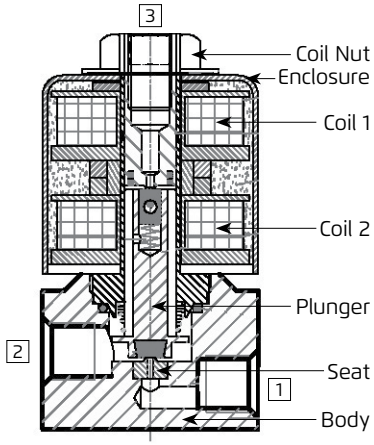
3-Way Latching Solenoid Valves

Latching solenoid valves are normally de-energized and are activated by a momentary electrical pulse, latching the solenoid in the release position. The Magna-Latch Solenoid valve is typically used to enable the safe remote control of BERMAD Deluge and Control valves, latching the BERMAD valve in its open position for safe discharge of firewater.
The Magna Latch solenoid valve consists of two coils that are incorporated in one enclosure. It is activated to release the control pressure of the main valve by means of a short electrical impulse signal to the Latch or "Pull" coil, after which solenoid actuator is latched in the last position by a permanent Holding Magnet. To Reset the system, an electrical pulse should be applied to the De-latch or "Push" coil, creating a counter-force which overcomes the magnet and allows the actuator to return to its normal position.
The Mechanical-Latch solenoid valve type is equipped with a manual reset lever to return the solenoid to it's normal position, while the coil is de-energized.
Latching solenoid valves are also used in areas where the system runs on limited power supply. They require a pulse duration of only 50ms to operate with minimal electric current, drastically reducing the power demand, and increasing system reliability.

Model BE370D-U-SS



Magna-Latch BE370D-U Construction

Notes: Images, illustrations and icons are for display only, refer to selection table for specific data

Features

- FM approved for use with BERMAD deluge valves, using firewater/air
- Low energy consumption, due to the "last position" feature
- 25 bar/365 psi max working pressure, refer to selection table
- Integral Terminal Box, IP66 Heavy Duty construction
- Safer operation for hydraulic valves
- Brass or Stainless Steel 316 construction
- Seawater option available on request

Power

- 8 to 11 Watts, refer to selection table
- Voltage Tolerance:: +10% -35% for BE370D and ±10% for other models
- 50ms minimum pulse duration

Materials

- Body: Brass or Stainless Steel 316
- Internals: Stainless steel
- Elastomers: NBR
- Enclosure: Refer to the selection table

Temperature

- Maximum Ambient[1]: 50°C (125°F)
- Maximum Fluid: 80°C (176°F)

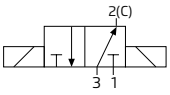
Notes: [1] Max. ambient temperature is determined under continuously energized conditions.

Installation

The BERMAD Magna-Latch solenoid type is suitable to be used with any conventional FM approved releasing panel, wired to the solenoid's COM and LC terminals. The remote resetting push button shall be wired to COM and DL, this push button must be outside of the conventional releasing panel.
This Magna-Latch solenoid also suitable for all common F & G panels. Please refer to the panel manufacturer diagrams and installation instructions prior to solenoid determination.
The Solenoid Valve is the most critical unit in the Deluge system. It should be installed and wired by qualified and trained personnel only. The coil should be wired according to the design wiring drawings and in accordance with the requirements of the applied norm such as NEC, NEMA, IEC, or ATEX codes. Ensure that the voltage supply and frequency corresponds with the markings that appear on the enclosure label. Provide cable of sufficient rating for operating the solenoid. The maximum current rating of the solenoid is < 1.0 Amp and the cable diameter should be no less than 1.5 mm^2.

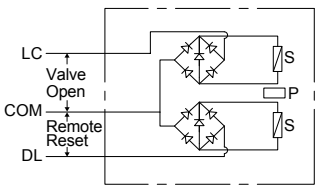
Circuit Functions

Magna-Latch symbol



Magna-Latch (Last Position)

Magna-Latch Wiring Diagram



Warning: Prevent simultaneous supply to Common and Latch with De-latch terminals. This product shall be installed and wired by an authorized electrician only.
The conduit hub on the enclosure must be supported against torque during assembly by using appropriate tools while tightening a fitting into the conduit hub, attention must be paid that a max. torque of 20 Nm is not exceeded.

Technical Data

Magna-Latch General Purpose, type, Model 0330D-LC/332D

The General Purpose magna-latch solenoid valve is used in non-classified locations where no special certification required. It is rated for IP 65 Ingress protection, with class F coil insulation.

Magna-Latch E xd type, Model BE370D-U

This Explosion Proof solenoid valve is FM approved for BERMAD Deluge valves, ATEX certified for II 2 G Ex d IIC T6 area classification for zone 1 or zone 2. It is rated for IP 66 Ingress protection, with class H coil insulation.

This enclosure has an Ex d Flame Proof design and equipped with an integral epoxy coated aluminum terminal box enclosure, including screw terminals, with ½" NPT cable entry and requires 3 wires (COM, LC and DL) for operation.

Mechanical-Latch Ex d types (with manual reset)

This Mechanical-latch solenoid valve is De-Energized in normal position, the coil should be energized to change to "Release" position and the solenoid will latch mechanically in this position. When the coil is De-energized the solenoid remains Latched.

The solenoid valve is equipped with a manual resetting lever for local manual "De-Latching" while the solenoid is de-energized. This Mechanical - latch solenoid valve is ATEX certified for hazardous locations II 2 G Ex d IIC T6, area classification for zone 1 or zone 2. It is rated for IP 66 Ingress protection. The enclosure is an Ex d Flame Proof design and equipped with an integral terminal box, including screw terminals.

Model BE-370D-ML is equipped with an epoxy coated aluminum enclosure, with ½" NPT cable entry.

Model SM1304B and SM1304S are equipped with a Stainless steel enclosure, with M20x1.5 cable entry.

Solenoid Valve Selection Table

Magna-Latch type

Model	Normally	Body Materials	Enclosure Type / Class	Code	Cable Entry	Port Size"	Orifice mm	bar / psi	Power Watts	Approval See Notes
0330D-LC/3302D	Last Position	Brass	General Purpose	-	DIN Plug	¼	2	16 / 235	11	(1)
BE370D-U-B2-LC-EX		Brass	Ex d, Zone 1	9	½" NPT	¼	1.6	25 / 365	8	(2), (4)
BE370D-U-SS-LC-EX		SS316	Ex d, Zone 1	9K	½" NPT	¼	1.6	25 / 365	8	(2), (4)

Mechanical-Latch type

Model	Normally	Body Materials	Enclosure Type / Class	Code	Cable Entry	Port Size"	Orifice mm	bar / psi	Power Watts	Approval See Notes
BE370D-ML	N.O.	SS316	Ex d, Zone 1	9	½" NPT	¼	1.6	20 / 300	8	(4)
SM1304B		SS316	Ex d, Zone 1	9	M20x1.5	¼	7	20 / 300	4.5 - 9.6	(3), (4)
SM1304S		Al. Bronze	Ex d, Zone 1	9	M20x1.5	¼	7	20 / 300	9.6	(3), (4)

Notes:

(1) General purpose / watertight, IP 65 Ingress Protection to IEC Spec.

(2) FM approved for BERMAD Deluge valves, furnished with 24V coil.

(3) FM Approved for hazardous locations Class I, Division 1, Groups A, B, C, D; Class II Gr. E, F, G.

(4) ATEX certified for hazardous locations zone 1, Ex d IIC T6, IP 66.

(5) Specifications subject to change without notice.

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