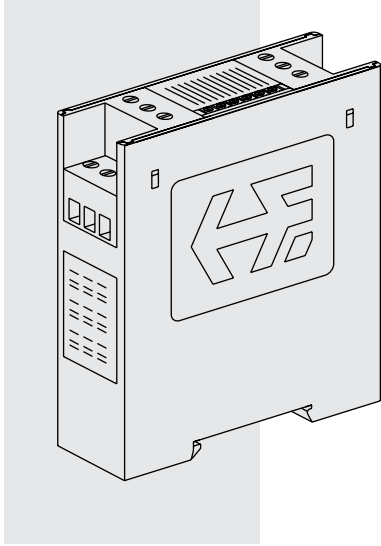


## Proportional Valve Controller—DIN Rail Mount—



### DESCRIPTION *PWM (Pulse Train) Input*

A DIN rail-mount style control amplifier for controlling HydraForce proportional valves. Remote mounting in a protected enclosure is required.

### OPERATION

This control module uses closed-loop current control with superimposed dither to supply a proportional valve solenoid with a proportional control signal. The input signal to this controller can be from a PWM (pulse train) source.

### FEATURES

- Adjustments and connections clearly labeled.
- LED indication of output power level, input level and power on/off.
- One unit covers supply voltages from 9 to 32 VDC.
- No internal fuses; circuit limits current electronically.
- Short circuit proof and reverse polarity protected.
- Can be disconnected from coil when powered.
- Maximum current adjustment does not affect minimum current setting.
- Current sensing circuit maintains output current regardless of changes in input voltage or coil resistance.
- Independent ramp adjustments.
- Filter eliminates electrical noise.
- Dither frequency and amplitude are adjustable for maximum valve performance.

### GENERAL SPECIFICATIONS

**Weight:** 25 g (0.88 oz.)

**Connections:** Screw terminals for 16–30 AWG wire

### RATINGS

**Supply Voltage:** 9–32 VDC

Coil rating must be matched with supply voltage:  $R_{COIL} \leq (V_{SUPPLY} - 1.5 V) / I-MAX.$

**Control Input Signal:** 250 to 5000 Hz PWM (pulse train); 5% to 95% duty cycle; Low < 1.5 volts; High > 3.5 volts; 50 volts maximum

**Input Resistance:** 9.7K Ohms

**Output Current:** up to 2000 mA (see ordering info.)

**Minimum Current Range:** 0–500 mA (adjustable)

**Maximum Current Range:** 600–2000 mA (adjustable)

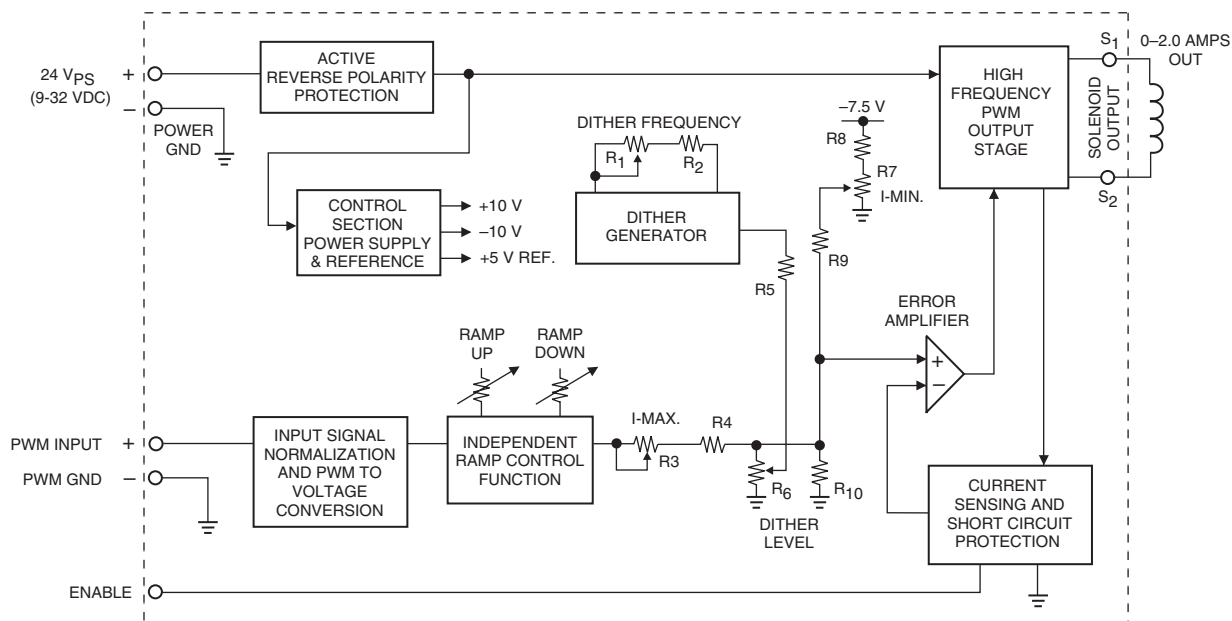
**Ramp Up and/or Down:** 0.01–5.0 seconds (independently adjustable)

**Dither Frequency:** 70–350 Hz ( $\pm 10\%$ )

**Dither Amplitude:** 0–10% of maximum current (adjustable)

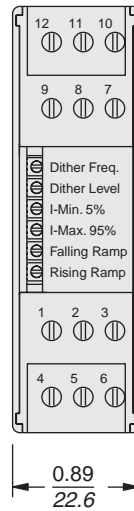
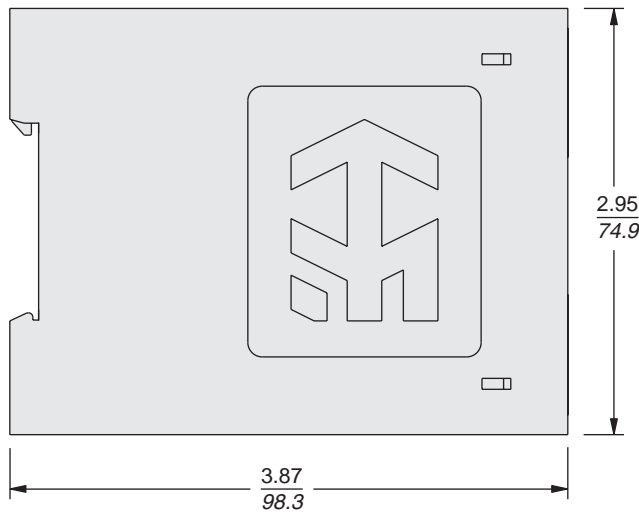
**Operating Conditions:** –20° to 85°C; 0 to 85% relative humidity

### SCHEMATIC



# PWM (Pulse Train) Input

## DIMENSIONS



### Screw Terminal Connections for 16–30 AWG wire

1. PWM In
2. Not Used
3. PWM Ground
4. (+) Power
5. Not Used
6. (-) Power
7. Enable
8. Not Used
9. Enable Ground
10. (+) Solenoid
11. Not Used
12. (-) Solenoid

INCH  
MILLIMETRE

**Note:** When Enable is left open, the unit is enabled. When Enable is connected to Enable Ground, the unit will be disabled.

## CONNECTIONS

For Complete Set-Up Instructions, see page 3.439.1

**Basic Setup:** Turn ramp screws fully counterclockwise to eliminate ramping. Use I-Min. screw to set minimum speed with minimum control input. Use I-Max. screw to set maximum speed with 100% of control input.

### PWM (Pulse Train) Control

Supplied by User	Screw Terminal
PWM Input	1 — PWM In
	2 — Not Used
Ground	3 — PWM Ground
(+) Power	4 — (+) Power
	5 — Not Used
(-) Power	6 — (-) Power
Enable	7 — Enable
	8 — Not Used
Ground	9 — Enable Ground
(+) Coil	10 — (+) Solenoid
	11 — Not Used
(-) Coil	12 — (-) Solenoid

## TO ORDER

Part Number	Output	I-Min. Setting	I-Max. Setting
4000140	2000 mA Max.	0 to 500 mA	600 to 2000 mA