



Priority Demand Valve

Fig. PDV-02V2

Product Description

Rapidrop's innovative electrically driven Priority Demand valve for use with mains water supply or stored water supply residential sprinkler systems.

Designed to meet BS 9251:2021 - Valve for isolating domestic supply in the event of sprinkler activation.

Upon activation of a flow switch / relay, the valve will automatically close the domestic supply allowing all water to flow to the sprinkler system.

The priority demand valve is available in ball or butterfly type body (depending on connection) attached to a specific actuator (dependant on size) along with a pre-wired control box.

Rapidrop's priority demand valve can also be linked to activate up to 10 valves simultaneously through a single flow switch/ alarm relay (More can be linked upon request) Refer to page 5 for more details.

Features

Ball Valve

- Full Bore
- WRAS approved

Butterfly valve

- Stainless steel disc, EPDM liner
- Epoxy coated ductile iron body
- WRAS approved

Actuator

- Failsafe close operation (operated by internal replaceable lithium-Ion battery)
- End of travel relay switch for valve positioning
- Visual LED indicator for positional identification
- Maximum Allowable 'Stem Torque' to protect valve
- Feedback on minimum amount of 'Stem Torque'
- External GSA Connectors (For RAS actuator, M20 Glands for RAM/ RAL actuator)
- Manual positional override via:
 - Password protected bluetooth app (android)
 - External push buttons (available on request)
 - Nylon handwheel (not permanently connected, for RAS actuator only)
- IP67 Rated Actuator
- Real time data (cycles, temp, number of starts, power on/off)
- Additional features including, status of valve deterioration, status of possible blockages.
- Activate up to 10 valves simultaneously (refer to page 5)



Control Box

- Metal IP66 wall mounted enclosure with external mounting brackets
- 24VDC power adapter with internal din rail mount terminals to receive change of state signal from either a single flow switch or relay switch to initiate the priority demand valve
- Power supply requirements; 230V AC connected to a 3A fused spur

Working Pressure

Max. Working Pressure 16Bar (232 psi)
(Higher pressure range available on request)

Working Temperature Range

-10°C to 70°C (14°F to 158°F)

Connections

Ball valve (DN25 to DN50)

- BSP female thread according to ISO 228/1

Butterfly valve (DN50 to DN200)

- Semi lug wafer pattern to suit PN16 Flange according to BS EN 1092 and Table D/E flanges according to BS 10

Operation

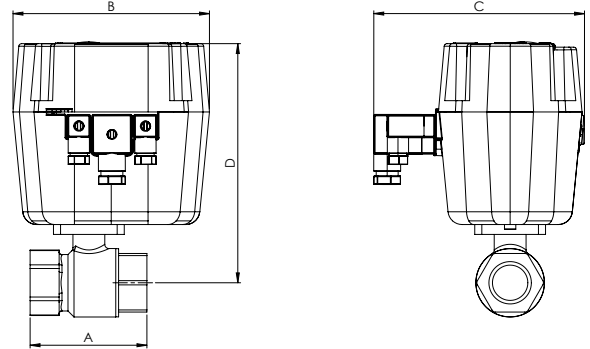
Rapidrop Priority demand valve is a power to open, power to close valve. In the event of power loss the valve will failsafe to the closed position.

Priority Demand Valve

Fig. PDV-02V2

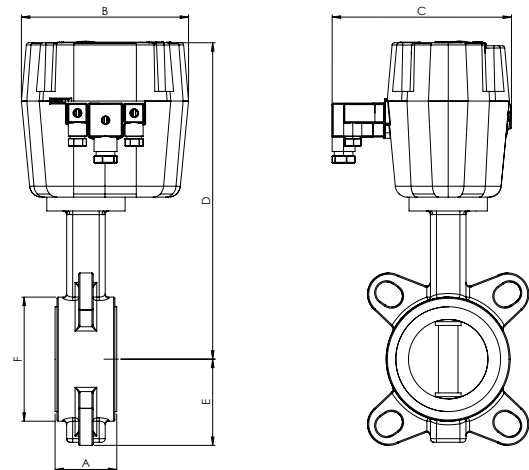
Ball Valve Dimensions

Sizes		Dimensions (mm)				Flow Rate (KV)
mm	Inch	A	B	C	D	
DN25	1"	83	140	150	170	43
DN32	1 1/4"	94	140	150	175	89
DN40	1 1/2"	102	140	150	187	230
DN50	2"	124	140	150	194	265



Butterfly Valve Dimensions

Sizes		Dimensions (mm)					
mm	Inch	A	B	C	D	E	F
DN50	2"	43	140	150	255	62	89
DN65	2 1/2"	46	140	150	265	69	102
DN80	3"	46	203	206	334	90	118
DN100	4"	52	203	206	354	106	150
DN125	5"	56	203	206	374	119	174
DN150	6"	56	203	206	404	133	205
DN200	8"	60	203	206	432	166	260



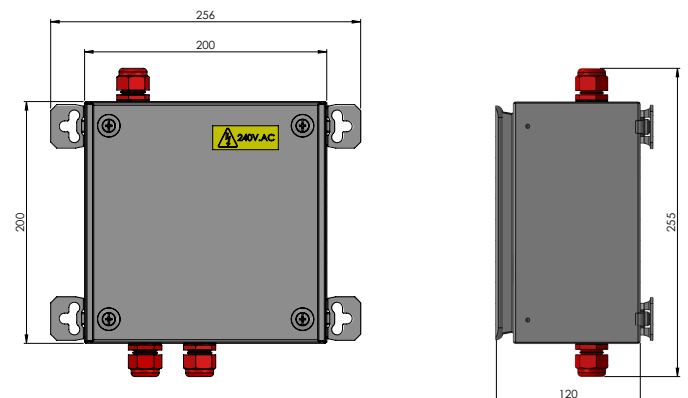
WRAS approval for valve body owned by Brandoni S.P.A

Ordering Codes

Sizes		Isolation Valve	Actuator Model	Ordering Codes
mm	Inch			
DN25	1"	Ball Valve	RAS	RDPDV-02-025BLV2
DN32	1 1/4"	Ball Valve	RAS	RDPDV-02-032BLV2
DN40	1 1/2"	Ball Valve	RAS	RDPDV-02-040BLV2
DN50	2"	Ball Valve	RAS	RDPDV-02-050BLV2
DN50	2"	Butterfly Valve	RAS	RDPDV-02-050V2
DN65	2 1/2"	Butterfly Valve	RAS	RDPDV-02-065V2
DN80	3"	Butterfly Valve	RAM	RDPDV-02-080V2
DN100	4"	Butterfly Valve	RAM	RDPDV-02-100V2
DN125	5"	Butterfly Valve	RAM	RDPDV-02-125V2
DN150	6"	Butterfly Valve	RAL	RDPDV-02-150V2
DN200	8"	Butterfly Valve	RAL	RDPDV-02-200V2

The above ordering codes include 1x electrically actuated isolation valve and 1x control box.

Control Box Dimensions





Priority Demand Valve

Fig. PDV-02V2

Specifications

Valve Size/ Actuator model	DN25 - DN65 (1" - 2 1/2") RAS Actuator	DN080 - DN125 (3" - 5") RAM Actuator	DN150 - DN200 (6" - 8") RAL Actuator
Working Time 0-90°	8 Seconds	4 Seconds	16 Seconds
Current	0.55A	0.55A	0.55A
Power Supply	12-30V	12-30V	12-30V
IP Rating	IP67	IP67	IP67
End of Travel Relays	300VAC/900mA - 30VDC	250VAC/5A - 30VDC	250VAC/5A - 30VDC
Ambient Temp Range	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C
Manual Override	Local Buttons (Disabled as standard)	Local Buttons (Disabled as standard)	Local Buttons (Disabled as standard)
Bluetooth Control	Via Android App	Via Android App	Via Android App
Cable Entries	External GSA	2 x M20 Cable Glands	2 x M20 Cable Glands

Installation

The valve may be installed in any position and the flow may be from either direction through the valve.

1. Visually inspect the valve, make sure that the connections are clean of debris and any foreign materials.
2. Mount/connect the valve to the pipework. Note for butterfly valve bodies do not over torque the flange. This may distort the rubber seal.
3. Wire the valve following the below sequence;

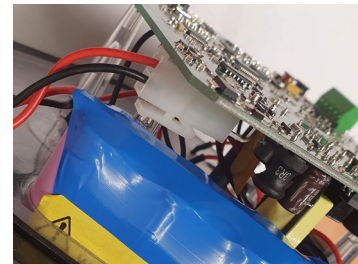
RAS - Remove the lid by undoing the 4 bolts using a 3mm allen key. **Connect the battery** within the actuator using the nylon male/female plug. Re-assemble the lid cover. Undo the centre GSA screw using a Phillips or flat-head screwdriver. Wire as per wiring Diagram. Re-assemble the GSA plug onto the actuator.

RAM/RAL - Remove the lid by undoing the 6 bolts using a 3mm allen key. **Connect the battery** within the actuator using the nylon male/female plug. Disconnect the terminal block and wire as per wiring Diagram. Re-assemble the lid.

4. Functional test the operation of the valve via the flow switch or relay. The solid green LED will indicate the vale is in the open position. The solid red LED will indicate the valve is in the closed position

Note; The internal battery is disconnected for storage/travel and to prevent detriment to the battery.

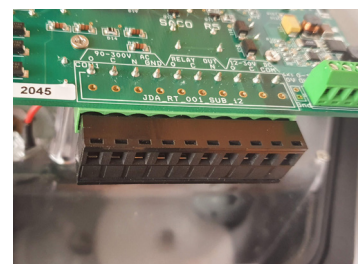
Connection of battery



RAS - GSA Connector



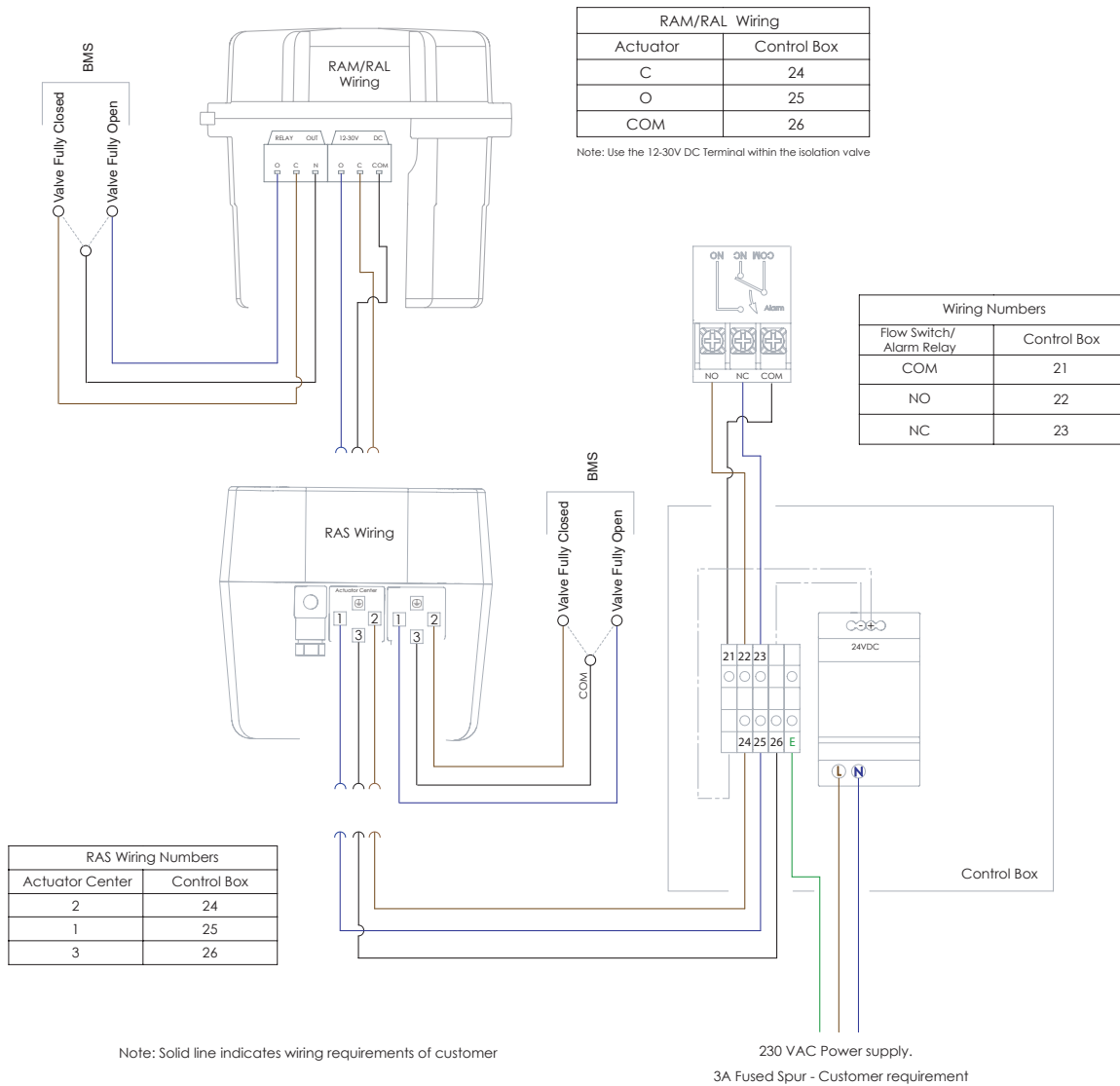
RAM/RAL terminal block



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Wiring diagram



Care and Maintenance

The only maintenance requirement of the priority demand valve is with regards to the battery.

An orange flashing LED indicator would indicate the battery requires replacing or regenerating. Rapidrop recommend replacing the battery every 3 years at a minimum to prevent detriment of the system.

It is advisable to inspect and verify the operation of the unit annually or in accordance with the authority having jurisdiction.

Important information

- The installation and maintenance of the priority demand valve must only be made by qualified personnel.
- Ensure electrical installation is as per BS 9251:2021
- Before removing any covers, always make sure the power supply to the control unit is shut off.
- Failure to follow these instructions could cause improper operation, resulting in personal injury and/or property damage.
- For further details and technical support please contact your Rapidrop sales representative.

Priority Demand Valve

Fig. PDV-02V2

Linked Priority Demand Valve

Rapidrop's priority demand valve can be linked to activate up to 25 valves simultaneously through a single flow switch/ alarm relay. Upon receiving a 10V signal all connected valves will default to the closed position.

One 'linked priority demand valve power supply unit' can power up to 7 'linked priority demand valves'

Note: Each valve requires at least 12V, consider voltage drop for longer lengths of cables.

One 'linked priority demand valve control box' can control up to 25 'linked priority demand valves'

For linking more than 25 priority demand valves contact a Rapidrop representative for more information.

Follow the installation process as per page 3 and wire as per the diagram below.

Linked Priority Demand Valve Box Ordering Codes

Description	Ordering Codes
Linked Priority Demand Valve Power Supply Unit	RDPDV-PSU
Linked Priority Demand Valve Control Box	RDPDV-LCMU

When ordering, please specify the number of valves connecting to power supply unit and also the control box (for hole drilling purposes)

Linked Priority Demand Valve Ordering Codes

Sizes		Isolation Valve	Actuator Model	Ordering Codes
mm	Inch			
DN25	1"	Ball Valve	RAS	RDPDV-02-025BLV2SM
DN32	1 1/4"	Ball Valve	RAS	RDPDV-02-032BLV2SM
DN40	1 1/2"	Ball Valve	RAS	RDPDV-02-040BLV2SM
DN50	2"	Ball Valve	RAS	RDPDV-02-050BLV2SM
DN50	2"	Butterfly Valve	RAS	RDPDV-02-050V2SM
DN65	2 1/2"	Butterfly Valve	RAS	RDPDV-02-065V2SM
DN80	3"	Butterfly Valve	RAM	RDPDV-02-080V2SM
DN100	4"	Butterfly Valve	RAM	RDPDV-02-100V2SM
DN125	5"	Butterfly Valve	RAM	RDPDV-02-125V2SM
DN150	6"	Butterfly Valve	RAL	RDPDV-02-150V2SM
DN200	8"	Butterfly Valve	RAL	RDPDV-02-200V2SM

The above ordering codes include 1x electrically actuated isolation valve only. Appropriate power supply unit and control box need to be ordered separately.

