

BM-1S Type Ball Valve Type Motor Valve (for Liquids, Air or Gases)

Two-way valve for on/off control

BM-1S Type is a motor on/off valve with characteristics of ball valve and stainless body.



FEATURES

- Large operating power.
- The state of valve can be checked from outside.
- Manual open/close.
- No limitation on flow direction and installation direction.
- The signal for valve open/close can be drawn out.
- Embedded thermal protector (for size 32~50mm above)
- Rainproof, suitable for outdoor application.*

SPECIFICATIONS

Model name	BM-1S	
Code name	BM1S-D	
Applicable fluid	Liquids, air & gases	
Fluid temperature	-10~100°C(Freezing is not allowed.)	
Applicable pressure	Max. 1.0MPa	
Ambient temperature	-10~50°C	
Operation	ON/OFF control	
Leakage allowance	Nil(Confirm at pressure gauge)	
End connection	Screwed JIS Rc	
Valve body pressure test	Hydraulic 1.5MPa	
Materials	Body(Stainless steel), Ball(Stainless steel), Cover(Cast aluminum), O-ring(Viton)	
Rated voltage	AC100/110V 50/60Hz or AC200/220V 50/60Hz	
Allowable voltage fluctuation range	Rated voltage ±5%	
Size	10~25(3/8"~1")	32~50(1 1/4"~2")
Rated capacity	22VA	50VA
Rated current	AC100V:0.22A, AC200V:0.11A	AC100V: 0.50A, AC200V:0.25A
Starting current	AC100V:0.30A, AC200V:0.15A	AC100V: 0.90A, AC200V:0.45A
Open/close time	Approx. 2sec	Approx. 4sec
Insulation	Class E	
Time rating	30min	
Withstanding voltage test	AC1500V/min	
Insulation resistance	50MΩ or more	
Overload protection	Thermal protector is built in (Size 32~50mm)	
Protection	Rain proof (with cabtyre cable)*	
Open/close check contact	Provided (voltage) Contact capacity: AC125, 250V, 10A(Equivalent to JIS C4505 V3)	
Manual control device	Equipped	

* Avoid exposure to direct sunray in the case of outdoor installation.

DIMENSIONS

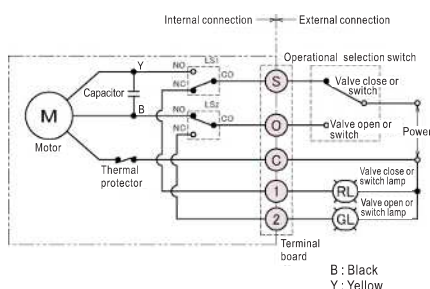
(mm)

Size	d	L	G	H	A	B	W	Port size	Cv value	Mass(kg)
10(3/8")	3/8"	45	15	219	139	89	44	7.5	2.5	3.1
15(1/2")	1/2"	55	17	222	139	89	50	9.0	3.5	3.2
20(3/4")	3/4"	61	20	225	139	89	56	12.5	7	3.3
25(1")	1"	75	26	229	139	89	65	16	11	3.6
32(1 1/4")	1 1/4"	78	30	265	159	109	80	21	20	5.7
40(1 1/2")	1 1/2"	82	34	267	159	109	84	24	25	6
50(2")	2"	100	41	275	159	109	102	32	45	7

OPERATION

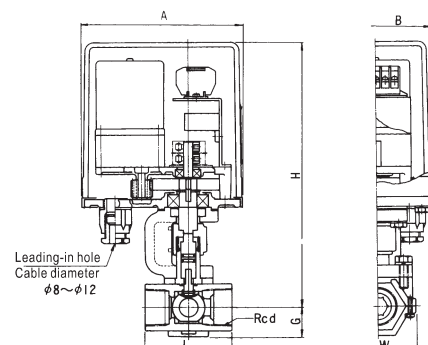
CO power-on opening
CS power-on closing

CIRCUIT DIAGRAM OF ACTUATOR



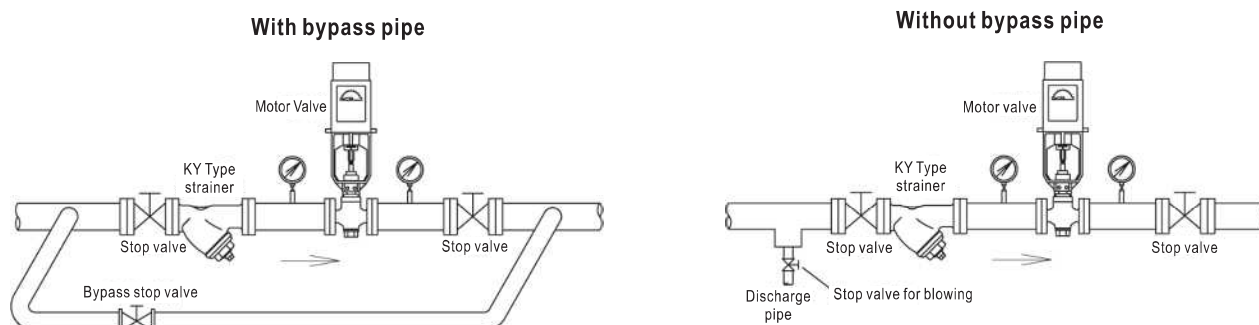
(The figure shows all-closing state)
Note: Size 10~25mm product has no thermal protector embedded.

CONSTRUCTION



DATA/ML Type Motor Valve

Fig.1 Piping example



Selection and Installation

1. Install strainer on the primary side of motor valve (see Fig.1).
2. Install a bypass pipe (with stop valve) between the primary and secondary sides of motor valve if the operation of equipment cannot be stopped (see Fig.1).
If you do not intend to install bypass pipe, install blowing stop valve, which is branched from the main pipe, right before the stop valve on the primary side of motor valve, to allow flushing.
3. Install the valve upright to horizontal pipe or on vertical pipe (see Fig.2). For installation on vertical pipe and when the size is 80mm above, leave sufficient space for maintenance purpose.
4. As for application with 1 piece of operational switch, in the case 2 or more motor valves are connected through parallel connection, install external relay and the operation should be performed through the contact of relay.
5. The ambient temperature should be within the range of applicable temperature described in specifications.
In addition, avoid using motor valve in environment where there is excessive humidity, dust, corrosive gas or explosive gas.
6. Install steam trap on piping if the valve is used for steam.
7. When the fluid is liquid, the pressure in pipe may increase due to thermal expansion caused by ambient temperature when valve is closed. In such cases, it is recommended to install relief valve to protect machine (see Fig. 3).
8. Make sure the arrow mark on motor valve match with the direction of flow of fluid.
9. Leave some space for disassembling and maintenance.
10. Fix and support piping properly to prevent motor valve from being damaged due to weight of piping, excessively large stress, bending force or vibration.
11. Discharge drain or apply thermal insulation if there is risk of freezing.

Fig.2 Direction of installation of ML motor valve

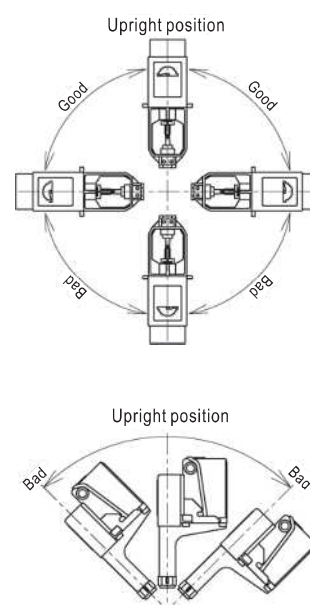
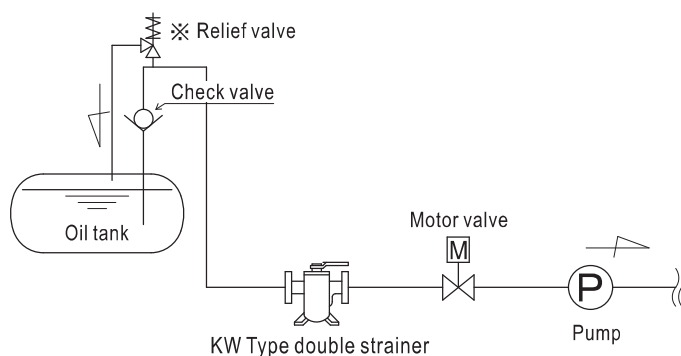


Fig.3 Relief valve installation



※Install relief valve if pressure rise due to thermal expansion or other factors is anticipated.