

Reliable®

Solenoid Valves

For use in Systems with an Electric Release

Features

- Normally Closed (Energize to Open)
- Multiple Coil Voltage Options available
- Easily cleaned / Straight Body Style
- Explosion Proof Models available
- Brass Body & Rubber Seals

Product Description

Solenoid Valves indicated on this bulletin are listed/approved releasing devices for Reliable deluge and preaction systems. These valves are used in conjunction with a listed/approved releasing control panel operated by listed/approved detectors to activate the deluge or preaction system water control valve. The releasing control panel must have a supervised releasing circuit and back up batteries (60-hour for UL and 90-hour for FM compliance).

Note: Cross-listing and/or compatibility of solenoid valves with releasing control panels is not within the scope of this document. Please refer to releasing control panel manufacturer.

Operation

A normally closed solenoid valve is the primary releasing device located in the trim of an electric release deluge control valve. When electrical current is provided from an approved releasing control panel, the solenoid valve opens and relieves water pressure from the deluge valve push rod chamber or diaphragm control chamber. The loss of water pressure will allow the deluge control valve to open releasing water into the connected sprinkler system piping.

The actuation of the system is initiated by detectors and/or manual release stations used in conjunction with a releasing control panel. Normally closed, de-energized valves open when energized. Power is applied to the solenoid coil, causing the solenoid core to lift, opening the pilot orifice to the outlet side of the valve. This relieves the pressure on the top side of the diaphragm and allows the line pressure to open the valve.

When de-energized, the solenoid core reseals the pilot orifice, allowing the line pressure to build above the diaphragm causing the valve to close. For remote resetting systems, subsequent de-energizing of the release circuit (UL) or a secondary pulse of power (FM) to the solenoid will allow control pressure to re-establish in the push-rod chamber or diaphragm control chamber the stop the flow of water into the system piping.



Representative sample; actual product may vary.

Note: When using a normally closed solenoid valve, the system will not operate on total loss of power. The releasing panel used with the solenoid must have battery backup in order to operate the solenoid when the main power supply is lost.

Installation

1. Check nameplate for the correct voltage and the installation and maintenance instructions enclosed with the valve.
2. Remove the plastic plugs, if the unit is not installed in the trim by the factory.
3. Solenoids may be installed in any position but the recommended installation is vertical, with the coil upright.
4. The solenoid must be wired in accordance with local and national electrical codes. Units located in hazardous areas are to be wired with the appropriate electrical fittings.
5. Verify presence of strainer on supply side of solenoid valve. (Standard on Reliable valve trims utilizing solenoid valves.)
6. Apply pipe joint compound sparingly to the male threads of the pipe only. Use PTFE tape carefully to prevent any tape from getting into the solenoid valve. PTFE tape can become lodged in the valve and cause it to malfunction.
7. Only wrench flats provided on the body should be used when tightening the valve. Never use the sleeve or enclosure as a lever.
8. The solenoid valve is normally installed on a powered circuit. Never jumper or short the solenoid circuit terminals.

Solenoid Valves for Use in Ordinary Locations
Table A

Reliable Part Number	Approvals	Manufacturer Part Number	Pressure Rating psi (bar)	Voltage	Watts	Threads	Cv Factor	NEMA Rating	FM Release Panel Group	Notes
6871020000	UL, FM	Parker Hannifin 73218BN4UNLVNOC111C2	175 (12.1)	24 VDC	10	1/2"	4.0	1, 2, 3, 3S, 4, & 4X	1 or higher	1
6871030000	UL	Parker Hannifin 73218BN4UNLVNOC111C4	175 (12.1)	48 VDC	10	1/2"	4.0	1, 2, 3, 3S, 4, & 4X	NA	2, 3
6871090000	UL	Parker Hannifin 73218BN4UNLVNOC111P3	175 (12.1)	120 VAC	10	1/2"	4.0	1, 2, 3, 3S, 4, & 4X	NA	2, 3
6871040000	UL	Parker Hannifin 73218BN4UNLVNOC1113N	175 (12.1)	125 VDC	10	1/2"	4.0	1, 2, 3, 3S, 4, & 4X	NA	2, 3
6871020020	UL, FM	Parker Hannifin 73212BN4TNLVNOC322C2	300 (20.7)	24 VDC	22	1/2"	4.0	1, 2, 3, 3S, 4, & 4X	3 or higher	1
6871020040	UL	Parker Hannifin 73212BN4UNLVNOC322C4	300 (20.7)	48 VDC	22	1/2"	4.0	1, 2, 3, 3S, 4, & 4X	NA	2, 3
Upon Request	UL	Parker Hannifin 73212BN4TNLVNOC322P3	300 (20.7)	120 VAC	22	1/2"	4.0	1, 2, 3, 3S, 4, & 4X	NA	2, 3
Upon Request	UL	Parker Hannifin 73212BN4TNLVNOC3223N	300 (20.7)	125 VDC	22	1/2"	4.0	1, 2, 3, 3S, 4, & 4X	NA	2, 3

Solenoid Valves for Use in Hazardous Locations
Table B

Reliable Part Number	Approvals	Manufacturer Part Number	Pressure Rating psi (bar)	Voltage	Watts	Threads	Cv Factor	NEMA Rating	FM Release Panel Group	Notes
6999990322	UL, FM	Parker Hannifin 73218BN4UNLVNOH111C2	175 (12.1)	24 VDC	10	1/2"	4.0	1, 2, 3, 3S, 4, 4X, 7, & 9	1 or higher	1
Upon Request	UL	Parker Hannifin 73218BN4UNLVNOH111P3	175 (12.1)	120 VAC	10	1/2"	4.0	1, 2, 3, 3S, 4, 4X, 7, & 9	NA	2, 3
Upon Request	UL	Parker Hannifin 73218BN4UNLVNOH1113N	175 (12.1)	125 VDC	10	1/2"	4.0	1, 2, 3, 3S, 4, 4X, 7, & 9	NA	2, 3
6871020033	UL, FM	Parker Hannifin 73212BN4TNLVNOH322C2	300 (20.7)	24 VDC	22	1/2"	4.0	1, 2, 3, 3S, 4, 4X, 7, & 9	3 or higher	1
Upon Request	UL	Parker Hannifin 73212BN4TNLVNOH322C3	300 (20.7)	120 VAC	22	1/2"	4.0	1, 2, 3, 3S, 4, 4X, 7, & 9	NA	2, 3
Upon Request	UL	Parker Hannifin 73212BN4TNLVNOH3223N	300 (20.7)	125 VDC	22	1/2"	4.0	1, 2, 3, 3S, 4, 4X, 7, & 9	NA	2, 3

Alternate Solenoid Valves
Table C

Reliable Part Number	Approvals	Manufacturer Part Number	Pressure Rating psi (bar)	Voltage	Watts	Threads	Cv Factor	NEMA Rating	FM Release Panel Group	Notes
6871020010	UL, FM	ASCO 8210G207	175 (12.1)	24 VDC	10.6	1/2"	3.4	1, 2, 3, 3S, 4, & 4X	3 or higher	2
6871060000	UL	ASCO 8210G107	175 (12.1)	120 VAC	16.7	1/2"	3.4	1, 2, 3, 3S, 4, & 4X	NA	2
6871040000	UL	ASCO 8210A107	175 (12.1)	125 VDC	16.7	1/2"	3.4	1, 2, 3, 3S, 4, & 4X	NA	2
Upon Request	UL, FM	ASCO 8210G227	300 (20.7)	24 VDC	17.1	1/2"	3.4	1, 2, 3, 3S, 4, & 4X	3 or higher	2
6871020250	FM	Bürkert 5282	300 (20.7)	24 VDC	11	1/2"	4.0	4X	1 or higher	2, 4, 5
6871020143	LPCB, CE	Parker Hannifin 73212BN4TNLVNOH211C2	300 (20.7)	24 VDC	22	1/2"	4.0	ATEX	3 or higher	6
7U99001874	LPCB, CE	Buschjost GmbH 04023/1001/1012-NJ	300 (20.7)	24 VDC	18.5	1/2"	4.4	IP65	3 or higher	6, 7
7U99001875	LPCB, CE	Buschjost GmbH 04023/1001/1182-NG	300 (20.7)	24 VDC	7	1/2"	4.4	IP65	1 or higher	6

Table A, B, and C Notes:

1. Reliable standard solenoid valve for preaction systems and deluge systems, except remote-reset valves.
2. Non-standard, special order solenoid valves. Allow additional lead time (contact Reliable sales).
3. FM does not approve solenoid voltages other than 24 VDC.
4. Reliable standard solenoid valve for remote reset deluge valves.
5. Solenoid is rated to 400 psi (27.6 bar) when used on 400 psi rated deluge valve.
6. International approvals and applications.
7. Normally open valve.

Maintenance

The owner is responsible for maintaining all parts of the fire protection system in proper operating condition. Any system maintenance or testing that involves placing a system component out of service may eliminate the fire protection that is provided by the fire protection system.

Solenoid valves shall periodically be given a thorough inspection and test. NFPA 25, "Inspection, Testing, and Maintenance of Water Based Fire Protection Systems," provides minimum maintenance requirements. System components shall be tested, operated, cleaned, and inspected at least annually and parts replaced as required.

The frequency of the testing may vary due to contaminated water supplies, corrosive water supplies, or corrosive atmospheres. Solenoid valves should be operated at least once a month and checked for cracks, corrosion, and leakage. Immediately repair or replace any valve found to be inoperable or impaired.

Before closing a fire protection system control valve for inspection and/or maintenance, permission to take the system out of service must be obtained from the proper authorities and all persons who might be affected by the outage. Particular care must be taken to notify those responsible for monitoring the system and the fire service organization responsible for the response in the event of a fire. After putting the system back in service, notify the proper authorities and all persons who were affected by the outage.

Replacement or repair of a solenoid valve should only be done by trained and experienced personnel. A damaged or improperly repaired solenoid could cause the fire protection system to be impaired or inoperable. This impairment could result in the loss of life or property. A fire patrol or fire watch may be required to ensure that there is not a loss of life or property. The owner is responsible to ensure that all maintenance and repair is done properly and that prudent measures are taken to protect life and property.

Prior to taking the system out of service, ensure that the control valve for the system is closed. Before the system is placed back in service, the solenoid valve should be tested to ensure that it is functioning properly.

Service

Caution: Do not expose plastic or elastomeric materials to any type of cleaning fluid. Parts should be cleaned with a mild soap and water.

1. Disassemble the valve as per the manufacturer's instructions. Remove extraneous matter. Clean parts in a mild soap and water.
2. Examine surface of the plunger or diaphragm.
3. Inspect orifices in the body, cover, and diaphragm for nicks or dirt.
4. Examine surfaces of the diaphragm or seal in contact with the main orifice. Clean if dirty or replace if damaged or worn.
5. Check all springs. Replace if broken or damaged.

Causes of Improper Operation

1. Review the distance from the releasing panel and check the available voltage at the connection to the solenoid. The voltage should be at least 85% of the nameplate rating.
2. Check the electrical system by energizing the releasing circuit to the solenoid valve. A metallic "click" that signals that the solenoid valve is working. If you do not hear the click check for loose wires, connections, blown fuses, open circuits or grounded coil. Check for broken lead wires or bad splice connections.
3. Check for open-circuited (burned out) coil and replace if necessary. Confirm supply voltage does not exceed the coil name plate rating.

Guarantee

For Reliable Automatic Sprinkler Co., Inc. guarantee, terms, and conditions, visit www.reliablesprinkler.com.

Ordering Information

Provide description and part number from Table A, B, or C.