

Hydro-electric pressure switch

RE 50056/12.12
Replaces: 08.12

1/8

Type HED 5

Component series 3X
Maximum operating pressure 400 bar
CE, CCC, UL

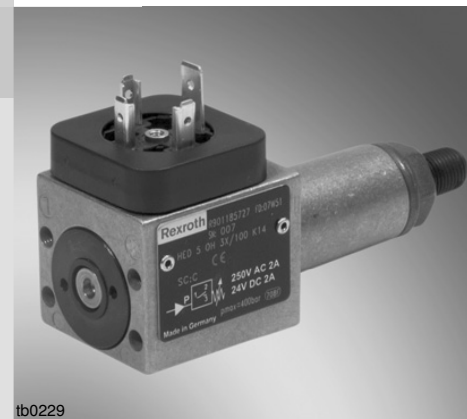


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Features

- 4 pressure ratings
- Electrical connection
 - with large cubic connector
 - with M12 x 1 connector
- Micro switch with NC/NO contact function
- Potential-free switching of currents from 1 mA to 2 A
- UL approval
- CCC approval (except for MT version)

Ordering code

HED 5 OH - 3X / / / / *

Piston type pressure switch	= HED 5
Flange connection	= OH
Component series 30 to 39 (30 to 39: Unchanged installation and connection dimensions)	= 3X
Pressure rating maximum 50 bar	= 50
Pressure rating maximum 100 bar	= 100
Pressure rating maximum 200 bar	= 200
Pressure rating maximum 350 bar	= 350

Further details in the plain text

no code =
V =
MT =

Seal material

NBR seals
FKM seals
Low-temperature design
(max. 315 bar)
(other seals upon request)

Notice:
Observe compatibility of seals with the hydraulic fluid used!

Electrical connection

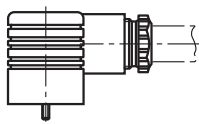
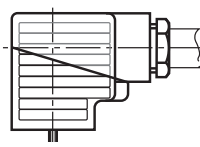
K14 = Individual connection with connector according to EN 175301-803, large cubic connector, without mating connector ¹⁾

K35 = Individual connection with connector according to IEC 61076-2-101, M12 x 1, A coding, without mating connector ¹⁾

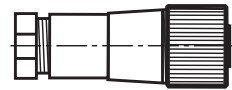
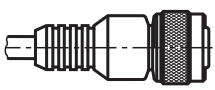
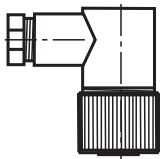
¹⁾ Mating connectors, separate order, see below

Mating connectors

For connection "K14"

For details and more mating connectors see data sheet 08006						
	Material no.					
	without circuitry 240 V, -40...+125 °C	6 ... 14 V	16 ... 30 V	36 ... 60 V	90 ... 130 V	180 ... 240 V
Color black	R901017012	R901017030	R901017048	R901017032	R901017035	R901017037

For connection "K35"

For details and more mating connectors see data sheet 08006			
	Material no.		
	4-pole, M12 x 1 with screw connection, -40...+85 °C	4-pole, M12 x 1 with PUR cable, 3 m long, -25...+85 °C	4-pole, M12 x 1 with screw connection, angled, -40...+85 °C
Color black	R900031155	R900064381	R900082899

Function, section, symbol

Hydro-electric pressure switches of type HED 5 are piston type pressure switches.

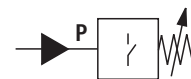
They basically consist of housing (1), installation kit with piston (2), compression spring (3), adjustment element (4) and micro switch (5).

The pressure to be monitored acts on the piston (2). The latter is supported by the spring plate (6) and acts against the continuously adjustable force of the compression spring (3). The spring plate (6) transmits the movement of the piston (2) onto the micro switch (5). This switches the electric circuit on or off, depending on the circuit set-up.

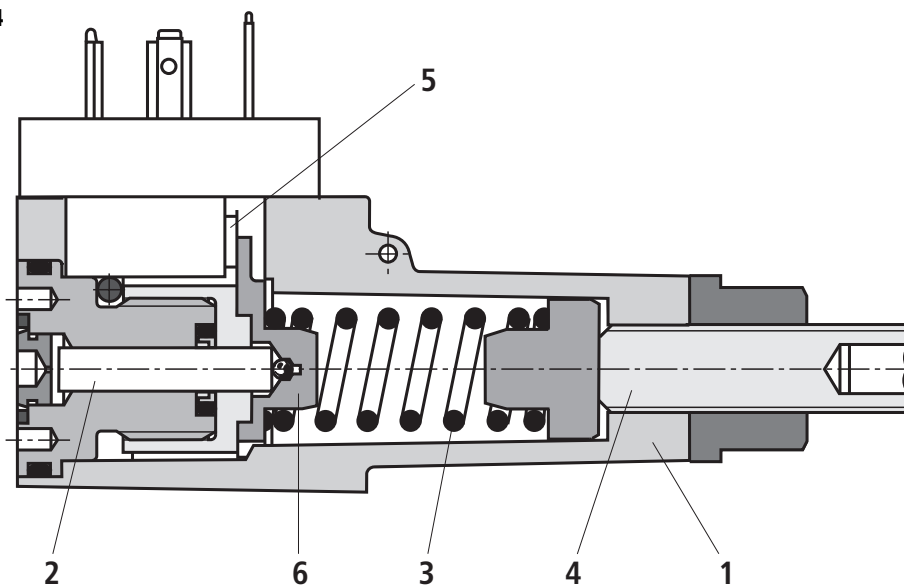
Installation information:

To increase the life cycle, pressure switches are to be mounted free of shocks and suitable measures are to be taken to dampen hydraulic pressure shocks.

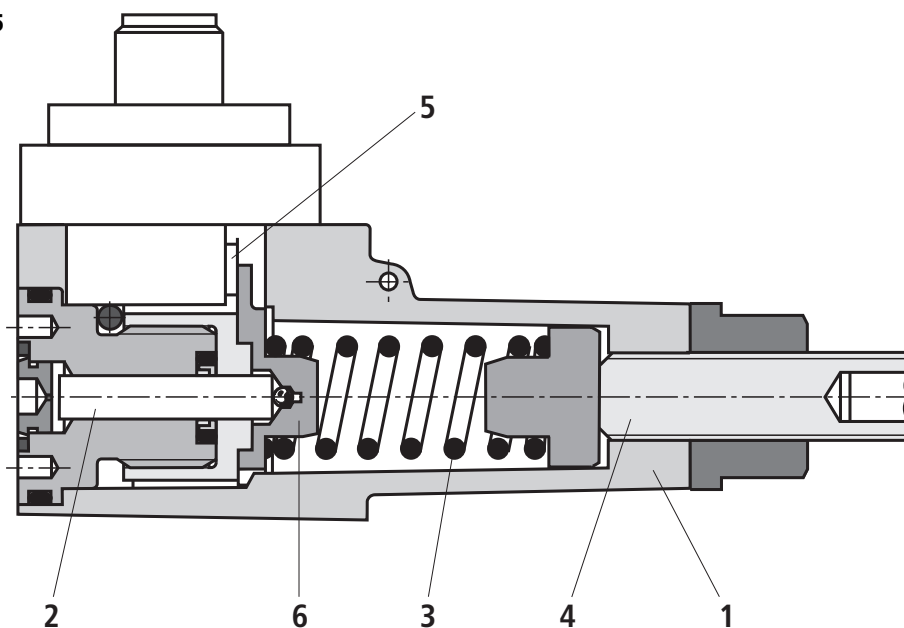
Symbol



Type HED 5...K14



Type HED 5...K35



Technical data (For applications outside these parameters, please consult us!)**general**

Weight	kg	0.2
Installation position		Any
Ambient temperature range		-30 to +50 (NBR seals) -20 to +50 (FKM seals) -40 to +50 (MT version)
Sine test according to DIN EN 60068-2-6:1996-05		10...2000 Hz, max. 10 g, 10 double cycles
Transport shock according to DIN EN 60068-2-27:1995-03		Half-sine 15 g / 11 ms, 3 x in positive direction, 3 x negative direction (a total of 6 single shocks per axis)
Noise test according to DIN EN 60068-2-64:1995-08		20...2000 Hz, 14 g _{RMS} , 24 h
Conformity	CE	- DIN EN 61058-1:2008-09-05 - IEC 60947-5-1:2010-04 - DIN EN 60529:2000-09
	UL	UL 508 17th edition File No E223220
	CCC	- EN 61058-1:1993 - IEC 60947-5-1

hydraulic

Pressure rating		50	100	200	350	
Maximum operating pressure						
	NBR/FKM seals	bar	350	350	350	400
	MT version	bar	315	315	315	315
Pressure adjustment range (decreasing)	bar	5...50	10...100	15...200	25...350	
Pressure differential per rotation ¹⁾	bar	≈10	≈17	≈38	≈60	
Hydraulic fluid		Mineral oil (HL, HLP) according to DIN 51524 ²⁾ ; fast biodegradable hydraulic fluids according to VDMA 24568 (see also data sheet 90221); HETG (rape seed oil) ²⁾ ; HEPG (polyglycols) ³⁾ ; HEES (synthetic esters) ³⁾ ; HVLV ⁴⁾ ; HFC ⁵⁾ ; other hydraulic fluids upon request				
Hydraulic fluid temperature range	°C	-30 to +80 (NBR seals) -20 to +80 (FKM seals) -40 to +80 (MT version)				
Viscosity range	mm ² /s	10 to 800				
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)		Class 20/18/15 ⁶⁾				
Load cycles		≥ 4 millions				

¹⁾ Direction of rotation:

- Clockwise → set pressure increase
- Counterclockwise → set pressure decrease

²⁾ Suitable for NBR and FKM seals and for MT version

³⁾ Only suitable for FKM seals

⁴⁾ Suitable for MT version

⁵⁾ Only suitable for NBR seals

⁶⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the life cycle of the components.

For the selection of the filters see www.boschrexroth.com/filter.

Technical data (For applications outside these parameters, please consult us!)

electric

Electrical connection / mating connector		K14	EN 175301-803, 3-pole + PE
		K35	IEC 61076-2-101, M12 x 1, A-coding, 4-pole
Maximum connection cross-section (mating connector)	mm ²	K14	1.5
		K35	0.75
Line entry (mating connector)		K14	M16 x 1.5
		K35	M10 x 1.5
Protection class according to EN 60529		K14	IP 65 with mating connector mounted and locked
		K35	IP 67 with mating connector mounted and locked
Maximum switching frequency		1/h	4800
Switching accuracy (repetition accuracy)			< ± 1 % of the set pressure
Switch			According to VDE 0630-1/DIN EN 61058-1
Transition resistance		mΩ	< 50
Insulation coordination			Overvoltage category 3
Contamination			Degree of contamination 3
Bounce time	ON	ms	< 5
	OFF	ms	< 5
Minimum current		mA	1.0 with 24 V DC
Maximum current		A	0.5 with 50 V DC, inductive 0.2 with 125 V DC, inductive 0.1 with 250 V DC, inductive 2.0 with 250 V AC

Switching power

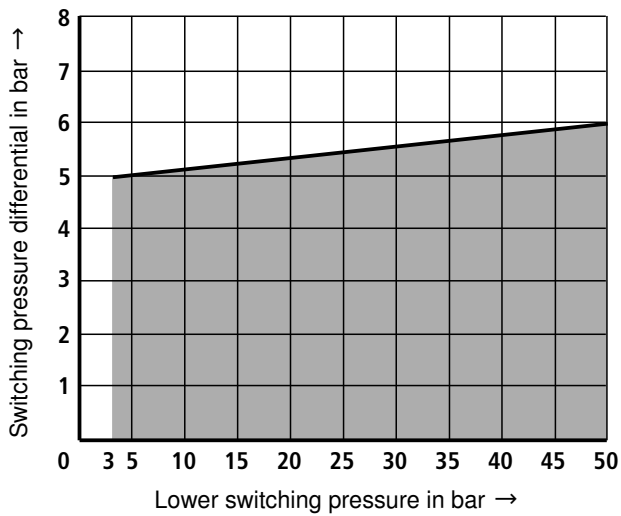
Switching cycles	Voltage U in V	Ohmic load max. in A	Inductive load, max. in A
2 million	250, AC	2 A for 2 million switching cycles	0.5 A, $\cos \varphi = 0.6$ for 2 million switching cycles
2 million	24, DC	2 A for 2 million switching cycles	0.5 A for 2 million switching cycles
5 million	24, DC	5.0 mA for 5 million switching cycles	–

Notice:

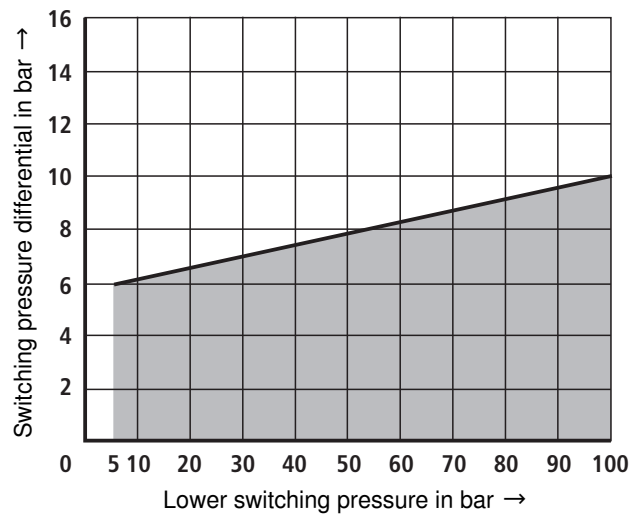
All variants can be unloaded to $p_{\min} = 0$ bar.
(Observe the switching pressure differential!)

Switching pressure differential (measured with HLP46, $\vartheta_{oil} = 40 \text{ °C} \pm 5 \text{ °C}$)

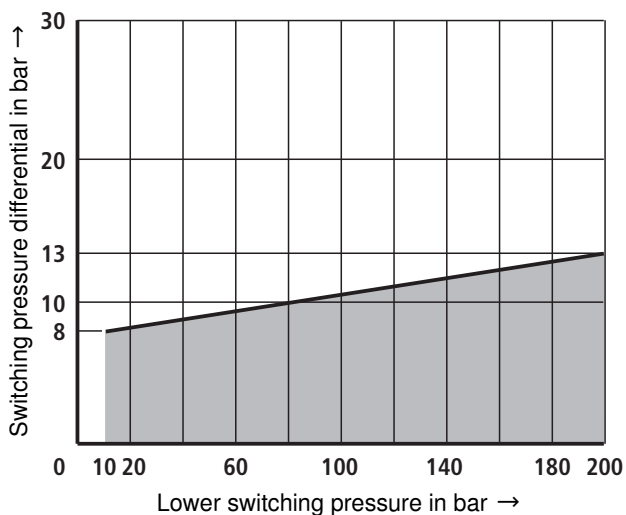
Pressure rating 50 bar



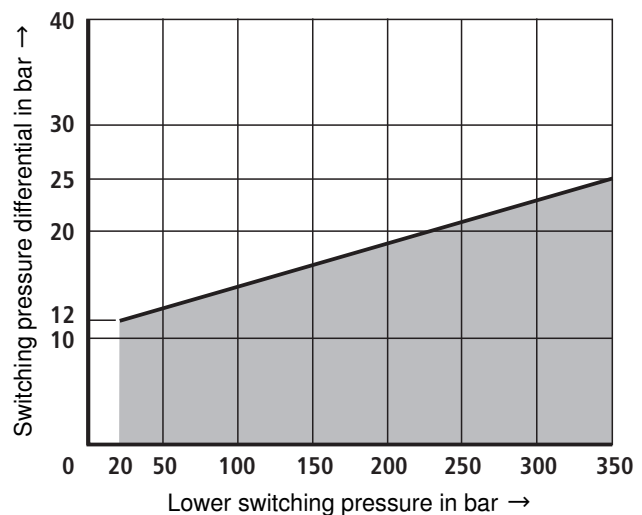
Pressure rating 100 bar



Pressure rating 200 bar



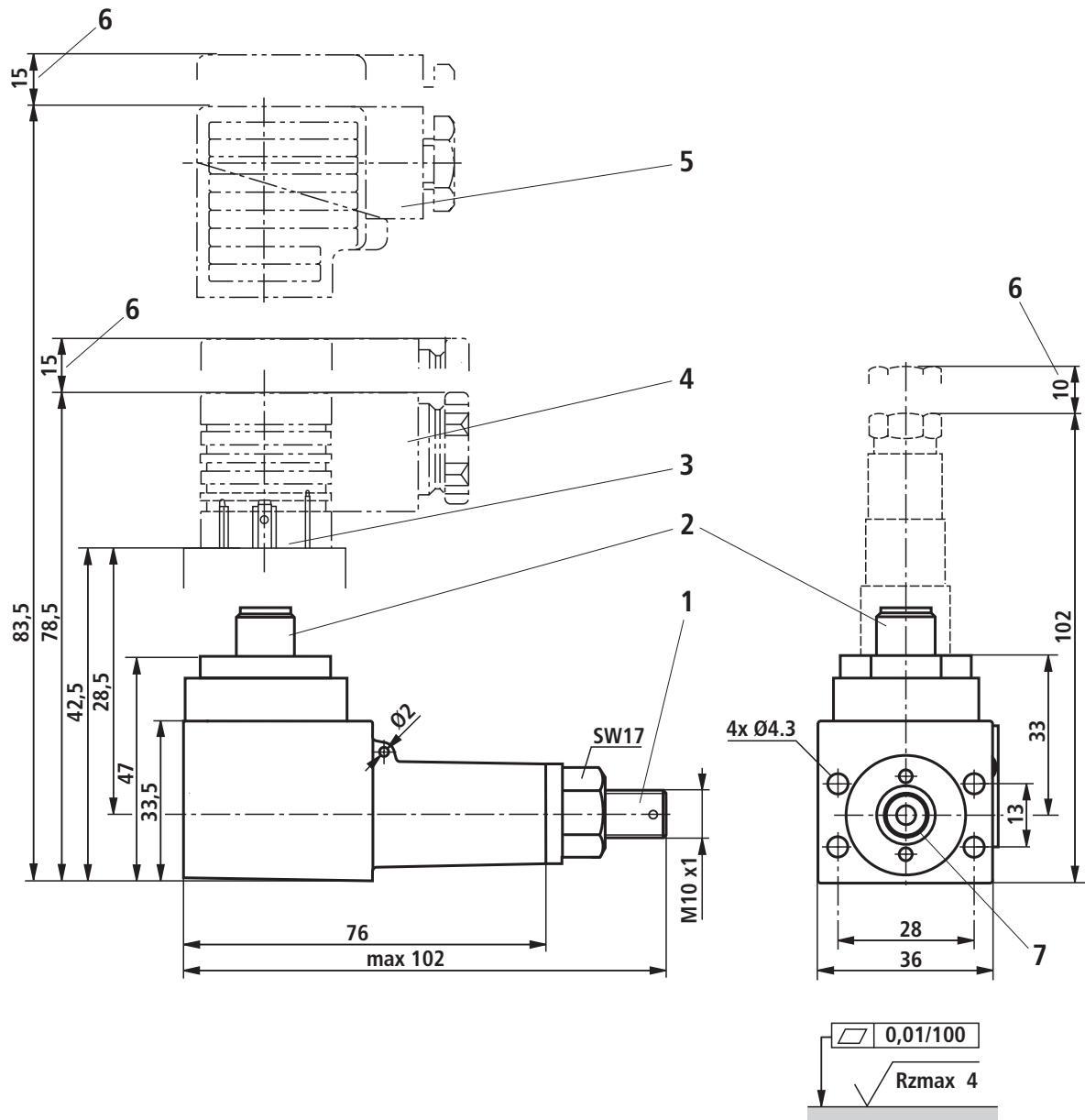
Pressure rating 350 bar



Notice:

The switching pressure differential may increase within the course of the life cycle due to the deterioration of the oil quality and the number of load cycles.

Device dimensions (dimensions in mm)



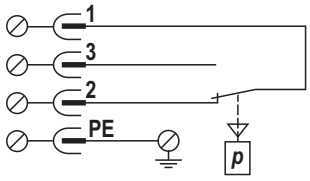
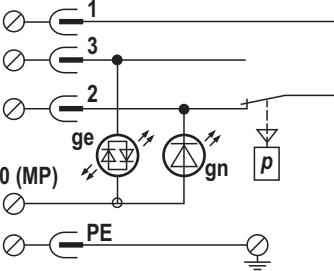
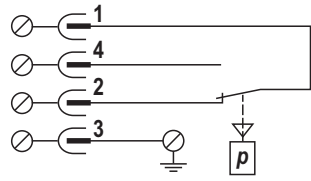
Required surface quality of the device contact surface

- 1 Adjustment element
- 2 Plug-in connection according to IEC 61076-2-101 (connection "K35")
- 3 Plug-in connection according to EN 175301-803 (connection "K14")
- 4 Mating connector without circuitry
- 5 Mating connector with circuitry
- 6 Space required to remove the mating connector
- 7 Seal ring (connection bore of the counterpart: max. Ø6)

Valve mounting screws (separate order)

4 hexagon socket head cap screws
ISO 4762-M4X45-10.9-fIZn-240h-L
(friction coefficient $\mu_{\text{total}} = 0.09$ to 0.14)
Tightening torque $M_A = 2 \text{ Nm} \pm 10 \%$
Material no. **R913000370**

Electrical connection

"K14" without indicator light	"K14" with indicator light	"K35"
		
<p>Switching function</p> <p>Terminals 1-2: Contact opens in case of pressure increase</p> <p>Terminals 1-3: Contact closes in case of pressure increase</p>	<p>Switching function</p> <p>Terminals 1-2: Contact opens in case of pressure increase</p> <p>Terminals 1-4: Contact closes in case of pressure increase</p>	