3-Way Solenoid

S-390-3W

The BERMAD S-390-3W is a compact 3-Way Solenoid, specially designed for reliable long life service in irrigation systems controlled by Continuous Current Controllers. The BERMAD solenoid can control valves independently or in combination with other control circuit accessories. Model S-390-3W is compliant with all Continuous Current Controllers on the market. It is excels in its low power and low sensitivity to dirt and voltage variations. The hydraulic base features a manual override and consists of a bracket for attaching to the valve or to a solenoid manifold.

Features and Benefits

- Advanced Construction Materials, Unique Plastic Casing
  - Proven pressure, voltage and weather resistance
  - Highly durable in corrosive environments
  - High mechanical strength
  - Protection Class- IP68; NEMA Type 6D
- Superb Internal Design and Finish
  - Reliable operation under dirt loaded water
  - Low sensitivity to voltage variations
- Low Power Consumption
  - Low coil heating and sediment damage
  - Saves wires and infrastructures costs
  - Suites all Continuous Current Controllers on the market
- Angled Plastic Base with Installation Bracket
  - High flow capacity quickens valve response
  - Manual override open
  - Simple installation to valve or manifold
- Simple Installation, Operation and Maintenance
- Reliable and Durable Product that Bears the Stamp of BERMAD Quality

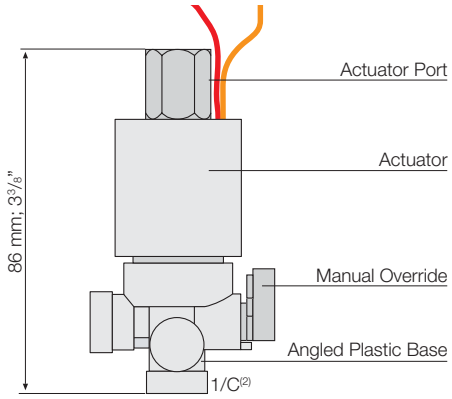
Applications

- Solenoid controlled on/off valves
- Solenoid controlled pressure and flow control valves
- Multiple valve systems
- Systems distanced from control center

Specifications

Ports:
Actuator Port (1/8" NPT) - Pressure (N.O.); Vent (N.C.)
Base Port - 1 (1/8" NPT[1]) - Vent (N.O.); Pressure (N.C.)
Base Port - C[2] (1/8" NPT[1]) -Valve Control Chamber (Common)
[1] Brass Base Ports Size is 1/4" NPT
[2] Brass Base Common Port is marked "2"
Solenoid to Base Connection: 3/4"; 20 UNEF Male Threaded
Leads: 2 leads x 0.32 mm² x 80 cm
Operating Pressure Range: 0-10 bar

Materials:
Actuator Casing: Nylon
Seals: NBR
Wetted parts: Stainless steel 400 and polyamide
Base: Nylon (Optional: Brass)



Electrical Data:

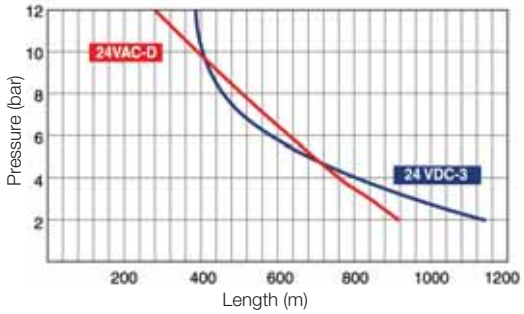
Actuator Type	Cable Color	Power (Watt)	Current (Amp)		Coil Resistance ohm@20°C; 68°F
			Inrush	Hold	
S-390-3W-24VAC-D NO	Red/Orange	2.2	0.13	0.13	37.5
S-390-3W-24VAC-D NC	Orange/Blue	3.5	0.20	0.20	*
S-390-3W-24VAC-R NO	Red/Red	2.9	0.46	0.24	21
S-390-3W-24VDC NO & NC	Black/Black	4.2	0.17	0.17	135
S-390-3W-12VDC NO & NC	Blue/Blue	4.0	0.33	0.33	36

* The resistance in these coils cannot be measured

Cable Length Data:

Maximum cable length according to coil type

Cable cross section: 0.5 mm², orifice size: 1.8 mm, air gap: 0.8 mm



For cables longer than shown in diagram

In order to calculate the cross section of a length other than shown in the diagram, use the following equation:

$$S = \frac{L\,(SOL)}{L\,(diagram)} \times 0.5$$

S = Minimum conductor cross-section in mm²
L (sol) = ActualLength of cable to solenoid
L (diagram) = Length of cable shown in this diagram

3-Way Flow & Pressure Data

Actuator Type	Pressure Rating (bar; Psi)		Inlet Port Kv*		Exhaust Kv*	
Orifice (mm)	1.6	1.8	1.6	1.8	1.6	1.8
S-390 24VAC-D-NO	10;150		0.05			0.12
S-390 24VAC-D-NC	15;220	10;150	0.07	0.12	0.05	
S-390 24VAC-R-NO	10;150		0.05			0.12
S-390 24VDC-NO	8;115		0.05			0.12
S-390 24VDC-NC	10;150	5;70	0.07	0.12	0.05	
S-390 12VDC-NO	8;115		0.05			0.12
S-390 12VDC-NC	10;150	5;70	0.07	0.12	0.05	

* KV = m³/h @ 1 bar ΔP ** CV = GPM @ 1 bar ΔP

How to Order

Please Specify the requested Solenoid as follow:

■ 2-wires Continuous Current Solenoid, BERMAD Model: S-390-3W-_____(a)-_____(b)-_____(c)-_____(d)

(a) Mark D or R
(b) Mark desired Voltage: 24V/AC, 24V/DC, 12V/DC
(c) Mark Solenoids desired De-Energised Function:
NO (Open) or NC (Closed)
(d) Mark desired Base: 00 (No Base) BC (Plastic NC), BR (Brass NC)

To Order installed and tested Solenoid Manifold Please Specify:

■ S-390-3W Solenoid Manifold, BERMAD Model: E-390-3W-_____(c)-_____(e)-_____(f)

(c) Mark Solenoids desired De-Energised Function:
NO (Open) or NC (Closed)
(e) Specify Desired Quantity of Solenoids
(2-10 Solenoids can be ordered)
(f) Mark desired Voltage: 24V/AC, 24V/DC, 12V/DC