

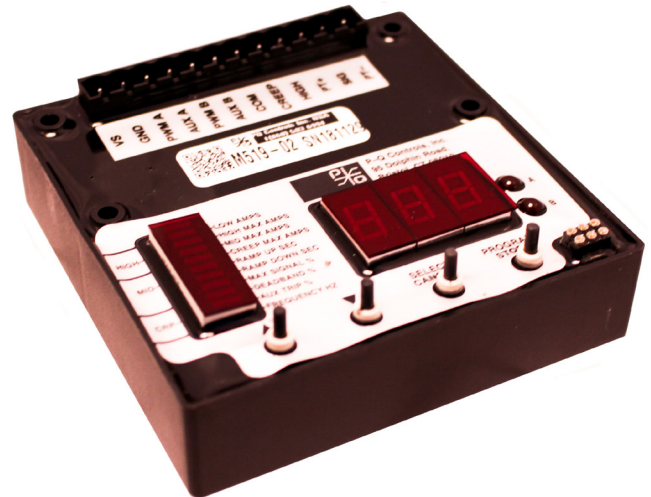


MODEL 519 SERIES

Valve Drive Board

- On-board, on the fly, programming capability
- On-board current meter
- Push Button Programming - No Trimpots!
- Completely independent adjustments
- Low Drop MOSFET Outputs
- Independently adjustable RAMP Rate
- Adjustable PWM Frequency
- Three PWM Output ranges
- Three auxiliary outputs w/ 2.5 Amp current rating
- RAMP between CRP, MID and HI Ranges
- Drives both low and high current valves
- Epoxy Encapsulated Electronics
- Current sourcing w/feedback outputs
- Password Protection (M519)
- Over-signal protection
- Short circuit protection
- Broken Lead Protection
- Reverse Polarity Protection
- Voltage Supply Transient Protection
- EMI & RFI Resistant

**For a complete description of the product, please see the M519 Manual.*



The Model 509/519 series of valve drive boards are an electronic interface between a command source (potentiometer, joystick, foot pedal, etc.) and an electrohydraulic valve or pump. The board receives analog signals from the command source, and provides Pulse Width Modulated Output (PWM) to drive most electrically modulated valves and pumps available today. The board also provides solid-state on/off outputs and other features to smoothly stroke a valve or pump with greater control and flexibility over conventional hydraulic components.

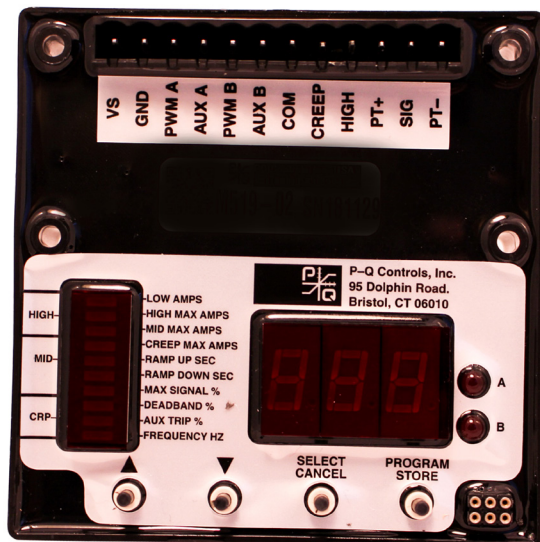
Electrical Data	
Supply Voltage	10-30 VDC
Signal Input	1-4 VDC, 2.5 Neutral (30% Signal Swing)
Auxiliary Outputs (A, B, Common*)	2.5 amps
Protection	Reverse Polarity, Over-voltage, Open/Shorted Signal Leads, Transient Voltage Supply
	EMI/RFI Hardened
Regulated Power Out (PT+, PT-)	5 VDC (may be used to power 5V CSource)
PWM Outputs (A, B)	Configurable from 10 - 2500mA
	Regulated Output Current Fixed within 2%
Mechanical Data	
Operating Temperature	-40° to 85°C (-40° to 185° F)
Resistance	Humidity, Rain/Water, Sun/UV Exposure
Protection	Sealed Epoxy potting (Black)



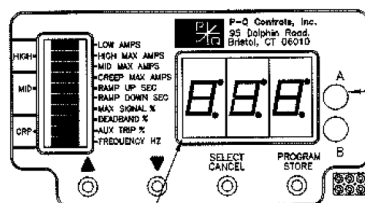
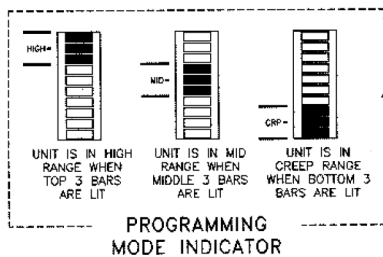
MODEL 519 SERIES

Valve Drive Board

Technical Drawing Example



M519 Operation Mode



Notes:

1. The M509 is larger than the M519 and will not mount directly to a P-Q joystick. The M509 has the added capability of driving low current grounded coils.
2. The M519 will mount directly to a single axis M115 P-Q joystick. The 519 will not drive low current grounded coils. The M519 has an added protection feature that requires a specific push button sequence to enter into the program mode. The M519 has the same mounting footprint as many other PQ Valve drive boards.



MODEL 519 SERIES

Valve Drive Board

Quick-Startup guide

PROGRAMMING

Operating Feedback / Notes

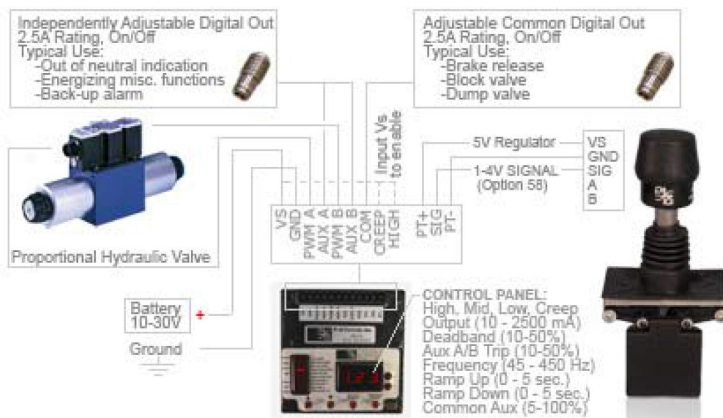
1. Hold down ▲▼ and simultaneously press Program to begin.
2. Press **Select** to choose Preset 0.
3. Press ▲▼ buttons to increase or decrease value of the setting.
4. Press **Select** to choose setting.
5. Press ▲▼ buttons to increase or decrease valve of the setting.
6. Press the **Store** button to save your setting.

Repeat steps 1 to 5 for each function you want to change. After you store your last change, press the **Store** button again to return to the Normal Operation Mode.

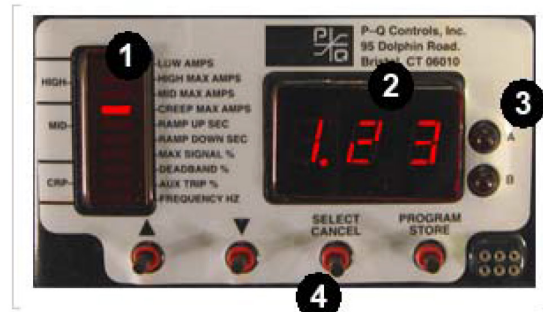
1. Display will show "P0" (Preset 0)
2. Preset 0 is the primary access database for your settings.
3. Each valve coil is adjusted independently. To adjust the "B" coil, simply scroll down until the "B" LED illuminates.
4. The Bar Graph LED blinks.

Frequency adjustment is made in the "A" mode and sets the frequency for both PWM A & PWM B.

Numeric Display is a current meter in the Normal Operation Mode and measures output in amps



TYPICAL APPLICATION:
(1) Single-Axis M115 w/ 5V Hall Board (Opt. 58/59)
(1) Standard Adjustable 504 Valve Drive Board
For reference only. See 509/519 manual for details



- 1) Bar Graph LED Indicator
- 2) LED Display / Current Meter
- 3) PWM Output and Direction Indicators
- 4) Push-button Programming Controls

IMPORTANT

- Use shielded cable for command source and connect shield to GND
- Ramp (Time Delay) is factory preset to Off for ease of fine tuning. Decel/accel time adjusted independently.
- The board defaults to MID speed operation (50% output). To enable normal operation, HIGH terminal must also be energized with Vs (see Typical Application diagram)
- PWMA and PWM B terminals begin output simultaneously with Aux A and Aux B. Aux A and Aux B terminals output VS as soon as deadband is exceeded (default deadband is 20% max travel , i.e., +/- 10%).
- Mating Connector A-09014-12