KOLLMORGEN

ASCII Object Reference
SERVOSTAR™ 300

Revision 1.8

ASCII -Command	\
Syntax Transmit	\ [Data]
Syntax Receive	\ <Data>
Type	Command
Format	Unsigned8
DIM	-
Range	0(=Master) .. 63
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	362B (hex)
PROFIBUS PNU:	1899 (dec) IND = 1 (de
DPR Objekt Nr:	299

Configuration	☐
Function Group	Communication

Data Type BUS/DPR	Unsigned8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Selection of Remote Address

Description

For a CAN network with several amplifiers, there is an option for using a serial connection to one of the devices (master) to communicate with all the other amplifiers. To do this, the |SCAN| command is initiated on the master device, which performs an automatic detection of all the drivess that are connected. The response to the |SCAN| command contains a list of the addresses of all the drives devices that have been detected.

Typing the backslash character followed by a drive address (\ addr) in the range of 0 to 63 selects the addressed drive for communications. Further commands sent via the serial interface are ignored by the master device, and passed on directly across the CAN bus to the activated device. The response that this device outputs to the CAN bus is diverted to the serial interface. The command, \ 0, deselects the slave device and re-activate the master.

The setting |MDRV| = 0 disables the multi link functionality.

ASCII -Command	ACC
Syntax Transmit	ACC [Data]
Syntax Receive	ACC <Data>
Type	Variable rw
Format	Integer16
DIM	>> ACCUNIT
Range	3 ..126000
Default	3150
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	136
CAN Object No:	3501 (hex)
PROFIBUS PNU:	1601 (dec) IND = 1 (de
DPR Objekt Nr:	1

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Acceleration Ramp

Description

This variable defines the acceleration ramp for the velocity control loop. The acceleration ramp is only used for command changes resulting in a velocity increase (acceleration). |DEC| is used for braking (deceleration).

See also |ACCUNIT|

ASCII -Command	ACCR
Syntax Transmit	ACCR [Data]
Syntax Receive	ACCR <Data>
Type	Variable rw
Format	Integer16
DIM	>> ACCUNIT
Range	3 ..126000
Default	3150
Opmode	8
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	42
CAN Object No:	3502 (hex)
PROFIBUS PNU:	1602 (dec) IND = 1 (de
DPR Objekt Nr:	2

Configuration	☐
Function Group	Setting-up Mode

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Acceleration Ramp for homing/jog modes

Description

This variable defines the acceleration ramp used for jogging and homing with the internal position control loop.
The entry is made in ACCUNIT. If |ACCUNIT| =0 (acceleration in ms) ACCR is defined to |PVMAX|.
When starting the homing or jog mode, the ACCR acceleration ramp can (in some circumstances) be limited by the minimum acceleration time |PTMIN|.

ASCII -Command	ACCUNIT
Syntax Transmit	ACCUNIT [Data]
Syntax Receive	ACCUNIT <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0,1, ... , 30
Default	1
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	160...2
CAN Object No:	3659 (hex)
PROFIBUS PNU:	1945 (dec) IND = 1 (de
DPR Objekt Nr:	345

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Type of acceleration setpoint for the system

Description

Using this command, the systemwide acceleration type is defined. This function is used for ramps of the trajectory generator (internal motion tasks |OPMODE| 8) and also for the ramps of the speed controller.

ACCUNIT = 0 in ms up to |VLIM| or |PVMAX|
ACCUNIT = 1 Acceleration is defined in rad/sec²
ACCUNIT = 2 Acceleration is defined in rpm/sec
ACCUNIT = 3 Acceleration is defined in |PUNIT|/sec²
ACCUNIT = 4 Acceleration is defined in 1000*|PUNIT|/sec²
ACCUNIT = 5 Acceleration is defined 1000000*|PUNIT|/sec²

If ACCUNIT=1 is selected, this Bit is ignored, this means the ramps are calculated in rad/sec².

If ACCUNIT is changed, all acc/dec parameters are calculated in a different way to get the right unit. Affected are |ACC|, |ACCR|, |DEC|, |DECR|, |DECSTOP|, |DECDIS|.

The motion tasks are not affected. So, before defining a motion task ACCUNIT has to be set in right manner. If ACCUNIT is changed later, all motion tasks have to be proofed or changed !!!!

The accdec-ramps of the motion tasks are limited bei |PTMIN|.

Attention!
High acceleration corresponds to small values of |PTMIN| at ACCUNIT=0. If ACCUNIT is > 0, |PTMIN| is small if the acceleration is high.

ASCII -Command	ACTFAULT
Syntax Transmit	ACTFAULT [Data]
Syntax Receive	ACTFAULT <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	1
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3503 (hex)
PROFIBUS PNU:	1603 (dec) IND = 1 (de
DPR Objekt Nr:	3

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Active Fault Mode

Description

The ACTFAULT command is used to specify the response of the drive if a fault occurs.
ACTFAULT=0: If a fault occurs, the output stage is immediately inhibited, the drive coasts down.
ACTFAULT=1: If a fault occurs, an Emergency Stop procedure is initiated, that consists of the following steps.
1. Switch over the controller mode to velocity control (|OPMODE|=0)
2. Change the braking ramp for the velocity control loop (|DEC|) to the emergency stop ramp (|DECSTOP|)
3. Set the internal velocity setpoint to 0 (before the ramp generator).
4. Start a timer (with time-out = 5 seconds)

As soon as the internal velocity setpoint (after the ramp generator) has reached 0, the output stage is inhibited and the original controller mode is re-activated. This will also happen if the time-out occurs before the velocity setpoint has reached 0.

ASCII -Command	ACTIVE		
Syntax Transmit	ACTIVE		
Syntax Receive	ACTIVE <Data>		
Type	Variable ro		
Format	Integer8		
DIM	-		
Range	0, 1		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		
Configuration	☐		
Function Group	-		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3504 (hex)
PROFIBUS PNU:	1604 (dec) IND = 1 (de
DPR Objekt Nr:	4

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Output stage active/inhibited

Description

The ACTIVE command returns the present status of the output stage.
ACTIVE=1 output stage is active/enabled
ACTIVE=0 output stage is inhibited/disabled

The following conditions must be met to enable the output stage, depending on the controller configuration:

1. Standard configuration (no active MainsBTB function)
- software enable set
- hardware enable set
- BTB is present

2. With active MainsBTB function (|O1MODE| or |O2MODE|=3)
- Software enable set
- hardware enable set
- BTB is present
- MainsBTB (Mains supply BTB) is present
- DC-link (DC-bus) voltage > undervoltage threshold

ASCII -Command	ACTRS232
Syntax Transmit	ACTRS232 [Data]
Syntax Receive	ACTRS232 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3655 (hex)
PROFIBUS PNU:	1941 (dec) IND = 1 (de
DPR Objekt Nr:	341

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Activate RS232 Watchdog

Description

The ACTRS232 command activates or deactivates the monitoring of the serial interface (RS232-watchdog).

ACTRS232=0 no monitoring of serial communication
ACTRS232=1 the RS232-watchdog is activated. The watchdog timer can be set in msec through the |RS232T| command. The watchdog must be triggered by every serial command. When the timer runs out, all movement is stopped and the warning n04 is displayed. The warning must be cancelled by the "Acknowledge fault" function.
ACTRS232=2 the RS232-watchdog is activated. The watchdog timer can be set in msec through the |RS232T| command. The watchdog must be triggered by every serial command. When the timer runs out, the present movement is stopped and ACTRS232 is set to 0. No warning is given out.

After switching on the amplifier, the RS232-watchdog is always deactivated (ACTRS232=0). When a service function is initiated via the serial interface, the PC program (or external controls) should ensure that the monitoring of the serial interface is switched on. In this way, you can be sure that if communication is interrupted or the PC crashes, the service function will be automatically terminated.

ASCII -Command	ADDR
Syntax Transmit	ADDR [Data]
Syntax Receive	ADDR <Data>
Type	Variable rw
Format	Unsigned8
DIM	-
Range	0 .. 127
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	96
CAN Object No:	3505 (hex)
PROFIBUS PNU:	1605 (dec) IND = 1 (de
DPR Objekt Nr:	5

Configuration	☐
Function Group	Basic Setup

Data Type BUS/DPR	Unsigned8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Multidrop Address

Description

This variable defines the station address (0 to 63) for the amplifier. This address is required by the fieldbus (CANBUS, PROFIBUS, SERCOS, etc.) and for the parameter setting of the servo amplifier in a multi-axis system for an unambiguous identification of the servo amplifier within the system. You can use the keys on the front panel of the servo panel to set the station address (refer to the Installation Manual). After changing the address, all parameters should be stored in the EEPROM (see |SAVE|) and the amplifier should be switched off and on again.

ASCII -Command	AENA
Syntax Transmit	AENA [Data]
Syntax Receive	AENA <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 ,1
Default	0
Opmode	0, 2, 4, 5, 8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3506 (hex)
PROFIBUS PNU:	1606 (dec) IND = 1 (de
DPR Objekt Nr:	6

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Software Auto-Enable

Description

This variable defines the state of the software enable when the amplifier is switched on. In order to enable the output stage, both the hardware enable and the software enable must be set (series AND configuration). The software enable gives an external control the option of enabling or disabling the output stage by software control, via a bus interface (CANBUS, PROFIBUS, SERCOS, RS232) or an expansion card in a slot.

0 = inactive

1 = active

When using an analog setpoint (|OPMODE|=1, 3), the software enable is automatically set when the amplifier is switched on, so that these instruments are instantly ready for operation (provided that the hardware enable is already present). When using a digital setpoint (|OPMODE|=0, 2, 4 through 8), the software enable is set to the same state as AENA at power-on.

For faults that can be reset in software after the fault has been cleared (digital input 1 or |CLRFAULT|), the software enable is set to the state of AENA. In this way, the response of the amplifier to a software reset is analogous to the power-on behavior.

		Available in	
ASCII -Command	ALIAS		
Syntax Transmit	ALIAS [Data]	MMI ☑	CAN-Bus ☐
Syntax Receive	ALIAS <Data>	PROFIBUS ☐	Sercos ☑
Type	Variable rw		
Format	String		
DIM	-	SERCOS IDN:	142
Range	max 8 ASCII Characters	CAN Object No:	no
Default	DRIVE0	PROFIBUS PNU:	no
Opmode	All	DPR Objekt Nr:	
Drive Status	-		
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	-
Function Group	Basic Setup	Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Drive Name

Description

The ALIAS command is used to assign a symbolic name to an amplifier. If the PC setup software is used, this name appears in the title bar of all open parameter windows.
In Multi-Drive mode (parameterizing several amplifiers that are grouped through the CAN bus) the ALIAS name can be used to give a clear assignment of the parameter window to the corresponding amplifier.

ASCII -Command	AN11NR		
Syntax Transmit	AN11NR [Data]		
Syntax Receive	AN11NR <Data>		
Type	Variable rw		
Format	Integer8		
DIM	-		
Range	0, 1, 2, 3, 4		
Default	0		
Opmode	All		
Drive Status	Disable		
Start Firmware	1.0		
Configuration	☑		
Function Group	-		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3699 (hex)
PROFIBUS PNU:	2009 (dec) IND = 1 (de
DPR Objekt Nr:	409

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	No. Of INxTRIG variable, that is changed analog

Description

The parameter AN11NR defines the number (x) of the auxiliary variable |IN1TRIG|, |IN2TRIG|, |IN3TRIG| or |IN4TRIG|, which can be changed by the analog input 2: This parameter has effect only with |ANCNFG|=11 and |ANCNFG|=12.

ASCII -Command	AN11RANGE
Syntax Transmit	AN11RANGE [Data]
Syntax Receive	AN11RANGE <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-262144 .. 262143
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	369A (hex)
PROFIBUS PNU:	2010 (dec) IND = 1 (de
DPR Objekt Nr:	410

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Range of the analog change of INxTRIG

Description

The parameter AN11RANGE gives the change of |IN1TRIG|, |IN2TRIG|, |IN3TRIG| or |IN4TRIG|, that is caused by an analog input 2 step from 0V to 10V. The function is supported using |ANCNFG|=11 and |ANCNFG|=12.

Example:

|ANCNFG|=11
|AN11NR|=1
|IN1TRIG|=1000
AN11RANGE=500

at Analog input2 = 0V |IN1TRIG| = 1000
at Analog input2 = 10V |IN1TRIG| = 1500
at Analog input2 = -10V |IN1TRIG| = 500

ASCII -Command	ANCNFG
Syntax Transmit	ANCNFG [Data]
Syntax Receive	ANCNFG <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 14
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3507 (hex)
PROFIBUS PNU:	1607 (dec) IND = 1 (de
DPR Objekt Nr:	7

Configuration	☑
Function Group	Analog I/O

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Configuration of Analog Input

Description

The ANCNFG command is used to configure the function of the analog inputs.

Since the ANCNFG variable is used for the configuration of the instrument, the controller must be switched off and then on again after the variable has been changed (use |SAVE| first).

Zustand		Description
ANCNFG=0	(Xcmd=Analog In 1)	Analog In 1 is used as velocity setpoint or current setpoint depending on the status of |OPMODE| (velocity in |OPMODE| =1; current in |OPMODE|=3). If one of the digital inputs is selected for |IN1TRIG|, |IN2TRIG|, |IN3TRIG| or |IN4TRIG|=8 (switch-over between Analog In 1 and Analog In 2), Analog In 1 (input=low) or Analog In 2 (input=high) have the functionality. Scaling : Analog In 1 velocity Setpoint |VSCALE1| (|OPMODE|=1) Analog In 1 Current Setpoint |ISCALE1| (|OPMODE|=3) Analog In 2 velocity Setpoint |VSCALE2| (|OPMODE|=1) Analog In 2 Current Setpoint |ISCALE2| (|OPMODE|=3)
ANCNFG=1	v_cmd=Analog In 1, Icmd=Analog In 2	Analog In 1 is used as velocity setpoint if |OPMODE| = 1 (scaling factor |VSCALE1|) Analog In 2 is used as current setpoint if |OPMODE| = 3 (scaling factor |ISCALE2|)
ANCNFG=2	Analog In 1 = nsoll, Analog In 2 = Isoll	Analog In 1 velocity setpoint Analog In 2 current feedforward (|OPMODE|=0,1) scaling factor |ISCALE2|
ANCNFG=3	Xcmd=Analog In 1, Ipeak1=Analog In 2	Analog In 1 depending on |OPMODE| velocity or current setpoint (scaling |VSCALE1| or |ISCALE1|) The absolute of Analog In 2 limits the current of the drive 10V 100% of |IPEAK| 5V 50% of |IPEAK| This current limit has effect to all used |OPMODE|

ANCNFG=4	Xcmd=Analog In 1+Analog In 2	The sum of Analog In 1 and Analog In 2 is used for velocity or current setpoint, depending on |OPMODE|. |OPMODE| 1 velocity setpoint |OPMODE| 3 current setpoint
ANCNFG=5	Xcmd=Analog In 1*Analog In 2	The multiplikation of Analog In 1 and Analog In 2 is used for velocity or current setpoint, depending on |OPMODE|. |OPMODE| 1 velocity setpoint |OPMODE| 3 current setpoint Analog In 1 |VSCALE1|/|ISCALE1| Analog In 2 10V means 100% -10V means -100%
ANCNFG=6	Electronic Gearing	Analog In 1 is used as velocity or current setpoint, depending on |OPMODE| Analog In 2 is used as scaling factor for electronic gearing (|OPMODE|=4). |VSCALE2| is used to define a correction factor in %. e.g. |VSCALE2|=20 (means 20%) Analog In 2= +10V GEAROeff=|GEARO| * 1.2 Analog In 2= -10V GEAROeff=|GEARO| * 0.8 Analog In 2= 0V GEAROeff=|GEARO|
ANCNFG=7	Analog In 1 = Isoll, Analog In 2 = Nmax	Analog In 1 is used as current setpoint |(ISCALE1|) (|OPMODE| has to be set to 3). Analog In 2 limits the velocity of the motor Analog In 2=10V, Nmax=(|VSCALE2|) If the velocity of the motor is greater than Nmax, the velocity is limited.
ANCNFG=8	Analog In 1 = Psoll	Analog In 1 is used as a analog position setpoint (only available in |OPMODE|=5). The working distance is defined by |SRND| and |ERND|. Analog In 1 = 0V Position = |SRND| Analog In 1= +/-10V Position = |ERND| When the drive is switched on, the reference point is not set and the drive does not move. The |OPMODE| can be set to 5. The a reference move can be starte bs digital input. After that, when the homing move is finished, the input can be set to zero again and then the drive moves automatically to the given analog position. |POSCNFG| has to be "0" (linear axes type).
ANCNFG=9		Analog In 1: velocity or current setpoint (same as ANCNFG=0) Analog In 2: Ferraris sensor
ANCNFG=10	Reserved	
ANCNFG=11		Change of an |IN1TRIG|, |IN2TRIG|, |IN3TRIG| or |IN4TRIG| variable via the Analog In 2. The corresponding Number (x) of the trigger variable is set by |AN11NR|. The range of the parameter change is defined by |AN11RANGE|. The change of the analog in 2 acts directly (update time 1 to 10ms), see also |AN11NR| and |AN11RANGE|.

ANCNFG=12		Internal change of an |IN1TRIG|, |IN2TRIG|, |IN3TRIG| or |IN4TRIG| variable via the Analog In 2. The corresponding number (x) of the trigger variable is set by |AN11NR|. The range of the parameter change is defined by |AN11RANGE|. The change of the analog in 2 actsafter a rising edge at digital inputx, see also |AN11NR| and |AN11RANGE|.
ANCNFG=13	Xcmd=Analog In 1, Ipeak1=Analog In 2	Analog In 1 depending on |OPMODE| velocity or current setpoint (scaling |VSCALE1| or |ISCALE1|) The absolute of Analog In 2 limits the positive current of the drive 10V 100% of |IPEAK| 5V 50% of |IPEAK| The negative current is not effected. In the positive direction, the acceleration current is limited and in the negative direction the deceleration current. This current limit has effect to all used |OPMODE|
ANCNFG=14	Xcmd=Analog In 1, Ipeak1=Analog In 2	Analog In 1 depending on |OPMODE| velocity or current setpoint (scaling |VSCALE1| or |ISCALE1|) The absolute of Analog In 2 limits the negative current of the drive 10V 100% of |IPEAK| 5V 50% of |IPEAK| The positive current is not effected. In the negative direction, the acceleration current is limited and in the negative direction the deceleration current. This current limit has effect to all used |OPMODE|

ASCII -Command	ANDB
Syntax Transmit	ANDB [Data]
Syntax Receive	ANDB <Data>
Type	Variable rw
Format	Float
DIM	Millivolts
Range	0.0 .. 10000.0
Default	0
Opmode	1, 3
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3508 (hex)
PROFIBUS PNU:	1608 (dec) IND = 1 (de
DPR Objekt Nr:	8

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Dead Band of the Analog Velocity Input Signal

Description

This variable suppresses small analog input signals by setting a dead band zone in which signals are ignored. This function is useful with |OPMODE|=1 (without higher-level position control). Depending on the operating mode, this parameter applies to analog input 1 or analog input 2 (depending on which setpoint input is used as the source for the velocity value). See |ANCNFG| for additional information.

ASCII -Command	ANIN1
Syntax Transmit	ANIN1
Syntax Receive	ANIN1 <Data>
Type	Variable ro
Format	Integer32
DIM	Millivolts
Range	-10000 .. 10000
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3034 ...5
CAN Object No:	3509 (hex)
PROFIBUS PNU:	1609 (dec) IND = 1 (de
DPR Objekt Nr:	9

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Voltage at Analog Input 1

Description

The ANIN1 command returns the present value of the voltage at the analog input analog input 1.

ASCII -Command	ANIN2
Syntax Transmit	ANIN2
Syntax Receive	ANIN2 <Data>
Type	Variable ro
Format	Integer32
DIM	Millivolts
Range	-10000 .. 10000
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3034 ...5
CAN Object No:	350A (hex)
PROFIBUS PNU:	1610 (dec) IND = 1 (de
DPR Objekt Nr:	10

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Voltage at Analog Input 2

Description

The ANIN2 command returns the present value of the voltage at the analog input SW2.

ASCII -Command	ANOFF1
Syntax Transmit	ANOFF1 [Data]
Syntax Receive	ANOFF1 <Data>
Type	Variable rw
Format	Integer16
DIM	Millivolts
Range	-10000 .. 10000
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	350B (hex)
PROFIBUS PNU:	1611 (dec) IND = 1 (de
DPR Objekt Nr:	11

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Analog Offset for analog input 1

Description

This variable compensates for the offset voltages of CNC controls and the analog input 1 |ANIN1| . It can also correct an analog offset from external controls.

ASCII -Command	ANOFF2
Syntax Transmit	ANOFF2 [Data]
Syntax Receive	ANOFF2 <Data>
Type	Variable rw
Format	Integer16
DIM	Millivolts
Range	-10000 .. 10000
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	350C (hex)
PROFIBUS PNU:	1612 (dec) IND = 1 (de
DPR Objekt Nr:	12

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Analog Offset for analog input 2

Description

This variable compensates for the offset voltages of CNC controls and the analog input, |ANIN2| . It can also correct an analog offset from external controls.

ASCII -Command	ANZERO1
Syntax Transmit	ANZERO1
Syntax Receive	ANZERO1
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	
CAN Object No:	350F (hex)
PROFIBUS PNU:	1615 (dec) IND = 1 (de
DPR Objekt Nr:	15

Configuration	☐
Function Group	Analog I/O

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Zero Analog Input 1

Description

This command can be used to start the automatic offset correction for the analog input 1. The setpoint at analog input 1 should be short-circuited before using this command. After the command has been carried out, the offset value that was determined is available in the |ANOFF1| parameter. To save this value permanently in the EEPROM, you should use the |SAVE| (save to EEPROM) command.
The function can adjust an offset of max. 75 mV.

ASCII -Command	ANZERO2
Syntax Transmit	ANZERO2
Syntax Receive	ANZERO2
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3510 (hex)
PROFIBUS PNU:	1616 (dec) IND = 1 (de
DPR Objekt Nr:	16

Configuration	☐
Function Group	Analog I/O

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Zero Analog Input SW2

Description

This command can be used to start the automatic offset correction for the analog input 2. The setpoint at analog input 2 should be short-circuited before using this command. After the command has been carried out, the offset value that was determined is available in the |ANOFF2| parameter. To save this value permanently in the EEPROM, you should use the |SAVE| (save to EEPROM) command.
The function can adjust an offset of max. 75 mV.

ASCII -Command	ARHPD
Syntax Transmit	ARHPD [Data]
Syntax Receive	ARHPD <Data>
Type	rw
Format	Float 32
DIM	
Range	0 ... 10
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	1863 (dec) IND = 1 (de
DPR Objekt Nr:	263

Configuration	☐
Function Group	

Data Type BUS/DPR	Float 32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Damping high pass filter

Description

ARHPD is the high-pass damping of the velocity-loop filter.

For a detailed description of how to set up the velocity-loop filter, see |BQMODE|.

ASCII -Command	ARHPF
Syntax Transmit	ARHPF [Data]
Syntax Receive	ARHPF [Data]
Type	rw
Format	Float 32
DIM	
Range	0 ... 4000
Default	1000
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	1864 (dec) IND = 1 (de
DPR Objekt Nr:	264

Configuration	☐
Function Group	

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Frequency limit high pass filter

Description

ARHPF is the high-pass frequency of the velocity-loop filter.

For a detailed description of how to set up the velocity-loop filter, see |BQMODE|.

ASCII -Command	ARLP2
Syntax Transmit	ARLP2 [Data]
Syntax Receive	ARLP2 [Data]
Type	rw
Format	Float 32
DIM	Hz
Range	0 ... 1500
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	1865 (dec) IND = 1 (de
DPR Objekt Nr:	265

Configuration	☐
Function Group	

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Low pass filter

Description

ARLP2 is the cut-off frequency of an additional 1st-order low-pass filter for the velocity loop. If If ARLP2 is set to a value > 0, the filter is activated, otherwise it is turned off.

Low-pass filters are used to suppress signals of higher frequencies (e.g. resonances and noise). Applying a low-pass filter to the velocity loop leads to an undesired phase lag above the filter's cut-off ferquency besides the desired signal attenuation. This leads to a degradation of phase margin. Thus, the velocity-loop bandwidth is always < 0.5 times the low-pass cutt-off frequency.

For a detailed description of how to set up the velocity-loop filter,see |BQMODE|.

ASCII -Command	ARLPD
Syntax Transmit	ARLPD [Data]
Syntax Receive	ARLPD [Data]
Type	rw
Format	Float 32
DIM	
Range	0 ... 10
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	1866 (dec) IND = 1 (de
DPR Objekt Nr:	266

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Damping low pass filter

Description

ARLPD is the low-pass damping of the velocity-loop filter.

For a detailed description of how to set up the velocity-loop filter,see |BQMODE|.

ASCII -Command	ARLPF
Syntax Transmit	ARLPF [Data]
Syntax Receive	ARLPF [Data]
Type	rw
Format	Float 32
DIM	
Range	0 ... 4000
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	1867 (dec) IND = 1 (de
DPR Objekt Nr:	267

Configuration	☐
Function Group	

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Frequency limit low pass filter

Description

ARLPF is the low-pass frequency of the velocity-loop filter.

For a detailed description of how to set up the velocity-loop filter, see |BQMODE|.

ASCII -Command	AUTOHOME
Syntax Transmit	AUTOHOME [Data]
Syntax Receive	AUTOHOME <Data>
Type	rw
Format	Integer8
DIM	
Range	0,1
Default	0
Opmode	8, 4
Drive Status	Disable
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36D7 (hex)
PROFIBUS PNU:	1671 (dec) IND = 17 (d
DPR Objekt Nr:	471

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Automatic homing

<u>Description</u>

The Command AUTOHOME selects, if the homing procedure will be started automatic.

AUTOHOME=0 no automatic homing prcedure started

AUTOHOME=1 After the drive is enabled the homing procedure |MH| is started automatic

FW > 1.31
AUTOHOME=2 After the drive is enabled the homing procedure |MH| is started automatic, in case it was not already set .

ASCII -Command	AVZ1
Syntax Transmit	AVZ1 [Data]
Syntax Receive	AVZ1 <Data>
Type	Variable rw
Format	Float
DIM	Milliseconds
Range	0.2 .. 100.0
Default	1
Opmode	1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3511 (hex)
PROFIBUS PNU:	1617 (dec) IND = 1 (de
DPR Objekt Nr:	17

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Filter Time Constant for analog input 1

Description

Filter time constant for analog input 1. (62.5µs Update Rate)

ASCII -Command	BCC
Syntax Transmit	BCC
Syntax Receive	BCC <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	363A (hex)
PROFIBUS PNU:	1914 (dec) IND = 1 (de
DPR Objekt Nr:	314

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	EEPROM check sum

Description

The BCC variable returns a checksum for the parameter area of the serial EEPROM.
When a |SAVE| command is carried out, all the internal parameters of the amplifier are saved in this area, in ASCII format. The checksum is obtained by summing all the stored bytes, and is recalculated with every |LOAD| or |SAVE| command. It is only intended for the detection of EEPROM errors.
But it can also be used to detect whether the data set that is present in the controls matches the data set that is stored in the servo amplifier.

ASCII -Command	BQMODE
Syntax Transmit	BQMODE [Data]
Syntax Receive	BQMODE <Data>
Type	rw
Format	Integer8
DIM	-
Range	0...4
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

	MMI	☐	CAN-Bus	☑
	PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3666 (hex)
PROFIBUS PNU:	1958 (dec) IND = 1 (de
DPR Objekt Nr:	358

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	Yes

Short Description	

Description

Zustand	Short Description	Description
BQMODE=0	filter turned off	
BQMODE=1	compatibility mode	In this mode, the filter is selected due to the settings of |ARLPF|, |ARHPF|, |ARLPD| and |ARHPD|. The filter is selected as follows: $\|ARLPF\| > 0, \|ARHPF\| > 0, \|ARLPD\| = \|ARHPD\| = 0$: PID-T2 filter (1st-order lag compensator) $\|ARLPF\| > 0, \|ARHPF\| > 0, \|ARLPD\| > 0, \|ARHPD\| \geq 0$: notch /bi-quad $\|ARLPF\| > 0, \|ARLPD\| > 0, \|ARHPD\| = \|ARHPD\| = 0$: 2nd-order low-pass (n/a) $\|ARLPF\| = \|ARHPF\| = \|ARLPD\| = \|ARHPD\| = 0$: filter turned off
BQMODE=2	PID-T2 filter (1st-order lag compensator)	The PID-T2 filter is only activated if the following conditions are met: $\|ARLPF\| > 0, \|ARHPF\| > 0$. PID-T2 filters can be used effectively to reduce the torque ripple and resonances from the motor, gearbox and a coupled load. The transfer function is |TF|

BQMODE=3	notch / bi-quad filter	The notch / bi-quad filter is only activated if the following conditions are met:
		$|ARLPF| > 0$, $|ARHPF| > 0$, $|ARLPD| > 0$, $|ARHPD| \geq 0$.
		Notch filters an be used to suppress single resonances because they offer a high attenuation for a small frequeny range. However, even small deviations between filter frequency and resonance frequency degrade the effect of this filter type dramatically. This high paramter sensitivity makes notch filters difficult to set up.
		Bi-quad filters can be used effectively to compensate for resonances in a two-mass servo system. If set up properly, this filter type helps to increase the stability margins which allows for a higher gain and thus a higher bandwidth of the velocity loop.
		The transfer function is $|TF|$
		Note:
		If ARLPF = ARHPF, ARLPD > 0 and ARHPD = 0, the filter acts as a notch filter, otherwise it acts as a bi-quad filter.
BQMODE=4	2nd-order low-pass filter	The 2nd-order low-pass filter is only activated if the following conditions are met:
		$|ARLPF| > 0$, $|ARLPD| > 0$.
		For general examples of low-pass filter usage, see $|ARLP2|$. If a 1st-order low-pass filter exhibits too much phase lag below the cutt-off frequency or too little signal attenuation above the cutt-off frequency, a 2nd-order low-pass filters can be used to improve the behavior.
		The transfer function is $|TF|$

ASCII -Command	BUSP0
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	385B (hex)
PROFIBUS PNU:	1659 (dec) IND = 33 (d
DPR Objekt Nr:	859

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	State of the MODBUS+ Network

Description
SERCOS:
IDN 97 lower 16 BIT
IDN 98 upper 16 BIT

ASCII -Command	BUSP1
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36E5 (hex)
PROFIBUS PNU:	1685 (dec) IND = 17 (d
DPR Objekt Nr:	485

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	State of the MODBUS+ Network

Description

BUSP1 gives the state of the Modbus+ network of the drive. The bit 3 can be written by the drive and can be saved. If the bit is set, Modbus+ network errors are indicated at the drive.

ASCII -Command	BUSP10		
Syntax Transmit	BUSP1 [Data]		
Syntax Receive	BUSP1 <Data>		
Type	Variable ro		
Format	Integer16		
DIM	-		
Range	0 .. 15		
Default	0		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36EE (hex)
PROFIBUS PNU:	1694 (dec) IND = 17 (d
DPR Objekt Nr:	494

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	State of the MODBUS+ Network

Description

ASCII -Command	BUSP11
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36EF (hex)
PROFIBUS PNU:	1695 (dec) IND = 17 (d
DPR Objekt Nr:	495

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	State of the MODBUS+ Network

Description

ASCII -Command	BUSP12
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36F0 (hex)
PROFIBUS PNU:	1696 (dec) IND = 17 (d
DPR Objekt Nr:	496

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	State of the MODBUS+ Network

Description

ASCII -Command	BUSP13
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36F1 (hex)
PROFIBUS PNU:	1697 (dec) IND = 17 (d
DPR Objekt Nr:	497

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	State of the MODBUS+ Network

Description

ASCII -Command	BUSP14
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36F2 (hex)
PROFIBUS PNU:	1698 (dec) IND = 17 (d
DPR Objekt Nr:	498

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	State of the MODBUS+ Network

Description

			Available in			
ASCII -Command	BUSP15		MMI	☐	CAN-Bus	☑
Syntax Transmit	BUSP1 [Data]		PROFIBUS	☑	Sercos	☐
Syntax Receive	BUSP1 <Data>					
Type	Variable ro					
Format	Integer16		SERCOS IDN:			
DIM	-		CAN Object No:	36F3 (hex)		
Range	0 .. 15		PROFIBUS PNU:	1699 (dec) IND = 17 (d		
Default	0		DPR Objekt Nr:	499		
Opmode	All					
Drive Status	-					
Start Firmware	1.0					
Configuration	☐		Data Type BUS/DPR	Integer16		
Function Group	-		Weighting 10^3			

Last Change of this Object	1.0
EEPROM	Yes

Short Description	State of the MODBUS+ Network

<u>Description</u>

ASCII -Command	BUSP16
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36F4 (hex)
PROFIBUS PNU:	1700 (dec) IND = 17 (d
DPR Objekt Nr:	500

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	State of the MODBUS+ Network

Description

ASCII -Command	BUSP2
Syntax Transmit	BUSP2 [Data]
Syntax Receive	BUSP2 <Data>
Type	Variable rw
Format	Integer16
DIM	10 ms
Range	1 .. 6000
Default	100
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36E6 (hex)
PROFIBUS PNU:	1686 (dec) IND = 17 (d
DPR Objekt Nr:	486

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Number of Data Words (Command) at MODBUS+

Description

This parameter defines the time-out of the Modbus communication in 10ms steps. If the drive gets no interrupt from the board in that time, the drive is disabled and the communication in |BUSP1| is displayed as faulty.

SERCOS:
IDN 15 Telegram typ   in Byte 0
IDN 32 Main operation mode   in Byte 2

ASCII -Command	BUSP3
Syntax Transmit	BUSP3 [Data]
Syntax Receive	BUSP3 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0,1
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36E7 (hex)
PROFIBUS PNU:	1687 (dec) IND = 17 (d
DPR Objekt Nr:	487

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Address selection of MODBUS+

Description

This parameter defines the direction of the address selection of the Modbus+ board in the initialization phase.
BUSP3 = 0   The address is given by the Modbus board.
BUSP3 = 1   The address is given by the drive and it's address in |ADDR|.

SERCOS:
IDN 121 Gearing input stage with data defined on motor side

ASCII -Command	BUSP4
Syntax Transmit	BUSP4 [Data]
Syntax Receive	BUSP4 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 9
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36E8 (hex)
PROFIBUS PNU:	1688 (dec) IND = 17 (d
DPR Objekt Nr:	488

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Number of Data Words (Command) at MODBUS+

Description

This parameter defines the number of data words (command), which are updated cyclic. Data, which is enabled as process data, cannot be written by the SDO channel (messaging).

SERCOS:
IDN 122 Gearing output stage with data defined on motor side

ASCII -Command	BUSP5
Syntax Transmit	BUSP5 [Data]
Syntax Receive	BUSP5 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	1 .. 64
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36E9 (hex)
PROFIBUS PNU:	1689 (dec) IND = 17 (d
DPR Objekt Nr:	489

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Number of Data Words (Command) at MODBUS+

Description

This parameter gives the address of the Modbus-Master for this drive. While initializing, this parameter is send from the drive to the Modbus board. The board then transmits only data to the drive, that was send from this master.

SERCOS:
IDN 123

ASCII -Command	BUSP6
Syntax Transmit	BUSP6 [Data]
Syntax Receive	BUSP6 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 18
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36EA (hex)
PROFIBUS PNU:	1690 (dec) IND = 17 (d
DPR Objekt Nr:	490

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Number of Actual Value Data Words via MODBUS

Description

This parameter defines the number of cyclic updated actual values in 16 bit data words, which are updated every cycle between the drive and the Modbus board.

SERCOS:
IDN 79

ASCII -Command	BUSP7
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36EB (hex)
PROFIBUS PNU:	1691 (dec) IND = 17 (d
DPR Objekt Nr:	491

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	State of the MODBUS+ Network

Description
SERCOS:

IDN117

ASCII -Command	BUSP8
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36EC (hex)
PROFIBUS PNU:	1692 (dec) IND = 17 (d
DPR Objekt Nr:	492

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	State of the MODBUS+ Network

Description

ASCII -Command	BUSP9		Available in	
Syntax Transmit	BUSP1 [Data]		MMI ☐	CAN-Bus ☑
Syntax Receive	BUSP1 <Data>		PROFIBUS ☑	Sercos ☐
Type	Variable ro			
Format	Integer16			
DIM	-		SERCOS IDN:	
Range	0 .. 15		CAN Object No:	36ED (hex)
Default	0		PROFIBUS PNU:	1693 (dec) IND = 17 (d
Opmode	All		DPR Objekt Nr:	493
Drive Status	-			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	Integer16
Function Group	-		Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	State of the MODBUS+ Network

Description

ASCII -Command	CALCHP
Syntax Transmit	CALCHP [Data] , [Data]
Syntax Receive	CALCHP
Type	Command
Format	-
DIM	rpm
Range	0 .. 200
Default	5
Opmode	All
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3512 (hex)
PROFIBUS PNU:	1618 (dec) IND = 1 (de
DPR Objekt Nr:	18

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Determining the Hiperface Parameters

Description

This command can be used to start the automatic determination of the Hiperface parameters. To do this, the output stage must be enabled and the drive must be able to move freely. While this command is being carried out, the motor makes a full turn at the predefined velocity. During this phase, the offset parameters (|HISOFFS|/|HICOFFS|) and the sine/cosine gain factor (|HIFACT1|) are calculated. After this function has been completed, the newly determined parameters can be stored in the encoder, using the |HSAVE| command for |FBTYPE| = 2 or 4 or using the command |SAVE| for|FBTYPE| = 7.
The CALCHP function is only available when a Hiperface- or an EnDAT-Encoder or sine encoder has been selected as the feedback device (|FBTYPE|=2 or 4 or 7).

 The first is to select a certain speed in rpm and the second the angle of the motor that should be moved.

E.g.: CALCHP 5 10, start CALCHP with 5 rpm and move the motor 10 degrees.

ASCII -Command	CALCRK		
Syntax Transmit	CALCRK [Data]		
Syntax Receive	CALCRK		
Type	Command		
Format	-		
DIM	rpm		
Range	0 .. 200		
Default	5		
Opmode	All		
Drive Status	Enabled		
Start Firmware	1.0		
Configuration	☐		
Function Group	-		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3513 (hex)
PROFIBUS PNU:	1619 (dec) IND = 1 (de
DPR Objekt Nr:	19

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Calculate resolver parameters

Description

This command can be used to start the automatic determination of the resolver parameter |RK| (sine/cosine gain factor). To do this, the output stage must be enabled and the drive must be able to move freely. While this command is being carried out, the motor makes approx. 2.5 turns at the given velocity. If CALCRK is started without parameter, the default value is used. After this function has been completed, the newly determined |RK| parameter can be stored in the EEPROM, using the |SAVE| command.
This command can be used to reduce the current ripple of the motor at high velocity. It can only be used with resolver feedback.

ASCII -Command	CALCRP
Syntax Transmit	CALCRP
Syntax Receive	
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	✔
Function Group	-

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3514 (hex)
PROFIBUS PNU:	1620 (dec) IND = 1 (de
DPR Objekt Nr:	20

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Calculate resolver phase

Description

ASCII -Command	CANDUMP
Syntax Transmit	CANDUMP [Data]
Syntax Receive	CANDUMP <Data>
Type	ro
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.15
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	0

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.6
EEPROM	No

Short Description	List with CANopen communication parameter

Description

Description

The command is used to get a list with the CANoden communication parameter.

ASCII -Command	CANSDO
Syntax Transmit	CANSDO [Data]
Syntax Receive	CANSDO <Data>
Type	rw
Format	INT32
DIM	-
Range	
Default	
Opmode	
Drive Status	
Start Firmware	2.15

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	

Configuration	☐
Function Group	

Data Type BUS/DPR	INT32
Weighting 10^3	

Last Change of this Object	1.5
EEPROM	No

Short Description	Access to a CAN Service Data Object

Description

The ASCII-command CANSDO <object> <value>, where object gives index, subindex and length of a CAN-object dictionary entry, gives read and write access to a CAN-SDO.

Examples:

Write access:
CANSDO 0x2F001802 1 means object 1800 sub 2 shall be written with a value of 1 and has 1 Byte=8 Bit length. The length must be according to the type of the entry given in the object dictionary (2F = 1 byte, 2B = 2 bytes, 27 = 3 bytes, 23 = 4 bytes)

Read access:
CANSDO 0x40416000 reads object 6041 subindex 0.

For further information to SDO access refer to the CAN manual.

ASCII -Command	CBAUD
Syntax Transmit	CBAUD [Data]
Syntax Receive	CBAUD <Data>
Type	Variable rw
Format	Integer16
DIM	kBaud
Range	10,20,50,100,125,250,333,500,666,800,1000
Default	500
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	Basic Setup

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3515 (hex)
PROFIBUS PNU:	1621 (dec) IND = 1 (de
DPR Objekt Nr:	21

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Baud Rate CAN Bus

Description

The transmission rate is required by the fieldbus (CANopen) and for the parameter setting of the servo amplifier in multi-axis systems (see the Installation Manual). You can also use the keys on the front panel of the servo amplifier to set the baud rate (see the Installation Manual).

ASCII -Command	CCSAVE
Syntax Transmit	CCSAVE [Data]
Syntax Receive	CCSAVE <Data>
Type	rw
Format	Integer32
DIM	-
Range	0 , 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.15
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.6
EEPROM	No

Short Description	Save / reset CANopen communication parameter

Description

Description

CCSAVE ist used to save the CANopen communiaction parameter in object area 1000h – 1FFFh into the drive or to reset the values to default.

Es sind zwei Werte zulässig:

0 – CANopen-communication parameter are set to default. The new data are active after drive restart.

1 – CANopen-communication parameter are saved into the drive.

ASCII -Command	CLRFAULT		Available in	
Syntax Transmit	CLRFAULT		MMI ☑	CAN-Bus ☑
Syntax Receive	CLRFAULT		PROFIBUS ☑	Sercos ☐
Type	Command			
Format	-			

SERCOS IDN:	
CAN Object No:	3518 (hex)
PROFIBUS PNU:	1624 (dec) IND = 1 (de
DPR Objekt Nr:	24

DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Clear Drive Fault

Description

The CLRFAULT command cancels the fault status of an amplifier. A hardware or software reset of the amplifier is carried out, depending on the type of fault that is present.
After a software reset the amplifier is immediately ready for operation, after a hardware reset the complete initialization phase must be gone through first (as for power-on).
As well as amplifier faults (display Fxx), the following warnings are also deleted.
- contouring/following error
- threshold monitoring

With the selection |CLRWARN|=1 (separate cancellation of warnings) this command will delete all warnings that are present.
A listing of all possible fault/error messages, with information on the hardware/software reset required, can be found in the description of the |ERRCODE| command.

The CLRFAULT command can either be implemented through the ASCII channel (CLRFAULT command) or via the CAN/PROFIBUS (with the "cancel fault" bit in the control word), or through a digital input ("Controller reset" function).

ASCII -Command	CLRHR
Syntax Transmit	CLRHR
Syntax Receive	CLRHR
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration ☐

Function Group

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3519 (hex)
PROFIBUS PNU:	1625 (dec) IND = 1 (de
DPR Objekt Nr:	25

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Bit 5 of status register STAT is cleared

Description

IN PREPARATION !

After every start-up or hardware reset of the drive, BIT 5 (0x20) of the |STAT| register is set to high. This bit is cleared by CLRHR. Possible usage:
The Software User Interface uploads all the data stored in the drive, if the hardware reset Bit5 in the |STAT| register is set too high. When the parameter are completely uploaded, the Bit5 is set to low using the command CLRHR. The |STAT| register is monitored form the Software User Interface all the time and is checked, if it is low. When it becomes high again (drive had a reset) the Software User Interface uploads the data again.

ASCII -Command	CLRORDER		Available in	
Syntax Transmit	CLRORDER [Data]		MMI ☑	CAN-Bus ☑
Syntax Receive	-		PROFIBUS ☑	Sercos ☐
Type	Command			
Format	Integer16		SERCOS IDN:	
DIM	-		CAN Object No:	351A (hex)
Range	0;1 ..180; 192 .. 255		PROFIBUS PNU:	1626 (dec) IND = 1 (de
Default	-		DPR Objekt Nr:	26
Opmode	All			
Drive Status	Enabled (only RAM) / Disabled			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	Integer16
Function Group	-		Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Deleting a Motion Task

Description

The command CLRORDER is used to delete a motion task given by the variable (e.g. CLRORDER 10, means: motion task 10 is deleted).

ASCII -Command	CLRWARN		Available in	
Syntax Transmit	CLRWARN [Data]		MMI ☑	CAN-Bus ☑
Syntax Receive	CLRWARN <Data>			
Type	Variable rw		PROFIBUS ☑	Sercos ☐
Format	Unsigned8			
DIM	-		SERCOS IDN:	
Range	0, 1		CAN Object No:	351B (hex)
Default	0		PROFIBUS PNU:	1627 (dec) IND = 1 (de
Opmode	All		DPR Objekt Nr:	27
Drive Status	Disabled + Reset (Coldstart)			
Start Firmware	1.0			
Configuration	☑		Data Type BUS/DPR	Unsigned8
Function Group	-		Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Warning mode

Description

The CLRWARN configuration variable can be used to control the response of the drive if a warning occurs.

CLRWARN=0 Warnings will be displayed until the cause of the warning has been removed.
 Warnings cannot be cancelled (exceptions: - contouring/following error, threshold detection).
CLRWARN=1 A warning is only displayed at the moment when it occurs (transition).
All warnings can be cancelled by the |CLRFAULT| command, or through the digital input ("Controller reset" function).

The listing of the possible warnings can be found in the description of the |STATCODE *| command.

ASCII -Command	CMDDLY
Syntax Transmit	CMDDLY [Data]
Syntax Receive	CMDDLY <Data>
Type	rw
Format	Integer16
DIM	ms
Range	0 ... 160
Default	15
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3670 (hex)
PROFIBUS PNU:	1968 (dec) IND = 1 (de
DPR Objekt Nr:	368

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.1
EEPROM	Yes

Short Description	Command Delay Time for RS232

Description

The parameter CMDDLY defines a minimum delay time for answers from the drive via RS232 (ASCII). This enables the possibility for slower controller to communicate with the Drive.
The delay time CMDDLY defines the time between the last character of a ASCII string send to the drive to the first character of the answer.
The time between the characters cannot be changed, they are defined by the baud rate and the internal calculation times.
This time defines only the minimum delay time between the ASCII strings. The time can be longer, depending on the internal calculation time

ASCII -Command	COLDSTART
Syntax Transmit	COLDSTART
Syntax Receive	COLDSTART
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Drive Status

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3632 (hex)
PROFIBUS PNU:	1906 (dec) IND = 1 (de
DPR Objekt Nr:	306

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Drive Reset

Description

Software reset (warm boot) of the servo amplifier. The servo amplifier must be disabled. The current faults are cancelled, the servo amplifier software is initialized and communications are re-established. This command has the same effect as turning the drive power off and then back on.

ASCII -Command	CONTINUE
Syntax Transmit	CONTINUE
Syntax Receive	CONTINUE
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	8
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	351D (hex)
PROFIBUS PNU:	1629 (dec) IND = 1 (de
DPR Objekt Nr:	29

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Continue last position order

Description

The CONTINUE command can be used to continue (and complete) a motion block that was previously interrupted by the |STOP| command. This is especially important for a motion block with relative paths.

ASCII -Command	CTUNE
Syntax Transmit	CTUNE [Data]
Syntax Receive	CTUNE
Type	Command
Format	-
DIM	Hz
Range	500 ... 1800
Default	
Opmode	All
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	351E (hex)
PROFIBUS PNU:	1630 (dec) IND = 1 (de
DPR Objekt Nr:	30

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Calculate current parameters

Description

This command calculates current parameters. Set the |OPMODE| = 2 before starting.

ASCII -Command	CUPDATE		
Syntax Transmit	CUPDATE		
Syntax Receive	CUPDATE		
Type	Command		
Format	-		
DIM	-		
Range	-		
Default	-		
Opmode	All		
Drive Status	Disabled		
Start Firmware	1.0		
Configuration	☐		
Function Group	-		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	351F (hex)
PROFIBUS PNU:	1631 (dec) IND = 1 (de
DPR Objekt Nr:	31

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Program Update (CAN Bus)

Description

The CUPDATE command activates a function that can receive data through a CAN bus interface and save them in the program memory of the amplifier. After this function has been activated, no more commands will be accepted through the serial interface. The program PRGDOWN.EXE should be used for downloading data on the PC side. This program operates with the hardware in a handshaking procedure, and prepares the data for CAN transmission.

ASCII -Command	DEC	Available in	
Syntax Transmit	DEC [Data]	MMI ☑	CAN-Bus ☑
Syntax Receive	DEC <Data>	PROFIBUS ☑	Sercos ☑
Type	Variable rw		
Format	Integer16	SERCOS IDN:	137
DIM	>> ACCUNIT	CAN Object No:	3522 (hex)
Range	3 ..126000	PROFIBUS PNU:	1634 (dec) IND = 1 (de
Default	3150	DPR Objekt Nr:	34
Opmode	0, 1, 8 (bei EXTPOS=1,4)		
Drive Status	-		
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	Integer16
Function Group	velocity	Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Deceleration Rate

Description

The DEC command defines the deceleration ramp for the velocity control loop. The DEC deceleration/braking ramp is only used for setpoint step changes that result in a velocity decrease (braking). The |ACC| parameter is used for acceleration.

The DEC braking ramp applies to all setpoint changes, whether they are provided in analog or digital form. Separate braking ramps (|DECSTOP|/|DECDIS|) are used for setpoint changes that are generated internally in emergency stop situations (e.g. amplifier fault, or removal of the amplifier enable).

See also |ACCUNIT|

ASCII -Command	DECDIS
Syntax Transmit	DECDIS [Data]
Syntax Receive	DECDIS <Data>
Type	Variable rw
Format	Integer16
DIM	>> ACCUNIT
Range	3 ..126000
Default	3150
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3523 (hex)
PROFIBUS PNU:	1635 (dec) IND = 1 (de
DPR Objekt Nr:	35

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Deceleration used on Disable Output Stage

Description

When the output stage is disabled (removal of the hardware or software enable), the internal velocity setpoint is set to 0, using the preset DECDIS ramp. The output stage is only disabled when the actual velocity has fallen below the standstill threshold (|VEL0|). The DECDIS ramp only has an effect for motors with a configured brake (|MBRAKE|=1) or with the selection |STOPMODE|=1. With |STOPMODE|=0 the output stage is immediately disabled, and the drive coasts down.

See also |ACCUNIT|

ASCII -Command	DECR		
Syntax Transmit	DECR [Data]		
Syntax Receive	DECR <Data>		
Type	Variable rw		
Format	Integer16		
DIM	>> ACCUNIT		
Range	3 ..126000		
Default	3150		
Opmode	8		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	42
CAN Object No:	3524 (hex)
PROFIBUS PNU:	1636 (dec) IND = 1 (de
DPR Objekt Nr:	36

Configuration	☐
Function Group	Setting-up Mode

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Deceleration Ramp for homing/jog modes

Description

The DECR command defines the braking ramp for jog mode or homing with the internal position control loop. The entry is made in ACCUNIT. If ACCUNIT=0 (acceleration in ms) DECR is defined to |PVMAX|.
When starting the homing/jog mode, the DECR deceleration ramp can, in some circumstances, be limited by the minimum acceleration time |PTMIN| (see description of the |PTMIN| parameter).

Details are shown at parameter |ACCUNIT| .

ASCII -Command	DECSTOP		Available in	
Syntax Transmit	DECSTOP [Data]		MMI ☑	CAN-Bus ☑
Syntax Receive	DECSTOP <Data>		PROFIBUS ☑	Sercos ☑
Type	Variable rw			
Format	Integer16			
DIM	>> ACCUNIT		SERCOS IDN:	P 3022
Range	3 ..126000		CAN Object No:	3525 (hex)
Default	3150		PROFIBUS PNU:	1637 (dec) IND = 1 (de
Opmode	All		DPR Objekt Nr:	37
Drive Status	-			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	Integer16
Function Group	velocity		Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Quick Stop – braking ramp for emergency situations

Description

In emergency stop situations, the internal setpoint goes to 0 using the preset DECSTOP ramp. The output stage is only disabled when the actual velocity has fallen below the standstill threshold (|VEL0|).
An emergency stop situation exists in the following cases:
- amplifier fault (with |ACTFAULT|=1)
- contouring/following error
- threshold monitoring (fieldbus devices)
- hardware/software limit switch activated
- quick stop function through the digital input (|INxMODE|=27)
- quick stop function through the fieldbus (control word)

see also |ACCUNIT|

ASCII -Command	DENA
Syntax Transmit	DENA [Data]
Syntax Receive	DENA <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	362D (hex)
PROFIBUS PNU:	1901 (dec) IND = 1 (de
DPR Objekt Nr:	301

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	DPR software disable reset mode

Description

With external DPR-SLOT cards, it is possible to cancel existing instrument faults by removing the DPR software enable. This function can be activated or inhibited by using the DENA variable.

DENA=0 Removing the software enable causes a hardware/software reset of the amplifier.
The reset only takes place when a fault occurs, or the warning "contouring error" or "threshold monitoring activated" is present. (customer-specific protocol: Beckhoff).

DENA=1 Removing the software enable causes a hardware/software reset of the amplifier.
The reset only takes place when a fault occurs, or the warning "contouring error" or "threshold monitoring activated" is present.

DENA=2 No reset if the software enable is removed.

ASCII -Command	DI2T		
Syntax Transmit	DI2T [Data]		
Syntax Receive	DI2T <Data>		
Type	ro		
Format	Integer 8		
DIM	%		
Range	0 ... 100		
Default	-		
Opmode	All		
Drive Status			
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3559 (hex)
PROFIBUS PNU:	1689 (dec) IND = 1 (de
DPR Objekt Nr:	89

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer 8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Drive I2T load

Description

This variable returns the average current as a percentage of the continuous current (see |DICONT|). The average current is filtered with a time constant of 16 seconds.

ASCII -Command	DICONT		Available in	
Syntax Transmit	DICONT		MMI ☑	CAN-Bus ☑
Syntax Receive	DICONT <Data>		PROFIBUS ☑	Sercos ☑
Type	Variable ro			
Format	Float		SERCOS IDN:	112
DIM	Amperes		CAN Object No:	3527 (hex)
Range	1.5 .. 20.0		PROFIBUS PNU:	1639 (dec) IND = 1 (de
Default	Hardware Defined		DPR Objekt Nr:	39
Opmode	All			
Drive Status	-			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	Integer32
Function Group	-		Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Drive Continuous Current

Description

The continuous current rating of the drive. DICONT is depending on |VBUSBAL| for drive 403, 406, 614 and 670.

ASCII -Command	DIFVAR		
Syntax Transmit	DIFVAR		
Syntax Receive	DIFVAR <Data>		
Type	Multi-line Return Command		
Format	-		
DIM	-		
Range	-		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3528 (hex)
PROFIBUS PNU:	1640 (dec) IND = 1 (de
DPR Objekt Nr:	40

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	List Variables with Values

Description

This command produces a list of parameters with settings that differ from the default values. The list contains entries in the following form:

PARAMETER Value (Default)   PARAMETER = Parameter name
                                    Value = the actual parameter setting
                                    Default = the default value for the parameter

ASCII -Command	DILIM		
Syntax Transmit	DILIM [Data]		
Syntax Receive	DILIM <Data>		
Type	Variable rw		
Format	Integer8		
DIM	-		
Range	0, 1		
Default	0		
Opmode	All		
Drive Status	Disabled + Reset (Coldstart)		
Start Firmware	1.0		
Configuration	☑		
Function Group	-		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	362C (hex)
PROFIBUS PNU:	1900 (dec) IND = 1 (de
DPR Objekt Nr:	300

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	DPR current limit

Description

With external DPR-SLOT cards it is possible to limit the drive current through the DPR (RAM interface to the SLOT card). This function must be enabled through the DILIM configuration variable.

ASCII -Command	DIPEAK
Syntax Transmit	DIPEAK
Syntax Receive	DIPEAK <Data>
Type	Variable ro
Format	Float
DIM	Amperes
Range	3.0 .. 70.0
Default	Hardware Defined
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	110
CAN Object No:	3529 (hex)
PROFIBUS PNU:	1641 (dec) IND = 1 (de
DPR Objekt Nr:	41

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Drive Peak Rated Current

Description

The peak rated current of the drive. DIPEAK is depending on |VBUSBAL| for drive 403, 406, 614 and 670.

ASCII -Command	DIR
Syntax Transmit	DIR [Data]
Syntax Receive	DIR <Data>
Type	rw
Format	Integer16
DIM	-
Range	0 ... 128
Default	21
Opmode	All
Drive Status	Disable
Start Firmware	0.87

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	43 + 55
CAN Object No:	352A (hex)
PROFIBUS PNU:	1642 (dec) IND = 1 (de
DPR Objekt Nr:	42

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	

Description

The DIR variable defines the count direction for feedback information
The DIR variable can be considered as a 16-bit variable, whereby the single bits define the count direction
for different feedback units.
Bit=1 means a positive direction (cw), Bit=0 a negative direction (ccw)

Bit 0 (0x01)   count direction for |FBTYPE| unit (=1 positive direction)
Bit 1 (0x02)
Bit 2 (0x04)   count direction for |EXTPOS| unit (=1 positive direction)
Bit 3 (0x08)
Bit 4 (0x10)   count direction for |GEARMODE| unit (=1 positive direction)
Bit 5 (0x20)
Bit 6 (0x40)   =1 inverse commutation

ASCII -Command	DIS
Syntax Transmit	DIS
Syntax Receive	DIS
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	Amplifier

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	352B (hex)
PROFIBUS PNU:	1643 (dec) IND = 1 (de
DPR Objekt Nr:	43

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Software-Disable

Description

The DIS command sets the software enable for the output stage to 0. Depending on the configuration (see |MBRAKE|,| STOPMODE|), the drive will coast down, or be run down under control.

ASCII -Command	DISDPR		
Syntax Transmit	DISDPR [Data]		
Syntax Receive	DISDPR <Data>		
Type	Variable rw		
Format	Integer8		
DIM	-		
Range	0, 1		
Default	0		
Opmode	All		
Drive Status	Disable		
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3673 (hex)
PROFIBUS PNU:	1971 (dec) IND = 1 (de
DPR Objekt Nr:	371

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Disable DPR access

Description

DISDPR=1 disables the write access of e.g. Lightbus option boards to the drive. Read access is still possible. This enables the service functionality via PC even if the Bus is running.

DISDPR=0 Full access from the controller side.
DISDPR=1 Only read access.

This parameter is not stored in the EEPROM.

ASCII -Command	DNBAUD
Syntax Transmit	DNBAUD [Data]
Syntax Receive	DNBAUD <Data>
Type	rw
Format	Integer8
DIM	kbaud
Range	125,250,500
Default	125
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	369F (hex)
PROFIBUS PNU:	2015 (dec) IND = 1 (de
DPR Objekt Nr:	415

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	DeviceNet baud rate

Description

The baud rate switch on the DeviceNet option card may be set to 0 (125 KBaud), 1 (250 KBaud) or
2 (500 KBaud). If the switch is set to a value greater than 2, the baud rate is configurable through
the terminal parameter DNBAUD and through DeviceNet. If the switch is set from 0 to 2, the baud
rate cannot be controlled with DNBAUD or DeviceNet.

ASCII -Command	DNDUMP
Syntax Transmit	DNDUMP [Data]
Syntax Receive	DNDUMP <Data>
Type	
Format	-
DIM	-
Range	
Default	
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Debugging Information DeviceNet

Description

DNDUMP prints out debugging information with the status of the DeviceNet connection.

ASCII -Command	DNMACID
Syntax Transmit	DNMACID [Data]
Syntax Receive	DNMACID <Data>
Type	rw
Format	Integer8
DIM	-
Range	0...63
Default	63
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36A0 (hex)
PROFIBUS PNU:	2016 (dec) IND = 1 (de
DPR Objekt Nr:	416

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	

Description

The MACID (address) switches on the DeviceNet option card may be set to a valid address from 0 to 63. If the switches are set to a value greater than 63, the MACID is configurable through the terminal parameter DNMACID and through DeviceNet. If the switches are set from 0 to 63, the MACID cannot be controlled with DNMACID or DeviceNet.

ASCII -Command	DOVRIDE
Syntax Transmit	DOVRIDE [Data]
Syntax Receive	DOVRIDE <Data>
Type	Variable rw
Format	Int16
DIM	-
Range	0 .. 8192
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36B6 (hex)
PROFIBUS PNU:	2038 (dec) IND = 1 (de
DPR Objekt Nr:	438

Configuration	☐
Function Group	-

Data Type BUS/DPR	Int16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Digital Override Factor

Description

If the digital Override function is selected (see |OVRIDE|=3), DOVRIDE gives the possibility to change the digital scaling.

The scaling is:

DOVRIDE=0   Motion task speed is 0 %
DOVRIDE=8192   Motion task speed is 100 %

ASCII -Command	DPRILIMIT
Syntax Transmit	DPRILIMIT [Data]
Syntax Receive	DPRILIMIT <Data>
Type	Variable rw
Format	Int16
DIM	-
Range	0 .. 3280
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3658 (hex)
PROFIBUS PNU:	1944 (dec) IND = 1 (de
DPR Objekt Nr:	344

Data Type BUS/DPR	Int16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Digital Limiting of the peak Current via DPR

Description

Digiatl Limiting of the peak current via DPR.

The scaling is:
DPRILIMIT=3280   Current limited to DIPEAK
DPRILIMIT=0   Current limited to 0 A

If the drive is switched on, DPRILIMIT is set to 3280 (no current limit). DPRILIMIT is not stored in EEPROM. So to enable the limit, write the data to the variable via fieldbus, RS232 or I/O command buffer.

To enable this function, DILIM has to be set to "1".

ASCII -Command	DR_TYPE
Syntax Transmit	DR_TYPE
Syntax Receive	DR_TYPE <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	1 .. 8
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	352E (hex)
PROFIBUS PNU:	1646 (dec) IND = 1 (de
DPR Objekt Nr:	46

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Gives the Output Stage Indentification

Description

This command can be used to read the drive type.

DR_TYPE   Drive
1   S
2   S
3   S
4   S
5   S
6   S
7   S
8   S
9   S

ASCII -Command	DREF		Available in	
Syntax Transmit	DREF [Data]		MMI ☑	CAN-Bus ☑
Syntax Receive	DREF <Data>		PROFIBUS ☑	Sercos ☐
Type	Variable rw			
Format	Integer8			
DIM	-		SERCOS IDN:	
Range	0, 1, 2		CAN Object No:	352C (hex)
Default	0		PROFIBUS PNU:	1644 (dec) IND = 1 (de
Opmode	8		DPR Objekt Nr:	44
Drive Status	-			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	Integer8
Function Group	Setting-up Mode		Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Direction for Homing

Description

The DREF parameter can be used to define the preferred direction of motion for a homing operation and for positioning with a modulo-axes.

Bits 0..3 are used for homing, Bits 4..7 for modulo-axis (|POSCNFG|=1).

The possible combinations are shown in the table.

If a homing mode with zero puls is selected DREF should be set to 2,18 or 34.

See also |POSCNFG|

	Homing - Direction	Modulo - Direction
DREF = 0	negative	negative
DREF = 1	positive	negative
DREF = 2	shortest distance	negative
DREF =4	negative movement without reversing	>= version 1.30 DREF =4 homing direction negativ (like DREF=0),no positive movement on reference switch or limit switch This setting is only usefull for |NREF|=1,3.
DREF = 5	potitive movement without reversing	>= version 1.30 DREF =5 homing direction positive (like DREF=0),no negative movement on reference switch or limit switch This setting is only usefull for |NREF|=1,3.
DREF = 16	negative	positive
DREF = 17	positive	positive
DREF = 18	shortest distance	positive
DREF = 32	negative	shortest distance
DREF = 33	positive	shortest distance
DREF = 34	shortest distance	shortest distance

ASCII -Command	DRIVE
Syntax Transmit	DRIVE [Data]
Syntax Receive	DRIVE <Data>
Type	r
Format	Integer32
DIM	-
Range	32Bit
Default	-
Opmode	All
Drive Status	-
Start Firmware	0.71

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3677 (hex)
PROFIBUS PNU:	1975 (dec) IND = 1 (de
DPR Objekt Nr:	375

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	type of the servo drive (drive family

Description

The variable DRIVE returns the type of the servo drive (drive family).

ASCII -Command	DRVCNFG
Syntax Transmit	DRVCNFG [Data]
Syntax Receive	DRVCNFG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3672 (hex)
PROFIBUS PNU:	1970 (dec) IND = 1 (de
DPR Objekt Nr:	370

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Configuration Variable for CAN-Bus

Description

The configuration parameter offers the possibility to change/correct the behaviour of the servo amplifier via setting of configuration bits. A resetted bit results in the default or old behaviour of the drive.

The chosen bit combination has to be given as decimal number.

Example: If bit 2 and 5 are set the number is $2^2+2^5 = 4 + 32 = 36$

Bit	Description
0	reserved
1	reserved
2	reserved
3	reserved
4	= 1 PDO mapping and communication parameters, SDO parameters 6093, 6094 are saved with the other drive parameters to EEProm after a SAVE command = 0 no saving of above CANopen specific parameters
5	reserved
6	reserved
8 (0x100)	A single turn absolute sine encoder is executed as a multi turn encoder. On power up the absolute position of the single turn absolute encoder is read and stored in |PFB|. Homing is not required. Firmware > 4.94 is required.
9	reserved
11	reserved
12	reserved

13 (0x2000)	= 1 Configuration for following tasks: At start of the following task it's checked if the planed moving distance is smaller than the deceleration distance. In case the result is positive the deceleration ramp of the active motion task is used. = 0 The following task is always started. The braking ramp can be very fast.
14	reserved
15 (0x8000)	= 1 Endat-position will be read only once = 0 Endat-position will be read multiple times (up to 5). THE absolute position will be taken only if value is equal all the time
16 (0x10000)	= 1 With following tasks the acceleration ramp of it will be taken always = 0 One of the following ramps is taken: - Is the velocity of the following task greater and in the same direction, the acceleration ramp of the following task is taken - Is the velocity of the following task less and in the same direction, the braking ramp of the former task is taken - Is the velocity of the following task is in the opposite direction, the braking ramp of the first is taken and the acceleration ramp of the following task
17	reserved
18	reserved
19 (0x80000)	= 1 The external position PFB0 won't be reset at end of homing = 0 The external position PFB0 will be set to ROFFS at end of homing
20	reserved
21	reserved
22 (0x400000)	= 1 no encoder-pulses with disabled power stage = 0 encoder-pulses also with disabled power stage
25	reserved
24 (0x1000000)	= 1 If bit 13 is set, the drive moves back to its target position = 0 No return
26	reserved
26	reserved
27	reserved
28	reserved
29	reserved

| 30 | reserved |
| 31 | reserved |

			Available in		
ASCII -Command	DRVCNFG2				
Syntax Transmit	DRVCNFG [Data]		MMI	☐	CAN-Bus ☑
Syntax Receive	DRVCNFG <Data>		PROFIBUS	☑	Sercos ☐
Type	rw				
Format	Integer32				
DIM			SERCOS IDN:		
Range	32 Bit		CAN Object No:	36E4 (hex)	
Default	0		PROFIBUS PNU:	1684 (dec) IND = 17 (d	
Opmode	All		DPR Objekt Nr:	484	
Drive Status	Disable+Reset (Coldstart)				
Start Firmware	1.0				
Configuration	☑		Data Type BUS/DPR	Integer32	
Function Group			Weighting 10^3		

Last Change of this Object	1.1
EEPROM	Yes

Short Description	Additional drive functions

Description

The variable is used to activate different additional functions of the drive.

Bit	significance	description
0	0x1	
1	0x2	0 = Latchfunction at digital input 1 is always activ 1 = Latchfunction at digital input 1 has to be enabled by the controller
2	0x4	0 = Latchfunction at digital input 1 is always activ 1 = Latchfunction at digital input 1 has to be enabled by the controller
3	0x8	
4	0x10	
5	0x20	
6	0x40	
7	0x80	
8	0x100	= 1 'ROFFS' – value saved in the feedback is used = 0 'ROFFS' – value saved in the drive EEPROM is used
9	0x200	
10	0x400	
11	0x800	
12	0x1000	
13	0x2000	
14	0x4000	
15	0x8000	

16		Bit16 = 0
		At the End of reference movement (multiturn-feedback) the |ROFFSABS| is calculated and saved to EEPROM.
		Bit16 = 1 No effect to |ROFFSABS|
17	0x20000	
18	0x40000	FW >= 2.14
		= 1 scope record cycle 62.5 µs (16 KHz)
		In case of motor encoder feedback the sine cosine signal is used direct after the differentiation for the bode plot
		= 0 scope record cycle 250 µs (4 KHz)
		the actual velocity value of the observer is used for the bode plot
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30	0x40000000	=1 Every "ERROR-Reset"-Command resets a F04 error by software. This bit has only effect on |FBTYPE| =0 (Resolver) setting. =0 In case of error F04 an error resets will effect a hardware-reset.
31		

ASCII -Command	DRVSTAT
Syntax Transmit	DRVSTAT
Syntax Receive	DRVSTAT <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	0 .. 0xFFFFFFFF
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Drive Status

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	352D (hex)
PROFIBUS PNU:	1645 (dec) IND = 1 (de
DPR Objekt Nr:	45

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	internal Status information

Description

The DRVSTAT command returns the internal status information in the form of a bit-variable.

Bit/Display/Level	Bit combination	Description
1 / n02 / 0	0x00000002	=1 Regen message. Is high, if the actual regen power exceeds the adjusted threshold |PBALMAX|, otherwise low.
2 / n03 / 1	0x00000004	=1 following error. Is set, if the distance between the actual position and the target position of the trajectory generator is greater than the contouring error window |PEMAX|. Is cleared by the command |CLRFAULT| or by an digital input with |INxMODE|=14. Note: Running the position modes (|OPMODE| = 4 or 8) a position following error will cause "n03".
3 / n04 / 1	0x00000008	=1 Node guarding (watch dog). Is set, if the Bus (PROFIBUS or CAN) or the Slotcard has no communication to the master for the adjusted time |EXTWD|. Is cleared by the command |CLRFAULT| or by an digital input with |INxMODE|=14.
4 / n05 / 0	0x00000010	=1 Line phase missing. Is high, if one or all of the three input line phase are lost, otherwise low.

5 / n06 / 1	0x00000020	=1 Software limit switch 1 (|SWE1|) underrun. Is set if: - the position is lower than |SWE1| - a motion task is started which has a target position lower than |SWE1|. At the same time the bit "faulty motion task" is set. the bit is cleared if: - the actual position overruns |SWE1| and a positive velocity is given - a motion task is started which has a target position greater than |SWE1|.
6 / n07 / 1	0x00000040	=1 Software limit switch 2 (|SWE2|) overrun. Is set if: - the position is higher than |SWE2| - a motion task is started which has a target position higher than |SWE2|. At the same time the bit "faulty motion task" is set. the bit is cleared if: - the actual position underruns |SWE2| and a negative velocity is given - a motion task is started which has a target position smaller than |SWE2|.
7 / n08 / 0	0x00000080	=1 Faulty motion task was started Is set, if a faulty motion task (wrong checksum) is started. Is cleared, if a valid motion task is started.
8 / n09 / 0	0x00000100	=1 No reference point. Is set, is a motion task is started without starting a refernce move before. Is cleared, if a refernce move is started.
9 / n10 / 1	0x00000200	= 1 PSTOP active. Is high, if the hardware limit switch PSTOP is active, otherwise low.
10 / n11 / 1	0x00000400	= 1 NSTOP active. Is high, if the hardware limit switch NSTOP is active, otherwise low.
11 / n12 / 0	0x00000800	=1 Default motor data loaded. Is set, if the motor number stored in the EEPROM of the drive is not the same as the motor number stored in the feedback system (EnDAT or Hiperface). By saving the drive parameter (|SAVE|) and restart the drive, the warning disappears.
12 / n13 / 1	0x00001000	=1 Slot warning (I/-expansion board). Is high, if the external 24V supply of the I/O expansion board is missing, otherwise low.
13 / n14 / 0	0x00002000	=1 Scanning for |MPHASE| (|FBTYPE|=7) Is set while start-up of the drive and is cleared after the drive was enabled and |MPHASE| was determined.
14 / n15 / 0	0x00004000	
15 / n16 / 0	0x00008000	Is active, if one or more of the warnings n17...n31 are active.
16	0x00010000	=1 Motion task active. Is set, if a motion task is started (motion task, jog or homing move). Is cleared, if the action is finished or a |STOP| - command is executed.
17	0x00020000	=1 Reference point is set. Is set, if the homing move was done or a absolute encoder feedback device is used. Is cleared if a homing move is started.

18	0x00040000	=1 Home switch. Is high, if the homing switch is closed, otherwise low.
19	0x00080000	=1 In-Position. Is high, if the distance between the target position and the actual position is smaller than |PEINPOS|, otherwise low. When several motion tasks are tied together, only the last motion task enables this bit.
20	0x00100000	=1 Position latch occurred (positive edge). Is set, if a positive edge at the latch input (Input2 with |IN2MODE|=26) was detected. Is cleared, if the lachted position was read (example: |LATCH1N16|/ |LATCH1N32|).
21	0x00200000	
22	0x00400000	
23		
24		
25	0x02000000	
26	0x04000000	=1 Initialization phase finished. Is set, if the initialization phase of the drive is finished (takes about 15s).
27	0x08000000	
28	0x10000000	=1 Motor stand still message. Is high, if the actual motor velocity is lower than the threshold |VEL0|, otherwise low.
29	0x20000000	=1 Safety relais selected. Is high, if the safety relay of the option -AS- is switched on, otherwise low.
30	0x40000000	= Output stage enabled. Is high, if the soft- and the hardware enable is present, otherwise low.
31		

ASCII -Command	DRVSTAT2
Syntax Transmit	DRVSTAT2 [Data]
Syntax Receive	DRVSTAT2 <Data>
Type	Variable ro
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.37
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	375B (hex)
PROFIBUS PNU:	1803 (dec) IND = 17 (d
DPR Objekt Nr:	603

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1:3
EEPROM	No

Short Description	internal status information

Description

The ASCII parameter DRVSTAT2 extends the parameter DRVSTAT and returns the internal status information in the form of a bit-variable

Bit	significance	description
1	0x00000001	result of the |VINPOS| function As long as the difference between the last target velocity |VCMD| and the actual velocity |V| is within the width of the velocity In-Position window |VINPOS|, a 1 is signalled, otherwise a 0. The signal change is not signaled before the new state was valid at least |INPT0| msec.
2	0x00000002	=1 slave synchronised to the master This function is only available for following settings: 0xMODE0=42,43,51,53 or |ENGAGE|>0

ASCII -Command	DUMP
Syntax Transmit	DUMP
Syntax Receive	DUMP <Data>
Type	Multi-line Return Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	352F (hex)
PROFIBUS PNU:	1647 (dec) IND = 1 (de
DPR Objekt Nr:	47

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	List All EEPROM Variables with Values

Description

This command produces a list of all the parameters that can be stored in the EEPROM, together with their present values. All the amplifier-specific parameters (e.g. A/D-offset values) start with a ";"(semicolon).

ASCII -Command	DUMPSLNO		
Syntax Transmit	DUMPSLNO [Data]		
Syntax Receive	DUMPSLNO <Data>		
Type	rw		
Format	Integer16		
DIM			
Range	write 0 read 0 ... Integer16		
Default	343		
Opmode	All		
Drive Status			
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35FA (hex)
PROFIBUS PNU:	1850 (dec) IND = 1 (de
DPR Objekt Nr:	250

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.1
EEPROM	No

Short Description	Listing of the numerical EEProm-parameters

Description

With the command DUMPSLNO a list of the object numbers which are stored in the EEProm can be fetched step by step. The parameters are ordered the same way as in the parameter files stored by the GUI, the priorities of parameters are considered.

With "DUMPSLNO 0" the list can be resetted.

The command can be used to get all relevant for storing and restoring a parameter list of the drive.

Example:

-->DUMPSLNO

343   ; FW command

-->DUMPSLNO

194   ; PBALRES command

-->DUMPSLNO

209   ; PRBASE command

At the end of this lsit a 0 is reported.

ASCII -Command	EGEARI
Syntax Transmit	EGEARI [Data]
Syntax Receive	EGEARI <Data>
Type	rw
Format	Integer32
DIM	-
Range	1 ... long Integer
Default	1
Opmode	4 ... 8
Drive Status	Disable
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	350D (hex)
PROFIBUS PNU:	1613 (dec) IND = 1 (de
DPR Objekt Nr:	13

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Ratio external feedback

Description

In case an external feedback system is used the ratio can be set by EGEARI and |EGEARO|. The feedbackturn are set by EGEARI the motor turn by |EGEARO|

ASCII -Command	EGEARO
Syntax Transmit	EGEARO [Data]
Syntax Receive	EGEARO <Data>
Type	rw
Format	Integer32
DIM	-
Range	0 ... Long Integer
Default	1
Opmode	4 ... 8
Drive Status	Disable
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	350E (hex)
PROFIBUS PNU:	1614 (dec) IND = 1 (de
DPR Objekt Nr:	14

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Ratio external feedback

Description

In case an external feedback system is used the ratio can be set by |EGEARI| and EGEARO. The feedbackturn are set by |EGEARI| the motor turn by EGEARO

ASCII -Command	EMRGTO
Syntax Transmit	EMRGTO [Data]
Syntax Receive	EMRGTO <Data>
Type	rw
Format	Integer16
DIM	-
Range	0 ... 2147483647
Default	5000
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36DC (hex)
PROFIBUS PNU:	1676 (dec) IND = 17 (d
DPR Objekt Nr:	476

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	

Description

EMRGTO defines the emergency time out for the |ACTFAULT|=1 and |STOPMODE|=1 operations.

After the ACTFAULT (drive error) or STOPMODE (power stage enable) conditions the drive tries
To reduce the velocity to zero. If this fails, the power stage will be disable after the EMRGTO time at the latest.
F 30 is reported.

EMRGTO = 0 then the F30 function is switched off.

New since FW 0.80:

If in 0.25 of EMRGTO time the velocity is not decrease by 0.125 the drive create an F30. This is because the default of 5 seconds
could be very long if for what ever reason no speed deceleration is done.

EMRGTO can be set to 0 or values >= 10

ASCII -Command	EN
Syntax Transmit	EN
Syntax Receive	EN
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Amplifier

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3530 (hex)
PROFIBUS PNU:	1648 (dec) IND = 1 (de
DPR Objekt Nr:	48

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Software-Enable

Description

The EN command sets the software enable for the output stage.
If the software enable and the hardware enable are set and no fault is present (the BTB contact is closed), then the output stage is enabled.
If the MAINS BTB function is activated (|OxMODE|=3), then the output stage will only be enabled when the supply power has been switched on and the charging circuit has charged up the DC bus. If the supply power is removed from an enabled instrument, then it remains enabled until the DC bus voltage has fallen below the undervoltage limit (|VBUSMIN|).

ASCII -Command	ENCIN
Syntax Transmit	ENCIN [Data]
Syntax Receive	ENCIN <Data>
Type	rw
Format	Integer16
DIM	-
Range	16 ... 32767
Default	1024
Opmode	All
Drive Status	Disable
Start Firmware	0.87
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3532 (hex)
PROFIBUS PNU:	1650 (dec) IND = 1 (de
DPR Objekt Nr:	50

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	digital feedback resolution

Description

ENCIN sets the resolution (number of pulses) of the encoder input channel using a digital encoder as feedback unit. In case of Rotary Motors it is the number of pulses per revolution, in case of linear Motors it is the number of pulses per pole pitch.

This parameter is used for following feedback settings: |EXTPOS| = 1…4 or |FBTYPE| =12…19

ASCII -Command	ENCLINES
Syntax Transmit	ENCLINES [Data]
Syntax Receive	ENCLINES <Data>
Type	Variable rw
Format	Integer24
DIM	-
Range	65535
Default	1000
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3533 (hex)
PROFIBUS PNU:	1651 (dec) IND = 1 (de
DPR Objekt Nr:	51

Data Type BUS/DPR	Integer24
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	SinCos Encoder Resolution

Description

ENCLINES sets the resolution (number of lines) of the sine encoder input channel .. In case of rotary Motors it is the number of lines per revolution, in case of linear motors it is the number of lines per pole pitch. The ENCLINES data is stored in an ENDAT or Hiperface Encoder if this feedback is used. In this case during power up process the ENCLINES data is read automatically .

Example to the ENCLINES setting on a linear motor >>> |1|

In case an external feedbacksystem is used for the position loop |ENCLINES| has to correspond with this measurement system.

ASCII -Command	ENCMODE
Syntax Transmit	ENCMODE [Data]
Syntax Receive	ENCMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2, 3
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3011
CAN Object No:	3534 (hex)
PROFIBUS PNU:	1652 (dec) IND = 1 (de
DPR Objekt Nr:	52

Configuration	☐
Function Group	Encoder

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Selection of Encoder Emulation

Description

Selection of the digital encoder channel connector S600

ENCMODE=0   input

ENCMODE=1   EEO digital encoder output (RS422)
output resolutions = |ENCOUT| per motor revolution (rotary motor).
output resolutions = |ENCOUT| per motor pole pitch (linear motor).

ENCMODE=2   SSI output also used for SSI input
see also |GEARMODE| = 7

ENCMODE=3   EEO digital encoder interpolation mode
This mode is available with high resolution sincos feedback device .
output resolutions = |ENCOUT| * |ENCLINES| lines per motor rev. (rotary motor).
output resolutions = |ENCOUT| * |ENCLINES| per motor pole pitch (linear motor).
Following settings are possible: 4,8,16,32,64,128

ASCII -Command	ENCOUT
Syntax Transmit	ENCOUT [Data]
Syntax Receive	ENCOUT <Data>
Type	Variable rw
Format	Integer16
DIM	CPR
Range	see Description
Default	1024
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3535 (hex)
PROFIBUS PNU:	1653 (dec) IND = 1 (de
DPR Objekt Nr:	53

Configuration	☐
Function Group	Encoder

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Resolution Encoder Emulation EEO (ROD)

Description

Selection of the digital encoder channel connector S600

ENCMODE=0   input

ENCMODE=1   EEO digital encoder output
output resolutions = |ENCOUT| per motor revolution (rotary motor).
output resolutions = |ENCOUT| per motor pole pitch (linear motor).

ENCMODE=2   SSI output also used for SSI input
see also |GEARMODE| = 7

ENCMODE=3   EEO digital encoder interpolation mode
This mode is available with high resolution sincos feedback device .
output resolutions = |ENCOUT| * |ENCLINES| lines per motor rev. (rotary motor).
output resolutions = |ENCOUT| * |ENCLINES| per motor pole pitch (linear motor).
Following settings are possible: 4,8,16,32,64,128

If multispeed resolver are used there is more than one zero pulse within 360° . There is a zero pulse to each resolver pole pair.
Example. 6 pole resolver >> 3 zero pulses

See |REFMODE| for information about the zero pulse signal.

ASCII -Command	ENCVON
Syntax Transmit	ENCVON [Data]
Syntax Receive	ENCVON <Data>
Type	Command
Format	-
DIM	-
Range	0 ... 2
Default	0
Opmode	All
Drive Status	-
Start Firmware	0.73
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	70

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	power supply for the external encoder (connector X1

Description

The command ENCVON switches the power supply for the external encoder on/off (connector X1).ENCVON=1 means 5V power supply, ENCVON=2 have to be used for 12V power supply.These settings can only be used when no external encoder was configured (ENDAT or HIPERFACE with FBTYPE/GEARMODE/EXTPOS). In case of encoder configuration the power supply required by this encoder has a higher priority as the setting ENCVON. The setting ENCVON=2 (12V power supply) is only possible when the SENSE wire was not recognized.

ASCII -Command	ENCZERO
Syntax Transmit	ENCZERO [Data]
Syntax Receive	ENCZERO <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 .. ENCOUT-1
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Encoder

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3537 (hex)
PROFIBUS PNU:	1655 (dec) IND = 1 (de
DPR Objekt Nr:	55

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Zero Pulse Offset EEO (ROD)

Description

The ENCZERO command can be used to shift the output of the encoder emulation digital encoder zero pulse over the range of one turn. The shift is made in the clockwise direction, e.g.
|ENCOUT| 1024
ENCZERO 256
The zero pulse is given out at the 90° position.

This is also effective for SSI outputs.

ASCII -Command	ERESMASK
Syntax Transmit	ERESMASK [Data]
Syntax Receive	ERESMASK <Data>
Type	ro
Format	Integer32
DIM	-
Range	
Default	
Opmode	All
Drive Status	-
Start Firmware	0.86

Available in

	MMI	☐	CAN-Bus	☑
	PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3755 (hex)
PROFIBUS PNU:	1797 (dec) IND = 17 (d
DPR Objekt Nr:	597

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Failure reset setting

Description

The command ERESMASK describes the kind of fault reset for error messages Fxx.If the bit xx of ERESMASK is set to 1, the fault reset of the corresponding error Fxx+1 causes a hardware reset of the drive (bit=0 means a software reset of the error).
See also |ERRCODE|

ASCII -Command	ERND
Syntax Transmit	ERND [Data]
Syntax Receive	ERND <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	2^31-1
Opmode	-
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	103
CAN Object No:	3638 (hex)
PROFIBUS PNU:	1912 (dec) IND = 1 (de
DPR Objekt Nr:	312

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	End position of modulo axes

Description

The ERND parameter is used to define the end of the range of movement for a modulo axes (|POSCNFG|=2). The start of the range can be set by the |SRND| command. All positioning operations are made in the positioning range <|SRND|...ERND-1>.
The entry for ERND is made in SI units (taking account of |PGEARI|, |PGEARO|).

ASCII -Command	ERRCNFG
Syntax Transmit	ERRCNFG [Data]
Syntax Receive	ERRCNFG <Data>
Type	rw
Format	Integer32
DIM	-
Range	
Default	8194
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

	MMI	☐	CAN-Bus	☑
	PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	(hex)
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	

Description

The command ERRCNFG defines the behavior of the drive in the case of error massage Fxx.
If the bit number xx of the ERRCNFG parameter is set to 1, then the corresponding error message FXX+1
generates an immediately power stage disable (no matter what is the setting of ACTFAULT).

Example:
The default value 8194 disables immediately the output stage in case of error F02 and F14.
(0x2002 = 8194)

See also command |ERRCODE|, |ERRCODES|

ASCII -Command	ERRCODE
Syntax Transmit	ERRCODE
Syntax Receive	ERRCODE <Data>
Type	Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	129
CAN Object No:	385D (hex)
PROFIBUS PNU:	1661 (dec) IND = 33 (d
DPR Objekt Nr:	861

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Activated Fault Messages

Description

The ERRCODE command returns the clear text information about any existing faults.

See also |ERRCODES|

			Available in			
ASCII -Command	ERRCODE *					
Syntax Transmit	ERRCODE *		MMI	☑	CAN-Bus	☐
Syntax Receive	ERRCODE <Data>		PROFIBUS	☐	Sercos	☐
Type	Command					
Format	Integer32		SERCOS IDN:			
DIM	-		CAN Object No:	no		
Range	0 .. 0xFFFFFFFF		PROFIBUS PNU:	no		
Default	-		DPR Objekt Nr:			
Opmode	All					
Drive Status	-					
Start Firmware	1.0					
Configuration	☐		Data Type BUS/DPR	-		
Function Group	Drive Status		Weighting 10^3			

Last Change of this Object	1.0
EEPROM	-

Short Description	Output Error Register

Description

The ERRCODE* command returns the internal status information in the form of a bit-variable. A bit is set for as long as the corresponding error/fault is detected. The bit is deleted by the hardware reset of the amplifier.
Faults that are designated by the SW label can also be deleted by a software reset (function |CLRFAULT| – clear fault).

Level gives an information about the error handling in the drive.

Level 2:
A fault causes an emergency stop. The stop of the motor is done in velocity control using the emergency stop ramp (|DECSTOP|). When the motor reaches the zero velocity level (|VEL0|) (limited by max. 5 sec), the power stage is disabled. The Ready-to-Operate relay is switched off. The drive has to be reset before it can be enabled again. The fault is displayed.

Level 3:
A fault causes an emergency stop. The stop of the motor is done without feedback device (sensorless). When the motor has stopped, the power stage is disabled. The Ready-to-Operate relay is switched off. The drive has to be reset before it can be enabled again. The fault is displayed.

Level 4:
A fault causes an directly disable of the power stage. The motor has no torque (coast). The Ready-to-Operate relay is switched off. The drive has to be reset before it can be enabled again. The fault is displayed.

Faults, that have different levels (2/3 and 4), the behaivior is controlled by |ACTFAULT| and |MBRAKE| or |STOPMODE|

|ACTFAULT|=1 or |MBRAKE|=1   LEVEL 2 or 3   (Default-Setting)
|ACTFAULT|=0 and |MBRAKE|=0   LEVEL 4

Bit/Displ./Reset/Level	Bit	Description
00/F01/SW/2,4	0x00000001	=1 Heatsink overtemperature is set, if the heatsink temperature TEMPH exceeds the max allowed threshold MAXTEMPH.
01/F02/SW/2,4	0x00000002	=1 DC-link overvoltage Is set, if the DC-link voltage exceeds the max threshold selected by |VBUSBAL|.
02/F03/SW/2	0x00000004	=1 Contouríng error of the external trajectory (|OPMODE|=6/SERCOS) Is set, if the target speed which is given by the extrnal trajectory is higher than |VLIM|/|VLIMN|.
03/F04/HW/3,4	0x00000008	=1 Feedback error Is set, if a feedback error was detected. The drive decelerates by current controller.

04/F05/SW/2,4	0x00000010	=1 Undervoltage protection Is set, if the DC-link voltage is lower than |VBUSMIN| (only if the drive is enabled).
05/F06/HW/2,4	0x00000020	=1 Motor overtemperature is set, if the heatsink temperature |TEMPM| exceeds the max allowed threshold |MAXTEMPM|.
06/F07/HW/2,4	0x00000040	=1 if the internal electronic supply is faulty.
07/F08/SW/3,4	0x00000080	=1 Overspeed Is set, if the velocity of the motor exceeds the overspeed threshold (|VOSPD|). The drive decelerates by current controller.
08/F09/HW/4	0x00000100	=1 EEPROM Checksum error Is set, if the data read/written from the EEPROM is not valid. There are two possibilities, that can cause this error. First is a defect EEPROM and the second is a wrong checksum in the EEPROM. In the second case, a |SAVE| can solve the problem.
09/F10/HW	0x00000200	Signal failure digital encoder input see also |SDLY|
10/F11/HW/2,4	0x00000400	=1 Brake error Is set, if the brake switch detects a fault (e.g. Brake is selected, but no brake is connected).
11/F12/HW	0x00000800	
12/F13/SW/2,4	0x00001000	=1 Ambient overtemperature is set, if the ambient temperature |TEMPE| exceeds the max allowed threshold |MAXTEMPE|.
13/F14/HW/2,4	0x00002000	=1 Output stage fault This fault can be caused by: Earth short circuit of the motor Short circuit of the motor phases Short circuit of the regen.
14/F15/SW/2,4	0x00004000	=1 I²tmax override Is set, if I²t exceeds 105% of ICONT (|FOLDMODE|=2).
15/F16/SW/2,4	0x00008000	=1 Mains BTB
16/F17/HW/2,4	0x00010000	=1 A/D converter error
17/F18/HW/2,4	0x00020000	=1 Regen error destroyed regen transistor regen resistor extern selected, but the internal one is used.
18/F19/SW/2,4	0x00040000	=1 DC bus breakdown (see also |VBUSLIM|, |PMODE| and |VBUSMAX|
19/F20/HW/2,4	0x00080000	=1 Slot error Error depends on the type of Slot board: 1. I/O expansion board The error is caused by a missing 24V supply at the I/O board. 2. DPR Slot board (Beckhoff, L&B, Sigmatek) The error is generated, if the DPR interrupt fails to appear. The watch-dog time can be selected by |EXTWD|. 3. PROFIBUS Error in the initialization time.

20/F21/HW/2,4	0x00100000	=1 PROFIBUS handling error If the |OPMODE| is changed by another communication channel than PROFIBUS, when the drive is under control of the PROFIBUS, this error is generated. Exception: Working mode -126 for PROFIBUS. This is the safe opmode when the drive is switched on.
21/F22/HW/2,4	0x00200000	reserved
22/F23/HW/2,4	0x00400000	=1 CANopen Bus-Off Fault in CAN communication. The communication fault BUSOFF is generated by layer 2 (CAN controller). This fault can have several resons. Some examples are: Drive tries to establish communication, but there is no other node. CAN nodes have different baud rates, Bus cable defekt, reflections because of missing or wrong bus terminations, etc. A BUSOFF is displayed by the drive, if another CAN node is connected and minimum one errorfree object is generated. If the BUSOFF is generated and the drive is moving the motor, the motor is stopped using the emergency ramp and then the drive is disabled.
23/F24/SW/2,4	0x00800000	Warning generates a error message (defined by |WMASK|)
24/F25/HW/3,4	0x01000000	Commutation Error (Run-away of the motor) The drive decelerates by current controller. see also |VCOMM|
25/F26/SW/2,4	0x02000000	Hardware limit switch error at homing move
26/F27/HW/4	0x04000000	=1 "-AS-Option" error If the ENABLE signal of the drive is high and the -AS-option is activated, this error is generated
27/F28/SW/2	0x08000000	=1 EtherCAT Error synchronisation is activated if the drive during the start up procedure isn't able to be synchronized or if the drive is in EtherCAT status „Operational" and loose synchronize.
28/F29/SW/2	0x10000000	=1 Slotcard Error (SERCOS) is activated if the communication is disturbed or a SW enable is set via slotcard without a set HW Enable. DPR-card (EtherCAT) is activated if the communication is switched to a lower level while the drive is enabled a not supported mapping of cyclic data is refined or a SW enable is set via slotcard without a set HW Enable.
29/F30/SW	0x20000000	Emergency stop time out

30/F31/SW	0x40000000	Reserved
31/F32/HW/4	0x80000000	=1 System error Is set, if an error occurred in the system check of the initialization phase or a watch-dog error in the working phase. Following reasons are possible: 1. Wrong program data in the FLASH (e.g. interrupted program download) 2. Macro error (the macros could not be compiled) 3. Software watch-dog activated 4. Error with the EEPROM (read or write). 5. Macro RAM (the compilation of the MACROs detect too less RAM) When the drive is switched on, a detailed message is send via RS232. In case of F32 error try a |SAVE| command. When this procedure is finnished reset the drive.

ASCII -Command	ERRCODE2
Syntax Transmit	ERRCODE2 [Data]
Syntax Receive	ERRCODE2 <Data>
Type	ro
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.21

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	866

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	No

Short Description	Additional error code info

Description

In case of an error (|ERRCODE| !=0) this variable gets an additional information about the errcor cause.

ERRCODE2 = 0 no additional information
ERRCODE2 = 1 Software Watch-Dog (in case of F32, ERRCODE=0x80000000)
ERRCODE2 = 2 wrong command order in the command table (F32)
ERRCODE2 = 3 macro translation error (F32)
ERRCODE2 = 4 PWM error (F32)

ASCII -Command	ERRPARAM
Syntax Transmit	ERRPARAM [Data]
Syntax Receive	ERRPARAM <Data>
Type	ro
Format	Integer32
DIM	
Range	
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.37

Available in	
MMI ☐	CAN-Bus ☑
PROFIBUS ☑	Sercos ☐

SERCOS IDN:	
CAN Object No:	375A (hex)
PROFIBUS PNU:	1802 (dec) IND = 17 (d
DPR Objekt Nr:	602

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	No

Short Description	Objectnumber of the incorrect parameter (warning n24)

Description

The ASCII parameter ERRPARAM gets the object number of the incorrect parameter that caused the warning n24.
During the initialisation phase the drive performs a plausibility check of the configuration parameters. In case of
Unreasonable settings (for example: reference limit switch configured for more than one digital input), the warning n24 (s.
|STATCODE|) is generated. The parameter number of the faulty parameter is stored in the ERRPARAM. The ASCII name of the
faulty parameter can be detemined with the command |IDDUMP|.

There are following plausibility checks:

Function INxMODE=2,3,4,5 possible only for x=3 or 4
Function INxMODE=6,7 only for x=3
Function INxMODE=19 only for x=2
Function INxMODE=26 only for x=1 and 2
Function INxMODE=30,33 only possible for x=1..4,19,20
Functions INxMODE=2,3,4,5,6,7,8,10,11,12,13,14,15,19,21,22,25,29,32,38,42 are possible for all digital inputs but every function
can be used only once.

ASCII -Command	ESPEED
Syntax Transmit	-
Syntax Receive	ESPEED <Data>
Type	Variable r
Format	Float
DIM	rpm
Range	0 .. 16000
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3675 (hex)
PROFIBUS PNU:	1973 (dec) IND = 1 (de
DPR Objekt Nr:	373

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	-

Short Description	Maximum velocity corresponding to the Feedback Type

Description

The command ESPEED gives the maximum velocity of the motor corresponding to the selected feedback type (|FBTYPE|).

ASCII -Command	EXTBRAKE		
Syntax Transmit	EXTBRAKE [Data]		
Syntax Receive	EXTBRAKE <Data>		
Type	rw		
Format	Integer8		
DIM			
Range			
Default	0		
Opmode	All		
Drive Status	Disable + Reset (Coldstart)		
Start Firmware	1.37		
Configuration	✔		
Function Group			

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	385C (hex)
PROFIBUS PNU:	1660 (dec) IND = 33 (d
DPR Objekt Nr:	860

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	Yes

Short Description	software brake on/off software configuration

Description

With EXTBRAKE=1 a software brake control is switched on.
The brake control is linked to the internal macro variable EXTBRAKEC and can be
used by fieldbus or ASCII channel in the case, that the power stage is disabled.

EXTBRAKEC=1 brake open
EXTBRAKEC=0 brake closed

ASCII -Command	EXTLATCH
Syntax Transmit	EXTLATCH [Data]
Syntax Receive	EXTLATCH <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 2
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3018
CAN Object No:	3681 (hex)
PROFIBUS PNU:	1985 (dec) IND = 1 (de
DPR Objekt Nr:	385

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Selection of the Source of the Latch Inputs

Description

The configuration variable EXTLATCH defines the source for the position information using the Latch functions of the digital inputs (|IN1MODE|=26 and/or |IN2MODE|=26). If more than one inputs (1 or 2) are configured as Latch input, EXTLATCH defines the different sources. If only one input is configured as Latch input, both different sources are stored at the same time.

If EXTLATCH=0 the actuall position controller feedback is latched, that is

|EXTPOS| = 0 the actuall value of the standard feedback (FBTYPE)

|EXTPOS| > 0 he actuall value of an external feedback.

|EXTPOS| < 0 the value of the latched data is defined by

EXTLATCH = 0 latch position |PFB| by both digital inputs 1and 2 (|IN1MODE|=26 / |IN2MODE|=26) in the register |LATCH1P32| and |LATCH2P32|

EXTLATCH = 1 latch position |PFB0| by digital input 1 in |LATCH1P32| and position |PFB| by digital input 2 in |LATCH2P32|

EXTLATCH =2 latch position |PFB0| by both digital inputs 1and 2 in register |LATCH1P32| and |LATCH2P32|

ASCII -Command	EXTMUL
Syntax Transmit	EXTMUL [Data]
Syntax Receive	EXTMUL <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	-32768 .. 32767
Default	256
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	257
CAN Object No:	3538 (hex)
PROFIBUS PNU:	1656 (dec) IND = 1 (de
DPR Objekt Nr:	56

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	ext. Encoder multiplier

Description

The EXTMUL parameter can be used to adjust the resolution of the external digital encoder (digital encoder) to match the resolution of the internal position control loop. EXTMUL can be calculated according to the following formula:

$$EXTMUL = 2^{|PRBASE|} / (NN \times 4)$$ NN is the resolution of the external encoder, in pulses/turn

ASCII -Command	EXTPOS	
Syntax Transmit	EXTPOS [Data]	
Syntax Receive	EXTPOS <Data>	
Type	Variable rw	
Format	Integer8	
DIM	-	
Range	0 ... 24	
Default	0	
Opmode	All	
Drive Status	Disabled + Reset (Coldstart)	
Start Firmware	1.0	
Configuration	☑	
Function Group	-	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3539 (hex)
PROFIBUS PNU:	1657 (dec) IND = 1 (de
DPR Objekt Nr:	57

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Value For Position Control

Description

The parameter EXTPOS define the source of feedback used for the position loop. For EXTPOS = 0 the motor feedback, defined by the command |FBTYPE|, will used for the position loop. For EXTPOS > 0 an external feedback will used for position loop. The gearing factor of the external feedback to bring the external position to 32Bit per revolution will set by the parameter |EGEARO| as a multiplier and |EGEAR|I as a divisor.

If EXTPOS is set to negative values the feedback is read and the position stored in PFB0. The position loop acts with the commutation feedback (|FBTYPE|).

Example |EXTPOS| = -6 The sinus/cosinus-Feedback(5V) is read.
The position can be monitored by ASCII-command |PFB0|.
The input of the external feedback is withput effect to the position control.

|EGEARI| and |EGEARO| can be used to set the ratio:

1. On all analog read position feedbacks |EXTPOS|=6,7,8,9 the position is calculated by the |ENCLINES|-setting and converted to the 32Bit/turn -format.
The parameter |EGEARI|/|EGEARO| are only for the gearing-factor.
On EGEARI-feedback turn the motor makes |EGEARO| turns.

example: |EGEARI|=10,|EGEARO|=3   -> ratio 10 : 3

2. On all digital read position feedbacks(EXTPOS=1...4)
the parameter |ENCIN| defines the feedback pulses / turn.
The parameter |EGEARI|/|EGEARO| sets the gearing-faktor.
example:
An external digital Encoder has got 1024 pulses / turn,
on 1 feedback turn the motor runs 3 turns.
The necessary settings are:

EXTPOS 3,
ENCIN 1024,
EGEARI 1,
EGEARO 3

EXTPOS	Feedback for position control
EXTPOS = 0	motor feedback |FBTYPE|
EXTPOS = 1	24 V pulse / direction connector X3
EXTPOS = 2	24 V digital encoder connector X3

EXTPOS = 3	5 V digital encoder connector X5
EXTPOS = 4	5 V pulse / direction connector X5
EXTPOS = 5	SSI encoder connector X5
EXTPOS = 6	5V SinCos Encoder connector X1
EXTPOS = 7	12V SinCos Encoder connector X1
EXTPOS = 8	ENDAT connector X1
EXTPOS = 9	HIPERFACE connector X1
EXTPOS=10	5V ROD encoder for actual position value in positon control mode

ASCII -Command	EXTWD
Syntax Transmit	EXTWD [Data]
Syntax Receive	EXTWD <Data>
Type	Variable rw
Format	Integer32
DIM	Milliseconds
Range	1 .. 32000
Default	100
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	353A (hex)
PROFIBUS PNU:	1658 (dec) IND = 1 (de
DPR Objekt Nr:	58

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	External Watch Dog (Fieldbus)

Description

The EXTWD parameter can be used to define the monitoring time (watchdog timer) for the fieldbus/slot communication. The monitoring is only active if the EXTWD parameter has a value greater than zero (EXTWD=0 means monitoring is switched off) and the output stage is enabled. If the preset time runs out, without the timer being retriggered, then the warning n04 (threshold monitoring) is generated and the drive is stopped. The amplifier remains ready for operation, and the output stage is still enabled. This warning must be cancelled (function |CLRFAULT| or |INxMODE|=14) before a new motion command (setpoint) can be accepted.

For DeviceNet, set to 1 to enable F04 and 0 to disable.   (Watchdog time is set by DeviceNet controller.)

ASCII -Command	FBTYPE
Syntax Transmit	FBTYPE [Data]
Syntax Receive	FBTYPE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 ... 16
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	Feedback

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3010
CAN Object No:	353B (hex)
PROFIBUS PNU:	1659 (dec) IND = 1 (de
DPR Objekt Nr:	59

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Selection of commutation feedback

Description

The FBTYPE command is used to select the type of feedback device that is used for the commutation and velocity controller. It is also ued for the position controller unless |EXTPOS| = 1.

The type of encoder that is set is only initialized when the amplifier is switched on, which means that the amplifier must be switched off and then on again after every change of this variable.

The encoder parameters can be altered by using the appropriate ASCII command (in brackets) and then saved in the encoder EEPROM, using the |HSAVE| command. The encoder commands (|HISOFFS|, |HICOFFS|, |HIFACT1|, |HSAVE|) are only available when communication with the connected encoder has been established.

If communication with the encoder is not possible, then the error message ENCODER FAULT F04 is displayed.

When the data are loaded from the encoder, the setting for the motor number in the encoder is compared with the internal setting (|MNUMBER|). If the numbers are different, then an attempt is made to load a motor data set from the internal motor database that has the same motor number as that stored in the encoder. At the same time, the warning "NEW MOTOR DATA SET" n12 is displayed.

In order to prevent a warning being generated at the next power-on, the latest |MNUMBER| setting should be saved in the EEPROM, using the |SAVE| command. If it was not possible to load a valid motor number from the encoder (for instance, when an encoder is used for the first time), then no motor data will be loaded. However, the n12 warning will still be generated. The |HSAVE| command can be used to save the preset setting for the motor number (|MNUMBER|) in the encoder, so that no warning will be produced at the next power-on.

When using an encoder without a parameter channel (|FBTYPE|=7/16), and thus without the facility for storing parameters, the offset values |HISOFFS| / |HICOFFS| / |HIFACT1| will be saved in the serial EEPROM of the amplifier. After an alteration, these values can be permanently stored ry by using the |SAVE| command.

Zustand	Type of Feedback System	Description
FBTYPE = 0	Resolver	Data is loaded from the drive EEPROM. connector X2
FBTYPE =1	SinCos 5V (|MPHASE| from EEPROM)	connector X1
FBTYPE = 2	Hiperface (Stegmann)	In the initialization phase, all the data is loaded that is stored in the encoder EEPROM. These are: Offset compensation Sine (|HISOFFS|) Offset compensation Cosine (|HICOFFS|) Amplitude scaling (|HIFACT1|) Motor number (|MNUMBER|) Motorphase (|MPHASE|) connector X1
FBTYPE = 3	SinCos 12V (|MPHASE| fromEEPROM)	connector X1

FBTYPE = 4	EnDAT (Heidenhain)	In the initialization phase, all the data is loaded that is stored in the encoder EEPROM. These are: Offset compensation Sine (|HISOFFS|) Offset compensation Cosine (|HICOFFS|) Amplitude scaling (|HIFACT1|) Motor number (|MNUMBER|) Motorphase (|MPHASE|) connector X1
FBTYPE = 5	SinCos with Hall	connector X1
FBTYPE = 6	SinCos 12V with Hall	connector X1
FBTYPE = 7	SinCos 5V mit W & S	connector X1
FBTYPE=8	SinCos 12 V with W & S	connector X1
FBTYPE=9	SSI	connector X5
FBTYPE=10	sensorless	in preparation
FBTYPE=11	Hall only 5 V	
FBTYPE=12	RS422 feedback device (A quad B) with hall's The parameter MPHASE can compensate for misalignement of Hall sensors. To compensates inverted hall effect sensors. set |MPHASE| = 180.	connector X3
FBTYPE = 13	digital encoder 5V (|MPHASE| from EEPROM	connector X5
FBTYPE = 14	digital encoder 24V with Hall	connector X3
FBTYPE = 15	digital encoder 5V with Hall	connector X1
FBTYPE = 16	digital encoder 24V with W&S	connector X3
FBTYPE = 17	digital encoder 5V W&S	connector X1
FBTYPE = 18	digital encoder 5V with Hall	connector X5
FBTYPE = 19	digital encoder 5V W&S	connector X5
FBTYPE = 20	BISS - Feedback	5V BISS connector X1 After the amplifier is switched on all Encoder-EEPROM data are load in the drive. These are: sinus offset adjustment |HISOFFS|, offset adjustment cosinus |HICOFFS|, amplitude scaling |HIFACT1|, motor number |MNUMBER|, motor phase |MPHASE| only |FW| > 2.14
FBTYPE = 21	EnDat + W&S	
FBTYPE=22	BISS - Feedback	BISS 12V /digital only |FW| > 2.14
FBTYPE=23	BISS Feedback	BISS 5V / analoge only |FW| > 2.14
FBTYPE=24	BISS Feedback	BISS 12V / analoge only |FW| > 2.14

ASCII -Command	FILTMODE
Syntax Transmit	FILTMODE [Data]
Syntax Receive	FILTMODE <Data>
Type	rw
Format	Integer8
DIM	-
Range	0 ... 4
Default	1
Opmode	All
Drive Status	
Start Firmware	1.21
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	353C (hex)
PROFIBUS PNU:	1660 (dec) IND = 1 (de
DPR Objekt Nr:	60

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.1
EEPROM	Yes

Short Description	Smith Predictor

Description

The Smith Predictor estimates the current, which will settle in 62,5 ms, to compensate the delay time of the servo drive. (fs = 8 kHz). A new motor model with electrical motor time constant is used. Te = L / R. The algotith is switched on by FILTMODE 2 . |KC| sets the predictor activity (KC = 1 >>> 100 %, KC = 0,3 >>> 30 %)

To execute the algorithm the following motor parameter have to be saved:
|MRS| Phase-Phase resistor of the winding
|ML| Phase-Phase inductivity of the winding in mH.

With predictor the current controller bandwith can be set up to 2,5 kHz (fs = 8 kHz). If the predictor is switched on the |CTUNE| default value is 1,8 kHz. Usual the current controller gain |MLGQ| can be increased by 50 % .

ASCII -Command	FLTCNT
Syntax Transmit	FLTCNT
Syntax Receive	FLTCNT <Data>
Type	Command
Format	String
DIM	-
Range	0, 65535 per Fault Message
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Drive Status

Available in

MMI		☑	CAN-Bus	☐
PROFIBUS		☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Fault Frequency

Description

The FLTCNT command provides a listing of all possible error messages, with the number of occurrences of each type of fault in clear text. The total number of faults (sum of the individual faults) is given out before the fault list.

ASCII -Command	FLTCNT *
Syntax Transmit	FLTCNT *
Syntax Receive	FLTCNT <Data>
Type	Command
Format	1 x Integer32 + 32 x Integer16
DIM	-
Range	-
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Fault Frequency

Description

The command returns a list of 33 numbers:
1st number: total number of faults (Integer32)
2nd number   number of occurrences of fault F01
3rd number   number of occurrences of fault F02
....
33rd number   number of occurrences of fault F32

ASCII -Command	FLTHIST
Syntax Transmit	FLTHIST
Syntax Receive	FLTHIST <Data>
Type	Command
Format	String
DIM	Number and TRUN
Range	10 No. of Last Messages+Times
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Drive Status

Available in

MMI	☑	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Fault History: Display last 10 faults

Description

The FLTHIST command produces a list of the last 10 faults that occurred, together with the corresponding number of operating hours at the time of occurrence, in clear text.

ASCII -Command	FLTHIST *
Syntax Transmit	FLTHIST *
Syntax Receive	FLTHIST <Data>
Type	Command
Format	20 x Integer32
DIM	Number and TRUN
Range	-
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Fault History: Display last 10 faults

Description

The FLTHIST command produces a list of the last 10 faults that occurred, together with the corresponding number of operating hours at the time of occurrence, in clear text.
The output looks like this:
n1 t1 n2 t2 n3 t3 ....n10 t10
n – fault number
t – time of the event (operating hours counter) [in 1024/60000 minutes]

ASCII -Command	FW
Syntax Transmit	FW
Syntax Receive	FW <Data>
Type	Variable ro
Format	Float
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3657 (hex)
PROFIBUS PNU:	1943 (dec) IND = 1 (de
DPR Objekt Nr:	343

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Displays the Version Number of the Firmware

Description

The command FW displays the versionnumber of the firmware. The command is also appears in the |DUMP| list and is part of the parameter settings of the drive.

ASCII -Command	GEARFILT	
Syntax Transmit	GEARFILT [Data]	
Syntax Receive	GEARFILT <Data>	
Type		
Format	Command	
DIM	-	
Range	1 ...8	
Default	4	
Opmode	0	
Drive Status	Enable	
Start Firmware	1.0	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36D6 (hex)
PROFIBUS PNU:	1670 (dec) IND = 17 (d
DPR Objekt Nr:	470

Configuration	☐
Function Group	

Data Type BUS/DPR	Command
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	

Description

For the operation of electronic gearing (OPMODE = 4), a second order low pass filter is introduced, to smooth the input position command signal. This command GEARFILT can be used to determine the corresponding frequency of the electronic gearing filter.

GEARFILT	f (HZ)
1	318
2	159
3	80
4	40
5	20
6	10
7	5
8	2.5

The filter is only used, if it is necessary, because the filter also introduces a delay to prevent the slave from following the master exactly at time during acceleration and deceleration. Normally, GEARFILT = 4 with 40 Hz cut-frequency is chosen.

ASCII -Command	GEARI
Syntax Transmit	GEARI [Data]
Syntax Receive	GEARI <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-2147483648 ... 2147483647
Default	1024
Opmode	4
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	353E (hex)
PROFIBUS PNU:	1662 (dec) IND = 1 (de
DPR Objekt Nr:	62

Configuration	☐
Function Group	Gearing

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Input Factor for Electronic Gearing

Description

In master/slave applications (|OPMODE|=4) this parameter can be used to set the master/slave translation ratio.

1. In case of analoge input signals (|GEARMODE|=6...9) the position is registered by the |ENCLINES| setting and converted in the 32bit/turn format.
The parameter GEARI/|GEARO| is only for the gearing-ratio.

Example:
GEARI ->> feedback turns
|GEARO| - >> motor turns.
GEARI=10,GEARO=3   -> ratio 10 : 3

2. In case of SSI-feedback (|GEARMODE|=5) the position is set and calvulated by |SSIRXD| and |SSIREVOL| and converted in the 32bit/turn format.
The parameter GEARI/|GEARO| is only for the gearing-ratio.

3. In case of all digital position inputs (|GEARMODE|=1...4) the parameter GEARI defines the feedback pulses within |GEARO| motor turns.
Example:
An externer ROD-feedbackhas 1024 pulses / turn, by 1 feedback turnn the motor should go 3 turns.
The corresponding setting is:
GEARI = 1024, GEARO 3

ASCII -Command	GEARMODE
Syntax Transmit	GEARMODE [Data]
Syntax Receive	GEARMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 9
Default	0
Opmode	4
Drive Status	Disabled
Start Firmware	1.0
Configuration	☑
Function Group	Gearing

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	353F (hex)
PROFIBUS PNU:	1663 (dec) IND = 1 (de
DPR Objekt Nr:	63

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Input Electronic Gearing Mode

Description

The servo amplifier is controlled through different interfaces from various sources. The GEARMODE variable configures the source that provides the master setpoint (position). For the connector pin assignments, see the Installation Manual.

All devices resolver, SinCos and incremental signals can be used at the same time. Resolver for commutation and speed control, SinCos for position control and incremental encoder for electronic gearing.
Following settings have to be made:

|EXTPOS|=1 .. 3 (External actual position)
GEARMODE=10 ..17
In addition to GEARMODE 0 ..7, a sine encoder at connector X1 can be used for position control with |EXTPOS| = 1.

Zustand	Description
GEARMODE=0	No Feedback
GEARMODE=1	Pulse And Direction Digital I/O 24V (X3) With a stepper motor control (pulse/direction, 24V signal level) connected to the digital inputs DIGITAL-IN 1/2, terminals X3/11, 12, an additional function assignment for the inputs is not necessary and any assignments on the screen page, Digital I/O, are ignored. INPUT1=direction (Low = positive, High = negative) INPUT2=pulse
GEARMODE=2	24 V digital encoder at X3
	Encoder Follower Digital I/O 24V (X3) With an incremental encoder (track A/B, 24V signal level) connected to the digital inputs DIGITAL-IN 1/2, terminals X3/11, 12, an additional function assignment for the inputs is not necessary and any assignments on the screen page, Digital I/O, are ignored.

GEARMODE=3	5 V digital encoder at X5
	Encoder Follower Digital I/O 5V X5 (Drive 400 X4) With an incremental encoder connected to connector X5 (Drive 400 X4), terminals 4, 5, 6, 7. |ENCMODE| has to be set to "0".
GEARMODE=4	5V pulse and direction Digital I/O
	With a stepper motor control connected to connector X5, terminals 4, 5, 6, 7. INPUT1=direction (Low = positive, High = negative) INPUT2=pulse |ENCMODE| has to be set to "0"
GEARMODE=5	SSI at X5
GEARMODE=6	5V sine encoder connected to X1.
	Only the zero crossing of the sine(cosine signals are used. No analog processing.
GEARMODE=7	5V sine encoder connected to X1.
	Only the zero crossing of the sine(cosine signals are used. No analog processing.
GEARMODE=8	EnDAT-Encoder at input X1.
	The difference to GEARMODE=6 is, that the parameter channel of the encoder is read and the absolute position is transfered to the position register. |ENCLINES| is calculated automatically to thie internal resolution of 20 Bit per rev of the encoder. This setting can be used in position mode under |EXTPOS|=1. The sine/cosine signals of the encoder are read analog. This increases the resolution significantly.

GEARMODE=9	HIPERFACE-Encoder at input X1.
	The difference to GEARMODE=6 is, that the parameter channel of the encoder is read and the absolute position is transfered to the position register. |ENCLINES| is calculated automatically to the internal resolution of 20 Bit per rev of the encoder. This setting can be used in position mode under |EXTPOS|=1. The sine/cosine signals of the encoder are read analog. This increases the resolution significantly.
GEARMODE=10	5V ROD-encoder as master - slave input connector X1 (|OPMODE| = 4)

ASCII -Command	GEARO		Available in	
Syntax Transmit	GEARO [Data]		MMI ✔	CAN-Bus ✔
Syntax Receive	GEARO <Data>		PROFIBUS ✔	Sercos ☐
Type	Variable rw			
Format	Integer32		SERCOS IDN:	
DIM	-		CAN Object No:	3540 (hex)
Range	0 .. 2147483647		PROFIBUS PNU:	1664 (dec) IND = 1 (de
Default	1		DPR Objekt Nr:	64
Opmode	4			
Drive Status	-			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	Integer32
Function Group	Gearing		Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Output Factor for Electronic Gearing

Description

In master/slave applications (|OPMODE|=4) this parameter can be used to set the master/slave translation ratio.

ASCII -Command	GET
Syntax Transmit	GET
Syntax Receive	GET <Data>
Type	Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3541 (hex)
PROFIBUS PNU:	1665 (dec) IND = 1 (de
DPR Objekt Nr:	65

Configuration	☐
Function Group	Oscilloscope

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Scope: output data

Description

The GET command returns a list with all the most recently recorded SCOPE data. The list consists of n+3 lines (n = no. items of data recorded)
Line 1: commentary e.g. "Drive Recording"
Line 2: n, timebase in msec e.g. 10, 0.25 (10 data lines, timebase 250 microseconds)
Line 3: var1, var2, var3 names of the recorded variables, e.g. |VCMD|, |V|, |ICMD|
Line 4: data1, data2, data3 recorded data, e.g. 0, 20.3, -0.5
Line 5: data1, dat2, data3
..
Line 1: data1, data2, data3

see also |RECORD|, |RECTRIG|

ASCII -Command	GF
Syntax Transmit	GF [Data]
Syntax Receive	GF <Data>
Type	rw
Format	Float
DIM	-
Range	0 ... 10
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.37

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.2
EEPROM	Yes

Short Description	proportional gain of the flux controller

Description

ASCII -Command	GFTN
Syntax Transmit	GFTN [Data]
Syntax Receive	GFTN <Data>
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	0

Configuration	☐
Function Group	

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	

Description

Nominal speed of the asynchron motor (field weakening)

ASCII -Command	GP
Syntax Transmit	GP [Data]
Syntax Receive	GP <Data>
Type	Variable rw
Format	Float
DIM	(m/s)/m
Range	0.1 ... 1000
Default	0.1
Opmode	4, 5, 8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	104
CAN Object No:	3542 (hex)
PROFIBUS PNU:	1666 (dec) IND = 1 (de
DPR Objekt Nr:	66

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Control Loop: Proportional Gain

Description

This variable is the proportional gain of the position control loop . If GP is set too low, the lag or settling time is too long and the drive is too soft. If GP is set too high, the drive oscillates.

ASCII -Command	GP_X
Syntax Transmit	GP [Data]
Syntax Receive	GP <Data>
Type	Variable rw
Format	Float
DIM	(m/s)/m
Range	0.1 ... 1000
Default	0.1
Opmode	4, 5, 8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	104
CAN Object No:	3761 (hex)
PROFIBUS PNU:	1809 (dec) IND = 17 (d
DPR Objekt Nr:	609

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Position Control Loop: Proportional Gain 2

Description
see |PARCNFG|

ASCII -Command	GPFFT
Syntax Transmit	GPFFT [Data]
Syntax Receive	GPFFT <Data>
Type	rw
Format	Float
DIM	-
Range	0 ... 1000
Default	1
Opmode	4,5,8
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3544 (hex)
PROFIBUS PNU:	1668 (dec) IND = 1 (de
DPR Objekt Nr:	68

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position control loop: feed forward for the current setpoint

Description

Position control loop: feed forward for the current setpoint.
Has to be set, that the following error is minimized.

This parameter has effect for control structure only in the following cases:
1.using table based motion task enabled with bit in |O_C|. ;
2.using sine squared acceleration and deceleration motion profiles.

If |GV| is changed after optimizing GPFFT, GPFFT has to be changed also inversely proportional.

ASCII -Command	GPFFT_X
Syntax Transmit	GPFFT [Data]
Syntax Receive	GPFFT <Data>
Type	rw
Format	Float
DIM	-
Range	0 ... 1000
Default	1
Opmode	4,5,8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3762 (hex)
PROFIBUS PNU:	1810 (dec) IND = 17 (d
DPR Objekt Nr:	610

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Position control loop: feed forward for the current setpoint 2

Description
see |PARCNFG|

ASCII -Command	GPFFV
Syntax Transmit	GPFFV [Data]
Syntax Receive	GPFFV <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0 ... 1000
Default	1
Opmode	4, 5, 8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	
CAN Object No:	3545 (hex)
PROFIBUS PNU:	1669 (dec) IND = 1 (de
DPR Objekt Nr:	69

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Control Loop: Feed Forward for Velocity

Description

This variable is used in the position control loop. Feed forward is used to ease the position controller task. A better setting for GPFFV means better utilization of the dynamic range of the position controller. The most favorable setting (usually about 1.0), depends on factors external to the drive such as friction, dynamic resistance, and stiffness. If GPFFV is set too low, the drive lags. If GPFFV is set too high, the drive oversteers.

ASCII -Command	GPFFV_X		
Syntax Transmit	GPFFV [Data]		
Syntax Receive	GPFFV <Data>		
Type	Variable rw		
Format	Float		
DIM	-		
Range	0 ... 1000		
Default	1		
Opmode	4, 5, 8		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	
CAN Object No:	3763 (hex)
PROFIBUS PNU:	1811 (dec) IND = 17 (d
DPR Objekt Nr:	611

Configuration	☐
Function Group	Position

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Position Control Loop: Feed Forward for Velocity 2

Description
see |PARCNFG|

ASCII -Command	GV
Syntax Transmit	GV [Data]
Syntax Receive	GV <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.001 ... 369.2
Default	0.046
Opmode	0, 1
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	100
CAN Object No:	3548 (hex)
PROFIBUS PNU:	1672 (dec) IND = 1 (de
DPR Objekt Nr:	72

Configuration	☐
Function Group	velocity

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity Control Loop: Proportional Gain

Description

GV gives the proportional (ac) gain of the velocity control loop. This also affects |GVTN|.Compared with the SR 600 the dimension has changed to As/rad.GV[SR300] = GV[SR600] * DIPEAK [in A]/ 314.15rad/s
Using the SR601 and GV[SR600] = 1 -> GV[SR300] = 1 * 3A / 314.15rad/s = 0.010 As/rad
Using the SR603 and GV[SR600] = 1 -> GV[SR300] = 1 * 6A / 314.15rad/s = 0.019 As/rad
Using the SR606 and GV[SR600] = 1 -> GV[SR300] = 1 * 12A / 314.15rad/s = 0.038 As/rad
Using the SR610 and GV[SR600] = 1 -> GV[SR300] = 1 * 20A / 314.15rad/s = 0.064 As/rad
Using the SR610-30 / 614 / 620 and GV[SR600] = 1 -> GV[SR300] = 1 * 40A / 314.15rad/s = 0.127 As/rad
Using the SR403 and GV[SR400] = 1 -> GV[SR300] = 1 * 9A / 314.15rad/s = 0.029 As/rad
Using the SR406 and GV[SR400] = 1 -> GV[SR300] = 1 * 12A / 314.15rad/s = 0.038 As/rad

Version 2.14
The maximum GV value was changed:

Maximum		Default
SR303	= 1107	= 0.028
SR306	= 1846	= 0.046
SR310	= 2461	= 0.062
SR341	= 553	= 0.014
SR343	= 923	= 0.023
SR346	= 1476	= 0.037

ASCII -Command	GV_X
Syntax Transmit	GV [Data]
Syntax Receive	GV <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.001 ... 369.2
Default	0.046
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	100
CAN Object No:	3760 (hex)
PROFIBUS PNU:	1808 (dec) IND = 17 (d
DPR Objekt Nr:	608

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Velocity Control Loop: Proportional Gain 2

Description
siehe |PARCNFG|

ASCII -Command	GVFR
Syntax Transmit	GVFR [Data]
Syntax Receive	GVFR <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.0 .. 1.0
Default	1.0
Opmode	All
Drive Status	-
Start Firmware	1.00
Configuration	☐
Function Group	PI-PLUS

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	354B (hex)
PROFIBUS PNU:	1675 (dec) IND = 1 (de
DPR Objekt Nr:	75

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	PI-PLUS Actual Velocity Feedforward

Description

GVFR is a tuning variable of the velocity control loop which sets the feed-forward to feedback gain ratio for the Pseudo Derivative Feedback with Feed-Forward. (PDFF or PI+) . With GVFR 1 the behavior of the velocity control loop is like a standard PI controller. GVFR 0.65 is a value which suppresses step response overshoot.

ASCII -Command	GVFR_X
Syntax Transmit	GVFR [Data]
Syntax Receive	GVFR <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.0 .. 1.0
Default	1.0
Opmode	All
Drive Status	-
Start Firmware	1.00

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	375E (hex)
PROFIBUS PNU:	1806 (dec) IND = 17 (d
DPR Objekt Nr:	606

Configuration	☐
Function Group	PI-PLUS

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	PI-PLUS Actual Velocity Feedforward

Description
see |PARCNFG|

ASCII -Command	GVTN
Syntax Transmit	GVTN [Data]
Syntax Receive	GVTN <Data>
Type	Variable rw
Format	Float
DIM	Milliseconds
Range	0.0 , GV/62.5 .. 1000.0
Default	10
Opmode	0, 1
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	101
CAN Object No:	354D (hex)
PROFIBUS PNU:	1677 (dec) IND = 1 (de
DPR Objekt Nr:	77

Configuration	☐
Function Group	velocity

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity Control Loop: I-Integration Time

Description

This variable determines the integral-action time/integral time constant. Smaller motors permit shorter integration times. Larger motors or high moments of inertia in the load usually require integration times of 20ms or more. With GVTN=0ms, the I-component is switched off. If the GVTN value is too low, the drive runs roughly or strongly overshoots with high inertia loads. If the GVTN value is too high, the drive is too soft.

ASCII -Command	GVTN_X
Syntax Transmit	GVTN [Data]
Syntax Receive	GVTN <Data>
Type	Variable rw
Format	Float
DIM	Milliseconds
Range	0.0 , GV/62.5 .. 1000.0
Default	10
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	101
CAN Object No:	375F (hex)
PROFIBUS PNU:	1807 (dec) IND = 17 (d
DPR Objekt Nr:	607

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Velocity Control Loop: I-Integration Time 2

Description

siehe |PARCNFG|

ASCII -Command	HALLDIR
Syntax Transmit	HALLDIR [Data]
Syntax Receive	HALLDIR <Data>
Type	rw
Format	Integer8
DIM	-
Range	0, 1
Default	0
Opmode	All
Drive Status	Disable
Start Firmware	1.00

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3550 (hex)
PROFIBUS PNU:	1680 (dec) IND = 1 (de
DPR Objekt Nr:	80

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.00
EEPROM	Yes

Short Description	Hall segment table number

Description

In the S300 firmware there are 2 tables with hall segment numbers.

HALLDIR = 0:   order of hall segments   1,5,4,6,2,3
HALLDIR = 1:   order of hall segments   1,3,2,6,4,5

The correct table number can be determined by moving the motor in the positive direction (velocity > 0)
And checking the order of the hall segments with the macro command (M SR_HALL).

ASCII -Command	HDUMP		
Syntax Transmit	HDUMP		
Syntax Receive	HDUMP <Data>		
Type	Multi-line Return Command		
Format	String		
DIM	-		
Range	-		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		
Configuration	☐		
Function Group	-		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3551 (hex)
PROFIBUS PNU:	1681 (dec) IND = 1 (de
DPR Objekt Nr:	81

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Output all sin/cos (Hiperface) variables

Description

List all sincos feedback variables stored in the encoders memory. (Hyperface or Endat)

ASCII -Command	HELP
Syntax Transmit	HELP <Data>
Syntax Receive	HELP <Data>
Type	Variable ro
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Output Parameter Help Information

Description

Using the parameter HELP <name> produces a display of help information for the ASCII parameter "name". This help information includes input limits and both the actual and default values for the parameter.

e.g. HELP GV

    GV act=6 min=0 max=1000 default=1

ASCII -Command	HICOFFS
Syntax Transmit	HICOFFS [Data]
Syntax Receive	HICOFFS <Data>
Type	Variable rw
Format	Integer16
DIM	Millivolts
Range	-10000 .. 10000
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3552 (hex)
PROFIBUS PNU:	1682 (dec) IND = 1 (de
DPR Objekt Nr:	82

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Hiperface: Cosine-Offset (incremental track)

Description

The HICOFFS command sets the offset correction (in mV) for the cosine signal of the incremental track.
The command is only available when a sin/cos encoder has been selected as the feedback device (|FBTYPE|=2,4,7). Depending on the type of encoder used, the HICOFFS setting is stored in the EEPROM of the encoder (|FBTYPE|=2,4, command |HSAVE|).
When using an encoder without a parameter channel (|FBTYPE|=7), and thus without an internal EEPROM, this setting will be saved in the EEPROM of the amplifier (command |SAVE|).

ASCII -Command	HIFACT1		
Syntax Transmit	HIFACT1 [Data]		
Syntax Receive	HIFACT1 <Data>		
Type	Variable rw		
Format	Integer16		
DIM	-		
Range	12000 .. 19000		
Default	16384		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3553 (hex)
PROFIBUS PNU:	1683 (dec) IND = 1 (de
DPR Objekt Nr:	83

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Encoder

Short Description	Hiperface: Sin/Cos Gain Factor (incremental track)

Description

The HIFACT1 command sets the amplitude scaling for the sine signal of the absolute track (SinCoder). The amplitude scaling is for the value 16384 = 1.

The command is only available when a sin/cos encoder has been selected as the feedback device (|FBTYPE|=2,4,7). Depending on the type of encoder used, the HIFACT1 setting is stored in the EEPROM of the encoder (|FBTYPE|=2,4, command |HSAVE|). When using an encoder without a parameter channel (|FBTYPE|=7), and thus without an internal EEPROM, this setting will be saved in the EEPROM of the amplifier (command |SAVE|).

ASCII -Command	HISOFFS	
Syntax Transmit	HISOFFS [Data]	
Syntax Receive	HISOFFS <Data>	
Type	Variable rw	
Format	Integer16	
DIM	Millivolts	
Range	-10000 .. 10000	
Default	0	
Opmode	All	
Drive Status	-	
Start Firmware	1.0	

Available in			
MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3554 (hex)
PROFIBUS PNU:	1684 (dec) IND = 1 (de
DPR Objekt Nr:	84

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Encoder

Short Description	Hiperface: Sin/Cos Offset (incremental track)

Description

The HISOFFS command sets the offset correction (in mV) for the sine signal of the incremental track.
The command is only available when a sin/cos encoder has been selected as the feedback device (|FBTYPE|=2,4,7). Depending on the type of encoder used, the HISOFFS setting is stored in the EEPROM of the encoder (|FBTYPE|=2,4, command |HSAVE|).
When using an encoder without a parameter channel (|FBTYPE|=7), and thus without an internal EEPROM, this setting will be saved in the EEPROM of the amplifier (command |SAVE|).

ASCII -Command	HSAVE
Syntax Transmit	HSAVE
Syntax Receive	HSAVE
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3556 (hex)
PROFIBUS PNU:	1686 (dec) IND = 1 (de
DPR Objekt Nr:	86

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Hiperface: Save Parameters in Encoder

Description

If |FBTYPE|=2 or =4 is set, the |HSAVE| command saves the variables for the encoder (HIPERFACE / EnDat) in the serial EEPROM of the encoder. With the setting |FBTYPE|=7, only the variables for the incremental track, as well as |MNUMBER| and |MPHASE| are saved in the serial EEPROM of the amplifier.

This command is only available if the amplifier has detected a sin/cos encoder (|FBTYPE| =2;4;7).

|FBTYPE| = 2 HIPERFACE (Stegmann)

|FBTYPE| = 4 EnDat (Heidenhain)

|FBTYPE| = 7 SINCOS – encoder without its own serial EEPROM

The HSAVE command saves the following variables.

|MNUMBER|*

|MPHASE|*

|HICOFFS|*

|HISOFFS|*

|HIFACT1|*

|MBRAKE|*

|MSERIALNO|*

* If |FBTYPE| = 7, these parameters are saved in the serial EEPROM of the amplifier.

Hiperface encoder, which have contents, can be erased by "HSAVE ERASE".

ASCII -Command	HVER		
Syntax Transmit	HVER		
Syntax Receive	HVER <Data>		
Type	Variable ro		
Format	String		
DIM	-		
Range	max 50 ASCII Characters		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3557 (hex)
PROFIBUS PNU:	1687 (dec) IND = 1 (de
DPR Objekt Nr:	87

Configuration	☐
Function Group	Basic Setup

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Output the Hardware Version

Description

The HVER command returns the designation for the hardware version, in the following form:
"Drive 3xx Hardware Version (yy) zzzz"
xx - designation of the output stage (current rating)
yy - designation of the hardware version
zzzz - date of the first hardware revision

ASCII -Command	I
Syntax Transmit	I
Syntax Receive	I <Data>
Type	Variable ro
Format	Float
DIM	Amperes
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	84
CAN Object No:	3558 (hex)
PROFIBUS PNU:	1688 (dec) IND = 1 (de
DPR Objekt Nr:	88

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Current Monitor

Description

This variable returns the actual current value in amperes. This value is always positive.

ASCII -Command	I2TLIM
Syntax Transmit	I2TLIM [Data]
Syntax Receive	I2TLIM <Data>
Type	Variable rw
Format	Integer8
DIM	%
Range	0 .. 100
Default	80
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	Current

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	144
CAN Object No:	355A (hex)
PROFIBUS PNU:	1690 (dec) IND = 1 (de
DPR Objekt Nr:	90

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	I2T Warning

Description

This variable defines a threshold for the I2T warning. As soon as the I2T values goes above this threshold, the warning, n01, is generated. This warning is passed on to a control system via a digital output (|OxMODE|=11). If the I2TLIM value is too low, the message appears too soon and the drive is not fully utilized. If the I2TLIM value is too high, limiting occurs at the same time as the message.

ASCII -Command	ICMD
Syntax Transmit	ICMD
Syntax Receive	ICMD <Data>
Type	Variable ro
Format	Float
DIM	Amperes
Range	-DIPEAK .. DPEAK
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	355B (hex)
PROFIBUS PNU:	1691 (dec) IND = 1 (de
DPR Objekt Nr:	91

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Current Setpoint

Description

Shows the internal current setpoint.

ASCII -Command	ID
Syntax Transmit	ID
Syntax Receive	ID <Data>
Type	Variable ro
Format	Float
DIM	Amperes
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	Actual values

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	355D (hex)
PROFIBUS PNU:	1693 (dec) IND = 1 (de
DPR Objekt Nr:	93

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	D-component of Current Monitor

Description

The D-axes component of the actual current value.

ASCII -Command	IDDUMP		
Syntax Transmit	IDDUMP [Data]		
Syntax Receive	IDDUMP <Data>		
Type	Multi-Line Return Command		
Format	String		
DIM			
Range			
Default			
Opmode	All		
Drive Status	-		
Start Firmware	1.37		
Configuration	☐		
Function Group			

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	

Data Type BUS/DPR	String
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	No

Short Description	Output the number/names of Parameter-Objects

Description

The command IDDUMP outputs the list of the object (parameter) numbers with the corresponding ASCII names.

The command "IDDUMP idno" gets the name of the ASCII parameter with the object number "idno".

ASCII -Command	IDUMP
Syntax Transmit	IDUMP
Syntax Receive	IDUMP <Data>
Type	Multi-line Return Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	355E (hex)
PROFIBUS PNU:	1694 (dec) IND = 1 (de
DPR Objekt Nr:	94

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	-

Short Description	Output Current Limit List

Description

This command returns a list of the current limit variables and their settings (see |CDUMP|).

ASCII -Command	IN
Syntax Transmit	IN
Syntax Receive	IN <Data>
Type	Multi-line Return Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3560 (hex)
PROFIBUS PNU:	1696 (dec) IND = 1 (de
DPR Objekt Nr:	96

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	List Analog Voltage Values

Description

The IN command returns the input voltages for the 8 A/D channels as counts (-4096 ... +4096).
Channel 0: Heat sink temperature
Channel 1: Ambient temperature
Channel 2: Regen power
Channel 3: I_U
Channel 4: Motor temperature
Channel 5: DC-link/DC-bus voltage [4096 counts = 1015 V]
Channel 6: Supply voltage [4096 counts = 800 V]
Channel 7: I_W

ASCII -Command	IN1
Syntax Transmit	IN1
Syntax Receive	IN1 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3561 (hex)
PROFIBUS PNU:	1697 (dec) IND = 1 (de
DPR Objekt Nr:	97

Configuration	☐
Function Group	Digital I/O

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Status of Digital Input 1

Description

The status of the digital input INPUT1.

ASCII -Command	IN10
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	1716 (dec) IND = 17 (d
DPR Objekt Nr:	516

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of Digital Input

Description

see |IN5_20|

ASCII -Command	IN10MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3705 (hex)
PROFIBUS PNU:	1717 (dec) IND = 17 (d
DPR Objekt Nr:	517

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN10TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3706 (hex)
PROFIBUS PNU:	1718 (dec) IND = 17 (d
DPR Objekt Nr:	518

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

		Available in			
ASCII -Command	IN11				
Syntax Transmit		MMI	☐	CAN-Bus	☑
Syntax Receive		PROFIBUS	☑	Sercos	☐
Type	Variable rw				
Format					
DIM		SERCOS IDN:			
Range		CAN Object No:	3707 (hex)		
Default		PROFIBUS PNU:	1719 (dec) IND = 17 (d		
Opmode		DPR Objekt Nr:	519		
Drive Status					
Start Firmware					
Configuration	☐	Data Type BUS/DPR			
Function Group		Weighting 10^3			

Last Change of this Object	1.2
EEPROM	

Short Description	Status of Digital Input

Description

see |IN5_20|

ASCII -Command	IN11MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3708 (hex)
PROFIBUS PNU:	1720 (dec) IND = 17 (d
DPR Objekt Nr:	520

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN11TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3709 (hex)
PROFIBUS PNU:	1721 (dec) IND = 17 (d
DPR Objekt Nr:	521

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

			Available in			
ASCII -Command	IN12					
Syntax Transmit			MMI	☐	CAN-Bus	☑
Syntax Receive			PROFIBUS	☑	Sercos	☐
Type	Variable rw					
Format			SERCOS IDN:			
DIM			CAN Object No:	370A (hex)		
Range			PROFIBUS PNU:	1722 (dec) IND = 17 (d		
Default			DPR Objekt Nr:	522		
Opmode						
Drive Status						
Start Firmware						
Configuration	☐		Data Type BUS/DPR			
Function Group			Weighting 10^3			

Last Change of this Object	1.2
EEPROM	

Short Description	Status of Digital Input

Description

see |IN5_20|

ASCII -Command	IN12MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	370B (hex)
PROFIBUS PNU:	1723 (dec) IND = 17 (d
DPR Objekt Nr:	523

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN12TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	370C (hex)
PROFIBUS PNU:	1724 (dec) IND = 17 (d
DPR Objekt Nr:	524

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN13
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Available in			
MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	370D (hex)
PROFIBUS PNU:	1725 (dec) IND = 17 (d
DPR Objekt Nr:	525

Configuration	☐
Function Group	

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of Digital Input

Description

see |IN5_20|

ASCII -Command	IN13MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	370E (hex)
PROFIBUS PNU:	1726 (dec) IND = 17 (d
DPR Objekt Nr:	526

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN13TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	370F (hex)
PROFIBUS PNU:	1727 (dec) IND = 17 (d
DPR Objekt Nr:	527

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN14
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3710 (hex)
PROFIBUS PNU:	1728 (dec) IND = 17 (d
DPR Objekt Nr:	528

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of Digital Input

Description

see |IN5_20|

ASCII -Command	IN14MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3711 (hex)
PROFIBUS PNU:	1729 (dec) IND = 17 (d
DPR Objekt Nr:	529

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN14TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3712 (hex)
PROFIBUS PNU:	1730 (dec) IND = 17 (d
DPR Objekt Nr:	530

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN15
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3713 (hex)
PROFIBUS PNU:	1731 (dec) IND = 17 (d
DPR Objekt Nr:	531

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of Digital Input

Description

see |IN5_20|

ASCII -Command	IN15MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3714 (hex)
PROFIBUS PNU:	1732 (dec) IND = 17 (d
DPR Objekt Nr:	532

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN15TRIG		
Syntax Transmit			
Syntax Receive			
Type	Variable rw		
Format			
DIM			
Range			
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐		
Function Group			

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3715 (hex)
PROFIBUS PNU:	1733 (dec) IND = 17 (d
DPR Objekt Nr:	533

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN16
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3716 (hex)
PROFIBUS PNU:	1734 (dec) IND = 17 (d
DPR Objekt Nr:	534

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of Digital Input

Description

see |IN5_20|

ASCII -Command	IN16MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3717 (hex)
PROFIBUS PNU:	1735 (dec) IND = 17 (d
DPR Objekt Nr:	535

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN16TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3718 (hex)
PROFIBUS PNU:	1736 (dec) IND = 17 (d
DPR Objekt Nr:	536

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN17
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3719 (hex)
PROFIBUS PNU:	1737 (dec) IND = 17 (d
DPR Objekt Nr:	537

Configuration	☐
Function Group	

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of Digital Input

Description

see |IN5_20|

ASCII -Command	IN17MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	371A (hex)
PROFIBUS PNU:	1738 (dec) IND = 17 (d
DPR Objekt Nr:	538

Last Change of this Object	1.2
EEPROM	

Data Type BUS/DPR	
Weighting 10^3	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN17TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	371B (hex)
PROFIBUS PNU:	1739 (dec) IND = 17 (d
DPR Objekt Nr:	539

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN18
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	371C (hex)
PROFIBUS PNU:	1740 (dec) IND = 17 (d
DPR Objekt Nr:	540

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of Digital Input

Description

see |IN5_20|

ASCII -Command	IN18MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	371D (hex)
PROFIBUS PNU:	1741 (dec) IND = 17 (d
DPR Objekt Nr:	541

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN18TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	371E (hex)
PROFIBUS PNU:	1742 (dec) IND = 17 (d
DPR Objekt Nr:	542

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN19
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Available in			
MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	371F (hex)
PROFIBUS PNU:	1743 (dec) IND = 17 (d
DPR Objekt Nr:	543

Configuration	☐
Function Group	

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of Digital Input

Description

see |IN5_20|

ASCII -Command	IN19HCMD
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	0

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Command buffer for high level

Description

see |IN2HCMD|

ASCII -Command	IN19LCMD
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	0

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Command buffer for low level

Description

see |IN2LCMD|

ASCII -Command	IN19MODE	Available in	
Syntax Transmit		MMI ☐	CAN-Bus ☑
Syntax Receive		PROFIBUS ☑	Sercos ☐
Type	Variable rw		
Format		SERCOS IDN:	
DIM		CAN Object No:	3720 (hex)
Range		PROFIBUS PNU:	1744 (dec) IND = 17 (d
Default		DPR Objekt Nr:	544
Opmode			
Drive Status			
Start Firmware			
Configuration	☑	Data Type BUS/DPR	
Function Group		Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN19TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3721 (hex)
PROFIBUS PNU:	1745 (dec) IND = 17 (d
DPR Objekt Nr:	545

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN1HCMD
Syntax Transmit	IN1HCMD [Data]
Syntax Receive	IN1HCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3722 (hex)
PROFIBUS PNU:	1746 (dec) IND = 17 (d
DPR Objekt Nr:	546

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for high level

Description

The command IN1HCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a rising edge is detected at the input 1 that has been configured with the function |IN1MODE|=30,33
A command sequence consists of individual ASCII commands, separated by a semicolon (;)
The maximum length of this command sequence is 56 characters.

Example:
IN1HCMD |GV| 10; |GVTN| 15

If a LOW/HIGH edge is detected, the gain of the velocity control loop is set to 10 and the integral action time is set to 15 msec.

ASCII -Command	IN1LCMD		
Syntax Transmit	IN1LCMD [Data]		
Syntax Receive	IN1LCMD <Data>		
Type	Variable rw		
Format	String		
DIM	-		
Range	-		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3723 (hex)
PROFIBUS PNU:	1747 (dec) IND = 17 (d
DPR Objekt Nr:	547

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for low level

Description

The command IN1LCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a falling edge is detected at the input 1 that has been configured with the function |IN1MODE|=30,33 A command sequence consists of individual ASCII commands, separated by a semicolon (;) The maximum length of this command sequence is 56 characters.

Example:
IN1LCMD |GV| 5; |GVTN| 10

If a HIGH/LOW edge is detected, the gain of the velocity control loop is set to 5 and the integral action time is set to 10 msec.

ASCII -Command	IN1MODE
Syntax Transmit	IN1MODE [Data]
Syntax Receive	IN1MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	Digital I/O

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3000...3
CAN Object No:	3562 (hex)
PROFIBUS PNU:	1698 (dec) IND = 1 (de
DPR Objekt Nr:	98

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Input 1

Description

The IN1MODE command is used to configure the function of the digital input INPUT1. The amplifier must be switched off and then on again after an alteration of this parameter.
The following functions can be configured:

Zustand	Function	Description
IN1MODE=0	Off	The state of the input 1 is read and can be used via fieldbus or Slot card.
IN1MODE=1	Failure Reset	Software reset of the servo amplifier in the event of a fault. The high input signal is ignored, if the drive has no fault. All the functions and displays are set to the initial status. Parameters that are not stored in the EEPROM are erased, the parameter set that is stored in the EEPROM is loaded. If any of the error messages F01, F02, F03, F05, F08, F13, F16 or F19 (p.52) are present, then no software-reset will be carried out, just the error message will be deleted. This means that, for example, the encoder output signals are stable and can continue to be evaluated by the controls. When the input is high, while the auxillary 24V supply is switched on, the drive waits, before the input is set to low. This state is symbolised in the display. The first of the three display positions displays a "A".
IN1MODE=2	Off	
IN1MODE=3	Off	
IN1MODE=4	Off	
IN1MODE=5	Off	
IN1MODE=6	Off	
IN1MODE=7	Off	

IN1MODE=8	Analog In 1/Analog In 2	Switches over the setpoint inputs Analog In 1/2 at |ANCNFG| = 0. This function is only effective if the analog set-point function 0,Xcmd=Analog In 1 has been selected. High level at the input : Analog In 2 (terminals X3/6,7) is active Low level at the input : Analog In 1 (terminals X3/4,5) is active
IN1MODE=9	MT_No_Bit	Here you can select the motion tasks that are stored in the servo amplifier (numbers 1...7) or the reference traverse/homing (0). The motion task number is presented externally at the digital inputs as a logical word, with a width of max. 3 bits . An input is required to start the motion task (|INxMODE| =17, Start_MT IO). If you wire up a reference/homing switch (|INxMODE| =12, Reference) and (also) want to start a following task (|INxMODE| =15, Start_MT Next) externally, the number of inputs that are available for selecting the motion tasks will be further reduced.
IN1MODE=10	Intg.Off	Switch off the integral component of the velocity controller, the P-gain remains at the set value, the actual- (rotational) velocity feedback remains in operation.
IN1MODE=11	v/Torq.Contr.	Bypasses the velocity controller. The analog setpoint is taken 1:1 as the setpoint for current control, i.e. change over from velocity control to current (torque) control. High-level at the input : torque control Low-level at the input : velocity control Depending on |OPMODE|, it changes between |OPMODE|=0 (low) and |OPMODE|=2 (high) or |OPMODE|=1 (low) and |OPMODE|=3 (high).
IN1MODE=12	Reference	home/reference switch located on machine
IN1MODE=13	digital encoder/SSI	Changeover of the encoder-emulation (position output) on connector X5. High level at the input : SSI-compatible position signals (|ENCMODE| = 2) High level at the input : ROD-compatible position signals (|ENCMODE| = 1)
IN1MODE=14	FError_clear	Clear the warning of a contouring error (display n03) or the response monitoring (display n04).
IN1MODE=15	Start_MT Next	The following task, that is defined in the motion task by "Start with I/O" is started. The target position of the present motion task must be reached before the following task can be started. (see also |O_C| tablel 3)
IN1MODE=16	Start_MT No x	Start a motion task that is stored in the servo amplifier, by giving the motion task number. After the function has been selected you can enter the motion task number as the auxiliary variable |IN1TRIG|. Motion task number "0" (|IN1TRIG|=0) initiates homing/reference traverse. A rising edge starts the motion task, a falling edge cancels the motion task. Only |OPMODE| 4 or 8

IN1MODE=17	Start_MT IO	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A rising edge starts the motion task a falling edge cancels the motion task by a |STOP| - command
IN1MODE=18	Ipeak2 x	Switch over to a second (lower) peak value of current. Scaled as x (0...100) % of the peak current of the instrument. After the function has been selected you can enter the percentage value as the auxiliary variable |IN1TRIG|. Make the conversion according to the following equation: |IN1TRIG| given in % of |IPEAK|
IN1MODE=19	Off	
IN1MODE=20	Start_Jog v=x	Start of the setup mode "Constant velocity" with a defined speed. After selecting the function, you can enter the speed in |IN1TRIG|. A rising edge starts the motion, a falling edge cancels the motion. This function works in position control, so |OPMODE|=8 has to be selected. The speed is given in units of the position controller given by |VUNIT|, the sign selects the moving direction.
IN1MODE=21	U_Mon.off	Turns off the undervoltage monitoring function of the servo amplifier. High = off Low = on
IN1MODE=22	MT Restart	Continues the motion task that was previously interrupted by a |STOP| - command.
IN1MODE=23	Start2_MT No x	Start of a motion task that is stored in the servo amplifier, with definition of the motion task number. After selecting the function, you can enter the motion task number in |IN1TRIG| Motion task number "0" starts the homing run. A rising edge starts the motion task. Warning ! The motion task does not stop automatically if the start signal is removed ! The motion task must be stopped by — a falling edge on another digital input (configured with 16, FStart_Nr x) — the ASCII command |STOP| — the STOP function via Bus or digital input

IN1MODE=24	Switch over OPMODE	The two different |OPMODE|s, that can be selected for switching over via the digital input, are written in the |IN1TRIG| help variable of the this input. The lower byte consists the |OPMODE| that should be available when the input has a negative edge. The higher byte consists the |OPMODE| that should be available when the input has a positive edge. When the drive is switched on, the |OPMODE| is set automatically to the corresponding state of the input. The contents of the help variable must be in decimal !! e.g.: Input1=low |OPMODE|=4 Input1=high |OPMODE|=8 IN1MODE=24 (Activate Input) |IN1TRIG|=2052 (Decimal 0804h) 2052 (Dec) = 0804 (Hex)
IN1MODE=25	Zero_latch	Sets the digital encoder zero pulse offset. The current position, depending on the digital encoder resolution (|ENCOUT|) that is set, is calculated at the rising edge and stored as NI-Offset in |ENCZERO|. After that, an automatic |SAVE| is generated. This function is used to perform an automatic setting of the zero pulse in one turn of the motor..
IN1MODE=26	Position Latch	A edge on this input latches the actual position. The position can then be read by |LATCH1P32| (positive edge) or |LATCH1N32| (negative edge). The actual 16-Bit position (absolute in one turn) can be read by |LATCH1P16| (positive edge) and |LATCH1N16| (negative edge). The status of the latching can be read by the equivalent bits of |DRVSTAT|. The min. cycle time for a low/high to high/low transaction is 500µs. The min. time between two latch pulses is 1 msec.
IN1MODE=27	Emergency Stop	Low state on the input starts an emergency stop function, that is executed with the ramp |DECSTOP|. Independently of the selected |OPMODE|, in this phase, the drive stops in velocity control. When it has stopped, it switches over to the original mode.
IN1MODE=28	Starting Jogmode	ONLY |OPMODE| = 8 Firmware >= 0.73 A rising edge starts a jogmode with speed |VJOG|. A falling edge stopps the movement.
IN1MODE=29	Starting motion task / homing	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A rising edge is without effect..

IN1MODE=30	Command Buffer 1	A positive or negative edge on the input starts a command buffer. This command buffer contains separate ASCII objects, that are separated with semicolon (;). The command buffer for the positive edge is |INH1CMD|, the command buffer for the negative edge is |IN1LCMD|. The max. length of that buffers is 56 character for each. If a digital input is configured with INxMODE=30, this input will proceed in that way. When the drive is switched on, the Command buffer is set automatically started to the corresponding state of the input.
IN1MODE=33	see 30	Different from the functionality 30, the resulting answers of the commands are not suppressed, but are send to the seriell communication channel RS232. This setting can't be used in combination with GUI software.
IN1MODE=32	Brake	Warning ! With suspended loads, this function will lead to slipping of the axes ! A rising edge at the input triggers the braking output of the servo amplifier. This function is only available while the amplifier is disabled.
IN1MODE=35		
IN1MODE=36	Give Offset to Gearing Function	Gearing mode |OPMODE| =4. A high signal on the digital input configured with this INxMODE adds a difference velocity to the gearing. This allows a simple synchronisation of two axes. The difference velocity is given to |IN1TRIG|. The scaling is in 32Bit per revolution every 250μs. The difference velocity (n) must be known, then the |IN1TRIG| can be calculated: IN1TRIG = n [rpm]*2^32/(4000*60) example: n = 500 [U/min] INxTRIG = 500 * 2^32 / (4000*60) = 8947848
IN1MODE=37		reserved
IN1MODE=38	Enable signal for following motion task	Definition of a motion task with following motion tasks. If INxMODE=15 is used (start of an following motion task via I/O), IN1MODE=38 can be used, to have an additional enable for the start of the following motion tasks. Means, that the following motion task is started, if once a rising edge on digital input 1 was detected and then the INxMODE=15 input is enabled to start the following motion task.

IN1MODE=39	Constant velocity for defined time	This function starts a constant velocity for a defined time. The parameters for velocity and time are given by |IN1TRIG|. The velocity is given by the lower 16 bit (scaling by |VUNIT|), bit 15 is the sign and defines the moving direction and the time by the upper 16 bit (given in msec) of the help variable |IN1TRIG|. A rising edge at INPUT1 changes the |OPMODE| to 0 (digital velocity) and gives the velocity that is given by |IN1TRIG|. After the defined time or a falling edge at INPUT1 is detected, the digital velocity setpoint is set to "0". After the actual velocity has reached "0" the |OPMODE| is automatically switched back to the old one.
		
		Example for defining the help variable |IN1TRIG|
		1. Velocity = 1000 rpm
		   time = 10 sec = 10000 msec
		   |IN1TRIG| = 0x271003E8 = 655361000
		
		2. Velocity = -500 rpm
		   time = 10 msec
		   |IN1TRIG| = 0x000afe0c = 720396

IN1MODE=40	Additional hardware input	The digital input works as an additional hardware input. Only if this input has a high signal, the power stage is enabled. This Function can be used by several inputs. In this case, the inputs are configured in series. All inputs have to be high to enable the power stage.
IN1MODE=41	Quick stop	If the input is going to low, the drive stops the motor using the |DECSTOP| ramp. If zero velocity is reached (|V|<|VEL0|), the power stage is disabled. While stopping the motor the bit 24 (0x01000000) in |TRJSTAT| is set. The input is read in the 250µs task.
IN1MODE=42	Activate/deactivate electronic gearing	Activate/deactivate electronic gearing in |OPMODE| = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by |ACCR| for the acceleration and |DECR| for deceleration time.
IN1MODE=43	Activate/deactivate electronic gearing with position latch	Activate/deactivate electronic gearing in |OPMODE| = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by |ACCR| for the acceleration and |DECR| for deceleration time In contrast to IN1MODE = 42, the master position is latched at the rising edge of the input and the position delay caused by the ramp is compensated. |IN1TRIG| gives the possibility to add an position offset (in |PGEARI| units) to the latched position.

ASCII -Command	IN1TRIG
Syntax Transmit	IN1TRIG [Data]
Syntax Receive	IN1TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3563 (hex)
PROFIBUS PNU:	1699 (dec) IND = 1 (de
DPR Objekt Nr:	99

Configuration	☐
Function Group	Digital I/O

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Variable for IN1MODE

Description

Auxiliary trigger variable for |IN1MODE|. Certain settings of |IN1MODE| require you to specify an additional trigger level. See |IN1MODE| for further details.

ASCII -Command	IN2
Syntax Transmit	IN2
Syntax Receive	IN2 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3564 (hex)
PROFIBUS PNU:	1700 (dec) IND = 1 (de
DPR Objekt Nr:	100

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status of Digital Input 2

Description

The status of the digital input INPUT2.

ASCII -Command	IN20
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3722 (hex)
PROFIBUS PNU:	1746 (dec) IND = 17 (d
DPR Objekt Nr:	546

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of digital input

Description

see |IN5_20|

ASCII -Command	IN20HCMD
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	0

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Command buffer for high level

Description

see |IN2HCMD|

ASCII -Command	IN20LCMD
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	0

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Command buffer for low level

Description

see |IN2LCMD|

ASCII -Command	IN20MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3723 (hex)
PROFIBUS PNU:	1747 (dec) IND = 17 (d
DPR Objekt Nr:	547

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN20TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3724 (hex)
PROFIBUS PNU:	1748 (dec) IND = 17 (d
DPR Objekt Nr:	548

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN2HCMD
Syntax Transmit	IN2HCMD [Data]
Syntax Receive	IN2HCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	(hex)
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for high level

Description

The command IN2HCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a rising edge is detected at the input 2 that has been configured with the function |IN2MODE|=30,33
A command sequence consists of individual ASCII commands, separated by a semicolon (;)
The maximum length of this command sequence is 56 characters.

Example:
IN2HCMD |GV| 10; |GVTN| 15

If a LOW/HIGH edge is detected, the gain of the velocity control loop is set to 10 and the integral action time is set to 15 msec.

			Available in		
ASCII -Command	IN2LCMD				
Syntax Transmit	IN2LCMD [Data]		MMI	☐	CAN-Bus ☑
Syntax Receive	IN2LCMD <Data>		PROFIBUS	☐	Sercos ☐
Type	Variable rw				
Format	String				
DIM	-		SERCOS IDN:		
Range	-		CAN Object No:	(hex)	
Default	-		PROFIBUS PNU:	no	
Opmode	All		DPR Objekt Nr:		
Drive Status	-				
Start Firmware	1.0				
Configuration	☐		Data Type BUS/DPR	-	
Function Group	-		Weighting 10^3		

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for low level

Description

The command IN2LCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a falling edge is detected at the input 2 that has been configured with the function |IN2MODE|=30,33 A command sequence consists of individual ASCII commands, separated by a semicolon (;) The maximum length of this command sequence is 56 characters.

Example:
IN2LCMD |GV| 5; |GVTN| 10

If a HIGH/LOW edge is detected, the gain of the velocity control loop is set to 5 and the integral action time is set to 10 msec.

ASCII -Command	IN2MODE
Syntax Transmit	IN2MODE [Data]
Syntax Receive	IN2MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	Digital I/O

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3000...3
CAN Object No:	3565 (hex)
PROFIBUS PNU:	1701 (dec) IND = 1 (de
DPR Objekt Nr:	101

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Input 2

Description

The IN2MODE command is used to configure the function of the digital input INPUT2. The amplifier must be switched off and then on again after an alteration of this parameter.
The following functions can be configured:

Zustand	Function	Description
IN2MODE=0	Off	The state of the input 1 is read and can be used via fieldbus or Slot card.
IN2MODE=1	No function	
IN2MODE=2	Off	
IN2MODE=3	Off	
IN2MODE=4	Off	
IN2MODE=5	Off	
IN2MODE=6	Off	
IN2MODE=7	Off	
IN2MODE=8	selection Analog In 1 / 2	Switches over the setpoint inputs Analog In 1/2 at |ANCNFG| = 0. This function is only effective if the analog set-point function 0, Xcmd = Analog In 1 has been selected. High level at the input : Analog In 2 (terminals X3/6,7) is active Low level at the input : Analog In 1 (terminals X3/4,5) is active

IN2MODE=9	MT_No_Bit	Here you can select the motion tasks that are stored in the servo amplifier (numbers 1...7) or the reference traverse/homing (0). The motion task number is presented externally at the digital inputs as a logical word, with a width of max. 3 bits . An input is required to start the motion task (|INxMODE| =17, Start_MT IO). If you wire up a reference/homing switch (|INxMODE| =12, Reference) and (also) want to start a following task (|INxMODE| =15, Start_MT Next) externally, the number of inputs that are available for selecting the motion tasks will be further reduced.
IN2MODE=10	Intg.Off	Switch off the integral component of the velocity controller, the P-gain remains at the set value, the actual- (rotational) velocity feedback remains in operation.
IN2MODE=11	v/Torq.Contr.	Bypasses the velocity controller. The analog setpoint is taken 1:1 as the setpoint for current control, i.e. change over from velocity control to current (torque) control. High-level at the input : torque control Low-level at the input : velocity control Depending on |OPMODE|, it changes between |OPMODE|=0 (low) and |OPMODE|=2 (high) or |OPMODE|=1 (low) and |OPMODE|=3 (high).
IN2MODE=12	Reference	home/reference switch located on machine
IN2MODE=13	digital encoder/SSI	Changeover of the encoder-emulation (position output) on connector X5. High level at the input : SSI-compatible position signals (|ENCMODE| = 2) High level at the input : ROD-compatible position signals (|ENCMODE| = 1)
IN2MODE=14	FError_clear	Clear the warning of a contouring error (display n03) or the response monitoring (display n04).
IN2MODE=15	Start_MT Next	The following task, that is defined in the motion task by "Start with I/O" is started. The target position of the present motion task must be reached before the following task can be started. (see also |O_C| tablel 3)
IN2MODE=16	Start_MT No x	Start a motion task that is stored in the servo amplifier, by giving the motion task number. After the function has been selected you can enter the motion task number as the auxiliary variable |IN2TRIG|. Motion task number "0" (|IN2TRIG|=0) initiates homing/reference traverse. A rising edge starts the motion task, a falling edge cancels the motion task.

Only \|OPMODE\| 4 or 8 |
| IN2MODE=17 | Start_MT IO | Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A rising edge starts the motion task a falling edge cancels the motion task by a \|STOP\| - command |

IN2MODE=18	Ipeak2 x	Switch over to a second (lower) peak value of current. Scaled as x (0...100) % of the peak current of the instrument. After the function has been selected you can enter the percentage value as the auxiliary variable |IN2TRIG|. Make the conversion according to the following equation: |IN2TRIG| given in % of |IPEAK|
IN2MODE=19	Off	
IN2MODE=20	Start_Jog v=x	Start of the setup mode "Constant velocity" with a defined speed. After selecting the function, you can enter the speed in |IN2TRIG|. A rising edge starts the motion, a falling edge cancels the motion. This function works in position control, so |OPMODE|=8 has to be selected. The speed is given in units of the position controller given by |VUNIT|, the sign selects the moving direction.
IN2MODE=21	U_Mon.off	Turns off the undervoltage monitoring function of the servo amplifier. High = off Low = on
IN2MODE=22	MT Restart	Continues the motion task that was previously interrupted by a |STOP| - command.
IN2MODE=23	Start2_MT No x	Start of a motion task that is stored in the servo amplifier, with definition of the motion task number. After selecting the function, you can enter the motion task number in |IN2TRIG| Motion task number "0" starts the homing run. A rising edge starts the motion task. Warning ! The motion task does not stop automatically if the start signal is removed ! The motion task must be stopped by — a falling edge on another digital input (configured with 16, FStart_Nr x) — the ASCII command |STOP| — the STOP function via Bus or digital input
IN2MODE=24	Switch over OPMODE	The two different |OPMODE|s, that can be selected for switching over via the digital input, are written in the |IN2TRIG| help variable of the this input. The lower byte consists the |OPMODE| that should be available when the input has a negative edge. The higher byte consists the |OPMODE| that should be available when the input has a positive edge. When the drive is switched on, the |OPMODE| is set automatically to the corresponding state of the input. The contents of the help variable must be in decimal !! e.g.: Input1=low |OPMODE|=4 Input1=high |OPMODE|=8 IN1MODE=24 (Activate Input) |IN2TRIG|=2052 (Decimal 0804h) 2052 (Dec) = 0804 (Hex)

IN2MODE=25	Zero_latch	Sets the digital encoder zero pulse offset. The current position, depending on the digital encoderresolution (|ENCOUT|) that is set, is calculated at the rising edge and stored as NI-Offset in |ENCZERO|. After that, an automatic |SAVE| is generated. This function is used to perform an automatic setting of the zero pulse in one turn of the motor..
IN2MODE=26	Position Latch	A edge on this input latches the actual position. The position can then be read by |LATCH2P32| (positive edge) or |LATCH2N32| (negative edge). The actual 16-Bit position (absolute in one turn) can be read by |LATCH2P16| (positive edge) and |LATCH2N16| (negative edge). The status of the latching can be read by the equivalent bits of |DRVSTAT|. The min. cycle time for a low/high to high/low transaction is 500µs. The min. time between two latch pulses is 1 msec.
IN2MODE=27	Emergency Stop	Low state on the input starts an emergency stop function, that is executed with the ramp |DECSTOP|. Independently of the selected |OPMODE|, in this phase, the drive stops in velocity control. When it has stopped, it switches over to the original mode.
IN2MODE=28	Starting Jogmode	ONLY |OPMODE| = 8 Firmware >= 0.73 A rising edge starts a jogmode with speed |VJOG|. A falling edge stopps the movement.
IN2MODE=29	Starting motion task / homing	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A rising edge is without effect..
IN2MODE=30	Command Buffer 1	A positive or negative edge on the input starts a command buffer. This command buffer contains separate ASCII objects, that are separated with semicolon (;). The command buffer for the positive edge is |INH2CMD|, the command buffer for the negative edge is |IN2LCMD|. The max. length of that buffers is 56 character for each. If a digital input is configured with INxMODE=30, this input will proceed in that way. When the drive is switched on, the Command buffer is set automatically started to the corresponding state of the input.
IN2MODE=33	see 30	Different from the functionality 30, the resulting answers of the commands are not suppressed, but are send to the seriell communication channel RS232. This setting can't be used in combination with GUI software.

IN2MODE=32	Brake	Warning ! With suspended loads, this function will lead to slipping of the axes ! A rising edge at the input triggers the braking output of the servo amplifier. This function is only available while the amplifier is disabled.
IN2MODE=35		
IN2MODE=36	Give Offset to Gearing Function	Gearing mode |OPMODE| =4. A high signal on the digital input configured with this INxMODE adds a difference velocity to the gearing. This allows a simple synchronisation of two axes. The difference velocity is given to |IN2TRIG|. The scaling is in 32Bit per revolution every 250μs. The difference velocity (n) must be known, then the |IN2TRIG| can be calculated: IN2TRIG = n [rpm]*2^32/(4000*60) example: n = 500 [U/min] INxTRIG = 500 * 2^32 / (4000*60) = 8947848
IN2MODE=37		reserved
IN2MODE=38	Enable signal for following motion task	Definition of a motion task with following motion tasks. If INxMODE=15 is used (start of an following motion task via I/O), IN1MODE=38 can be used, to have an additional enable for the start of the following motion tasks. Means, that the following motion task is started, if once a rising edge on digital input 1 was detected and then the INxMODE=15 input is enabled to start the following motion task.
IN2MODE=39	Constant velocity for defined time	This function starts a constant velocity for a defined time. The parameters for velocity and time are given by |IN2TRIG|. The velocity is given by the lower 16 bit (scaling by |VUNIT|), bit 15 is the sign and defines the moving direction and the time by the upper 16 bit (given in msec) of the help variable |IN2TRIG|. A rising edge at INPUT1 changes the |OPMODE| to 0 (digital velocity) and gives the velocity that is given by |IN2TRIG|. After the defined time or a falling edge at INPUT1 is detected, the digital velocity setpoint is set to "0". After the actual velocity has reached "0" the |OPMODE| is automatically switched back to the old one. Example for defining the help variable |IN2TRIG| 1. Velocity = 1000 rpm time = 10 sec = 10000 msec |IN2TRIG| = 0x271003E8 = 655361000 2. Velocity = -500 rpm time = 10 msec |IN2TRIG| = 0x000afe0c = 720396
IN2MODE=40	Additional hardware input	The digital input works as an additional hardware input. Only if this input has a high signal, the power stage is enabled. This Function can be used by several inputs. In this case, the inputs are configured in series. All inputs have to be high to enable the power stage.

IN2MODE=41	Quick stop	If the input is going to low, the drive stops the motor using the |DECSTOP| ramp. If zero velocity is reached (|V|<|VEL0|), the power stage is disabled. While stopping the motor the bit 24 (0x01000000) in |TRJSTAT| is set. The input is read in the 250μs task.
IN2MODE=42	Activate/deactivate electronic gearing	Activate/deactivate electronic gearing in |OPMODE| = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by |ACCR| for the acceleration and |DECR| for deceleration time.
IN2MODE=43	Activate/deactivate electronic gearing with position latch	Activate/deactivate electronic gearing in |OPMODE| = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by |ACCR| for the acceleration and |DECR| for deceleration time In contrast to IN1MODE = 42, the master position is latched at the rising edge of the input and the position delay caused by the ramp is compensated. |IN2TRIG| gives the possibility to add an position offset (in |PGEARI| units) to the latched position.

ASCII -Command	IN2PM	
Syntax Transmit	IN2PM [Data]	
Syntax Receive	IN2PM <Data>	
Type	rw	
Format	Integer8	
DIM	-	
Range	0,1,2	
Default	0	
Opmode	All	
Drive Status	-	
Start Firmware	1.0	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	362E (hex)
PROFIBUS PNU:	1902 (dec) IND = 1 (de
DPR Objekt Nr:	302

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	

Description

The IN2PM command is used to configure the function of a digital output during a motion task (motion block) sequence.

The function "NextInPos" is available if an I/O expansion card is used (terminal X11B4) or a digital output of the drive is configured with the function OxMODE=16. At the start of the first motion block (motion task), the "NextInPos" output is always set to 0. The response of the output during the execution of the motion block sequence depends on the configuration variable IN2PM.

IN2PM=0 – the output is inverted at the start of the next block.
IN2PM=1– the output is set to 0 at the start of a motion block, and set to HIGH at the end of a motion block.
IN2PM=2 – the output is inverted at the end of a block.
With a sequence of motion blocks where the blocks are started immediately, only the IN2PM=0 or IN2PM=2 settings make sense. If the setting is IN2PM=1, the HIGH state is so short that it may not be registered at all by the external control system.

If a following task is started with the aid of an I/O (INxMODE=15), then the IN2PM=2 or IN2PM=1 setting should be used. With this setting, the end of a motion block is signaled by the HIGH state (IN2PM=1) or the change of state (IN2PM=2) at the "NextInPos" output. The external control system can then initialize the continuation of the motion task sequence via the "Start next task" input.
See also |IN1MODE| = 15

ASCII -Command	IN2TRIG
Syntax Transmit	IN2TRIG [Data]
Syntax Receive	IN2TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3566 (hex)
PROFIBUS PNU:	1702 (dec) IND = 1 (de
DPR Objekt Nr:	102

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Variable for IN2MODE

Description

Auxiliary trigger variable for |IN2MODE|. Certain settings of |IN2MODE| require you to specify an additional trigger level. See |IN2MODE| for further details.

ASCII -Command	IN3
Syntax Transmit	IN3
Syntax Receive	IN3 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3567 (hex)
PROFIBUS PNU:	1703 (dec) IND = 1 (de
DPR Objekt Nr:	103

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status of Digital Input 3

Description

The status of the digital input INPUT3.

ASCII -Command	IN3HCMD
Syntax Transmit	IN3HCMD [Data]
Syntax Receive	IN3HCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for high level

Description

The command IN3HCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a rising edge is detected at the input 3 that has been configured with the function |IN3MODE|=30,33
A command sequence consists of individual ASCII commands, separated by a semicolon (;)
The maximum length of this command sequence is 56 characters.

Example:
IN3HCMD |GV| 10; |GVTN| 15

If a LOW/HIGH edge is detected, the gain of the velocity control loop is set to 10 and the integral action time is set to 15 msec.

ASCII -Command	IN3LCMD
Syntax Transmit	IN3LCMD [Data]
Syntax Receive	IN3LCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	(hex)
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for low level

Description

The command IN3LCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a falling edge is detected at the input 3 that has been configured with the function |IN3MODE|=30,33 A command sequence consists of individual ASCII commands, separated by a semicolon (;) The maximum length of this command sequence is 56 characters.

Example:
IN3LCMD |GV| 5; |GVTN| 10

If a HIGH/LOW edge is detected, the gain of the velocity control loop is set to 5 and the integral action time is set to 10 msec.

ASCII -Command	IN3MODE
Syntax Transmit	IN3MODE [Data]
Syntax Receive	IN3MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	Digital I/O

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3000...3
CAN Object No:	3568 (hex)
PROFIBUS PNU:	1704 (dec) IND = 1 (de
DPR Objekt Nr:	104

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Input 3

Description

The IN3MODE command is used to configure the function of the digital input INPUT3. The amplifier must be switched off and then on again after an alteration of this parameter.
The following functions can be configured:

Zustand	Function	Description
IN3MODE=0	Off	The state of the input 1 is read and can be used via fieldbus or Slot card.
IN3MODE=1	Off	
IN3MODE=1	Reset	Software reset of the servo amplifier in the event of a fault. The high input signal is ignored, if the drive has no fault. All the functions and displays are set to the initial status. Parameters that are not stored in the EEPROM are erased, the parameter set that is stored in the EEPROM is loaded. If any of the error messages F01, F02, F03, F05, F08, F13, F16 or F19 (p.52) are present, then no software-reset will be carried out, just the error message will be deleted. This means that, for example, the encoder output signals are stable and can continue to be evaluated by the controls. When the input is high, while the auxillary 24V supply is switched on, the drive waits, before the input is set to low. This state is symbolised in the display. The first of the three display positions displays a "A".
IN3MODE=2	PSTOP	A low on the input disables the positive direction (clockwise if |DIR|=1, counterclockwise if |DIR|=0). At the same time, a warning "n10" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in |OPMODE|=0 (velocity control with setpoint zero) using the |DECSTOP| ramp. When the motor has stopped, the old |OPMODE| is activated.

IN3MODE=3	NSTOP (4.78)	A low on the input disables the negative direction (clockwise if |DIR|=0, counterclockwise if |DIR|=1). At the same time, a warning "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in |OPMODE|=0 (velocity control with setpoint zero) using the |DECSTOP| ramp. When the motor has stopped, the old |OPMODE| is activated.
IN3MODE=4	PSTOP+Intg.Off	A low on the input disables the positive direction (clockwise if |DIR|=1, counterclockwise if |DIR|=0). At the same time, a warning "n10" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in |OPMODE|=0 (velocity control with setpoint zero) using the |DECSTOP| ramp. When the motor has stopped, the old |OPMODE| is activated (without integral part in the velocity controller).
IN3MODE=5	NSTOP + Int. off	A low on the input disables the negative direction (counterclockwise if |DIR|=1, clockwise if |DIR|=0). At the same time, a warning "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in |OPMODE|=0 (velocity control with setpoint zero) using the |DECSTOP| ramp. When the motor has stopped, the old |OPMODE| is activated (without integral part in the velocity controller).
IN3MODE=6	PSTOP+NSTOP	A low on the input disables the positive and the negative direction. At the same time, a warning "n10" and "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in |OPMODE|=0 (velocity control with setpoint zero) using the |DECSTOP| ramp. When the motor has stopped, the old |OPMODE| is activated.
IN3MODE=7	P/Nstop+Intg.Off	A low on the input disables the positive and the negative direction. At the same time, a warning "n10" and "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in |OPMODE|=0 (velocity control with setpoint zero) using the |DECSTOP| ramp. When the motor has stopped, the old |OPMODE| is activated (without integral part in the velocity controller).
IN3MODE=8	selection Analog In 1 / 2	Switches over the setpoint inputs Analog In 1/2 at |ANCNFG| = 0. This function is only effective if the Analog In function = 0 Xcmd=Analog In 1 has been selected. High level at the input : Analog In 2 (terminals X3/6,7) is active Low level at the input : Analog In 1 (terminals X3/4,5) is active

IN3MODE=9	MT_No_Bit	Here you can select the motion tasks that are stored in the servo amplifier (numbers 1...7) or the reference traverse/homing (0). The motion task number is presented externally at the digital inputs as a logical word, with a width of max. 3 bits . An input is required to start the motion task (|INxMODE| =17, Start_MT IO). If you wire up a reference/homing switch (|INxMODE| =12, Reference) and (also) want to start a following task (|INxMODE| =15, Start_MT Next) externally, the number of inputs that are available for selecting the motion tasks will be further reduced.
IN3MODE=10	Intg.Off	Switch off the integral component of the velocity controller, the P-gain remains at the set value, the actual- (rotational) velocity feedback remains in operation.
IN3MODE=11	v/Torq.Contr.	Bypasses the velocity controller. The analog setpoint is taken 1:1 as the setpoint for current control, i.e. change over from velocity control to current (torque) control. High-level at the input : torque control Low-level at the input : velocity control Depending on |OPMODE|, it changes between |OPMODE|=0 (low) and |OPMODE|=2 (high) or |OPMODE|=1 (low) and |OPMODE|=3 (high).
IN3MODE=12	Reference	home/reference switch located on machine
IN3MODE=13	digital encoder/SSI	Changeover of the encoder-emulation (position output) on connector X5. High level at the input : SSI-compatible position signals (|ENCMODE| = 2) High level at the input : ROD-compatible position signals (|ENCMODE| = 1)
IN3MODE=14	FError_clear	Clear the warning of a contouring error (display n03) or the response monitoring (display n04).
IN3MODE=15	Start_MT Next	The following task, that is defined in the motion task by "Start with I/O" is started. The target position of the present motion task must be reached before the following task can be started. (see also |O_C| tablel 3)
IN3MODE=16	Start_MT No x	Start a motion task that is stored in the servo amplifier, by giving the motion task number. After the function has been selected you can enter the motion task number as the auxiliary variable |IN3TRIG|. Motion task number "0" (|IN3TRIG|=0) initiates homing/reference traverse. A rising edge starts the motion task, a falling edge cancels the motion task. Only |OPMODE| 4 or 8
IN3MODE=17	Start_MT IO	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A rising edge starts the motion task a falling edge cancels the motion task by a |STOP| - command

IN3MODE=18	Ipeak2 x	Switch over to a second (lower) peak value of current. Scaled as x (0...100) % of the peak current of the instrument. After the function has been selected you can enter the percentage value as the auxiliary variable |IN3TRIG|. Make the conversion according to the following equation: |IN3TRIG| given in % of |IPEAK|
IN3MODE=19	Off	
IN3MODE=20	Start_Jog v=x	Start of the setup mode "Constant velocity" with a defined speed. After selecting the function, you can enter the speed in |IN3TRIG|. A rising edge starts the motion, a falling edge cancels the motion. This function works in position control, so |OPMODE|=8 has to be selected. The speed is given in units of the position controller given by |VUNIT|, the sign selects the moving direction.
IN3MODE=21	U_Mon.off	Turns off the undervoltage monitoring function of the servo amplifier. High = off Low = on
IN3MODE=22	MT Restart	Continues the motion task that was previously interrupted by a |STOP| - command.
IN3MODE=23	Start2_MT No x	Start of a motion task that is stored in the servo amplifier, with definition of the motion task number. After selecting the function, you can enter the motion task number in |IN3TRIG| Motion task number "0" starts the homing run. A rising edge starts the motion task. Warning ! The motion task does not stop automatically if the start signal is removed ! The motion task must be stopped by — a falling edge on another digital input (configured with 16, FStart_Nr x) — the ASCII command |STOP| — the STOP function via Bus or digital input
IN3MODE=24	Switch over OPMODE	The two different |OPMODE|s, that can be selected for switching over via the digital input, are written in the |IN3TRIG| help variable of the this input. The lower byte consists the |OPMODE| that should be available when the input has a negative edge. The higher byte consists the |OPMODE| that should be available when the input has a positive edge. When the drive is switched on, the |OPMODE| is set automatically to the corresponding state of the input. The contents of the help variable must be in decimal !! e.g.: Input1=low |OPMODE|=4 Input1=high |OPMODE|=8 IN1MODE=24 (Activate Input) |IN3TRIG|=2052 (Decimal 0804h) 2052 (Dec) = 0804 (Hex)

IN3MODE=25	Zero_latch	Sets the digital encoder zero pulse offset. The current position, depending on the digital encoder resolution (|ENCOUT|) that is set, is calculated at the rising edge and stored as NI-Offset in |ENCZERO|. After that, an automatic |SAVE| is generated. This function is used to perform an automatic setting of the zero pulse in one turn of the motor..
IN3MODE=26		
IN3MODE=27	Emergency Stop	Low state on the input starts an emergency stop function, that is executed with the ramp |DECSTOP|. Independently of the selected |OPMODE|, in this phase, the drive stops in velocity control. When it has stopped, it switches over to the original mode.
IN3MODE=28	Starting Jogmode	ONLY |OPMODE| = 8 Firmware >= 0.73 A rising edge starts a jogmode with speed |VJOG|. A falling edge stopps the movement.
IN3MODE=29	Starting motion task / homing	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A rising edge is without effect..
IN3MODE=30	Command Buffer 1	A positive or negative edge on the input starts a command buffer. This command buffer contains separate ASCII objects, that are separated with semicolon (;). The command buffer for the positive edge is |INH3CMD|, the command buffer for the negative edge is |IN3LCMD|. The max. length of that buffers is 56 character for each. If a digital input is configured with INxMODE=30, this input will proceed in that way. When the drive is switched on, the Command buffer is set automatically started to the corresponding state of the input.
IN3MODE=32	Brake	Warning ! With suspended loads, this function will lead to slipping of the axes ! A rising edge at the input triggers the braking output of the servo amplifier. This function is only available while the amplifier is disabled.
IN3MODE=33	see 30	Different from the functionality 30, the resulting answers of the commands are not suppressed, but are send to the seriell communication channel RS232. This setting can't be used in combination with GUI software.
IN3MODE=35		.

IN3MODE=36	Give Offset to Gearing Function	Gearing mode |OPMODE| =4. A high signal on the digital input configured with this INxMODE adds a difference velocity to the gearing. This allows a simple synchronisation of two axes. The difference velocity is given to |IN3TRIG|. The scaling is in 32Bit per revolution every 250μs. The difference velocity (n) must be known, then the |IN3TRIG| can be calculated: IN3TRIG = n [rpm]*2^32/(4000*60) example: n = 500 [U/min] INxTRIG = 500 * 2^32 / (4000*60) = 8947848
IN3MODE=37		reserved
IN3MODE=38	Enable signal for following motion task	Definition of a motion task with following motion tasks. If INxMODE=15 is used (start of an following motion task via I/O), IN1MODE=38 can be used, to have an additional enable for the start of the following motion tasks. Means, that the following motion task is started, if once a rising edge on digital input 1 was detected and then the INxMODE=15 input is enabled to start the following motion task.

IN3MODE=39	Constant velocity for defined time	This function starts a constant velocity for a defined time. The parameters for velocity and time are given by |IN3TRIG|. The velocity is given by the lower 16 bit (scaling by |VUNIT|), bit 15 is the sign and defines the moving direction and the time by the upper 16 bit (given in msec) of the help variable |IN3TRIG|.
		A rising edge at INPUT1 changes the |OPMODE| to 0 (digital velocity)
		 and gives the velocity that is given by |IN3TRIG|. After the defined time or a falling edge at INPUT1 is detected, the digital velocity setpoint is set to "0". After the actual velocity has reached "0" the |OPMODE| is automatically switched back to the old one.
		
		Example for defining the help variable |IN3TRIG|
		1. Velocity = 1000 rpm
		    time = 10 sec = 10000 msec
		    |IN3TRIG| = 0x271003E8 = 655361000
		
		2. Velocity = -500 rpm
		    time = 10 msec
		    |IN3TRIG| = 0x000afe0c = 720396

IN3MODE=40	Additional hardware input	The digital input works as an additional hardware input. Only if this input has a high signal, the power stage is enabled. This Function can be used by several inputs. In this case, the inputs are configured in series. All inputs have to be high to enable the power stage.
IN3MODE=41	Quick stop	If the input is going to low, the drive stops the motor using the |DECSTOP| ramp. If zero velocity is reached (|V|<|VEL0|), the power stage is disabled. While stopping the motor the bit 24 (0x01000000) in |TRJSTAT| is set. The input is read in the 250μs task.

IN3MODE=42	Activate/deactivate electronic gearing	Activate/deactivate electronic gearing in |OPMODE| = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by |ACCR| for the acceleration and |DECR| for deceleration time.
IN3MODE=43	Activate/deactivate electronic gearing with position latch	Activate/deactivate electronic gearing in |OPMODE| = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by |ACCR| for the acceleration and |DECR| for deceleration time In contrast to IN1MODE = 42, the master position is latched at the rising edge of the input and the position delay caused by the ramp is compensated. |IN3TRIG| gives the possibility to add an position offset (in |PGEARI| units) to the latched position.

ASCII -Command	IN3TRIG
Syntax Transmit	IN3TRIG [Data]
Syntax Receive	IN3TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3569 (hex)
PROFIBUS PNU:	1705 (dec) IND = 1 (de
DPR Objekt Nr:	105

Configuration	☐
Function Group	Digital I/O

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Variable for IN3MODE

Description

Auxiliary trigger variable for |IN3MODE|. Certain settings of |IN3MODE| require you to specify an additional trigger level. See |IN3MODE| for further details.

ASCII -Command	IN4
Syntax Transmit	IN4
Syntax Receive	IN4 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	356A (hex)
PROFIBUS PNU:	1706 (dec) IND = 1 (de
DPR Objekt Nr:	106

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status of Digital Input 4.

Description

The status of the digital input INPUT4.

ASCII -Command	IN4HCMD		Available in	
Syntax Transmit	IN4HCMD [Data]		MMI ☐	CAN-Bus ☐
Syntax Receive	IN4HCMD <Data>		PROFIBUS ☐	Sercos ☐
Type	Variable rw			
Format	String		SERCOS IDN:	
DIM	-		CAN Object No:	no
Range	-		PROFIBUS PNU:	no
Default	-		DPR Objekt Nr:	
Opmode	All			
Drive Status	-			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	-
Function Group	-		Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for high level

Description

The command IN4HCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a rising edge is detected at the input 4 that has been configured with the function |IN4MODE|=30,33
A command sequence consists of individual ASCII commands, separated by a semicolon (;)
The maximum length of this command sequence is 56 characters.

Example:
IN4HCMD |GV| 10; |GVTN| 15

If a LOW/HIGH edge is detected, the gain of the velocity control loop is set to 10 and the integral action time is set to 15 msec.

ASCII -Command	IN4LCMD
Syntax Transmit	IN4LCMD [Data]
Syntax Receive	IN4LCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for low level

Description

The command IN4LCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a falling edge is detected at the input 4 that has been configured with the function |IN4MODE|=30,33 A command sequence consists of individual ASCII commands, separated by a semicolon (;) The maximum length of this command sequence is 56 characters.

Example:
IN4LCMD |GV| 5; |GVTN| 10

If a HIGH/LOW edge is detected, the gain of the velocity control loop is set to 5 and the integral action time is set to 10 msec.

ASCII -Command	IN4MODE
Syntax Transmit	IN4MODE [Data]
Syntax Receive	IN4MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	✔
Function Group	Digital I/O

Available in

MMI	✔	CAN-Bus	✔
PROFIBUS	✔	Sercos	✔

SERCOS IDN:	P 3000...3
CAN Object No:	356B (hex)
PROFIBUS PNU:	1707 (dec) IND = 1 (de
DPR Objekt Nr:	107

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Input 4

Description

The IN4MODE command is used to configure the function of the digital input INPUT4.
The amplifier must be switched off and then on again after an alteration of this parameter.
The following functions can be configured:

Zustand / State	Function	Description
IN4MODE=0	Off	The state of the input 1 is read and can be used via fieldbus or Slot card.
IN4MODE=1	Off	
IN4MODE=2	PSTOP (4.78)	A low on the input disables the positive direction (clockwise if |DIR|=1, counterclockwise if |DIR|=0). At the same time, a warning "n10" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in |OPMODE|=0 (velocity control with setpoint zero) using the |DECSTOP| ramp. When the motor has stopped, the old |OPMODE| is activated.
IN4MODE=3	NSTOP	A low on the input disables the negative direction (clockwise if |DIR|=0, counterclockwise if |DIR|=1). At the same time, a warning "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in |OPMODE|=0 (velocity control with setpoint zero) using the |DECSTOP| ramp. When the motor has stopped, the old |OPMODE| is activated.
IN4MODE=4	NSTOP + Int. off	A low on the input disables the negative direction (counterclockwise if |DIR|=1, clockwise if |DIR|=0). At the same time, a warning "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in |OPMODE|=0 (velocity control with setpoint zero) using the |DECSTOP| ramp. When the motor has stopped, the old |OPMODE| is activated (without integral part in the velocity controller).

IN4MODE=5	NSTOP+Intg.Off	A low on the input disables the negative direction (clockwise if |DIR|=0, counterclockwise if |DIR|=1). At the same time, a warning "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in |OPMODE|=0 (velocity control with setpoint zero) using the |DECSTOP| ramp. When the motor has stopped, the old |OPMODE| is activated (without integral part in the velocity controller).
IN4MODE=6	Off	
IN4MODE=7	Off	
IN4MODE=8	selection Analog In 1/ .2	Switches over the setpoint inputs Analog In 1/2 at |ANCNFG| = 0. This function is only effective if the analog set-point function 0,Xcmd=Analog In 1 has been selected. High level at the input : Analog In 2 (terminals X3/6,7) is active Low level at the input : Analog In 1 (terminals X3/4,5) is active
IN4MODE=9	MT_No_Bit	Here you can select the motion tasks that are stored in the servo amplifier (numbers 1...7) or the reference traverse/homing (0). The motion task number is presented externally at the digital inputs as a logical word, with a width of max. 3 bits . An input is required to start the motion task (|INxMODE| =17, Start_MT IO). If you wire up a reference/homing switch (|INxMODE| =12, Reference) and (also) want to start a following task (|INxMODE| =15, Start_MT Next) externally, the number of inputs that are available for selecting the motion tasks will be further reduced.
IN4MODE=10	Intg.Off	Switch off the integral component of the velocity controller, the P-gain remains at the set value, the actual- (rotational) velocity feedback remains in operation.
IN4MODE=11	v/Torq.Contr.	Bypasses the velocity controller. The analog setpoint is taken 1:1 as the setpoint for current control, i.e. change over from velocity control to current (torque) control. High-level at the input : torque control Low-level at the input : velocity control Depending on |OPMODE|, it changes between |OPMODE|=0 (low) and |OPMODE|=2 (high) or |OPMODE|=1 (low) and |OPMODE|=3 (high).
IN4MODE=12	Reference	home/reference switch located on machine
IN4MODE=13	digital encoder /SSI	Changeover of the encoder-emulation (position output) on connector X5. High level at the input : SSI-compatible position signals (|ENCMODE| = 2) High level at the input : ROD-compatible position signals (|ENCMODE| = 1)
IN4MODE=14	FError_clear	Clear the warning of a contouring error (display n03) or the response monitoring (display n04).
IN4MODE=15	Start_MT Next	The following task, that is defined in the motion task by "Start with I/O" is started. The target position of the present motion task must be reached before the following task can be started. (see also |O_C| table1 3)

IN4MODE=16	Start_MT No x	Start a motion task that is stored in the servo amplifier, by giving the motion task number. After the function has been selected you can enter the motion task number as the auxiliary variable |IN4TRIG|. Motion task number "0" (|IN4TRIG|=0) initiates homing/reference traverse. A rising edge starts the motion task, a falling edge cancels the motion task. Only |OPMODE| 4 or 8
IN4MODE=17	Start_MT IO	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A rising edge starts the motion task a falling edge cancels the motion task by a |STOP| - command
IN4MODE=18	Ipeak2 x	Switch over to a second (lower) peak value of current. Scaled as x (0...100) % of the peak current of the instrument. After the function has been selected you can enter the percentage value as the auxiliary variable |IN4TRIG|. Make the conversion according to the following equation: |IN4TRIG| given in % of |IPEAK|
IN4MODE=19	Off	
IN4MODE=20	Start_Jog v=x	Start of the setup mode "Constant velocity" with a defined speed. After selecting the function, you can enter the speed in |IN4TRIG|. A rising edge starts the motion, a falling edge cancels the motion. This function works in position control, so |OPMODE|=8 has to be selected. The speed is given in units of the position controller given by |VUNIT|, the sign selects the moving direction.
IN4MODE=21	U_Mon.off	Turns off the undervoltage monitoring function of the servo amplifier. High = off Low = on
IN4MODE=22	MT Restart	Continues the motion task that was previously interrupted by a |STOP| - command.
IN4MODE=23	Start2_MT No x	Start of a motion task that is stored in the servo amplifier, with definition of the motion task number. After selecting the function, you can enter the motion task number in |IN4TRIG| Motion task number "0" starts the homing run. A rising edge starts the motion task. Warning ! The motion task does not stop automatically if the start signal is removed ! The motion task must be stopped by — a falling edge on another digital input (configured with 16, FStart_Nr x) — the ASCII command |STOP| — the STOP function via Bus or digital input

IN4MODE=24	Switch over OPMODE	The two different |OPMODE|s, that can be selected for switching over via the digital input, are written in the |IN4TRIG| help variable of the this input. The lower byte consists the |OPMODE| that should be available when the input has a negative edge. The higher byte consists the |OPMODE| that should be available when the input has a positive edge. When the drive is switched on, the |OPMODE| is set automatically to the corresponding state of the input. The contents of the help variable must be in decimal !! e.g.: Input1=low |OPMODE|=4 Input1=high |OPMODE|=8 IN1MODE=24 (Activate Input) |IN4TRIG|=2052 (Decimal 0804h) 2052 (Dec) = 0804 (Hex)
IN4MODE=25	Zero_latch	Sets the digital encoder zero pulse offset. The current position, depending on the digital encoder resolution (|ENCOUT|) that is set, is calculated at the rising edge and stored as NI-Offset in |ENCZERO|. After that, an automatic |SAVE| is generated. This function is used to perform an automatic setting of the zero pulse in one turn of the motor..
IN4MODE=26		
IN4MODE=27	Emergency Stop	Low state on the input starts an emergency stop function, that is executed with the ramp |DECSTOP|. Independently of the selected |OPMODE|, in this phase, the drive stops in velocity control. When it has stopped, it switches over to the original mode.
IN4MODE=28	Starting Jogmode	ONLY |OPMODE| = 8 Firmware >= 0.73 A rising edge starts a jogmode with speed |VJOG|. A falling edge stopps the movement.
IN4MODE=29	Starting motion task / homing	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A rising edge is without effect..
IN4MODE=30	Command Buffer 1	A positive or negative edge on the input starts a command buffer. This command buffer contains separate ASCII objects, that are separated with semicolon (;). The command buffer for the positive edge is |INH4CMD|, the command buffer for the negative edge is |IN4LCMD|. The max. length of that buffers is 56 character for each. If a digital input is configured with INxMODE=30, this input will proceed in that way. When the drive is switched on, the Command buffer is set automatically started to the corresponding state of the input.

IN4MODE=33	see 30	Different from the functionality 30, the resulting answers of the commands are not suppressed, but are send to the seriell communication channel RS232.
		This setting can't be used in combination with GUI software.
IN4MODE=32	Brake	Warning ! With suspended loads, this function will lead to slipping of the axes !
		A rising edge at the input triggers the braking output of the servo amplifier. This function is only available while the amplifier is disabled.
IN4MODE=35		
IN4MODE=36	Give Offset to Gearing Function	Gearing mode |OPMODE| =4. A high signal on the digital input configured with this INxMODE adds a difference velocity to the gearing. This allows a simple synchronisation of two axes. The difference velocity is given to |IN4TRIG|. The scaling is in 32Bit per revolution every 250µs. The difference velocity (n) must be known, then the |IN4TRIG| can be calculated:
		IN4TRIG = n [rpm]*2^32/(4000*60) example: n = 500 [U/min] INxTRIG = 500 * 2^32 / (4000*60) = 8947848
IN4MODE=37		reserved
IN4MODE=38	Enable signal for following motion task	Definition of a motion task with following motion tasks. If INxMODE=15 is used (start of an following motion task via I/O), IN1MODE=38 can be used, to have an additional enable for the start of the following motion tasks. Means, that the following motion task is started, if once a rising edge on digital input 1 was detected and then the INxMODE=15 input is enabled to start the following motion task.
IN4MODE=39	Constant velocity for defined time	This function starts a constant velocity for a defined time. The parameters for velocity and time are given by |IN4TRIG|. The velocity is given by the lower 16 bit (scaling by |VUNIT|), bit 15 is the sign and defines the moving direction and the time by the upper 16 bit (given in msec) of the help variable |IN4TRIG|. A rising edge at INPUT1 changes the |OPMODE| to 0 (digital velocity) and gives the velocity that is given by |IN4TRIG|. After the defined time or a falling edge at INPUT1 is detected, the digital velocity setpoint is set to "0". After the actual velocity has reached "0" the |OPMODE| is automatically switched back to the old one.
		Example for defining the help variable |IN4TRIG| 1. Velocity = 1000 rpm time = 10 sec = 10000 msec |IN4TRIG| = 0x271003E8 = 655361000
		2. Velocity = -500 rpm time = 10 msec |IN4TRIG| = 0x000afe0c = 720396

IN4MODE=40	Additional hardware input	The digital input works as an additional hardware input. Only if this input has a high signal, the power stage is enabled. This Function can be used by several inputs. In this case, the inputs are configured in series. All inputs have to be high to enable the power stage.
IN4MODE=41	Quick stop	If the input is going to low, the drive stops the motor using the |DECSTOP| ramp. If zero velocity is reached ($\|V\|<\|VEL0\|$), the power stage is disabled. While stopping the motor the bit 24 (0x01000000) in |TRJSTAT| is set. The input is read in the 250µs task.
IN4MODE=42	Activate/deactivate electronic gearing	Activate/deactivate electronic gearing in |OPMODE| = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by |ACCR| for the acceleration and |DECR| for deceleration time.
IN4MODE=43	Activate/deactivate electronic gearing with position latch	Activate/deactivate electronic gearing in |OPMODE| = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by |ACCR| for the acceleration and |DECR| for deceleration time In contrast to IN1MODE = 42, the master position is latched at the rising edge of the input and the position delay caused by the ramp is compensated. |IN4TRIG| gives the possibility to add an position offset (in |PGEARI| units) to the latched position.

ASCII -Command	IN4TRIG		
Syntax Transmit	IN4TRIG [Data]		
Syntax Receive	IN4TRIG <Data>		
Type	Variable rw		
Format	Integer32		
DIM	-		
Range	long int		
Default	0		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	356C (hex)
PROFIBUS PNU:	1708 (dec) IND = 1 (de
DPR Objekt Nr:	108

Configuration	☐
Function Group	Digital I/O

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Variable for IN4MODE

Description

Auxiliary trigger variable for |IN4MODE|. Certain settings of |IN4MODE| require you to specify an additional trigger level. See |IN4MODE| for further details.

ASCII -Command	IN5
Syntax Transmit	IN20MODE [Data]
Syntax Receive	IN20MODE <Data>
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36F5 (hex)
PROFIBUS PNU:	1701 (dec) IND = 17 (d
DPR Objekt Nr:	501

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of digital input

Description

see |IN5_20|

ASCII -Command	IN5_20		
Syntax Transmit	IN5 ... IN20		
Syntax Receive	IN5 ... IN20		
Type	Variable ro		
Format	Integer8		
DIM	-		
Range	-		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3561 (hex)
PROFIBUS PNU:	1697 (dec) IND = 1 (de
DPR Objekt Nr:	97

Configuration	☐
Function Group	Digital I/O

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Status of digital inputs 5 ...20

Description

The status of the digital input INPUTx.   X = 5 ... 20

ASCII -Command	IN5_20MODE
Syntax Transmit	IN1MODE [Data]
Syntax Receive	IN1MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	✔
Function Group	Digital I/O

Available in

MMI	✔	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3562 (hex)
PROFIBUS PNU:	1698 (dec) IND = 1 (de
DPR Objekt Nr:	98

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of digital inputs 5 ...20

Description

The commands IN5MODE ... IN20MODE are used to set the mode of the digital inputs INPUT5 .... INPUT20.

4 digital inputs are given by the standard S300 hardware. 16 additional digital inputs can be controlled by the S300 firmware, so 20 digitalö inputs are availbale.

The digitalen I/O's are the 24V inputs (hardware) and the software I/O's (controlled by software : Fildbus, RS232, DPR-interface).

The possible combinations are:

S300 without I/O-extensioncard

1. hardware
input basic unit: 4 (IN1 - IN4)

2. software
virtual inputs: 16 (IN5 - IN20)

S300 with I/O-extensioncard

1. hardware
inputs basic unit: 4 (IN1 - IN4)
inputs extension card 14 (IN5 – IN18)

2. software
virtual inputs: 2 (IN19 - IN20)

All digital inputs can be set to several configurations.
The command INxMODE sets the used function. (x is the number of the used input).
In case Hilfswerte are necessary these parameters are set by command INxTRIG
(x = 5, 6, ...20)
see|IN5_20TRIG|

The input status can be monitored via command INx
(x = 5, 6, ...20)
see |IN5...20| .

Following settings are not possible:

INxMODE =

NSTOP/PSTOP-Function (INxMODE=2,3,4,5,6,7) only for x=3,4 .
Macro-Interrupt (INxMODE=19) only for x=2

Latch-Function (INxMODE=26,44,45,46) only for x=1,2
ASCII-Buffer (INxMODE=30,33) only for x=1...6

The PNU numbers are selected like

IN5MODE   PNU 1702 (dec) IND 17 (dec)
IN6MODE   PNU 1705 (dec) IND 17 (dec)
IN7MODE   PNU 1708 (dec) IND 17 (dec)
  :
  :
  :

IN20MODE   PNU 1747 (dec) IND 17 (dec)

ASCII -Command	IN5_20TRIG
Syntax Transmit	IN1TRIG [Data]
Syntax Receive	IN1TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3563 (hex)
PROFIBUS PNU:	1699 (dec) IND = 1 (de
DPR Objekt Nr:	99

Configuration	☐
Function Group	Digital I/O

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Variable for digital inputs 5 ...20

Description

Auxiliary trigger variable . Certain settings require you to specify an additional trigger level. See |IN5_20MODE| for further details.

ASCII -Command	IN5MODE		
Syntax Transmit			
Syntax Receive			
Type	Variable rw		
Format			
DIM			
Range			
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	✔		
Function Group			

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	✔

SERCOS IDN:	
CAN Object No:	36F6 (hex)
PROFIBUS PNU:	1702 (dec) IND = 17 (d
DPR Objekt Nr:	502

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN5TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36F7 (hex)
PROFIBUS PNU:	1703 (dec) IND = 17 (d
DPR Objekt Nr:	503

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN6		
Syntax Transmit			
Syntax Receive			
Type	Variable rw		
Format			
DIM			
Range			
Default			
Opmode			
Drive Status			
Start Firmware			

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36F8 (hex)
PROFIBUS PNU:	1704 (dec) IND = 17 (d
DPR Objekt Nr:	504

Configuration	☐
Function Group	

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of digital input

Description

see |IN5_20|

ASCII -Command	IN6MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	36F9 (hex)
PROFIBUS PNU:	1705 (dec) IND = 17 (d
DPR Objekt Nr:	505

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN6TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36FA (hex)
PROFIBUS PNU:	1706 (dec) IND = 17 (d
DPR Objekt Nr:	506

Last Change of this Object	1.2
EEPROM	

Data Type BUS/DPR	
Weighting 10^3	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN7
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36FB (hex)
PROFIBUS PNU:	1707 (dec) IND = 17 (d
DPR Objekt Nr:	507

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of digital input

Description

see |IN5_20|

ASCII -Command	IN7MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36FC (hex)
PROFIBUS PNU:	1708 (dec) IND = 17 (d
DPR Objekt Nr:	508

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN7TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36FD (hex)
PROFIBUS PNU:	1709 (dec) IND = 17 (d
DPR Objekt Nr:	509

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN8		
Syntax Transmit			
Syntax Receive			
Type	Variable rw		
Format			
DIM			
Range			
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐		
Function Group			

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36FE (hex)
PROFIBUS PNU:	1710 (dec) IND = 17 (d
DPR Objekt Nr:	510

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of digital input

Description

see |IN5_20|

ASCII -Command	IN8MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	36FF (hex)
PROFIBUS PNU:	1711 (dec) IND = 17 (d
DPR Objekt Nr:	511

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN8TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3700 (hex)
PROFIBUS PNU:	1712 (dec) IND = 17 (d
DPR Objekt Nr:	512

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	IN9
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Available in			
MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3701 (hex)
PROFIBUS PNU:	1713 (dec) IND = 17 (d
DPR Objekt Nr:	513

Configuration	☐
Function Group	

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Status of digital input

Description
see |IN5_20|

ASCII -Command	IN9MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3702 (hex)
PROFIBUS PNU:	1714 (dec) IND = 17 (d
DPR Objekt Nr:	514

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input

Description

see |IN5_20MODE|

ASCII -Command	IN9TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3703 (hex)
PROFIBUS PNU:	1715 (dec) IND = 17 (d
DPR Objekt Nr:	515

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input

Description

see |IN5_20TRIG|

ASCII -Command	INPOS		
Syntax Transmit	INPOS		
Syntax Receive	INPOS <Data>		
Type	Variable ro		
Format	Integer8		
DIM	-		
Range	-		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	356D (hex)
PROFIBUS PNU:	1709 (dec) IND = 1 (de
DPR Objekt Nr:	109

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Status of In-Position Signal

Description

The INPOS command returns the status of the IN-Position bit of the status register (|DRVSTAT|).
As long as the difference between the last target position (motion task) and the actual position (|PFB|) is within the width of the preset In-Position window (|PEINPOS|), a 1 is signalled, otherwise a 0.

see also |INPT0|

ASCII -Command	INPT0
Syntax Transmit	INPT [Data]
Syntax Receive	INPT <Data>
Type	Variable rw
Format	Integer16
DIM	Milliseconds
Range	1 .. 32000
Default	10
Opmode	8
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3630 (hex)
PROFIBUS PNU:	1904 (dec) IND = 1 (de
DPR Objekt Nr:	304

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	Yes

Short Description	In-Position Delay

Description

The INPT0 command defines a delay time for the In-Position signal. At the start of a motion block, the In-Position signal is removed, and the monitoring of the In-Position window is only activated again after the end of this preset time. This function is especially important for positioning tasks within the In-Position window. In such a case, it ensures that the In-Position signal is always removed for a definite time.

See also |INPOS|

ASCII -Command	INPT1
Syntax Transmit	INPT1 [Data]
Syntax Receive	INPT1 <Data>
Type	rw
Format	Integer32
DIM	-
Range	0 ... 32000
Default	0
Opmode	4 ... 8
Drive Status	-
Start Firmware	1.0
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3521 (hex)
PROFIBUS PNU:	1633 (dec) IND = 1 (de
DPR Objekt Nr:	33

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description

Description

The command INPT1 defines the delay time for the "IN POSITION" and "REFERENCE POINT SET" messages.

ASCII -Command	INS0
Syntax Transmit	INS0
Syntax Receive	INS0 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36BE (hex)
PROFIBUS PNU:	2046 (dec) IND = 1 (de
DPR Objekt Nr:	446

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A0 of the I/O Option Card

Description

INS0 is used to read input A0 (terminal 1) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS1	Available in	
Syntax Transmit	INS1	MMI ☐ CAN-Bus ☑	
Syntax Receive	INS1 <Data>	PROFIBUS ☑ Sercos ☐	
Type	Variable ro		
Format	Integer8		
DIM	-	SERCOS IDN:	
Range	0, 1	CAN Object No:	36BF (hex)
Default	-	PROFIBUS PNU:	1647 (dec) IND = 17 (d
Opmode	All	DPR Objekt Nr:	447
Drive Status	-		
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	Integer8
Function Group		Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A1 of the I/O Option Card

Description

INS1 is used to read input A1 (terminal 2 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS2
Syntax Transmit	INS2
Syntax Receive	INS2 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36C0 (hex)
PROFIBUS PNU:	1648 (dec) IND = 17 (d
DPR Objekt Nr:	448

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A2 of the I/O Option Card

Description

INS2 is used to read input A2 (terminal 3 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS3
Syntax Transmit	INS3
Syntax Receive	INS3 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration ☐

Function Group

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36C1 (hex)
PROFIBUS PNU:	1649 (dec) IND = 17 (d
DPR Objekt Nr:	449

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A3 of the I/O Option Card

Description

INS3 is used to read input A3 (terminal 4 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS4	
Syntax Transmit	INS4	
Syntax Receive	INS4 <Data>	
Type	Variable ro	
Format	Integer8	
DIM	-	
Range	0, 1	
Default	-	
Opmode	All	
Drive Status	-	
Start Firmware	1.0	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36C2 (hex)
PROFIBUS PNU:	1650 (dec) IND = 17 (d
DPR Objekt Nr:	450

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A4 of the I/O Option Card

Description

INS4 is used to read input A4 (terminal 5 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS5		
Syntax Transmit	INS5		
Syntax Receive	INS5 <Data>		
Type	Variable ro		
Format	Integer8		
DIM	-		
Range	0, 1		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36C3 (hex)
PROFIBUS PNU:	1651 (dec) IND = 17 (d
DPR Objekt Nr:	451

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A5 of the I/O Option Card

Description

INS5 is used to read input A5 (terminal 6 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS6
Syntax Transmit	INS6
Syntax Receive	INS6 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36C4 (hex)
PROFIBUS PNU:	1652 (dec) IND = 17 (d
DPR Objekt Nr:	452

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A6 of the I/O Option Card

Description

INS6 is used to read input A6 (terminal 7 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS7
Syntax Transmit	INS7
Syntax Receive	INS7 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36C5 (hex)
PROFIBUS PNU:	1653 (dec) IND = 17 (d
DPR Objekt Nr:	453

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A7 of the I/O Option Card

Description

INS7 is used to read input A7 (terminal 8 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS8
Syntax Transmit	INS8
Syntax Receive	INS8 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36C6 (hex)
PROFIBUS PNU:	1654 (dec) IND = 17 (d
DPR Objekt Nr:	454

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of FSTART_IO of the I/O Option Card

Description

INS8 is used to read input FSTART_IO (terminal 2 of X11B) at the I/O option card. This input is normally used to start a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	IPEAK
Syntax Transmit	IPEAK [Data]
Syntax Receive	IPEAK <Data>
Type	Variable rw
Format	Float
DIM	Amperes
Range	0.0 ... DIPEAK
Default	IMAX
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	92
CAN Object No:	356E (hex)
PROFIBUS PNU:	1710 (dec) IND = 1 (de
DPR Objekt Nr:	110

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Application Peak Current

Description

IPEAK sets the peak rated current |IPEAKP| and |IPEAKN|of the application (RMS value). The value to be entered is limited to the lower of the peak rated current of the motor (||MIPEAK|) or amplifier (|DIPEAK|). If the IPEAK value is too low, the drive shows following errors and the peak torque is too low. If the IPEAK value is too high, the motor is endangered.

ASCII -Command	IPEAKN
Syntax Transmit	IPEAKN [Data]
Syntax Receive	IPEAKN <Data>
Type	Variable rw
Format	Float
DIM	A rms
Range	0.0 ... DIPEAK
Default	IMAX
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	356F (hex)
PROFIBUS PNU:	1711 (dec) IND = 1 (de
DPR Objekt Nr:	111

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	negative motor peak rms current

Description

Negative motor peak rms current. Can be reduced to |DICONT| or |MICONT| in I2T fallback condition

ASCII -Command	IPEAKP
Syntax Transmit	IPEAKP [Data]
Syntax Receive	IPEAKP <Data>
Type	rw
Format	Float
DIM	A rms
Range	0 ... DIPEAK
Default	IMAX
Opmode	All
Drive Status	+
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3594 (hex)
PROFIBUS PNU:	1748 (dec) IND = 1 (de
DPR Objekt Nr:	148

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	positive motor peak rms current

Description

Positive motor peak rms current. Can be reduced to |DICONT| or |MICONT| in I2T fallback condition

			Available in		
ASCII -Command	IQ				
Syntax Transmit	IQ		MMI	☑	CAN-Bus ☑
Syntax Receive	IQ <Data>		PROFIBUS	☑	Sercos ☐
Type	Variable ro				
Format	Float		SERCOS IDN:		
DIM	Amperes		CAN Object No:	3570 (hex)	
Range	-		PROFIBUS PNU:	1712 (dec) IND = 1 (de	
Default	-		DPR Objekt Nr:	112	
Opmode	All				
Drive Status	-				
Start Firmware	1.0				
Configuration	☐		Data Type BUS/DPR	Integer32	
Function Group	Actual values		Weighting 10^3	*	

Last Change of this Object	1.0
EEPROM	No

Short Description	Q-Component of Current Monitor

Description

The Q-axes component of the actual current value.

ASCII -Command	ISCALE1
Syntax Transmit	ISCALE1 [Data]
Syntax Receive	ISCALE1 <Data>
Type	Variable rw
Format	Float
DIM	A/10Volts
Range	0 ... 30
Default	15
Opmode	3
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3571 (hex)
PROFIBUS PNU:	1713 (dec) IND = 1 (de
DPR Objekt Nr:	113

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Scaling of Analog Current Setpoint 1

Description

Defines the scaling for the analog setpoint input 1 (if it is a current setpoint in |OPMODE| = 3). The current value that is set here corresponds to the maximum input voltage (10V).

			Available in	
ASCII -Command	ISCALE2			
Syntax Transmit	ISCALE2 [Data]		MMI ☑	CAN-Bus ☑
Syntax Receive	ISCALE2 <Data>		PROFIBUS ☑	Sercos ☐
Type	Variable rw			
Format	Float		SERCOS IDN:	
DIM	A/10Volts		CAN Object No:	3572 (hex)
Range	0 ... 30		PROFIBUS PNU:	1714 (dec) IND = 1 (de
Default	15		DPR Objekt Nr:	114
Opmode	3			
Drive Status	-			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	Integer32
Function Group	Analog I/O		Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Scaling of Analog Current Setpoint 2

Description

Defines the scaling for the analog setpoint input 2 (if it is a current setpoint in |OPMODE| = 3). The current value that is set here corresponds to the maximum input voltage (10V).

ASCII -Command	ISTFR
Syntax Transmit	ISTFR [Data]
Syntax Receive	ISTFR <Data>
Type	rw
Format	Float
DIM	A
Range	0 ... DIPEAK
Default	0
Opmode	0, 1, 4...8
Drive Status	Disable
Start Firmware	1.30
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36A4 (hex)
PROFIBUS PNU:	2020 (dec) IND = 1 (de
DPR Objekt Nr:	420

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.1
EEPROM	Yes

Short Description	Current Limit for velocity-dependent friction compensation

Description

The two parameters ISTFR and |VSTFR| define the friction compensation curve. If ISTFR is set to 0 the function is inactive. The friction compensation changes the additional current from -ISTFR to ISTFR if the velocity changes from -VSTFR to VSTFR. The current is added before the velocity filter, so the filter applies also to the friction compensation.

It is a configuration parameter if it is changed from "0" to another value, other changes can be done online.

|V|=0 -> IFRICT = 0
V= 50% of VSTFR -> IFRICT = 50% of ISTFR
V>=VSTFR -> IFRICT = ISTFR
V= -50% of VSTFR -> IFRICT = -50% of ISTFR
V<=-VSTFR -> IFRICT = -ISTFR

ASCII -Command	J
Syntax Transmit	J [Data]
Syntax Receive	J <Data>
Type	Command
Format	Float
DIM	rpm (velocity) / Milliseconds (Time)
Range	-15000.0 .. 15000.0 (=velocity),long int (Time)
Default	-
Opmode	0
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	Oscilloscope/Service

Available in

MMI	☑	CAN-Bus	☐
PROFIBUS	☐	Sercos	☑

SERCOS IDN:	36
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Service Function: Constant Velocity

Description

The command "J <n> <t>" can be used to define a constant velocity <n> (in rpm) for a defined time <t> (in msec). If the <t> entry is missing, the drive runs continuously.

ASCII -Command	K
Syntax Transmit	K
Syntax Receive	K
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3573 (hex)
PROFIBUS PNU:	1715 (dec) IND = 1 (de
DPR Objekt Nr:	115

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Kill (=Disable)

Description

The K (Kill) command is a short form command of the "|DIS|" command.

ASCII -Command	KC
Syntax Transmit	KC [Data]
Syntax Receive	KC <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.0 .. 1.0
Default	1.0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3574 (hex)
PROFIBUS PNU:	1716 (dec) IND = 1 (de
DPR Objekt Nr:	116

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	I-Controller Prediction Constant

Description

KC is a tuning variable of the current loop. For compensation of time delay a predicted current value can be used in addition to the measured motor current. KC 1 switches the current prediction on, KC 0.5 sets it to 50% and KC 0 switches it off. Disabling the current prediction can cause an unstable current loop.

Depending to function |FILTMODE| KC selects different algorithms . By setting |FILTMODE|=1 (Default) the usually prädiktion is used, with setting |FILTMODE| =2 the Smith Predictor is switched on. If the Smith Predictors is on the proportional gain of the current controller |MLGQ| can increase, in case the settings |ML| and |MRS| are tuned well .

ASCII -Command	KC_X		Available in	
Syntax Transmit	KC [Data]		MMI ☑	CAN-Bus ☑
Syntax Receive	KC <Data>		PROFIBUS ☑	Sercos ☐
Type	Variable rw			
Format	Float		SERCOS IDN:	
DIM	-		CAN Object No:	3764 (hex)
Range	0.0 .. 1.0		PROFIBUS PNU:	1812 (dec) IND = 17 (d
Default	1.0		DPR Objekt Nr:	612
Opmode	All			
Drive Status	-			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	Integer32
Function Group	Current		Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	I-Controller Prediction Constant 2

Description
see |PARCNFG|

ASCII -Command	KEYLOCK	Available in	
Syntax Transmit	KEYLOCK [Data]	MMI ☑	CAN-Bus ☑
Syntax Receive	KEYLOCK <Data>	PROFIBUS ☑	Sercos ☐
Type	Variable rw		
Format	Integer8		
DIM	-	SERCOS IDN:	
Range	0, 1, 2	CAN Object No:	3575 (hex)
Default	0	PROFIBUS PNU:	1717 (dec) IND = 1 (de
Opmode	All	DPR Objekt Nr:	117
Drive Status	-		
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	Integer8
Function Group	-	Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Locks the push buttons

Description

If KEYLOCK=1, operation of the amplifier from the keys on the front panel is inhibited.
The display functions of the instrument (error messages, warnings) remain active.

ASCII -Command	KTN
Syntax Transmit	KTN [Data]
Syntax Receive	KTN <Data>
Type	Variable rw
Format	Float
DIM	Milliseconds
Range	0.2 ... 2
Default	0.6
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	107 + 120
CAN Object No:	362F (hex)
PROFIBUS PNU:	1903 (dec) IND = 1 (de
DPR Objekt Nr:	303

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Current Controller Integral-Action Time

Description

The integral-action time (integration time constant) of the current control loop.

ASCII -Command	KTN_X
Syntax Transmit	KTN [Data]
Syntax Receive	KTN <Data>
Type	Variable rw
Format	Float
DIM	Milliseconds
Range	0.2 ... 2
Default	0.6
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	107 + 120
CAN Object No:	3765 (hex)
PROFIBUS PNU:	1813 (dec) IND = 17 (d
DPR Objekt Nr:	613

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Current Controller Integral-Action Time 2

Description

see |PARCNFG|

ASCII -Command	LASTWMASK
Syntax Transmit	LASTWMASK
Syntax Receive	LASTWMASK <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	long int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36CE (hex)
PROFIBUS PNU:	1662 (dec) IND = 17 (d
DPR Objekt Nr:	462

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Fault history of WMASK

Description

|WMASK| gives the possibility to create a mask to change warnings to errors. If the F24 occurs, LASTWMASK displays the warnings that caused the error.

ASCII -Command	LATCH1N16
Syntax Transmit	LATCH16N
Syntax Receive	LATCH16N <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.03

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3680 (hex)
PROFIBUS PNU:	1984 (dec) IND = 1 (de
DPR Objekt Nr:	384

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Latched 16-bit Position (negative edge)

Description

The LATCH1N16 command returns the position where latching was performed by the last negative (falling) edge on digital input 1 (|IN1MODE|=26). The position value is absolute within one turn, and is given out in the internal units (counts 0 ... 65535). In order to get the absolute 32-bit position in SI units (taking account of the position control loop resolution |PGEARI|/|PGEARO|), the command |LATCH1N32| should be used.

The commands LATCH1N16 and |LATCH1N32| have the effect of erasing the status bit 23 "negative latch made" in the status register |TRJSTAT|.

ASCII -Command	LATCH1N32		
Syntax Transmit	LATCH1N32		
Syntax Receive	LATCH1N32 <Data>		
Type	Variable rw		
Format	Integer32		
DIM	-		
Range	-		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		
Configuration	☐		
Function Group	-		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	131
CAN Object No:	357D (hex)
PROFIBUS PNU:	1725 (dec) IND = 1 (de
DPR Objekt Nr:	125

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Latched 32-bit Position (negative edge)

Description

The LATCH1N32 command returns the position where latching was performed by the last negative (falling) edge on digital input 1 (|IN1MODE|=26). The position value is absolute within 4096 turns, and is given out in microns (taking account of the position control loop resolution |PGEARI|/|PGEARO|). To obtain an absolute position within one turn, the |LATCH1N16| command should be used.

The commands |LATCH1N16| and LATCH1N32 have the effect of erasing the status bit 23 "negative latch made" in the status register |TRJSTAT|.

ASCII -Command	LATCH1P16
Syntax Transmit	LATCH1P16
Syntax Receive	LATCH1P16 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	367F (hex)
PROFIBUS PNU:	1983 (dec) IND = 1 (de
DPR Objekt Nr:	383

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Latched 16-bit Position (positive edge)

Description

The LATCH1P16 command returns the position where latching was performed by the last positive (rising) edge on digital input 1 (|IN1MODE|=26). The position value is absolute within one turn, and is given out in the internal units (counts 0 ... 65535). In order to get the absolute 32-bit position in SI units (taking account of the position control loop resolution |PGEARI|/|PGEARO|), the command |LATCH1P32| should be used.

The commands LATCH1P16 and |LATCH1P32| have the effect of erasing the status bit 20 "positive latch made" in the status register |DRVSTAT|.

ASCII -Command	LATCH1P32
Syntax Transmit	LATCH1P32
Syntax Receive	LATCH1P32 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	130
CAN Object No:	357C (hex)
PROFIBUS PNU:	1724 (dec) IND = 1 (de
DPR Objekt Nr:	124

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Latched 32-bit Position (positive edge)

Description

The LATCH1P32 command returns the position where latching was performed by the last positive (rising) edge on digital input 1 (|IN1MODE|=26). The position value is absolute within 4096 turns, and is given out in microns (taking account of the position control loop resolution |PGEARI|/|PGEARO|). To obtain an absolute position within one turn, the |LATCH1P16| command should be used.

The commands |LATCH1P16| and LATCH1P32 have the effect of erasing the status bit 20 "positive latch made" in the status register |DRVSTAT|.

ASCII -Command	LATCH2N16
Syntax Transmit	LATCH2N16
Syntax Receive	LATCH2N16 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3579 (hex)
PROFIBUS PNU:	1721 (dec) IND = 1 (de
DPR Objekt Nr:	121

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Latched 16-bit Position (negative edge)

Description

The LATCH2N16 command returns the position where latching was performed by the last negative (falling) edge on digital input 2 (|IN2MODE|=26). The position value is absolute within one turn, and is given out in the internal units (counts 0 ... 65535). In order to get the absolute 32-bit position in SI units (taking account of the position control loop resolution |PGEARI|/|PGEARO|), the command LATCH2N32 should be used.

The commands LATCH2N16 and |LATCH2N32| have the effect of erasing the status bit 23 "negative latch made" in the status register |TRJSTAT|.

ASCII -Command	LATCH2N32	Available in	
Syntax Transmit	LATCH2N32	MMI ☐	CAN-Bus ☑
Syntax Receive	LATCH2N32 <Data>	PROFIBUS ☑	Sercos ☑
Type	Variable rw		
Format	Integer32		
DIM	-	SERCOS IDN:	133
Range	-	CAN Object No:	357B (hex)
Default	-	PROFIBUS PNU:	1723 (dec) IND = 1 (de
Opmode	All	DPR Objekt Nr:	123
Drive Status	-		
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	Integer32
Function Group	-	Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Latched 32-bit Position (negative edge)

Description

The LATCH2N32 command returns the position where latching was performed by the last negative (falling) edge on digital input 2 (|IN2MODE|=26). The position value is absolute within 4096 turns, and is given out in microns (taking account of the position control loop resolution |PGEARI|/|PGEARO|). To obtain an absolute position within one turn, the |LATCH2N16| command should be used.

The commands |LATCH2N16| and LATCH2N32 have the effect of erasing the status bit 23 "negative latch made" in the status register |TRJSTAT|.

ASCII -Command	LATCH2P16
Syntax Transmit	LATCH2P16
Syntax Receive	LATCH2P16 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3578 (hex)
PROFIBUS PNU:	1720 (dec) IND = 1 (de
DPR Objekt Nr:	120

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Latched 16-bit Position (positive edge)

Description

The LATCH2P16 command returns the position where latching was performed by the last positive (rising) edge on digital input 2 (|IN2MODE|=26). The position value is absolute within one turn, and is given out in the internal units (counts 0 ... 65535). In order to get the absolute 32-bit position in SI units (taking account of the position control loop resolution |PGEARI|/|PGEARO|), the command |LATCH2P32| should be used.

The commands LATCH2P16 and |LATCH2P32| have the effect of erasing the status bit 20 "positive latch made" in the status register |DRVSTAT|.

ASCII -Command	LATCH2P32
Syntax Transmit	LATCH2P32
Syntax Receive	LATCH2P32 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	132
CAN Object No:	357A (hex)
PROFIBUS PNU:	1722 (dec) IND = 1 (de
DPR Objekt Nr:	122

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Latched 32-bit Position (positive edge)

Description

The LATCH2P32 command returns the position where latching was performed by the last positive (rising) edge on digital input 2 (|IN2MODE|=26). The position value is absolute within 4096 turns, and is given out in microns (taking account of the position control loop resolution |PGEARI|/|PGEARO|). To obtain an absolute position within one turn, the |LATCH2P16| command should be used.

The commands |LATCH2P16| and LATCH2P32 have the effect of erasing the status bit 20 "positive latch made" in the status register |DRVSTAT|.

ASCII -Command	LDUMP
Syntax Transmit	LDUMP [data]
Syntax Receive	LDUMP <Data>
Type	Multi-line Return Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Parameter Output of Motor Data

Description

The command LDUMP <name> can be used to output the parameters for the motor data set <name> from the internal database.
The <name> that is entered must be a valid motor designation from the motor database (see |MDBLIST|). If the <name> parameter is not entered, the motor parameters that are loaded at present will be displayed.

ASCII -Command	LED1
Syntax Transmit	LED1 [Data]
Syntax Receive	LED1 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 ... 127
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	357E (hex)
PROFIBUS PNU:	1726 (dec) IND = 1 (de
DPR Objekt Nr:	126

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	State of Display 1 Segment

Description

IN PREPARATION !

The command LED1 returns the present status (7-segment code) of the segment in LED1 (left).

Bit-assignment for a 7-segment display:

Bit 0 (0x01, 1) segment A (top)
Bit 1 (0x02, 2) segment B (top right)
Bit 2 (0x04, 4) segment C (bottom right)
Bit 3 (0x08, 8) segment D (bottom)
Bit 4 (0x10, 16) segment E (bottom left)
Bit 5 (0x20, 32) segment F (top left)
Bit 6 (0x40, 64) segment G (center)

A write action LED1 <code> produces the defined code on the display.
This only makes sense if the internal display output has been switched off (LEDSTAT 0).
It is not possible to output a decimal point.

ASCII -Command	LED2
Syntax Transmit	LED2 [Data]
Syntax Receive	LED2 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 ... 127
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	357F (hex)
PROFIBUS PNU:	1727 (dec) IND = 1 (de
DPR Objekt Nr:	127

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	State of Display 2 Segment

Description

IN PREPARATION !

The command LED2 returns the present status (7-segment code) of the segment in LED2 (center).
Bit-assignment for a 7-segment display:

Bit 0 (0x01, 1) segment A (top)
Bit 1 (0x02, 2) segment B (top right)
Bit 2 (0x04, 4) segment C (bottom right)
Bit 3 (0x08, 8) segment D (bottom)
Bit 4 (0x10, 16) segment E (bottom left)
Bit 5 (0x20, 32) segment F (top left)
Bit 6 (0x40, 64) segment G (center)

A write action LED2 <code> produces the defined code on the display.
This only makes sense if the internal display output has been switched off (LEDSTAT 0).
It is not possible to output a decimal point.

ASCII -Command	LED3		Available in	
Syntax Transmit	LED3 [Data]		MMI	☑ CAN-Bus ☑
Syntax Receive	LED3 <Data>		PROFIBUS	☑ Sercos ☐
Type	Variable rw			
Format	Integer8		SERCOS IDN:	
DIM	-		CAN Object No:	3580 (hex)
Range	0 ...127		PROFIBUS PNU:	1728 (dec) IND = 1 (de
Default	0		DPR Objekt Nr:	128
Opmode	All			
Drive Status	-			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	Integer8
Function Group	-		Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	State of Display 3 Segment

Description

IN PREPARATION !

The command LED3 returns the present status (7-segment code) of the segment in LED2 (right).
Bit-assignment for a 7-segment display:

Bit 0 (0x01, 1) segment A (top)
Bit 1 (0x02, 2) segment B (top right)
Bit 2 (0x04, 4) segment C (bottom right)
Bit 3 (0x08, 8) segment D (bottom)
Bit 4 (0x10, 16) segment E (bottom left)
Bit 5 (0x20, 32) segment F (top left)
Bit 6 (0x40, 64) segment G (center)

A write action LED3 <code> produces the defined code on the display.
This only makes sense if the internal display output has been switched off (LEDSTAT 0).
It is not possible to output a decimal point.

ASCII -Command	LEDSTAT
Syntax Transmit	LEDSTAT [Data]
Syntax Receive	LEDSTAT <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 ... 16
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3581 (hex)
PROFIBUS PNU:	1729 (dec) IND = 1 (de
DPR Objekt Nr:	129

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Display page

Description

IN PREPARATION !

The variable LEDSTAT shows the number of the present "display page".
Altering the LEDSTAT variable makes it possible the change the display via the serial interface.
The assignments are as follows:
LEDSTAT=0 Display is switched off
LEDSTAT=1 Status display
LEDSTAT=2 Fieldbus address
LEDSTAT=3 CAN Baud rate
LEDSTAT=4 Parameter S01 (Kp velocity control loop)
LEDSTAT=5 Parameter S02 (Tn velocity control loop)
LEDSTAT=6 Parameter S03 (setpoint offset)
LEDSTAT=7 Parameter S04 (motor number)
LEDSTAT=8 Parameter S05 (encoder selection)
LEDSTAT=9 Parameter S06 (brake selection)
LEDSTAT=10 Parameter S07 (Multidrive selection, from software 3.00)
LEDSTAT=11 Load data from the EEPROM
LEDSTAT=12 Save data in the EEPROM
LEDSTAT=13 Set default values (from software 3.00)
LEDSTAT=14 New configuration of the amplifier (|M_RESET|, from software 3.00)
LEDSTAT=15 Error messages
LEDSTAT=16 Serial number

ASCII -Command	LIST		
Syntax Transmit	LIST		
Syntax Receive	LIST <Data>		
Type	Multi-line Return Command		
Format	String		
DIM	-		
Range	-		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3582 (hex)
PROFIBUS PNU:	1730 (dec) IND = 1 (de
DPR Objekt Nr:	130

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	List All ASCII Commands

Description

All those commands are listed which can be used for to the present motor/amplifier configuration. ASCII commands that require specific hardware (e.g. Hiperface/Endat, Profibus,Sercos) will only be displayed if the corresponding hardware has been recognized correctly.

			Available in			
ASCII -Command	LOAD		MMI	☑	CAN-Bus	☑
Syntax Transmit	LOAD		PROFIBUS	☑	Sercos	☐
Syntax Receive	LOAD					
Type	Command					
Format	-		SERCOS IDN:			
DIM	-		CAN Object No:	3583 (hex)		
Range	-		PROFIBUS PNU:	1731 (dec) IND = 1 (de		
Default	-		DPR Objekt Nr:	131		
Opmode	All					
Drive Status	-					
Start Firmware	1.0					
Configuration	☐		Data Type BUS/DPR	-		
Function Group	-		Weighting 10^3			

Last Change of this Object	1.0
EEPROM	No

Short Description	Load parameters from serial EEPROM

Description

The LOAD command loads the parameters from the serial EEPROM. All parameter changes that have been made since the last |SAVE| command (save in the serial EEPROM) will be lost.

ASCII -Command	M	Available in	
Syntax Transmit	M [Data]	MMI ☐	CAN-Bus ☐
Syntax Receive	M <Data>	PROFIBUS ☐	Sercos ☐
Type	Variable rw		
Format	String		
DIM	-	SERCOS IDN:	
Range	-	CAN Object No:	no
Default	-	PROFIBUS PNU:	no
Opmode	All	DPR Objekt Nr:	
Drive Status	-		
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	-
Function Group	-	Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Read/write Macro Variable

Description

The M command can be used to access any internal macro variable.

Macro variables are variables which can be used by the macro routines. They are called by name within a macro routine. The complete variable information (name, address) is managed in the form of a table. There are two types of macro variable.

1. System variables – these variables are determined by the firmware, and are fixed. Both the names and the addresses for such variables are constant within a given firmware version. The table with the data for the variables is within the programming area, so that the system variables can be accessed at any time.

2. User variables – these variables are set up in the macro routines during the initialization phase of the amplifier. The availability of a specific variable, or its physical address, depends on the amplifier configuration. The table with the information for the variables is set up in the RAM, and is normally only required during the compilation of the macro programs (initialization phase). After the initialization has been concluded, the table is removed from the memory. In this case, it is not possible to access the user variables through the M command.

If the parameter setting MSG=2 is found when the amplifier is switched on, then the table for the user variables is kept in the memory. In this case, it will also be possible to access the user variables through the M command.

The M command can be used in one of three forms:

1. "M" – a list of all the system and user variables is generated

2. "M name" – an information line is generated for the variable <name>, in the following form:

"name [TYPE] address FORMAT=value"

The individual elements are interpreted as follows:

name = name of the macro variable

TYPE = variable type (SYSTEM or USER)

address = physical address of the variable (hexadecimal format)

FORMAT = variable type (BYTE,WORD,LONG,STRING), the suffix FAST means that the variable is stored in the internal (fast) RAM

Value = variable contents (in hexadecimal format, or as ASCII string, depending on FORMAT)

3. "M name value" – the number "value" is entered in the variable "name"

The entry for "value" must be made as a decimal number. If the character sequence "0x" is added as a prefix, the number can be entered in hexadecimal format.

ASCII -Command	M_RESET
Syntax Transmit	M_RESET
Syntax Receive	M_RESET
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Disable
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35A9 (hex)
PROFIBUS PNU:	1769 (dec) IND = 1 (de
DPR Objekt Nr:	169

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Recompile Macro Programs

Description

All macro programs are compiled and started when the amplifier is switched on. The compilation of the macro programs is managed by configuration variables. The values for these configuration variables must be fixed before the compilation procedure is started. If the value of a configuration variable is altered at a later time, this change will only take effect with the next compilation of the macro programs. This means, that after changing a configuration variable, this change should first be stored in the EEPROM (see |SAVE| command) and the amplifier should then be switched off and on again.

The M_RESET command offers an alternative. This command is used to force a new compilation of the macro programs, without having to switch the amplifier off and on again. Since this function, unlike that performed during the initialization phase, is carried out while the interrupts are enabled, it takes longer to complete (about 5 min).

ASCII -Command	MAXTEMPE
Syntax Transmit	MAXTEMPE [Data]
Syntax Receive	MAXTEMPE <Data>
Type	Variable rw
Format	Integer16
DIM	Centigrade Degrees
Range	10 .. 80
Default	70
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	205
CAN Object No:	3584 (hex)
PROFIBUS PNU:	1732 (dec) IND = 1 (de
DPR Objekt Nr:	132

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Ambient Temperature Switch off Threshold

Description

The ambient temperature value for switching off the power stage and opening the BTB / RTO contact. If the drive temperature (as given by |TEMPE|) exceeds this value, the drive faults (F13).

ASCII -Command	MAXTEMPH
Syntax Transmit	MAXTEMPH [Data]
Syntax Receive	MAXTEMPH <Data>
Type	Variable rw
Format	Integer16
DIM	Centigrade Degrees
Range	20 ... 85
Default	70
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☐	Sercos	☑

SERCOS IDN:	203
CAN Object No:	3585 (hex)
PROFIBUS PNU:	
DPR Objekt Nr:	133

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Heat Sink Temperature Switch off Threshold

Description

The heat sink temperature for switching off. If the heat sink temperature (as given by |TEMPH|) exceeds this value, the drive faults.

ASCII -Command	MAXTEMPM
Syntax Transmit	MAXTEMPM [Data]
Syntax Receive	MAXMTEMP <Data>
Type	Variable rw
Format	Float
DIM	Ohm (KOhm)
Range	0.0 .. 6000.0
Default	300
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3586 (hex)
PROFIBUS PNU:	1734 (dec) IND = 1 (de
DPR Objekt Nr:	134

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Temperature Switch off Threshold

Description

The motor temperature for switching off (defined by the resistance in ohms).

ASCII -Command	MBRAKE
Syntax Transmit	MBRAKE [Data]
Syntax Receive	MBRAKE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 2
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	Motor

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3587 (hex)
PROFIBUS PNU:	1735 (dec) IND = 1 (de
DPR Objekt Nr:	135

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Select Motor Holding Brake

Description

MBRAKE enables the brake function for a 24V holding brake in the motor directly from the servo amplifier.

MBRAKE = 0 Brake function is disabled
MBRAKE = 1 Brake function is enabled. The output at the BRAKE terminal is 24V if the ENABLE signal is present (brake off) and 0V if the ENABLE signal is missing (brake activated).
MBRAKE = 2 If the wake&shake mode is activated (|FBTYPE| = 7 or 8) the holding brake is deactivated after the wake&shake mode .

ASCII -Command	MDBCNT
Syntax Transmit	MDBCNT
Syntax Receive	MDBCNT <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	1 .. 127
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3588 (hex)
PROFIBUS PNU:	1736 (dec) IND = 1 (de
DPR Objekt Nr:	136

Configuration	☐
Function Group	Motor

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Number of Motor Data Sets

Description

MDBCNT returns the number of motor data sets that can be loaded for the present combination of output stage + feedback. A change of the feedback setting |FBTYPE| is used, for instance, to ensure that only the data sets for resolver motors or EnDat motors are used.

ASCII -Command	MDBGET
Syntax Transmit	MDBGET
Syntax Receive	MDBGET \<Data\>
Type	Command
Format	String
DIM	-
Range	1 .. MDBCNT
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3589 (hex)
PROFIBUS PNU:	1737 (dec) IND = 1 (de
DPR Objekt Nr:	137

Configuration	☐
Function Group	Motor

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Get Actual Motor Data Set

Description

The MDBGET command generates an information line (directory entry) for the latest motor data set that was selected with the |MDBSET| command. The information line consists of the following elements:
data set number, motor name, motor number, motor family
The individual elements are interpreted as follows:
Data set number: the number for the data set within the motor database. This number can be used to address a motor data set with the |MDBSET| command. This number is increased automatically at every MDBGET call.
Motor name: a symbolic motor designation (max. length 12 characters).
Motor number: a number that can be used to uniquely identify a particular motor. This number is used to load a data set from the motor database with the |MNUMBER| command.
Motor family: an additional designation (for internal use only).

The group of commands |MDBCNT|,|MDBSET|,MDBGET can be used by an external control system, to read out the contents of the motor database. The procedure is as follows:
1. Read out the number of available data sets, using the |MDBCNT| command.
2. Set the data set pointer to the first data set, using the |MDBSET| 1 command.
3. Read out the first directory entry, using the MDBGET command.
4. Repeat step 3 until the number of available data sets (|MDBCNT|) has been read.

The |MDBLIST| command offers an alternative. This command can be used to display the complete list.

		Available in			
ASCII -Command	MDBLIST				
Syntax Transmit	MDBLIST [*]	MMI	☐	CAN-Bus	☐
Syntax Receive	MDBLIST <Data>	PROFIBUS	☐	Sercos	☐
Type	Multi-line Return Command				
Format	String				
DIM	-	SERCOS IDN:			
Range	-	CAN Object No:	no		
Default	-	PROFIBUS PNU:	no		
Opmode	All	DPR Objekt Nr:			
Drive Status	-				
Start Firmware	1.0				
Configuration	☐	Data Type BUS/DPR	-		
Function Group	-	Weighting 10^3			

Last Change of this Object	1.0
EEPROM	No

Short Description	List of Motor Data Sets

Description

The MDBLIST command returns the list of contents for the motor database (for the present combination of output stage + feedback). One motor database entry is displayed per line on the screen, in the following format:
motor name, motor number, motor family, amplifier designation

The individual elements are interpreted as follows:
Motor name: a symbolic motor designation (max. length 12 characters).
Motor number: a number that can be used to uniquely identify a particular motor. This number is used to load a data set from the motor database with the |MNUMBER| command.
Motor family: an additional designation (for internal use only).

If |PROMPT| 2 is set, a formatted output appears, which is especially suitable for terminal display.

The MDBLIST * command can be used to display the complete list of contents for the motor database. The difference to the output generated by MDBLIST is that the contents also include motor data sets that are not suitable for the present combination of output stage and feedback. These data sets will be displayed, but they cannot be loaded.
Compared with the MDBLIST output, the MDBLIST * output has been enlarged by the columns "Amplifier designation" and "Feedback". These designations can be used to find out for which output stage or |FBTYPE| setting this data set was created.
Amplifier designation 6xx, where xx = current rating
Feedback: 0=Resolver, 2=Hiperface, 4=Endat

ASCII -Command	MDBSET
Syntax Transmit	MDBSET [Data]
Syntax Receive	MDBSET <Data>
Type	Command
Format	Integer16
DIM	-
Range	1 .. MDBCNT
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	358A (hex)
PROFIBUS PNU:	1738 (dec) IND = 1 (de
DPR Objekt Nr:	138

Configuration	☐
Function Group	Motor

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Set Actual Motor Data Set

Description

The MDBSET command can be used to address a specific data set from the motor database. The subsequent |MDBGET| command provides the directory entry for the selected motor data set (see |MDBGET| description).

ASCII -Command	MH		
Syntax Transmit	MH		
Syntax Receive	MH		
Type	Command		
Format	-		
DIM	-		
Range	-		
Default	-		
Opmode	8		
Drive Status	Enabled		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	358D (hex)
PROFIBUS PNU:	1741 (dec) IND = 1 (de
DPR Objekt Nr:	141

Configuration	☐
Function Group	Setting-up Mode

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Start Homing

Description

The MH (move home) command is used to start a homing movement (reference traverse) via the serial interface. Homing type, direction and speed are taken from the |NREF|, |DREF| and |VREF| parameters.
See also |SETREF| especially for |OPMODE| 1...6.

ASCII -Command	MI2T
Syntax Transmit	MI2T [Data]
Syntax Receive	MI2T <Data>
Type	ro
Format	Integer8
DIM	%
Range	0 ... 100
Default	-
Opmode	All
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35A4 (hex)
PROFIBUS PNU:	1764 (dec) IND = 1 (de
DPR Objekt Nr:	164

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Motor I2T load

Description

This variable returns the average current as a percentage of the continuous current (see |MICONT|). The average current is filtered with the time constant |MTIME|.

ASCII -Command	MICONT
Syntax Transmit	MICONT [Data]
Syntax Receive	MICONT <Data>
Type	Variable rw
Format	Float
DIM	Amperes
Range	10% of DICONT, .. 2* DICONT
Default	DICONT
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	111 + 196
CAN Object No:	358E (hex)
PROFIBUS PNU:	1742 (dec) IND = 1 (de
DPR Objekt Nr:	142

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Continuous Current Rating

Description

This parameter limits the continues current of the amplifier, depending on the maximum continuous current rating of the motor.

ASCII -Command	MICONT_X
Syntax Transmit	MICONT [Data]
Syntax Receive	MICONT <Data>
Type	Variable rw
Format	Float
DIM	Amperes
Range	10% of DICONT, .. 2* DICONT
Default	DICONT
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	111 + 196
CAN Object No:	3770 (hex)
PROFIBUS PNU:	1824 (dec) IND = 17 (d
DPR Objekt Nr:	624

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Motor Continuous Current Rating

Description
see |PARCNFG|

ASCII -Command	MIMR
Syntax Transmit	MIMR [Data]
Syntax Receive	MIMR <Data>
Type	rw
Format	Float
DIM	A
Range	
Default	MICONT / 10
Opmode	All
Drive Status	-
Start Firmware	1.37

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	1963 (dec) IND = 1 (de
DPR Objekt Nr:	363

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.2
EEPROM	Yes

Short Description	current command D-part

Description

If a asynchron motor is used |MTYPE| = 3 a D-part for the current is sticked in.

ASCII -Command	MIPEAK
Syntax Transmit	MIPEAK [Data]
Syntax Receive	MIPEAK <Data>
Type	Variable rw
Format	Float
DIM	Amperes
Range	10% of DIPEAK, .. 2*DIPEAK
Default	DIPEAK
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	109
CAN Object No:	358F (hex)
PROFIBUS PNU:	1743 (dec) IND = 1 (de
DPR Objekt Nr:	143

Configuration	☐
Function Group	Motor

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Peak Current Rating

Description

MIPEAK limits the |IPEAK| setting of the amplifier, depending on the maximum peak current rating of the motor. The peak current should not exceed 4 times the rated current (|MICONT|) of the motor. The actual value is also determined by the peak current (|DIPEAK|) of the servo amplifier used (defines the maximum value for the entry of |IPEAK| in the current controller).

		Available in			
ASCII -Command	MIPEAK_X				
Syntax Transmit	MIPEAK [Data]	MMI	✔	CAN-Bus	✔
Syntax Receive	MIPEAK <Data>	PROFIBUS	✔	Sercos	✔
Type	Variable rw				
Format	Float	SERCOS IDN:	109		
DIM	Amperes	CAN Object No:	3771 (hex)		
Range	10% of DIPEAK, .. 2*DIPEAK	PROFIBUS PNU:	1825 (dec) IND = 17 (d		
Default	DIPEAK	DPR Objekt Nr:	625		
Opmode	All				
Drive Status	-				
Start Firmware	1.0				
Configuration	☐	Data Type BUS/DPR	Integer32		
Function Group	Motor	Weighting 10^3	*		

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Motor Peak Current Rating

Description
see |PARCNFG|

ASCII -Command	MJ
Syntax Transmit	MJ [Data]
Syntax Receive	MJ <Data>
Type	rw
Format	Float
DIM	kgcm^2
Range	0.01 ... 1000
Default	3
Opmode	All
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35AB (hex)
PROFIBUS PNU:	1771 (dec) IND = 1 (de
DPR Objekt Nr:	171

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor inertia

Description

Motor inertia

MJ is in kg in case of a linear motor.

ASCII -Command	MJ_X
Syntax Transmit	MJ [Data]
Syntax Receive	MJ <Data>
Type	rw
Format	Float
DIM	kgcm^2
Range	0.01 ... 1000
Default	3
Opmode	All
Drive Status	
Start Firmware	1.0

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	376B (hex)
PROFIBUS PNU:	1819 (dec) IND = 17 (d
DPR Objekt Nr:	619

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Motor inertia 2

Description

see |PARCNFG|

ASCII -Command	MJOG
Syntax Transmit	MJOG
Syntax Receive	MJOG
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	8
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	Setting-up Mode

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3591 (hex)
PROFIBUS PNU:	1745 (dec) IND = 1 (de
DPR Objekt Nr:	145

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Start Jog Mode

Description

MJOG starts the jog mode via the serial interface (OPMODE 8 only). The velocity in the jog mode is taken from |VJOG| (with ± sign). Jog mode is defined as a continuous motion at a constant velocity. This type of operation is started without a reference point being set (without homing). The hardware limit switches are monitored. Software limit switches are only monitored if a reference point is set (the drive has been homed). Acceleration and deceleration ramps are taken from the settings for homing (see |ACCR|, |DECR|, and |VJOG|).

ASCII -Command	MKT
Syntax Transmit	MKT [Data]
Syntax Receive	MKT <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.0 .. 10.0
Default	1.0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3593 (hex)
PROFIBUS PNU:	1747 (dec) IND = 1 (de
DPR Objekt Nr:	147

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor KT

Description

The torque constant of the motor in Nm/A.

This parameter is used for sensorless control. The value can be online checked according to the following equation:

$$Kt = 60 * SQRT (3) * Ui / (2 * PI * n)$$

Ui   induced voltage of the motor
n   actual rotor velocity

ASCII -Command	MKT_X
Syntax Transmit	MKT [Data]
Syntax Receive	MKT <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.0 .. 10.0
Default	1.0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	376E (hex)
PROFIBUS PNU:	1822 (dec) IND = 17 (d
DPR Objekt Nr:	622

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Motor KT

Description
see |PARCNFG|

ASCII -Command	ML		
Syntax Transmit	L [Data]		
Syntax Receive	L <Data>		
Type	Variable rw		
Format	Float		
DIM	mH		
Range	0 .. 100		
Default	1		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3577 (hex)
PROFIBUS PNU:	1719 (dec) IND = 1 (de
DPR Objekt Nr:	119

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Stator Inductance of the Motor

Description

The parameter describes the stator inductance between phase and phase in mH.

ASCII -Command	ML_X
Syntax Transmit	L [Data]
Syntax Receive	L <Data>
Type	Variable rw
Format	Float
DIM	mH
Range	0 .. 100
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	376D (hex)
PROFIBUS PNU:	1821 (dec) IND = 17 (d
DPR Objekt Nr:	621

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Stator Inductance of the Motor

Description

see |PARCNFG|

ASCII -Command	MLGC		
Syntax Transmit	MLGC [Data]		
Syntax Receive	MLGC <Data>		
Type	Variable rw		
Format	Float		
DIM	ratet to MLGQ		
Range	0.2 .. 1.0		
Default	0.7		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3595 (hex)
PROFIBUS PNU:	1749 (dec) IND = 1 (de
DPR Objekt Nr:	149

Configuration	☐
Function Group	Current

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Current Control loop Adaptive Gain (Q-component at rated current)

Description

The current control loop includes an adaptive alteration of the gain that depends on the current. The MLGC parameter defines the relative gain referred to |MLGQ| for continuous current.

MLGC = 0.8   means that the gain of the current control loop for continuous current is 80% of |MLGQ|. A linear interpolation is made for the gain from current = 0 up to current = |MICONT|.

ASCII -Command	MLGC_X
Syntax Transmit	MLGC [Data]
Syntax Receive	MLGC <Data>
Type	Variable rw
Format	Float
DIM	ratet to MLGQ
Range	0.2 .. 1.0
Default	0.7
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3767 (hex)
PROFIBUS PNU:	1815 (dec) IND = 17 (d
DPR Objekt Nr:	615

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Current Control loop Adaptive Gain (Q-component at rated current)

Description

see |PARCNFG|

ASCII -Command	MLGD		
Syntax Transmit	MLGD [Data]		
Syntax Receive	MLGD <Data>		
Type	Variable rw		
Format	Float		
DIM	ratet to MLGQ		
Range	0.4 .. 1.0		
Default	0.7		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	119
CAN Object No:	3596 (hex)
PROFIBUS PNU:	1750 (dec) IND = 1 (de
DPR Objekt Nr:	150

Configuration	☐
Function Group	Current

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Adaptive Gain for Current Control loop, D-component

Description

The D-component of the current control loop (field component). The MLGD parameter defines the relative gain referred to |MLGQ|.

MLGC = 0.6   means that the gain of the current control loop D-component is 60% of |MLGQ|.

ASCII -Command	MLGD_X
Syntax Transmit	MLGD [Data]
Syntax Receive	MLGD <Data>
Type	Variable rw
Format	Float
DIM	ratet to MLGQ
Range	0.4 .. 1.0
Default	0.7
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	119
CAN Object No:	3768 (hex)
PROFIBUS PNU:	1816 (dec) IND = 17 (d
DPR Objekt Nr:	616

Configuration	☐
Function Group	Current

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Adaptive Gain for Current Control loop, D-component

Description
see |PARCNFG|

ASCII -Command	MLGP
Syntax Transmit	MLGP [Data]
Syntax Receive	MLGP <Data>
Type	Variable rw
Format	Float
DIM	ratet to MLGQ
Range	0.1 .. 1.0
Default	0.4
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3597 (hex)
PROFIBUS PNU:	1751 (dec) IND = 1 (de
DPR Objekt Nr:	151

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Current Control loop Adaptive Gain (Q-component at peak current)

Description

The current control loop includes an adaptive alteration of the gain that depends on the current. The MLGP parameter defines the relative gain referred to |MLGQ| for peak current.

MLGP = 0.6   means that the gain of the current control loop for peak current is 60% of |MLGQ|. A linear interpolation is made for the gain from current = |MICONT| up to current = |MIPEAK|.

ASCII -Command	MLGP_X
Syntax Transmit	MLGP [Data]
Syntax Receive	MLGP <Data>
Type	Variable rw
Format	Float
DIM	ratet to MLGQ
Range	0.1 .. 1.0
Default	0.4
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3769 (hex)
PROFIBUS PNU:	1817 (dec) IND = 17 (d
DPR Objekt Nr:	617

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Current Control loop Adaptive Gain (Q-component at peak current)

Description

see |PARCNFG|

ASCII -Command	MLGQ		
Syntax Transmit	MLGQ [Data]		
Syntax Receive	MLGQ <Data>		
Type	Variable rw		
Format	Float		
DIM	-		
Range	3 .. 1800		
Default	60		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	106
CAN Object No:	3598 (hex)
PROFIBUS PNU:	1752 (dec) IND = 1 (de
DPR Objekt Nr:	152

Configuration	☐
Function Group	Current

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Absolute Gain of Current Control loop

Description

MLGQ gives the proportional (ac) gain of the current control loop. This also affects |MLGC|, |MLGP| and |MLGD| KTN.Compared with the SR 600 the dimension has changed to V/A.The calculation from a SR600 gain is depending of the drive rating:
MLGQ[SR300] = MLGQ[SR600] * 480 V / DIPEAK[in A].
Using the SR 601 DIPEAK is 3A: MLGQ[SR600] =1 -> MLGQ[SR300] = 1 * 480V / 3A = 160 V/A
Using the SR 603 DIPEAK is 6A: MLGQ[SR600] =1 -> MLGQ[SR300] = 1 * 480V / 6A = 80 V/A
Using the SR 606 DIPEAK is 13A: MLGQ[SR600] =1 -> MLGQ[SR300] = 1 * 480V / 12A = 40 V/A
Using the SR 610 DIPEAK is 20A: MLGQ[SR600] =1 -> MLGQ[SR300] = 1 * 480V / 20A = 24 V/A
Using the SR 610/30 / 614 / 620 DIPEAK is 40A: MLGQ[SR600] =1 -> MLGQ[SR300] = 1 * 480V / 40A = 12 V/A
Using the SR 640 DIPEAK is 80A: MLGQ[SR600] =1 -> MLGQ[SR300] = 1 * 480V / 80A = 6 V/A
Using the SR 670 DIPEAK is 160A: MLGQ[SR600] =1 -> MLGQ[SR300] = 1 * 480V / 160A = 3 V/A
Using the SR 403 DIPEAK is 9A: MLGQ[SR400] =1 -> MLGQ[SR300] = 1 * 480V / 9A = 53 V/A
Using the SR 406 DIPEAK is 12A: MLGQ[SR400] =1 -> MLGQ[SR300] = 1 * 480V / 12A = 40 V/A
An estimated value for MLGQ is 3000 * L[in H]Driving a 10 mH Motor MLGQ will be round 30 V/A

MLGQ = 3000 * L (L in H)

ASCII -Command	MLGQ_X		
Syntax Transmit	MLGQ [Data]		
Syntax Receive	MLGQ <Data>		
Type	Variable rw		
Format	Float		
DIM	-		
Range	3 .. 1800		
Default	60		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		
Configuration	☐		
Function Group	Current		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	106
CAN Object No:	376A (hex)
PROFIBUS PNU:	1818 (dec) IND = 17 (d
DPR Objekt Nr:	618

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Absolute Gain of Current Control loop

Description

see |PARCNFG|

ASCII -Command	MNAME
Syntax Transmit	MNAME [Data]
Syntax Receive	MNAME <Data>
Type	Variable rw
Format	String
DIM	-
Range	max 12 ASCII Characters
Default	Blanks
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in

MMI	☑	CAN-Bus	☐
PROFIBUS	☐	Sercos	☑

SERCOS IDN:	141
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Name

Description

The MNAME parameter is directly related to the motor number |MNUMBER|.
When a motor data set is loaded from the motor database (|MNUMBER| command), the motor designation MNAME is also transferred. If a customer-specific motor designation is to be defined, then this can be done with the MNAME command.
When the motor name is altered, the motor number (|MNUMBER|) is set to 0, to indicate a customer-specific motor data set.

ASCII -Command	MNUMBER
Syntax Transmit	MNUMBER [Data]
Syntax Receive	MNUMBER <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	int
Default	0
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3046
CAN Object No:	3599 (hex)
PROFIBUS PNU:	1753 (dec) IND = 1 (de
DPR Objekt Nr:	153

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Number

Description

The command "MNUMBER nr" is used to load a motor data set with the number "nr" from the motor database. If MNUMBER 0 is entered, then no data set will be loaded, but the variable MNUMBER will simply be set to 0. This setting indicates a customer-specific motor data set.

ASCII -Command	MOVE		
Syntax Transmit	MOVE [Data]		
Syntax Receive	MOVE <Data>		
Type	Command		
Format	Integer16		
DIM	-		
Range	0 ... 300		
Default	0		
Opmode	8		
Drive Status	Enabled		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3642 (hex)
PROFIBUS PNU:	1922 (dec) IND = 1 (de
DPR Objekt Nr:	322

Configuration	☐
Function Group	Position Data

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Start Motion Task

Description

The command "MOVE nr" starts the motion task "nr" from the motion task memory.
If the command is used without a parameter, then the number of the most recently started task will be displayed.

ASCII -Command	MPHASE
Syntax Transmit	MPHASE [Data]
Syntax Receive	MPHASE <Data>
Type	Variable rw
Format	Integer16
DIM	Electrical Degrees
Range	0 .. 360
Default	0
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Feedback

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	359C (hex)
PROFIBUS PNU:	1756 (dec) IND = 1 (de
DPR Objekt Nr:	156

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Phase, Feedback Offset

Description

The MOTOR PHASE parameter is handled in different ways, depending on the type of feedback (|FBTYPE|) that is used.
|FBTYPE|=0 resolver
MPHASE is saved in the serial EEPROM of the amplifier (|SAVE| command) and is transferred after every power-on of the amplifier.

|FBTYPE|=2, 4 Hiperface/Endat
MPHASE is saved in the serial EEPROM of the encoder (|HSAVE| command) and is read out from the encoder after every power-on of the amplifier. So if an encoder is exchanged, the MPHASE setting goes with the encoder. When a new encoder is fitted, the MPHASE value must be re-established and stored in the encoder (|HSAVE| command).

|FBTYPE|=7 sin/cos encoder without an internal EEPROM
MPHASE will be determined automatically at the first enable of the output stage (Wake & Shake)
It is not necessary to make a separate determination of the MPHASE value, or to save it.

ASCII -Command	MPHASE2
Syntax Transmit	MPHASE2 [Data]
Syntax Receive	MPHASE2 <Data>
Type	rw
Format	Integer16
DIM	-
Range	0 ... 359, 1000
Default	1000
Opmode	All
Drive Status	-
Start Firmware	6.35
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3536 (hex)
PROFIBUS PNU:	1654 (dec) IND = 1 (de
DPR Objekt Nr:	54

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	
EEPROM	Yes

Short Description	Commutationfineadjustment

Description

Defines the MPHASE setting after the homing move. A value between 0 and 359 activates the function for setting the MPHASE value after the homing move is done The value MPHASE2 is written to the MPHASE parameter because the MPHASE parameter, which is calculated during W&S, can be imprecise.

The setting MPHASE2 1000 switches this function off.

ASCII -Command	MPITCH
Syntax Transmit	MPITCH [Data]
Syntax Receive	MPITCH <Data>
Type	rw
Format	Integer32
DIM	um
Range	
Default	32000
Opmode	All
Drive Status	-
Start Firmware	0.67
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	pole pair pitch for linear motor

Description

The command MPITCH defines the pole - pair pitch for a linear motor.

ASCII -Command	MPOLES
Syntax Transmit	MPOLES [Data]
Syntax Receive	MPOLES <Data>
Type	Variable rw
Format	Integer8
DIM	Poles
Range	0, 2, 4, 6, .. , 256
Default	6
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	359D (hex)
PROFIBUS PNU:	1757 (dec) IND = 1 (de
DPR Objekt Nr:	157

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Number of Motor Poles

Description

The number of motor poles per turn of the motor.
MPOLES = 0 is not saved into the drive. The setting MPOLES =0 is also not monitored in the MMI.

Linear Motors:
The standard setting for linear motors is MPOLES = 2.
An exception is if enclines is not an integer value for the pole pitch distance (|MPITCH|). In this case a differnt value for enclines and |MPOLES| is required. Contact our technical support.

ASCII -Command	MPOLES_X
Syntax Transmit	MPOLES [Data]
Syntax Receive	MPOLES <Data>
Type	Variable rw
Format	Integer8
DIM	Poles
Range	0, 2, 4, 6, .. , 256
Default	6
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3766 (hex)
PROFIBUS PNU:	1814 (dec) IND = 17 (d
DPR Objekt Nr:	614

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Number of Motor Poles

Description
see |PARCNFG|

ASCII -Command	MRESBW
Syntax Transmit	MRESBW [Data]
Syntax Receive	MRESBW <Data>
Type	Variable rw
Format	Integer16
DIM	Hz
Range	50 .. 2000
Default	300
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35A0 (hex)
PROFIBUS PNU:	1760 (dec) IND = 1 (de
DPR Objekt Nr:	160

Configuration	☐
Function Group	Feedback

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Resolver Bandwidth

Description

MRESBW is a tuning parameter that sets the bandwidth (in Hz) of the inner control loop. A high value (>800 Hz) results in a fast (low phase lag) and noisy velocity signal. A low value (<400 Hz) results in a slow (higher phase lag) and smooth velocity signal. The default value of 600 Hz is a compromise between phase lag and noise. The phase lag can be reduced by providing the acceleration feed forward signal (|VLO| = 1).

With a wide bandwidth, the drive responds more rapidly to control loop deviations and there is a smaller following error (reduced lag). A very wide bandwidth only makes sense with low moments of inertia, low KP, and very high acceleration values. A narrower bandwidth produces a filter effect. The rotational velocity and positional control are smoother (encoder equivalent output is quieter as well).
For the sensorless drive, the Luenberger Observer is used as the adaptive controller. Therefore, the parameter MRESBW corresponds to the bandwidth of the adaptive controller. It is normally set between 25 and 100 Hz.

ASCII -Command	MRESPOLES
Syntax Transmit	MRESPOLES [Data]
Syntax Receive	MRESPOLES <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	2, 4, .. 32
Default	2
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Feedback

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35A1 (hex)
PROFIBUS PNU:	1761 (dec) IND = 1 (de
DPR Objekt Nr:	161

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Number of Resolver Poles (Multispeed)

Description

The number of resolver poles (multispeed resolver) per turn.

ASCII -Command	MRS
Syntax Transmit	MRS [Data]
Syntax Receive	MRS <Data>
Type	Variable rw
Format	Float
DIM	Ohm
Range	0 .. 100
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3686 (hex)
PROFIBUS PNU:	1990 (dec) IND = 1 (de
DPR Objekt Nr:	390

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Winding Resistance of the Stator Phase-Phase

Description

The parameter describes the stator winding resistance phase-phase in Ohm

ASCII -Command	MRS_X
Syntax Transmit	MRS [Data]
Syntax Receive	MRS <Data>
Type	Variable rw
Format	Float
DIM	Ohm
Range	0 .. 100
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	376C (hex)
PROFIBUS PNU:	1820 (dec) IND = 17 (d
DPR Objekt Nr:	620

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Winding Resistance of the Stator Phase-Phase

Description
see |PARCNFG|

ASCII -Command	MSERIALNO
Syntax Transmit	MSERIALNO [Data]
Syntax Receive	MSERIALNO <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	Long Int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36A3 (hex)
PROFIBUS PNU:	2019 (dec) IND = 1 (de
DPR Objekt Nr:	419

Configuration ☐

Function Group

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Serial no of the motor for encoder feedback

Description

MSERIALNO give the possibility to add a serial number of the motor. It is stored in the encoder with parameter channel (EnDAT or Hiperface) of the motor by typing in |HSAVE|.
MSERIALNO gives the serial number of the connected motor with encoder feedback.
This command can only be used, if a motor with encoder is connected.

ASCII -Command	MSG
Syntax Transmit	MSG [Data]
Syntax Receive	MSG <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35A2 (hex)
PROFIBUS PNU:	1762 (dec) IND = 1 (de
DPR Objekt Nr:	162

Configuration	☐
Function Group	Communication

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Enable / Disable All Messages via RS232

Description

If "MSG 2" is set, then the execution of the individual initialization steps will be signaled through the serial interface when the amplifier is switched on (initialization phase). This setting should only be used for test purposes (e.g. during commissioning). Since the drive setup software Drive.exe only works with the setting "MSG 1", the "MSG 2" setting can only be implemented with the help of a terminal program (not in the terminal window of the operating program).

ASCII -Command	MSLBRAKE
Syntax Transmit	MSLBRAKE [Data]
Syntax Receive	MSLBRAKE <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	1 .. 32
Default	8
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3671 (hex)
PROFIBUS PNU:	1969 (dec) IND = 1 (de
DPR Objekt Nr:	369

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	DEC ramp at sensorless emergency stop

Description

If the feedback unit trips (Fault F04, F08 or F25), it is impossible to stop the motor with the standard commutation. Therefore a sensorless stop is implemented. It is not possible to define a ramp, because it depends on the friction and inertia of the system. MSLBRAKE offers the possibility to change the emergency ramp in this case. The lower MSLBRAKE is, the lower is the deceleration of the motor.

ASCII -Command	MSPEED
Syntax Transmit	MSPEED [Data]
Syntax Receive	MSPEED <Data>
Type	Variable rw
Format	Float
DIM	rpm
Range	0.0 .. 12000.0
Default	3000
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	Motor

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	113
CAN Object No:	35A3 (hex)
PROFIBUS PNU:	1763 (dec) IND = 1 (de
DPR Objekt Nr:	163

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Maximum Rated Motor Velocity

Description

The MSPEED sets the upper limit for the following amplifier parameters: |VLIM|, |VLIMN|,
5/6 * |VOSPD|.

Details are shown at parameter |VUNIT| .

ASCII -Command	MTANGLP
Syntax Transmit	MTANGLP [Data]
Syntax Receive	MTANGLP <Data>
Type	Variable rw
Format	Integer16
DIM	Electrical Degrees
Range	0 .. 45
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in

MMI	✔	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	35A5 (hex)
PROFIBUS PNU:	1765 (dec) IND = 1 (de
DPR Objekt Nr:	165

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Current Lead

Description

The current-dependent phase lead that is applied to make use of the reluctance torque at motor peak current (|MIPEAK|.

ASCII -Command	MTIME
Syntax Transmit	MTIME [Data]
Syntax Receive	MTIME <Data>
Type	rw
Format	Float
DIM	s
Range	1 ... 600
Default	16
Opmode	All
Drive Status	
Start Firmware	1.0
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35AC (hex)
PROFIBUS PNU:	1772 (dec) IND = 1 (de
DPR Objekt Nr:	172

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor thermal time constant

Description

Motor thermal time constant to calculate |MI2T| with |MICONT|

ASCII -Command	MTIME_X		
Syntax Transmit	MTIME [Data]		
Syntax Receive	MTIME <Data>		
Type	rw		
Format	Float		
DIM	s		
Range	1 ... 600		
Default	16		
Opmode	All		
Drive Status			
Start Firmware	1.0		
Configuration	✔		
Function Group			

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	376F (hex)
PROFIBUS PNU:	1823 (dec) IND = 17 (d
DPR Objekt Nr:	623

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Motor thermal time constant

Description
see |PARCNFG|

ASCII -Command	MTMUX
Syntax Transmit	MTMUX [Data]
Syntax Receive	MTMUX <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 ... 300
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	365B (hex)
PROFIBUS PNU:	1947 (dec) IND = 1 (de
DPR Objekt Nr:	347

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Presetting for motion task that is processed later

Description

The command MTMUX presets the number of a motion task that is then prepared to work with commands
|O_P|,|O_V|,|O_C|,|O_ACC1|,|O_DEC1|,|O_FT|,|O_FN|.
All this commands then have access to the selected motion task.

MTMUX work only with motion tasks no. 0, 201 ... 300.

MTMUX is not stored in EEPROM. While start-up of the drive, MTMUX is automatically set to "0".

ASCII -Command	MTR
Syntax Transmit	MTR [Data]
Syntax Receive	MTR <Data>
Type	rw
Format	-
DIM	ms
Range	20 ... 1000
Default	100
Opmode	All
Drive Status	
Start Firmware	1.37

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.37
EEPROM	Yes

Short Description	

Description

Rotor time constant for calculation of the magnetic rotor flux and the gap

ASCII -Command	MTYPE
Syntax Transmit	MTYPE [Data]
Syntax Receive	MTYPE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	1 ... 4
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35A6 (hex)
PROFIBUS PNU:	1766 (dec) IND = 1 (de
DPR Objekt Nr:	166

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Type

Description

MTYPE sets the drive control algorithms to different motor types as follows:

MTYPE = 1: permanent magnet motor

MTYPE = 2: permanent magnet motor with Id current control

The one case is for the linear permanent magnet motor, the other case is for the sensorless drive of permanent magnet motor.

MTYPE = 3: asynchronous motor (Induction motor)

ASCII -Command	MVANGLB
Syntax Transmit	MVANGLB [Data]
Syntax Receive	MVANGLB <Data>
Type	Variable rw
Format	Integer32
DIM	rpm
Range	0 .. 15000
Default	3000
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35A7 (hex)
PROFIBUS PNU:	1767 (dec) IND = 1 (de
DPR Objekt Nr:	167

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity-dependent Lead (Start Phi)

Description

This is a compensation for the inductive phase shift between the motor voltage and the motor current at high velocitys. With defined voltage relationships, it permits a higher torque at the final limit velocity. Alternatively, the achievable final limit velocity can be increased by up to 30%. Depending on the motor velocity, the phase shift (commutation angle) is increased linearly from the Start Phi point up to the Limit Phi value (|MVANGLF|) at the final limit velocity. The most favorable setting depends on the type of motor and the final limit velocity.
See also |MVANGLF|.

ASCII -Command	MVANGLF
Syntax Transmit	MVANGLF [Data]
Syntax Receive	MVANGLF <Data>
Type	Variable rw
Format	Integer16
DIM	Electrical Degrees
Range	0 .. 45
Default	20
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35A8 (hex)
PROFIBUS PNU:	1768 (dec) IND = 1 (de
DPR Objekt Nr:	168

Configuration	☐
Function Group	Motor

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity-dependent Lead (Limit Phi)

Description

This is a compensation for the inductive phase shift between the motor voltage and the motor current at high velocitys. With defined voltage relationships, this permits a higher torque at the final limit velocity. Alternatively, the achievable final limit velocity can be increased by up to 30%. Depending on the motor velocity, the phase shift is increased linearly from the Start Phi point (|MVANGLB|) up to the End Phi value at the final limit velocity. The most favorable setting depends on the type of motor and the final limit velocity.
See also |MVANGLB|.

ASCII -Command	MVANGLP
Syntax Transmit	MVANGLP [Data]
Syntax Receive	MVANGLP <Data>
Type	Variable rw
Format	Integer16
DIM	Electrical Degrees
Range	0 .. 60
Default	20
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3592 (hex)
PROFIBUS PNU:	1746 (dec) IND = 1 (de
DPR Objekt Nr:	146

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity-dependent Lead (Commutation Angle)

Description

The inductive phase shift between the motor current and the motor voltage is compensated at high velocities. With the given voltage conditions, a higher torque is achieved at the velocity limit.
Alternatively, the achievable velocity limit is increased by 30%. The phase shift is increased linearly from a value of 0 degrees at |MVANGLB| up to a final value of |MVANGLF| degrees at |VLIM|. The optimum setting depends on the type of motor and velocity limit.

ASCII -Command	MVER		
Syntax Transmit	MVER [Data]		
Syntax Receive	MVER <Data>		
Type	ro		
Format	Float32		
DIM	-		
Range			
Default			
Opmode	All		
Drive Status	-		
Start Firmware	2.14		
Configuration	☐		
Function Group			

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3861 (hex)
PROFIBUS PNU:	1665 (dec) IND = 33 (d
DPR Objekt Nr:	865

Data Type BUS/DPR	Float32
Weighting 10^3	

Last Change of this Object	1.5
EEPROM	No

Short Description	Version of the motor data base

Description

This variable includes the version of the motor data base.

			Available in			
ASCII -Command	MVR		MMI	☐	CAN-Bus	☐
Syntax Transmit	MVR [Data]		PROFIBUS	☑	Sercos	☐
Syntax Receive	MVR <Data>					
Type						
Format			SERCOS IDN:			
DIM			CAN Object No:			
Range			PROFIBUS PNU:	1965 (dec) IND = 1 (de		
Default			DPR Objekt Nr:	365		
Opmode						
Drive Status						
Start Firmware						
Configuration	☐		Data Type BUS/DPR			
Function Group			Weighting 10^3			

Last Change of this Object	1.2
EEPROM	

Short Description	Nominal speed of asynchron motor

Description

ASCII -Command	NONBTB
Syntax Transmit	NONBTB [Data]
Syntax Receive	NONBTB <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☑
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35AA (hex)
PROFIBUS PNU:	1770 (dec) IND = 1 (de
DPR Objekt Nr:	170

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Mains-BTB Check On/Off

Description

If the AC main power is missing, then the output stage will produce a fault message F16 (Mains-RTO) if the drive is enabled. To disable this response set NONBTB = 1. In the case the drive is powered direct by DC power this setting is requiered.

See also |UVLTMODE|.

ASCII -Command	NREF
Syntax Transmit	NREF [Data]
Syntax Receive	NREF <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 20
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3027
CAN Object No:	35AD (hex)
PROFIBUS PNU:	1773 (dec) IND = 1 (de
DPR Objekt Nr:	173

Configuration	☐
Function Group	Setting-up Mode

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Homing Mode

Description

For linear movements, before a positioning movement can be started, a homing operation must be carried out. The reference point set in this operation is valid until the next hardware reset of the amplifier. An attempt to start positioning without a reference point being set causes a warning (LCD display n09). Any previously-set reference point is cancelled before the homing operation begins. A preset zero-point offset is taken into account for the position output and display. Exception: Homing=5. In this case, the true current position is displayed. You can shift the zero-crossing point of the motor shaft within one turn by using |ENCZERO|. Zero-point recognition: The reference point is set to the first zero-crossing point of the feedback unit (zero mark) after recognition of the reference switch transition. Two-pole resolvers and all encoders have just one zero-crossing per turn, so the positioning at the zero mark is unambiguous within a motor turn. For four-pole resolvers, there are two zero-crossings per turn. For six-pole resolvers, there are three zero-crossings per turn. If the transition of the reference switch lies very close to the zero-crossing point of the feedback unit, the positioning to the zero mark can vary by one motor turn. The repetition accuracy of homing operations made without zero-point recognition depends on the traversing velocity and the mechanical design of the reference or limit switch.
For homing modes 1 and 3, a digital input must be configured as a zero-mark input (home position) (|INxMODE|=12 or I/O expansion card).
For homing modes 2 and 4, a digital input must be configured as a hardware limit switch (see also |IN3MODE| or |IN4MODE|).
For homing modes 1, 2, 3, 4, 5, and 7, the setting of the zero-pulse offset for the Encoder Equivalent Output (EEO) output is taken into account (the zero point is set so both the output of the zero pulse and the display of the zero position appear at zero-pulse offset).
The setting of the reference offset (|ROFFS|) is taken into account for all homing modes. The zero point is assigned to a freely chosen absolute position value.

If a multiturn encoder is used, every homing move can be started. If the homing move is ready, |RSOFFS| is calculated automatically and a |SAVE| command is executed.
Wenn the drive is switched off and on, the drive has the same position.

See also |REFMODE|, |VREF|

Zustand	Short Description	Additional Description
NREF=0	Set Reference at actual position	The actual position becomes the refernce point (the target and the actual position are set to |ROFFS|). The distance between the actual and the target position is lost.

NREF=1	Traverse to the reference switch with zero-mark recognition.	The drive starts a move using |DREF|, until a positive edge at the reference switch is detected. Then the distance to the next zero point of the resolver is calculated and a move to this position is started. If the reference switch is present (input signal = high), a move in the opposite direction of |DREF| is startet until a negative edge is detected. Then the homing move is started. If a hardware limit switch is detected (start of the homing move behind the reference switch), the direction is changed and a move is started, until a positive and a negative level edge is detected at the reference switch. Then the homing move is started. At the end of the homing move, the target and the actual position are set to |ROFFS|.
NREF=2	Move to hardware limit-switch, with zero-mark recognition.	The drive starts a move using |DREF| until the hardware limit switch is reached. Then the direction is changed and the drive moves to the next zero point of the resolver. At the end of the homing move, the target and the actual position are set to |ROFFS|.
NREF=3	Move to reference switch, without zero-mark recognition.	The drive starts a move using |DREF|, until a positive edge at the reference switch is detected. The position at the edge of the reference move is eqivalent to |ROFFS|. Then the drive stops. If the reference switch is present (input signal = high), a move in the opposite direction of |DREF| is startet until a negative edge is detected. Then the homing move is started. If a hardware limit switch is detected (start of the homing move behind the reference switch), the direction is changed and a move is started, until a positive and a negative level edge is detected at the reference switch. Then the homing move is started. The real stop position is not the edge of the reference switch and depends on the selected speed and the deceleration ramp.
NREF=4	Move to hardware limit-switch, without zero-mark recognition.	The drive starts a move using |DREF|, until the hardware limit switch is detected. Then the direction is changed and a move is started until the hardware limit switch is high again. The position at the edge of the hardware limit switch is eqivalent to |ROFFS|. Then the drive stops. The real stop position is not the edge of the hardware limit switch and depends on the selected speed and the deceleration ramp.
NREF=5	Move to the next zero-mark of the feedback unit.	Homing to the next zero point of the resolver. The moving direction is given by variable |DREF|. |DREF|=0 negative |DREF|=1 positive |DREF|=2 the direction is given by the shortest distance.
NREF=6	Set Reference at actual position, without loosing target position	The actual position becomes the reference point (the position setpoint and the actual position are set to |ROFFS|). The difference to NREF=0 is, that the distance between target and actual position is not lost (position error).

NREF=7	Move to mechanical stop with zero-mark recognition	When the homing mode 7 is started, the peak current limit threshold |IPEAK| is set to |REFIP| (peak current for the homing mode in A) in the drirection given by |DREF| (|DREF|=0 positive, |DREF|=1 negative). When the drive moves the motor, the contouring error is monitored and if the error becomes higher than |PEMAX| / 2 (half of the contouring error window), the direction is changed and a move to the next zero point of the resolver is startet. The motor stops in that position and sets the actual and the target position to |ROFFS|. The peak current of the drive is set back to the original value of |IPEAK|.
NREF=8	Move to absolute SSI-position	When a homing mode 8 is started, the actual position of an external Multiturn SSI encoder (selected by |GEARMODE|) is read, calculated with |GEARI| and |GEARO| to internal counts and an offset value |ROFFS2| is added. The result is a target position for a motion task that is started. When the target position is reached, the IN-POSITION bit is set. This function is done for a gantry application with multiturn encoder feedback and coupling of the two drive using SSI multiturn,
NREF=9	Move to mechanical stop without zero-mark recognition	When the homing mode 9 is started, the peak current limit threshold |IPEAK| is set to |REFIP| (peak current for the homing mode in A) in the drirection given by |DREF| (|DREF|=0 positive, |DREF|=1 negative). When the drive moves the motor, the contouring error is monitored and if the error becomes higher than |PEMAX| / 2 (half of the contouring error window), this position is used to set the actual and the target position to |ROFFS|. The peak current of the drive is set back to the original value of |IPEAK|.

ASCII -Command	NREFMT
Syntax Transmit	NREFMT [Data]
Syntax Receive	NREFMT <Data>
Type	rw
Format	Integer16
DIM	
Range	0 ... 511
Default	0
Opmode	8
Drive Status	
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36D2 (hex)
PROFIBUS PNU:	1666 (dec) IND = 17 (d
DPR Objekt Nr:	466

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Homing wih following motion task

Description

The command NREFMT will automatically start a motion task at the end of homing.

The parameter NREFMT is a bit-variable (16 bit)

FEDCBA9876543210
xxxxxxxcnnnnnnnn

Bits 0..7 (nnnnnnnn) number of the automatic started motion task
number = 0 no motion task will be started.

Bit 8   =0 motion task nn will be startet after the motor stopped. The bits "homing active=0" and "homing finnished=1" are set before motion task nn is started.

        =1 motion task nn starts immediately. The bits "homing active=0" and "homing finnished=1" are set after motion task nn is finnished.

ASCII -Command	O_ACC
Syntax Transmit	O_ACC1 [Data]
Syntax Receive	O_ACC1 <Data>
Type	Variable rw
Format	Integer32
DIM	Milliseconds, mm/sec ^2
Range	0 ... 2147483647
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35B7 (hex)
PROFIBUS PNU:	1783 (dec) IND = 1 (de
DPR Objekt Nr:	183

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Acceleration Time 1 for Motion Task 0

Description

The command O_ACC1 can be used to define the acceleration ramp for motion task 0 (direct motion block). The scaling of the acceleration time depends on the |PGEARI|, |PGEARO| and |O_C| parameters.

1. Bit 12 of the motion task control variable |O_C| is = 0.
   The acceleration time is given in milliseconds for acceleration from 0 to the target speed |O_V|.
2. Bit 12 of the motion task control variable |O_C| is = 1.
   The acceleration is given in mm/sec². The resulting run-up time is calculated at the start of the motion task.

Note: If the resolution is set to 1 (|PGEARI|=|PGEARO|) then internal units (counts) will be used for the speed, position and acceleration. In this case, O_ACC1 is interpreted as a run-up time in msec.

ASCII -Command	O_C
Syntax Transmit	O_C [Data]
Syntax Receive	O_C <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35B9 (hex)
PROFIBUS PNU:	1785 (dec) IND = 1 (de
DPR Objekt Nr:	185

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Control Variable for Motion Task 0

Description

The O_C command defines the type of motion task for the local motion task 0 (direct motion task).
A bit-variable (16 bits) is transferred as the parameter. The individual bits of this variable are interpreted as follows:

see also |o_c_3|

Bit	Significance	Meaning
0	0x0001	Bit for the type of motion task (relative or absolute) (see table 2)
1	0x0002	Bit for the type of the relative motion task (see table 2)
2	0x0004	Bit for the type of the relative motion task (see table 2)
3	0x0008	=0 no next motion task, at the end of the motion task, the drive stops. =1 Next motion task selected, at the end of the motion task, automatically the next motion task is started. The number of the next motion task is given by |O_FN| This function is only available with linear acceleration.
4	0x0010	Bit for the type of next motion task (see table 3)
5	0x0020	Bit for the type of next motion task (see table 3)
6	0x0040	Bit for the type of next motion task (see table 3)
7	0x0080	Bit for the type of next motion task (see table 3)
8	0x0100	Bit for the type of next motion task (see table 3)
9	0x0200	=0 The motion task is executed via the internal trajectory generator. =1 A stored lookup table profile is started. The table has to be stored in the flash of the drive. |O_TAB| gives the number of the selected table. The sum of |O_ACC| and |O_DEC| gives the moving time of the profile in ms, independent of |ACCUNIT|.

10	0x0400	=0 The profile is executed in the given direction. =1 The profile is executed in the inverse direction.
11	0x0800	reserved
12	0x1000	reserved
13	0x2000	=0 The target postition and target speed of the motion task are in [IncrementsPRBASE]and [InkrementePRBASE / 250us]. They are nopt internal calculated in other units. The unit IncrementsPRBASE means one turn is erqual 2^PRBASE increments. =1 The target position and target speed is given in SI units. There must be a calulation with |PGEARI| and |PGEARO| to get the internal counts (see also |O_S|, |O_V|, |PGEARI|, |PGEARO|). If |VUNIT| <> 0 the speed is given in VUNIT
14	0x4000	=0 The speed that is given in the motion task is the target speed. =1 The target speed is given by the analog setpoint 1. When a motion task is started, the anlog input is read and becomes the target speed of the motion task (Scaling: 10V=|VSCALE1|). The absolute of Analog In 1 is used.
15	0x8000	Bit 3 of the type of the relative motion task (see separate table)
16	0x10000	If bit 16 is set a table motion task is started. Bit 9 has to be set to 0.The mean value out of |O_ACC| and |O_DEC| is used for acceleration and deceleration.
17	0x20000	=1 Position setpoint in internal increments and in 32 bit format.one turn is equal 2^32 increments. The speed is monitored in increments 32/250μs.
	Table 2	Type of relative/absolute Motion Task

Bit 15/2/1/0	Meaning
xxx0	Absolute Motion Task, the position value in the motion task is the new target position
x001	Relative Motion Task, the position value in the motion task is added to the old target position. The target position depends on the IN-POSITION message: IN-POSITION=1 target position = last target position + relative position of the motion task IN-POSITION = 0 target position = actual position + relative position of the motion task
x011	Relative Motion Task, the position value in the motion task is added to the old target position. target position = last target position + relative position of the motion task
x101	Relative Motion Task, the position value in the motion task is added to the actual position. target position = actual position + relative position of the motion task

0111	Relative Motion Task, the position value in the motion task is added to the old target position. target position = latched position at the positive edge of the input + relative position of the motion task (see object |LATCH1P32|, |LATCH1N32|, |LATCH1P16|, |LATCH1N16|, |LATCH2P32|, ...)	
1111	Relative Motion Task, the position value in the motion task is added to the old target position. target position = latched position at the negative edge of the input + relative move of the motion task (see object |LATCH32N|	
	Table 3	Type of Next motion task
Bit 8/7/6/5/4	Meaning	
00000	Switch over to next motion task with stop. The drive stops at the target position of the actual motion task. Then it starts the next motion task in the sequence.	
00001	Switch over to next motion task without stop. The drive moves to the target position with target speed of the actual motion task. Then it starts the next motion task in the sequence.	
10001	Switch over to next motion task without stop. The drive calculates the brake point, that the speed of the motor at target position becomes the speedof the next motion task in the sequence.	
00010	Switch over to next motion task with stop. The drive stops at the target position of the actual motion task. The next motion task in the sequence is started, if the digital input selected by |INxMODE|=15 is switched to low.	
00110	Switch over to next motion task with stop. The drive stops at the target position of the actual motion task. The next motion task in the sequence is started, if the digital input selected by |INxMODE|=15 is switched to high.	
01000	Switch over to next motion task with stop. The drive stops at the target position of the actual motion task. The next motion task in the sequence is started after the selected delay time defined by |O_FT|).	
01010	Switch over to next motion task with stop. The drive stops at the target position of the actual motion task. The next motion task in the sequence is started after the selected delay time defined by |O_FT|) or if the digital input selected by |INxMODE|=15 is set to low.	

01110
Switch over to next motion task with stop. The drive stops at the target position of the actual motion task. The next motion task in the sequence is started after the selected delay time defined by |O_FT|) or if the digital input selected by |INxMODE|=15 is set to high.

ASCII -Command	O_DEC
Syntax Transmit	O_DEC1 [Data]
Syntax Receive	O_DEC1 <Data>
Type	Variable rw
Format	Integer32
DIM	Milliseconds, mm/sec ^2
Range	0 ... 2147483647
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35BA (hex)
PROFIBUS PNU:	1786 (dec) IND = 1 (de
DPR Objekt Nr:	186

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Braking Time 1 for Motion Task 0

Description

The command O_DEC1 can be used to define the deceleration (braking) ramp for motion task 0 (direct motion task). The scaling of the deceleration/braking time depends on the |PGEARI|, |PGEARO| and |O_C| parameters.

1. Bit 12 of the motion task control variable |O_C| is = 0.
   The braking time is given in milliseconds for deceleration from target speed |O_V| down to 0.
2. Bit 12 of the motion task control variable |O_C| is = 1.
   The deceleration is given in mm/sec². The resulting run-down time is calculated at the start of the motion task.

Note: If the resolution is set to 1 (|PGEARI|=|PGEARO|) then internal units (counts) will be used for the speed, position and acceleration. In this case, O_DEC1 is interpreted as a run-down time in msec.

ASCII -Command	O_FN	Available in	
Syntax Transmit	O_FN [Data]	MMI ☑	CAN-Bus ☑
Syntax Receive	O_FN <Data>	PROFIBUS ☑	Sercos ☐
Type	Variable rw		
Format	Integer16	
DIM	-	SERCOS IDN:	
Range	0, 1, .. ,180,192 .. 255	CAN Object No:	35BC (hex)
Default	-	PROFIBUS PNU:	1788 (dec) IND = 1 (de
Opmode	All	DPR Objekt Nr:	188
Drive Status	-		
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	Integer16
Function Group	-	Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Next Task Number for Motion Task 0

Description

The command O_FN can be used to define the number of the following motion block. This number is only used if bit 3 (next block activated) of the motion block control word is set to 1.
The motion block number can have the following values:
0 - direct motion block
1 ... 180 motion block from the Flash EEPROM
192 ... 255 motion block from the RAM

ASCII -Command	O_FT
Syntax Transmit	O_FT [data]
Syntax Receive	O_FT <data>
Type	Variable rw
Format	Integer16
DIM	Milliseconds
Range	1 .. 32767
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35BD (hex)
PROFIBUS PNU:	1789 (dec) IND = 1 (de
DPR Objekt Nr:	189

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Delay before Next Motion Task

Description

This parameter can be used to delay the start of the next motion task (if one is defined). This parameter is only evaluated if bit 3 (next task activated) and bit 7 (delay time activated) of the motion task control word are set.

		Available in			
ASCII -Command	O_P				
Syntax Transmit	O_P [data]	MMI	☑	CAN-Bus	☑
Syntax Receive	O_P <data>	PROFIBUS	☑	Sercos	☐
Type	Variable rw				
Format	Integer64				
DIM	-	SERCOS IDN:			
Range	long int	CAN Object No:	35BE (hex)		
Default	-	PROFIBUS PNU:	1790 (dec) IND = 1 (de		
Opmode	All	DPR Objekt Nr:	190		
Drive Status	-				
Start Firmware	1.0				
Configuration	☐	Data Type BUS/DPR	Integer64		
Function Group	-	Weighting 10^3			

Last Change of this Object	1.0
EEPROM	No

Short Description	Target Position/Path for Motion Task 0

Description

The command O_P can be used to define the target position for motion block 0 (direct motion block). Depending on the type of motion task (absolute or relative) this parameter will be interpreted as an absolute target position or a relative path movement. The scaling of the position depends on the |PGEARI|, |PGEARO|, |PRBASE| and |O_C| parameters.

1. Bit 13 of the motion block control word = 0 (given in internal units)
 The position /path is given in counts.
 Scaling: |PRBASE|=20 -> 1048576 increments per turn
             |PRBASE|=16   -> 65536 increments per turn

2. Bit 13 of the motion block control variable is = 1 (taking the resolution into account)
 The position is converted according to the following formula:
 Position [increments] = |O_P| * |PGEARO| / |PGEARI|

Note: If the resolution is set to 1 (|PGEARI|=|PGEARO|*2^|PRBASE|) then internal units (counts) will be used for the speed, position and acceleration.

ASCII -Command	O_TAB
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0

Available in			
MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	184

Configuration	☐
Function Group	

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	

Description

ASCII -Command	O_V
Syntax Transmit	O_V [data]
Syntax Receive	O_V <data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35BF (hex)
PROFIBUS PNU:	1791 (dec) IND = 1 (de
DPR Objekt Nr:	191

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Target Speed for Motion Task 0

Description

The command O_V can be used to define the target speed for motion block 0 (direct motion block). The scaling of the speed depends on the |PGEARI|, |PGEARO|, |PRBASE| and |O_C| parameters.

1. Bit 13 of the motion block control word = 0 (given in internal units)
 The speed is given in counts.
 Scaling: |PRBASE|=20   -> 140/32 increments per rpm
                   |PRBASE|=16   -> 140/512 increments per rpm

2. Bit 13 of the motion block control variable is = 1 (taking the resolution into account)
The speed is given in the actual VUNIT - units.
On |VUNIT| =0 or 5 the speed is converted according to the following formula:
  Speed [increments] = |O_P| * |PGEARO| / |PGEARI| / 4000

Note: If the resolution is set to 1 (PGEARI=PGEARO) then internal units (counts) will be used for the speed.

ASCII -Command	O1
Syntax Transmit	O1 [data]
Syntax Receive	O1 <data>
Type	Variable rw
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3036 ... 7
CAN Object No:	35AE (hex)
PROFIBUS PNU:	1774 (dec) IND = 1 (de
DPR Objekt Nr:	174

Configuration	☐
Function Group	Digital I/O

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Digital Output 1

Description

The O1 command returns the state of the digital output 1 (0 = Low,1 = High).
If no function is assigned to digital output 1 (|O1MODE|=0), then the High/Low state can be given out at output 1 by using the command "O1 1" or "O1 0".

ASCII -Command	O10
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	373A (hex)
PROFIBUS PNU:	1770 (dec) IND = 17 (d
DPR Objekt Nr:	570

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O10MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	373B (hex)
PROFIBUS PNU:	1771 (dec) IND = 17 (d
DPR Objekt Nr:	571

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description
see |O3_18MODE|

ASCII -Command	O10TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Available in			
MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	373C (hex)
PROFIBUS PNU:	1772 (dec) IND = 17 (d
DPR Objekt Nr:	572

Configuration	☐
Function Group	

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O11
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	373D (hex)
PROFIBUS PNU:	1773 (dec) IND = 17 (d
DPR Objekt Nr:	573

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O11MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	373E (hex)
PROFIBUS PNU:	1774 (dec) IND = 17 (d
DPR Objekt Nr:	574

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O11TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	373F (hex)
PROFIBUS PNU:	1775 (dec) IND = 17 (d
DPR Objekt Nr:	575

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O12		Available in
Syntax Transmit			MMI ☐ CAN-Bus ☑
Syntax Receive			PROFIBUS ☑ Sercos ☐
Type	Variable rw		
Format			SERCOS IDN:
DIM			CAN Object No: 3740 (hex)
Range			PROFIBUS PNU: 1776 (dec) IND = 17 (d
Default			DPR Objekt Nr: 576
Opmode			
Drive Status			
Start Firmware			
Configuration	☑		Data Type BUS/DPR
Function Group			Weighting 10^3

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O12MODE	
Syntax Transmit		
Syntax Receive		
Type	Variable rw	
Format		
DIM		
Range		
Default		
Opmode		
Drive Status		
Start Firmware		
Configuration	☑	
Function Group		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3741 (hex)
PROFIBUS PNU:	1777 (dec) IND = 17 (d
DPR Objekt Nr:	577

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O12TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3742 (hex)
PROFIBUS PNU:	1778 (dec) IND = 17 (d
DPR Objekt Nr:	578

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O13
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3743 (hex)
PROFIBUS PNU:	1779 (dec) IND = 17 (d
DPR Objekt Nr:	579

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O13MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3744 (hex)
PROFIBUS PNU:	1780 (dec) IND = 17 (d
DPR Objekt Nr:	580

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O13TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3745 (hex)
PROFIBUS PNU:	1781 (dec) IND = 17 (d
DPR Objekt Nr:	581

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O14
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3746 (hex)
PROFIBUS PNU:	1782 (dec) IND = 17 (d
DPR Objekt Nr:	582

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O14MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3747 (hex)
PROFIBUS PNU:	1783 (dec) IND = 17 (d
DPR Objekt Nr:	583

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O14TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3748 (hex)
PROFIBUS PNU:	1784 (dec) IND = 17 (d
DPR Objekt Nr:	584

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O15
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3749 (hex)
PROFIBUS PNU:	1785 (dec) IND = 17 (d
DPR Objekt Nr:	585

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O15MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	374A (hex)
PROFIBUS PNU:	1786 (dec) IND = 17 (d
DPR Objekt Nr:	586

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O15TRIG		
Syntax Transmit			
Syntax Receive			
Type	Variable rw		
Format			
DIM			
Range			
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐		
Function Group			

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	374B (hex)
PROFIBUS PNU:	1787 (dec) IND = 17 (d
DPR Objekt Nr:	587

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O16
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	374C (hex)
PROFIBUS PNU:	1788 (dec) IND = 17 (d
DPR Objekt Nr:	588

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O16MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	374D (hex)
PROFIBUS PNU:	1789 (dec) IND = 17 (d
DPR Objekt Nr:	589

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O16TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	374E (hex)
PROFIBUS PNU:	1790 (dec) IND = 17 (d
DPR Objekt Nr:	590

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O17
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	374F (hex)
PROFIBUS PNU:	1791 (dec) IND = 17 (d
DPR Objekt Nr:	591

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O17MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3750 (hex)
PROFIBUS PNU:	1792 (dec) IND = 17 (d
DPR Objekt Nr:	592

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O17TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3751 (hex)
PROFIBUS PNU:	1793 (dec) IND = 17 (d
DPR Objekt Nr:	593

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O18		
Syntax Transmit			
Syntax Receive			
Type	Variable rw		
Format			
DIM			
Range			
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	✔		
Function Group			

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3752 (hex)
PROFIBUS PNU:	1794 (dec) IND = 17 (d
DPR Objekt Nr:	594

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O18MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3753 (hex)
PROFIBUS PNU:	1795 (dec) IND = 17 (d
DPR Objekt Nr:	595

Last Change of this Object	1.2
EEPROM	

Data Type BUS/DPR	
Weighting 10^3	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O18TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3754 (hex)
PROFIBUS PNU:	1796 (dec) IND = 17 (d
DPR Objekt Nr:	596

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O1MODE
Syntax Transmit	O1MODE [Data]
Syntax Receive	O1MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	✔
Function Group	Digital I/O

Available in

MMI	✔	CAN-Bus	✔
PROFIBUS	✔	Sercos	✔

SERCOS IDN:	P 3005 ... 6
CAN Object No:	35AF (hex)
PROFIBUS PNU:	1775 (dec) IND = 1 (de
DPR Objekt Nr:	175

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Output 1

Description

The O1 command returns the state of the digital output 1 (0 = Low,1 = High).
If no function is assigned to digital output 1 (O1MODE=0), then the High/Low state can be given out at output 1 by using the command "|O1| 1" or "|O1| 0".

Zustand	Function	Description
O1MODE=0	Off	OFF The state of the digital output 1 can be set/cleared by RS232/Fieldbus or Slot board
O1MODE=1	v_act<|O1TRIG|	As long as the absolute value for the motor velocity is lower than a preset value (|O1TRIG|), a HIGH-signal will be output. After the function has been selected you can enter the velocity in rpm in |O1TRIG|. The ouput is high, if |V| < |O1TRIG| and becomes low, if |V| > |O1TRIG| + 0.01 * |MSPEED|.
O1MODE=2	v_act>|O1TRIG|	As long as the absolute value for the motor velocity is higher than a preset value (|O1TRIG|), a HIGH-signal will be output. After the function has been selected you can enter the velocity in rpm in |O1TRIG|. The ouput is high, if |V| > |O1TRIG| and becomes low, if |V| < |O1TRIG| + 0.01 * |MSPEED|.
O1MODE=3	Mains-RTO	This signals the operational readiness of the SERVOSTAR™ 600 power output stage. After switching on the mains supply, a HIGH-signal is output until the DC-link circuit is fully charged up. A LOW-signal is output when the charging of the DC-link circuit is finished. If the DC-link voltage falls below |VBUSMIN| value, then a HIGH-signal will be output. The "Undervoltage" monitoring is inactive.
O1MODE=4	Regen off	Signals if the preset regen power (screen page "Basic Setup") is exceeded.

O1MODE=5	Sw_limit	This produces a HIGH-signal if a software limit-switch is reached (a preset function of the corresponding position register, set to "SW limit-switch 1" or "SW limit-switch 2" – the function is defined in the screen page "Position"). A motion task in the opposite direction resets the output.
O1MODE=6	Pos.>x	If the position (angular position of the motor shaft) exceeds a preset value (|O1TRIG|), a HIGH-signal will be output. After the function has been selected, you can enter the signaling posi-tion in increment (a number or fraction of motor turns N) as |O1TRIG|. Make the calculation according to the following equation: x = 1048576 *N *Inkr. Maximum possible entry value:x =2 31 = 2147483648, this corresponds to N = 2048
O1MODE=7	InPos	When the target position for a motion task has been reached (the InPosition window |PEINPOS|), this is signaled by the output of a HIGH-signal. A cable break will not be detected. The width of the InPosition window for all the valid motion tasks is entered in the "Position data" screen page. If a sequence of motion tasks is performed one after another, then the signal for reaching the final position of the motion-task sequence will be output (target position of the last motion task). Signaling that the target position of each motion task has been reached, in a sequence of motion tasks, can be achieved with the function "16, Next_InPos".
O1MODE=8	I_act<|O1TRIG|	The output is a HIGH-signal, as long as the absolute r.m.s. value of the actual current is lower than a defined value in mA (|O1TRIG|). After the function has been selected, you can enter the current value as |O1TRIG| in mA.
O1MODE=9	I_act>|O1TRIG|	The output is a HIGH-signal, as long as the absolute r.m.s. value of the actual current is higher than a defined value in mA (|O1TRIG|). After the function has been selected, you can enter the current value as |O1TRIG| in mA.
O1MODE=10	Ferror	If the position goes outside the preset contouring-error window, this is indicated by a LOW-signal. The width of the contouring-error window (|PEMAX|) is entered in the screen page "Position" for all the valid motion tasks.
O1MODE=11	I2T	If the preset I2T monitoring threshold (|I2TLIM|) is reached (screen page "Current") this is indicated by a HIGH-signal.
O1MODE=12		
O1MODE=13		
O1MODE=14		
O1MODE=15		

O1MODE=16	Next-InPos	The start of each motion task in an automatically executed sequence of motion tasks is signalled by an inversion of the output signal. The output produces a Low signal at the start of the first motion task of the motion task sequence. The type of message can be set by |IN2PM|
O1MODE=17	Error/Warn	The output produces a HIGH-signal if an error or a warning message is signaled by the servo amplifier. A list of the error messages can be found under |ERRCODE|. n32 has no effect to the output.
O1MODE=18	Error	The output produces a HIGH-signal if an error is signaled by the servo amplifier. A list of the error messages can be found under |ERRCODE|
O1MODE=19	DC_Link>|O1TRIG|	A HIGH-signal is output if the actual value of the DC-link voltage is higher than a defined value in volts (|O1TRIG|). After the function has been selected, you can enter the voltage value as |O1TRIG| in Volt..
O1MODE=20	DC_Link < |O1TRIG|	A HIGH-signal is output if the actual value of the DC-link voltage is lower than a defined value in volts (|O1TRIG|). After the function has been selected, you can enter the voltage value in |O1TRIG| in Volt.
O1MODE=21	ENABLE	A HIGH-signal is output if the servo amplifier is enabled. To obtain the enable, the external Hardware Enable signal must be present, the Enable status must be set in the setup software (or via the fieldbus interface) and no errors must be present that would cause an automatic internal disabling of the servo amplifier. If function |OxMODE| = is selected, the enable signal is high, if the line voltage is applied and the charging of the link capacitors is finished. The drive is disabled, if the DC-link voltage wents under the threshold |VBUSMIN|.
O1MODE=22	Zero_pulse	The zero mark/pulse (HIGH-signal) is indicated by the encoder-emulation. This function is only use-ful at very low velocities. Vmax = 15000 / |ENCOUT| e.g. |ENCOUT|=256 Pulses/Rev Vmax = 58 rpm |O1TRIG| can be used to stretch the zero pulse length in positive direction. Important: The used LSB have to be set to 1, allowed O1TRIG values are only 2^n-1 (n=1....32) example O1TRIG=1,3,7,15,31...). The calculation is done by formula O1TRIG / 2^{32} * 360°. Example 1: O1TRIG=1073741823 = 0x3FFFFFFF. 1073741823 * 360°/ 2^{32} = 90° -> A HIGH signal is monitored on 0 - 90° Example 2: O1TRIG = 134217727 = 0x7FFFFFF 134217727 * 360° / 2^{32} = 11,25° -> A HIGH signal is monitored on 0 - 11,25°

O1MODE=23	Slot-DPR	This configuration enables the possibility to output a state from the Slot board (mem DPR Slot Board Offset 0x3E4). If no Slot board is available, this configuration is equal to OxMODE=0. If a Device-Net option board is plugged in the drive, this setting enables access of Device-Net to digital output 1
O1MODE=24	Ref_OK	The output signals High, if a reference point is available. Reference traverse (homing) has been carried out, or a reference point has been set. (see |NREF|)
O1MODE=28		
O1MODE=29		- .
O1MODE=30		
O1MODE=31	Analog In 1< |O1TRIG|	The output is high, if the Analog In voltage at Analog In 1 is lower than the threshold |O1TRIG|. The auxiliary variable |O1TRIG| is given in mV (with sign).
O1MODE=32	Analog In 1> |O1TRIG|	The output is high, if the Analog In voltage at Analog In 1 is higher than the threshold |O1TRIG|. The auxiliary variable |O1TRIG| is given in mV (with sign).
O1MODE=33	Analog In 2 < |O1TRIG|	The output is high, if the Analog In voltage at Analog In 2 is lower than the threshold |O1TRIG|. The auxiliary variable |O1TRIG| is given in mV (with sign).
O1MODE=34	Analog In 2 > |O1TRIG|	The output is high, if the Analog In voltage at Analog In 2 is higher than the threshold |O1TRIG|. The auxiliary variable |O1TRIG| is given in mV (with sign).
O1MODE=35	Internal Enable	The state of the internal ENABLE signal is mirrored on the digital output. If the setiings are: |MBRAKE|=0, |STOPMODE|=0 and |ACTFAULT|=0, the function is similar to |O1MODE|=21. If one of the three variables is "1", the output changes to low, when the drives starts to dec to "0". If |O1MODE|=21, the output is low, if the drive has stopped and has disabled the output stage.
O1MODE=36	Logical OR: |DRVSTAT| - |O1TRIG|	This function makes a OR operation between the Bit-variable |DRVSTAT| and a Bit mask given by |O1TRIG|. The result is present at output 1.
O1MODE=37	Logical AND: |DRVSTAT| -|O1TRIG|	This function makes a AND operation between the Bit-variable |DRVSTAT| and a Bit mask given by |O1TRIG|. The result is present at output 1.
O1MODE=38	Logical OR: |TRJSTAT| - |O1TRIG|	This function makes a OR operation between the Bit-variable |TRJSTAT| and a Bit mask given by |O1TRIG|. The result is present at output 1.
O1MODE=39	Logical AND: |TRJSTAT| - |O1TRIG|	This function makes a AND operation between the Bit-variable |TRJSTAT| and a Bit mask given by |O1TRIG|. The result is present at output 1.
O1MODE=40	Logical OR: |POSRSTAT| - |O1TRIG|	This function makes a OR operation between the Bit-variable |POSRSTAT| and a Bit mask given by |O1TRIG|. The result is present at output 1.
O1MODE=41	Logical AND: |POSRSTAT| - |O1TRIG|	This function makes a AND operation between the Bit-variable |POSRSTAT| and a Bit mask given by |O1TRIG|. The result is present at output 1.

O1MODE=42	Internal temperature warning	This function enables a temperature warning. If one of the three internal measured temperatures reaches the trip level, the digital output ist set to high. After the selected delay time given in |O1TRIG| the drive generates a error message and disables the output stage.
		The delay time has the range 0...30000 msec and effects following temperatures:
		Motor temperature |TEMPM|, threshold |MAXTEMPM| Heatsink temperature |TEMPH|, Threshold |MAXTEMPH| Ambient temperature |TEMPE|, threshold |MAXTEMPE|
O1MODE=43	The sign of the actual velocity	OUTPUT1 = 1 V < -|VEL0| OUTPUT1 = 0 V > -|VEL0|
O1MODE=44	Velocity In-Position (active high)	The output 1 is set, if the absolute of the difference between the internal velocity command and the actual velocity is smaller than |O1TRIG|. The size of the window (|O1TRIG|) is given in valid velocity units (|VUNIT|).
O1MODE=45	Velocity In-Position (aktive low)	The output 1 is set, if the absolute of the difference between the internal velocity command and the actual velocity is bigger than |O1TRIG|. The size of the window (|O1TRIG|) is given in valid velocity units (|VUNIT|). (4.30)
O1MODE=46	Current in Window (low active)	The digital output 1 is set, if the absolute of the difference between current command and actual value is smaller than the window, defined by |O1TRIG|. The window is given in mA.
O1MODE=47	Current not in Window (low active)	The digital output 1 is set, if the absolute of the difference between current command and actual value is greater than the window, defined by |O1TRIG|. The window is given in mA.
O1MODE=48	Logical NOR: |DRVSTAT| - |O1TRIG|	This function makes a inverted OR operation between the Bit-variable |DRVSTAT| and a Bit mask given by |O1TRIG|. The result is present at output 1.
O1MODE=49	Logical NAND: |DRVSTAT| -|O1TRIG|	This function makes a inverted AND operation between the Bit-variable |DRVSTAT| and a Bit mask given by |O1TRIG|. The result is present at output 1.
O1MODE=50	Logical NOR: |TRJSTAT| - |O1TRIG|	This function makes a inverted OR operation between the Bit-variable |TRJSTAT| and a Bit mask given by |O1TRIG|. The result is present at output 1.
O1MODE=51	Logical NAND: |TRJSTAT| - |O1TRIG|	This function makes a AND operation between the Bit-variable |TRJSTAT| and a Bit mask given by |O1TRIG|. The result is present at output 1.
O1MODE=52	Logical AND: |POSRSTAT| - |O1TRIG|	same as O1MODE = 41 but the output is for |PTBASE| * 250 us on high level

O1MODE=53

O1MODE=54	prepared for moving	version > =1.21 The output is high if all following conditions are true
		software-enable set
		no error
		DC link loaded (VBUS > VBUSMIN)
		no contouring error (Warnung n03)
O1MODE=55	Actual master-slave status	Version >=2.13: The function OxMODE=55 monitors the actual master slave status at the slave axis. Output=1 The slave is in master/slave modus. This can be: 1. synchroize up to the master speed 2. following the master-position 3. Declutch the master slave mode Ausgang=0 - None of the master slave modes is active. The master pulses are ignored.1 see also function |INxMODE|=42,43

ASCII -Command	O1TRIG
Syntax Transmit	O1TRIG [Data]
Syntax Receive	O1TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3007 ...8
CAN Object No:	35B0 (hex)
PROFIBUS PNU:	1776 (dec) IND = 1 (de
DPR Objekt Nr:	176

Configuration	☐
Function Group	Digital I/O

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Auxiliary Variable for O1MODE

Description

The function of the auxiliary variable O1TRIG depends on the configuration of |O1MODE|.
see |O1MODE|

ASCII -Command	O2
Syntax Transmit	O2 [Data]
Syntax Receive	O2 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3036 ... 7
CAN Object No:	35B1 (hex)
PROFIBUS PNU:	1777 (dec) IND = 1 (de
DPR Objekt Nr:	177

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Digital Output 2

Description

The O2 command returns the state of the digital output 2 (0 = Low,1 = High).
If no function is assigned to digital output 2 (|O2MODE|=0), then the High/Low state can be given out at output 2 by using the command "|O2| 1" or "|O2| 0".

ASCII -Command	O2MODE
Syntax Transmit	O2MODE [Data]
Syntax Receive	O2MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	Digital I/O

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3005 ... 6
CAN Object No:	35B2 (hex)
PROFIBUS PNU:	1778 (dec) IND = 1 (de
DPR Objekt Nr:	178

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Output 2

Description

The O2MODE command can be used to configure the function of the digital output OUT2. The amplifier must be switched off and then on again after an alteration of this parameter.
The following functions can be configured:

Zustand	Function	Description
O2MODE=0	Off	OFF The state of the digital output 1 can be set/cleared by RS232/Fieldbus or Slot board
O2MODE=1	v_act<|O2TRIG|	As long as the absolute value for the motor velocity is lower than a preset value (|O2TRIG|), a HIGH-signal will be output. After the function has been selected you can enter the velocity in rpm in |O2TRIG|. The ouput is high, if |V| < |O2TRIG| and becomes low, if |V| > |O2TRIG| + 0.01 * |MSPEED|.
O2MODE=2	v_act>|O2TRIG|	As long as the absolute value for the motor velocity is higher than a preset value (|O2TRIG|), a HIGH-signal will be output. After the function has been selected you can enter the velocity in rpm in |O2TRIG|. The ouput is high, if |V| > |O2TRIG| and becomes low, if |V| < |O2TRIG| + 0.01 * |MSPEED|.
O2MODE=3	Mains-RTO	This signals the operational readiness of the SERVOSTAR™ 600 power output stage. After switching on the mains supply, a HIGH-signal is output until the DC-link circuit is fully charged up. A LOW-signal is output when the charging of the DC-link circuit is finished. If the DC-link voltage falls below |VBUSMIN| value, then a HIGH-signal will be output. The "Undervoltage" monitoring is inactive.
O2MODE=4	Regen off	Signals if the preset regen power (screen page "Basic Setup") is exceeded.

O2MODE=5	Sw_limit	This produces a HIGH-signal if a software limit-switch is reached (a preset function of the corresponding position register, set to "SW limit-switch 1" or "SW limit-switch 2" – the function is defined in the screen page "Position"). A motion task in the opposite direction resets the output.
O2MODE=6	Pos.>x	If the position (angular position of the motor shaft) exceeds a preset value (|O2TRIG|), a HIGH-signal will be output. After the function has been selected, you can enter the signaling posi-tion in increment (a number or fraction of motor turns N) as |O2TRIG|. Make the calculation according to the following equation: $x = 1048576 * N * Inkr.$ Maximum possible entry value:$x = 2^{31} = 2147483648$, this corresponds to N = 2048
O2MODE=7	InPos	When the target position for a motion task has been reached (the InPosition window |PEINPOS|), this is signaled by the output of a HIGH-signal. A cable break will not be detected. The width of the InPosition window for all the valid motion tasks is entered in the "Position data" screen page. If a sequence of motion tasks is performed one after another, then the signal for reaching the final position of the motion-task sequence will be output (target position of the last motion task). Signaling that the target position of each motion task has been reached, in a sequence of motion tasks, can be achieved with the function "16, Next_InPos".
O2MODE=8	I_act<|O2TRIG|	The output is a HIGH-signal, as long as the absolute r.m.s. value of the actual current is lower than a defined value in mA (|O2TRIG|). After the function has been selected, you can enter the current value as |O2TRIG| in mA.
O2MODE=9	I_act>|O2TRIG|	The output is a HIGH-signal, as long as the absolute r.m.s. value of the actual current is higher than a defined value in mA (|O2TRIG|). After the function has been selected, you can enter the current value as |O2TRIG| in mA.
O2MODE=10	Ferror	If the position goes outside the preset contouring-error window, this is indicated by a LOW-signal. The width of the contouring-error window (|PEMAX|) is entered in the screen page "Position" for all the valid motion tasks.
O2MODE=11	I2T	If the preset I2T monitoring threshold (|I2TLIM|) is reached (screen page "Current") this is indicated by a HIGH-signal.
O2MODE=12		.
O2MODE=13		
O2MODE=14		
O2MODE=15		

O2MODE=16	Next-InPos	The start of each motion task in an automatically executed sequence of motion tasks is signalled by an inversion of the output signal. The output produces a Low signal at the start of the first motion task of the motion task sequence. The type of message can be set by |IN2PM|
O2MODE=17	Error/Warn	The output produces a HIGH-signal if an error or a warning message is signaled by the servo amplifier. A list of the error messages can be found under |ERRCODE|. n32 has no effect to the output.
O2MODE=18	Error	The output produces a HIGH-signal if an error is signaled by the servo amplifier. A list of the error messages can be found under |ERRCODE|
O2MODE=19	DC_Link>|O2TRIG|	A HIGH-signal is output if the actual value of the DC-link voltage is higher than a defined value in volts (|O2TRIG|). After the function has been selected, you can enter the voltage value as |O2TRIG| in Volt..
O2MODE=20	DC_Link < |O2TRIG|	A HIGH-signal is output if the actual value of the DC-link voltage is lower than a defined value in volts (|O2TRIG|). After the function has been selected, you can enter the voltage value in |O2TRIG| in Volt.
O2MODE=21	ENABLE	A HIGH-signal is output if the servo amplifier is enabled. To obtain the enable, the external Hardware Enable signal must be present, the Enable status must be set in the setup software (or via the fieldbus interface) and no errors must be present that would cause an automatic internal disabling of the servo amplifier. If function |OxMODE| = is selected, the enable signal is high, if the line voltage is applied and the charging of the link capacitors is finished. The drive is disabled, if the DC-link voltage wents under the threshold |VBUSMIN|.
O2MODE=22	Zero_pulse	The zero mark/pulse (HIGH-signal) is indicated by the encoder-emulation. This function is only use-ful at very low velocities. Vmax = 15000 / |ENCOUT| e.g. |ENCOUT|=256 Pulses/Rev Vmax = 58 rpm |O2TRIG| can be used to stretch the zero pulse length in positive direction. Important: The used LSB have to be set to 1, allowed O2TRIG values are only 2^n-1 (n=1....32) example O2TRIG=1,3,7,15,31...). The calculation is done by formula O2TRIG / 2^{32} * 360°. Example 1: O2TRIG=1073741823 = 0x3FFFFFFF. 1073741823 * 360°/ 2^{32} = 90° -> A HIGH signal is monitored on 0 - 90° Example 2: O2TRIG = 134217727 = 0x7FFFFFF 134217727 * 360° / 2^{32} = 11,25° -> A HIGH signal is monitored on 0 - 11,25°

O2MODE=23	Slot-DPR	This configuration enables the possibility to output a state from the Slot board (mem DPR Slot Board Offset 0x3E4). If no Slot board is available, this configuration is equal to OxMODE=0. If a Device-Net option board is plugged in the drive, this setting enables access of Device-Net to digital output 1
O2MODE=24	Ref_OK	The output signals High, if a reference point is available. Reference traverse (homing) has been carried out, or a reference point has been set. (see |NREF|)
O2MODE=28		
O2MODE=29		
O2MODE=30		
O2MODE=31	Analog In 1< |O2TRIG|	The output is high, if the Analog In voltage at Analog In 1 is lower than the threshold |O2TRIG|. The auxiliary variable |O2TRIG| is given in mV (with sign).
O2MODE=32	Analog In 1> |O2TRIG|	The output is high, if the Analog In voltage at Analog In 1 is higher than the threshold |O2TRIG|. The auxiliary variable |O2TRIG| is given in mV (with sign).
O2MODE=33	Analog In 2 < |O2TRIG|	The output is high, if the Analog In voltage at Analog In 2 is lower than the threshold |O2TRIG|. The auxiliary variable |O2TRIG| is given in mV (with sign).
O2MODE=34	Analog In 2 > |O2TRIG|	The output is high, if the Analog In voltage at Analog In 2 is higher than the threshold |O2TRIG|. The auxiliary variable |O2TRIG| is given in mV (with sign).
O2MODE=35	Internal Enable	The state of the internal ENABLE signal is mirrored on the digital output. If the setiings are: |MBRAKE|=0, |STOPMODE|=0 and |ACTFAULT|=0, the function is similar to |O1MODE|=21. If one of the three variables is "1", the output changes to low, when the drives starts to dec to "0". If |O1MODE|=21, the output is low, if the drive has stopped and has disabled the output stage.
O2MODE=36	Logical OR: |DRVSTAT| - |O2TRIG|	This function makes a OR operation between the Bit-variable |DRVSTAT| and a Bit mask given by |O2TRIG|. The result is present at output 1.
O2MODE=37	Logical AND: |DRVSTAT| -|O2TRIG|	This function makes a AND operation between the Bit-variable |DRVSTAT| and a Bit mask given by |O2TRIG|. The result is present at output 1.
O2MODE=38	Logical OR: |TRJSTAT| - |O2TRIG|	This function makes a OR operation between the Bit-variable |TRJSTAT| and a Bit mask given by |O2TRIG|. The result is present at output 1.
O2MODE=39	Logical AND: |TRJSTAT| - |O2TRIG|	This function makes a AND operation between the Bit-variable |TRJSTAT| and a Bit mask given by |O2TRIG|. The result is present at output 1.
O2MODE=40	Logical OR: |POSRSTAT| - |O2TRIG|	This function makes a OR operation between the Bit-variable |POSRSTAT| and a Bit mask given by |O2TRIG|. The result is present at output 1.
O2MODE=41	Logical AND: |POSRSTAT| - |O2TRIG|	This function makes a AND operation between the Bit-variable |POSRSTAT| and a Bit mask given by |O2TRIG|. The result is present at output 1.

O2MODE=42	Internal temperature warning	This function enables a temperature warning. If one of the three internal measured temperatures reaches the trip level, the digital output ist set to high. After the selected delay time given in |O2TRIG| the drive generates a error message and disables the output stage. The delay time has the range 0...30000 msec and effects following temperatures: Motor temperature |TEMPM|, threshold |MAXTEMPM| Heatsink temperature |TEMPH|, Threshold |MAXTEMPH| Ambient temperature |TEMPE|, threshold |MAXTEMPE|
O2MODE=43	The sign of the actual velocity	OUTPUT1 = 1 V < -|VEL0| OUTPUT1 = 0 V > -|VEL0|
O2MODE=44	Velocity In-Position (active high)	The output 1 is set, if the absolute of the difference between the internal velocity command and the actual velocity is smaller than |O2TRIG|. The size of the window (|O2TRIG|) is given in valid velocity units (|VUNIT|).
O2MODE=45	Velocity In-Position (aktive low)	The output 1 is set, if the absolute of the difference between the internal velocity command and the actual velocity is bigger than |O2TRIG|. The size of the window (|O2TRIG|) is given in valid velocity units (|VUNIT|).
O2MODE=46	Current in Window (low active)	The digital output 1 is set, if the absolute of the difference between current command and actual value is smaller than the window, defined by |O2TRIG|. The window is given in mA.
O2MODE=47	Current not in Window (low active)	The digital output 1 is set, if the absolute of the difference between current command and actual value is greater than the window, defined by |O2TRIG|. The window is given in mA.
O2MODE=48	Logical NOR: |DRVSTAT| - |O2TRIG|	This function makes a inverted OR operation between the Bit-variable |DRVSTAT| and a Bit mask given by |O2TRIG|. The result is present at output 1.
O2MODE=49	Logical NAND: |DRVSTAT| -|O2TRIG|	This function makes a inverted AND operation between the Bit-variable |DRVSTAT| and a Bit mask given by |O2TRIG|. The result is present at output 1.
O2MODE=50	Logical NOR: |TRJSTAT| - |O2TRIG|	This function makes a inverted OR operation between the Bit-variable |TRJSTAT| and a Bit mask given by |O2TRIG|. The result is present at output 1.
O2MODE=51	Logical NAND: |TRJSTAT| - |O2TRIG|	This function makes a AND operation between the Bit-variable |TRJSTAT| and a Bit mask given by |O2TRIG|. The result is present at output 1.
O2MODE=52	Logical AND: |POSRSTAT| - |O2TRIG|	same as O2MODE = 41 but the output is for |PTBASE| * 250 us on high level

O2MODE=53

O2MODE=54	prepared for moving	version > =1.21 The output is high if all following conditions are true
		software-enable set
		no error
		DC link loaded (VBUS > VBUSMIN)
		no contouring error (Warnung n03)
O2MODE=55	master slave status	Version >=2.13: The function OxMODE=55 monitors the actual master slave status at the slave axis. Output=1 The slave is in master/slave modus. This can be: 1. synchroize up to the master speed 2. following the master-position 3. Declutch the master slave mode Ausgang=0 - None of the master slave modes is active. The master pulses are ignored.1 see also function |INxMODE|=42,43

ASCII -Command	O2TRIG
Syntax Transmit	O2TRIG [Data]
Syntax Receive	O2TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3007 ...8
CAN Object No:	35B3 (hex)
PROFIBUS PNU:	1779 (dec) IND = 1 (de
DPR Objekt Nr:	179

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Auxiliary Variable for O2MODE

Description

The function of the auxiliary variable O2TRIG depends on the configuration of |O2MODE|.
see |O2MODE|

ASCII -Command	O3
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3725 (hex)
PROFIBUS PNU:	1749 (dec) IND = 17 (d
DPR Objekt Nr:	549

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O3_18
Syntax Transmit	O1 [data]
Syntax Receive	O1 <data>
Type	Variable rw
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35AE (hex)
PROFIBUS PNU:	1774 (dec) IND = 1 (de
DPR Objekt Nr:	174

Configuration	☐
Function Group	Digital I/O

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Digital Output 1

Description

The O1 command returns the state of the digital output 1 (0 = Low,1 = High).
If no function is assigned to digital output 1 (|O1MODE|=0), then the High/Low state can be given out at output 1 by using the command "O1 1" or "O1 0".

ASCII -Command	O3_18MODE
Syntax Transmit	O1MODE [Data]
Syntax Receive	O1MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	Digital I/O

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35AF (hex)
PROFIBUS PNU:	1775 (dec) IND = 1 (de
DPR Objekt Nr:	175

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Output 1

Description

The O1 command returns the state of the digital output 1 (0 = Low,1 = High).
If no function is assigned to digital output 1 (O1MODE=0), then the High/Low state can be given out at output 1 by using the command "|O1| 1" or "|O1| 0".

		Available in			
ASCII -Command	O3_18TRIG				
Syntax Transmit	O1TRIG [Data]	MMI	☑	CAN-Bus	☑
Syntax Receive	O1TRIG <Data>	PROFIBUS	☑	Sercos	☐
Type	Variable rw				
Format	Integer32				
DIM	-	SERCOS IDN:			
Range	long int	CAN Object No:	35B0 (hex)		
Default	0	PROFIBUS PNU:	1776 (dec) IND = 1 (de		
Opmode	All	DPR Objekt Nr:	176		
Drive Status	-				
Start Firmware	1.0				
Configuration	☐	Data Type BUS/DPR	Integer32		
Function Group	Digital I/O	Weighting 10^3			

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Auxiliary Variable for O1MODE

Description

The function of the auxiliary variable O1TRIG depends on the configuration of |O1MODE|.
see |O1MODE|

ASCII -Command	O3MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3726 (hex)
PROFIBUS PNU:	1750 (dec) IND = 17 (d
DPR Objekt Nr:	550

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O3TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3727 (hex)
PROFIBUS PNU:	1751 (dec) IND = 17 (d
DPR Objekt Nr:	551

Configuration	☐
Function Group	

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description
see |O3_18TRIG|

ASCII -Command	O4
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3728 (hex)
PROFIBUS PNU:	1752 (dec) IND = 17 (d
DPR Objekt Nr:	552

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O4MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3729 (hex)
PROFIBUS PNU:	1753 (dec) IND = 17 (d
DPR Objekt Nr:	553

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description
see |O3_18MODE|

ASCII -Command	O4TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	372A (hex)
PROFIBUS PNU:	1754 (dec) IND = 17 (d
DPR Objekt Nr:	554

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O5
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	372B (hex)
PROFIBUS PNU:	1755 (dec) IND = 17 (d
DPR Objekt Nr:	555

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O5MODE		
Syntax Transmit			
Syntax Receive			
Type	Variable rw		
Format			
DIM			
Range			
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	✔		
Function Group			

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	372C (hex)
PROFIBUS PNU:	1756 (dec) IND = 17 (d
DPR Objekt Nr:	556

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O5TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	372D (hex)
PROFIBUS PNU:	1757 (dec) IND = 17 (d
DPR Objekt Nr:	557

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O6
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	372E (hex)
PROFIBUS PNU:	1758 (dec) IND = 17 (d
DPR Objekt Nr:	558

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O6MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	372F (hex)
PROFIBUS PNU:	1759 (dec) IND = 17 (d
DPR Objekt Nr:	559

| Data Type BUS/DPR | |
| Weighting 10^3 | |

| Last Change of this Object | 1.2 |
| EEPROM | |

| Short Description | Function of digital output |

Description

see |O3_18MODE|

ASCII -Command	O6TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3730 (hex)
PROFIBUS PNU:	1760 (dec) IND = 17 (d
DPR Objekt Nr:	560

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O7
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3731 (hex)
PROFIBUS PNU:	1761 (dec) IND = 17 (d
DPR Objekt Nr:	561

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O7MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3732 (hex)
PROFIBUS PNU:	1762 (dec) IND = 17 (d
DPR Objekt Nr:	562

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O7TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3733 (hex)
PROFIBUS PNU:	1763 (dec) IND = 17 (d
DPR Objekt Nr:	563

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O8
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3734 (hex)
PROFIBUS PNU:	1764 (dec) IND = 17 (d
DPR Objekt Nr:	564

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O8MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3735 (hex)
PROFIBUS PNU:	1765 (dec) IND = 17 (d
DPR Objekt Nr:	565

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O8TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3736 (hex)
PROFIBUS PNU:	1766 (dec) IND = 17 (d
DPR Objekt Nr:	566

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	O9
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3737 (hex)
PROFIBUS PNU:	1767 (dec) IND = 17 (d
DPR Objekt Nr:	567

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	State of digital output

Description

see |O3_18|

ASCII -Command	O9MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3738 (hex)
PROFIBUS PNU:	1768 (dec) IND = 17 (d
DPR Objekt Nr:	568

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output

Description

see |O3_18MODE|

ASCII -Command	O9TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3743 (hex)
PROFIBUS PNU:	1779 (dec) IND = 17 (d
DPR Objekt Nr:	579

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output

Description

see |O3_18TRIG|

ASCII -Command	OCOPY
Syntax Transmit	OCOPY <Data> [- Data] <data>
Syntax Receive	OCOPY <Data> <Data>
Type	Command
Format	Integer8 Integer8
DIM	-
Range	0,1,..,180,192..255
Default	-
Opmode	8
Drive Status	Enabled (only RAM) / Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Parameter Motion Task

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Save/copy Motion Tasks

Description

The OCOPY command can be used to copy motion tasks from one storage location to another. The motion block number can have the following values:

0 - direct/local motion block

1 ... 200 motion blocks from the ROM. The ROM motion blocks are stored in a segment of the internal Flash EEPROM. They remain in the amplifier memory even after the 24V supply has been switched off. Write access to these motion blocks is only permitted if the output stage has been disabled.

201 ... 300 motion blocks from the RAM. The RAM motion blocks can also be written while the output stage is enabled. But the contents of these motion blocks will be lost if the 24V supply is switched off. When the controller is switched on, the RAM motion blocks will be initialized with the contents of ROM motion blocks 1 ... 64.

e.g.
OCOPY 0 1 save the local motion block (direct motion block /RAM) as ROM motion task 1
(The output stage must be inhibited while this command is carried out)
OCOPY 1 201 copy the first ROM motion block to the RAM (number 201)
OCOPY 1 - 16 201 copy ROM motion blocks 1 ... 16 to the RAM (201 ... 216)

ASCII -Command	OLIST
Syntax Transmit	OLIST [Data] [Data]
Syntax Receive	OLIST <Data>
Type	Multi-line Return Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	List of Motion Task Data

Description

The command "OLIST x number" is used to output the contents of "number" motion blocks (= motion orders) one after another, starting with block "x". The interpretation and sequence of the parameters that are shown corresponds to the parameters of the |ORDER| command.

If the "number" parameter is missing, then just the contents of motion block "x" will be shown.

If both the "x" and the "number" parameter are missing, then the contents of all the valid motion blocks will be shown (i.e. motion blocks with valid data and correct checksums).

ASCII -Command	OPMODE
Syntax Transmit	OPMODE [Data]
Syntax Receive	OPMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, .. , 8
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	32 + 33
CAN Object No:	35B4 (hex)
PROFIBUS PNU:	1780 (dec) IND = 1 (de
DPR Objekt Nr:	180

Configuration	☐
Function Group	Amplifier

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Operating Mode

Description

The OPMODE command is used to set the operating mode (basic function) for the amplifier. This operating mode can be changed over at any time, through the fieldbus interface or the digital I/O (|INxMODE|=24).
The following settings are possible:

Zustand	Short Description	Description
OPMODE=0	Velocity control -digital command	Digital (rotational) velocity There are different possibilities to generate a velocity command: - RS232 Interface ("|J|" command) - Fieldbus Interface (PROFIBUS, CANopen, SERCOS, DPR Slot boards)
OPMODE=1	Velocity control -analog command	Analog (rotational) velocity The velocity setpoint is generated by the Analog In s 1/2. The configuration is done with |ANCNFG| and |INxMODE|=8.
OPMODE=2	Current control -digital command	Digital torque The current setpoint can be generated by: - RS232 Interface ("|T|" command) - Fieldbus Interface (PROFIBUS, CANopen, SERCOS, DPR Slot boards)
OPMODE=3	Current control -analog command	Analog torque The current command is generated by the Analog In s 1/2. The configuration is done with |ANCNFG| and |INxMODE|=8.
OPMODE=4	Electronic Gearing (Master/Slave)	Position: electr. gearing The target position is generated by an extrenal encoder. The type of the activated interface is selected by |GEARMODE|.

OPMODE=5	External Trajectory	Position: ext. position nodes The target position is generated by fieldbus (PROFIBUS, CANopen or DRP Slot board). The cycle time for writing the new position can be selected with the command |PTBASE| in 250µs steps. The position controller brings the actual position to the new target postion in the selected time. When using ANCNFG=8, the target position is given by the Analog In 1. The analog voltage is read every 250µs and is used as target position for the position controller. The scaling of the anlog input voltage is done with |SRND| and |ERND|. Before this function is active, a homing move has to completed.
OPMODE=6	SERCOS control	SERCOS control
OPMODE=7	Reserved	
OPMODE=8	Motion Tasks	Position: motion blocks This setting allows the starting of motion tasks and also the homing moves.

ASCII -Command	OPTION
Syntax Transmit	OPTION
Syntax Receive	OPTION <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	int (=Word)
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35B5 (hex)
PROFIBUS PNU:	1781 (dec) IND = 1 (de
DPR Objekt Nr:	181

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Option Slot ID

Description

The OPTION command returns the identification for the slot card that has been detected. The following IDs are possible at present:
H0000 no slot card detected
H01xx I/O-expansion card
H0Cxx PROFIBUS
H03xx SERCOS
H06xx kundenspezifisch
H8100 kundenspezifisch
H8200 kundenspezifisch
H8300 kundenspezifisch

The least significant 8 bits (xx) indicate the hardware revision of the corresponding card.

ASCII -Command	ORDER
Syntax Transmit	ORDER [Data1...Data10]
Syntax Receive	ORDER <Data1...Data10>
Type	Command
Format	Integer32 ... Integer32
DIM	-
Range	0 .. 200, 201 .. 300
Default	-
Opmode	8
Drive Status	Enabled (only RAM) / Disabled
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	Parameter Motion Task

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Set Motion Task Parameters

Description

The ORDER command can be used to define any RAM/ROM motion task (= order). The ORDER command can be used in one of three forms:

ORDER   the contents of the direct motion task (nr = 0) are shown
ORDER nr   the contents of motion task number "nr" are shown
ORDER nr o_p o_v o_c o_acc o_dec o_tab reserved o_fn o_ft = definition of motion task "nr"

The "nr" parameter specifies the number of the motion task that is to be defined. The motion task number can have the following values:

0 - direct/local motion task

1 ... 200 motion tasks from the ROM.
The ROM motion tasks are stored in a segment of the internal Flash EEPROM. They remain in the amplifier memory even after the 24V supply has been switched off. Write access to these motion tasks is only permitted if the output stage has been disabled.

201 ... 300 motion tasks from the RAM.
The RAM motion tasks can also be written while the output stage is enabled. But the contents of these motion tasks will be lost if the 24V supply is switched off. When the controller is switched on, the RAM motion tasks will be initialized with the contents of ROM motion tasks 1 ... 100.

The individual elements o_p ... o_ft have the same interpretation as the corresponding ASCII commands.

|O_P| target position/path for the motion task
|O_V| target speed/velocity
|O_C| type of motion task (control word)
|O_ACC1| acceleration ramp /starting acceleration
|O_DEC1| braking ramp / deceleration
|O_TAB| number of the lookup table

|O_FN| number of following motion tasks
|O_FT| delay before starting next motion task

ASCII -Command	OTUNE		
Syntax Transmit	OTUNE [Data]		
Syntax Receive	OTUNE <Data>		
Type	Command		
Format	-		
DIM	-		
Range	100 ... 800 Hz		
Default	250		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	optimizing function VLO parameter

Description

The command "OTUNE [data]" starts an optimizing function for the VLO (parameter for the Luenberger Velocity Observer) at the frequency "data" Hz.

ASCII -Command	OVRIDE
Syntax Transmit	OVRIDE [Data]
Syntax Receive	OVRIDE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 3
Default	0
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☑
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	108
CAN Object No:	35B6 (hex)
PROFIBUS PNU:	1782 (dec) IND = 1 (de
DPR Objekt Nr:	182

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Override Function for Motion Tasks

Description

The override function can be used to influence the speed/velocity for a motion block, reference movements and jog mode through the analog/digital interface. When this function is activated, the analog command is read every millisecond and used for scaling the velocity for the motion block.
Analog input=10V motion block velocity = the target velocity that is programmed in the motion block
Analog input=5V motion block velocity = 50% of the programmed target velocity

The override function does not work with $\sin^2$ curves.

The following settings are possible:
OVRIDE=0 override function is switched off

OVRIDE=1 analog input 1 input is activated for the override function

OVRIDE=2 analog input 2 input is activated for the override function

OVRIDE=3 Digital interface is activated for the override function. The digital Interface can be: Sercos, CAN, PROFIBUS, DPR , RS 232 and all other field busses.
see |DOVRIDE|.

> Firmware 1.37

OVRIDE=4 Limiting of the motion task speed by the master speed

In case motion tasks are used in electronic gearing the motion task speed is limited in a way, so that the sign of the slave speed (master + motion task) is not inverted.

Example 1: Master-Speed (PSPEED1) = +1000
The motion task speed (PSPEED3) is limited to (-1000...PVMAX)

Example 2: Master-Speed (PSPEED1) = -2000
The motion task speed (PSPEED3)) is limited to (-PVMAX...+2000).

OVRIDE=5 Limiting of the motion task speed by the positive master speed

In case of negative master speed command the motion task speed is set to 0 .

Example 1: Master-Speed (PSPEED1) = +1000
The motion task speed (PSPEED3) is limited to (-1000...PVMAX)

Example 2: Master-Speed (PSPEED1) = -2000
The motion task speed (PSPEED3)) is limited to 0.

OVRIDE=6 Limiting of the motion task speed by the negative master speed

In case of positive master speed command the motion task speed is set to 0 .

Example 1: Master-Speed (PSPEED1) = +1000
The motion task speed (PSPEED3)) is limited to 0.

Example 2: Master-Speed (PSPEED1) = -2000
The motion task speed (PSPEED3) is limited to (-PVMAX ... +2000).

Bei positiver Master-Geschwindigkeit wird die Fahrsatz-Geschwindigkeit auf 0 begrenzt.

Beispiel 1: Master-Geschwindigkeit (PSPEED1) = +1000
die Fahrsatz-Geschwindigkeit (PSPEED3) wird auf 0 begrenzt.

Beispiel 2: Master-Geschwindigkeit (PSPEED1) = -2000
die Fahrsatz-Geschwindigkeit (PSPEED3) wird auf den Bereich (-PVMAX...+2000) begrenzt.

ASCII -Command	P1
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3644 (hex)
PROFIBUS PNU:	1924 (dec) IND = 1 (de
DPR Objekt Nr:	324

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P1_P16		Available in	
Syntax Transmit	P1 [Data]		MMI ☐	CAN-Bus ☑
Syntax Receive	P1 <Data>		PROFIBUS ☐	Sercos ☐
Type	Variable rw			
Format	Integer32			
DIM	-		SERCOS IDN:	
Range	long int		CAN Object No:	(hex)
Default	0		PROFIBUS PNU:	1924 (dec) IND = 1 (de
Opmode	All		DPR Objekt Nr:	
Drive Status	-			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	Integer32
Function Group	-		Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Fast Position Register 1 ... 16

Description

The variables P1 ... P16 contain the position values for the position thresholds 1 ... 16.
The scaling of the position depends on the |PGEARI|, |PGEARO|, |PRBASE| parameters, and is calculated according to the following formula:

$$P[increments] = P[entered] * |PGEARO| / |PGEARI|$$

1048576 increments/turn at |PRBASE|=20
65536 increments/turn at |PRBASE|=16

see also description of |WPOS|, |WPOSE|, |WPOSP|, |WPOSX|, |POSRSTAT|

The object number is given for P1. The other object numbers up to P16 are the next ones.

ASCII -Command	P10		Available in	
Syntax Transmit			MMI ☐	CAN-Bus ☑
Syntax Receive			PROFIBUS ☑	Sercos ☐
Type				
Format			SERCOS IDN:	
DIM			CAN Object No:	364D (hex)
Range			PROFIBUS PNU:	1933 (dec) IND = 1 (de
Default			DPR Objekt Nr:	333
Opmode				
Drive Status				
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	
Function Group			Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P11
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	364E (hex)
PROFIBUS PNU:	1934 (dec) IND = 1 (de
DPR Objekt Nr:	334

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P12
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	364F (hex)
PROFIBUS PNU:	1935 (dec) IND = 1 (de
DPR Objekt Nr:	335

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P13
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3650 (hex)
PROFIBUS PNU:	1936 (dec) IND = 1 (de
DPR Objekt Nr:	336

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P14
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3651 (hex)
PROFIBUS PNU:	1937 (dec) IND = 1 (de
DPR Objekt Nr:	337

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P15
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3652 (hex)
PROFIBUS PNU:	1938 (dec) IND = 1 (de
DPR Objekt Nr:	338

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P16		
Syntax Transmit			
Syntax Receive			
Type			
Format			
DIM			
Range			
Default			
Opmode			
Drive Status			
Start Firmware	1.0		
Configuration	☐		
Function Group			

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3653 (hex)
PROFIBUS PNU:	1939 (dec) IND = 1 (de
DPR Objekt Nr:	339

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P2
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3645 (hex)
PROFIBUS PNU:	1925 (dec) IND = 1 (de
DPR Objekt Nr:	325

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P3
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3646 (hex)
PROFIBUS PNU:	1926 (dec) IND = 1 (de
DPR Objekt Nr:	326

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P4
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3647 (hex)
PROFIBUS PNU:	1927 (dec) IND = 1 (de
DPR Objekt Nr:	327

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P5
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3648 (hex)
PROFIBUS PNU:	1928 (dec) IND = 1 (de
DPR Objekt Nr:	328

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P6
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0

Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3649 (hex)
PROFIBUS PNU:	1929 (dec) IND = 1 (de
DPR Objekt Nr:	329

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P7
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	364A (hex)
PROFIBUS PNU:	1930 (dec) IND = 1 (de
DPR Objekt Nr:	330

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P8
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	364B (hex)
PROFIBUS PNU:	1931 (dec) IND = 1 (de
DPR Objekt Nr:	331

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	P9
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0

Configuration ☐

Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	364C (hex)
PROFIBUS PNU:	1932 (dec) IND = 1 (de
DPR Objekt Nr:	332

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register

Description

see |P1_P16|

ASCII -Command	PARCNFG
Syntax Transmit	PARCNFG [Data]
Syntax Receive	PARCNFG <Data>
Type	rw
Format	Integer32
DIM	
Range	
Default	
Opmode	All
Drive Status	Disable
Start Firmware	2.11
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	375D (hex)
PROFIBUS PNU:	1805 (dec) IND = 17 (d
DPR Objekt Nr:	605

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Configuration of parameter sets switching functions

Description

The command PARCNFG is used to select the function for the second parameter group. This group contains the parameters |GP|,|GPFFT|,|GPFFV|,|GV|,|GVFR|,|GVTN|,|KC|,|KTN|,|MICONT|,|MIPEAK|,|MJ|,|MKT|,|ML| |MLGC|,|MLGD|,|MLGP|,|MLGQ|,|MPOLES|,|MRS|,|MTIME| with the ending _X.

Selection of the active parameters
The selection can be activated by a digital input or via an internal function.

By dig. Input
The function INxMODE=57 is used for this process. Only one digital input setting 57 is allowed otherwise a warning n24 – parameter error is monitored.
Also the command PARCNFG has to be auf 0 or warning n24 is activated . The digital input level selects the parameter group
- Low: main parameter group
- High: second parameter group

Automatic mode

PARCNFG = 0x0000   always standard parameters
PARCNFG = 0x0001   second parameter group for the Wake&Shake-process.
PARCNFG = 0x0002   second parameter group active during motion tasks, homing or jog mode.

Siehe auch |PARDUMP|, |PARRST|

ASCII -Command	PARDUMP
Syntax Transmit	PARDUMP [Data]
Syntax Receive	PARDUMP <Data>
Type	r
Format	String
DIM	
Range	
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.11

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	

Configuration	☐
Function Group	

Data Type BUS/DPR	String
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	No

Short Description	List of switchable parameter sets

Description

The ASCII parameter PARDUMP lists all drive parameters that are included in the switchable parameter set.

The output looks like this:

GP 0.1   (GP_X 0.2)
GV 1.5   (GV_X 3)
Data Set 1 activ

The first parameter in every line ist the ascii parameter from the main parameter set.
The parameter in brackets is the ascii parameter from the second (shadow) parameter set.
The last line indicates the currently active parameter set.

ASCII -Command	PARRST
Syntax Transmit	PARRST [Data]
Syntax Receive	PARRST <Data>
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	0

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	

Short Description	second parameter set = main parameter set

Description

The ASCII parameter PARRST resets all parameters of the second (shadow) parameter set to the values of the main parameter set.

See also |PARCNFG|, |PARDUMP|

ASCII -Command	PASS
Syntax Transmit	PASS [Data]
Syntax Receive	PASS <Data>
Type	w
Format	Integer32
DIM	-
Range	-2147483648...2147483647
Default	0
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36D5 (hex)
PROFIBUS PNU:	1669 (dec) IND = 17 (d
DPR Objekt Nr:	469

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Password Input

Description

This variable defines the value of the password. When the password function is activ (|PASSX| = y)
the change of parameter is only possible after the setting of a valid password value "PASS y"

ASCII -Command	PASSCNFG
Syntax Transmit	PASSCNFG [Data]
Syntax Receive	PASSCNFG <Data>
Type	rw
Format	Integer8
DIM	
Range	0,1
Default	0
Opmode	
Drive Status	
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36D8 (hex)
PROFIBUS PNU:	1672 (dec) IND = 17 (d
DPR Objekt Nr:	472

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Password Function

Description

The command PASSCNFG sets the passwort-function.(see also |PASS|, |PASSX|)

PASSCNFG=0   all parameter writing procedures are locked

PASSCNFG=1   only parameter SAVE is locked

ASCII -Command	PASSX
Syntax Transmit	PASSX [Data]
Syntax Receive	PASSX <Data>
Type	w
Format	Integer32
DIM	
Range	-2147483648...2147483647
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration ☐

Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	36D4 (hex)
PROFIBUS PNU:	1668 (dec) IND = 17 (d
DPR Objekt Nr:	468

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	activate password function

Description

PASSX activates the password function
PASSX=0 password function switched off
PASSX=y password function switched on.
The change of all parametera is only possible after the setting of a valid password "|PASS| y".

ASCII -Command	PBAL
Syntax Transmit	PBAL
Syntax Receive	PBAL <Data>
Type	Variable ro
Format	Integer32
DIM	W
Range	0 .. 1500
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35C0 (hex)
PROFIBUS PNU:	1792 (dec) IND = 1 (de
DPR Objekt Nr:	192

Configuration	☐
Function Group	Actual values

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Actual Regen Power

Description

The actual value of average regen power.

ASCII -Command	PBALMAX
Syntax Transmit	PBALMAX [Data]
Syntax Receive	PBALMAX <Data>
Type	Variable rw
Format	Integer32
DIM	W
Range	see Manual
Default	
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35C1 (hex)
PROFIBUS PNU:	1793 (dec) IND = 1 (de
DPR Objekt Nr:	193

Configuration	☐
Function Group	Basic Setup

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Maximum Regen Power

Description

This parameter can be used to limit the continuous power dissipated in the regen resistor.
If the actual value of the power in the regen resistor exceeds the preset maximum value, then the regen resistor is switched off. This may trigger the fault message "Overvoltage" as a result. If the maximum value is too high, the regen resistor may be overloaded.

Defaultwerte:

with |PBALRES| = 0
SR 303,   SR 341   20 W
SR 306, SR 310, SR 343, SR 346   50 W

with |PBALRES| >= 1
SR 303,   SR 341   300W
SR 306, SR 310, SR 343, SR 346   1000 W

ASCII -Command	PBALRES
Syntax Transmit	PBALRES [Data]
Syntax Receive	PBALRES <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 ... 200
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☑
Function Group	Basic Setup

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35C2 (hex)
PROFIBUS PNU:	1794 (dec) IND = 1 (de
DPR Objekt Nr:	194

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Select Regen Resistor

Description

This parameter can be used to select whether the internal (0) or an external (> 0) regen resistor should be used.The value > 0 sets the regen resistor in ohm.

Note: The allowed resistor value depends to the used drive type. Look into the installation manuel for the data, please.

It affects the |PBALMAX| parameter.

ASCII -Command	PBAUD
Syntax Transmit	PBAUD
Syntax Receive	PBAUD <Data>
Type	Variable ro
Format	Float
DIM	kBaud
Range	1.0 .. 12000.0
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35C3 (hex)
PROFIBUS PNU:	1795 (dec) IND = 1 (de
DPR Objekt Nr:	195

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Profibus Baud Rate

Description

The PBAUD command reads out the present PROFIBUS baud rate. The baud rate is provided by the master (control system). The Drive detects the baud rate automatically.
The following settings are possible (in kbaud/kbps):
12000
6000
3000
1500
500
187.5
93.75
45.45
19.2
9.6

ASCII -Command	PE
Syntax Transmit	PE
Syntax Receive	PE <Data>
Type	Variable ro
Format	Integer32
DIM	µm
Range	long int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	189
CAN Object No:	35C5 (hex)
PROFIBUS PNU:	1797 (dec) IND = 1 (de
DPR Objekt Nr:	197

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Actual Following Error

Description

The following error |OPMODE| = 8 or contouring error |OPMODE| = 5 or 6 is the momentary difference between the position command and the actual position and is displayed in the same units as the position control loop (|PGEARI| / |PGEARO|).

See description of |PFB| , |PEMAX|, |PUNITS|

ASCII -Command	PEINPOS
Syntax Transmit	PEINPOS [Data]
Syntax Receive	PEINPOS <Data>
Type	Variable rw
Format	Integer32
DIM	PUNIT
Range	long int
Default	4000
Opmode	>=4
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position Data

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35C6 (hex)
PROFIBUS PNU:	1798 (dec) IND = 1 (de
DPR Objekt Nr:	198

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	In-Position Window

Description

If the distance between the actual position and the target position during the execution of an internal motion block is less than the window width that has been set, then the In-Position signal is generated (status message, digital output).
The In-Position window is entered in the same units as the position control loop (|PGEARI| / |PGEARO|).
See description of |PFB|

ASCII -Command	PEMAX
Syntax Transmit	PEMAX [Data]
Syntax Receive	PEMAX <Data>
Type	Variable rw
Format	Integer32
DIM	µm
Range	long int
Default	262144
Opmode	>=4
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	Position

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	159
CAN Object No:	35C7 (hex)
PROFIBUS PNU:	1799 (dec) IND = 1 (de
DPR Objekt Nr:	199

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. Following Error

Description

If the momentary following or contouring error (|PE|) goes beyond the maximum value set, the motion is stopped and the following error warning (n03) or contouring error fault (F03) is generated. The motion block can only be continued (|CONTINUE|) or restarted after the warning has been acknowledged (|CLRFAULT|, digital input |INxMODE|=14). PEMAX=0 switches off the following error monitoring.

If a following error occurs, negative values do not result in a stop of the axis. The status bit and warning are still there. A following motion task or new motion task cannot be started until the following error is cleared.

ASCII -Command	PFB
Syntax Transmit	PFB
Syntax Receive	PFB <Data>
Type	Variable ro
Format	Integer32
DIM	µm
Range	long int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	51
CAN Object No:	35C8 (hex)
PROFIBUS PNU:	1800 (dec) IND = 1 (de
DPR Objekt Nr:	200

Configuration	☐
Function Group	Actual values

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Actual Position from Feedback Device

Description

The PFB command returns the actual value of the position (from the position control loop feedback). The unit for the position value depends on the |PGEARI|, |PGEARO| and |PRBASE| settings.

PFB = Position * |PGEARI| / |PGEARO|
whereby:
Position = position value in increments, 1048576/turn for |PRBASE|=20, 65536/turn for |PRBASE|=16
|PGEARI|, |PGEARO| - resolution of position control loop

Note: If the resolution is set to 1 (|PGEARI|=|PGEARO|) then the PFB command provides internal units (counts).

If the position information of an external encoder is evaluated (|EXTPOS|=1,2,3), then this information can be displayed by using the |PFB0| command.

ASCII -Command	PFB0
Syntax Transmit	PFB0
Syntax Receive	PFB0 <Data>
Type	Variable ro
Format	Integer32
DIM	Counts
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	Actual values

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	53
CAN Object No:	35C9 (hex)
PROFIBUS PNU:	1801 (dec) IND = 1 (de
DPR Objekt Nr:	201

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Position from External Encoder

Description

The PFB0 command returns the actual position, calculated from the position information provided by an external encoder. The position is only derived from an external encoder if the configuration variable |EXTPOS| is set to 1,2,3. The unit for the position value depends on the |PGEARI|, |PGEARO| and |ENCIN| settings.

PFB0 = Position * |PGEARI| / |PGEARO|
whereby:
Position = position value in increments
|PGEARI|, |PGEARO| - resolution of position control loop

Note: If the resolution is set to 1 (|PGEARI|=|PGEARO|) then the PFB0 command provides internal units (counts).

ASCII -Command	PGEARI		
Syntax Transmit	PGEARI [Data]		
Syntax Receive	PGEARI <Data>		
Type	Variable rw		
Format	Integer32		
DIM	µm		
Range	long int		
Default	10000		
Opmode	All		
Drive Status	Disabled + Reset (Coldstart)		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35CA (hex)
PROFIBUS PNU:	1802 (dec) IND = 1 (de
DPR Objekt Nr:	202

Configuration	☐
Function Group	Position Data

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Resolution (Numerator)

Description

Description:

The pararameter PGEARI is used in conjunction with the |PGEARO| parameter to convert the internal position and speed from increments into user-defined units. The PGEARI parameter contains the number of user-defined units that are counted at |PGEARO| turns. The user decides which unit is used by the formula PGEARI/|PGEARO|.

1. Example:

If a band-conveyer moves 3cm by one turn of the rotor shaft and the operator wants to use the unit mm, the value of PGEARI/|PGEARO| must be 30000. It is advisable to set PGEARI=30000 and |PGEARO|=1. The position can now be adjusted in mm.

If a gearing is connected previous to the band-conveyer with a ratio of 3:1, the user just needs to set |PGEARO|=3. Also odd-numbered values of the ratio are possible (e.g. 2.5:1). For that purpose PGEARI must be multiplicated with 2 and |PGEARO| with 5.

2. Example

A motion task should be driven by a certain speed. Therefore Bit 13 of the motion task controllword o_c has to be set on 1. For that purpose the parameter o_v describes the target speed in the user-defined unit/sec. To get the target speed in SI-units use the following formula:

o_v=10000; PGEARI=1000, |PGEARO|=1

$n\ [rev*sec^{-1}] = o\_v\ /\ (\ PGEARI\ /\ |PGEARO|\ )$

Examples to explain the

Resolution = |PGEARI| / |PGEARO| :

Linearmotor	>>>	|1|
Turntable	>>>	|2|
Turntable extern driven	>>>	|3|
Spindel	>>>	|4|
Beltdrive	>>>	|5|

ASCII -Command	PGEARO
Syntax Transmit	PGEARO [Data]
Syntax Receive	PGEARO <Data>
Type	Variable rw
Format	Integer32
DIM	µm
Range	long int
Default	1048576
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☐
Function Group	Position Data

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35CB (hex)
PROFIBUS PNU:	1803 (dec) IND = 1 (de
DPR Objekt Nr:	203

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Resolution (Denominator)

Description

Description:

The parameter PGEARO is used in conjunction with the |PGEARI| parameter to convert the control loop position and speed from user-defined units into internal increments.
The PGEARO parameter contains in combination with |PRBASE| the number of increments that are moved if the path to be moved has a length of |PGEARI|.
The conversion is made according to the following formula:

Position[increments] = Position[user-defined unit] * PGEARO *2^|PRBASE| / |PGEARI|
Velocity[increments/250us] = Velocity[user-defined unit] * PGEARO *2^|PRBASE| / (|PGEARI| * 4000)

If |PGEARI| = PGEARO * 2^|PRBASE|, then there will be no conversion from user-defined units into increments. In this case, the position and velocity must be given in increments.

Position: 1 turn = 2^|PRBASE| increments

Velocity: speed [rpm] * 2^|PRBASE| / (4000 *60)

For an example: see |PGEARI|

ASCII -Command	PIOBUF
Syntax Transmit	PIOBUF
Syntax Receive	PIOBUF <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35CC (hex)
PROFIBUS PNU:	1804 (dec) IND = 1 (de
DPR Objekt Nr:	204

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Profibus data

Description

This command reads out the present PROFIBUS input and output buffers. The output buffer handles the data flow from the control system to the Drive, and the input buffer handles the data flow from the Drive to the control system. Each buffer is 20 bytes long (telegram length) and is put together from the PKW section (8 bytes. i.e. 4 words) and the PZD section (12 bytes, 6 words). The individual bytes are in hexadecimal format.
PIOBUF provides 20 bytes of output buffer in the first line, and 20 bytes of input buffer in the second line.

If the communication over the PROFIBUS is interrupted or faulty, then a fault message "ERR [PIOBUF] NO DATA EXCHANGE SPC3 - INTERRUPT" is generated.

ASCII -Command	PMODE
Syntax Transmit	PMODE [Data]
Syntax Receive	PMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2
Default	1
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	✔
Function Group	Basic Setup

Available in

MMI	✔	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	35CD (hex)
PROFIBUS PNU:	1805 (dec) IND = 1 (de
DPR Objekt Nr:	205

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Line Phase Mode

Description

PMODE=0   single phase operation (current limit) only available on S 34x.
no warning, no fault message, current limited to max. see |POWER_PMODE|
PMODE=1   three phase operation, current limit and warning n05 in case of network phase missing
current limited to max. see |POWER_PMODE|
PMODE=2   three phase operation, error message F19 in case of DC bus break down
PMODE=3   three phase operation, current limit in case of network phase missing

Default-setting: PMODE=1

If the current limiting is activated, it only applies to periods of acceleration. A braking operation can still be carried out at full current.

ASCII -Command	PNOID
Syntax Transmit	PNOID
Syntax Receive	PNOID <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35CE (hex)
PROFIBUS PNU:	1806 (dec) IND = 1 (de
DPR Objekt Nr:	206

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	PROFIBUS ID

Description

The PNOID command reads out the identification number of the Drive. This number is used for the unique identification of the Drive as a participant in the PROFIBUS network. The ID is allocated and managed by the PROFIBUS User Organization. This instrument ID is also part of the GSD (base data for the instrument).

PNOID returns the identification number 045D (hexadecimal).

ASCII -Command	POSCNFG
Syntax Transmit	POSCNFG [Data]
Syntax Receive	POSCNFG <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	0
Opmode	8
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	✔
Function Group	Position Data

Available in

MMI	✔	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	35CF (hex)
PROFIBUS PNU:	1807 (dec) IND = 1 (de
DPR Objekt Nr:	207

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Axes Type

Description

Use the axis type to select whether the axis is treated as a linear or rotary axis. This variable does not imply that the motor is a linear or rotary motor, but instead, affects the way the software limit switches are used by the Firmware. The software limit switches are treated in different ways, depending on the selection. The possible settings are:

POSCNFG=0	Linear Axes	Axes with a limited range of movement. The zero position for position tracking is fixed by a homing operation. With this setting, a set reference point is a precondition to be able to implement motion blocks. After the homing movement (setting the reference point) has been completed, the position is continuously tracked for the control loop, and remains valid until the amplifier is switched off. In case a multiturn absolute feedback is used a reference move after drive switch on is not necessary. see also |ROFFS|

| POSCNFG=1 | Modulo Axis | Axes with a limited range of movement. The minimum position is \|SRND\| and the maximum position is \|ERND\|-1. If the maimum position \|ERND\|-1 is reached, it automatically switches over to \|SRND\|. The absolute target positions have to be in the defined range. If a motion task is startet, which has a absolute position outside the range, a warning "n08" is displayed (wrong motion task). Relative moves are calculated in a way, that the target position always is in the defined range. A positioning in a axes like this, gives two possibilities of direction to the target position. \|DREF\| gives the possibility to restrict the direction if an absolute motion task type is selected. This axes type also needs a homing move.

In case a multiturn absolute feedback is used a reference move after drive switch on is not necessary.

see also \|ROFFS\| |

ASCII -Command	POSRSTAT
Syntax Transmit	POSRSTAT [Data]
Syntax Receive	POSRSTAT <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3643 (hex)
PROFIBUS PNU:	1923 (dec) IND = 1 (de
DPR Objekt Nr:	323

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status of Fast Position Registers 1 ... 16

Description

The variable POSRSTAT returns the present status of the fast position registers.
This variable can be considered as a 32-bit variable, whereby the lower 16 bits (bits 0 ... 15) are used for the status information of position registers P1 ... P16.
Bit=0 position signaling inactive
Bit=1 position signaling active (position overrun for |WPOSP|=0 or underrun for |WPOSP|=1).

See also |WPOS|

ASCII -Command	PPOTYP
Syntax Transmit	PPOTYP
Syntax Receive	PPOTYP <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	2
Default	2
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35D0 (hex)
PROFIBUS PNU:	1808 (dec) IND = 1 (de
DPR Objekt Nr:	208

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object		1.0
EEPROM	Yes	

Short Description	Profibus PPO Type

Description

PPOTYP reads the PROFIBUS DP telegram type. The amplifier supports telegram type 2 (telegram consists of 10 words (20 bytes) and is divided into a PKW section (4 words) and a PZD section (6 words)). PPOTYP returns the value, 2.

ASCII -Command	PRBASE
Syntax Transmit	PRBASE [Data]
Syntax Receive	PRBASE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	1 ... 32
Default	20
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	79 + 116
CAN Object No:	35D1 (hex)
PROFIBUS PNU:	1809 (dec) IND = 1 (de
DPR Objekt Nr:	209

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Resolution

Description

Description:

The Servostar 300 works with an internal 64Bit variable for counting the number of turns of the rotor shaft and for the internal position resolution. The upper 32Bit are disposed for counting the number of turns, the lower 32 Bit are acting for the internal position resolution. External controller are working mostly with 32Bit variables. Therefore 32Bit of the 64Bit variable must be copied in an internal 32Bit variable.

PRBASE defines, how many Bits of this 32 Bit variable are acting for the position resolution. The remaining Bits are used for counting the number of turns. The resolution is only activated when the amplifier is switched off and then on again.

PRBASE=20:
20Bits are available for the internal position resolution. With the remaining 12 Bits, the Servostar can count $2^{12}=4096 =+/-2047$ turns.

PRBASE=16:
16Bits are available for the internal position resolution. With the remaining 16 Bits, the Servostar can count $2^{12}=65536=+/-32767$ turns.

Example:

Internal 64Bit variable: : 0x00000012   15E3A455
　　　　　　　　Number of turns Position

Internal 32Bit variable at PRBASE=20 : 0x01215E3A

Internal 32Bit variable at PRBASE=16 : 0x001215E3

ASCII -Command	PRD
Syntax Transmit	PRD
Syntax Receive	PRD <Data>
Type	Variable ro
Format	Integer32
DIM	Counts
Range	0 .. 1048575
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35D2 (hex)
PROFIBUS PNU:	1810 (dec) IND = 1 (de
DPR Objekt Nr:	210

Configuration	☐
Function Group	Actual values

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	20-bit Position Feedback

Description

The PRD command returns a 20-bit position (absolute within one turn) that is derived from the signals of the feedback device
(|FBTYPE|). Unlike the position from the position control loop, PFB, this position cannot be altered.
PRD is not related to |PRBASE|

ASCII -Command	PROMPT
Syntax Transmit	PROMPT [Data]
Syntax Receive	PROMPT <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0, 1, 2, 3
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35D3 (hex)
PROFIBUS PNU:	1811 (dec) IND = 1 (de
DPR Objekt Nr:	211

Configuration	☐
Function Group	Communication

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Select RS232 Protocol

Description

The PROMPT parameter can be used to set the protocol for the RS232 transmission.
The following settings are possible:

PROMPT=0	No Echo	The data that is received through the RS232 interface is not automatically echoed (transmitted). There is no output of the prompt (-->) symbol.
PROMPT=1	"-->" plus Echo	The data that is received through the RS232 interface is automatically echoed (transmitted). The prompt (-->) symbol is given for inputting data.
PROMPT=2	Terminal Mode	This setting is the same as PROMPT=1 except: 1. If a CR(Enter) command is typed in at the beginning of the line, the last command is repeated. 2. Some commands (like DUMP) output more than one line of information. In this cases, the output is automatically stopped after one page.

PROMPT=3	"-->" plus Echo plus Checksum	This setting is the same as PROMPT=1 except an additional checksum is transmitted and checked in both directions to prevent wrong data. All character of a command are summed (Modulo 256 without CR). example: Command string : "|ADDR| 1<CR>" generate Checksum: "A" = 0x41 "D" = 0x44 "D" = 0x44 "R" = 0x52 " " = 0x20 "1" = 0x31 The sum is: 0x16C Modulo 256: 0x6C = 108 (Dec) First Character: 108/16 + 0x30 =0x36 = "6" Sec. Character: 108%16 + 0x30 = 0x3C = "<" The command string is: "ADDR 16<" <CR> When the command string is received, the same calculation is done and the last two characters in front of the <CR> are compared with the received data. If the checksum is ok, the ACK (0x06) is send, if no NACK (0x15) is send.

ASCII -Command	PSTATE
Syntax Transmit	PSTATE
Syntax Receive	PSTATE <Data>
Type	Variable ro
Format	String
DIM	-
Range	-
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35D4 (hex)
PROFIBUS PNU:	1812 (dec) IND = 1 (de
DPR Objekt Nr:	212

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Profibus Status

Description

The command PSTATE reads out the present status of the PROFIBUS communication. The first value that is shown provides the SPC3 WATCHDOG status, the second value provides the PROFIBUS DP-status.

SPC3 WATCHDOG status

0 = baud rate search
1 = check baud rate
2 = DP mode, i.e. the bus watchdog is active

PROFIBUS-DP status

0 = wait for parameterization, performed by the master
1 = wait for configuration, performed by the master
2 = data exchange
3 = fault – the cause could, for instance, have been a faulty parameterization telegram in the data transfer phase.

Productive data can only be received, i.e. data exchanged for the PKW and PZD sections of the Drive, when the SPC3 WATCHDOG status has the value 2, and the PROFIBUS-DP status has the value 2.

ASCII -Command	PTARGET
Syntax Transmit	PTARGET
Syntax Receive	PTARGET <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3654 (hex)
PROFIBUS PNU:	1940 (dec) IND = 1 (de
DPR Objekt Nr:	340

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Last Target Position

Description

The command PTARGET can be used to request the target position for the last motion task that was started (and possibly already interrupted). This position is accepted as a new target position, as soon as the |CONTINUE| command is executed (to continue the last motion task).

ASCII -Command	PTBASE
Syntax Transmit	PTBASE [Data]
Syntax Receive	PTBASE <Data>
Type	rw
Format	Integer8
DIM	1/4 ms
Range	1 ... 127
Default	4
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	1813 (dec) IND = 1 (de
DPR Objekt Nr:	213

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Time base for the external trajectory

Description

The PTBASE parameter is used to define the interpolation time for the external trajectory (|OPMODE|=5). The time is set in 250 microsecond steps, and defined the time period in which the drive should reach the next position command. Since the internal position control loop works in 250 microsecond steps, an interpolation of the given position command (external trajectory) is also given in 250 microsecond steps.

ASCII -Command	PTMIN		Available in	
Syntax Transmit	PTMIN [Data]		MMI ☑	CAN-Bus ☑
Syntax Receive	PTMIN <Data>		PROFIBUS ☑	Sercos ☐
Type	Variable rw			
Format	Integer16		SERCOS IDN:	
DIM	>> ACCUNIT		CAN Object No:	35D6 (hex)
Range	3 .. 126000		PROFIBUS PNU:	1814 (dec) IND = 1 (de
Default	3150		DPR Objekt Nr:	214
Opmode	8			
Drive Status	-			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	Integer16
Function Group	Position Data		Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Min. Acceleration Ramp for Motion Tasks

Description

The minimum acceleration ramp PTMIN defines the minimum time that is permitted for a velocity change from 0 to |PVMAX|.
Regardless of how the acceleration value is entered (milliseconds, SI units), the acceleration that is used is limited to |PVMAX| /
PTMIN at the start of a motion task.
With the help of the |PVMAX| and PTMIN parameters it is possible to control the behavior of the system, especially during the
commissioning phase, without having to alter the individual motion tasks.

ASCII -Command	PUNIT
Syntax Transmit	PUNIT [Data]
Syntax Receive	PUNIT <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 ... 12
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	✔
Function Group	

Available in

MMI	✔	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	3660 (hex)
PROFIBUS PNU:	1952 (dec) IND = 1 (de
DPR Objekt Nr:	352

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Set Resolution of the Position

Description

PUNIT enables a systemwide setting for the unit of position for the position controller. The following settings are possible:

PUNIT=0   internal Unit (user specific)
PUNIT=1   1 dm (0.1 m)
PUNIT=2   1 cm (0.01 m)
PUNIT=3   1 mm
PUNIT=4   0.1 mm
PUNIT=5   0.01 mm
PUNIT=6   1 µm
PUNIT=7   0.1 µm
PUNIT=8   0.01 µm
PUNIT=9   1 nm
PUNIT=10   0.1 nm
PUNIT=11   inch.
PUNIT=12   mils
PUNIT=13   °

The parameter PUNIT is only used for the MMI. It calculates different units for the MMI. All internal calculations (position controller resolution |PGEARI| and motion tasks are not effected.

IF PUNIT=0 there is no difference to older firmware versions. The unit is defined only by |PGEARI|.

e.g: |PGEARI|=360   (Unit = Degree)
     |PGEARI|=3600 (Unit= 0.1 Degree)

ASCII -Command	PV
Syntax Transmit	PV
Syntax Receive	PV <Data>
Type	Variable ro
Format	Integer32
DIM	VUNIT
Range	long int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35D7 (hex)
PROFIBUS PNU:	1815 (dec) IND = 1 (de
DPR Objekt Nr:	215

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Actual Velocity (Position Control Loop)

Description

The actual velocity (position control loop) can be requested by using the PV command.
The scaling of the velocity depends on the |PGEARI|, and |PGEARO| parameters.

ASCII -Command	PVMAX	
Syntax Transmit	PVMAX [Data]	
Syntax Receive	PVMAX <Data>	
Type	Variable rw	
Format	Integer32	
DIM	VUNIT	
Range	0 .. VLIM	
Default	10000	
Opmode	8	
Drive Status	-	
Start Firmware	1.0	

Configuration ☐

Function Group | Position Data

Available in

MMI ☑   CAN-Bus ☑

PROFIBUS ☑   Sercos ☐

SERCOS IDN:	
CAN Object No:	35D8 (hex)
PROFIBUS PNU:	1816 (dec) IND = 1 (de
DPR Objekt Nr:	216

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description | Max. Velocity for Position Control

Description

The parameter PVMAX defines the maximum velocity that is permitted for a motion task. When a motion task is started, the target velocity for the motion task is limited to the value of PVMAX.
With the help of the PVMAX and |PTMIN| parameters it is possible to control the behavior of the system, especially during the commissioning phase, without having to alter the individual motion tasks.

When used together with the |PVMAXN| parameter, it is possible to implement a directionally-dependent velocity limit. The PVMAX determines the maximum velocity for positive and negative directions together. By making a subsequent entry for |PVMAXN|, the limit for the negative direction can be set separately.

See |VLIM| , |PVMAXP|, |PVMAXN|

ASCII -Command	PVMAXN
Syntax Transmit	PVMAXN [Data]
Syntax Receive	PVMAXN <Data>
Type	Variable rw
Format	Integer32
DIM	VUNIT
Range	0 .. VLIM
Default	10000
Opmode	8
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35D9 (hex)
PROFIBUS PNU:	1817 (dec) IND = 1 (de
DPR Objekt Nr:	217

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. (Negative) Velocity for Position Control

Description

The parameter PVMAXN defines the maximum velocity (in the negative direction) that is permitted for a motion task. When a motion task is started, the target velocity for the motion task is limited to the value of PVMAXN.

When the maximum velocity for the positive direction (|PVMAX|) is defined, the PVMAXN parameter is set to the |PVMAX| value at the same time. So, if a separate setting is required for the negative direction of movement, the value for PVMAXN must be entered separately, afterwards.

With the help of the |PVMAX|, |PTMIN| and PVMAXN parameters it is possible to control the behavior of the system, especially during the commissioning phase, without having to alter the individual motion tasks.

ASCII -Command	PVMAXP
Syntax Transmit	PVMAX [Data]
Syntax Receive	PVMAX <Data>
Type	Variable rw
Format	Integer32
DIM	VUNIT
Range	0 .. VLIM
Default	10000
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position Data

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35DB (hex)
PROFIBUS PNU:	1819 (dec) IND = 1 (de
DPR Objekt Nr:	219

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. Velocity for Position Control

Description

-

ASCII -Command	READY
Syntax Transmit	READY
Syntax Receive	READY <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35DD (hex)
PROFIBUS PNU:	1821 (dec) IND = 1 (de
DPR Objekt Nr:	221

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status of the Software Enable

Description

Requests the status of the internal software enable.
READY = 0   Disabled
READY = 1   Enabled

ASCII -Command	RECDONE
Syntax Transmit	RECDONE
Syntax Receive	RECDONE <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35DE (hex)
PROFIBUS PNU:	1822 (dec) IND = 1 (de
DPR Objekt Nr:	222

Configuration	☐
Function Group	Oscilloscope

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Scope: Recording Done

Description

The RECDONE command can be used to request the status of the SCOPE recording. The command returns a 1 if the recording is finished and the data can now be requested with the |GET| command.

ASCII -Command	RECING
Syntax Transmit	RECING
Syntax Receive	RECING <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35DF (hex)
PROFIBUS PNU:	1823 (dec) IND = 1 (de
DPR Objekt Nr:	223

Configuration	☐
Function Group	Oscilloscope

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Scope: Recording in Progress

Description

Returns a 1 if the recording is active. At the end of a recording, or if the recording has not started, a 0 is returned.

ASCII -Command	RECOFF		
Syntax Transmit	RECOFF		
Syntax Receive	RECOFF		
Type	Command		
Format	-		
DIM	-		
Range	-		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35E0 (hex)
PROFIBUS PNU:	1824 (dec) IND = 1 (de
DPR Objekt Nr:	224

Configuration	☐
Function Group	Oscilloscope

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Scope: Cancel Scope Recording

Description

RECOFF stops the SCOPE recording (if started). State after RECOFF: |RECRDY|=1, |RECING|=0, |RECDONE|=0.

ASCII -Command	RECORD
Syntax Transmit	RECORD [Data]
Syntax Receive	RECORD <Data>
Type	Variable rw
Format	String
DIM	-
Range	1 .. 10000 (=Time);1 .. 1024(=Points); ASCII String (=
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☑	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	Oscilloscope

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Scope: Capture Data for Recording

Description

The RECORD command can be used to define the data for the next SCOPE recording. The command is used in the following form.

RECORD time number var1 [var2] [var3] [var4]

time: the sampling interval in 250 microsecond steps
number: the number of sample points to be recorded.
The maximum possible number depends on the number and size of the variables to be recorded.
If the number entered is too large, it will automatically be limited (when recording Long/Float variables, a maximum of 512 sample points can be recorded).
var1,var2,var3 - names of the variables to be recorded. Apart from the names for macro variables, the following names can be used.
|I| - actual value of current
|ICMDVAL| - setpoint for current
|PE| - following error
|V| - actual value of velocity
|VCMD| - setpoint for velocity
|VBUS| - DC-bus (DC-link) voltage
|PFB| - actual position

ASCII -Command	RECRDY
Syntax Transmit	RECRDY
Syntax Receive	RECRDY <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	Oscilloscope

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35E1 (hex)
PROFIBUS PNU:	1825 (dec) IND = 1 (de
DPR Objekt Nr:	225

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Scope: Status of RECORD Function

Description

After the recording has been made trigger-ready by |RECORD| / |RECTRIG|, the RECRDY command generates a 0. As soon as the trigger condition defined by RECRDY is fulfilled, and the recording starts, RECRDY generates a 1.
(RECRDY=0 means "waiting for trigger event")

ASCII -Command	RECTRIG
Syntax Transmit	RECTRIG [Data]
Syntax Receive	RECTRIG <Data>
Type	Variable rw
Format	String
DIM	-
Range	ASCII String (=Mode);Depends upon Mode (=Level);0
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	Oscilloscope

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Scope: Activate Recording Function

Description

The RECTRIG command prepares the SCOPE function for a data recording.
The command is used in the following form.

RECTRIG mode level location direction

mode: designates the name of a variable that is to be used to trigger the recording. If the designation IMM is used, the recording starts immediately. In this case, the parameters "level", "location" and "direction" do not have to be specified.

level: specifies the value of the variable that has to be reached to trigger the recording.

location: give the number of points that are to be recorded previous to the moment of the trigger event.

direction: specifies in which direction the value must pass the threshold "level" of the "mode" variable in order to trigger the recording.
direction=0 falling (variable value falls below threshold level)
direction=1 rising (variable value goes above threshold level)

ASCII -Command	REFIP
Syntax Transmit	REFIP [Data]
Syntax Receive	REFIP <Data>
Type	Variable rw
Format	Float
DIM	Amperes
Range	0.0 .. min(IPEAK,IPEAKN)
Default	min(IPEAK,IPEAKN,DICONT/2)
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35E2 (hex)
PROFIBUS PNU:	1826 (dec) IND = 1 (de
DPR Objekt Nr:	226

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Peak Rated Current for Homing 7

Description

The REFIP parameter can be used to set the peak current for homing to a stop. When Homing mode 7 is started (homing to a stop and searching for a zero mark), |IPEAK|, the normal value for peak current, is set to the value REFIP. When the homing movement is finished, the |IPEAK| parameter is reset to the previous (normal) value.

- - - - - - - - - - - -

REFIP is also used for the wake & shake procedure (|FBTYPE|=7,8). It sets the current limit for the first phase (rough angle adjustment). The second wake & shake phase is done by the |IPEAK| setting.

In case a firmware version > 5.80 is used the socond wake & shake phase is done with the |REFIP2 setting.

ASCII -Command	REFIP2
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	Float32
DIM	
Range	0 ...IPEAK
Default	IPEAK
Opmode	
Drive Status	
Start Firmware	1.0

Configuration ☐

Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36E3 (hex)
PROFIBUS PNU:	1683 (dec) IND = 17 (d
DPR Objekt Nr:	483

Data Type BUS/DPR	
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	

Description

REFIP2 limits the peak current during the wake & shake procedure.
After wake & shake is finished the current is reset to the |IPEAK| value.

>>> see also |REFIP|

ASCII -Command	REFLS
Syntax Transmit	REFLS [Data]
Syntax Receive	REFLS <Data>
Type	rw
Format	Integer32
DIM	-
Range	0, 1, 2, 3
Default	0
Opmode	8
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	365D (hex)
PROFIBUS PNU:	1949 (dec) IND = 1 (de
DPR Objekt Nr:	349

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description

Description

REFLS defines the drive behavior when activating a hardware limit during a homing move.

REFLS=0 Change direction at NSTOP and PSTOP
REFLS=1 Change direction at PSTOP, create error message F26 (limit switch) at NSTOP
REFLS=2 Change direction at NSTOP, create error message F26 (limit switch) at PSTOP
REFLS=3 Create error message F26 (limit switch) at NSTOP and PSTOP

REFLS used when /NREF/ (homing mode) = 1 or 3

ASCII -Command	REFMODE
Syntax Transmit	REFMODE [Data]
Syntax Receive	REFMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2, 3, 4, 5, 6, 7
Default	0
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	363C (hex)
PROFIBUS PNU:	1916 (dec) IND = 1 (de
DPR Objekt Nr:	316

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Source of the Zero Pulse in Homing Mode

Description

The command REFMODE selects the source of the zero pulse in homing mode.

REFMODE=0 Resolver- or singleturn encoder-zero, Zero crossing per rev of a multiturn encoder / at |EXTPOS|=1 Data-Pin connector X1

REFMODE=1 digital INPUT1
REFMODE=2 digital INPUT2
REFMODE=3 digital INPUT3
REFMODE=4 digital INPUT4
REFMODE=5 Data-Pin of connector X1
REFMODE=6 Zero pulse of the connector X5
REFMODE=7 Zero crossing of the absolute multiturn encoder (per rev)

ASCII -Command	REFPOS
Syntax Transmit	REFPOS [Data]
Syntax Receive	REFPOS <Data>
Type	ro
Format	Integer32
DIM	Counts
Range	0 ... 1048576
Default	-
Opmode	8
Drive Status	-
Start Firmware	2.14
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35E3 (hex)
PROFIBUS PNU:	1827 (dec) IND = 1 (de
DPR Objekt Nr:	227

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	Nein

Short Description	Reference Switch Position

Description

The REFPOS command returns the position (20-bit, within one turn) to be used for detecting the "Reference criterion" during the homing movement. The "Reference criterion" depends on |NREF|, the type of homing movement.

|NREF|=0,5,6 REFPOS = position for starting the homing movement
|NREF|=1,3 REFPOS = position for detecting the rising edge of the reference switch
|NREF|=2,4 REFPOS = position for detecting the falling edge of the reference switch
|NREF|=7 REFPOS = position for detecting a stop (|PE|>|PEMAX| / 2)
|NREF|=8 REFPOS is not altered

ASCII -Command	REMOTE
Syntax Transmit	REMOTE
Syntax Receive	REMOTE <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0 .. 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35E4 (hex)
PROFIBUS PNU:	1828 (dec) IND = 1 (de
DPR Objekt Nr:	228

Configuration	☐
Function Group	Digital I/O

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status of the Hardware Enable

Description

The REMOTE command indicates the state of the hardware enable input .
1 indicates a High state of the inputs (hardware enable is set), a 0 indicates a Low state.

ASCII -Command	RESOLVER
Syntax Transmit	RESOLVER [Data]
Syntax Receive	RESOLVER <Data>
Type	rw
Format	Integer8
DIM	
Range	0 ... 2
Default	1
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Resolver excitation gain adjust +/- 20%

Description

RESOLVER 0 will reduce the excitation by 20%.
RESOLVER 2 will increase the excitation by 20%.

ASCII -Command	RESPHASE
Syntax Transmit	RESPHASE [Data]
Syntax Receive	RESPHASE <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	-90 ... 90
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35E5 (hex)
PROFIBUS PNU:	1829 (dec) IND = 1 (de
DPR Objekt Nr:	229

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Resolver Phase

Description

The resolver RESPHASE parameter is defined as the phase shift between the excitation signal and the modulated output sin- and cos- signals, related to 8 kHz modulation excitation signal.

The effective adjustable range of this parameter is between –50 and 50 degree. One special case is RESPHASE = -300, to ensures the compatibility for the hardware version using Sipex A/D converter (Serialno <= xxx230000).

The default value of RESPHASE equals zero and the real value can be determined by starting the ASCII command |CALCRP|. Please refer to the ASCII command |CALCRP|.

ASCII -Command	RK
Syntax Transmit	RK [Data]
Syntax Receive	RK <Data>
Type	Variable rw
Format	Integer16
DIM	Counts
Range	12000 ..19000
Default	16384
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35E6 (hex)
PROFIBUS PNU:	1830 (dec) IND = 1 (de
DPR Objekt Nr:	230

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Gain Adjust for Resolver Sine Signal

Description

The RK parameter can be used to correct any amplitude difference that may exist between the sine and cosine signals from the resolver. The relationships are as follows:
RK = 16384 no alteration of the amplitude of the sine signal
RK < 16384 sine signal amplitude is reduced
RK > 16384 sine signal amplitude is increased

An incorrect setting of this correction factor will result in velocity/velocity variations (ripple) which are strongly dependent on the position.
The |CALCRK| command enables an automatic determination of the correction factor RK.

This value will not be changed by a parameter download, since it only depends on the equipment.

ASCII -Command	ROFFS
Syntax Transmit	ROFFS [Data]
Syntax Receive	ROFFS <Ddata>
Type	Variable rw
Format	Integer32
DIM	µm
Range	long int
Default	0
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Setting-up Mode

Available in

MMI	✔	CAN-Bus	✔
PROFIBUS	✔	Sercos	✔

SERCOS IDN:	52
CAN Object No:	35E7 (hex)
PROFIBUS PNU:	1831 (dec) IND = 1 (de
DPR Objekt Nr:	231

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Reference Offset

Description

The ROFFS parameter is used for Resolver or single-turn encoder   (homing to reference point is possible)

The ROFFS parameter can be used to assign a freely chosen absolute position as the reference position (zero position) that will be reached at the end of a homing movement.
The scaling of the position depends on the settings for |PGEARI|, |PGEARO|, |PRBASE|.
If the resolution is set to 1 (|PGEARI|=|PGEARO|), then internal units (counts) will be used.

ASCII -Command	ROFFSABS
Syntax Transmit	ROFFS [Data]
Syntax Receive	ROFFS <Ddata>
Type	Variable rw
Format	Integer32
DIM	µm
Range	long int
Default	0
Opmode	8
Drive Status	-
Start Firmware	0.39

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3656 (hex)
PROFIBUS PNU:	1942 (dec) IND = 1 (de
DPR Objekt Nr:	342

Configuration	☐
Function Group	Setting-up Mode

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Reference Offset

Description

The ROFFSABS parameter is used with an absolute encoder (multi-turn, homing to reference point is also possible)
The ROFFSABS sets an offset to the absolute encoder position. This procedure is executed by drive power on. The parameter must be saved in the EEPROM (using the |SAVE| command) after every alteration of the ROFFSABS variable, and the amplifier must then be switched off and on again (|COLDSTART| command).

Example:
If a position 10000 (|PFB|) is shown when the amplifier is switched on with ROFFSABS = 0, ROFFSABS = −10000 will shift the position to the value 0.

ASCII -Command	RS232T
Syntax Transmit	RS232T [Data]
Syntax Receive	RS232T <Data>
Type	Variable rw
Format	Integer16
DIM	Milliseconds
Range	1 .. 5000
Default	2500
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35E8 (hex)
PROFIBUS PNU:	1832 (dec) IND = 1 (de
DPR Objekt Nr:	232

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	RS232 Watch Dog

Description

If the monitoring of the serial interface is activated (RS232 watchdog), then the RS232T command can be used to set the time for the watchdog timer.
See also |ACTRS232|

ASCII -Command	RSTVAR
Syntax Transmit	RSTVAR
Syntax Receive	RSTVAR
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	262
CAN Object No:	35E9 (hex)
PROFIBUS PNU:	1833 (dec) IND = 1 (de
DPR Objekt Nr:	233

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Restore Variables (Default Values)

Description

The RSTVAR command resets all parameters / variables to the default settings. The parameters which are stored in the EEPROM are not immediately affected by this. The default settings only become permanent when the |SAVE| command is used (save parameters in the EEPORM).

In case configuration settings had been changed |SAVE| and |COLDSTART| is required.

ASCII -Command	S
Syntax Transmit	S
Syntax Receive	S
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35EA (hex)
PROFIBUS PNU:	1834 (dec) IND = 1 (de
DPR Objekt Nr:	234

Configuration	☐
Function Group	Oscilloscope/Service

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Stop Motor and Disable Drive

Description

The S command stops the drive (using the braking ramp |DECSTOP|). As soon as the velocity/velocity falls below the standstill threshold (|VEL0|) the output stage is disabled.
The S command corresponds to the command |K| (or |DIS|) if the |STOPMODE| option is set to 1.

ASCII -Command	SAVE
Syntax Transmit	SAVE
Syntax Receive	SAVE
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration ☐

Function Group	Amplifier

Available in

MMI	✔	CAN-Bus	✔
PROFIBUS	✔	Sercos	✔

SERCOS IDN:	264
CAN Object No:	35EB (hex)
PROFIBUS PNU:	1835 (dec) IND = 1 (de
DPR Objekt Nr:	235

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Save Data in EEPROM

Description

The SAVE command stores the present settings of the amplifier parameters in the serial EEPROM. At the same time, the checksum for the parameter field is updated and also saved in the serial EEPROM. The save process takes about 2 seconds. During this time, the 24V supply for the amplifier must not be switched off. If this supply voltage is switched off during the save process, this may result in invalid data (or none) being saved in the serial EEPROM. A checksum error will be detected at the next power-on of the equipment, and the fault message F09 will be generated.
Furthermore, all the amplifier parameters will be reset to the default values. In order to reset the F09 fault, the SAVE command must be used once more, and the amplifier must be switched off and on again.

A SAVE command is set, if an absolute feedback is used and a homing is executed.The reference offset is calculated and the command SAVE is set.

ASCII -Command	SBAUD	
Syntax Transmit	SBAUD [Data]	
Syntax Receive	SBAUD <Data>	
Type	Variable rw	
Format	Integer8	
DIM	Mbaud	
Range	2, 4, 8, 16	
Default	4	
Opmode	All	
Drive Status	-	
Start Firmware	1.00	

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35EC (hex)
PROFIBUS PNU:	1836 (dec) IND = 1 (de
DPR Objekt Nr:	236

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Sercos: Baud Rate

Description

This parameter sets the transmission rate for SERCOS in MBAUD.

ASCII -Command	SCAN		Available in	
Syntax Transmit	SCAN		MMI ☑	CAN-Bus ☑
Syntax Receive	SCAN <Data>		PROFIBUS ☑	Sercos ☐
Type	Command			
Format	<integer8> [Integer8...Integer8]			
DIM	-		SERCOS IDN:	
Range	-		CAN Object No:	35ED (hex)
Default	-		PROFIBUS PNU:	1837 (dec) IND = 1 (de
Opmode	All		DPR Objekt Nr:	237
Drive Status	-			
Start Firmware	1.0			
Configuration	☐		Data Type BUS/DPR	-
Function Group	Communication		Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Detect CAN Stations

Description

A PC can be used to communicate to a multiple drive system. The PC communicate via RS232 to the first drive (Master). All additional drives (Slaves) are connected to this Master via CAN bus. CAN bus is a standard feature of the S 300 drives. The CAN baudrate (|CBAUD|) for this communication has to be set to the same value in each drive. The address (|ADDR|) of each master and slave axis must be different.
SCAN determines the number of slaves and the adress of each one.

Example:
SCAN gives the result: 3 6 5 4
This means there are 3 slaves with the adresses 6 5 4

see |BACKSLASH|

For a CAN bus network with several drives connected, there is an option for using a serial connection to one of the drives (master) to communicate with all the other amplifiers. To do this, the SCAN command is initiated on the master device, which performs an automatic detection of all the drivess that are connected. The response to the SCAN command contains the total number and a list of the addresses of all the drive devices that have been detected.
The time taken to carry out this command is strongly dependent on the baud rate (|CBAUD|) that is has been set for CAN, and is in the range from 1 second (at 1 Mbaud/1 Mbps) to 37 seconds (at 10Kbaud/10 kbps).

With drive 400, the communication is not done via CAN, but via an internal serial link. The behaivior is the same.

ASCII -Command	SDLY
Syntax Transmit	SDLY [Data]
Syntax Receive	SDLY <Data>
Type	rw
Format	Integer32
DIM	-
Range	0 ... 100 000
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.31

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.1
EEPROM	Yes

Short Description	Start delay

Description

SDLY sets the start delay for the program execution.
After the boot up the RTO function and the supervisor program execution will be delayed for SDLY msec.

See also |ERRCODES| F10

ASCII -Command	SERCERR
Syntax Transmit	SERCERR [Data]
Syntax Receive	SERCERR <Data>
Type	ro
Format	Integer32
DIM	-
Range	0 ... 8
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	

Description

The command SERERR displays an error generated by an wrong access with the command SERCOS to an IDN. See also object SERCOS.

ASCII -Command	SERCLIST
Syntax Transmit	SERCLIST [Data]
Syntax Receive	SERCLIST <Data>
Type	rw
Format	Integer32
DIM	-
Range	0 ... 8
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration ☐	
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	

Description

The command SERCLIST enables the access to an element of the IDN list. After that, the IDN can be read by command SERCOS. See also object SERCOS.

ASCII -Command	SERCOS
Syntax Transmit	SERCOS [Data]
Syntax Receive	SERCOS <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 .. 8
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Read the Data of an Sercos IDN

Description

Gives the contents of an Sercos IDN. Write access changes the selected number of the IDN, read access gives the contents of the selected IDN. If the selected IDN is a list, only the list value where |SERCLIST| points to is displayed. If SERCOS generates an error (e.g. wrong IDN number), |SERCERR| is set to "1" and a value of "0" is displayed.

ASCII -Command	SERCSET
Syntax Transmit	SERCSET [Data]
Syntax Receive	SERCSET <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	Long Int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	43 + P3028
CAN Object No:	3691 (hex)
PROFIBUS PNU:	2001 (dec) IND = 1 (de
DPR Objekt Nr:	401

Configuration	☐
Function Group	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Set Sercos Settings

Description

The object SERCSET gives the possiblity to change some of the Sercos settings. Changes have to be saved in the EEPROM and effect at the next start-up of the drive. The not described bits effect other Sercos settings. In so far, this command should only be used in combination with the MMI. See also Sercos IDN Manual.

Bit 0:   Hardware Limit Switch Effect (P-IDN 3015)
Bit 1: |CLRFAULT| Command Effect (P-IDN 3016)
Bit 4:   Polarity Target Position (S-IDN 55)
Bit 6:   Polaity Actual Position 1 (S-IDN 55)
Bit 7:   Polaity Actual Position 2 (S-IDN 55)
Bit 12: Polarity Target Speed (S-IDN 43)
Bit 14: Polarity Actual Speed (S-IDN 43)

EtherCAT: Bit 17 (0x00020000) The synchronize -error monitor (ERRCODE F28) with EtherCAT can be switched off. The synchronize warning n17 is still checked.

ASCII -Command	SERIALNO
Syntax Transmit	SERIALNO
Syntax Receive	SERIALNO <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	10 ASCII characters
Default	Factory default
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Basic Setup

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35EF (hex)
PROFIBUS PNU:	1839 (dec) IND = 1 (de
DPR Objekt Nr:	239

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Drive Serial Number

Description

The serial number of the drive amplifier.

ASCII -Command	SETREF
Syntax Transmit	SETREF
Syntax Receive	SETREF
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35F0 (hex)
PROFIBUS PNU:	1840 (dec) IND = 1 (de
DPR Objekt Nr:	240

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Set Reference Point

Description

The SETREF command is used to declare the present position as the reference point (i.e. the actual position is set to the value of |ROFFS|) and to set the bit that permits the execution of motion blocks.
The SETREF command corresponds to the execution of a homing to a reference with |NREF|=0.

ASCII -Command	SLEN
Syntax Transmit	SLEN [Data]
Syntax Receive	SLEN <Data>
Type	Variable rw
Format	Integer8
DIM	m
Range	0 .. 45
Default	5
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35F2 (hex)
PROFIBUS PNU:	1842 (dec) IND = 1 (de
DPR Objekt Nr:	242

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Sercos Optical Range

Description

This parameter can be used to set the optical range (in meters) for a standardized 1mm² plastic optical fiber cable.

ASCII -Command	SLOTIO
Syntax Transmit	SLOTIO
Syntax Receive	SLOTIO <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35F3 (hex)
PROFIBUS PNU:	1843 (dec) IND = 1 (de
DPR Objekt Nr:	243

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	I/O-Expansion Card: I/O States

Description

The SLOTIO command returns the states of the inputs and outputs on the I/O-expansion card (slot card) in the format Hxxxxxxxx

Bit number	Bit combination	Input/Output	Description
0	0x00000001	Input	Bit 0 Motion block number (A0)
1	0x00000002	Input	Bit 1 Motion block number (A1)
2	0x00000004	Input	Bit 2 Motion block number (A2)
3	0x00000008	Input	Bit 3 Motion block number (A3)
4	0x00000010	Input	Bit 4 Motion block number (A4)
5	0x00000020	Input	Bit 5 Motion block number (A5)
6	0x00000040	Input	Bit 6 Motion block number (A6)
7	0x00000080	Input	Bit 7 Motion block number (A7)
8	0x00000100	Input	Reference switch
9	0x00000200	Input	Acknowledge Contouring error
10	0x00000400	Input	Start next motion block
11	0x00000400	Input	Start jog mode
12	0x00001000	Input	Continue a motion block
13	0x00002000	Input	Start motion block no. A0 ... A7
14	0x00004000	Output	"In-Position" signal
15	0x00008000	Output	"In-Position2" signal (next)
16	0x00010000	Output	Contouring error
17	0x00020000	Output	"Position register 1" signal
18	0x00040000	Output	"Position register 2" signal
19	0x00080000	Output	"Position register 3" signal
20	0x00100000	Output	"Position register 4" signal
21	0x00200000	Output	"Position register 5" signal
22	0x00400000	Status	24Volt - On
23	0x00800000	Status	Slot fault
24...31			Reserve

ASCII -Command	SMNUMBER
Syntax Transmit	SMNUMBER [Data]
Syntax Receive	SMNUMBER <Data>
Type	Variable r
Format	Integer16
DIM	-
Range	0 .. 32767
Default	0
Opmode	-
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3695 (hex)
PROFIBUS PNU:	2005 (dec) IND = 1 (de
DPR Objekt Nr:	405

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Stored Motor Number in the feedback Device

Description

IN PREPARATION !

SMNUMBER gives the motor number, that is stored in the feedback device (EnDAT or HIPERFACE).

This Object makes sense with |FBTYPE| = 2 or 4, otherwise "0" is returned.

ASCII -Command	SOFTIN
Syntax Transmit	SOFTIN [Data]
Syntax Receive	SOFTIN <Data>
Type	rw
Format	Integer32
DIM	-
Range	Integer32
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.00

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	354E (hex)
PROFIBUS PNU:	1678 (dec) IND = 1 (de
DPR Objekt Nr:	78

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	No

Short Description	Input variable for digital software inputs INPUT5…INPUT20

Description

The bit variable SOFTIN describes the actual state of the virtual digital inputs INPUT5 … INPUT20
The relation between the Bit number and the digital input is as follows:

Bit0 INPUT5
Bit1 INPUT6
….
BIT15 INPUT20

The write access to the parameter SOFTIN affects directly the state of the corresponding digital input
For example:

SOFTIN 5 : the digital inputs INPUT5 and INPUT7 becomes the state high

The function of the virtual digital inputs can be configured by the commands IN5MODE…IN20MODE

In case that an external I/O slot card is used, only a reduced number of virtual inputs is available INPUT19…INPUT20)

ASCII -Command	SOFTOUT
Syntax Transmit	SOFTOUT [Data]
Syntax Receive	SOFTOUT <Data>
Type	ro
Format	Integer32
DIM	-
Range	Integer32
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.00

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	354F (hex)
PROFIBUS PNU:	1679 (dec) IND = 1 (de
DPR Objekt Nr:	79

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	No

Short Description	State variable for the virtual digital Outputs

Description

The bit variable SOFTOUT describes the actual state of the virtual digital outputs |OUTPUT3| … |OUTPUT18|

The relation between the Bit number and the digital output is as follows:

Bit0 |OUTPUT3|
Bit1 |OUTPUT4|
….
BIT15 |OUTPUT18|

The function of the virtual digital outputs can be configured by the commands |O3MODE|…|O18MODE|

In case that an external I/O slot card is used, only a reduced number of virtual outputs is available OUTPUT11…OUTPUT18)

ASCII -Command	SPHAS
Syntax Transmit	SPHAS
Syntax Receive	SPHAS <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.67

Configuration ☐

Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35F4 (hex)
PROFIBUS PNU:	1844 (dec) IND = 1 (de
DPR Objekt Nr:	244

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Sercos Phase

Description

Shows the present Sercos phase.

Phase 0   Close ring and reset
Phase 1   Drive identification
Phase 2   Communication initialization
Phase 3   Parameter initialization
Phase 4   Ready for operation

ASCII -Command	SRND		
Syntax Transmit	SRND [Data]		
Syntax Receive	SRND <Data>		
Type	Variable rw		
Format	Integer32		
DIM	-		
Range	-		
Default	- 2^31		
Opmode	-		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3637 (hex)
PROFIBUS PNU:	1911 (dec) IND = 1 (de
DPR Objekt Nr:	311

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Start Position of Modulo Axes

Description

The SRND parameter is used to define the start of the range of movement for a modulo axes (|POSCNFG|=2). The end of the range can be set by the |ERND| command. All positioning operations are made in the positioning range <SRND...|ERND|-1>.
The entry for SRND is made in SI units (taking account of |PGEARI|, |PGEARO|).

ASCII -Command	SSIGRAY
Syntax Transmit	SSIGRAY [Data]
Syntax Receive	SSIGRAY <Data>
Type	rw
Format	Integer8
DIM	-
Range	0,1
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	1846 (dec) IND = 1 (de
DPR Objekt Nr:	246

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	SSI format selection

Description

The command is used to select the SSI format

SSIGRAY 0　　= Binär
SSIGRAY 1　　= Gray

ASCII -Command	SSIREVOL
Syntax Transmit	SSIREVOL [Data]
Syntax Receive	SSIREVOL <Data>
Type	rw
Format	Integer8
DIM	-
Range	0 ... 4
Default	4
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3619 (hex)
PROFIBUS PNU:	1881 (dec) IND = 1 (de
DPR Objekt Nr:	281

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Transmit Timeout SSI

Description

The command SSIREVOL defines the number of multiturn-bits by the SSI – transmission (receive)
In combination with command |SSIRXD| all bits in the SSI-telegramm are defined.

SSIRXD – all SSI-bits
SSIREVOL – bits for multiturn-information

Bits per feedback turn = SSIRXD - SSIREVOL

12 Bit (4095)   =>   SSIREVOL 4

ASCII -Command	SSIRXD
Syntax Transmit	SSIRXD [Data]
Syntax Receive	SSIRXD <Data>
Type	rw
Format	Integer8
DIM	-
Range	1 ... 33
Default	24
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	365E (hex)
PROFIBUS PNU:	1950 (dec) IND = 1 (de
DPR Objekt Nr:	350

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	

Description

The command 'SSIRXD' sts the number ofreceived SSI-bits .

REGISTER max. 32 bit

number of bits:

1	=>	SSIRXD 1
2	=>	SSIRXD 2
…		
32	=>	SSIRXD 32
33	=>	SSIRXD 33

ASCII -Command	SSITOUT
Syntax Transmit	SSITOUT [Data]
Syntax Receive	SSITOUT <Data>
Type	rw
Format	Integer8
DIM	-
Range	0, 1
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3661 (hex)
PROFIBUS PNU:	1953 (dec) IND = 1 (de
DPR Objekt Nr:	353

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Transmit Timeout SSI

Description

The command SSIOUT sets the monoflop - timeout of the SSI - transmittion.

Timeout:

13us   =>   SSITOUT 0

 3us   =>   SSITOUT 1

ASCII -Command	SSTAT
Syntax Transmit	SSTAT [Data]
Syntax Receive	SSTAT <Data>
Type	ro
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	95
CAN Object No:	35FA (hex)
PROFIBUS PNU:	1850 (dec) IND = 1 (de
DPR Objekt Nr:	250

Configuration	☐
Function Group	

Data Type BUS/DPR	String
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	

Description

Presents the actual status of the Sercos interface, as a text string.

ASCII -Command	STAGECODE
Syntax Transmit	-
Syntax Receive	STAGECODE <Data>
Type	Variable r
Format	Integer8
DIM	-
Range	1, 2, .., 19
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

	MMI	☐	CAN-Bus	☑
	PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3682 (hex)
PROFIBUS PNU:	1986 (dec) IND = 1 (de
DPR Objekt Nr:	386

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Power Stage Identification

Description

Give the identification of the power stage-

STAGECODE=0   not allowed (Hardware error)
STAGECODE=1   S 303
STAGECODE=2   S 306
STAGECODE=3   S 310
STAGECODE=4   S 341
STAGECODE=5   S 343
STAGECODE=6   S 346

ASCII -Command	STAT
Syntax Transmit	STAT
Syntax Receive	STAT
Type	Variable ro
Format	Integer16
DIM	-
Range	int (=Word)
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35FB (hex)
PROFIBUS PNU:	1851 (dec) IND = 1 (de
DPR Objekt Nr:	251

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Drive Status Word

Description

The STAT command provides a 16-bit status word in hexadecimal format (Hxxxx).

Bit Value Interpretation
0   0x0001   =0 if output stage is enabled
              =1 output stage disabled
1   0x0002   =0 if controller is ready for operation (BTB)
              =1 fault present
2   0x0004   reserve
3   0x0008   =1 if service function is active
              =0 no service function active
4   0x0004   reserve
5   0x0020   =1 after a hardware reset, is cancelled by |CLRHR|
6   0x0040   =1 configuration variable was altered (|SAVE| and |COLDSTART|)
              =0 no configuration variable altered
7   0x0080   =1 safety relay is active (AS-Option)
              =0 safety relay is not active
8   0x0100   =1 discrepancy between RAM and EEPROM parameters (cancelled by |SAVE| command).
              =0 RAM and EEPROM parameters are the same
9   0x0200   =1 slot-expansion card is available
              =0 slot-expansion card is not available
10 0x0400   =1 RAM parameter modified (cancelled by |DUMP| command)
              =0 no change in RAM parameters since the last |DUMP|.
11...15   Reserve

Bits 5, 6, 8 and 10 are used for an external signal that internal parameters have been changed

Bit 5 hardware reset
Bit 5 is set if the parameters are copied from the serial EEPROM to the RAM (this happens after a hardware reset of a LOAD command). If this bit is set, all the parameters should be requested by the parameterization software (|DUMP| command) and bit 5 should be cancelled by the |CLRHR| command.

Bit 6 configuration variable was altered
Any alteration of a configuration variable (a variable that makes it necessary to recompile the macro, i.e. to reset the amplifier) means that this bit will be set to 1. If this bit is set, the parameterization software should generate a |SAVE| / |COLDSTART| command (controller reset) at a suitable moment. Bit 6 is only cancelled by a hardware reset (|COLDSTART|).

Bit 8 discrepancy between EEPROM and RAM parameters
Any alteration of a RAM parameter means that this bit is set to 1. If this bit is set, the parameterization software should generate a |SAVE| command (save the data in the EEPROM) at a suitable moment (e.g. on exiting the program). This bit is cancelled by a |SAVE| command.

Bit 10 RAM parameters modified
Any alteration of a RAM parameter through a parameterization channel other than the RS232 means that this bit is set to 1. If this bit is set, the parameterization software should generate a |DUMP| command (read all data) at a suitable moment. This bit is

cancelled by a |DUMP| command.

ASCII -Command	STATCODE
Syntax Transmit	STATCODE
Syntax Receive	STATCODE <Data>
Type	Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	Drive Status

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	385E (hex)
PROFIBUS PNU:	1662 (dec) IND = 33 (d
DPR Objekt Nr:	862

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Plain Text Warnings

Description

The warnings are displayed as plain text.

See also |STATCODES|

ASCII -Command	STATCODE *
Syntax Transmit	STATCODE *
Syntax Receive	STATCODE <Data>
Type	Command
Format	Integer32
DIM	-
Range	0 .. 0xFFFFFFFF
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Status Variable "Warnings"

Description

The STATCODE * command returns the internal warnings in the form of a bit-variable.
The assignments for the individual bits can be seen in the following table.

Bit	Display	Meaning
0 / 0x00000001	n01	=1 |I2T| Threshold override
1 / 0x00000002	n02	=1 Regen message
2 / 0x00000004	n03	=1 Contouring error
3 / 0x00000008	n04	=1 watchdog limit reached
4 / 0x00000010	n05	=1 Line phase missing
5 / 0x00000020	n06	=1 Software limit switch 1 active
6 / 0x00000040	n07	=1 Software limit switch 2 active
7 / 0x00000080	n08	=1 Wrong motion task started Bit is set if a not defined motion task was selected, the target position is out of range (software limit switches) or wrong (out of range) settings for |ACCR|, |DECR| are used . The warning gets also active, if |AUTOHOME| is used or a digital input is selected as reference input (for example |IN1MODE| 16) and |OPMODE| <> 4 or 8. Starting a not existing table motion task can also be the reason (|FW| > 2.14)
8 / 0x00000100	n09	=1 Reference point not set
9 / 0x00000200	n10	=1 PSTOP active
10 / 0x00000400	n11	=1 NSTOP active
11 / 0x00000800	n12	=1 Default motor settings loaded
12 / 0x00001000	n13	=1 Slot warning (I/O extension board)
13 / 0x00002000	n14	=1 sincos commutation (wake & shake) not completed, will be canceled when the amplifier is enabled and wake & shake is carried out
14 / 0x00004000	n15	

15 / 0x00008000	n16	Is active, if one or more of the warnings n17...n31 are active.
16 / 0x00010000	n17	CAN-Sync is not locked
17 / 0x00020000	n18 *	Using Multiturn encoder feedback, a overrun over the maximum number of resolutions (+/- 2048) was detected
19	n191	The motion task ramps are limited (range overflow on motion task data)
20	n20	Invalid motion task
21	n21	PLC program error (for details see plc code)
22	n22	max. motortemperatur reached (the user can shut down the process before the temperature eror will interrupt the process immediately)
23	n23	Sin Cos Feedback warning level reached
24	n24	Bit is set to 1, if during boot up process the plausibility check is negative see also |ERRPARAM|
25	n25	Reserved
26	n26	Reserved
27	n27	Reserved
28	n28	Reserved
29...30	n29 ..n31	Reserved
31 / 0x80000000	n32	=1 Beta version of the firmware

ASCII -Command	STATIO		
Syntax Transmit	STATIO		
Syntax Receive	STATIO <Data>		
Type	Variable ro		
Format	7 x Integer8		
DIM	-		
Range	0,1 (=State)		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35FC (hex)
PROFIBUS PNU:	1852 (dec) IND = 1 (de
DPR Objekt Nr:	252

Configuration	☐
Function Group	Digital I/O

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	I/O Status

Description

The STATIO command returns the actual state of the digital inputs and outputs of the servo amplifier, in the following sequence.
IN1 IN2 IN3 IN4 ENABLE OUT1 OUT2

A 0 at the appropriate position means that the corresponding input/output is in the Low state, a 1 signifies the High state.

ASCII -Command	STATUS
Syntax Transmit	STATUS
Syntax Receive	STATUS <Data>
Type	Variable ro
Format	Integer16 Integer32 Integer16 Integer16 Integer16
DIM	-
Range	int (=Word); long int (=DoubleWord)
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35FD (hex)
PROFIBUS PNU:	1853 (dec) IND = 1 (de
DPR Objekt Nr:	253

Configuration	☐
Function Group	Drive Status

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Detailed Amplifier Status

Description

The STATUS command returns the detailed status information in the form of a 5 status variables in hexadecimal format.

Word no. 1 Format Hxxxx
Bit 0 =0 if hardware enable is set (ENABLE input = 24V)
Bit 1 =0 if software enable is set
Bit 2 reserve
Bit 3 =0 if amplifier is ready for operation (BTB / no fault)

Word no. 2 Format Hxxxx
Bits 0 ... 31 fault variable (see |ERRCODE|)

Word no. 3 Format Hxxxx
Word no. 4 Format Hxxxx
=0 no service function active
=1 service function "constant current/velocity" is active
=2 jog mode |MJOX| is active

Word no. 5 Format Hxxxx

Bit Value Interpretation
0   0x0001   =1 motion block / homing movement / jog mode is active
1   0x0002   =1 reference point set
2   0x0004   =1 reference switch occupied (home position)
3   0x0008   =1 IN-POSITION signal
4   0x0010   =1 position has been latched (positive edge)
5   0x0020   =1 homing in progress
6   0x0040   =1 jog mode is running
7   0x0080   =1 position has been latched (negative edge)
8 ... 15   reserve

ASCII -Command	STEP
Syntax Transmit	STEP [Data]
Syntax Receive	STEP <Data>
Type	Command
Format	Integer16 Float Integer16 Float
DIM	Milliseconds (DurationN) / rpm (velocityN)
Range	Duration:0 to 32767; velocity:-VLIM to +VLIM
Default	Duration:1000; velocity1/2: 100/-100
Opmode	0
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	Oscilloscope/Service

Available in

MMI	☑	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Service Operation (STEP Command)

Description

The STEP command is used to implement a service function through the operating mode "digital velocity control" (|OPMODE|=0).
The command can be used in the following forms.
1. STEP
The command provides the present settings for the service function.
2. STEP T1 V1
A digital setpoint V1 (RPM) is provided for time T1 (in msec). After T1 has elapsed, the digital setpoint is set to 0.
3. STEP T1 V1 T2 V2
A digital setpoint V1 (RPM) is provided for time T1 (in msec). After T1 has elapsed, a digital setpoint V2 (RPM) is provided for time T2 (in msec). After T2 has elapsed, the T1/V1 cycle starts again. This command can be used to create an endless reversing operation.
e.g. STEP 1000 500 1000 -500

The service operation can always be cancelled by using the |STOP| command.
The "digital velocity control" operating mode is a precondition for implementing the STEP command.

ASCII -Command	STOP
Syntax Transmit	STOP
Syntax Receive	STOP
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Enabled
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35FE (hex)
PROFIBUS PNU:	1854 (dec) IND = 1 (de
DPR Objekt Nr:	254

Configuration	☐
Function Group	Position Data

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Stop Motion Task

Description

The STOP command breaks off the drive movement. The response of the drive varies according to the operating mode that is valid at the moment.

1. |OPMODE|=0 (digital velocity control)
The STOP command has the effect of setting the velocity setpoint to 0.
The drive brakes along the preset braking ramp for the velocity control loop (|DEC|).

2. |OPMODE|=2 (digital current control)
The STOP command has the effect of setting the current setpoint to 0.
The drive coasts down.

3. |OPMODE|=8 (internal motion tasks)
The STOP command has the effect of breaking off the present motion task (jog mode / homing movement).
The drive brakes along the decel ramp that is defined in the motion task. The motion task can be restarted by |CONTINUE| or digital input defined with |INxMODE|=22.

The STOP command has no function in the |OPMODE|=1,3,4,5,6,7 operating modes.

ASCII -Command	STOPMODE
Syntax Transmit	STOPMODE [Data]
Syntax Receive	STOPMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	1
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	35FF (hex)
PROFIBUS PNU:	1855 (dec) IND = 1 (de
DPR Objekt Nr:	255

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Brake Response for Disable

Description

STOPMODE defines the response of the drive to a disabling of the output stage.
The following settings are possible:
STOPMODE=0 the output stage is immediately disabled, and the drive coasts down.
STOPMODE=1 the drive is run down under velocity control to velocity 0 (|DECDIS| ramp). When the velocity falls below the standstill threshold |VEL0|, the output stage is disabled.
The output stage will also be disabled if the |VEL0| velocity is not reached within 5 seconds (a 5-second time-out).

ASCII -Command	SWCNFG
Syntax Transmit	SWCNFG [Data]
Syntax Receive	SWCNFG <Data>
Type	Variable rw
Format	Unsigned16
DIM	-
Range	0 .. 65536
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	✔
Function Group	Position Data

Available in

MMI	✔	CAN-Bus	✔
PROFIBUS	✔	Sercos	✔

SERCOS IDN:	P 3004
CAN Object No:	3600 (hex)
PROFIBUS PNU:	1856 (dec) IND = 1 (de
DPR Objekt Nr:	256

Data Type BUS/DPR	Unsigned16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Configuration of software limit switches

Description

Configuration of software limit switches

The SWCNFG variable can be considered as a bit-variable. The individual bits are interpreted as follows:

Bit 0 =1 Software limit switch 1 active
Bit 1 =1 Software limit switch 2 active

The software limit sitches are acting only after a homing is done.

see also |SWE1|, |SWE2|

ASCII -Command	SWE1
Syntax Transmit	SWE1 [Data]
Syntax Receive	SWE1 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	✔	CAN-Bus	✔
PROFIBUS	✔	Sercos	✔

SERCOS IDN:	50
CAN Object No:	3604 (hex)
PROFIBUS PNU:	1860 (dec) IND = 1 (de
DPR Objekt Nr:	260

Configuration	☐
Function Group	Position Data

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	SW limit switch (smalest position)

Description

The variable SWE1 contains the position value for the limit switch..
The scaling of the position depends on the |PGEARI| / |PGEARO| / |PRBASE| parameters, and is calculated according to the following formula:

SWE1[increments] = SWE1[input] * |PGEARO| / |PGEARI|

1048576 increments/turn for |PRBASE|=20
65536 increments/turn for |PRBASE|=16

SWE1 < |SWE2|

see also description of |SWCNFG|

ASCII -Command	SWE2
Syntax Transmit	SWE2 [Data]
Syntax Receive	SWE2 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	49
CAN Object No:	3606 (hex)
PROFIBUS PNU:	1862 (dec) IND = 1 (de
DPR Objekt Nr:	262

Configuration	☐
Function Group	Position Data

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	SW limit switch (biggest position)

Description

The variable SWE2 contains the position value for the limit switch.
The scaling of the position depends on the |PGEARI| / |PGEARO| / |PRBASE| parameters, and is calculated according to the following formula:

  SWE2[increments] = SWE2[input] * |PGEARO| / |PGEARI|

1048576 increments/turn for |PRBASE|=20
65536 increments/turn for |PRBASE|=16

|SWE1| < SWE2

see also description of |SWCNFG|

ASCII -Command	SYNCSRC
Syntax Transmit	SYNCSRC [Data]
Syntax Receive	SYNCSRC <Data>
Type	rw
Format	Integer16
DIM	-
Range	0, 1, 2, 3
Default	0
Opmode	All
Drive Status	Disable + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3683 (hex)
PROFIBUS PNU:	1987 (dec) IND = 1 (de
DPR Objekt Nr:	387

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	

Description

This parameter defines the source for the synchronization of the control loops to the external fieldbus.

0: No synchronization
1: (reserved) synchronization via Sercos
2: Synchronization via KS3000 Fire-Wire option board
3: Synchronization via CANopen
4: old DPR card
5: new DPR card (example EtherCAT wire card)

ASCII -Command	T
Syntax Transmit	T [Data]
Syntax Receive	T <Data>
Type	Command
Format	Float
DIM	Amperes
Range	-DIPEAK .. DIPEAK
Default	-
Opmode	2
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	Oscilloscope/Service

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	360E (hex)
PROFIBUS PNU:	1870 (dec) IND = 1 (de
DPR Objekt Nr:	270

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	-

Short Description	Digital Current Setpoint

Description

The "T" command can be used to define a constant current setpoint <i> (in A).
This current setpoint remains effective until a new T / |STOP| / |OPMODE| command is executed.

ASCII -Command	TASK
Syntax Transmit	TASK
Syntax Receive	TASK <Data>
Type	Variable ro
Format	String
DIM	-
Range	max 80 ASCII Characters
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	360F (hex)
PROFIBUS PNU:	1871 (dec) IND = 1 (de
DPR Objekt Nr:	271

Configuration	☐
Function Group	-

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Task Workload

Description

The TASK command shows the loading for the individual firmware tasks.
The figures signify the number of functions performed per second.

ASCII -Command	TBRAKE
Syntax Transmit	TBRAKE [Data]
Syntax Receive	TBRAKE <Data>
Type	Variable rw
Format	Integer16
DIM	ms
Range	10 .. 10000
Default	100
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

	MMI	☐	CAN-Bus	☑
	PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	366E (hex)
PROFIBUS PNU:	1966 (dec) IND = 1 (de
DPR Objekt Nr:	366

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Disable Delaytime with Holding Brake

Description

TBRAKE defines a disable delay time with holding brake.
If the drive is disabled, it controls the holding brake if selected. After the motor is stopped, the holding brake is switched off and a delay timer (value is TBRAKE) is started. When the time is gone, the drive is disabled.

ASCII -Command	TBRAKE0		
Syntax Transmit	TBRAKE0 [Data]		
Syntax Receive	TBRAKE0 <Data>		
Type	Variable rw		
Format	Integer16		
DIM	ms		
Range	-10 .. 10000		
Default	20		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		
Configuration	☐		
Function Group	-		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	366F (hex)
PROFIBUS PNU:	1967 (dec) IND = 1 (de
DPR Objekt Nr:	367

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Enable Delaytime with Holding Brake

Description

The parameter TBRAKE0 defines a reaction time of the holding brake when the drive is enabled.
If the drive is enabled (hardware/software enable) the drive controls the holding brake. During the selected time TBRAKE0, the internal velocity setpoint is set to 0. After the time when the brake is open, the setpoint is accepted internally and the motor can run.

Important !
If the value TBRAKE0 is to big, this can cause on a vertical axis a fall down.

If the TRBAKE0 is set to values <0, the internal setpoint is activated before the holding brake is open.

ASCII -Command	TEMPE
Syntax Transmit	TEMPE
Syntax Receive	TEMPE <Data>
Type	Variable ro
Format	Integer32
DIM	Centigrade Degrees
Range	-20 .. 90
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3610 (hex)
PROFIBUS PNU:	1872 (dec) IND = 1 (de
DPR Objekt Nr:	272

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Ambient Temperature

Description

Displays the present internal temperature in °C.

ASCII -Command	TEMPH
Syntax Transmit	TEMPH
Syntax Receive	TEMPH <Data>
Type	Variable ro
Format	Integer32
DIM	Centigrade Degrees
Range	-20 .. 90
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	Actual values

Available in

MMI	✔	CAN-Bus	✔
PROFIBUS	✔	Sercos	✔

SERCOS IDN:	384
CAN Object No:	3611 (hex)
PROFIBUS PNU:	1873 (dec) IND = 1 (de
DPR Objekt Nr:	273

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Heat Sink Temperature

Description

Displays the present heat sink temperature in °C.

ASCII -Command	TEMPM		
Syntax Transmit	TEMPM		
Syntax Receive	TEMPM \<Data>		
Type	Variable ro		
Format	Integer32		
DIM	Ohm		
Range	0 .. 10000		
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3612 (hex)
PROFIBUS PNU:	1874 (dec) IND = 1 (de
DPR Objekt Nr:	274

Configuration ☐	
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Motor Temperature

Description

Indicates the motor temperature, in the form of the resistance of the temperature sensor (in ohms).

ASCII -Command	TRJSTAT			
Syntax Transmit	TRJSTAT			
Syntax Receive	TRJSTAT <Data>			
Type	Variable ro			
Format	Integer32			
DIM	-			
Range	0 .. 0xFFFFFFFF			
Default	-			
Opmode	All			
Drive Status	-			
Start Firmware	1.0			

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3613 (hex)
PROFIBUS PNU:	1875 (dec) IND = 1 (de
DPR Objekt Nr:	275

Configuration	☐
Function Group	Drive Status2

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status2 Information

Description

The TRJSTAT command returns the internal status information in the form of a bit-variable.
The status information is primarily used for internal functions. Only the bits that are marked by an "*" can be used for external functions (control system).
Bits 16 ... 20 are also mirrored in the |DRVSTAT| status variable.

Bit	Significance	Meaning
0	0x00000001	=1 the output INPOS2 is updated every msec
1	0x00000002	=1 At the end of the actual motion task, the drive outputs no IN-POSITION signal (a motion task sequence was activated.
2*	0x00000004	=1 Toggle Bit "Motion task finished". Is toggled at the end of a motion task. The toggling of the Bit is done, if the target position is reached and the profile generator is switched off. This is different to the functionality of the IN-POSITION Bit. When the drive is switched on, this Bit is set to low.
3...15		Reserved
16*	0x00010000	=1 Motion task active (position control) Is set, if a motion task is started(motion task, Jog, Homing). Is cleared, if a motion task has finished or is stopped (|STOP|).
17*	0x00020000	=1 Reference point set Is set, if the homing move has successfully finished or if the feedback device is a multiturn encoder. Is cleared, when a homing move is started. see also bit no. 21
18*	0x00040000	=1 Home position Is high, if the homing switch is active, otherwise low.
19*	0x00080000	=1 In-Position Is set, if the difference between the actual position and the target position is smaller than |PEINPOS|. Is cleared, if the distance is greater.

20*	0x00100000	=1 Position latch activated (positive latch) Is set, if a positive edge at Latch input 2 (configured by |IN2MODE|=26) was detected. Is cleared, if the position is read by |LATCH2P16| / |LATCH2P32|.
21*	0x00200000	=1 Homing move is active Is set, if a Homing move was started. Is cleared, if the homing move is successful or stopped (|STOP|).
22*	0x00400000	=1 Jog move active Is set, if a Jog move is started. Is cleared, if the Jog move is stopped.
23	0x00800000	=1 Position latch activated (negative latch) Is set, if a negative edge at Latch input 2 (configured by |IN2MODE|=26) was detected. Is cleared, if the position is read by |LATCH2N16| / |LATCH2N32|.
24	0x01000000	=1 Emergency stop active Is set, if an emergency stop has occurred (DEC-phase after an error, active hardware limit switches, Input configured as Emergency stop with level low.
25	0x02000000	=1 position latch at input1 (positive transition), if a rising edge at input 1 is detected, when input1 is defined as latch input (|IN1MODE|=26). Is reset, if the latched position is read by |LATCH1P16| or |LATCH1P32|.
26	0x04000000	=1 position latch at input1 (negative transition), if a falling edge at input 1 is detected, when input1 is defined as latch input (|IN1MODE|=26). Is reset, if the latched position is read by |LATCH1N16| or |LATCH1N32|.
27 .. 31		Reserved

ASCII -Command	TRUN
Syntax Transmit	TRUN
Syntax Receive	TRUN <Data>
Type	Variable ro
Format	String
DIM	hhhhh:mm
Range	00000:00 to 99999:45
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in			
MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3614 (hex)
PROFIBUS PNU:	1876 (dec) IND = 1 (de
DPR Objekt Nr:	276

Configuration	☐
Function Group	Basic Setup

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Run-time counter

Description

The run-time counter shows the operating life of the amplifier (if the 24V is applied) in minutes.
The internal resolution of the run-time counter is 1 second.
Since the run-time counter value is included in the serial EEPROM of the amplifier, it is only updated in the EEPROM every 8 minutes So switching off the 24V supply can cause a loss in the record of up to 8 minutes.

ASCII -Command	TRUNS
Syntax Transmit	TRUN
Syntax Receive	TRUN <Data>
Type	Variable ro
Format	String
DIM	hhhhh:mm
Range	00000:00 to 99999:45
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	Basic Setup

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3614 (hex)
PROFIBUS PNU:	1876 (dec) IND = 1 (de
DPR Objekt Nr:	276

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Run-time counter

Description

FW >=1.61

The run-time counter shows the operating life of the amplifier (if the 24V is applied) in seconds.

The internal resolution of the run-time counter is 1 second.

Since the run-time counter value is included in the serial EEPROM of the amplifier, it is only updated in the EEPROM every 8 minutes So switching off the 24V supply can cause a loss in the record of up to 8 minutes.

ASCII -Command	UCOMP
Syntax Transmit	UCOMP [Data]
Syntax Receive	UCOMP <Data>
Type	rw
Format	Integer32
DIM	PUNIT
Range	
Default	0
Opmode	8
Drive Status	-
Start Firmware	2.14
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3631 (hex)
PROFIBUS PNU:	1905 (dec) IND = 1 (de
DPR Objekt Nr:	305

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	Ja

Short Description	Backlash Compensation

Description

For many applications it is necessary to approach motion block positions from one direction only (to avoid backlash errors arising from the interplay of the rack and pinion). To do this, at the start of a motion block the target position for the motion block is shifted by a correction value, and the motion block is only started for the real target value when this corrected position has been reached. The behavior of this function is controlled by the UCOMP parameter. The value of this parameter is the size of the correction, the sign shows the direction in which the correction is to be made. If the sign is positive, the correction is only made for positive velocities (i.e. the target position is always approached from the right), if it is negative, the correction is only made for negative velocities. This function is switched off if UCOMP is set to 0 (default setting).

e.g.

1. Actual position = 0, target position = 1000, UCOMP = 100 -> the drive moves to position 1100, reverses, and stops at position 1000.

2. Actual position = 1000, target position = 0, UCOMP = 100 -> the drive moves directly to position 0

3. Actual position = 1000, target position = 0, UCOMP =-100 -> the drive moves to position -100, reverses, and stops at position

ASCII -Command	UPDATE
Syntax Transmit	UPDATE [Data]
Syntax Receive	UPDATE
Type	Command
Format	-
DIM	Name
Range	ALL,USER,TABLE,PROG,PORDER,MBASE,Lookup
Default	-
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Program Update via RS232

Description

The UPDATE command makes it possible to program the internal Flash EEPROM via the serial interface.

Procedure for a software update:

1. Connect the amplifier to the serial interface of a PC.
2. Start the terminal program HINT2.EXE COM2: 38400 (the computer should be booted in DOS mode).
This establishes the connection between the PPC and the command interpreter of the Drive. To check the connection, enter the
LIST command. The response should be a list of all the available commands, shown on the screen.
3. Enter the command |UPDATE| ALL xxxx in the command line.
xxxx - Name of the firmware file that is to be programmed. Take care that the file xxx for programming is in the active directory. If
no file name is entered, then the name ALL is used as a default.

Attention !!! When the drive is programmed with ALL, the loaded motion tasks are deleted. Save motion tasks before programming
the firmware.

The programming takes about 40 minutes.

The addresses that are programmed are displayed during the programming procedure. If the display remains static, but the
download has not been completed (this problem has been observed on several PCs), then operate the ENTER key. The
programming will then carry on.
If the programming procedure is interrupted, then the amplifier will report this in the monitor program at the next power-on (a "-"
sign in the first position of the display).
In this case, the download can be restarted by the following command sequence:
X: xxxx
xxxx - Name of the firmware file to be programmed.
Procedure for loading a motor database:

A standard motor database is included as a subset of the firmware. If a customer-specific motor database is required, then it can be
loaded after the firmware has been programmed.
This requires the following command:

 |UPDATE| MBASE xxxx

xxxx - Name of the motor database file that is to be programmed. Take care that the file xxx for programming is in the active
directory. If no file name is entered, then the name MBASE is used as a default.

ASCII -Command	UVLTMODE
Syntax Transmit	UVLTMODE [Data]
Syntax Receive	UVLTMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	1
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3617 (hex)
PROFIBUS PNU:	1879 (dec) IND = 1 (de
DPR Objekt Nr:	279

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Undervoltage Mode

Description

The configuration variable UVLTMODE activates or inhibits the undervoltage monitoring of the amplifier.
If the monitoring is activated (UVLTMODE=1), then the fault message F05 (undervoltage) is generated as soon a s the DC-bus
voltage falls below the undervoltage threshold |VBUSMIN| and the output stage is activated .

ASCII -Command	V
Syntax Transmit	V
Syntax Receive	V <Data>
Type	Variable ro
Format	FLOAT
DIM	MSPEED
Range	-15000 .. 15000
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	Actual values

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	40
CAN Object No:	3618 (hex)
PROFIBUS PNU:	1880 (dec) IND = 1 (de
DPR Objekt Nr:	280

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Actual Velocity

Description

The present velocity of the motor.

			Available in			
ASCII -Command	VBUS		MMI	☑	CAN-Bus	☑
Syntax Transmit	VBUS		PROFIBUS	☑	Sercos	☑
Syntax Receive	VBUS <Data>					
Type	Variable ro					
Format	Integer32		SERCOS IDN:	380		
DIM	Volts		CAN Object No:	361A (hex)		
Range	0 .. 900		PROFIBUS PNU:	1882 (dec) IND = 1 (de		
Default	-		DPR Objekt Nr:	282		
Opmode	All					
Drive Status	-					
Start Firmware	1.0					
Configuration	☐		Data Type BUS/DPR	Integer32		
Function Group	Actual values		Weighting 10^3			

Last Change of this Object	1.0
EEPROM	No

Short Description	DC-bus voltage

Description

The present voltage of the DC-bus.

ASCII -Command	VBUSBAL
Syntax Transmit	VBUSBAL [Data]
Syntax Receive	VBUSBAL <Data>
Type	Variable rw
Format	Integer16
DIM	- / Volt
Range	0, 1, 2, 3, 40 ... 750
Default	2
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	361B (hex)
PROFIBUS PNU:	1883 (dec) IND = 1 (de
DPR Objekt Nr:	283

Configuration	☐
Function Group	Basic Setup

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Maximum Line Voltage

Description

This setting is for the maximum permissible voltage for the motor. For instance, if a motor that is rated for a 400V supply is connected to the amplifier, then the setting must be VBUSBAL = 2 (400V). This sets regen and overvoltage thresholds in the amplifier to acceptable values for the motor. This ensures that the motor windings are not damaged.

VBUSBAL - Setting in the range of 40 to 750 are used to choose the maximum network voltage.
In this case ist |VBUSMAX| = 1,2 x VBUSBAL

VBUSBAL=0 (115 V) |VBUSMAX|=235V
VBUSBAL=1 (230 V) |VBUSMAX|=455V
VBUSBAL=2 (400 V) |VBUSMAX|=800V
VBUSBAL=3 (480 V) |VBUSMAX|=900V

ASCII -Command	VBUSMAX		
Syntax Transmit	VBUSMAX		
Syntax Receive	VBUSMAX <Data>		
Type	Variable ro		
Format	Integer32		
DIM	Volts		
Range	235, 455, 800, 900		
Default			
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	361C (hex)
PROFIBUS PNU:	1884 (dec) IND = 1 (de
DPR Objekt Nr:	284

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Maximum DC-bus Voltage

Description

The VBUSMAX parameter shows the value for the monitoring threshold for the fault message F02 (overvoltage).
This fault message is generated as soon as the DC-bus voltage goes above the value of VBUSMAX. The VBUSMAX threshold depends on the setting for |VBUSBAL|.

VBUSBAL=0 (115 V) |VBUSMAX|=235V
VBUSBAL=1 (230 V) |VBUSMAX|=455V
VBUSBAL=2 (400 V) |VBUSMAX|=800V
VBUSBAL=3 (480 V) |VBUSMAX|=900V

ASCII -Command	VBUSMIN
Syntax Transmit	VBUSMIN [Data]
Syntax Receive	VBUSMIN <Data>
Type	Variable rw
Format	Integer16
DIM	Volts
Range	30 .. 800
Default	100
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	361D (hex)
PROFIBUS PNU:	1885 (dec) IND = 1 (de
DPR Objekt Nr:	285

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Minimum DC-bus Voltage

Description

VBUSMIN defines the lower threshold for monitoring the DC-bus voltage. The fault message F05 (undervoltage) is generated as soon as the DC-bus voltage goes below this threshold. Undervoltage monitoring is only active under the following conditions.
1. Output stage is enabled
2. Monitoring is activated |UVLTMODE|=1
3. MAINSBTB function is not active (|OxMODE|<>3)
4. The switch-off of the monitoring function by a digital input (|INxMODE|=21) is not active.

ASCII -Command	VBW
Syntax Transmit	VBW
Syntax Receive	VBW
Type	Command
Format	-
DIM	-
Range	0
Default	0
Opmode	0
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Generate Bode Diagram

Description

VBW [fmin] [fmax] [sample] [switch]

Velocity BandWidth

Using the function VBW the Drive calculates a velocity loop Bode plot. Default are 50 samples (sample) between 20 Hz (fmin) and 500 Hz (fmax). Output are the gain in db and the phase shift in degree of the open loop and the closed loop of the velocity controller. Using |MSG| 2 the results are immediately shown. Standard is to query the data with the |GET| command. To use the function VBW the drive should be in |OPMODE| 0 and enabled. The shaft will move only a few degree. In case of resonance load velocity overshoot can cause a Fault which can result in an uncontrolled coasting of the motor.

[switch] = 1: Filter switched off
GV reduced to 20%
GVTN reduced to 50 ms

ASCII -Command	VCMD
Syntax Transmit	VCMD
Syntax Receive	VCMD <Data>
Type	Variable ro
Format	Float
DIM	MSPEED
Range	-VMAX .. VMAX
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	361E (hex)
PROFIBUS PNU:	1886 (dec) IND = 1 (de
DPR Objekt Nr:	286

Configuration	☐
Function Group	Actual values

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Internal Velocity Setpoint in RPM

Description

The VCMD variable contains the internal velocity setpoint (after the ramp generator) in RPM.
Depending on the operating mode that is set (|OPMODE|=0), this value is either provided directly and digitally (fieldbus, slot card) or derived from the analog velocity setpoint (|OPMODE|=1).
For operating modes that do not use a velocity control loop (|OPMODE|=2,3) the VCMD variable has the value V of the actual velocity.

ASCII -Command	VCOMM
Syntax Transmit	VCOMM [Data]
Syntax Receive	VCOMM <Data>
Type	Variable rw
Format	Float
DIM	rpm
Range	0 .. 1.2 * MSPEED
Default	1500
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	365A (hex)
PROFIBUS PNU:	1946 (dec) IND = 1 (de
DPR Objekt Nr:	346

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity Threshold for Commutation error

Description

The command VCOMM defines the threshold for the commutation error function.
The definition of an commutation error is that the sign of the actual current has the right relationship to the sign of the change of the velocity of the motor. This indicates a run-away of the motor and causes a disable of the output stage.

This commutation error is supervised, if the actual velocity is above the VCOMM threshold. To disable the function, VCOMM has to be set to |VLIM|.

ASCII -Command	VEL0
Syntax Transmit	VEL0 [Data]
Syntax Receive	VEL0 <Data>
Type	Variable rw
Format	Float
DIM	-
Range	
Default	5
Opmode	All
Drive Status	
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3620 (hex)
PROFIBUS PNU:	1888 (dec) IND = 1 (de
DPR Objekt Nr:	288

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Standstill Threshold

Description

The VEL0 (Velocity "0") parameter defines the velocity threshold (in RPM) for the standstill signal.
The standstill signal is required for the following functions:
1. Standstill signal in the status register |DRVSTAT|.
2. If the brake is configured (|MBRAKE|=1), then, if the output stage is disabled, first of all the velocity is reduced to 0, and the brake is only applied after the velocity has fallen below the standstill threshold.
3. If the |ACTFAULT| option is activated (active braking in the event of a fault), or the |STOPMODE| option (active braking if the output stage is disabled), then the standstill threshold defines the velocity below which the output stage will actually be disabled.

The minimum VEL0 value is changed from 0 rpm to 1 rpm in |FW| >= 2.14

ASCII -Command	VER
Syntax Transmit	VER [*]
Syntax Receive	VER <Data>
Type	Variable ro
Format	String
DIM	-
Range	max 50 ASCII Characters
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐

SERCOS IDN:	
CAN Object No:	no
PROFIBUS PNU:	no
DPR Objekt Nr:	

Configuration	☐
Function Group	Basic Setup

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Firmware Version

Description

The command VER returns the version designation and the date of creation for the firmware.
The expanded form of the command (VER *) returns a version list for the various firmware and hardware components.
- Version of the basic firmware
- Hardware revision
- CPLD version
- CAN: firmware version
- Version of the motor database (MDB)
- Profibus/Sercos firmware version

ASCII -Command	VINPOS
Syntax Transmit	VINPOS [Data]
Syntax Receive	VINPOS <Data>
Type	rw
Format	Float
DIM	
Range	
Default	10
Opmode	All
Drive Status	-
Start Firmware	1.37
Configuration	☑
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3856 (hex)
PROFIBUS PNU:	1654 (dec) IND = 33 (d
DPR Objekt Nr:	854

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.2
EEPROM	Yes

Short Description	

Description

VINPOS command defines the size of the velocity InPosition windows for the VINPOS state message (Bit 1 in DRVSTAT2).
As long as the difference between the last target velocity (VCMD) and the actual velocity (V) is within the width of the velocity In-Position window (VINPOS), a 1 is signalled, otherwise a 0
The signal change is not signaled before the new state was valid at least |INPT0| msec.

ASCII -Command	VJOG
Syntax Transmit	VJOG [Data]
Syntax Receive	VJOG <Data>
Type	Variable rw
Format	Integer32
DIM	see VUNIT
Range	-500008 ... 500008
Default	10000
Opmode	8
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	Setting-up Mode

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	
CAN Object No:	3621 (hex)
PROFIBUS PNU:	1889 (dec) IND = 1 (de
DPR Objekt Nr:	289

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Speed for Jog Mode

Description

Jog mode is effectively an endless motion task, and is implemented by the internal position control loop.
The sign for the speed indicates the direction for jog operation. The scaling of the velocity is given in position control loop units, and depends on the |PGEARI| and |PGEARO| parameters.

ASCII -Command	VLIM
Syntax Transmit	VLIM [Data]
Syntax Receive	VLIM <Data>
Type	Variable rw
Format	Float
DIM	(> VUNIT)
Range	0.0 .. MSPEED
Default	3000
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	91
CAN Object No:	358C (hex)
PROFIBUS PNU:	1740 (dec) IND = 1 (de
DPR Objekt Nr:	140

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. Velocity

Description

The VLIMN parameter defines the maximum velocity for the negative direction (velocity control loop) in units defined by |VUNIT|. VLIM is also used for limiting the following parameters:

1. $|MVANGLB| <= 0.9*VLIM$
2. $|MSPEED| >= VLIM$
3. $|PVMAX| <= (VLIM * |PGEARI| * 2^{\wedge}|PRBASE|) / (60 * |PGEARO|)$

When used together with the |VLIMN| parameter, it is possible to implement a directionally-dependent rotational velocity limit. The VLIM command determines the maximum velocity for both positive and negative directions. By making a subsequent entry for |VLIMN|, the limit for the negative direction can be set separately.

ASCII -Command	VLIMN
Syntax Transmit	VLIMN [Data]
Syntax Receive	VLIMN <Data>
Type	Variable rw
Format	Float
DIM	(> VUNIT)
Range	0.0 .. MSPEED
Default	3000
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	39
CAN Object No:	3623 (hex)
PROFIBUS PNU:	1891 (dec) IND = 1 (de
DPR Objekt Nr:	291

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. Negative Velocity

Description

The VLIMN parameter defines the maximum velocity for the negative direction (velocity control loop) in units defined by
|VUNIT|.VLIMN is also used for limiting |PVMAXN|:
PVMAXN <= (VLIMN * |PGEARI| * 2^|PRBASE|) / (60 * |PGEARO|)

When used together with the |VLIMP| parameter, it is possible to implement a directionally-dependent rotational velocity limit. The
|VLIMP| command determines the maximum velocity for the positive direction.

ASCII -Command	VLIMP
Syntax Transmit	VLIM [Data]
Syntax Receive	VLIM <Data>
Type	Variable rw
Format	Float
DIM	(> VUNIT)
Range	0.0 .. MSPEED
Default	3000
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	38
CAN Object No:	3622 (hex)
PROFIBUS PNU:	1890 (dec) IND = 1 (de
DPR Objekt Nr:	290

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. Velocity

Description

The VLIMN parameter defines the maximum velocity for the negative direction (velocity control loop) in units defined by |VUNIT|.
VLIMPis also used for limiting |PVMAXN|:
PVMAXP <= (VLIMP * |PGEARI| * 2^|PRBASE|) / (60 * |PGEARO|)

When used together with the |VLIMN| parameter, it is possible to implement a directionally-dependent rotational velocity limit. The |VLIMN| command determines the maximum velocity for the negative direction.

ASCII -Command	VLO		
Syntax Transmit	VLO [Data]		
Syntax Receive	VLO <Data>		
Type	Variable rw		
Format	Float		
DIM	-		
Range	0 ... 30		
Default	1		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	363D (hex)
PROFIBUS PNU:	1917 (dec) IND = 1 (de
DPR Objekt Nr:	317

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Software Resolver/Digital Converter Feedforward

Description

VLO is a parameter of the Luenberger Velocity Observer. To reduce the delay of the derivation the observer can be served with the torque component of the current. The effective inertia is estimated by the gain of the velocity loop (GV). Setting VLO to zero the acceleration will not influence the observer. With a value of 1 the acceleration is full enabled. With VLO 0.5 the Observer will use 50% of the acceleration torque. Reducing VLO can result in an instable velocity loop.

ASCII -Command	VMUL
Syntax Transmit	VMUL [Data]
Syntax Receive	VMUL <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 .. 65535
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3626 (hex)
PROFIBUS PNU:	1894 (dec) IND = 1 (de
DPR Objekt Nr:	294

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity Scale Factor

Description

VMUL is required by many fieldbus systems (PROFIBUS,CANBUS), since some fieldbus protocols only permit speed values in 16-bit format.The VMUL parameter is used to scale the speed (position control loop) for jog mode and motion tasks. This scaling factor can then be used to expand the 16-bit speed value from the fieldbus to give the internal 32-bit value.

See also: manual for PROFIBUS, CANBUS

ASCII -Command	VOSPD
Syntax Transmit	VOSPD [Data]
Syntax Receive	VOSPD <Data>
Type	Variable rw
Format	Float
DIM	rpm
Range	0.0 .. 1.2*MSPEED
Default	3600
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3021
CAN Object No:	3627 (hex)
PROFIBUS PNU:	1895 (dec) IND = 1 (de
DPR Objekt Nr:	295

Configuration	☐
Function Group	velocity

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Overspeed

Description

The VOSPD parameter sets the overspeed threshold. As soon as the actual velocity exceeds this limit, the fault message F08 (overspeed) is generated and the output stage is disabled.

ASCII -Command	VREF
Syntax Transmit	VREF [Data]
Syntax Receive	VREF <Data>
Type	Variable rw
Format	Integer32
DIM	(>VUNIT)
Range	0 ... VLIM/VLIMN
Default	10000
Opmode	8
Drive Status	-
Start Firmware	1.0

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	41
CAN Object No:	3628 (hex)
PROFIBUS PNU:	1896 (dec) IND = 1 (de
DPR Objekt Nr:	296

Configuration	☐
Function Group	Setting-up Mode

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Speed for Homing

Description

The VREF is used to define the velocity value (VREF>0) for homing to a reference. The direction of the reference is taken from the |DREF| variable.
The scaling of the velocity is given in position control loop units, and depends on the |PGEARI| and |PGEARO| parameters.

ASCII -Command	VREF0
Syntax Transmit	VREF0 [Data]
Syntax Receive	VREF0 <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.01 .. 2.0
Default	0.125
Opmode	8
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3698 (hex)
PROFIBUS PNU:	2008 (dec) IND = 1 (de
DPR Objekt Nr:	408

Configuration	☐
Function Group	-

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Homing Mode Reduction factor

Description
IN PREPARATION !

The parameter VREF0 reduces the homing speed, after the load reaches e.g. the reference switch, while searching for a zero pulse of an external encoder.
The selection of the source of the zero pulse can be selected by |REFMODE|.
The second homing speed can be reduced by VREF0 in % of |VREF|.

Example 1:

|REFMODE|=1   Zeropulse via digital input 1
|NREF|=1   Homing move with reference switch with zero pulse
|VREF|=10000   Homing speed 10000 μm/sec
VREF0=0.2   Reduction of the speed to 2000 μm/sec

Starting a homing move, the drive starts to find the reference switch with the speed of 10000 μm/sec. If the reference switch was found, the speed is reduced to 2000 μm/sec and then the search for the zero pulse is started. If the zero pulse was recognised at digital input 1(high level), the homing move is stopped.

Example 2:

|REFMODE|=2   Zero pulse via digiatl input 2
|NREF|=5   Zero pulse in one turn of the motor
|VREF|=10000
VREF0=0.2

The criteria for the search of the zero pulse is fulfilled, so the reference move is directly started with 2000 μm/sec.

ASCII -Command	VSCALE1		
Syntax Transmit	VSCALE1 [Data]		
Syntax Receive	VSCALE1 <Data>		
Type	Variable rw		
Format	Integer16		
DIM	VUNIT / 10 Volts		
Range	-15000 .. 15000		
Default	3000		
Opmode	1		
Drive Status	-		
Start Firmware	1.0		
Configuration	☐		
Function Group	Analog I/O		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3629 (hex)
PROFIBUS PNU:	1897 (dec) IND = 1 (de
DPR Objekt Nr:	297

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	SW1 Velocity Scaling Factor

Description

If the analog input 1 is used as the setpoint input for velocity control, then the VSCALE1 parameter can be used to set the scaling of the input voltage.
A 10V velocity setpoint input at input 1 produces a velocity of VSCALE1.

ASCII -Command	VSCALE2		
Syntax Transmit	VSCALE2 [Data]		
Syntax Receive	VSCALE2 <Data>		
Type	Variable rw		
Format	Integer16		
DIM	rpm / 10 Volts		
Range	-15000 .. 15000		
Default	3000		
Opmode	1		
Drive Status	-		
Start Firmware	1.0		

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	362A (hex)
PROFIBUS PNU:	1898 (dec) IND = 1 (de
DPR Objekt Nr:	298

Configuration	☐
Function Group	Analog I/O

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	SW2 Velocity Scaling Factor

Description

If the analog input 2 is used as the setpoint input for velocity control, then the VSCALE2 parameter can be used to set the scaling of the input voltage.
A 10V velocity setpoint input at input SW2 produces a velocity of VSCALE2.

ASCII -Command	VSTFR
Syntax Transmit	VSTFR [Data]
Syntax Receive	VSTFR <Data>
Type	rw
Format	Float
DIM	VUNIT
Range	0 ... 230 UPM
Default	0
Opmode	0, 1, 4 ... 8
Drive Status	-
Start Firmware	1.30
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36A5 (hex)
PROFIBUS PNU:	2021 (dec) IND = 1 (de
DPR Objekt Nr:	421

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.1
EEPROM	Yes

Short Description	Velocity for max. Friction Compensation

Description

see |ISTFR|

ASCII -Command	VUNIT
Syntax Transmit	VUNIT [Data]
Syntax Receive	VUNIT <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 .. 8
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	✔
Function Group	

Available in

MMI	☐	CAN-Bus	✔
PROFIBUS	✔	Sercos	☐

SERCOS IDN:	
CAN Object No:	365F (hex)
PROFIBUS PNU:	1951 (dec) IND = 1 (de
DPR Objekt Nr:	351

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Systemwide Definition of Velocity / Speed

Description

VUNIT gives the systemwide definition of velocity / speed resolution. This parameter effects all parameters that are related to velocity of the velocity controller and speed of the position controller.

VUNIT = 0 gives velocity in RPM   (example |OPMODE| = 0)
         gives speed in μm/sec (example |OPMODE| = 8).
VUNIT = 1   Unit = RPM
VUNIT = 2   Unit = Rad/Sec
VUNIT = 3   Unit = Degree/Sec
VUNIT = 4   Unit = increments in PRBASE-format / 250μs

example: PRBASE = 24
         1500U/min = 25U/s = 25*2^24/4000 IncrPRBASE / 250μs = 104857 IncrPRBASE / 250μs

VUNIT = 5   Unit = |PUNIT| / Sec
VUNIT = 6   Unit = |PUNIT| / Min
VUNIT = 7   Unit = 1000 * |PUNIT| / Sec
VUNIT = 8   Unit = 1000 * |PUNIT| / Min

Remark:
1. All parameters that are related to velovity have a fixed format of 32 Bit with 3 fractional digits. This causes a problem with some of the VUNIT settings (especially VUNIT=6), related to the resolution of the position controller (|PGEARI|), that not the full range of speed can be used. Under this condition, a different setting of VUNIT is necessary.

2. All parameters that are related to speed have a fixed format of 32 Bit with no fractional digits. This causes a problem with some of the VUNIT settings (especially VUNIT=3) to give fractional digits. Under this condition, a different setting of VUNIT is necessary.

Definition of the Calculation factors

VUNIT=1   1 UPM = 1048576*32/(4000*60)   =~ 139.8 Counts
VUNIT=2   1 Rad/sec = 1048576*32/(4000*2*PI)   =~ 1335 Counts
VUNIT=3   1 Grad/sec = 1048576*32/(4000*360)   =~ 23.3 Counts
VUNIT=4   1 Counts/250μs   = 32 Counts
VUNIT=5   1 |PUNIT| / sec = |PGEARO| / (125 * |PGEARI|)
VUNIT=6   1 |PUNIT| / min = (|PGEARO| * 60) / (125 * |PGEARI|)
VUNIT=7   1000 |PUNIT| / sec = |PGEARO| / (125 * |PGEARI| * 1000)
VUNIT=8   1000 |PUNIT| / min = (|PGEARO| * 60) / (125 * |PGEARI| * 1000)

ASCII -Command	VWM
Syntax Transmit	VWM [Data]
Syntax Receive	VWM <Data>
Type	rw
Format	Integer16
DIM	-
Range	0 ... 1500
Default	400
Opmode	All
Drive Status	-
Start Firmware	1.35

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3759 (hex)
PROFIBUS PNU:	1801 (dec) IND = 17 (d
DPR Objekt Nr:	601

Configuration ☐

Data Type BUS/DPR	Integer16
Weighting 10^3	

Function Group

Last Change of this Object	1.2
EEPROM	No

Short Description

Description

VWM defines the limit value for n23 warning (SinCos voltage too low). This warning can be used to get a message when a SinCos encoder (linear unit) becomes dirty

ASCII -Command	WMASK
Syntax Transmit	WMASK [Data]
Syntax Receive	WMASK <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-21474836470 ... 21474836470
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☑	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	363E (hex)
PROFIBUS PNU:	1918 (dec) IND = 1 (de
DPR Objekt Nr:	318

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Warning as Fault Mask

Description

The WMASK parameter can be used to reconfigure a warning as the fault message F24.
The WMASK parameter is a bit-variable, with bit assignments that correspond to the |STATCODE *| status variable. The bit that is set within the WMAKS variable means that the corresponding warning bit in the |STATCODE *| variable should generate an F24 fault message, as well as a warning. Unlike warnings, a fault message results in the disabling of the output stage, and the opening of the BTB contact. A reconfiguration of a warning to a fault message can be especially relevant for the following warnings: contouring/following error, threshold detection, hardware limit switch. The value has to be entered in decimal.

See also |LASTWMASK|

ASCII -Command	WPOS
Syntax Transmit	WPOS
Syntax Receive	WPOS <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1, 2
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☑
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3041
CAN Object No:	3636 (hex)
PROFIBUS PNU:	1910 (dec) IND = 1 (de
DPR Objekt Nr:	310

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Enable Position Registers

Description

Going above/below a position is detected and signaled by the position register within 1 millisecond. The functional range can be set to continually or once.
The fast position registers are enabled through the WPOS configuration variable.
WPOS=0 Position register disabled
WPOS=1 Position register enabled, no spontaneous CAN message on change of status.
WPOS=2 Position register enabled, spontaneous CAN message on change of status (this setting is only via CAN-Bus possible).

Changes of the WPOS variable between 0 and >0 can only be made offline (|SAVE| and |COLDSTART|), a change between 1 and 2 can also be made online.

There is a total of 16 position registers P1 ... P16, that can be configured with the help of 3 control variables. The position signals are indicated through a status variable. All control/status variables can be considered as 32-bit variables, whereby the lower 16 bits (bits 0 ... 15) are used for the configuration of the position registers P1 ... P16.

Control variables:
|WPOSE| Enable/disable a position register
Bit=0 the corresponding position register is not monitored
Bit=1 the position register is monitored

|WPOSP| Polarity for the position signaling
Bit=0   Position signal is generated on going above/beyond (overrun) the position
Bit=1   Position signal is generated on going below/behind (underrun) the position

|WPOSX| – Type of position monitoring
Bit=0   position is monitored continuously
Bit=1   position is monitored once. When the position signal is generated, the corresponding enable bit (WPOSE) is set to 0, so that the monitoring is disabled for this position register,

Status variable:
|POSRSTAT| (z_data.Posrstat) – Position signaling
Bit=0 position signaling inactive
Bit=1 position signaling active (position overrun for |WPOSP|=0 or underrun for |WPOSP|=1).

Position register:
The position registers 1 to 16 can be accessed by the ASCII command P1 ... P16. Position values are displayed in the same units as the position control loop (|PGEARI| / |PGEARO| conversion).
The variables that are required for the fast position registers (|WPOSE|, |WPOSP|, |WPOSX|, P1 ... P16) can be saved in the serial EEPROM by using the SAVE command. Those position registers P1 ... P16 which are not used should be set to 0 (since the default value for a position register is 0, no space will be occupied in the serial EEPROM).
The individual position signals from the status register |POSRSTAT| can be output from the digital outputs of the motherboard.

|OxMODE|=40
This function is used to produce the result of a logical OR operation (on the bit-variable |POSRSTAT| and a bit-mask from the auxiliary variable |OxTRIG|) at the digital output x.

|OxMODE|=41
This function is used to produce the result of a logical AND operation (on the bit-variable |POSRSTAT| and a bit-mask from the auxiliary variable |OxTRIG|) at the digital output x.

ASCII -Command	WPOSE
Syntax Transmit	WPOSE
Syntax Receive	WPOSE <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	0 ..65535
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3042
CAN Object No:	363F (hex)
PROFIBUS PNU:	1919 (dec) IND = 1 (de
DPR Objekt Nr:	319

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Enable Fast Position Registers 1 ... 16

Description

The bit-variable WPOSE is used to configure the fast position registers P1 ... P16 individually. The WPOSE variable can be considered as a 32-bit variable, whereby the lower 16 bits (bits 0 ... 15) are used for the configuration of the position registers P1 ... P16.

Bit=0 the corresponding position register is not monitored
Bit=1 the position register is monitored
See also |WPOS|

ASCII -Command	WPOSP
Syntax Transmit	WPOSP [Data]
Syntax Receive	WPOSP <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 .. 65535
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Configuration	☐
Function Group	-

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☑

SERCOS IDN:	P 3043
CAN Object No:	3640 (hex)
PROFIBUS PNU:	1920 (dec) IND = 1 (de
DPR Objekt Nr:	320

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Polarity of Fast Position Registers 1 ... 16

Description

The bit-variable WPOSP is used to configure the fast position registers P1 ... P16 individually. The WPOSP variable can be considered as a 32-bit variable, whereby the lower 16 bits (bits 0 ... 15) are used for the configuration of the position registers P1 ... P16.
Bit=0   Position signal is generated on going above/beyond (overrun) the position
Bit=1   Position signal is generated on going below/behind (underrun) the position

See also |WPOS|

ASCII -Command	WPOSX
Syntax Transmit	WPOSX [Data]
Syntax Receive	WPOSX <Data>
Type	rw
Format	Integer32
DIM	-
Range	0 ... 65535
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	3641 (hex)
PROFIBUS PNU:	1921 (dec) IND = 1 (de
DPR Objekt Nr:	321

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Mode of Fast Position Registers 1 ... 16

Description

The bit-variable WPOSX can be used to configure the fast position registers |P1| ... |P16| individually. The WPOSX variable can be considered as a 32-bit variable, whereby the lower 16 bits (bits 0 ... 15) are used for the configuration of the position registers P1 ... P16.
Bit=0 Position is monitored permanently
Bit=1 Position is monitored once. If a 1 is set the Enable-Bit |WPOSE| is set to 0, so the monitor function is diabled .

See also |WPOS|

ASCII -Command	WSAMPL
Syntax Transmit	WSAMPL [Data]
Syntax Receive	WSAMPL <Data>
Type	rw
Format	Integer32
DIM	-
Range	0 ... 2^31-1
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36D1 (hex)
PROFIBUS PNU:	1665 (dec) IND = 17 (d
DPR Objekt Nr:	465

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Minimum Move of W&S Mode

Description

WSAMPL sets the minimum movement for W&S - function in |FBTYPE| = 7 and 8. The units are internal counts.
If WSAMPL = 0, the calculation is automatically done with |ENCLINES|.

see also |WSLOOP|

ASCII -Command	WSLOOP
Syntax Transmit	WSLOOP [Data]
Syntax Receive	WSLOOP <Data>
Type	rw
Format	Integer16
DIM	-
Range	1 ... 50
Default	5
Opmode	All
Drive Status	-
Start Firmware	1.0

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36E2 (hex)
PROFIBUS PNU:	1682 (dec) IND = 17 (d
DPR Objekt Nr:	482

Configuration	☐
Function Group	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	Yes

Short Description	W&S Loops

Description

Max. number of Wake&Shake repeats |MPHASE| is calculated as mean value of all W&S repeats

see also |WSAMPL|

ASCII -Command	WSTIME
Syntax Transmit	WSTIME [Data]
Syntax Receive	WSTIME <Data>
Type	rw
Format	Integer16
DIM	ms
Range	0 ... 100
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in

MMI	☐	CAN-Bus	☑
PROFIBUS	☑	Sercos	☐

SERCOS IDN:	
CAN Object No:	36D0 (hex)
PROFIBUS PNU:	1664 (dec) IND = 17 (d
DPR Objekt Nr:	464

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	Yes

Short Description

Description

WSTIME defines the operation time of the W&S - function in |FBTYPE| = 7 and 8. The different current vectors are switched on for this time and the move distance is proportional to the WSTIME value. See also |WSAMPL|.
If WSTIME is set to "0", the calculation depends on the value of |GV| and is done automatically.

Sales and Service

We are committed to quality customer service. In order to serve in the most effective way,
please contact your local sales representative for assistance.
If you are unaware of your local sales representative, please contact us.

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