

# Electronic Controlled Valve

## Model MN-818-03 (For High Pressure Applications)

Hydraulically operated valve that responds to signals from the electronic controller BERMAD BE (optional), by changing its opening position according to set values programmed into the controller.

This valve combines the advantages of an excellent modulating, line pressure driven, hydraulic control valve with the advantages of electronic control.

The BERMAD 800 Series valves are hydraulic operated, piston actuated, oblique pattern, globe valves with a seat assembly and double chambered unitized actuator.

The valve's hydrodynamic body is designed for unobstructed flow path and provides excellent and high effective modulation capacity for high differential pressure applications.

The 800 Series operate under difficult operating conditions with minimal cavitation and noise. They are made of the highest quality materials suitable for different mining applications.



### Features and Benefits

- Robust structure, piston actuated
  - High pressure service
- Self-operated valves that can work without an external source of power, just a command is needed:
  - Low power consumption
  - Low cost wiring
  - Normally Open, Normally Closed or Last Position
- Designed to stand up to the toughest conditions
  - Tamper resistant
  - Excellent anti-cavitation properties
  - High stability and accuracy
  - Drip tight sealing
- Double chamber actuator design:
  - Full powered opening and closing (option "B")
  - Provide rapid response to sudden changes in system conditions
  - Simplified maintenance as it can be removed as a single unit. In-line serviceable
- Flexible design - Easy addition of optional features:
  - Analog position transmitter
  - V-Port Throttling Plug - Allows for low flow stability
- Obstacle free flow path

### Major Additional Features

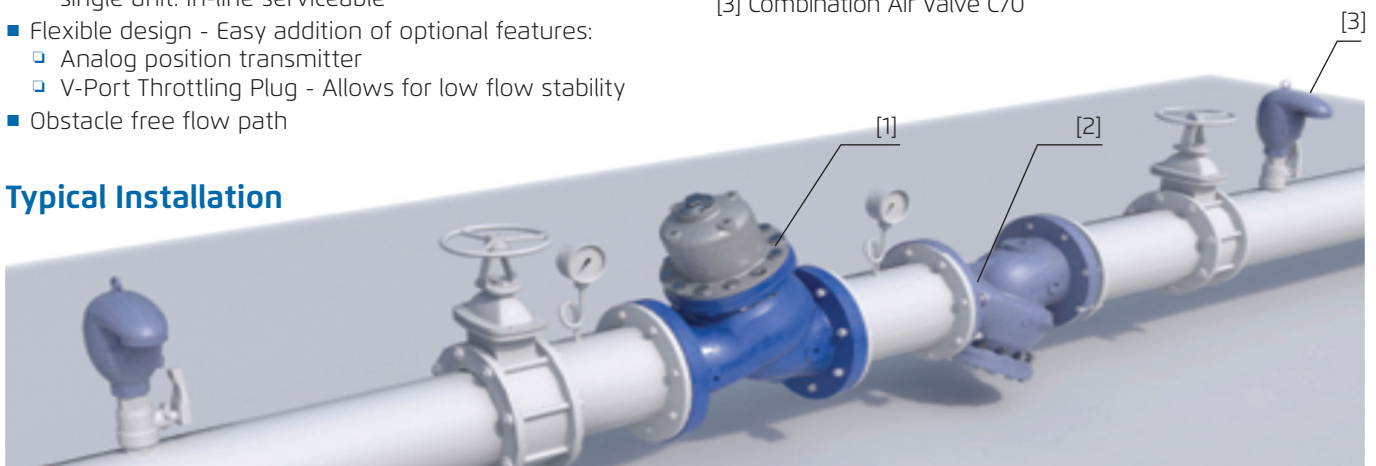
- Full powered opening & closing - **818 - 03 - B**
- Check feature - **818 - 03 - 20**
- Relief override - **818 - 03 - 3Q**
- Downstream over pressure guard - **818 - 03 - 48**

See relevant BERMAD publications

### List of Components:

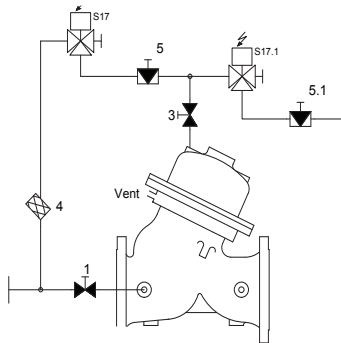
- [1] Electronic Controlled Valve MN-818
- [2] Strainer MN-80F
- [3] Combination Air Valve C70

### Typical Installation





### Control Schematic (\*)



#### Standard Configuration

- 1 2W Cock Valve
- 3 2W Cock Valve
- 4 Control Filter
- 5 Closing Needle Valve
- 5.1 Opening Needle Valve
- S17 Closing 3W Solenoid
- S17.1 Opening 3W Solenoid

#### Additional features (OPTIONAL)

- V V-Port Plug
- F Large Control Filter
- F1 Extra Large Control Filter
- I Visual Position Indicator
- S Electric Limit Switch
- Q Analog Position Transmitter 4-20 mA
- U Orifice Plate

(\*) As a reference only. Components may vary based on valve's size and class. For poor quality fluids, use of hydraulic relays is highly recommended

### Operation

- The main valve is equipped with two 2-way solenoid pilots.
- The interaction between the two solenoids determines the required opening position as signaled by the dedicated electronic controller (optional BERMAD BE).
- For a more closed position, then the closing solenoid must apply pressure to the upper control chamber, thereby, harnessing valve differential pressure to power the diaphragm actuator to close the main valve.
- For a more open position, the opening solenoid must vent the upper control chamber pressure to open the main valve.

### Electrical Data

#### Solenoid Data:

- Voltages:** (AC): 24, 110, 220  
(DC): 12, 24, 110, 220

#### Power Consumption:

- (AC): 30VA, inrush; 15VA (8W) holding  
(DC): 8W



### Pressure Rating

	Class 300		
Max. Recommended Pressure	600 PSI		
Available End Connection	Flanged ANSI#300	Grooved ANSI/AWWA C606	Threaded

### Materials

Components		Water Applications	Thermal Shock Applications	Base Solutions Applications	Acid Solutions Applications (**)
Main Valve	Body	Ductile Iron	Carbon Steel	Ductile Iron	Stainless Steel 316
	Cover	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316
	Internals	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel 316
		Brass/Coated Steel	Brass/Coated Steel	Coated Steel	
	Elastomers	Synthetic rubber	Synthetic rubber	Synthetic rubber	Viton
Coating	Fusion Bonded Epoxy	Fusion Bonded Epoxy	Fusion Bonded Epoxy	Uncoated	
Solenoid	Body	Brass	Brass	Stainless Steel 316	Stainless Steel 316
	Internals	Stainless Steel	Stainless Steel	Stainless Steel 316	Stainless Steel 316
	Elastomers	Synthetic rubber	Synthetic rubber	Synthetic rubber	Viton
Control Loop Accessories	Accessories	Brass/Bronze	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316
	Tubing & Fittings	Brass	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316

(\*\*) For highly aggressive acid solutions: Super Duplex, Hastelloy C-276, SMO-254 6-MO. Others by request.

#### Notes:

- Inlet pressure, outlet pressure and flow rate are required for optimal sizing and cavitation analysis.
- Recommended average flow velocity: 0.1-3.5m/sec; 0.3-11ft/sec. Intermittent flow velocity: 7.5m/sec-23ft/sec
- Minimum operating pressure: 2 bar / 30 PSI.

