COILS AND ELECTRONIC CONTROLS

Proportional Valve Controller—DIN Coil Mount—

DESCRIPTION
A convenient, plug-mounted control amplifier for controlling HydraForce proportional valves that have solenoids with DIN 43650A/ISO 4400 electrical connectors.

OPERATION
This control module utilizes high frequency switching (PWM) to supply a proportional valve solenoid with a proportional control signal. The input signal to this controller can be from a 10K potentiometer or a 0–5 VDC source. This economy version has no ramp adjustments. Dither frequency and amplitude are factory pre-set.

FEATURES
- Mounts directly to solenoid coils with DIN 43650A connectors.
- IP65 weather resistant when used with base gasket (supplied).
- Adjustments accessible with a removable cover.
- One unit covers supply voltages from 9 to 32 VDC.
- No internal fuses; circuit limits current electronically.
- Short circuit proof and reverse polarity protected.
- Connector can be disconnected from coil when powered.
- Maximum current adjustment does not affect minimum current setting.
- Internal supply for potentiometer.

GENERAL SPECIFICATIONS
Plug Housing: Polyamide
Plug Lid: Polycarbonate
Weight: 30 g (1.06 oz.) without cable
Connections: Mounted cable with unterminated wires provided;
  Length: approximately 2 meters (79”)

Note: The standard version of this controller is not UL Listed, but with the substitution of an alternate cable, it could be UL Listed. Consult factory.

RATINGS
Supply Voltage: 9–32 VDC
  Coil rating must be matched with supply voltage: \( R_{\text{COIL}} \leq (V_{\text{SUPPLY}} - 1.5 \text{ V}) / I_{\text{MAX}} \).
Control Input Signal Options: 10K external potentiometer (accepts 5K to 50K pots), or 0–5 VDC current signal (see connection diagrams)
Input Resistance: 200K Ohms
Output Current: up to 2000 mA (see ordering info.)
Minimum Current Range: 0–500 mA (adjustable)
Maximum Current Range: 600–2000 mA (adjustable)
Internal Supply for Setpoint Potentiometer: +5VDC
Dither Frequency: 200 Hz (±10% of full scale) Preset at Factory
Dither Amplitude: 5% Preset at Factory
Operating Conditions: −20° to 85°C; 0 to 85% relative humidity
Environmental Protection: IP65 with cover and base gasket installed

SCHEMATIC

[Diagram of the proportional valve controller]
10K Pot or 0–5 VDC Input—Economy Version

DIMENSIONS

(+) Power Supply — Red
(−) Power Supply — Black
Potentiometer Power — White
0–5 VDC Input — Green
Input Ground — Brown

ADJUSTMENTS DETAIL

Minimum Current

Maximum Current

CONNECTIONS

For Complete Set-Up Instructions,

<table>
<thead>
<tr>
<th>10K Potentiometer (Pot.) Control</th>
<th>0 to 5 VDC Control</th>
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</thead>
<tbody>
<tr>
<td>Supplied by User</td>
<td>Wire Color</td>
</tr>
<tr>
<td>(+) Power</td>
<td>Red</td>
</tr>
<tr>
<td>(−) Power</td>
<td>Black</td>
</tr>
<tr>
<td>(+) Pot</td>
<td>White</td>
</tr>
<tr>
<td>10K Pot.</td>
<td>Green</td>
</tr>
<tr>
<td>(−) Pot.</td>
<td>Brown</td>
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TO ORDER

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Output</th>
<th>I-Min. Setting</th>
<th>I-Max. Setting</th>
<th>Cable Length</th>
</tr>
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<tbody>
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<td>4000172</td>
<td>2000 mA</td>
<td>0 to 500 mA</td>
<td>600 to 2000 mA</td>
<td>2 meters</td>
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