

# **PRIORITY DEMAND VALVE**

## **BS 9251: 2021 fire sprinkler systems**



**WRAS APPROVED VALVES 2.5", 3", 4" and 5"**  
**Complete with failsafe actuator**

WRAS Approved butterfly valve with failsafe return close actuator  
Simple power connection, IP65 enclosure, alarm relay, valve position indication

- **WRAS approved** butterfly valve
- **Failsafe** return to closed in fire or power cut
- **Pre-wired** 24Vdc detection circuit
- **Power good** LED
- **Alarm relay** with power good LED
- **Valve position** LEDs
- **Simple installation**—3 amp plug
- **Valve cable** protected in M20 conduit
- **For domestic valves/ smaller sizes** see separate data sheet)
- **Smoked lid** controller
- **Labels** clearly define instructions
- **IP 65** protective conduit to the valve



### **LOGIC OF OPERATION**

Grifen offer you this turnkey product that returns to the failsafe closed position in the event of; power failure, flow or tank low level. The system can monitor the conditions with an alarm contact.

Actuators can be used to turn a butterfly valve, however they will stop in their last position, which for this application will be nominally open and therefore unsafe- we take that problem away and make sure your valve can close in a fire and a power fault.

**Low level failsafe** -A low level water tank detection circuit can be connected in series, this will ensure the valve shuts failsafe if the tank goes low (a fire alarm can be silenced but the valve will still close), the alarm contact will change state.

Grifen have been suggesting a tank low level closure for the PDV for years. We have also been suggesting a small lockable bypass.

Your could call the new BS 9251: 2021 the Grifen standard.

Our 3D modelled video will show how we have led the way.

## Fitting

The valve should be fitted between WRAS approved PN16 flanges. The controller is supplied with a simple wall mounting bracket with a flying lead and plug for simplicity (connect to a fused spur/ isolator/ IP rated lockable plug socket). Mains voltage is supplied to the valve and is within conduit.

The sprinkler flow switch must have a delay mechanism.

The mechanical delay is designed to prevent false activations of the valve and can be set easily on site

The installer also needs to install 2.5mm 2 core FP200 fire rated cable between the Grifen controller and the installed flow switch/ low level.

## Alarm condition

The system is fitted with an alarm contact for valve closed (power fail/ flow / low level).

**Domestic supply** The butterfly valve opens and closes slowly to reduce water hammer

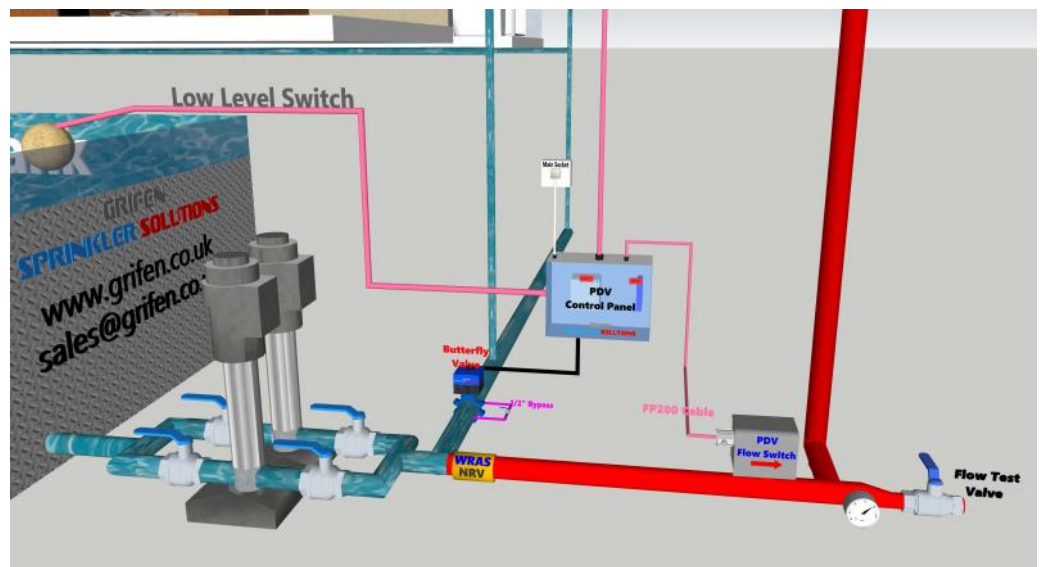
## Bypass arrangement

We recommend that a small bypass is fitted around the butterfly valve in order that if power is lost, some water will be available to the property for drinking/ slow refill of cisterns.

This 1/2" bypass should be should be locked closed



Control box with labels and LEDs



Building and install schematic

## Testing and service life

Grifen sprinkler solutions recommends that the butterfly valve is operated quarterly to check operation. To do this power should be cut at the fused spur/ lockable isolator and correct function noted/ trigger the flow switch.

This system complies with the rules for PDVs for BS 9251: 2021.

Electric actuators are considered as parts of machines, and therefore are CE marked as complying with the machinery equipment directive 2006/42/CE.

The valves comply with Directive 97/23/CE pressure equipment directive but are excluded from being CE marked due to exclusions within the standard.

The electrics within the system comply with the low voltage directive 2014/35/EU and are CE marked as such.

## Advice

We understand this valve can be a that crosses between industries.

We are here to help and welcome any questions you may have.

It is imperative your booster set complies in full with all of BS 9251: 2021 and the Machine Directive for use when pumps are on full demand with a closed valve/ low flow condition.



The Valve requires M16 bolts

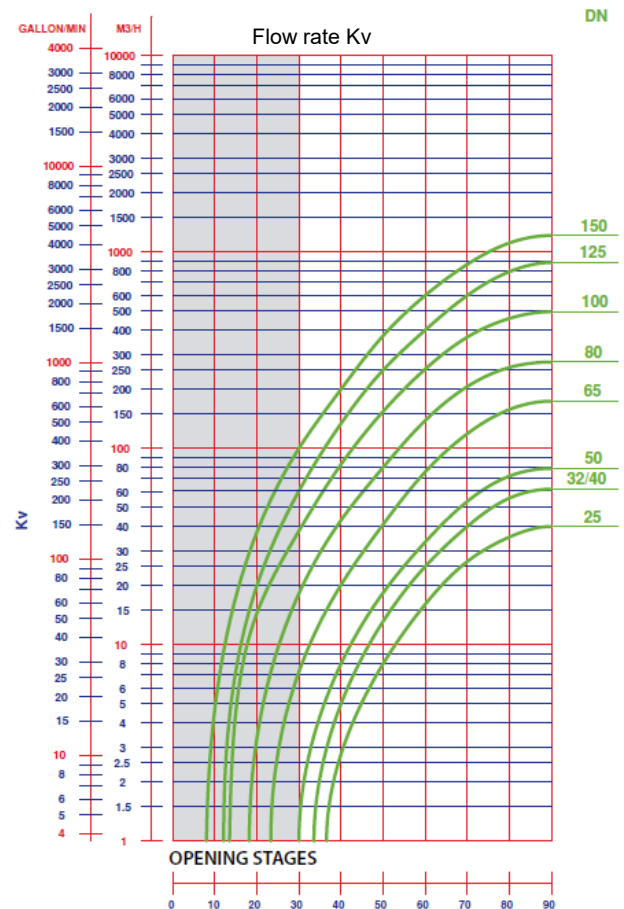
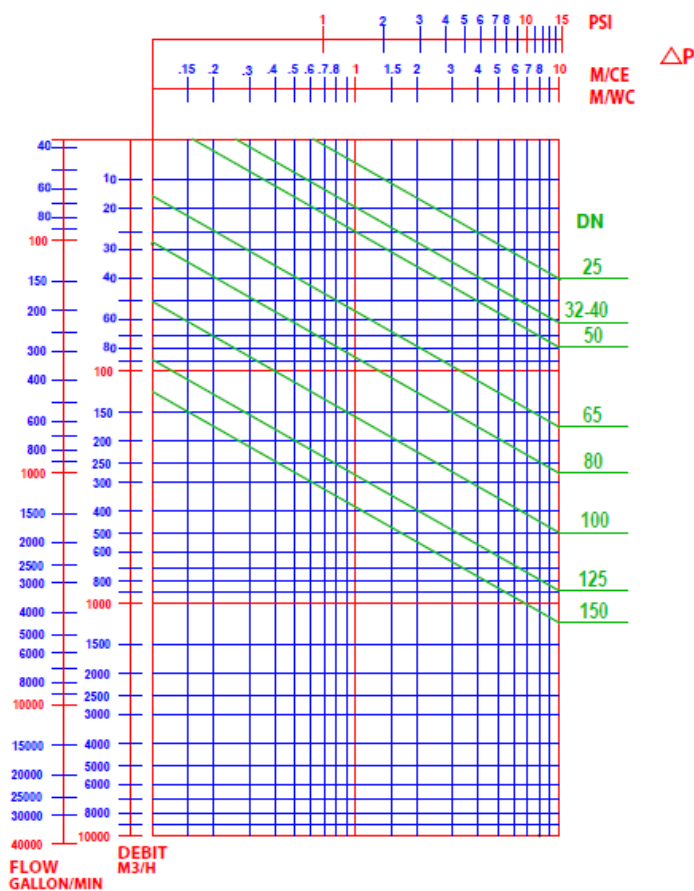
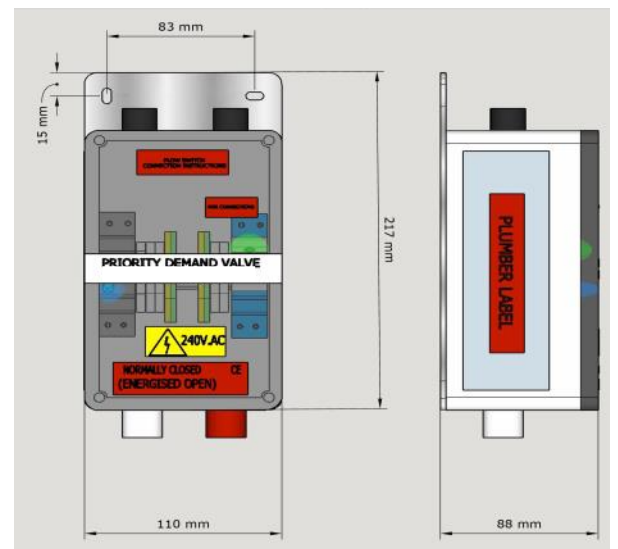
Face to Face dimensions

2.5" 46mm  
3" 46mm  
4" 52mm  
5" 56mm

Centre, Actuator LED and position indicator.

Wiring instructions are printed on the controller

Right, Controller dimensions



The tables show head loss and the flow rate through the various valve sizes in Kv

Kv = volume of water in m3/hour through a valve at a preset opening stage with a head loss of 1 bar.

Although the table shows all valves available, we supply WRAS approved solenoids from 1/2" to 2" for simplicity and cost effectiveness

### Technical Data: Butterfly Priority Demand Valve

#### Operating Conditions

Pressure range: 0-16 bars (higher available)

Potable water

Temperature

1°C to 40°C

#### Electrical

Supply 230VAC, 50Hz Link FP200 from controller to sprinkler flow switch (24VDC low voltage supplied)

#### Connections

Between PN16  
WRAS flanges

**GRIFEN sprinkler solutions**

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