

Electric Drives
and Controls

Hydraulics

Linear Motion and
Assembly Technologies

Pneumatics

Service

Rexroth
Bosch Group

Hydro-electric piston type pressure switch

RE 50040/04.06
Replaces: 07.04

1/8

Type HED 1

Component series 4X
Maximum operating pressure 600 bar



K3981/5

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Features

- Drain port, optional
- Check lamp, optional
- Electrical connection
 - Cable gland
 - Plug-in connection

Ordering code

HED 1		A	4X				*
With drain port	= K						Further details in clear text
Without drain port	= O						
Component series 40 to 49 (40 to 49: unchanged installation and connection dimensions)		= 4X					Seal material No code = NBR seals V = FKM seals (other seals on enquiry) ▲ Caution! Observe compatibility of seals with hydraulic fluid used!
Type HED 1 K							
Pressure range max. 100 bar		= 100					No code = Without lamp L24 = Lamp for 24 V (20 V to 35 V) L110 = Lamp for 110 V (90 V to 130 V) L220 = Lamp for 220 V (180 V to 240 V)
Pressure range max. 350 bar		= 350					
Pressure range max. 500 bar		= 500					
Type HED 1 O							
Pressure range max. 50 bar		= 50					
Pressure range max. 100 bar		= 100					
Pressure range max. 350 bar		= 350					
Cable gland		= No code					
Plug-in connection 4-pin + PE		= K ¹⁾					
Plug-in connection 6-pin + PE		= K6 ¹⁾					

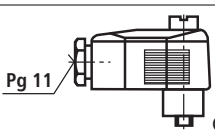
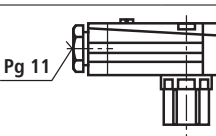
¹⁾ Plug-in connector, separate order, see below

Standard types

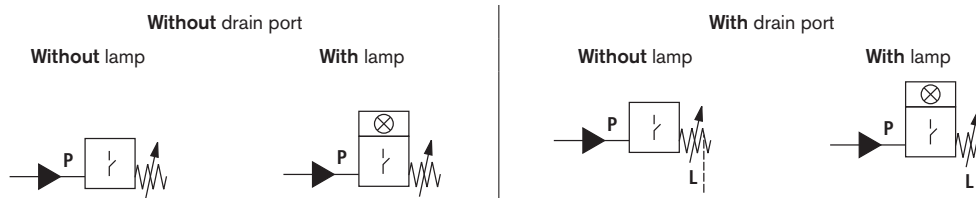
Type	Material number	Type	Material number
HED 1 KA4X/100	R900383852	HED 1 OA4X/50	R900383854
HED 1 KA4X/350	R900383624	HED 1 OA4X/100	R900383855
HED 1 KA4X/500	R900383853	HED 1 OA4X/350	R900383856

Further standard types and components can be found in the EPS (standard price list).

Plug-in connector

Plug-in connector 4-pin + PE		Plug-in connector 6-pin + PE; DIN EN 175201-804	
	Colour: red		Colour: grey
for plug-in connection K	Material no. R900005538	for plug-in connection K6	Material no. R900002803

Symbols



Function, section

Hydro-electric pressure switches of type HED 1 are piston type pressure switches.

They basically consist of housing (1), micro-switch (2), set screw (3), plunger (4), piston (5) and compression spring (6).

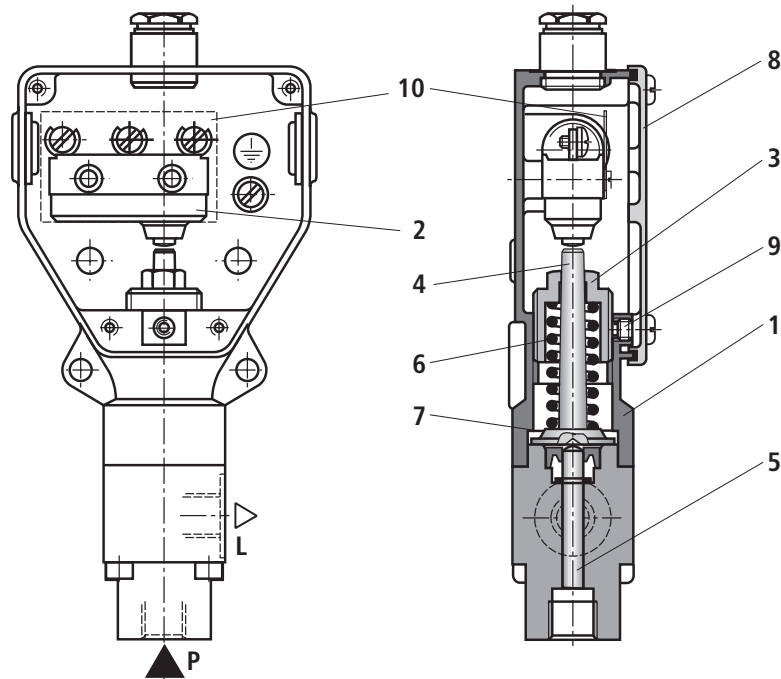
Pressure switches of type HED 1 are used for opening or closing an electrical circuit in dependence upon pressure.

Live terminals are covered by insulation foil (10).

The pressure to be monitored acts on piston (5). This piston (5) is supported on plunger (4) and acts against the infinitely adjustable force provided by compression spring (6). Plunger (4) transmits the movement of piston (5) to micro-switch (2). This causes the electrical circuit to open or close depending on the circuit setup. A mechanical limit stop (7) protects the micro-switch against destruction in the case of overpressure.

Adjustment of the switching pressure

To adjust the switching pressure, remove nameplate (8) and loosen locking screw (9). The switching pressure can now be adjusted by turning set screw (3). Then, set screw (3) must be secured by means of locking screw (9) and nameplate (8) mounted.



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

General

Weight	kg	1.2
Installation position		Optional
Ambient temperature range	°C	-30 to +50 (NBR seals) -20 to +50 (FKM seals)

Hydraulic

		Type HED 1 KA			Type HED 1 OA			
		100	350	500	50	100	350	
Pressure range	bar	100	350	500	50	100	350	
Maximum operating pressure (briefly)	bar	600	600	600	80	350	350	
Falling pressure	- minimum	bar	3	6	10	2	3	6
	- maximum	bar	92	325	465	45	82	295
Increasing pressure	- minimum	bar	6	10	20	3,5	8	20
	- maximum	bar	100	350	500	50	100	350
Maximum pressure at drain port	bar	2						
Hydraulic fluid		Mineral oil (HL, HLP) to DIN 51524 ¹⁾ ; fast bio-degradable hydraulic fluids to VDMA 24568 (see also RE 90221); HETG (rape seed oil) ¹⁾ ; HEPG (polyglycols) ²⁾ ; HEES (synthetic esters) ²⁾ ; other hydraulic fluids on enquiry						
Hydraulic fluid temperature range	°C	-30 to +80 (NBR seals) -20 to +80 (FKM seals)						
Max. permissible degree of contamination of the hydraulic fluid - cleanliness class to ISO 4406 (c)		Class 20/18/15 ³⁾						
Viscosity range	mm ² /s	10 to 800						

Electrical

Contact load	- AC voltage	V AC	250 V; 3 A
	- DC voltage	V DC	40 V; 1 A In the case of DC voltage with inductive load, provide a spark suppressor to increase the service life.
Maximum switching frequency	- Type HED 1 KA	1/h	18000
	- Type HED 1 OA	1/h	3000 (briefly 1.5 1/s)
Switching accuracy (repeatability)			< ± 2 % of set pressure
Electrical connection			Cable gland Pg 11 Plug-in connection Pg 11
Type of protection to DIN EN 60529			IP 65 with plug-in connector mounted and locked
Maximum cable cross-section	- Cable gland	mm ²	4
	- Plug-in connector	mm ²	1.5

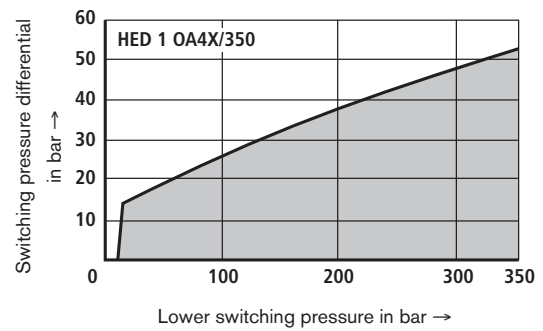
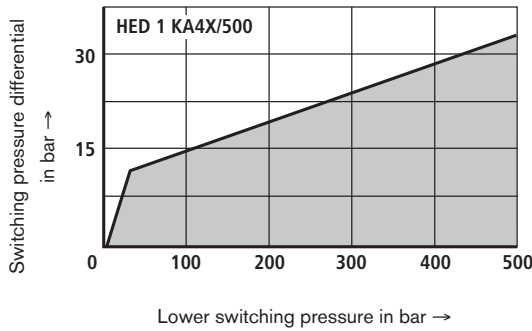
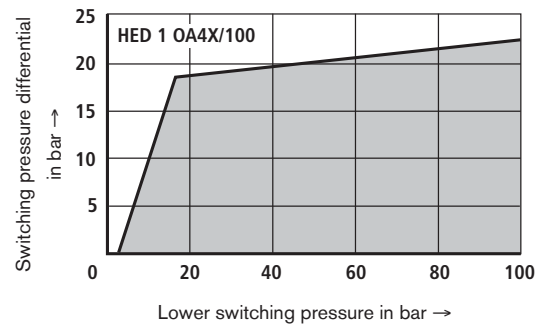
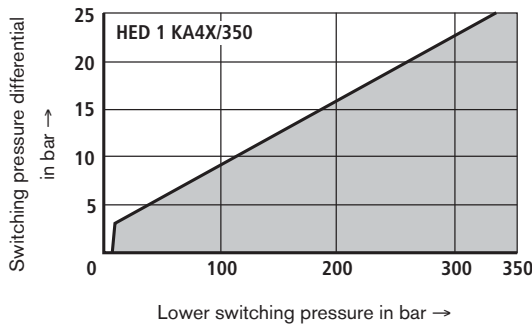
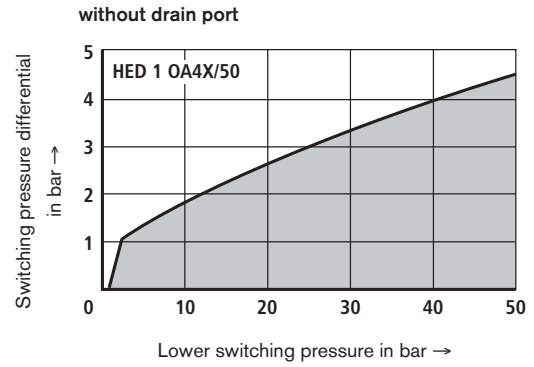
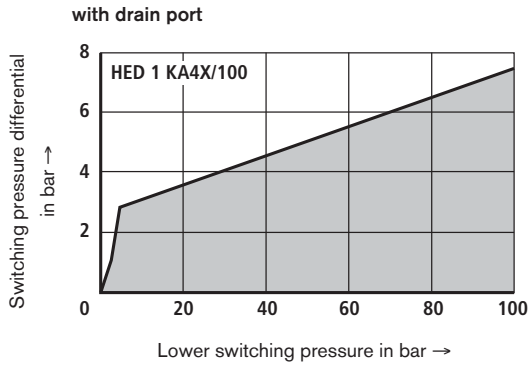
¹⁾ Suitable for NBR and FKM seals

²⁾ Only suitable for FKM seals

³⁾ The cleanliness classes specified for components must be adhered to in hydraulic systems. Effective filtration prevents malfunction and, at the same time, prolongs the service life of components.

For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086 and RE 50088.

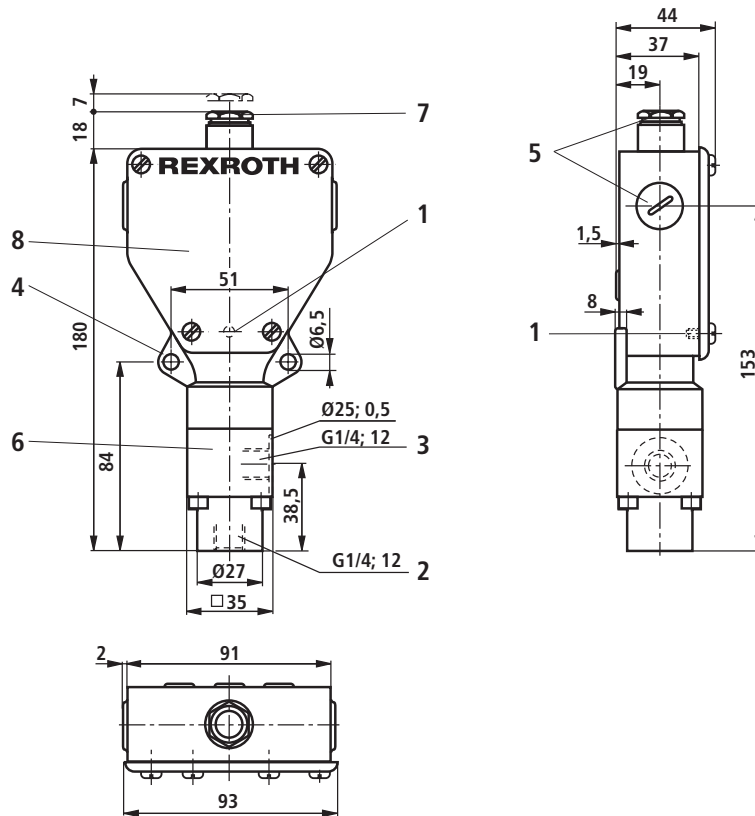
Switching pressure differential (pressure switch with or without drain port)



Note!

To ensure the reliability of the switching signal, the actual switching pressure differential obtained must be greater than the existing switching pressure differential of the pressure switch.

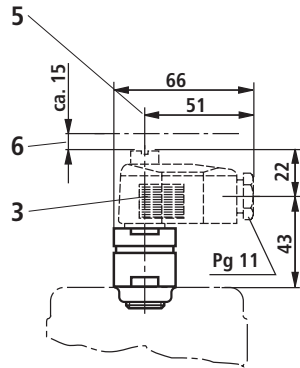
Unit dimensions (nominal dimensions in mm)



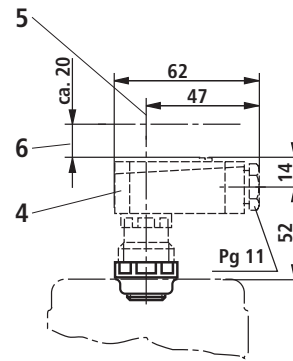
- 1 Locking mechanism for securing the set screw
- 2 Pressure port P
- 3 Drain port L, optional
- 4 Fixing holes
- 5 Electrical connection Pg 11, optional
- 6 Cartridge assembly, can be rotated in 90° increments
- 7 Electrical connection using cable gland Pg 11
- 8 Nameplate

Unit dimensions: Electrical connection (nominal dimensions in mm)

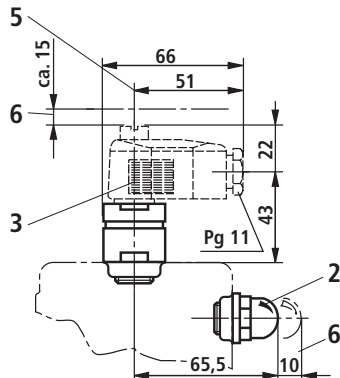
Type HED 1..A4X/..K..



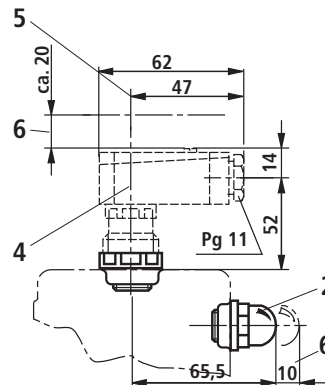
Type HED 1..A4X/..K6..



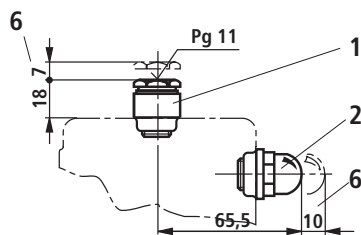
Type HED 1..A4X/..KL..



Type HED 1..A4X/..K6L..



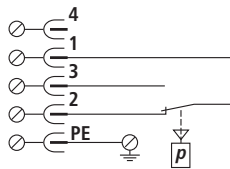
Type HED 1..A4X/..L..



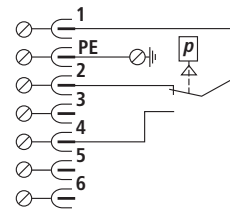
- 1 Electrical connection using cable gland Pg 11
- 2 Lamp
- 3 Plug-in connector, red
- 4 Plug-in connector, grey
- 5 Can be rotated in 30° increments around the plug-in axis
- 6 Dimension required to remove plug-in connector, lamp and cable gland

Pin assignment

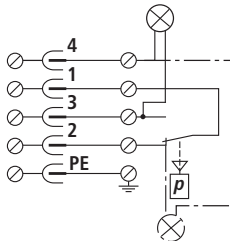
Plug-in connection "K"



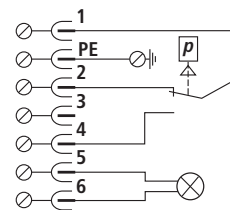
Plug-in connection "K6" (DIN EN 175201-804)



Plug-in connection "KL" with lamp

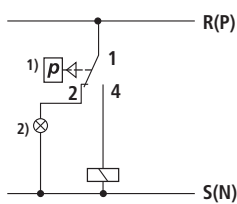


Plug-in connection "K6L" (DIN EN 175201-804)

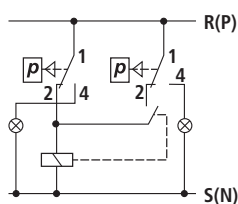


Connect lamp in accordance with the desired circuit

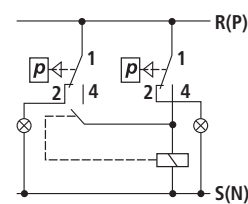
Circuit example



Simple circuit
(1 x HED 1)



Differential circuit
with N/O contact
(2 x HED 1)



Differential circuit
with N/C contact
(2 x HED 1)

- 1) Pressure switch
- 2) Lamp

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