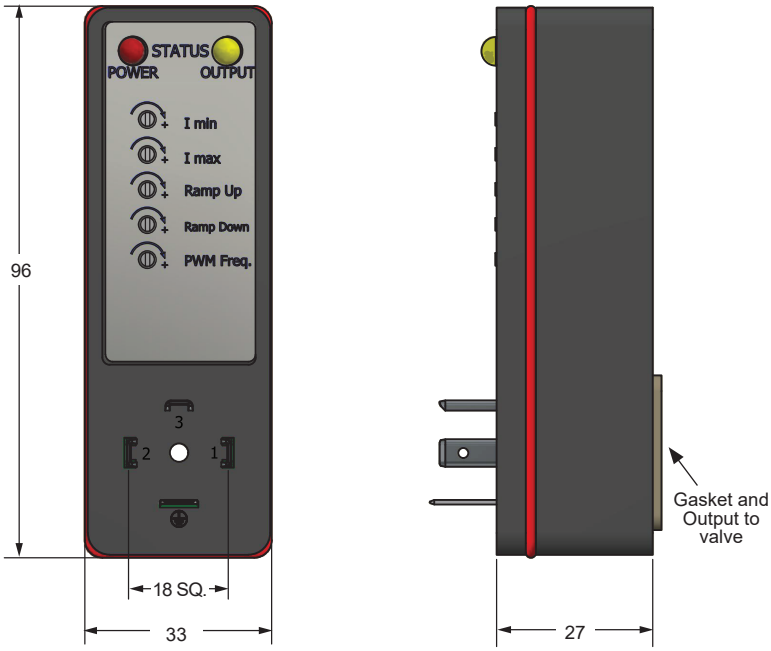
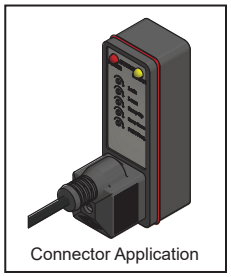
GENERAL DESCRIPTION

A Micro Proportional Driver provides accurate control of hydraulic and pneumatic proportional solenoid valves used in mobile construction equipment and industrial processes. The MPD can control the flow of air or liquid linearly at a setting from 0.10-20 seconds. One example of use would be in a paint system. The MPD allows a solenoid to oscillate, significantly reducing system shock and wear commonly found in non-oscillation digital valve systems. The Micro Proportional Driver is a compact electronic circuit built into an environment-resistant miniaturized enclosure. The circuit features control of proportional solenoids and operators. Functions include minimum and maximum current limiting, control signals from 0-10V or 0-20 mA (with a step function at 0.2V or 0.4 mA included for minimum current), a 0.1-20 sec. linear ramp up/ramp down adjustment and output current proportional to input command signal.

DIMENSIONAL DATA

All dimensions are in millimeters unless otherwise noted.




Connector Application

TECHNICAL DATA

Output Current @ 25° CT_A Continuous Peak Pulsed (16ms) I min. (+/- 20%) I min. (+/- 20%)	High Resolution Version: 1.5 Amps max. 4.7 Amps max. 0 - 0.5 Amps max. I min. + 1.0 Amps max.	High Output Version: 3.0 Amps max. 17.0 Amps max. 0 - 1.0 Amps max. I min. + 2.0 Amps max.
Supply Voltage	11.5 VDC min. - 32 VDC max.	
Supply Current	45 mA max. (no load)	
Input Control Signal Control Voltage Control Current Regulation Δ V Regulation Δ T Ramping Up/Down Time PWM Frequency Output Leap to I min.	 0 - 10 VDC (500 Ω impedance) 0 - 20 mA (100 Ω impedance) +/- 0.2% / V +/- 0.1% / °C 0.1 - 20 sec. linear (+/- 0.1% / °C 95 - 225 Hz @ 0.2 V or 0.4 mA control (+/- 15%)	
Temperature Range	-25° to +85°C	
Materials	Housing: PA	
Environmental Protection	IP 65 and NEMA 4 (When properly installed)	
Size	ISO: 18mm pin spacing - DIN Style "A" EN175301-803	

FUNCTION

Minimum Current & Maximum Current - These two adjustments will vary the minimum and maximum output current limits. The minimum current can be set between 0 - 500 mA or 0 - 1 A, depending on output current option. The maximum current can be set in the range between the minimum current setting and the minimum current setting plus 1 A or 2 A, depending on output current option. The minimum current must be set first as described below.

Minimum Current Adjustment - Set both min. and max. current adjusters max. counterclockwise. Apply an input command signal of approximately 0.5 volts or 1.0 mA. Adjust the min. current adjuster for a minimum current or to a desired system response. Back up adjuster until system stops responding. Proceed to max. current adjuster.

Maximum Current Adjustment - Increase the input command signal to 10 volts or 20 mA. Adjust max. current adjuster for a maximum current limit or to a desired system response.

Note: To minimize any effect of supply voltage, load resistance or temperature variation, make setup adjustments when these parameters are at the midpoint of the expected operating range for a particular installation. For example, if the expected operating temperature range is 20° C to 60° C, make final setup adjustments when system is approximately 40° C. If the supply voltage has a tolerance of 22 to 32 volts, make adjustments when the supply voltage is approximately 27 VDC.

Ramp Up/Ramp Down - Adjust to desired ramp up/ramp down time (0.10 - 20 sec.). Ramp time is linear and is proportional to the step change in the control signal. For example: 0.2 - 10 VDC change in control signal gives max. ramp of 20 sec. 0.2-5 VDC change in control signal gives max. ramp of 10 sec.

PWM Frequency - The output is pulse-width modulated to control output current within the minimum and maximum current settings. The frequency of the modulation is continuously adjustable from 95 - 225 Hz.

Output - The output is current regulated and will remain constant (within the limits specified under Technical Data on previous page) at the level set by the input command signal. Variations in supply voltage and load resistance have little effect as long as these values satisfy the equality stated below.

$$\text{Maximum Required Currents} \leq \frac{\text{Min. Supply Voltage}}{\text{Max. Load Resistance}}$$

ORDERING INFORMATION

Contains mounting screw and gasket.

5950 - 10 □ 01 □ □

Power Connection
0 - None
1 - 5F ISO 3+G 6' cable
2 - 5000 ISO 3+G PG9
3 - 5000 ISO 3+G 1/2" conduit

Output Current Options
0 - 1.5 Amps max. (high resolution)
1 - 3.0 Amps max. (high output)

Control Options
0 - Control voltage and control current input (no reference voltage output)
1 - Control voltage input and reference voltage output (no control current input)

Ordering Example: 5950 - 1010100

5F ISO 3+G 6' cable, control voltage and control current input, 1.5 amps max. output