

DFC 17B, 27B: Heavy-duty pressure switch

How energy efficiency is improved

Demand-led controlling and monitoring; no external energy source required.

Areas of application

For regulating and monitoring pressures in liquids, gases and vapours. Especially suitable for equipment that is subject to vibrations.

Features

- Pressure range: -1 to +80 bar
- Contact rating: 1 mA, 6 V to 10 A, 400 V
- Up to 110 °C media temperature
- Gold-plated silver contacts
- Upper and lower switching points can be set independently
- Sealable
- Complies with DGRL 97/23/EC, Cat. IV

Technical description

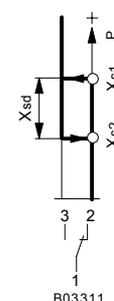
- Light-alloy housing with transparent cover
- Splash-proof
- Ambient temperature: -40 to +70 °C
- IP 54 or IP 67 available
- Brass sensor or stainless-steel for aggressive media



T03514



Y03262



B03311

Type	Setting range bar	Min. switching diff. bar	Max. sensor values bar	Max. sensor values °C	Weight kg
Pressure sensor of brass for non-aggressive media					
DFC 17B30 F001	0...0,4	0,035	10	70	1,7
DFC 17B36 F001	0...1,5	0,04	10	70	1,7
DFC 17B39 F001	-1,0...1,5	0,08	10	70	1,8
DFC 17B54 F001	0...2,5	0,14	16	70	1,2
DFC 17B58 F001	0...6,0	0,18	16	70	1,2
DFC 17B59 F001	-1,0...5,0	0,20	16	70	1,2
DFC 17B76 F001	0...10	0,5	40	70	1,1
DFC 17B77 F001	10...20	0,6	40	70	1,1
DFC 17B78 F001	0...16	0,5	40	70	1,1
DFC 17B79 F001	16...32	0,8	42	70	1,1
DFC 17B96 F001	0...25	1,7	100	70	1,0
DFC 17B97 F001	25...50	2,0	100	70	1,0
DFC 17B98 F001	0...40	1,8	100	70	1,0
DFC 17B99 F001	40...80	2,4	105	70	1,0
Pressure sensor of stainless steel for aggressive media					
DFC 27B26 F002	-1,0...2,5	0,3	21	110	0,9
DFC 27B43 F002	0,5...6,0	0,3	21	110	0,9
DFC 27B46 F002	1,0...10	0,3	21	110	0,9
DFC 27B52 F002	2,0...16	0,3	21	110	0,9

Contact rating	Degree of protection	IP 44 (EN 60529)
as silver contacts ¹⁾ for higher loading		IP 54 ³⁾ , IP 67 ⁴⁾
max.	10(2) A, 400 V~ (25 W), 250 V=	Protection class
min.	100 mA, 24 V	I (IEC 60730)
as gold contacts ²⁾ for lower loading		Test marking ⁵⁾
max.	200 mA, 50 V	DWFS (SDBF)
min.	1 mA, 6 V	DWFS (SDB)
Permissible vacuum loading	-1,0 bar	DB (SDBF)
Type B30; B36; B54	-0,7 bar	PED
Permissible ambient temp.	-40...70 °C	Wiring diagram
		Dimension drawing
		Fitting instructions
		DFC 17 DFC 27
		A01499 A01499
		M259344 M259344
		MV 2275 MV 2284

1) If under inductive load, take RC circuit into account

2) If the contacts are ever loaded higher than 200 mA, 50 V, the gold plating will be damaged. The contacts are then classed only as silver contacts, since they lose the properties of gold contacts

3) IP 54 with 0233310 000

4) IP 67 is available as a variant on request

5) Certificates can be downloaded from www.tuv.com



Variants (otherwise as standard version)

DFC 17B76 F021	Degree of prot. IP 67; alu. cover with inspection glass; cable screw fitting Pg 13,5
DFC 27B26 F062	Degree of prot. IP 67; alu. cover with inspection glass; cable screw fitting Pg 13,5
DFC 27B46 F062	Degree of prot. IP 67; alu. cover with inspection glass; cable screw fitting Pg 13,5
DFC 17B54 F211	Limiter; locks mechanically when pressure falls
DFC 17B58 F211	Limiter; locks mechanically when pressure falls
DFC 17B78 F211	Limiter; locks mechanically when pressure falls

Accessories

0044529 000	Plug spanner for the setting screws.
0192222 000*	Cap nut with soldering nipple.
0259239 000*	Adaptor G½ to 7/16" 20-UNF-2A for connecting copper tubing of Ø 6 mm, brass.
0311572 000*	Screw connection for connecting copper tubes of Ø 6 mm, brass.
0035465 000	Throttling screw for damping pressure surges; brass.
0214120 000	Throttling screw for damping pressure surges; stainless steel.
0192700 000*	1 m of capillary tubing for damping pressure surges; copper.
0114467 000*	1 m of capillary tubing for damping pressure surges; steel.
0233310 000	Aluminium cover with window (with accessory 0259299 000 = IP 54)
0292018 001*	Damping screw for arresting pressure surges in low-viscosity media. Stainless steel.
0259189 000*	Bracket for off-wall mounting (already supplied with DFC 17 B 30 - 59).
0259409 000*	Bracket (for 3-point fixing when used with 0259189).
0259299 000	Cable screw fitting Pg 13,5.
0292019 001	Setpoint setting per switching point according to customer's specification (\pm 3% of the setting range).
0292019 002	Sealed set screw for each switching point (with accessory 0292019/001 only)
0381141 001*	Sealing ring of copper for G½"

*) Dimension drawing or wiring diagram are available under the same number

Operation

Whenever the pressure exceeds the upper switching point (which can be set on the right-hand scale), the contacts switch over from 1-2 to 1-3.

When the pressure falls below the lower switching point (which can be set on the left-hand scale), the contacts switch over from 1-3 to 1-2.

The vibration-proof snap-action switch has a pre-loaded spring which prevents the change-over mechanism from operating until the switching point has been attained. This ensures that the contacts remain fully closed right up to the switching point, even if operation is very slow.

Engineering and fitting notes

The pressure limiters conform to European regulation 97/23/EEC on pressure equipment and, as safety components, belong to equipment category IV. They are approved for liquids and gases that are covered by the areas of usage stated in DIN 3398, Part 4. The devices also comply with low-voltage regulation 2006/95/EC and EMC regulation 2004/108/EC. They can be used as assemblies in accordance with machine regulation 89/37/EEC Appendix II.B.

These devices can be employed as safety pressure limiters (SDBF) for falling pressure if an electric interlock circuit (see examples of use) is used and the requirements in DIN 57116/VDE 0116 have been fulfilled. The electrical equipment must comply with VDE 0660 or VDE 0435.

Types with TÜV approval

DFC 17 B30...99 F001 as pressure controller for steam generators and hot-water boilers.

DFC 17 B54, 58, 78, 79 F001 with external electric locking facility as minimum pressure limiter.

DFC 17 B54, 78, 79 F211 as minimum pressure limiter with mechanical locking facility.

Additional details

Materials which come into contact with the medium: brass, stainless steel and nitril rubber on the DFC 7 (pressure sensor of brass); stainless steel and material nos. 1.4104 and 1.4541 on the DFC 27 (pressure sensor of stainless steel).

Additional technical data

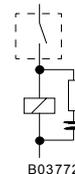
Complies with:-	
Directive 2006/95/EC	EN 60730-1/ EN 60730-2-6
EMC directive 2004/108/EC	EN 61000-6-1/ EN 61000-6-2 EN 61000-6-3/ EN 61000-6-4
PED 97/23/EEC, Cat. IV	Pressure 100/1 DIN 3398 T4

Technical notes

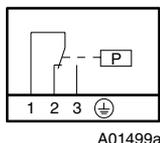
RC circuit under inductive load

For the optimum RC circuitry, refer to the specifications supplied by the manufacturers of the relays, contactors etc. If these are not available, the following rule of thumb can be applied in order to reduce the inductive load:-

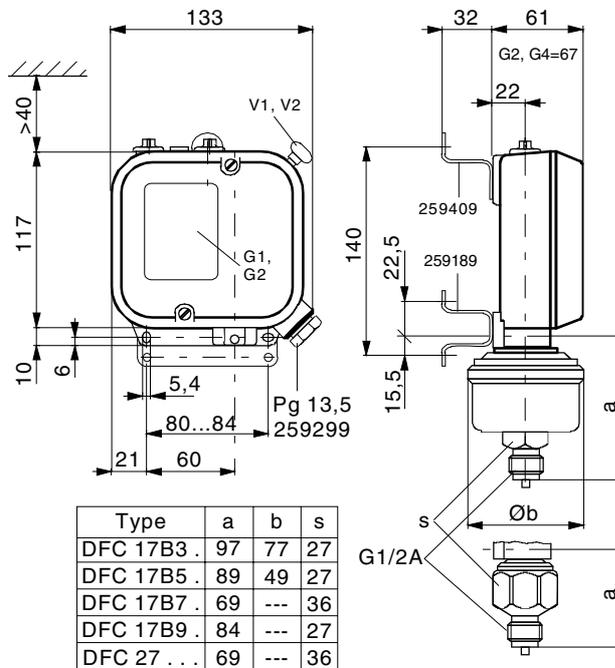
- Capacitance of the RC circuit (μF) is equal to or greater than the operating current (A).
- Resistance of the RC circuit (Ω) is approx. equal to the resistance of the coil (Ω).



Wiring diagram



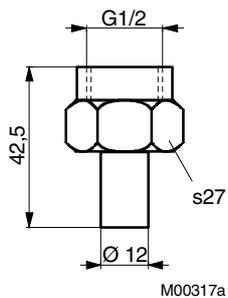
Dimension drawing



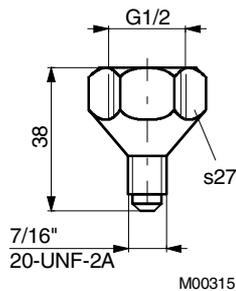
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Accessories

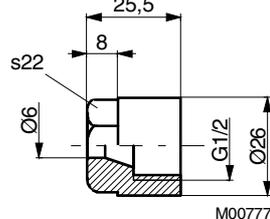
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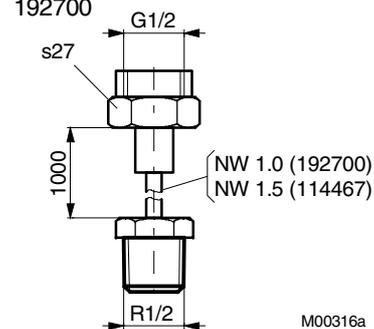
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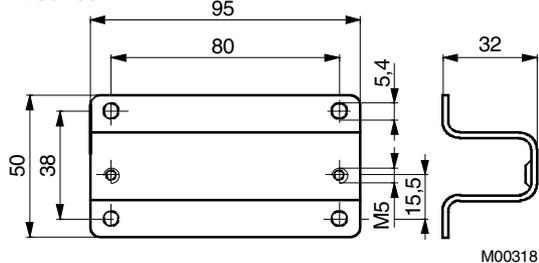
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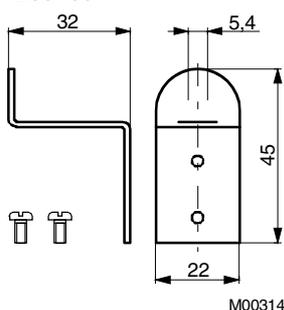
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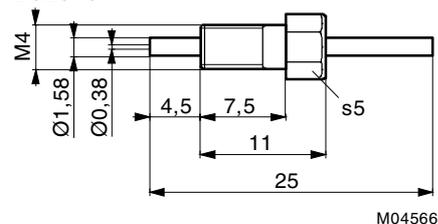
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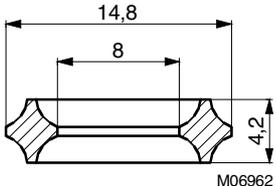
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