RE 30340
Edition: 2020-01
Replaces: 2019-10

rexroth
A Bosch Company

Electronic pressure switch for hydraulic applications

Type HEDE12

H8161

- Component series 1X

Features

- Two switching points adjustable via IO-Link or customer-specifically pre-set in the factory
- Transferring of pressure values via IO-Link
- 4 measurement ranges up to 630 bar
- Sensor with thin film measuring cell
- Throttle element in the pressure channel
- Accuracy class 0.5
- Components in contact with the media made of stainless steel and FKM
- Operational safety due to high bursting pressure, reversed polarity, overvoltage and short-circuit protection
- Compact design
- IO-Link V1.1

Contents

Ordering code

01	02	03	04	05	06	07	08	09	10
HEDE12	– **1X**	/	– **2**	– **K35**	– **V**	–	–	–	–

01	Electronic pressure switch	**HEDE12**
02	Component series 10 ... 19 (10 ... 19: unchanged installation and connection dimensions, pin assignment and function)	**1X**

Pressure measuring range

03	0 ... 100 bar	**100**
	0 ... 250 bar	**250**
	0 ... 400 bar	**400**
	0 ... 630 bar	**630**
04	2 switching outputs	**2**

Electrical connection

05	Connector, M12 x 1, DIN EN 61076-2-101, A-coded	**K35** [1]

Seal material (observe compatibility of seals with hydraulic fluid used)

06	FKM seals	**V**

Switching point adjustment in the factory – switching point 1

07	Factory setting	**no code**
	Customer-specific switching point adjustment 1 in plain text	*****

Switching point adjustment in the factory – switch-back point 1

08	Factory setting	**no code**
	Customer-specific switch-back point adjustment 1 in plain text	*****

Switching point adjustment in the factory – switching point 2

09	Factory setting	**no code**
	Customer-specific switching point adjustment 2 in plain text	*****

Switching point adjustment in the factory – switch-back point 2

10	Factory setting	**no code**
	Customer-specific switch-back point adjustment 2 in plain text	*****

[1] Mating connectors, separate order, see page 7 and data sheet 08006.

Technical data

General			
Installation position			any, preferably suspended
Ambient temperature range		°C	–40 ... +90
Nominal temperature range		°C	–25 ... +90
Storage temperature range		°C	–40 ... +100
Sine test according to DIN EN 60068-2-6			10 ... 2000 Hz / maximum 20 g / 10 frequency cycles per axis
Oscillation, noise signal according to DIN EN 60068-2-64			***f*** = 10 ... 2000 Hz (24 h per axis), 0.05 g^2/Hz (10 g_{RMS})
Shocking according to DIN EN 60068-2-27			15 g/11 ms, 3 x in positive, 3 x in negative direction/axis
Weight		kg	0.06
Measuring element			metallic thin film cell
Application			hydraulic applications
Conformity	▶ CE		EMC directive 2014/30/EU
	▶ UL		file no. E223220

Hydraulic						
Pressure rating (measurement range)		bar	100	250	400	630
Admissible overload pressure		bar	200	500	800	1000
Minimum bursting pressure		bar	1000	1200	1700	2520
Switching point, SP		bar	1 ... 100	2 ... 250	4 ... 400	6 ... 630
Switch-back point, rP		bar	0.5 ... 99.5	1 ... 249	2 ... 398	3 ... 627
In steps of		bar	0.05	0.1	0.2	0.2
Factory setting	▶ Switching point 1	bar	25	62.5	100	157.5
	▶ Switch-back point 1	bar	23	57.5	92	145
	▶ Switching point 2	bar	75	187.5	300	472.5
	▶ Switch-back point 2	bar	73	182.5	292	460
Vacuum-tight			yes			
Pressure media			HL, HLP, HFC, nitrogen (maximum 300 bar); others upon request			
Pressure media temperature range		°C	–40 ... +90			
Viscosity range		mm^2/s	10 ... 800			
Maximum admissible degree of contamination of the hydraulic fluid, cleanliness class according to ISO 4406 (c)			class 20/18/15 [1)]			
Housing materials			V4A (1.4404), PEI, HNBR			
Throttle element			V2A (1.4305)			
Material in contact with hydraulic fluid			V2A (1.4305), 1.4542, FKM			
Pressure connection according to DIN EN ISO 1179-2			G1/4 (male thread)			

1) The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and simultaneously increases the life cycle of the components.
Available filters can be found at www.boschrexroth.com/filter.

Technical data

Electric			
Electrical connection			M12 plug-in connection, gold-plated contacts
Protection class according to DIN EN 60529			IP65 / IP67 (if a suitable and correctly mounted mating connector is used)
Protection class according to EN 50178			III
Input variables			
Supply voltage		VDC	18 ... 30
Current consumption		mA	< 15
Isolation resistance		MΩ	100 (500 V DC)
Reverse polarity protection			yes
Output parameters			
Switching output	▶ Total outputs		2
	▶ Output signal		switching signal / IO-Link (parameterizable)
	▶ Output function		normally open contact / normally closed contact (parameterizable)
	▶ Electrical design		PNP / NPN
	▶ Permanent current carrying capacity	mA	100
	▶ Voltage drop	V	< 2.0
	▶ Overload-resistant		yes
	▶ Switching frequency	Hz	< 170
	▶ Short-circuit protection		yes
	▶ Short-circuit protection design		clocked
	▶ Overload-resistant		yes
Accuracy / variations			
Characteristic curve deviation (corresponds to the measuring deviation according to DIN EN 61298-2)		%	< ±0.5
Temperature coefficient (TK)	▶ Zero point		
	– –25 ... +90 °C	%/10 K	< 0.1
	– –40 ... -25 °C	%/10 K	< 0.2
	▶ Range		
	– –25 ... +90 °C	%/10 K	< 0.1
	– –40 ... -25 °C	%/10 K	< 0,2
Hysteresis		%	< ±0.2
Switching point accuracy (according to DIN EN 61298-2)		%	< ±0.5
Repetition accuracy (with temperature variations < 10 K)		%	< ±0.05
Parameterization options			hysteresis / window; normally open contact / normally closed contact; switch and switch-back delays; damping; diagnosis output
Long-term drift under reference conditions (6 months)		%	< ±0.1
Electro-magnetic compatibility (EMC)	▶ EN 61000-4-2 ESD	kV	4 CD / 8 AD
	▶ EN 61000-4-3 HF radiated	V/m	10
	▶ EN 61000-4-4 Burst	kV	±1
	▶ EN 61000-4-5 Surge	kV	1
	▶ EN 61000-4-6 HF conducted	V	10

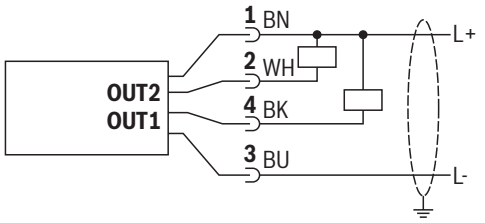
Technical data

Electric			
Reaction times			
Readiness delay time		s	< 0.3
Minimum reaction time switching output		ms	< 3
Adjustable delay time dS, dr		s	0 ... 50
Damping switching output (dAP)		s	0 ... 4
Watchdog integrated			yes
Life cycle	▶ Load cycles	million	60
	▶ Hours	h	60000
IO-Link device			
Transmission type			COM2 (38.4 kBaud)
IO-Link revision			1.1
SDCI standard			IEC 61131-9
Profiles			Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis
SIO mode			yes
Required master port class			A
Process data analog			2
Process data binary			2
Minimum process cycle time		ms	5.0

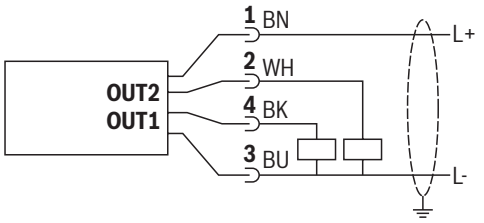
Electrical connection

"K35" – 2 switching outputs

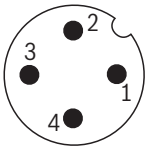
n-switching (NPN)



p-switching (PNP)

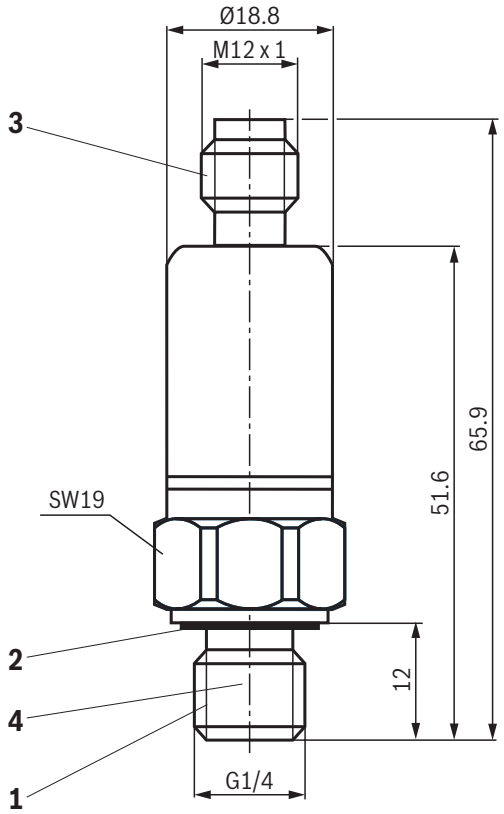


OUT1: Switching output or IO-Link
OUT2: Switching output
Color marking according to DIN EN 60947-5-2



Dimensions

(dimensions in mm)



1 Pressure port G1/4 male thread
2 Seal ring FKM
3 4-pole M12 connector
4 Throttle element (corresponds to nozzle 0.3 mm)

Accessories (separate order)

Mating connectors and cable sets

Designation	Version	Short designation	Material number	Data sheet
Cable sets with open cable end; for sensors and valves with "K24", "K35" and "K72" connectors, 4-pole	M12 x 1, straight, 2.0 m	4PM12	**R900773031**	08006
	M12 x 1, straight, 3.0 m	4PZ24	**R900064381**	
	M12 x 1, straight, 5.0 m	4PM12	**R900779498**	
	M12 x 1, straight, 10.0 m	4PZ24	**R913005668**	
	M12 x 1, angled, 2.0 m	4PM12	**R900779504**	
	M12 x 1, angled, 5.0 m	4PM12	**R900779503**	
	M12 x 1, angled, 10.0 m	4PZ24	**R913011722**	
Mating connectors; for sensors and valves with "K24", "K35" and "K72" connectors, 4-pole	M12 x 1, straight, PG 7	4PZ24	**R900773042**	
	M12 x 1, angled, PG 7		**R900779509**	

IO-Link gateways

Designation	Description	Material number
S67E-PN-IOL8-DI4-M12-6P	IndraControl S67E PROFINET device in the plastic housing 8 IO-Link ports (4 x class A and 4 x class B), 4 digital inputs, 24 VDC, M12 quick connection technology	**R911174436**
S67E-S3-IOL8-DI4-M12-6P	IndraControl S67E Sercos device in the plastic housing 8 IO-Link ports (4 x class A and 4 x class B), 4 digital inputs, 24 VDC, M12 quick connection technology	**R911174437**

Seal ring

Designation	Material number
FKM	**R913074646**

Further information

▶ Mating connectors and cable sets for valves and sensors	Data sheet 08006
▶ Selection of the filters	www.boschrexroth.com/filter
▶ Information on available spare parts	www.boschrexroth.com/spc

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