U.S. SOLID®

Manual NO.13637

Electric Motorized Ball Valve

This 2-way motorized ball valve is designed for automatic fluid on/off control. It opens and closes in approximately 2 seconds, with reliable sealing, low flow resistance, and IP68 dust and water resistance. The valve automatically opens when power is cut off, provides open/close position feedback, and cuts off power at the end position to reduce energy consumption and overheating. Its compact design and simple wiring make it easy to install in **water control**, **HVAC**, **irrigation**, and **water treatment systems**.

OPERATION

· Apply the specified power supply: DC 24V.

·Connect the valve according to the wiring diagram.

·Once the valve reaches the end position, the actuator automatically cuts off power to reduce energy consumption and prevent overheating.

·To change the valve position, switch the control signal according to the required wiring mode.

· Manual reset is available when needed.

INSTALLATION GUIDELINES

Mounting Position

· Recommended: horizontal piping with actuator upright.

· Avoid installing the valve in areas with long-term immersion, excessive vibration, high temperature, high humidity, or corrosive environments.

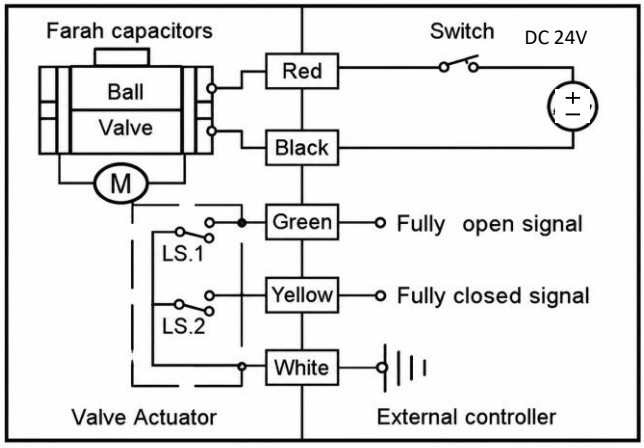
Piping Installation

· Use suitable sealing material or gaskets and tighten connections evenly.

· Do not overtighten to avoid damage to the valve body or threads.

· Support piping properly to prevent external stress on the valve.

WIRING SCHEMATIC



· When SW is closed, the valve **CLOSES.**
The actuator powers off at the end position.

· When SW is open, the valve **OPENS.**
The actuator powers off at the end position.

· Green & White connect with the valve's fully open signal wiring.

· Yellow & White connect with the valve's fully closed signal wiring.

Wire	Connection / Function
Red	DC 24V Positive (+) (Power)
Black	DC 24V Negative (-) (Power)
Green	Fully Open Position Feedback Signal
White	Feedback Common / External Controller Common
Yellow	Fully Closed Position Feedback Signal

⚠Pre-Installation Checks:

· Suitable working voltage: DC 24V.
Do not exceed the specified working voltage.

·Ensure pipeline pressure, temperature, and medium compatibility meet valve specifications.

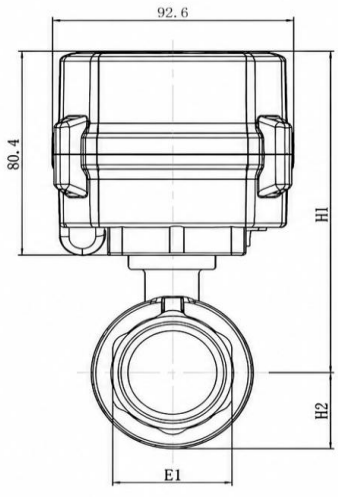
·Ensure the power supply is **OFF** before wiring.

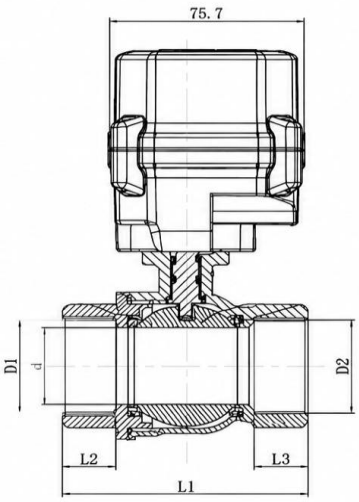
SPECIFICATIONS

Maximum Working Pressure	1.0 MPa	**Power Supply**	DC 24V
Circulation Medium	Fluid, air	**Input Signal**	Switch control
Working Current	≤1A (DC 24V)	**Output Signal**	Fully open / fully closed feedback
Locked-Rotor Current	3.5A (DC 24V)	**Life Time**	50,000 cycles
Open/Close Time	≤ 2 seconds	**Actuator Rotation**	90°
Liquid Temperature	2°C to 90°C	**Torque**	15 N·m
Environment Temperature	-15°C to 50°C	**Valve Body Material**	Brass/Stainless Steel/UPVC
Cable Specification	UL 22AWG, 0.5 m	**Ball type**	Full Port
Manual Override	Yes	**Sealing Material**	EPDM / FKM & PTFE
Open/Close Indicator	Yes	**Actuator Material**	Engineering Plastics PPO
Protection Class	IP68		

B150-T Series

Model	Material	D1/D2	d±0.3	L1±1	L2/L3±1	E1	H1±1	H2
USS-MSV90001	Brass	1-1/4''	32	102	25	47	125.4	31
USS-MSV90002	Brass	1-1/2''	38	114	26	54	132.4	36
USS-MSV90003	Brass	2''	49	130	27	66	140.4	44.5
USS-MSV90004	Brass	1/2''	15	57	12	25	109.4	16
USS-MSV90005	Brass	3/4''	20	65.5	15	31	112.9	19
USS-MSV90006	Brass	1''	23.5	71.5	16	38	114.9	22
USS-MSV40057	SS304	1/2''	15	62	14	25	110.5	17
USS-MSV40060	SS304	3/4''	20	72	17	31	113.9	20
USS-MSV40063	SS304	1''	25	79	18	38	116.9	24.5
USS-MSV40066	SS304	1-1/4''	32	102	25	47	125.4	31
USS-MSV40069	SS304	1-1/2''	38	114	26	54	132.4	36
USS-MSV40072	SS304	2''	49	130	27	66	140.4	44.5
USS-MSV90013	UPVC	1/2''	15	107	22.3	25	136.7	27.5
USS-MSV90014	UPVC	3/4''	20	115	25.5	31	141.2	32
USS-MSV90015	UPVC	1''	25	129	28.6	38	156.25	37.25
USS-MSV90016	UPVC	1-1/4''	32	144	32	47	162.4	42.75
USS-MSV90017	UPVC	1-1/2''	40	161	35	54	174	50
USS-MSV90018	UPVC	2''	50	173	38	66	194.4	61.2





ASSEMBLE DIAGRAM

