



# Monitored Residential Riser Test and Drain Valve Pre-wired with Model 120 Ball Valve

BS 9251: 2021

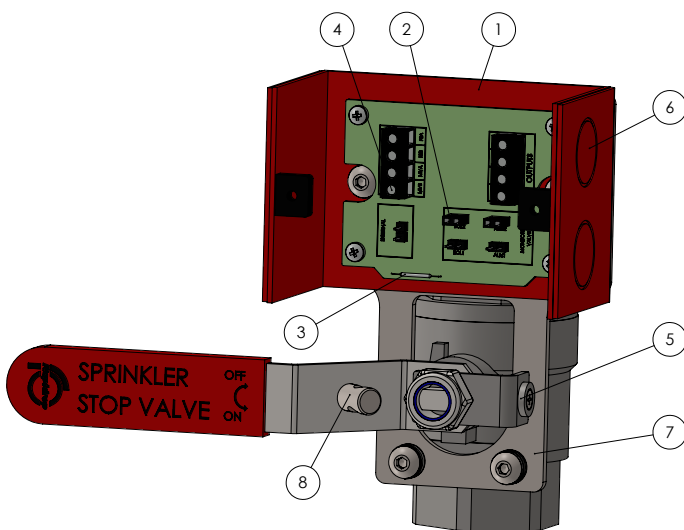
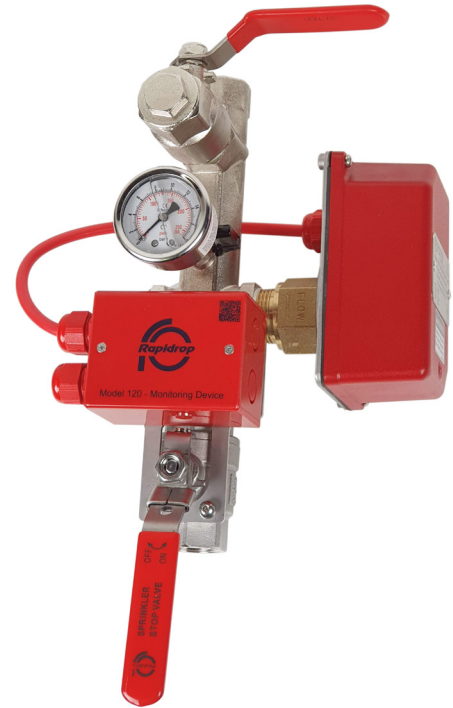
### General Description

Rapidrop innovative Monitored Residential Riser Test and Drain Valve Pre-Wired with Model 120 Ball Valve is 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 prewired for quick and easy installation.
- Lockable isolation valve with padlock locking pin - allows using any size leather strap/padlock up to 5.5mm
- Dual ports enable the flow switch to be mounted on either side (Right handed version standard, specify left handed when ordering if required)
- Full bore test valve
- Factory fitted 18 bar Glycerine filled pressure gauge equipped with isolation valve 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



### Model 120 Ball Valve Features

- IP54 rated (certified) open style enclosure (1) providing easy access for wiring whilst obtaining the maximum IP rating
- Factory fitted 100kΩ EOL & Series resistors specific to FloWatch monitoring system
- Push in resistor connectors for custom rating resistors (2)
- Normally Closed contactless switch for fail-safe operation (Valve in fully open position) (3)
- 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)
- Contactless switch activation (5), no mechanical parts, eliminating the possibility of being tampered with.
- Knock out connectors for M20 cable glands - (6) enabling the wiring connection from either side of the enclosure
- Direct/fixing switch mounting plate (7) preventing false alarms as seen with other style retro-fit brackets. The monitoring device can also be removed/ replaced in situ
- Lockable handle with padlock locking pin - allows using any size leather strap/padlock up to 5.5mm (8)
- Supplied with 2x cable glands for connecting to Flowwatch or other alarm device.
- QR code printed on the enclosure linked to product datasheet for ease of wiring details.



# Monitored Residential Riser Test and Drain Valve Pre-wired with Model 120 Ball Valve

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## 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

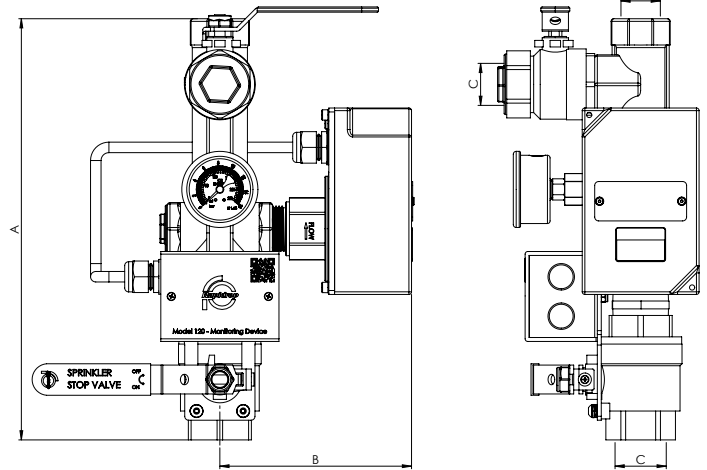
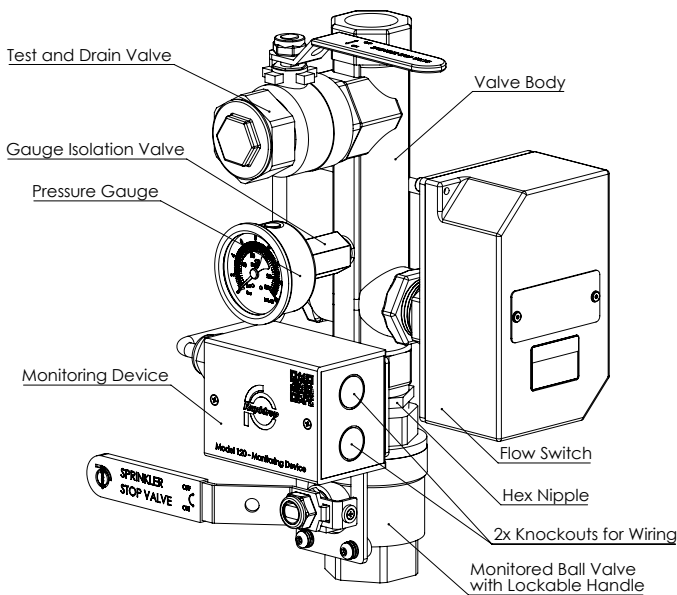
### Potter VSR-S-EU Vane Type flow switch

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

For more information refer to Rapidrop datasheet 2.15

## Model 120 Monitored Ball Valve

- 24V AC/DC
- IP54 - tested and certified as per BS EN 60529: 1992 + A2: 2013



## Dimensions

Riser Size	A	B	C	Ordering Codes
DN25 1"	298	135 ± 5	Rp1 (1" BSP)	RDMPWRESI120025
DN32 1 1/2"	320	140 ± 5	Rp1 1/4 (1 1/4" BSP)	RDMPWRESI120032
DN40 1 1/2"	344	145 ± 5	Rp1 1/2 (1 1/2" BSP)	RDMPWRESI120040
DN50 2"	383	155 ± 5	Rp2 (2" BSP)	RDMPWRESI120050

## Material Specification

No.	Part	Material
1	Residential Riser Body	Brass HPb59-1 Nickel Plated
2	Monitored Ball Valve	Stainless Steel 304
3	Monitoring Switch Enclosure	ABS
4	Gauge Isolation Valve	Brass HPb59-1 Nickel Plated
5	Pressure Gauge	304 Stainless Steel Case
6	Hex Nipple	Brass HPb59-1

## Optional Features

Additional security device of a padlock and alike key set. Compatible with any 6mm padlocks.

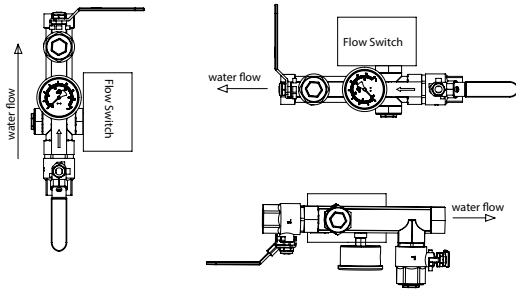
Ordering code: RDPAD25-KA02H

# Monitored Residential Riser Test and Drain Valve Pre-wired with Model 120 Ball Valve

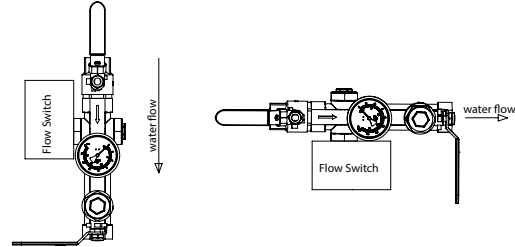
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### Flow Switch Installation Orientation

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.

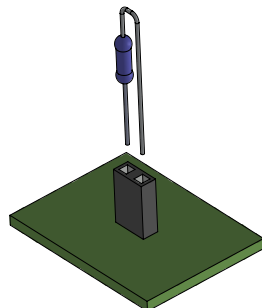
- Ensure correct tools are used for installation, never use grip type tools on the manifold
- Always use pipe sealant compatible with all system components. If in doubts please consult manufacturer's product manual.
- Do not over tighten connecting fittings/components
- Assemble/Restrain the residential 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

**Note:** Rapidrop residential riser assemblies contain internal joints that are factory sealed and pressure tested. Failure to correctly restrain the assembly during installation may damage the seal, lead to leakage and void warranty.

### Installation of resistors

- Refer to the resistor / PCB section for resistor positioning
- Ensure resistor wire engages into resistor terminal block

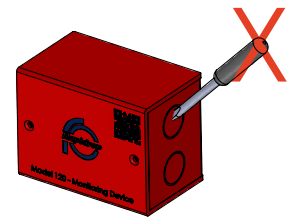
Note: The design of the connection block allows for removal of resistor in situ if required.



Use Resistor wire SWG 22 or SWG 24

### Knock out removal

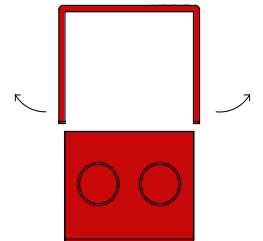
- Always remove knock outs with the lid in place
- Push the knock out through by hand or alternatively cut using a knife
- Never use tools to force knock out through - This may cause damage of the internal PCB



### 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.

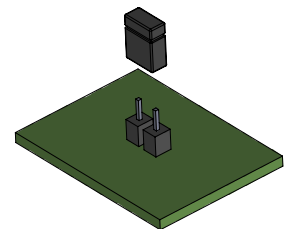
Note: Do not over bend the enclosure lid when lifting outwards



### Connecting to alarm panel

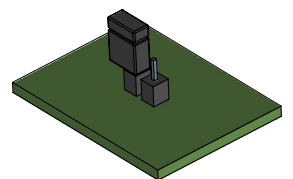
The circuit board is factory fitted with 100kΩ EOL & Series resistors specific to FloWatch monitoring system

To install different rating resistors remove the appropriate jumper and connect the resistor to corresponding pins on the PCB.



### Removal of Jumper

Lift female jumper connector off male connector.



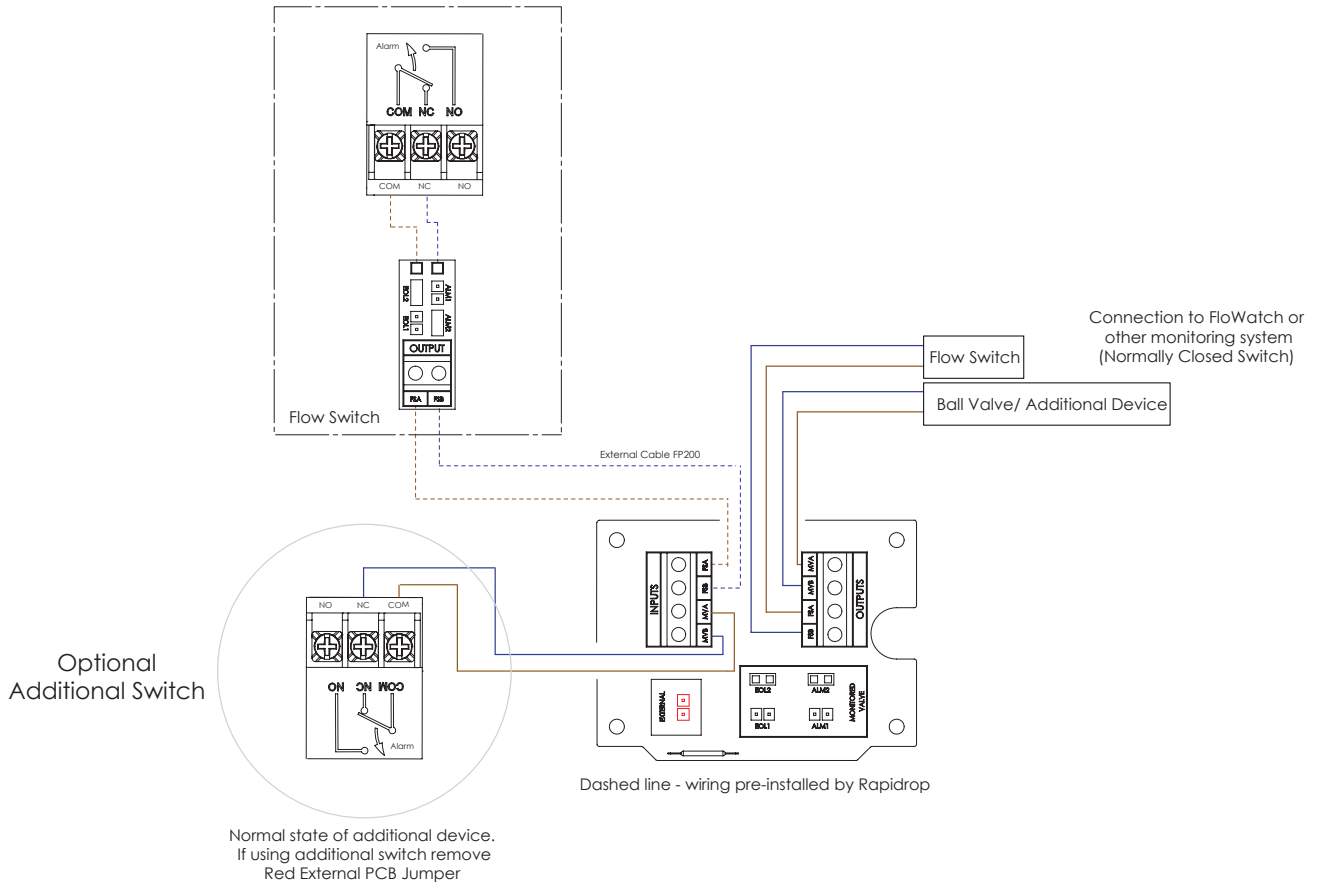
PCB Jumper can be placed onto single pin without affecting the circuit for future use.



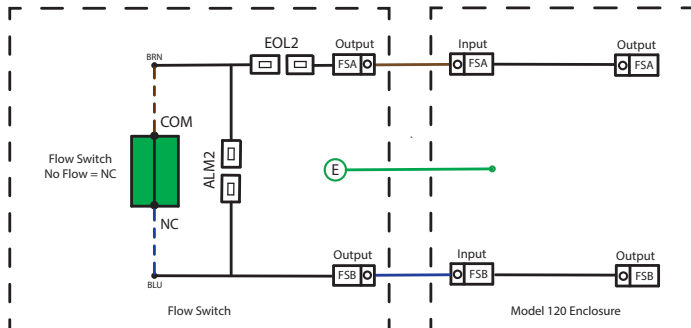
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### Wiring Diagram

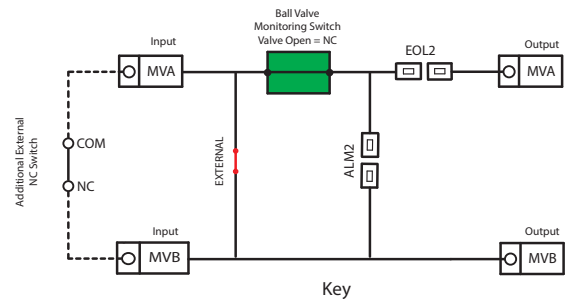


### Flow Switch Circuit Diagram



Coloured Cable - Wired by Rapidrop

### Ball Valve/External Switch Circuit Diagram



= Resistor quick connector

= PCB Circuit

= Terminals

= PCB Jumper



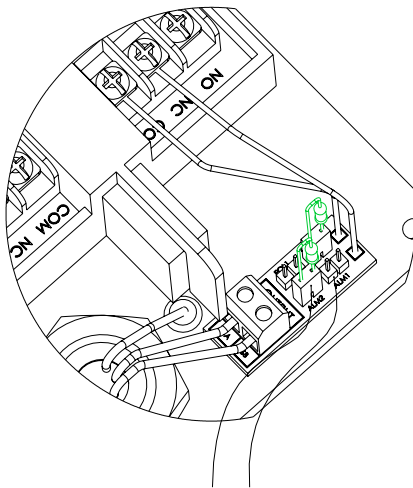
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### Monitoring Flow Switch and Ball Valve as Separate Outputs Resistor/PCB Positioning - Flow Switch

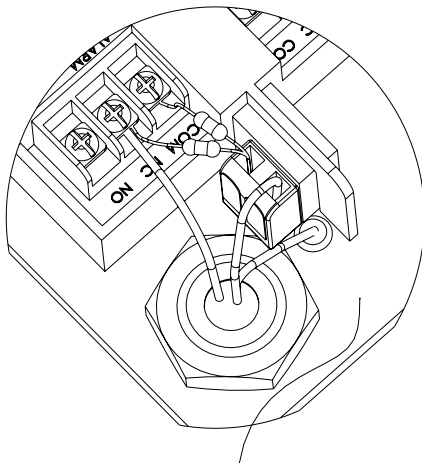
#### Alternative Monitoring System

##### Series resistor installation



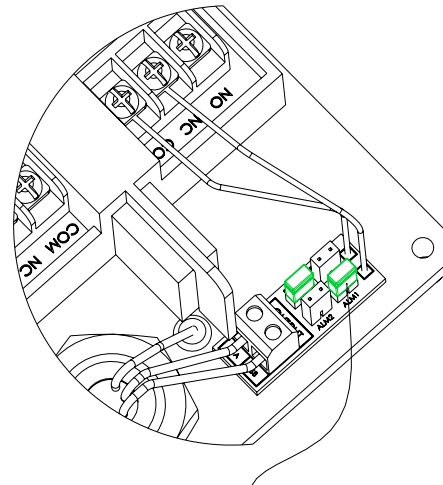
- Remove PCB jumpers (x2) ALM1 & EOL1
- Install relevant resistors (x2) into resistor block ALM2 & EOL2
- Wire as per datasheet

##### Parallel resistor installation



- Remove pre installed PCB
- Rewire FP200 cable and relevant resistors directly to the flow switch terminals

#### FloWatch Monitoring System



- Wire as per datasheet

Note: EOL1 & ALM1 PCB jumpers already pre-installed



Note the Flowswitch is pre-wired normally closed, for normally open circuits re-route existing cables  
Flowswitch PCB can be found within the flow switch enclosure

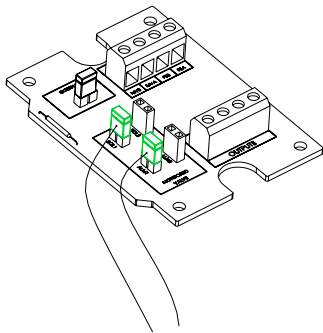
Each alarm/monitoring panel manufacturer require varying size resistors and a specific resistor installation unique to each panel. Refer to the above/below section for various resistor installation

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### Resistor/PCB Positioning - Ball Valve

#### FloWatch Monitoring System



#### FloWatch

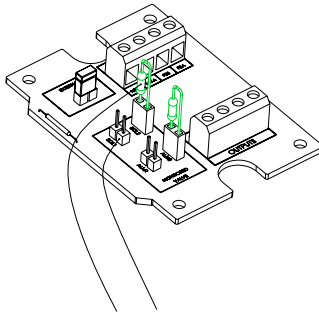
- Wire as per datasheet

Note: EOL1 & ALM1 PCB jumpers are pre-installed



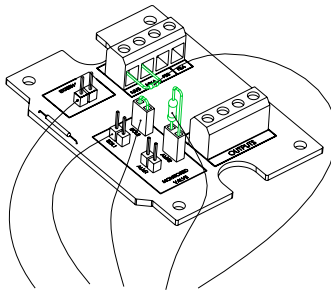
#### Alternative Monitoring System

##### Normally closed circuit Series resistor installation



- Remove PCB jumper (x2) EOL1 & ALM1
- Install relevant resistors (x2) into EOL2 & ALM2
- Wire as per datasheet

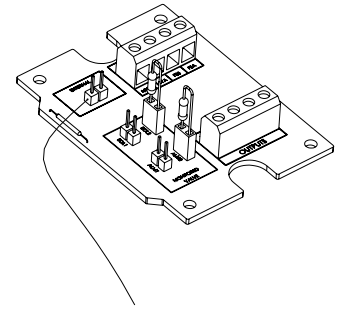
##### Normally closed circuit Parallel resistor installation



- Remove PCB jumper (x3) EOL1, ALM1 & External Switch
- Install link wire (EOL2)
- Install relevant resistors (x2) into resistor block (ALM2) & terminal block (MVA/MVB)
- Wire as per datasheet

#### Additional external input device

(If utilising)



#### Additional External Switch

- Remove red PCB jumper (EXTERNAL)
- Wire as per datasheet

Note: Normally closed circuit to 'common' the input

### 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 to:

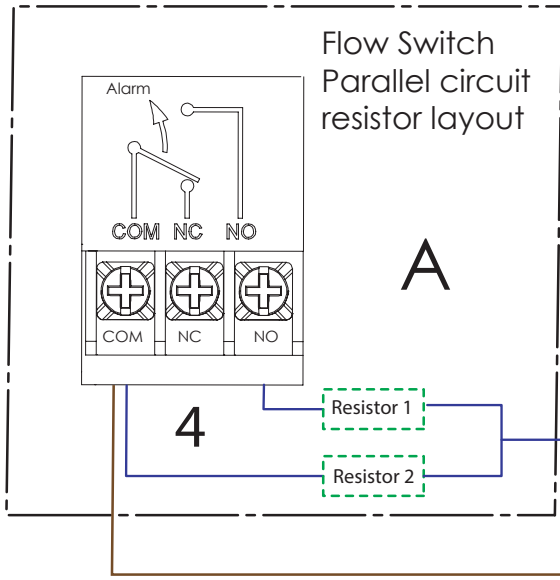
- Verify operation of the tamper switch
- Inspection of magnet (Clean with soapy water if contaminated with external debris)
- Ensure switch enclosure is secure



### Monitored Residential Riser Test and Drain Valve Pre-wired with Model 120 Ball Valve

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Monitoring Flow Switch and Ball Valve as one Output - Zone Connection Parallel and Series Layout



1. Remove PCB jumpers (x3) EOL1, ALM1 & External Switch
2. Install link wire (EOL2)
3. Move flow switch input wires from FSA/FSB to MVA/MVB
4. Remove flow switch PCB and install relevant resistors (x2) inside flow switch enclosure and wire as per diagram (A or B)

