

Model DCPU

Digital Control Processing Unit

Overview

The **SCAN-A-LINE™ Digital Control Processing Unit – Model DCPU** is a revolutionary design for position control. Specifically designed position control, the micro-controlled **Model DCPU** utilizes up to two 10XAAS-Series or 10XBR-Series sensors to provide edge or centerline strip position control with fully-tunable Proportional, Integral and Derivative (PID) term drivers for fast, reliable and accurate control.

The micro-controller features battery-backed RAM (plus a customizable EPROM), one serial communications port (RS-232 standard or RS-422 optional) for diagnostics output, manual switch controls and a LED Display/Keypad for system setup. All mathematical calculations are performed using IEEE floating point to ensure calculation precision. One standard bipolar (deviation $\pm 10\text{VDC}$) output and 12-bit DACs ensure high-precision edge and/or centerline position output. Also available is a pair of relay contacts for RIGHT, LEFT and GO limits. An open-collector output is also provided for sensor FAULT monitoring.

Applications

Position Control: Standard PID Position Control.

Rewind Control: Rewind (or Take-up) Mandrel closed-loop PID Position Control (requires optional Linear Transducer).

Rewind Control with Stagger Wrap: Rewind (or Take-up) Mandrel PID Position Control with edge stagger feature to eliminate tightly wound coils that have thick edges (requires optional Linear Transducer and Current Sensor).

Intermediate Strip Control

Interface

The **Model DCPU** utilizes simple and easy-to-operate operator interfaces for the setup, configuration and tuning of the control system. All system functions are available by either the Manual Controls or by the LED Display/Keypad.

LED Display/Keypad:

An internally mounted LED display and keypad are available for adjusting functional control parameters.

Manual Controls:

The **Model DCPU** has front-panel mounted switches for:

- Automatic, Manual & Servo-Center Selector Switch
- Manual Jog IN/OUT Selector Switch
- Auto-Zero TARGET Push-button
- LEFT/CENTER/RIGHT Guide Selector
- Stagger Wrap Option



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Features

- **Sensor Compatibility:** 10XAAS-Series or 10XBR-Series sensors, up to two per processing unit.
- **One Deviation valve control analog ($\pm 10\text{VDC}$ @ 100mA maximum) and up to two Absolute edge position analogs (0-10VDC @ 10mA maximum).**
- **Relay Outputs:** LEFT/GO/RIGHT limit relays rated at 250VAC @ 5A maximum.
- **Switching Power Supply ($\pm 12\text{VDC}$ regulated for sensors and 5VDC regulated for logic circuits) and signal routing for up to two SCAN-A-LINE™ sensors. Utilizes universal 90 - 240VAC UL1950, FCC Class C.**
- **Model DCPU Enclosure Dimensions:** 12" [305mm] wide x 14" [356mm] tall x 6" [152mm] deep.
- **Optional Remote Operator Interface Available for operation up to 50' [15.2m] or up to 4000' [1219m] with 422 Option.**

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