12-AXIS MULTI-DRIVE UNIT

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DESCRIPTION

This Multi-Drive Unit (MDU) consists of 12 independent servo drives assembled on a 9U PCB. Depending on the end-user's requirements, anywhere from 100 to 200 of these MDUs may be in use in a single machine. A CAN Communications Processor (CCP) controls the process and communicates with the MDUs.

The servodrives operate in Gear Mode only, following a Master Encoder value that comes from an encoder mounted on the main shaft of the machine. This value is broadcast every 1 milisecond over one of the CAN channels.

RATIONALE

The motivating factor behind the development effort was the need to have easy, faster setup and programming flexibility in controlling up to 2200 axes per machine, replacing a mechanical CAM shaft.

In addition, the new product had to meet:

- Outstanding Compact Size
- CAN communication with host controller.
- Aggressive cost target.
- Very High reliability.

SOLUTION

- Optimal arrangement of 12 axes per module and 8 modules in a rack.
- Centralized CAN operator for each module .



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Applications

• Tufting machine (carpet industry)

FEATURES

Operation Modes

• Gearing mode only: the servo drives follow a master encoder. Each servo drive has its own independent gear ratio.

Feedback

Differential inceremental encoder

Communications

- Dual CAN bus communications between the controller (CCP) and the MDU
- A central CPU on the MDU distributes information to the DSPs over an SSI bus.

Rating

- The servo drives are rated at 1.4 $\,{\rm A_{RMS}}$ continuous and 2 $\,{\rm A_{RMS}}$ peak Rated DC bus voltage 28 VDC

Mechanical Dimensions

1.1" (height) X 5.9" (width) X 4.96" (length)

