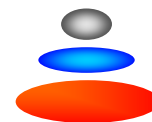


PRIORITY DEMAND BUTTERFLY VALVE



FAILSAFE OPERATION

GRIFEN sprinkler solutions

Pre-wired priority demand valve kit for domestic & residential BS9251 2014 fire sprinkler systems and associated cold water potable supply.

Includes a WRAS Approved butterfly valve with failsafe return close actuator, simple power connection, IP65 enclosure, alarm contact.

To operate simply link to the sprinkler flow switch with time delay to this controller

SPRINKLER REGULATIONS

Mains fed sprinklers—to cut off the household supply in a main fed system (*very important that stated duty at the original flow test is not compromised in real life by a washing machine etc— if it is you have to fit one of these valves to comply with **BS9251 2014 RULE 5.8.3.2** Design flow rate for mains water supply connections c) for category 1 systems the flow rate determined by 5.3.3 plus at least 25 L/min*

Pumped system—to enable sprinkler tank infill at the maximum flow rate

Combined sprinkler/ main boosted supply— to cut off the building potable water supply **BS9251 2014 RULE** for category 2 and 3 systems (see 4.3), the flow rate determined by 5.3.3 plus the design demand for the residency **plus at least 50 L/min.**

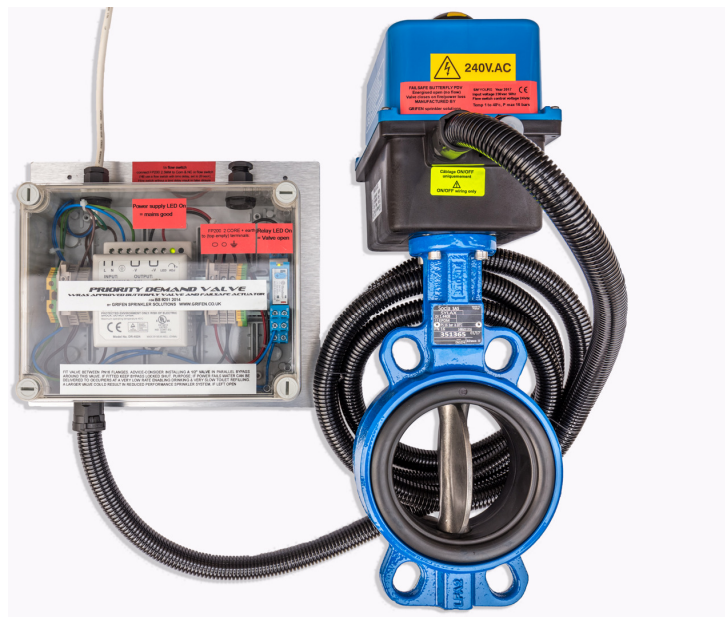
When required this can connect to the sprinkler system/ pump flow switch so that the domestic water supply is shut off in the event of a fire.

BS9251 2014 rules description

3.13 "valve for isolating the supply to the domestic supply in the event of sprinkler activation"

The valve is fitted in the domestic supply, the control is the flow switch in the sprinkler pipe, you simply connect FP200 fire rated cable to the connection points in our box and it does the rest

- **WRAS approved**—butterfly valve
- **Failsafe - return to closed in fire or power cut**
- **Pre-wired**—24Vdc detection circuit, IP55 rated
- **Power good LED**
- **Power failed relay SPDT with power good LED**
- **Simple installation**— 3 amp plug provided on power cable
- **Sizes**—2.5" to 6" (solenoids for smaller sizes- see separate data sheet)



LOGIC OF OPERATION

Grifen sprinkler solutions offer you this turnkey product that returns to the failsafe closed position in the event of a power failure or flow switch operation (a fire/ sprinkler test). The system can monitor that condition with an SPDT 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

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A butterfly priority demand valve supplied by Grifen sprinkler solutions requires a 3 amp fused spur and a flow switch installed in the fire sprinkler system pipe-work.

The flow switch must have a delay mechanism, manufacturers such as Potter and System Sensor should be used. The mechanical delay is designed to prevent false activations of the valve and can be site set, typically from zero to 60 seconds

The installer also needs to install FP200 or similar fire rated cable between the Grifen controller and the installed flow switch.

Once fitted the butterfly valve will slowly open and will slowly close to reduce water hammer, on power loss or flow from the sprinkler system, cutting off the domestic supply.

WRAS approval

The valves are WRAS approved and are suitable to be fitted in the potable supply, the valve should be fitted between PN16 flanges (options available)

Alarm condition

The system is fitted with a power trouble alarm, enabling trouble to be detected

Bypass arrangement

We recommend that a small bypass is fitted around the butterfly valve in order that if it should fail, some water will be available to the property for drinking/ slow refill of cisterns. This bypass should be much smaller than the valve chosen and should be locked closed

Isolation valves

You should perhaps consider the viability of secondary isolation to these valves. If providing sections to the building it is worth considering the what if it fails? A secondary valve would prevent the full shut down of the entire potable system

Testing and service life

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

Understanding

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) The mains voltage powering the valve is within conduit and the interface box comes with a simple bracket than can be cable tied to your water distribution pipe, keeping the installation quick, neat and compliant.

Compliance

This system allows you to comply with BS9251, and have a safe system beyond that described in that standard, relying on our knowledge and expertise to keep occupants safe.

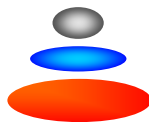
Electric actuators are considered as parts of machines, and therefore are CE marked as complying with the machinery equipment directive 2006/42/CE

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

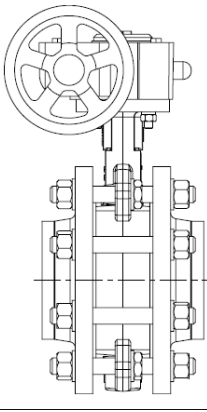
Advice

We understand this valve can be a minefield as involve purchasing and installing a valve that crosses between two industries. We are here to help and welcome any questions you may have



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Note : Bolts and nuts are not part of our standard supply.

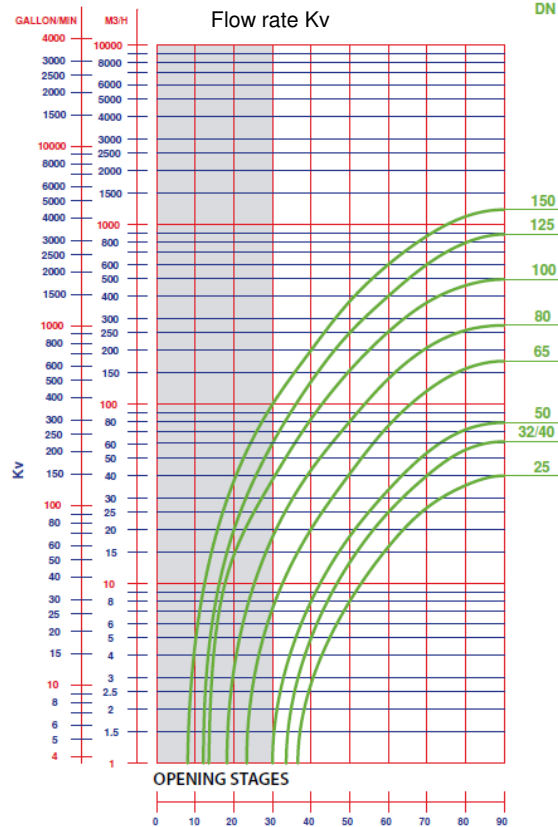
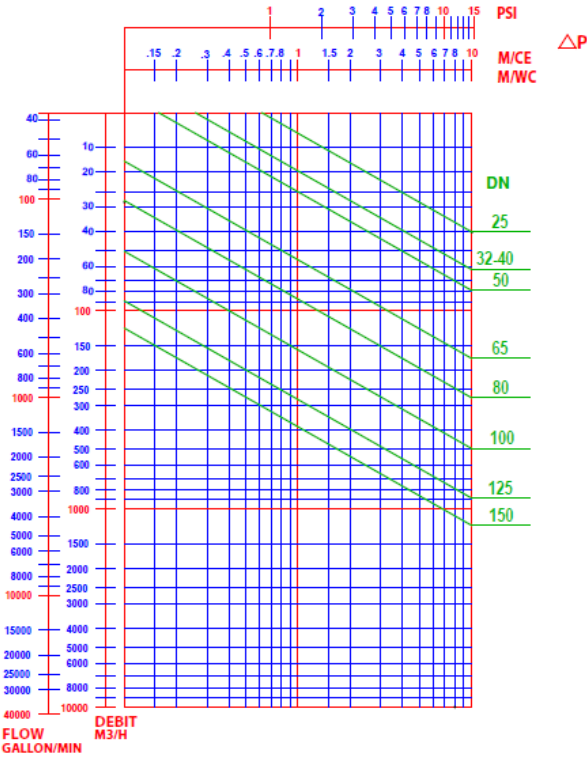
DN	NPS	a	e	EN 1092 PN6		EN 1092 PN10		EN 1092 PN16		EN 1092 PN25		ASME / ANSI B16.5 Class 150				
				*Nb rods or Nb SCREW	ØV	*Nb rods or Nb SCREW	ØV	*Nb rods or Nb SCREW	ØV	*Nb rods or Nb SCREW	ØV	*Nb rods or Nb SCREW	ØV Metric	ØV UNC**	c	
25	1	32	—	4	M10	16	4	M12	18	4	M12	18	4	M14	1/2"	18
32/40	1 ^{1/2}	32	14	4	M12	18	4	M16	24	4	M16	24	4	M14	1/2"	18
50	2	43	18	4	M12	18	4	M16	24	4	M16	24	4	M16	5/8"	24
65*	2 ^{1/2}	46	20	4	M12	18	8*	M16	24	8*	M16	24	8	M16	5/8"	24
80	3	46	20	4	M16	24	8	M16	24	8	M16	24	8	M16	5/8"	24
100	4	52	24	4	M16	24	8	M16	24	8	M20	26	8	M16	5/8"	24
125	5	56	26	8	M16	24	8	M16	24	8	M24	32	8	M20	3/4"	26
150	6	56	26	8	M16	24	8	M20	26	8	M24	32	8	M20	3/4"	26

* For flanges in cast or ductile iron 4 holes M16 and for flanges in steel 8 holes M16 on the same drilling circle.

This table provides information regarding the bolt and flange kits you will require to fit the valve in your pipeline system.

The tables below show flow rates and head loss. Please bear in mind that this information is for the potable source of water not the sprinkler system.

Head loss diagram (Δp)



OPENING STAGE - Stainless steel disc

DN	10°	20°	30°	40°	50°	60°	70°	80°	90°
25	-	-	-	3	8	16	27	35	40
32/40	-	-	-	5	12	25	40	56	62
50	-	-	1	8	18	33	54	71	79
65	-	-	6	19	41	76	118	158	174
80	-	3	18	43	79	138	211	252	275
100	-	15	38	83	154	253	368	458	496
125	-	20	61	134	249	399	599	792	883
150	5	37	100	200	374	600	863	1109	1212

The table left shows 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.

The valve is not used for throttling service and is designed simply to shut if flow is detected in the sprinkler system.

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- failsafe return

Operating Conditions			
Pressure range: 0-16 bars (higher available)	Potable water	Temperature	4°C to 50°C
Electrical	Supply 230VAC, 50Hz Link FP200 from controller to sprinkler flow switch (24VDC low voltage supplied)		
Connections	Between PN16 flanges		

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