

ML-FD Type dual seat two-way valve is designed for flow control of cold/hot water, oil, steam and gases.

The ON-OFF characteristic is for two-position control, while the linear characteristic is for proportion control. Since the valve is a double seat valve that allows certain leakage, it is not suitable for applications where complete closing is required.

■ FEATURES

- Large flow, suitable for large pressure differential.
- Less water hammer when opening/closing valve.

■ SPECIFICATIONS

Model name	ML-FD	
Code name	MLFD-BD	MLFD-BS
Applicable fluid	Water, hot water, oils* ¹ & gases	Steam
Rated pressure	1.0MPa	
Fluid temperature	Max. 100°C	Max. 180°C
Ambient temperature	-10~60°C	
Plug characteristics	ON-OFF and Linear	
Leakage allowance	Less than 0.5% of rated flow	
Protection	Splash-proof, for indoor installation * ² . (Equivalent to IP54 when waterproof cable ground is used.)	
End connection	Flanged JIS 10KFF	
Materials	Body(Cast iron), Trim(Cast bronze)	
Valve body pressure test	Hydraulic 1.5MPa	

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

* 2. Rain cover for outdoor installation is available upon your request.

* 3. Refer to Pages 264 and 265 for specifications and circuit, etc.

■ DIMENSIONS

(mm)

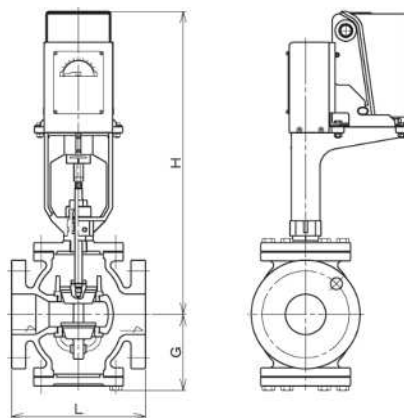
Size	L	G	H	Mass(kg)
32(1¼")	180	100	460	19
40(1½")	180	100	460	20
50(2")	180	110	470	21.5
65(2½")	215	125	487	27.5
80(3")	260	136	490	34.5
100(4")	300	163	523	54.5
125(5")	360	194	553	76
150(6")	382	224	577	112

Flange code JIS 10KFF

■ TABLE OF Cv VALUE AND APPLICABLE DIFFERENTIAL PRESSURE LIMIT

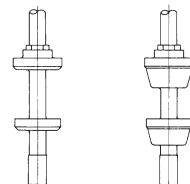
Size	Cv value	Differential pressure limit (MPa)
32(1¼")	20	1.0
40(1½")	30	1.0
50(2")	50	1.0
65(2½")	75	1.0
80(3")	105	1.0
100(4")	170	1.0
125(5")	250	0.5
150(6")	360	0.35

■ CONSTRUCTION



Valve shape

ON-OFF plug Linear plug



DATA/ML Type Motor Valve



Motor

【MOTOR】

■ FEATURES

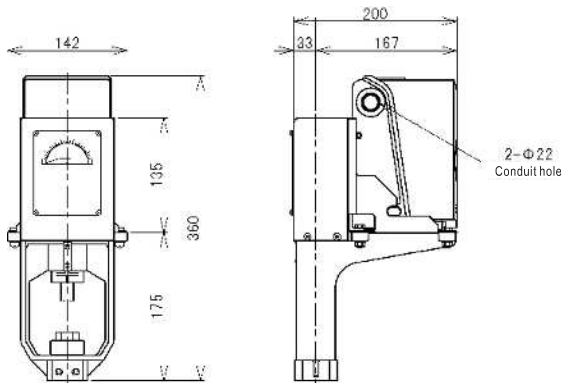
- Four types of motor available for meeting requirements of different input methods.
- Low power consumption, energy saving.
- Buffer in drive unit protect motor and disc from excessive stress.
- Needle and scale plate allow easy reading of valve opening degree.

■ SPECIFICATIONS

Control type	ON-OFF type	Proportional control type		
		A motor	B motor * ¹	C motor
Input signal	Relay contact	Potentiometer(135Ω/0.5W)	Relay contact	DC 4~20mA
Rated voltage	AC24V 50/60Hz* ³			AC24V 50/60Hz* ⁴
Rated capacity	9VA			
Timing (at non-load)	50Hz:69sec, 60Hz:58sec			
Withstanding voltage test	AC 500V/min			
Insulation resistance	5MΩ or more			
Ambient temperature	-10~60℃			
Protection	Splash-proof, for indoor installation* ⁵ . (Equivalent to IP54 when waterproof cable ground is used.)			

- * 1. The proportional B motor is equipped with feedback potential meter (135Ω/0.5W).
 * 2. Motor that is equipped with one of the following components are available:
 ①Auxiliary limit switch unit (with 4 switches, non-voltage/C contacts); or
 ②Auxiliary potential meter for opening display (1kΩ, max. DC5V)
 * 3. AC 100V or 200V for ON-OFF or B motor are available upon your request.
 * 4. Proportional C motor with rated voltage AC85~264V free power supply is also available.
 * 5. Rain cover for outdoor installation is available upon your request.

■ FIGURATION

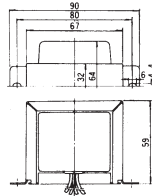


Transformer

【TRANSFORMER】 (accessory, not embedded)

The rated voltage of motor of ML motor valve is AC24V.
 Use the accessoril transformer to reduce general commercial voltage to rated voltage.

■ FIGURATION

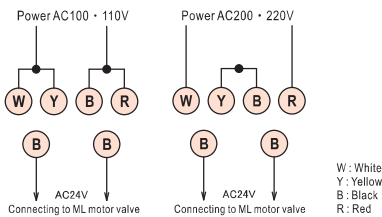


■ SPECIFICATIONS

Primary side voltage	AC100/200V 50/60Hz, AC110/220V 60Hz* Common use by method for wire connection
Secondary side voltage	25V(at non-load)
Apparent power	25VA
Withstanding voltage test	1500V/min
Insulation resistance	100MΩ or more
Coil connection	Coil connection Lead wires at both sides
Mounting	Mount on a panel board, etc. with M4 size screws or nuts.
Mass	0.95kg

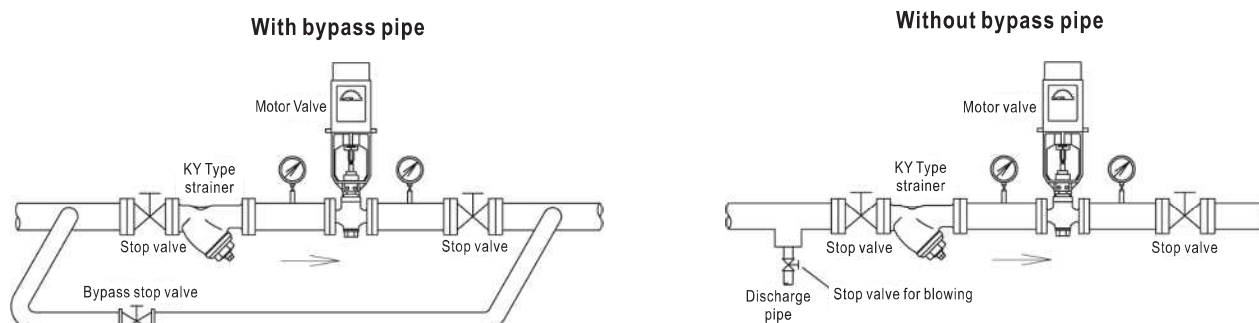
* Other voltages for primary side are available.

■ WIRING DIAGRAM



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

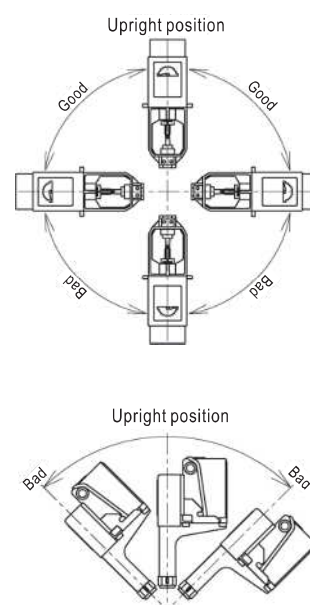
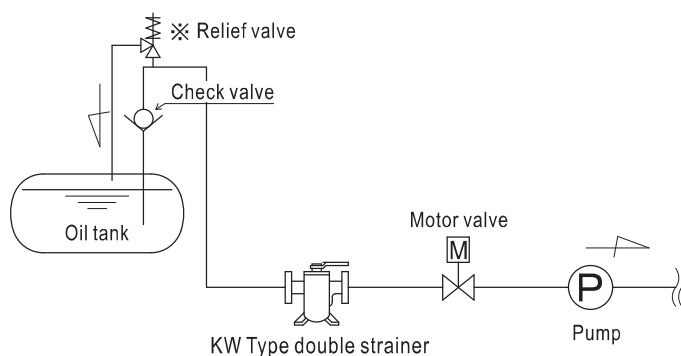


Fig.3 Relief valve installation



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