

Filter-check valve

with screw-in case G¹/₄ in degree of protection IP 65/66 or NEMA 4 for pneumatic and electropneumatic instruments

General

The filter-check valve is installed in the exhaust air connection of pneumatic and electropneumatic instruments (see "Notes of application") in order to ensure operational reliability of these instruments under rough service conditions. It prevents dust and jet-water from entering the instrument, independent of its installation position.

The filter-check valve has the following special features:

- Applicable for instruments with an exhaust air pressure ≤ 2.5 bar
- Screw-in case G¹/₄ made of stainless steel (WN 1.4305) or polyamide
- Degree of protection IP 65/66 or NEMA 4 when installed in the instrument
- Ambient temperature $-45 (-20) \dots +80^\circ\text{C}$

Function

The filter-check valve consists of a diaphragm ① and a filter plate ②, which are housed in a screw-in case. The air exhausted from the instrument in which the filter-check valve is installed flows via diaphragm ① through the filter plate ② into the atmosphere. In the opposite direction, diaphragm ① closes the exhaust air connection, thus preventing dust and jet-water from entering the instrument.

Technical data

Order no.	1790-7253	9646	7408	9645
Medium	Instrument air, free of corrosive particles			
Exhaust air pressure p_A	≤ 2.5 bar			
K_{VS} value ¹⁾	1.1 Note: When the filter-check valve is installed, make sure that the back-pressure produced does not impair proper functioning of the instrument (see "Notes of application").			
Installation position	Arbitrary Note: Make sure that the filter plate cannot be covered by dirt, snow etc. when the instrument is installed in the open air.			
Connection	G ¹ / ₄			
Tightening torque	≤ 6 Nm		≤ 4 Nm	
Material				
Diaphragm	Silicone rubber ²⁾ , not varnish-resistant			
Filter plate	Polyethylene, average pore size 80 μm			
Screw-in case	WN 1.4305		Polyamide	
Ambient temperature	$-45 \dots +80^\circ\text{C}$		$-20 \dots +80^\circ\text{C}$	
Degree of protection	IP 66	NEMA 4	IP 65	NEMA 4
Weight approx.	30 g		10 g	

- 1) The air flow at $p_1=2.4$ bar and $p_2=1.0$ bar can be calculated according to the following equation: $Q = K_{VS} \times 36.22$ in m^3/h .
- 2) For silicone-free applications, a filter made of polyethylene with a metal protective cover, connection G¹/₄, degree of protection IP 65, is available (Order no. 1099-1103).



Fig. 1

Circuit symbol

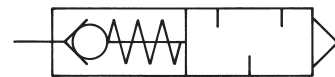


Fig. 2

Functional diagram and dimensions

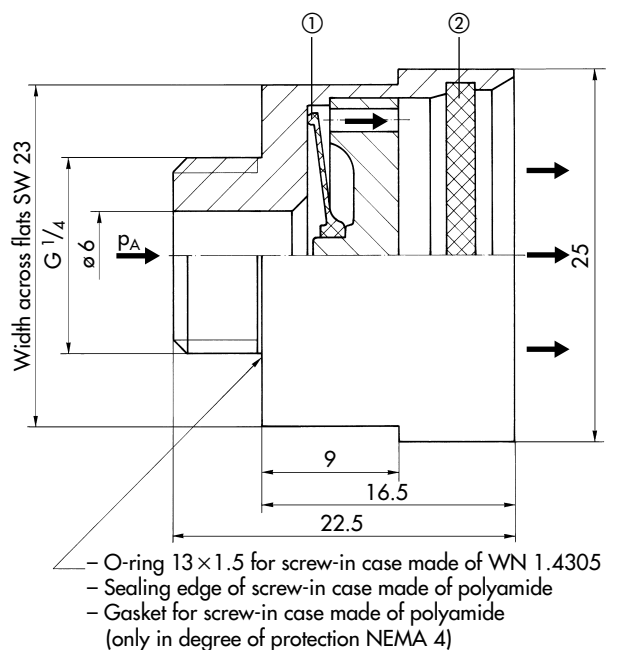


Fig. 3 · Dimensions in mm

Notes of application

The filter-check valve can be used for the following instruments:

- Solenoid valves (e.g. Types 3701, 3963 and 3966)
- i/p converters (e.g. Types 6116 and 6126)
- p/i converters (e.g. Type 6134-04)
- Pneumatic positioners (e.g. Types 3766 and 4765)
- Electropneumatic positioners (e.g. Types 4763, 3767, 3725 and 3730)
- Limit switches (e.g. Type 3776)

If the pressure and the flow rate of the air exhausted from the instrument to be protected are unknown, it is possible to check that the installed filter-check valve does not impair proper operation of the instrument. This can be done as follows:

1. Connect the filter-check valve and a pressure gauge to the exhaust air connection of the instrument, using a tee.
2. Switch on the supply air and adjust this to the instrument's operating pressure.
3. Place the instrument in the position at which the largest exhaust air flow is produced.
4. Then, with the instrument in this position, check whether the instrument functions properly and the exhaust air pressure does not exceed 2.5 bar.

Ordering data

Filter-check valve with screw-in case G 1/4
made of WN 1.4305, degree of protection IP 66

Order no. 1790-7253

made of polyamide, degree of protection IP 65

Order no. 1790-7408

made of WN 1.4305, degree of protection NEMA 4

Order no. 1790-9646

made of polyamide, degree of protection NEMA 4

Order no. 1790-9645

Spare parts

O-ring 13 × 1.5 made of NBR

(for screw-in case G 1/4 made of WN 1.4305)

Order no. 8421-0327

Gasket made of ECO

(for screw-in case G 1/4 made of polyamide,

degree of protection NEMA 4)

Order no. 0430-2807

(Specifications subject to change without notice.)

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