Diamond Controls®
Leak Detection & Trace Heating Systems

Datasheet

WATER LEAK DETECTION



LL-MBV-XX/230V

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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Product Overview

Unlike traditional solenoid valves (SVs), MBVs offer a range of advantages that revolutionise their functionality and reliability.

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.

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

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Electrical Characteristics

Voltage:	230 VAC
Power consumption in operation: Power	5 W
Power consumption holding:	0.6 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

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

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Commercial Data

Certifications:	CE, ROHS, TUV
WRAS Approval Certificate:	251015020

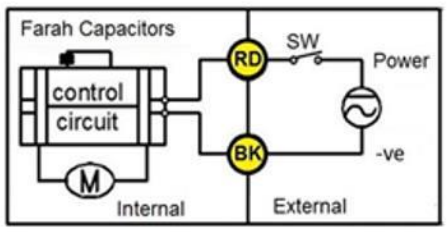
Warranty

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	230 VAC	LL-MBV-15/230V
3/4"	20	5	0	10	230 VAC	LL-MBV-20/230V
1"	25	5	0	10	230 VAC	LL-MBV-25/230V

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.

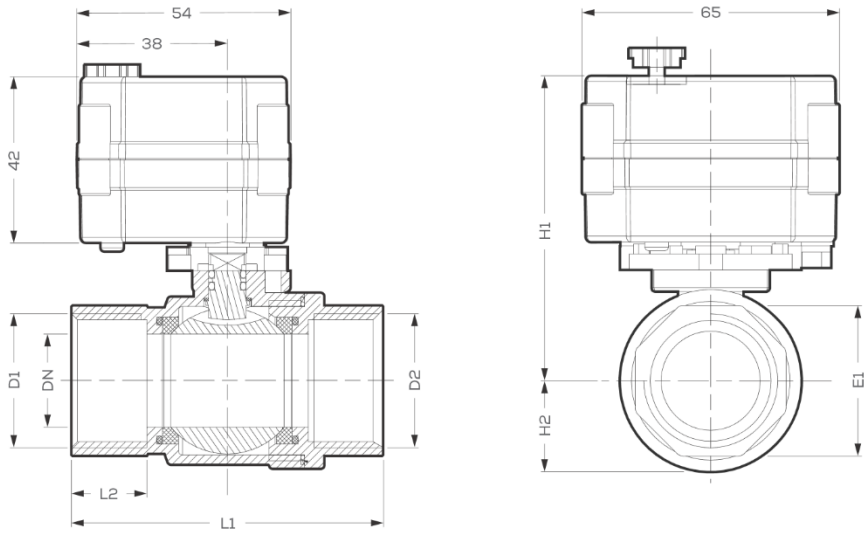
Valve stays in start position.

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

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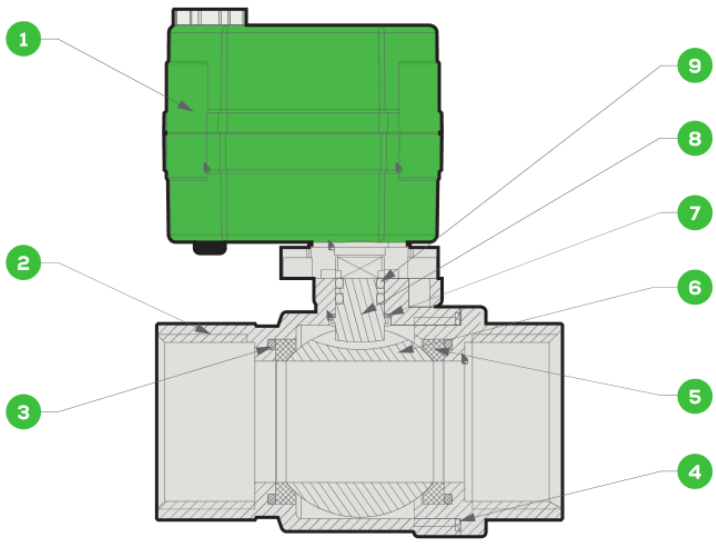
LL-MBV-XX/230V
Motorised Ball Valve (15-25mm)

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-15/230V	1/2"	15	62	14	25	72	17	0.54 kg
LL-MBV-20/230V	3/4"	20	72	17	31	75.5	20	0.61 kg
LL-MBV-25/230V	1"	25	79	18	38	78.5	24.5	0.70 kg

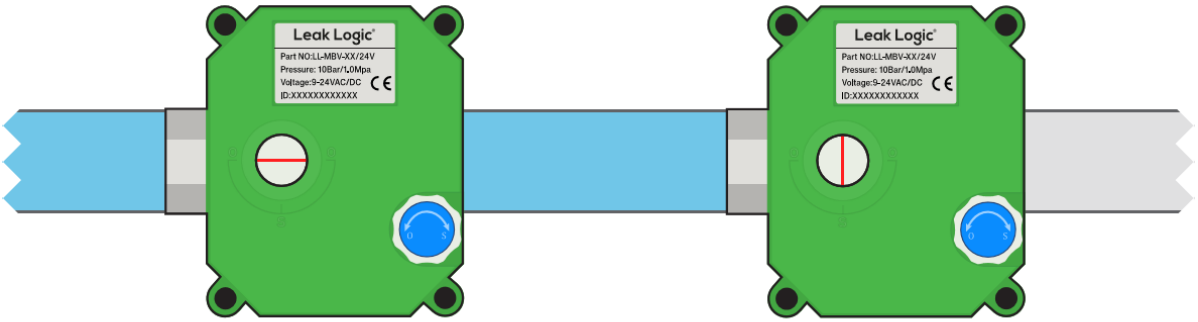


Item	Part	Material
1	Actuator	PPO
2	Valve body	SS304
3	O-ring	FKM
4	Sealing gasket	PTFE
5	Valve seat	PTFE
6	Ball	SS304
7	Gasket	PTFE
8	Valve stem	SS304
9	O-ring	FKM

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Position Indicator



OPEN CLOSED

Ordering Information

Part No.	Description
LL-MBV-15/230V	1/2" Motorised Ball Valve - Failsafe Closed – 230VAC
LL-MBV-20/230V	3/4" Motorised Ball Valve - Failsafe Closed - 12-24V 230VAC
LL-MBV-25/230V	1" Motorised Ball Valve - Failsafe Closed - 12-24V 230VAC

Accessories



LL-CSA-M
Brass Compression Male Straight Adaptor

Pack of 2. Sizes 1/2" up to 2" for motorised ball valves



LL-VT
Valve Terminal

Junction box for connecting up to 3 Valves



LL-TX-8/24V
Transformer

24V Transformer for powering up to 3

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