Data Sheet 7.37
Issue A

Monitored Residential Riser Test and Drain Valve
Fig RESI-120

BS 9251: 2021

General Description

Rapidrop innovative single piece monitored residential riser test and drain valve, designed to meet requirements of BS 9251: 2021, for use in all domestic and residential properties. The contactless tamper switch is monitoring the fully open position of the valve and will send a signal to FloWatch or any other monitoring system if the valve is being tampered with.

Commonly used in residential systems as a zone or control valve. The full bore design allows minimal flow restriction and pressure loss.

Features

- Monitored full bore isolation valve to meet the requirements of BS 9251: 2021
- Potter vane type flow switch, model VSR-S-EU, LPCB approved as per BS EN 12259-5
- Flow and monitoring switches pre-wired for quick and easy installation.
- Single piece casting (on the run)
- Dual ports enable the flow switch to be mounted on either side of the valve (Right hand as standard)
- Full bore test valve.
- Factory fitted 18 bar Glycerine filled pressure gauge equipped with no loss connector which allows replacement of the gauge without draining the system.
- Compact and space saving design, quick and easy installation/ wiring.
- Fully compatible with CPVC fire sprinkler systems.
- Supplied with key-alike padlock

Material Specification

No.	Part	Material
1	Residential Riser Body	Brass HPb59-1 Nickel Plated
2	Gauge No Loss Connector	Brass HPb59-1 Nickel Plated
3	Monitoring Switch Enclosure	ABS
4	Pressure Gauge	304 Stainless Steel Case

Standards

Conforms to BS 9251: 2021

Working Pressure

Max. working pressure 12 bar

Max. Test pressure 18 bar

Connections

Inlet, Outlet and Drain port

Rp (BSP) threads in accordance with ISO7-1

Flow Switch Ports

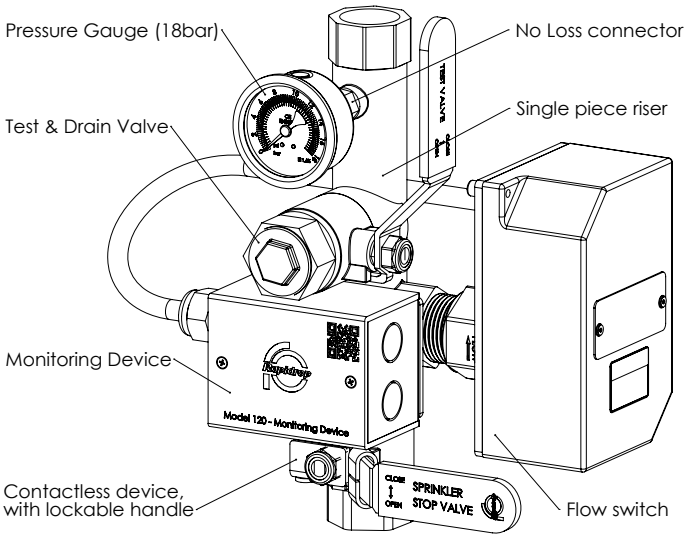
Rp1 (1" BSP) threads in accordance with ISO7-1

Flow Switch

Potter VSR-S-EU Vane Type flow switch

- Flow Sensitivity Range: 15-38 LPM
- UL, CE Marked (EN 12259-5) LPCB Approved
- IP54 rating

For more information refer to Rapidrop data sheet 2.15



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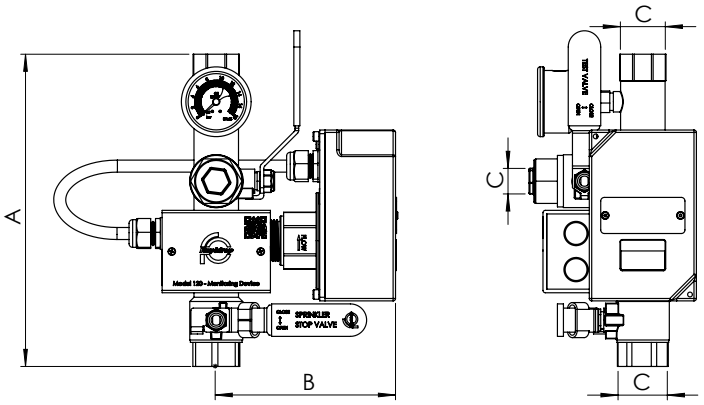
Model 120 Monitored Ball Valve

- 24V AC/DC
- IP54 - tested and certified as per BS EN 60529: 1992 + A2: 2013
- Configure as NO or NC switch contact
- Parallel or series resistor installation
- Zonal wiring circuit configuration (Refer to wiring diagrams)

Riser

- Full bore test valve equivalent to riser size
- Dual port for flow switch installation
- Lockable inlet lever
- Single piece casting (on the run)
- Gauge no loss connector

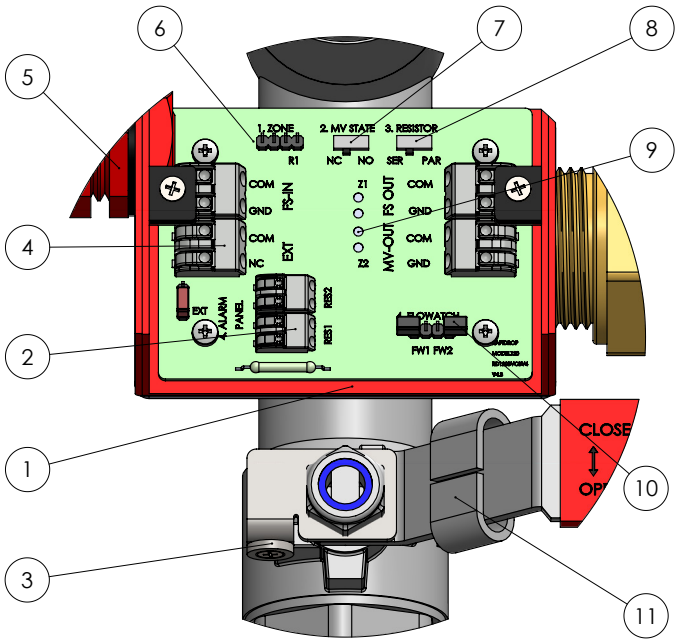


Dimensions/ Ordering Codes

Riser Size	A	B	C	Ordering Codes
DN25 1"	260	145 ± 5	G1 (1")	RDMRESI025G-M120P
DN32 1-1/4"	280	145 ± 5	G1-1/4 (1 1/4")	RDMRESI032G-M120P
DN40 1-1/2"	300	145 ± 5	G1-1/2 (1 1/2")	RDMRESI040G-M120P
DN50 2"	315	145 ± 5	G2 (2")	RDMRESI050H-M120P

Monitored Valve Features

- IP54 rated (certified) open style enclosure (1) providing easy access for wiring whilst still obtaining the maximum IP rating
- Push in resistor connectors for custom rating resistors (2)
- Contact less switch for fail-safe operation (3) no mechanical parts, eliminating the possibility of being tampered with
- External switch connection (4) allows an additional input to be connected onto the same zone, commonly found when installed on a combined BCWS (boosted cold water supply)
- Knock out connectors for M20 cable glands - (5) enabling the wiring connection from either side of the enclosure
- Customise wiring configuration - combining monitoring device and flow switch to single interface (6)
- Normally open or Normally closed dip switch configuration (7)
- Series or Parallel dip switch configuration - used for monitoring devices separately (8)
- Circuit board test points (9)
- Factory fitted 100kΩ EOL & Series resistors specific to FloWatch monitoring panel (10)
- Lockable ball valve lever (11)
- Supplied with cable glands for connecting to Flowatch or other alarm devices
- QR code printed on the enclosure linked to product data sheet for ease of wiring details
- Push in Wago PCV wiring connectors



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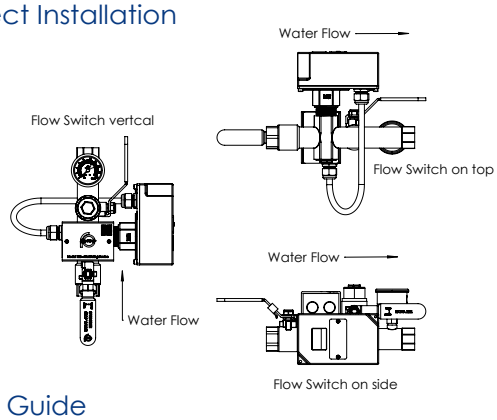
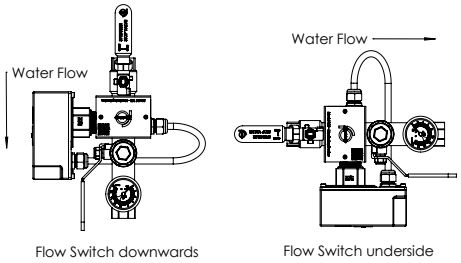
Flow Switch Installation Orientation

Correct Installation



Incorrect Installation



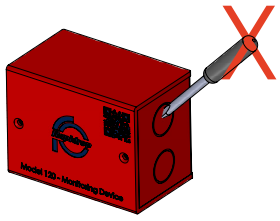
Installation Guide

The following notes are intended as a basic guide to assist installation and form part of the manufacturers warranty.

- Ensure correct tools are used for installation, never use grip type tools on the manifold
- Always use pipe sealant compatible with all system components. If in doubts please consult manufacturer's product manual.
- Do not over tighten connecting fittings/components
- Assemble/Restrain the residential riser near to the joint being connected too
- To ensure the manifold is securely positioned, bracket within 150mm from top and bottom connections
- When installing consider access for maintenance and wiring
- Installation should always be carried out by a suitably qualified person
- Consider access to flow switch during design and installation

Knock out removal

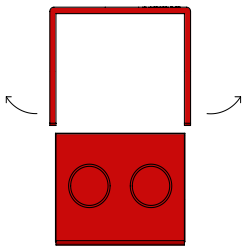
- Always remove knock outs with the lid in place
- Push the knock out through by hand or alternatively cut using a knife
- Never use tools to force knock out through - This may cause damage of the internal PCB



Opening Enclosure Lid

- Undo 2 x lid screws
- Prize the lid away at the bottom. Lift outwards to clear the grooves.
- To install the lid, line the grooves and slide it down, until it engages at the bottom.

Note: Do not over bend the enclosure lid when lifting outwards



Installation of resistors

- Fig.A Press down on terminal connection and push in resistor. Once in position remove pressure. Resistor will lock in place (Within the Model 120 Enclosure)
- Refer to wiring/PCB jumper configuration for correct positioning of resistors

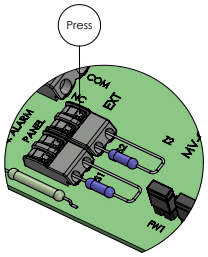


Fig.A

Configuration

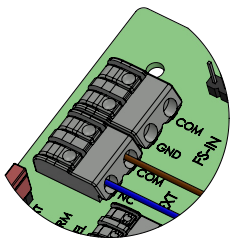
Rapidrop Model 120 utilises PCB Jumpers and dip switches to easily configure the circuit. Lift the female connectors and re-configure according to the alarm, monitoring system or pump controller you are connecting to.

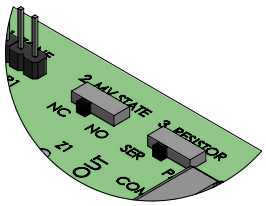
Refer to Wiring/ PCB Jumper configuration section

Wiring Connectors

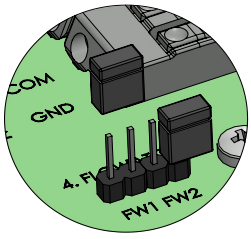
Push the wires in to the terminal to engage

Note: You do not need to press down onto the terminal.





Or



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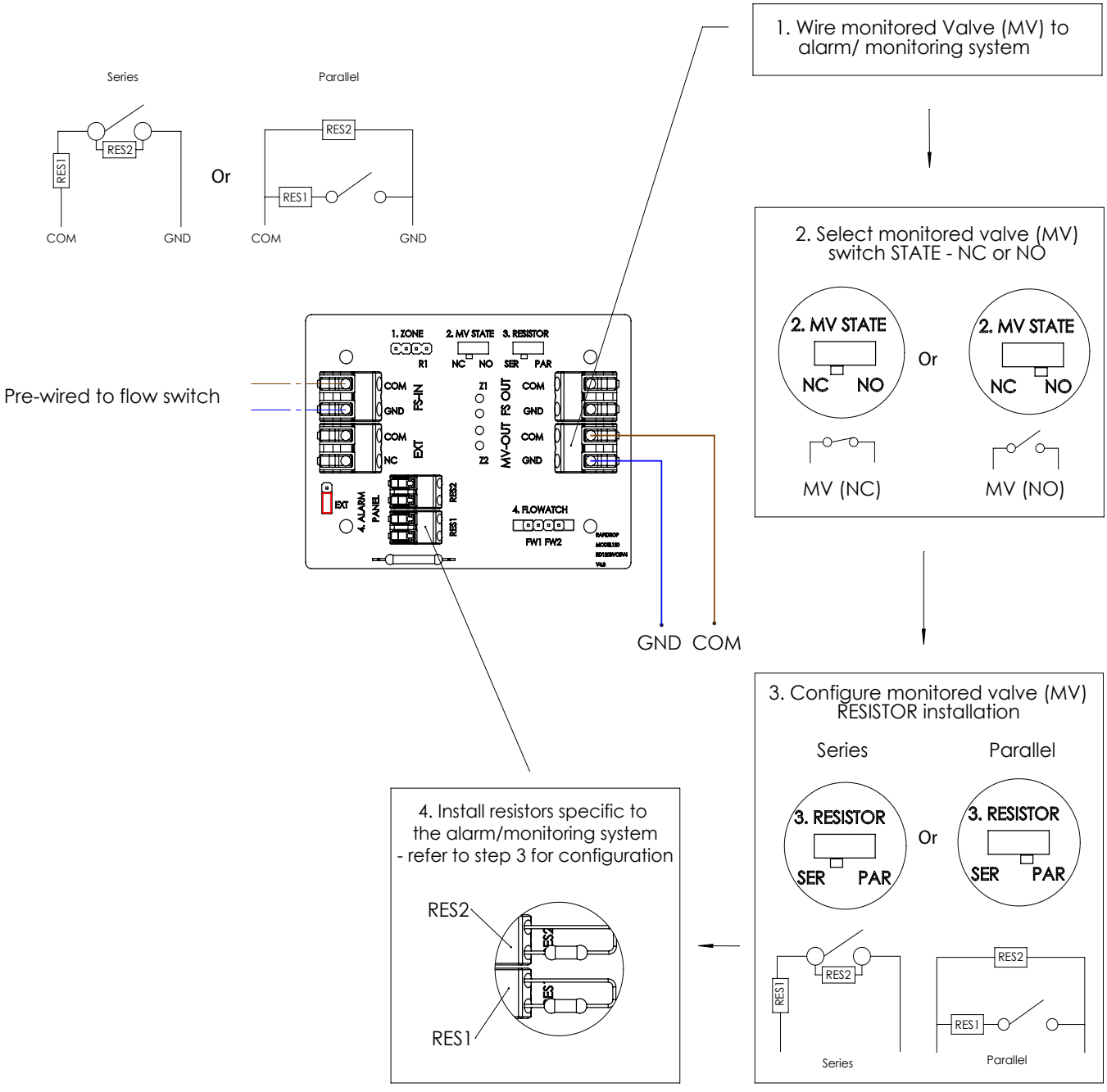
Wiring/ PCB Jumper Configuration

Monitored valve (Separate input)

Monitor the Isolation Valve Individually from the flow switch (Separate Interfaces)

Refer to the alarm/ monitoring panel manufacturer for switch state/ resistor installation



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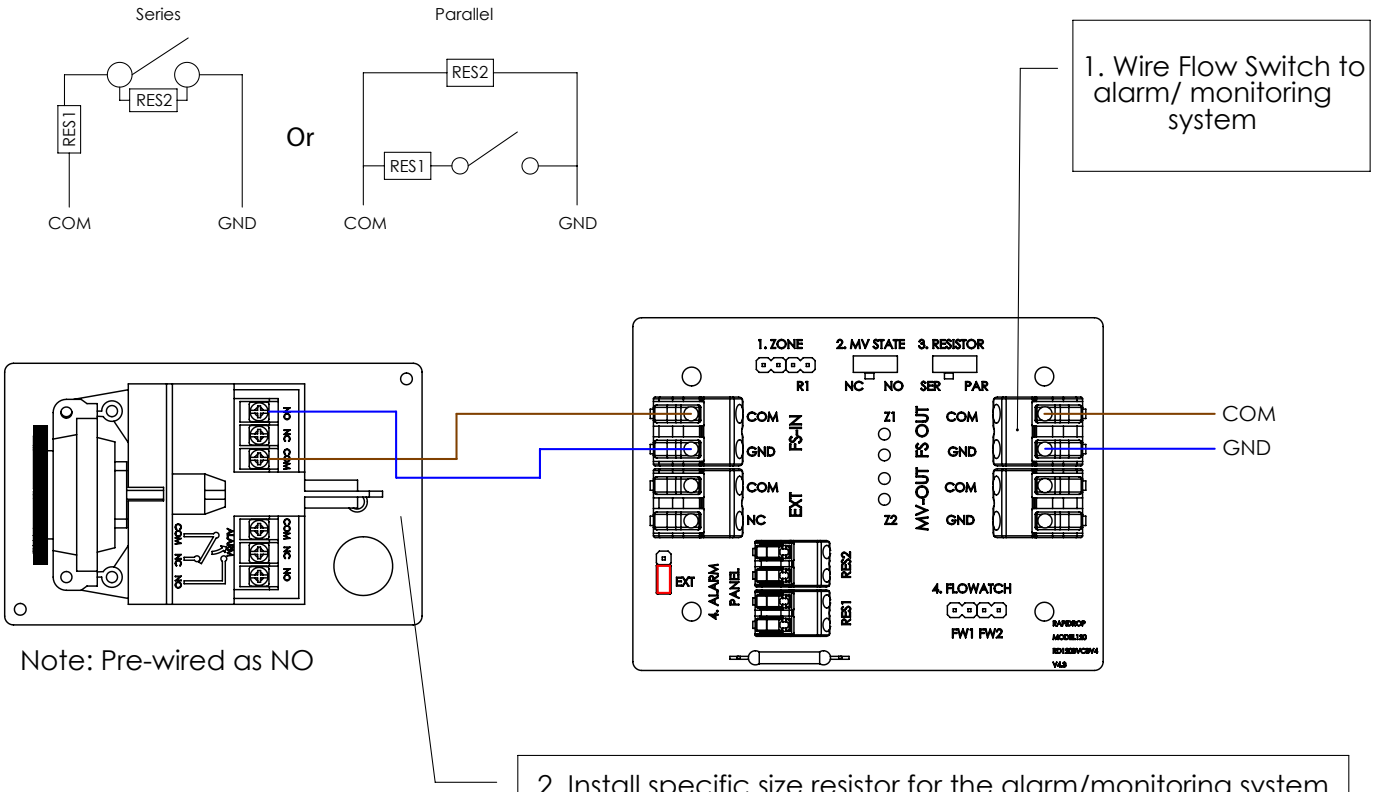
Flow Switch (Separate input)

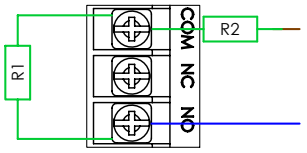
Monitor the flow switch Individually from the Isolation Valve (Separate Interface)

Refer to the alarm/ monitoring panel manufacturer for switch state/ resistor installation



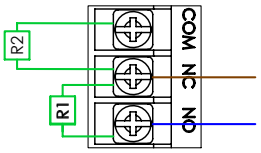
2. Install specific size resistor for the alarm/monitoring system
Examples below:

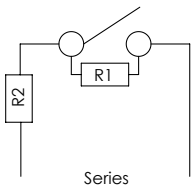
2A. Series Config

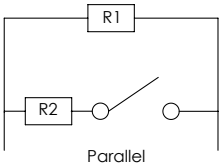


Or

2B. Parallel Config







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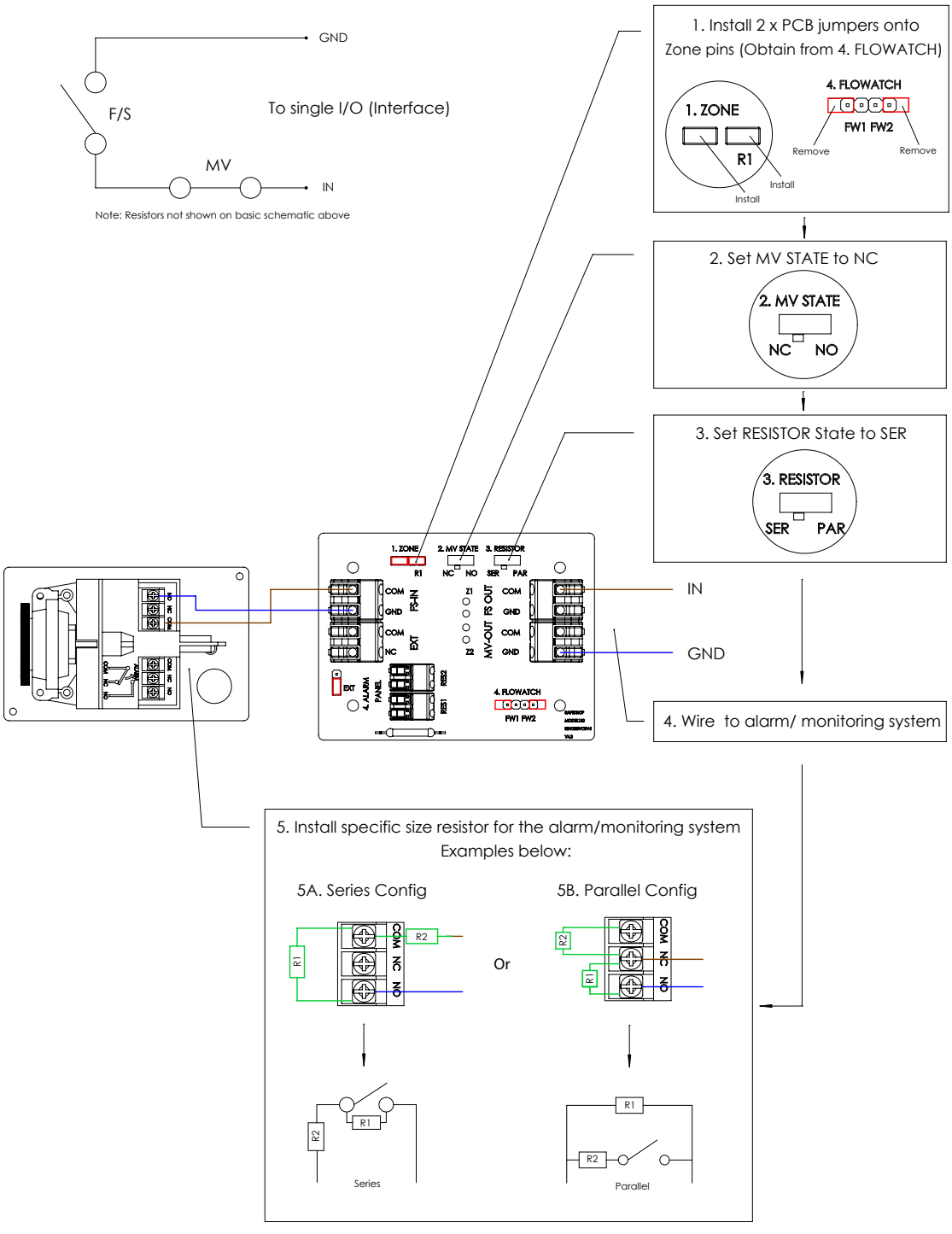
Flow Switch & Monitored Valve Combined input - Zone wiring

Combine the flow switch and Isolation valve onto a single interface. This should be wired in accordance with the building fire strategy. Rapidrop recommend monitoring each device separately to identify the mechanical and electrical fault/alarm of each component.

Refer to the alarm/ monitoring panel manufacturer for switch state/ resistor installation



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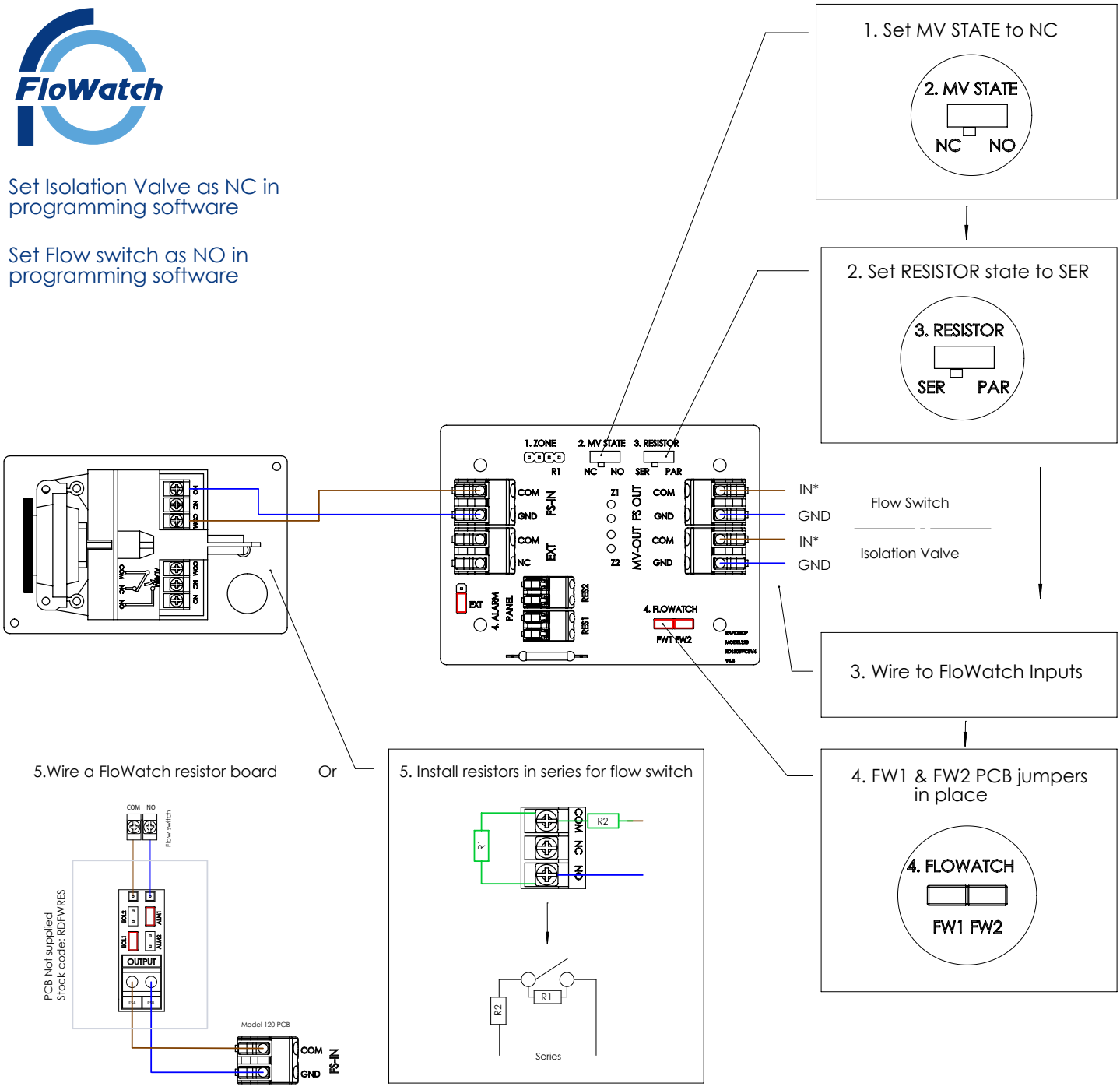
FloWatch Monitoring Panel Connection

Set Isolation Valve as NC in programming software

Set Flow switch as NO in programming software



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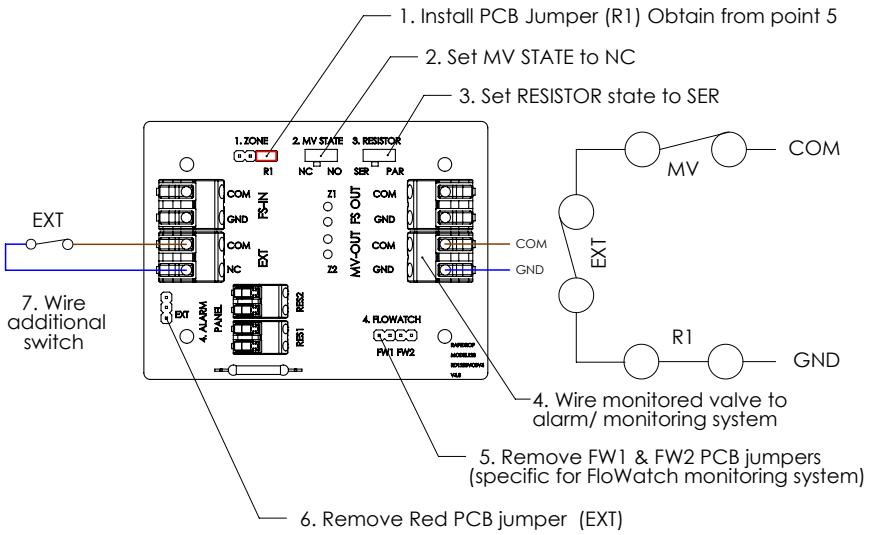
Optional wiring configurations

Additional external switch - Daisy chain monitored valve input

External switch connection allows an additional input to be connected onto the same zone/ circuit

Note: The devices will be linked on the same NC circuit (Not independent)

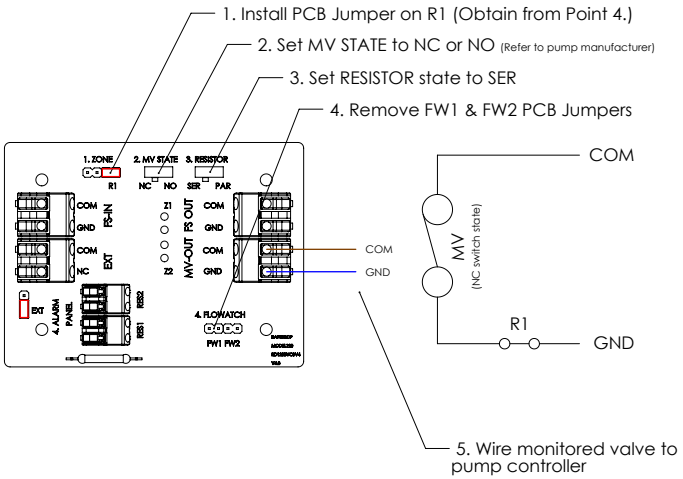


No Resistors - Pump controllers

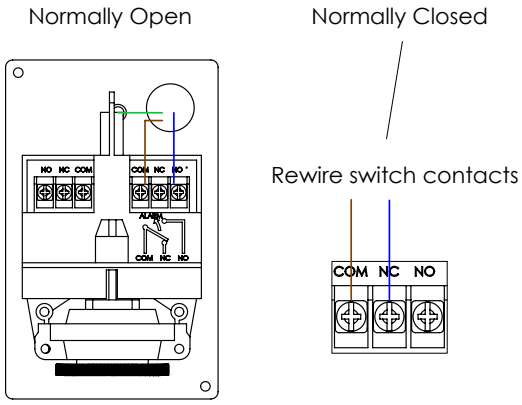
Pump controllers typically utilise voltage circuits rather than resistance. Refer to the below for connection to monitored valve and flow switch.

Refer to the pump controller for NC or NO Switch states

Monitored Valve



Flow switch



Flowswitch enables connection to alarm panel & pump controller.

Refer to pump controller manufacture for NO or NC contact

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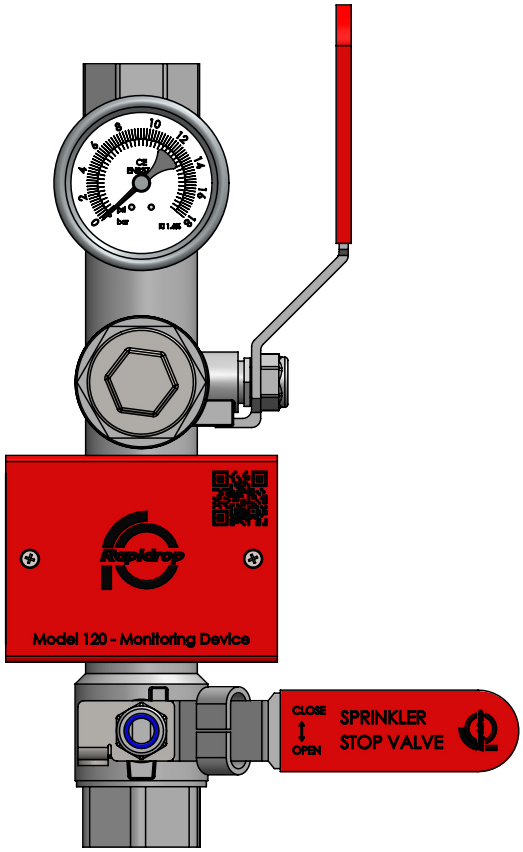
Optional Configuration

Rapidrop residential riser can be supplied with a Rapidrop Model 120 monitoring device only (No flow switch)

CPVC adapters available on request.

Refer to page 4 for wiring diagram of Model 120 monitoring device.



Ordering codes - monitored valve only

Riser Size	Ordering Codes - No Flow Switch
DN25 1"	RDMRESI025G-M120
DN32 1-1/4"	RDMRESI032G-M120
DN40 1-1/2"	RDMRESI040G-M120
DN50 2"	RDMRESI050H-M120

Maintenance

Rapidrop Model 120 monitored ball valve requires no regular maintenance, however it is advisable to inspect and verify proper operation of the unit annually or in accordance with the authority having jurisdiction.

The inspection should include, but not limited too:

- Verify operation of the tamper switch
- Inspection of magnet (Clean with soapy water if contaminated with external debris)
- Ensure switch enclosure is secure

RESPONSIBLE DISPOSAL

Rapidrop recommend that the product needs to be disposed of correctly when the product reaches the end of its life cycle.

• Disposal of business or commercial waste should be in compliance and accordance with government guidance and regulations

• Disposal of electrical waste should be in compliance and accordance with "Waste Electrical and Electronic Equipment recycling" (WEEE)

RoHS Compliant

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