Programmable PID Controller Dual Axis - 16Bit Analog (+/-10V Input)

E122-216-010 Single Eurocard RS-232/485 PC Tuneable



Description

The E122-216-010 controller is a 2 axis Analog PID system designed for Electro-hydraulic servo applications and compatible with the Moog E120 range of electronics.

Each axis may be used for position, velocity force or pressure control using an external analog signal or the internal waveform generator as the command source. A wide range of user selectable analog input options are possible via the other single eurocard conditioning and noise suppression modules in the range.

Built in 24V logical inputs allow each axis to be switched from home to run mode. Axis ready and control error 24V output logic is used to indicate the status of each axis.

The E122-216-010 controller is supplied with configuration and oscilloscope display files for use with the Moog Graphical Operator User Interface (GOUI) design toolkit (Part No C16960-001) supplied separately.

Application

Features:

- PID & Feed Forward Control
- Graphical Tuning Interface
- 16Bit Resolution, >1 kHz Sample Time
- Analog Demand or Internal Generator
- 24V Start/Stop and Error Logic
- Smooth Transition Between Operating Modes

PRESSURE DEMO WINDOW (Demo 2.0)			
Display Scope Editor Configuration Options EUI Help			
MOOG	On-line	Save Next 2 Axis No	a 🗧 🔃 Quit
PRESSURE MODE		Ch1-ACTUAL < PRESSURE > DEMAND-CH2	
Pressure Mode Select:		80 - 70 -	-80
PRESSURE TUNING GENERATOR		60- 50-	-60 -50
Tune Mode On/Off :		40	-40 -30 -20
Amplitude (bar):	\$100		30 35 40
Offset (bar):	\$ 50.0	Channel 1 39.8 Tin	ne 🖞 0.00
Delay (Sec):	2.0	Vertical Scale (bar)	10.0
PRESSURE CONTROLLER GAINS		Vertical Offset (bar)	\$ 50.0
P Gain (%):	\$ 12.2	Time Base (Sec/Div)	\$ 0.50
l Gain (%):	27.0	Time Shift (Sec)	0.00
D Gain (%):	\$ 0.0	<u>Run</u> Stop Refresh O	ff 🔲 On Quit)

- Position, Velocity Control Servos
- Force, Pressure Control Servos
- General Servo Hydraulics

Electrical Specification

Valve Drive Output: 2x16bit, +/-10V, +/-10mA, 20mA and 50mA options. Update frequency 1kHz. **Analog Input Range:** 6x16 bit, +/-10V Standard. Optional +/-5, 10, 15V; 0-10V, 0-5V, 0-20mA link selectable options and 2nd order noise filtering via D124-041-001 module.

Logic Inputs: 24V opto-isolated.

Logic Outputs: 24V, 50mA current sink

Power Requirements: 5V@ 500mA, +/-15V@ 180mA.

RS232 Comms: 9 pin D Type Moog Set-Up Protocol **RS485 Comms:** Multidropped Moog Set-Up Protocol. RS232 to 485 converter required.

PC Interface: Moog GOUI, Part No C16693 required to run on minimum 486 DX/2-66 with 8Mb Ram and 10Mb hard disk. Screen size 640x480 VGA.

Functional Specification

Loop Closure: PID, forward path with D feedforward and D feedback options, I term enable and output level control.

Demand Input: External Analog, Internal Generator or Home Position. Input Level and Rate Limiting. **Logic Input:** Valve On/Off Logic (1 input for both axes), Independent Home/Run Select Logic. **Logic Output:** Error Window exceeded logic and

Axis Ready logic – deactivated when in tune mode or switching between modes.

Tuning: PC based GOUI Interface; gain adjustment via oscilloscope and voltmeter display.

Calibration: Scale Offset and Invert calibration for all inputs and valve drive output.

Diagnostics: PC based GOUI Interface; I/O Logic, Demand and Controller Status diagnostics.

The E122-216-010 is part of the Moog M2000 product range, please consult Moog for further information.



Operational Schematic

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