

Electric Drives
and Controls

Hydraulics

Linear Motion and
Assembly Technologies

Pneumatics

Service

Rexroth
Bosch Group

Bourdon tube pressure switch with fixed switching pressure differential

RE 50046/06.12
Replaces: 10.10

1/8

Type HED 2

Component series 3X
Maximum operating pressure 400 bar
CCC



Table of contents

Contents	Page
Features	1
Ordering code	2
Plug-in connectors	2
Function, section, symbol	3
Technical data	4
Unit dimensions	5, 6
Pin assignment	7
Circuit examples	7

Features

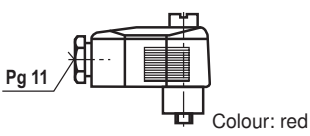
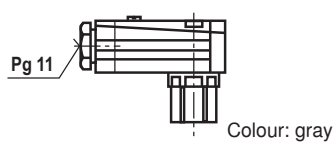
- Indicator lamp, optional
- Electrical connection
 - Cable gland
 - Plug-in connector
- Lockable rotary knob

Ordering code

HED 2 OA		3X/				*	
Bourdon tube pressure switch				Further details in clear text			
Component series 30 to 39 (30 to 39: unchanged installation and connection dimensions)				= 3X		No code = Without indicator lamp	
Pressure rating max. 25 bar				= 25		L24 = Indicator lamp for 24 V (20 V to 35 V)	
Pressure rating max. 63 bar				= 63		L110 = Indicator lamp for 110 V (90 V to 130 V)	
Pressure rating max. 100 bar				= 100		L220 = Indicator lamp for 220 V (180 V to 220 V)	
Pressure rating max. 200 bar				= 200		Electrical connection	
Pressure rating max. 400 bar				= 400		No code = Cable gland	
						K ¹⁾ = Plug-in connection 4-pin + PE	
						K6 ¹⁾ = Plug-in connection 6-pin + PE	

¹⁾ Plug-in connectors, separate order, see below.

Plug-in connectors

Plug-in connector 4-pin + PE		Plug-in connector 6-pin + PE; EN 175201-804	
			
for connection K	Material no. R900005538	for connection K6	Material no. R900002803

Function, section, symbol

Hydro-electric pressure switches of type HED 2 are Bourdon tube pressure switches.

They basically consist of housing (1), Bourdon tube (2) with actuating lever (3), micro-switch (4) and adjustment element.

Pressure switches assume the task of opening or closing an electrical circuit in dependence upon pressure. The pressure to be monitored acts on the Bourdon tube (2). Bourdon tube (2) bends and actuating lever (3) connected to it transmits the movement of Bourdon tube (2) to micro-switch (4). This causes the electrical circuit to open or close depending on the circuit set-up.

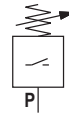
Adjustment of the switching pressure

The switching pressure can be adjusted externally by means of a lockable rotary knob.

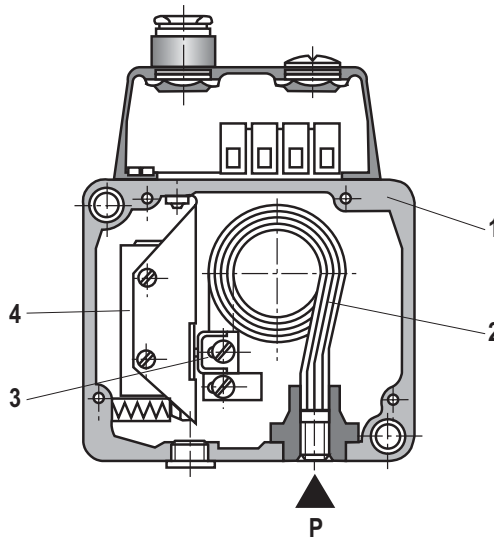
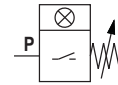
A fixed switching pressure differential is maintained over the entire adjustment range.

Symbols

Without indicator lamp



With indicator lamp



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

General

Weight	kg	1.0
Installation position		Optional
Ambient temperature range	°C	-30 to +50 (NBR seals)
Conformity	CCC	EN 61058-1:1993, IEC 60947-5-1

Hydraulic

Pressure range		25	63	100	200	400	
Maximum operating pressure (briefly)	bar	30	70	110	210	420	
Switching pressure differential ¹⁾	bar	approx. 1.0	approx. 2.0	approx. 2.5	approx. 5	approx. 7.5	
Falling pressure	minimum	bar	1.5	4	6	10	20
	maximum	bar	25	63	100	200	400
Increasing pressure	minimum	bar	2.5	6	8.5	15	27.5
	maximum	bar	26	66	102.5	205	407.5
Hydraulic fluid		Mineral oil (HL, HLP) to DIN 51524; fast bio-degradable hydraulic fluids to VDMA 24568 (see also data sheet 90221); HETG (rape seed oil); other hydraulic fluids on request					
Hydraulic fluid temperature range	°C	-30 to +80 (NBR seals)					
Viscosity range	mm ² /s	10 to 800					
Max. permissible degree of contamination of the hydraulic fluid - cleanliness class to ISO 4406 (c)		Class 20/18/15 ²⁾					

Electrical

Contact assignment	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, a spark suppressor must be provided to prolong the service life.
Maximum switching frequency		1/h	1800
Switching accuracy (repeatability)			approx. ± 1 % of set pressure
Long-term drift of switching point	50 000 load cycles		approx. +5 % of max. set pressure
	100 000 load cycles ³⁾		approx. +10 % of max. set pressure
Type of protection to EN 60529			IP 65 with plug-in connector mounted and locked
Electrical connection			Cable gland Pg 11 Plug-in connector Pg 11
Maximum cable cross-section	Cable gland	mm ²	1.5
	Plug-in connector	mm ²	1.5

¹⁾ Constant over the entire adjustment range

²⁾ 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 www.boschrexroth.com/filter.

³⁾ It is not possible to make any statements for long-term drift above 100 000 load cycles.

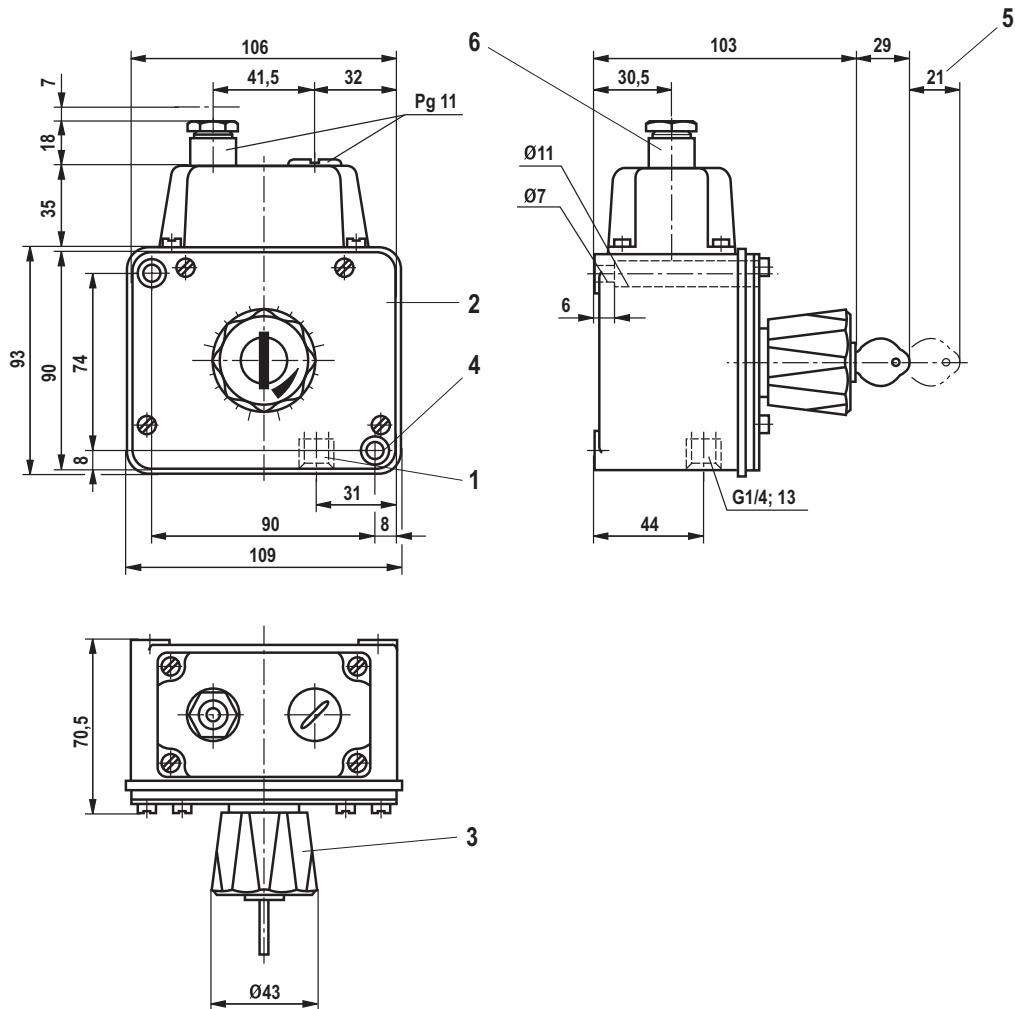
Notes:

- Pressure switch use
Bourdon tube pressure switches may only be exposed to dampened mechanical vibration (mounting with rubber buffers). To compensate for pump pulsation, we recommend

that the line pressure switch be connected by means of minimess hoses (DN approx. 2 mm, length min. 1 meter).

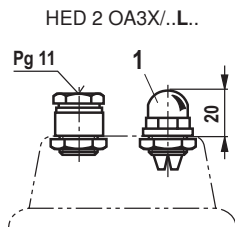
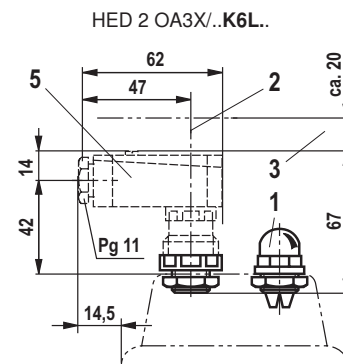
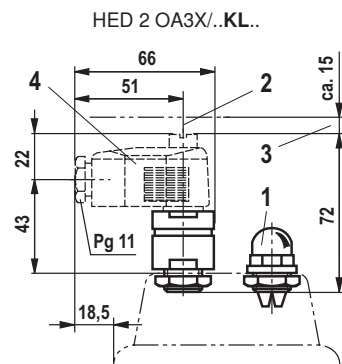
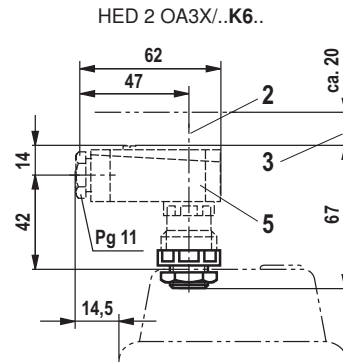
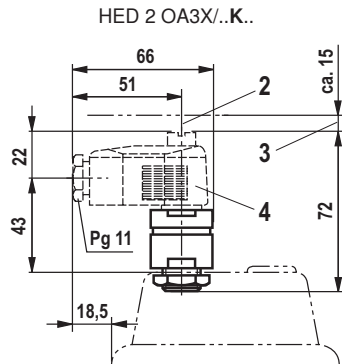
- Switching pressure differential
To ensure the reliability of the switching signal, the actual pressure differential obtained must be greater than the existing switching differential of the pressure switch.
- Long-term drift of switching points
Because the set switching point may change over the lifetime, the pressure switch is not suitable for use in safety applications.

Unit dimensions (dimensions in mm)



- 1 Pressure port P
- 2 Nameplate with scale
- 3 Lockable rotary knob
(H-key, material no. R900008158
is included in the scope of supply)
- 4 2 fixing holes
- 5 Space required to remove key
- 6 Electrical connection via cable gland Pg 11

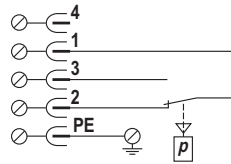
Unit dimensions: Electrical connection (dimensions in mm)



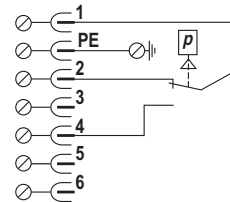
- 1 Indicator lamp
- 2 Can be rotated in 30° increments around the plug-in axis
- 3 Dimension to remove plug-in connector
- 4 Plug-in connector, red
- 5 Plug-in connector, gray

Pin assignment

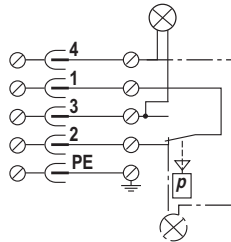
Connection "K"



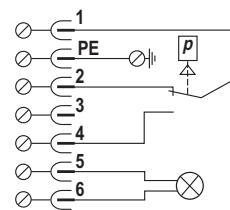
Connection "K6"



Connection "K" with indicator lamp "L..."

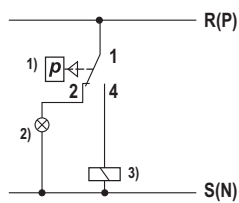


Connection "K6" with indicator lamp "L..."

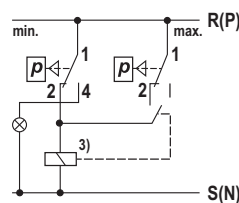


Connect indicator lamp according to the desired circuit

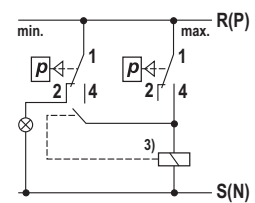
Circuit example



Simple circuit
(1 x HED 2)



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



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

- 1) Pressure switch
- 2) Indicator lamp
- 3) Operating relay

Notes

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