Trace Heating Supplies

Datasheet

WATER LEAK DETECTION

Leak Logic

LL-MBV-XX/24V

Motorised Ball Valve (15-28mm)

12V DC Motorised Ball Valves (MBVs) represent an innovation in water flow control, especially when integrated into leak detection systems.

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LL-MBV-XX/24V

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WATER LEAK DETECTION

Product Overview

Unlike traditional solenoid valves (SVs), MBVs offer a range of advantages that revolutionise their functionality and reliability. Firstly, they operate on a 12V DC power supply, eliminating the need for a 230V power spur at the valve location, simplifying installation and reducing infrastructure requirements.

MBVs feature full pipe bore sizes, ensuring unrestricted water flow and optimizing system efficiency by minimizing pressure drops. Moreover, they boast WRAS approval, meeting rigorous regulatory standards for water safety.

Unlike SVs, MBVs operate effectively without a minimum water pressure requirement, ensuring reliability across various conditions. They are inherently fail-safe, designed to be normally closed and driven open, with an inbuilt power reservoir that automatically closes the valve in the event of a leak detection or power supply failure. Additionally, MBVs require minimal maintenance, as they do not need regular exercising to prevent scale and metal deposits.

Equipped with a manual override function and position indicators, MBVs offer enhanced operational flexibility and visual confirmation of valve status. Furthermore, their minimal power consumption, thanks to the absence of permanently powered coils, reduces energy usage and eliminates the risk of overheating.

MBV's have the following advantages over the solenoid valves supplied previously:

- 230V power supply Spur no longer required in the field at the valve location.
- Motorised ball valves (MBVs) are full pipe bore sizes and offer no restriction to water flow.
- MBVs have WRAS approval (as do the SVs)
- There is no minimum water pressure required to operate MBVs. (standard SVs half 0.35 Bar min pressure differential)
- MBVs are fail safe (normally closed/driven open) and have an inbuilt power reservoir that will close the valve in the event of a leak being detected or a power supply failure.
- These MBVs do not require exercising to prevent scale and metal deposits from forming which can prevent solenoid valves from closing when instructed.
- The MBVs have a manual override function and open/closed position indicator.
- Minimal power usage when static, no permanently powered coils that get hot.

In conclusion, 12V DC Motorised Ball Valves provide unparalleled control, reliability, and ease of maintenance, making them indispensable for modern water management applications.

Application

TYPE ABVM/AR

½ Failsafe + Power Open/Close 0-10 Bar

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Technical Information

Mechanical Properties

Valve type:	2-way
Size:	1/2" (DN15), 3/4" (DN20), 1" (DN25)
End connection:	BSP
Actuator torque:	3 Nm
Min. pressure rating:	0 Bar
Max. pressure rating:	10 Bar
Open/close time:	5 s
Duty Cycle:	100 %
Cycle life:	100,000
Position Indicator:	Yes
Manual Override:	Yes
Type of protection:	IP67

Electrical Characteristics

Voltage:	9-24V AC/DC
Power consumption in operation: Power	5 W
Power consumption holding:	0.22 W
Working current:	≤ 500 mA
Failsafe capacitor recharge time:	15 s
Cable length:	3 m
Number of cores:	2
Core section:	0.5 mm2

Material

Valve body:	Stainless steel 304
Actuator:	Polyphenylene oxide
Sealing material:	EPDM & PTFE

Colour

Valve:	Silver Grey
Actuator:	Green

LL-MBV-XX/24V

Motorised Ball Valve (15-28mm)

Ambient Conditions

Min. ambient temperature:	-15 °C
Max. ambient temperature:	50 °C
Min. liquid temperature:	2 °C
Max. liquid temperature:	90 °C
Installation location:	General / Industrial

Commercial Data

Country of origin:	China
HS commodity code:	8481804090

Warranty

Warranty Time:	3 Years

Pressure

Port BSP	Orifice (mm)	Operating Time (Seconds)	Pressure Rating (Bar) ΔP		Voltage	Part Number
			Min	Max		
1/2”	15	5	0	10	9 to 24v AC or DC	LL-MBV-15/24V
3/4”	20	5	0	10	9 to 24v AC or DC	LL-MBV-20/24V
1”	25	5	0	10	9 to 24v AC or DC	LL-MBV-28/24V

Features

- Visual Position indication
- Failsafe closed 2 wire (+AR)
- Manual Override (Lift + Turn + MO) 9-24 volt only. (Not IP67)

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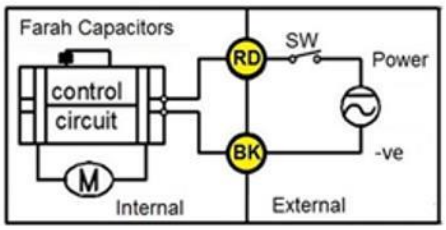
Motorised Ball Valve (15-28mm)

Failsafe Control



Failsafe Control.

Power ON motor actuates valve into powered position and then automatically powers off.

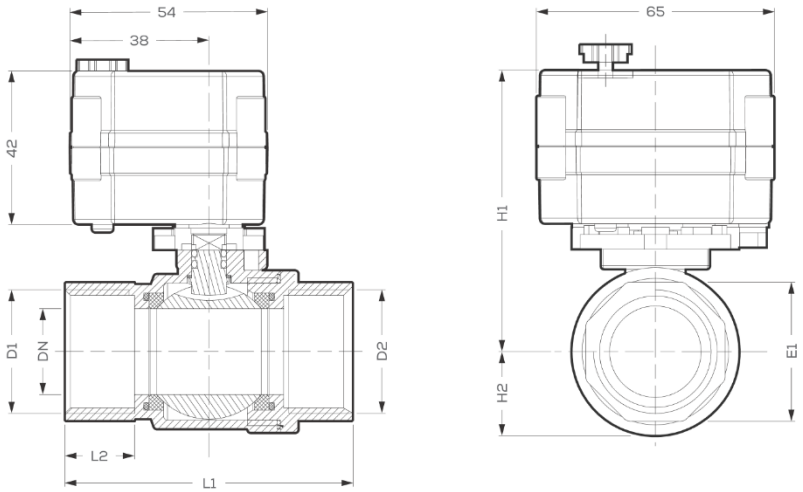
Valve stays in powered position.

Power OFF motor actuates valve back to start position using reserve power.

Valve stays in start position.

Failsafe requires 10-15 seconds Power On to Recharge the Farah capacitors.

Dimensions & Materials



*Dimensions in Millimetres (mm)

Part No.	Size (D1/D2)	DN ± 0.3	L1 ± 1	L2 ± 1	E1 ± 0.5	H1 ± 1	H2	Weight
LL-MBV-15/24V	1/2"	15	62	14	25	72	17	0.54 kg
LL-MBV-20/24V	3/4"	20	72	17	31	75.5	20	0.61 kg
LL-MBV-28/24V	1"	25	79	18	38	78.5	24.5	0.70 kg

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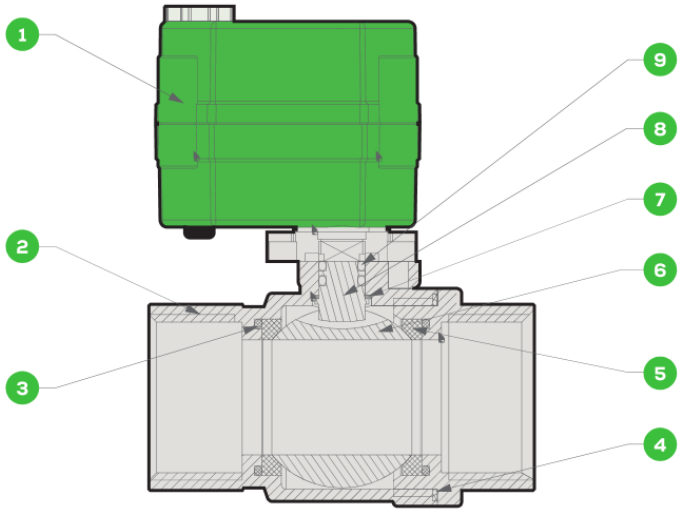
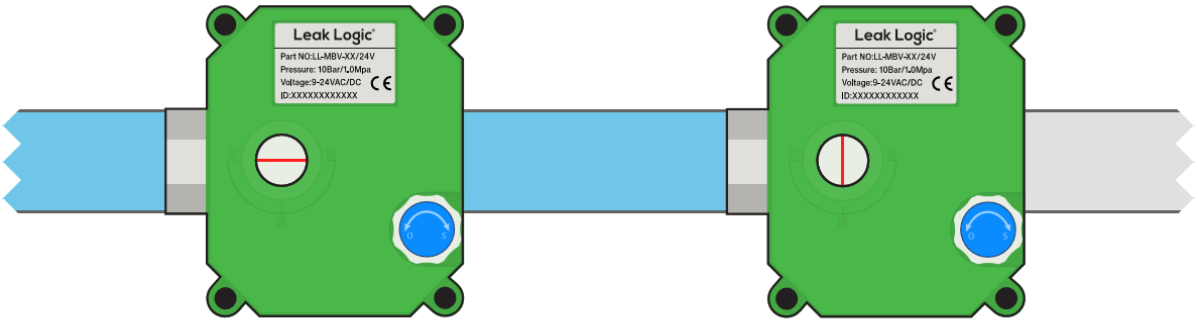
Motorised Ball Valve (15-28mm)



Item	Part	Material
1	Actuator	PPO
2	Valve body	SS304
3	O-ring	FKM
4	Sealing gasket	PTFE
5	Valve seat	PTFE
6	Ball	SS304
7	Gasket	PTFE
8	Valve stem	SS304
9	O-ring	FKM

Position Indicator



Ordering Information

Part No.	Description
LL-MBV-15/24V	1/2" Motorised Ball Valve - Failsafe Closed - 12-24V AC/DC
LL-MBV-20/24V	3/4" Motorised Ball Valve - Failsafe Closed - 12-24V AC/DC
LL-MBV-28/24V	1" Motorised Ball Valve - Failsafe Closed - 12-24V AC/DC

Important: All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their application.