

BM-12CR, 13CR, 14CR Type Ball Valve Type Capacitor Return Motor Valve

Two-way valve for on/off control

Ball type capacitor return motor valve uses capacitor to store electricity and opens or closes using such electricity stored when power is off.

This product combines the characteristics of motor valve (no limitation on flow direction) and solenoid valve (2-wire control).

BM-12CR Type is a valve for general purpose, BM-13CR Type has long neck, and BM-14CR Type has stainless steel body. Both are for on/off control.



BM-12CR Type

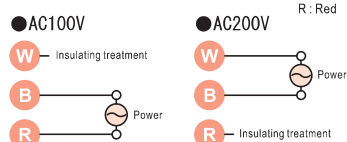


BM-13CR Type



BM-14CR Type

WIRING DIAGRAM



Unused wire (white or red) must be insulated.

FEATURES

- Rated voltage AC100/200V.
- 2-wire type that can be handled like solenoid valve.
- Low rated current, energy saving.
- Durable stainless steel ball.
- No limitation on flow direction and installation direction (in the case of indoor application).

SPECIFICATIONS

Model name		BM-12CR	BM-13CR	BM-14CR
Code name		BM12CR-J	BM13CR-J	BM14CR-D
Type		Standard neck	Long neck	Standard neck
Size		10~25(⅜"~1")	15~25(½"~1")	
Applicable fluid		Water, oils ^{*1} , air, gases & liquids		
Fluid temperature		-10~80°C(Freezing is not allowed.)		
Applicable pressure		0~1.0MPa		
Ambient temperature		-10~50°C		
Operation		De-energized close, Energized open ^{*2}		
Leakage allowance		Water & oils:Nil(Confirm at pressure gauge), Air & gases:50mL/min(Standard state) or less		
End connection		Screwed JIS Rc		
Valve body pressure test		Hydraulic 1.75MPa		
Materials	Body	Cast bronze		Stainless steel
	Ball	Stainless steel		
Rated voltage		Common use AC100/200V (50/60Hz)		
Allowable voltage fluctuation range		Rated voltage ±10%		
Rated capacity		3VA ^{*4} (20VA ^{*3})		
Rated current		AC100V:0.03A ^{*4} , AC200V:0.015A ^{*4}		
Starting current		AC100V:0.2A ^{*3} , AC200V:0.1A ^{*3}		
Open/close time		Around 6sec ^{*4*5}		
Insulation		Class A		
Time rating		Continuous duty		
Withstanding voltage test		AC1500V/min		
Insulation resistance		20MΩ or more		
Protection		Water jet prevention type(IP-55 corresponding) ^{*6}		
Manual control device		Equipped		

* 1. If there is any local regulation for fuel oils or diesel oils, confirm the body materials according to the regulation.

* 2. Energized close and de-energized open type such as BM-12CR, 13CR and 14CR Types are available upon your request.

* 3. At the beginning of power charges in capacitor.

* 4. At the full power charge in capacitor.

* 5. At the first operation, it is required to charge power for 2 min. before operation. Also in case of first operation and re-start after long time no-use without any power supply for actuator, it takes about 20 seconds to start operation and 30 seconds more for the full-open.

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

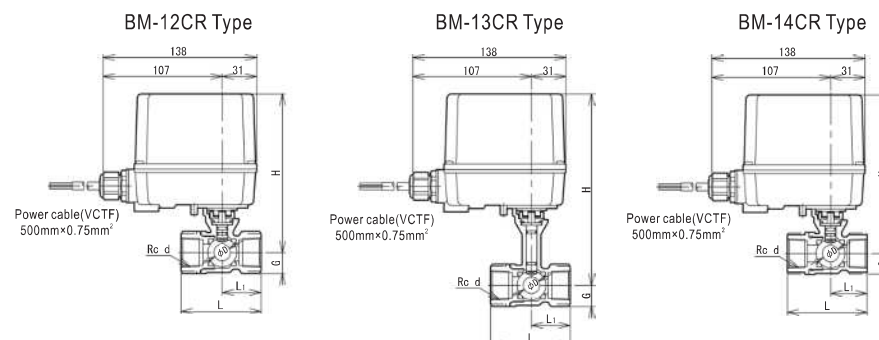
DIMENSIONS

(mm)

Size	d	D	L	L ₁	G	Cv value	BM-12CR Type		BM-13CR Type		BM-14CR Type	
							H	Mass(kg)	H	Mass(kg)	H	Mass(kg)
10($\frac{3}{8}$ ")	$\frac{3}{8}$ "	12.5	62	31	16	4.5	139	1.9	—	—	—	—
15($\frac{1}{2}$ ")	$\frac{1}{2}$ "	12.5	62	31	16	7	139	1.9	170	2	139	1.8
20($\frac{3}{4}$ ")	$\frac{3}{4}$ "	15	72	35(33)	19	10	143	2.1	172	2.1	143	2
25(1")	1"	21	81	40.5	23	20	147	2.2	177	2.3	147	2.2

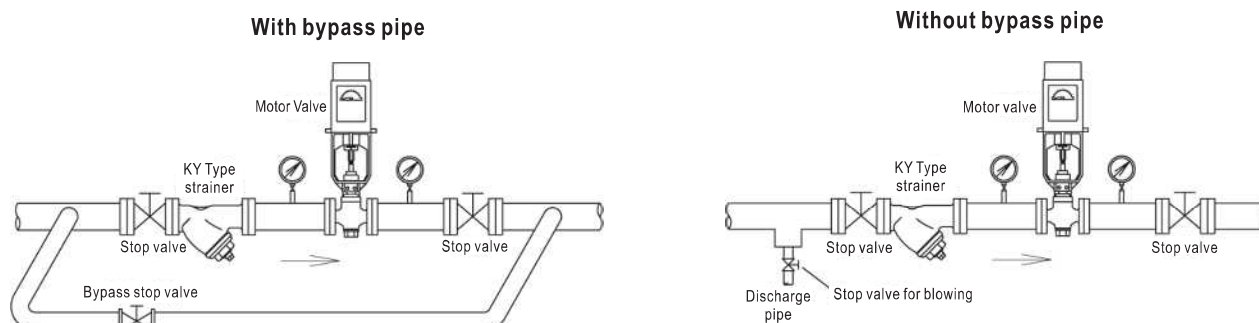
* Figures in () are for BM-14CR Type

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

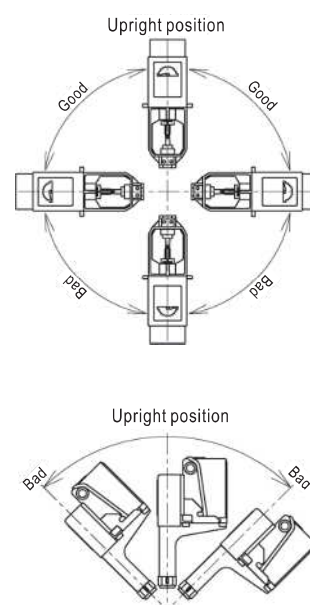
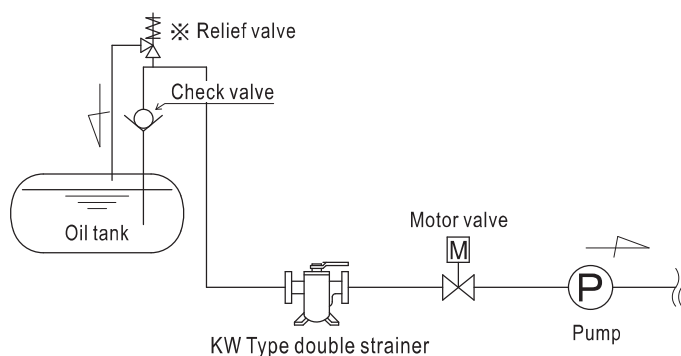


Fig.3 Relief valve installation



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