

**Product Codes:**

½" DFV-15

¾" DFV-22

1" DFV-28

# DANFOSS SOLENOID SHUT OFF VALVES (½" TO 1")



## Product Specification

Range of **Danfoss WRAS approved, Normally Closed** (power to open), pilot operated, brass solenoid shut off valves, controlled by an on/off switch, a time switch or by a **PIR sensor** switch for **BREEAM** credits.

These **230 VAC solenoid shut off valves** enable a water supply to be turned on or off in response to an electrical signal. Our standard valves are **Normally Closed** – which means that they are closed when de-energised (fail safe) and open when energised.

Please read instructions carefully before installation, we recommend the fitting of a gauze strainer to the inlet to prevent ingress of debris into the valve.



## Specification

- 2/2 NC Normally Closed (fail safe) operation
- Available in sizes from ½" to 1" BSP female thread
- Minimum pressure 0.3 bar
- Maximum pressure 10 bar working (15 bar max)
- Maximum temperature 90°C
- 230/240 V coil – other AC & DC coil voltage options available
- WRAS approved with EPDM sealing; 0 to 90 °C
- Equipped with clip on coil for dry and humid environments
- 12-month manufacturer's warranty
- Enclosure: IP65 rated



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Designed & Manufactured  
in the UK



# Solenoid Shut Off Valve

## Technical Specification

Compact indirect servo-operated 2/2 way solenoid valves, especially designed for use within a limited space.

### Overview

|                                   |              |
|-----------------------------------|--------------|
| Body Material                     | Brass        |
| DN (mm)                           | 15 to 28     |
| Connection                        | G3/8" to G2" |
| Sealing Material                  | EPDM, NBR    |
| K <sub>v</sub> [m3/h]             | 1.6 to 32    |
| Differential pressure range [bar] | 0.2 to 10    |
| Temperature range [°C]            | -30 to 100   |

### Materials in Contact with Fluid

|                                                      |                    |
|------------------------------------------------------|--------------------|
| Valve body/cover                                     | Brass              |
| Armature/armature stop,<br>Armature tube and Springs | Stainless<br>Steel |
| O-ring, Valve plate and Diaphragm                    | EPDM               |

#### Notes:

Sealings: EPDM = Ethylene-propylene elastomer (WRAS/KTW certified compound)

- Operation with gaseous media, at high pressure without any outlet restriction, can reduce the diaphragm life.

### Coil

Standard Coil supplied - 230 V, 50/60 Hz, 8 W

Coils available in various voltages and specifications, please enquire for full details of range and product offerings.

### Function

#### Coil voltage disconnected (valve closed)

When voltage is disconnected, the armature spring (2) presses the armature (3) down against the pilot orifice (4). Pressure builds up over the diaphragm (5) via the equalizing orifice (6). The diaphragm closes the main orifice (7) as soon as the pressure over the diaphragm equals the inlet pressure. The valve stays closed for as long as voltage remains disconnected.

#### Coil voltage connected (valve open)

When voltage is applied to the coil (1), the pilot orifice (4) is opened. Since the pilot orifice is larger than the equalizing orifice (6), pressure over the diaphragm (5) falls and the diaphragm is lifted clear of the main orifice (7). The valve stays open for as long as the required minimum differential pressure is present and voltage is applied to the coil.



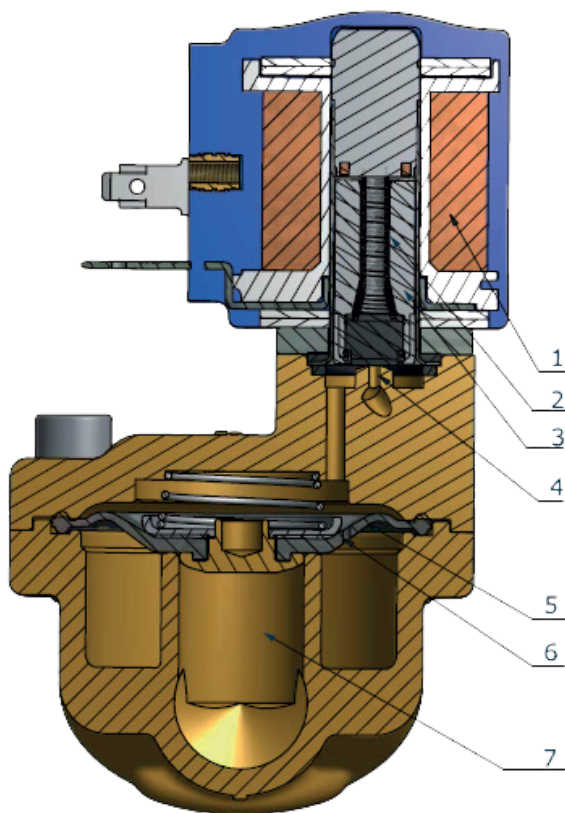
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- |          |                 |          |                    |
|----------|-----------------|----------|--------------------|
| <b>1</b> | Coil            | <b>5</b> | Diaphragm          |
| <b>2</b> | Armature Spring | <b>6</b> | Equalising orifice |
| <b>3</b> | Armature        | <b>7</b> | Main Orifice       |
| <b>4</b> | Pilot Orifice   |          |                    |

## Applications

It is recommended to use a filter in front of the valve. Recommended filter 50 mesh (297 microns).

In water applications, exercise the valves at least once every 24 hours, meaning change the state of the valve. The valve exercise will minimise the risk of the valve sticking due to calcium carbonate, zinc or iron oxide build-up.

To minimise scaling, and corrosion attack it is recommended that the water passing the valve have the following values:

- Hardness 6 to 18 °dH to avoid scaling (chalk / lime stone build up).
- Conductivity 50 to 800 µS/cm to avoid brass dezincification and corrosion.
- Above 25 °C media temperature avoid stagnant water inside the valve to avoid dezincification and corrosion attack.



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|                                          |                                     |                                                                   |
|------------------------------------------|-------------------------------------|-------------------------------------------------------------------|
| Media                                    | EPDM                                | For water and drinking water (WRAS approvals)                     |
| Media temperature [°C]                   | EPDM NC WRAS approved               | 0 to 90 °C                                                        |
| Ambient temperature [°C]                 | -40 to 50 °C                        |                                                                   |
| K <sub>v</sub> [m <sup>3</sup> /h]       | ½" DFV-15<br>¾" DFV-22<br>1" DFV-28 | 4 m <sup>3</sup> /h<br>7 m <sup>3</sup> /h<br>7 m <sup>3</sup> /h |
| Min. Opening differential pressure [bar] | 0.3 bar                             |                                                                   |
| Max. Opening differential pressure [bar] | 10 bar                              |                                                                   |
| Max. working pressure [bar]              | 10 bar                              |                                                                   |
| Max. test pressure [bar]                 | 15 bar                              |                                                                   |
| Viscosity [cSt]                          | Max. 50 cSt                         |                                                                   |



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