



Manual NO.11917

Proportional Motorized Ball Valve

This electrically actuated proportional control valve provides precise, continuous fluid flow regulation. It converts a **4–20 mA** control signal into a corresponding valve opening, ensuring accurate modulation across the full operating range. Designed for stable, repeatable control with fast response and high positioning accuracy, it can be integrated directly with PLCs, DDC systems, and other automated control equipment. Suitable for **HVAC, industrial automation, process control loops, and water treatment applications** requiring continuous proportional adjustment.

OPERATION

- Apply the specified DC power supply (9–24V DC).
- Send a 4–20 mA control signal from your controller (e.g., PLC, DDC, PID) to the valve.
- The valve will **automatically** and **linearly adjust** its opening according to the input signal:
 - 4 mA → fully closed (0%)
 - 20 mA → fully open (100%)
 - 4–20 mA signals set proportional openings (e.g., 8 mA ≈ 25%, 12 mA ≈ 50%, 16 mA ≈ 75%)

INSTALLATION GUIDELINES

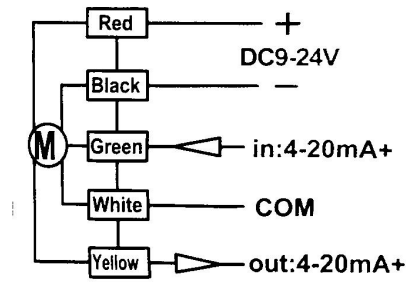
Mounting Position

- Recommended: horizontal piping with actuator upright.
- Avoid installing the valve in areas with dripping water, excessive vibration, high humidity, or corrosive environments.

Piping Installation

- Use proper gaskets and tighten connections evenly.
- Do not overtighten to avoid valve damage.
- Support piping to prevent external stress on the valve.

WIRING SCHEMATIC



Wire Color	Connection / Function
Red	DC 9–24 V Positive (Power)
Black	DC 9–24 V Negative (Power)
Green	Control Signal + (4–20 mA input)
White	Signal Common / – (input & feedback)
Yellow	Feedback Output + (4–20 mA valve position)

⚠ Pre-Installation Checks:

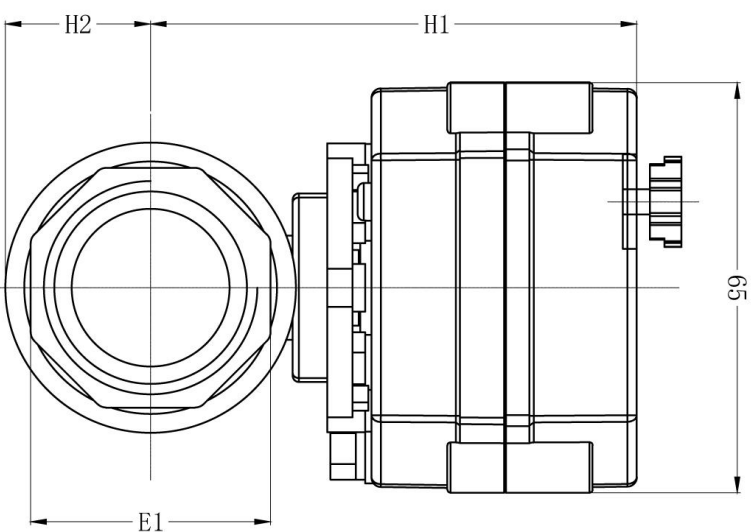
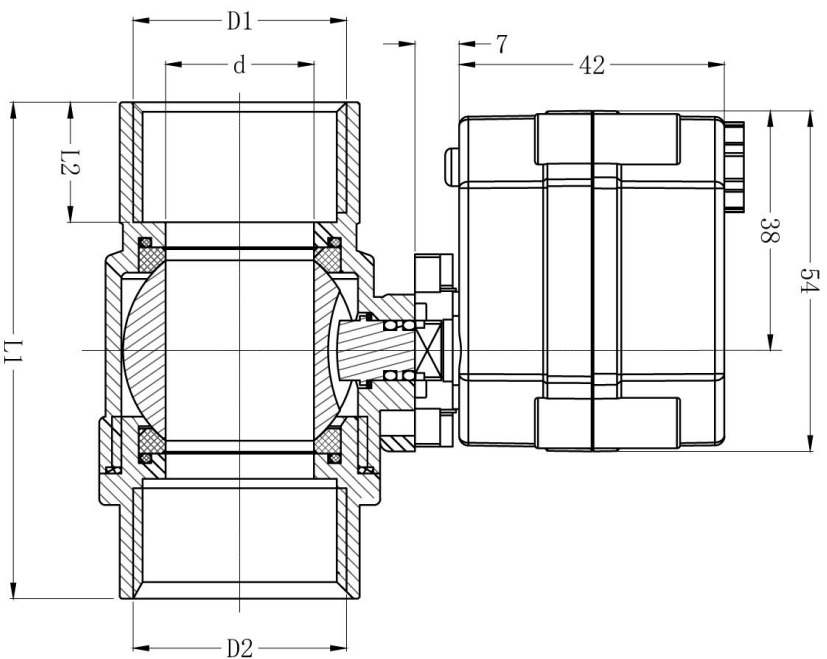
- Ensure pipeline pressure, temperature, and medium compatibility meet valve specifications.
- Ensure the power supply is **OFF** before wiring.

SPECIFICATIONS

Model	Material	Port Size	Voltage
USS-MSV50030	SS304	1/2"	DC 9–24V
USS-MSV50031	SS304	3/4"	DC 9–24V
USS-MSV50032	SS304	1"	DC 9–24V

Maximum Working Pressure	1.0 MPa
Circulation Medium	Fluid, air
Input Signal	4–20mA
Output Signal	4–20mA
Working Current	≤ 500 mA
Open/Close Time	≤ 8 seconds
Life Time	70,000 cycles
Actuator Material	PPO
Sealing Material	FKM & PTFE
Ball Type	Full Port
Torque	3 N·m
Cable Length	1.5 m
Environment Temperature	-15°C to 50°C
Liquid Temperature	2°C to 90°C
Manual Override	No
Open/Close Indicator	Yes
Protection Class	IP67

Diagram for a stainless steel motorized ball valve



DESCRIPTION	D1/D2	d±0.5	L1±1	L2±1	E1±0.5	H1±1	H2
15-S2-C	1/2"	15	62	14	25	84.5	17
20-S2-C	3/4"	20	72	17	31	88	20
25-S2-C	1/2"	25	79	18	38	91	24.5