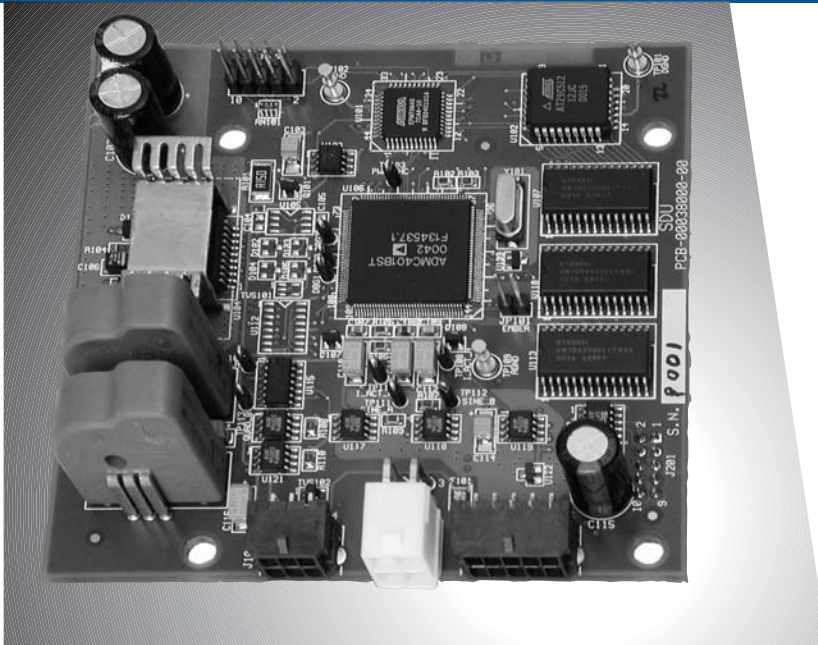


MINIATURE SERVO AMPLIFIER

www.DanaherMotion.com



DESCRIPTION

Measuring only 4" by 4", the miniature servo amplifier provides digital current and velocity loops with an integrated power stage. The system operates in velocity mode, executing a motion profile that is communicated over the serial communications link. The SDU drives an IL-030 DDL linear motor, achieving an effective resolution of 20 nm.

RATIONALE

A very light, low profile amplifier had to be assembled on the moving part of a linear motor.

The motivating factor was the need to have more accurate, lower cost replacement for the existing gear-based servo system.

At the same time the new product had to:

- Perform specific motion profile
- Serial communication RS-232 with the host computer
- Meet aggressive target costs

SOLUTION

Very small, single board, frameless, fully digital servo drive, driving a linear motor in precision scanning.

Applications

- Used by Medical scanners

FEATURES

Feedback

- Sine Encoder (A/B) interface with 256x interpolation
- Incremental Encoder (A/B)
- Commutation initialization at power up

Servo Control

- Fully digital current and velocity loops
- Sinewave commutation provides smooth, precise low-speed control as well as high-speed performance
- Accurate torque control
- Programmable velocity loop output filter.
- Selectable 400 Hz filter on the feedback.
- PDFF velocity loop

Motion Options

- Motion commanded via serial port instructions
- Homing to limit switch
- Motion profile based on precise velocity control

I/O's

- Positive and negative direction limit switches

Communication

- Serial communications - RS-232

Robust Design

- Self-protecting power modules
- Full protection against short circuit, over-voltage, under-voltage, motor and drive over-temperature, over-current and feedback loss
- Flexible current foldback protection
- DC Bus sharing

Rating

- 24 VDC bus power supply, 5 VDC logic supply
- 1.4 A_{RMS} continuous and 2.3 A_{RMS}

Mechanical Dimensions

4" (length) x 4" (width)