

On/Off, Floating point, Non fail-safe, 24 V



5-year warranty



Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	1.5 W
	Power consumption in rest position	0.2 W
	Transformer sizing	2.5 VA
	Electrical Connection	Screw terminal (for 26 to 14 GA wire)
	Overload Protection	electronic throughout 0...90° rotation
	Electrical Protection	actuators are double insulated
Functional data	Direction of motion motor	selectable with switch 0/1
	Manual override	external push button
	Angle of rotation	90°
	Angle of rotation note	adjustable with mechanical stop
	Running Time (Motor)	90 s / 90°
	Running time motor variable	150, 90, 45, 35 s
	Noise level, motor	35 dB(A)
	Position indication	Mechanical, pluggable
Safety data	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2
	Enclosure	UL Enclosure Type 2
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU
	Quality Standard	ISO 9001
	UL 2043 Compliant	Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-22...122°F [-30...50°C]
	Storage temperature	-40...176°F [-40...80°C]
	Servicing	maintenance-free
Weight	Weight	0.90 lb [0.41 kg]
Materials	Housing material	Galvanized steel and plastic housing

Technical data

Footnotes †Rated Impulse Voltage 800V, Type of Action 1, Control Pollution Degree 2.

Accessories

Electrical accessories	Description	Type
	Battery backup system, for non-spring return models	NSV24 US
	Battery, 12 V, 1.2 Ah (two required)	NSV-BAT
	Auxiliary switch 1x SPDT add-on	S1A
	Auxiliary switch 2x SPDT add-on	S2A
	Feedback potentiometer 140 Ω add-on, grey	P140A GR
	Feedback potentiometer 1 k Ω add-on, grey	P1000A GR
	Feedback potentiometer 10 k Ω add-on, grey	P10000A GR
	Feedback potentiometer 2.8 k Ω add-on, grey	P2800A GR
	Feedback potentiometer 500 Ω add-on, grey	P500A GR
	Feedback potentiometer 5 k Ω add-on, grey	P5000A GR

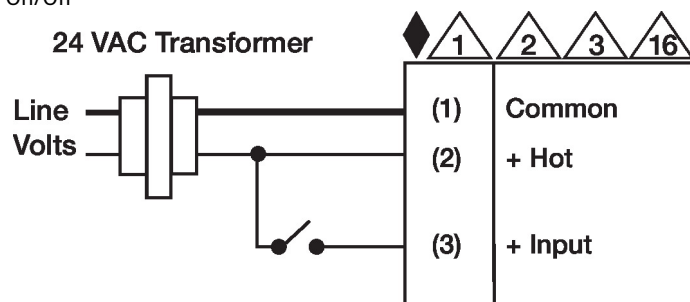
Electrical installation

✂️ INSTALLATION NOTES

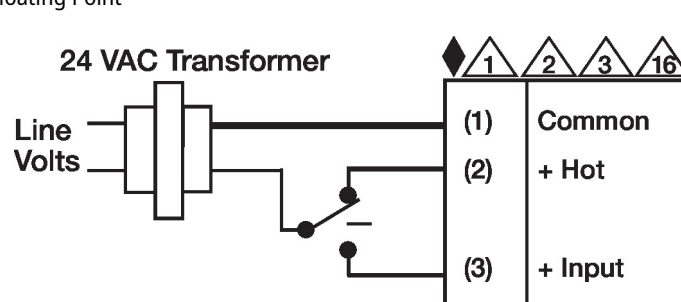
- 1 Provide overload protection and disconnect as required.
- 2 Actuators may be connected in parallel. Power consumption and input impedance must be observed.
- 3 Actuators may also be powered by DC 24 V.
- 6 Actuators Hot wire must be connected to the control board common. Only connect common to neg. (-) leg of control circuits. Terminal models (-T) have no-feedback.
- 16 Actuators are provided with a numbered screw terminal strip instead of a cable.
- ◆ Meets cULus requirements without the need of an electrical ground connection.
- ⚠️ **Warning! Live electrical components!**
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

Wiring diagrams

On/Off

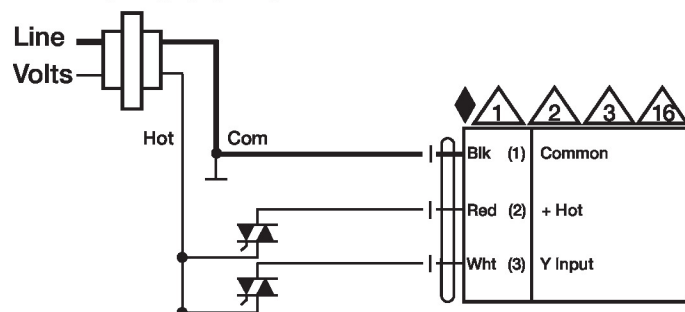
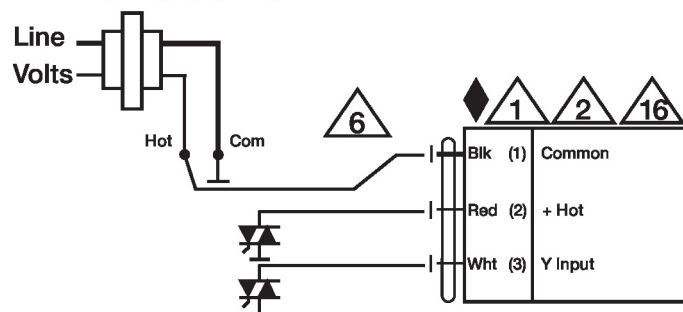


Floating Point



Electrical installation

Wiring diagrams

 Floating Point - Triac Source
 24 VAC Transformer

 Floating Point - Triac Sink
 24 VAC Transformer


Potable water valve, 2-way, Internal thread

- For potable water applications
- NSF/ANSI 372 - Lead Free
- NSF/ANSI 61 - CLD 23 - Water Quality



5-year warranty



Technical data

Functional data	Valve size [mm]	1" [25]
	Potable water certificate	NSF/ANSI 61 NSF/ANSI 372
	Fluid	Potable water
	Fluid temperature	-4...212°F [-20...100°C]
	Body Pressure Rating	600 psi CWP
	Close-off pressure Δps	200 psi
	Differential pressure Δpmax	30psi
	Leakage rate	0%
	Angle of rotation	90°
	Pipe connection	Internal thread NPT (female)
	Installation orientation	upright to horizontal (in relation to the stem)
	Servicing	maintenance-free
	Flow Pattern	2-way
	Cv	81
Materials	Valve body	Lead free brass
	Stem	Lead free brass
	Seat	PTFE
	O-ring	EPDM
	Ball	Chrome plated lead free brass
Suitable actuators	Non Fail-Safe	LRB(X)
	Spring	LF

Safety notes



- The ball valve has to be exercised at least once a week, so that the quality of potable water as well as the functionality are not affected.
- The valve has been designed for use in stationary potable water systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- The valve does not contain any parts that can be replaced or repaired by the user.

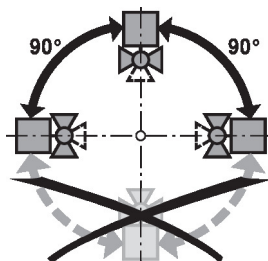
Product features

Operating mode The on/off ball valve is adjusted by a rotary actuator. The rotary actuator is connected by an on/off signal. Open the ball valve counterclockwise and close it clockwise.

Installation notes

Notes The ball valve is a regulating device. To fulfil this control task in the long term, the circuit must be kept free from particle debris (e.g. welding beads during installation work).

Permissible installation orientation The ball valve can be installed upright to horizontal. The ball valve may not be installed in a hanging position, i.e. with the stem pointing downwards.

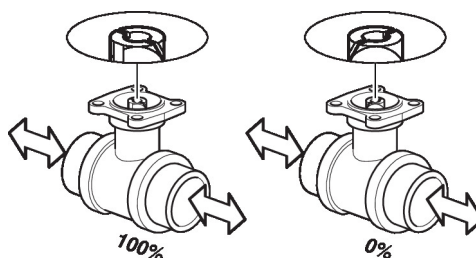


Servicing Ball valves and rotary actuators are maintenance-free.

Before any service work on the control element is carried out, it is essential to isolate the rotary actuator from the power supply (by unplugging the electrical cable if necessary). Any pumps in the part of the piping system concerned must also be switched off and the appropriate slide valves closed (allow all components to cool down first if necessary and always reduce the system pressure to ambient pressure level).

The system must not be returned to service until the ball valve and the rotary actuator have been correctly reassembled in accordance with the instructions and the pipeline has been refilled by professionally trained personnel.

Flow direction Please also ensure that the ball is in the correct position (marking on the shaft).



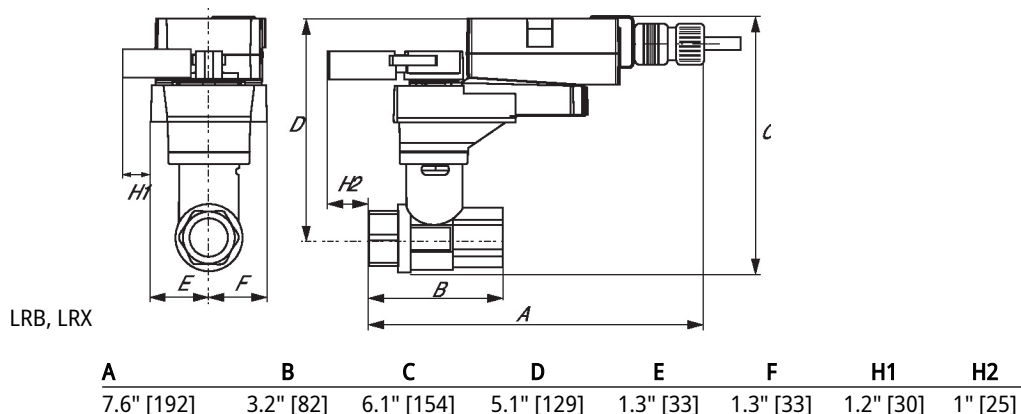
Dimensions

DN

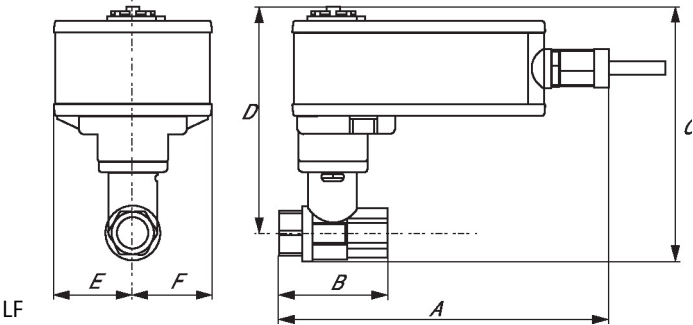
25

Weight

1.4 lb [0.64 kg]



Dimensions



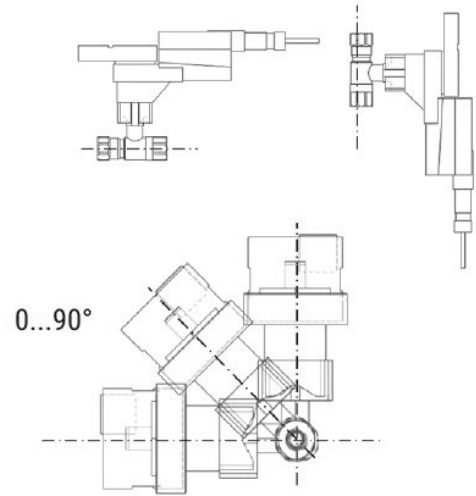
A	B	C	D	E	F
8.9" [226]	3.2" [82]	6.1" [154]	5.3" [134]	1.9" [48]	1.9" [48]

EXT Potable Water Ball Valves

EXT-B2 Series Ball Valves

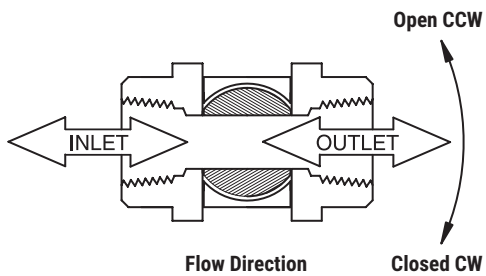
Technical Data	
Service	domestic potable water
Flow characteristic	full port
Action	90° rotation valve open CCW, valve closed CW
End fitting	female NPT, press fit
Materials:	
Body	CW510L lead free brass
Ball	CW510L lead free brass
Seats	PTFE
Stem	CW510L lead free brass
O-rings	EPDM
Pressure rating	600 psig CWP
Media temp. range	-4...212°F [-20...100°C]
Leakage	0%

Piping/Mounting Orientation



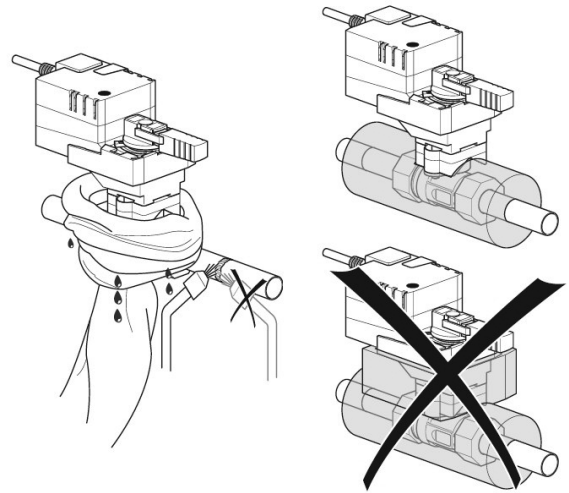
Water Applications

Flow Pattern



NOTE:

To avoid torque increase during off season shut down, or other periods of inactivity longer than 1 month - the valve should be exercised (actuator or manually driven full open-closed cycle) at least once per month. This is necessary to avoid any application problems after an off season shut down.



Installation

1. Inspect shipping package, valve, and actuator for physical damage. If shipping damage has occurred notify appropriate carrier. Do not install.
2. If a replacement, remove existing valve, linkage and actuator from the piping system.
3. If actuator is removed, it must be reinstalled correctly. The actuator must be rotated so that the valve sits properly for close off.
4. Blow out all piping and thoroughly clean before valve installation.
5. Clean male pipe threads with wire brush and rag. If threads have been damaged or exposed to weather, running a tap or die over the threads may straighten them. Clean pipes, threads, and valve threads before installation; check for any foreign material that can become lodged in trim components. Strainers should be cleaned after initial startup. For Valves with Press Fit Connections proceed to following Press Fit Installation Instructions
6. Pipe sealing compound should be applied sparingly after cleaning and may not be applied to the two lead threads of a screwed pipe, which are innermost inside the valve. Sealing compound is to be placed on male threads only. The purpose is to lubricate the pipes when tightening.
7. Valve must be installed per the mounting drawings shown.
8. Start the connection by turning the valve or pipe by hand as far as possible. Be certain the threads mate by the "feel" of the connection.
9. Use wrenches to tighten the valve to the pipe. Do not over tighten or strip the threads. Two wrenches are necessary to avoid damaging the valve.
10. Two-way valve Normally Open or Closed configurations must be verified by examining both the mechanical drawings and the valve and actuator.

Warning!

Valve should not be used for combustible gas applications. Gas leaks and explosions may result. Do not install in systems which exceed the ratings of the valve.

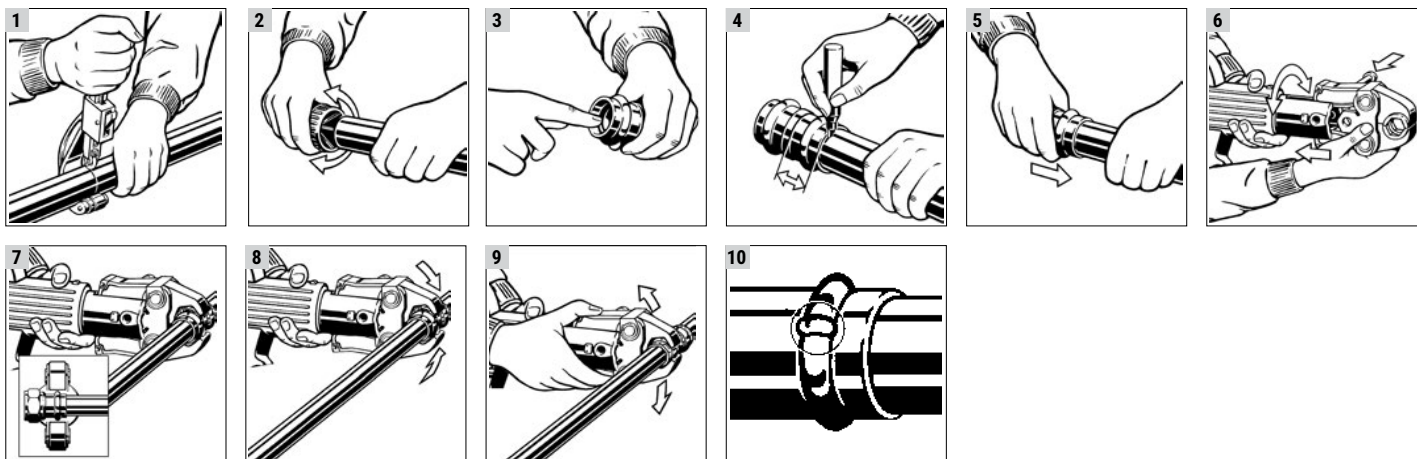
- Avoid installations where valve may be exposed to excessive moisture, corrosive fumes, vibration, high ambient temperatures, elements, or high traffic areas with potential for mechanical damage.
- Valve assembly location must be within ambient ratings of actuator.
- The valve assembly will require heat shielding, thermal isolation, or cooling if combined effect of medium and ambient temperatures – conduction, convection, and radiation – is above 122°F for prolonged time periods at the actuator.
- Strainers should be installed before coil and valve.
- Visual access must be provided. Assembly must be accessible for routine scheduled service. Contractor should provide unions for removal from line and isolation valves.
- Avoid excessive stresses. Mechanical support must be provided where reducers have been used and the piping system may have less structural integrity than full pipe sizes.
- Sufficient upstream and downstream piping runs must be provided to ensure proper valve capacity and flow response. Five diameters in each direction are recommended.
- Life span of valve is dependent on maintaining non-damaging conditions. Poor water treatment or filtration, corrosion, scale, other particulate can result in damage to trim components. A water treatment specialist should be consulted.
- Normal thread engagement between male pipe thread and valve body should be observed. Pipe run that is in too far will damage the valve.

EXT-B2 Series Ball Valves

Instruction Manual



71867-00001



For Hard Copper and Soft Copper Tubing

- 1 Cut the tube square using a displacement-type cutter or fine toothed saw.
Note: Cut tubing a minimum of 4" away from the contact area of the vise to prevent possible damage to the tubing in the press area.
- 2 Deburr inside and outside of the tube to the proper insertion depths to prevent cutting sealing element.
- 3 Check the sealing element for correct fit. Do not use oils or lubricants.

- 4 Mark the proper insertion depth as indicated by the Insertion Depth Chart. Improper insertion depth may result in an improper seal.

Insertion Depth Chart	
Tube Size (in)	Insertion Depth (in)
1/2	3/4
3/4	7/8
1	7/8

i Copper tubing must be free of surface imperfections, including metal stamped print lines, before a Press fitting is installed.

- 5 While turning slightly, slide press fitting onto tubing to the marked depth. End of tubing must contact stop.
- 6 Insert appropriate press fit jaw into the press tool and push in, holding pin until it locks in place.
- 7 Open the jaw and place at right angle on the fitting. Visually check insertion depth using mark on tubing.

Warning!
Keep extremities and foreign objects away from press tool during pressing operation to prevent injury or incomplete press.

- 8 Hold trigger on press tool until press jaws have fully engaged the fitting. Jaws will automatically release after a full press is made.
- 9 After pressing, open the jaw and remove the press tool.

Unpressed connections are located by pressurizing the system with air or water.