

Bosch Rexroth HEDE10-3X/400/1/-Ga-K35-V electronic pressure switch and transducer

Manufacturer: Bosch Rexroth
Manufacturer part number / published order designation: R901433084
Published model: HEDE10-3X/400/1/-Ga-K35-V

About this compilation

Prepared by Hydmaster from selected manufacturer documentation. Original technical pages follow without cropped drawings, rewritten data or altered units. This cover and index are Hydmaster editorial material, not a manufacturer-issued exact-execution datasheet.

Coverage: selected pages relevant to the identified size and configuration. Other options or neighbouring models retained on an original page apply only where explicitly identified.

Execution notes and conditions

Actual calibration, delivery settings and order availability are not established by the dated technical reference.

Pressure reference type (gauge or absolute) is not assigned without explicit article-specific primary evidence.

Burst and overload pressures are not continuous measurement/operating limits.

Switching points, switch-back points, damping and output mode are programmable; no actual delivery preset is inferred.

NPN/PNP behavior is not transferred from the two-switching-output diagrams to this one-switching/one-analog execution.

Source-page index

Source page numbers below are physical pages of each complete original PDF. The original printed page labels and technical content remain unchanged. Compiled page numbers count this cover/index.

Source A: Bosch Rexroth Hede10 Re30277 2017 Sotek Original

Original pages	Compiled pages	Relevant content
1-8	2-9	Manufacturer HEDE10 electronic sensor overview and edition; Actual series 3X, range, output 1, Gi/Ga and seal option key; Selected range overload/burst distinction, fluid limits and exact Gi/Ga process port; Electrical supply, analog/switching load conditions and qualified accuracy; IO-Link/display data and matching Gi/Ga installation dimensions; Actual one-switching/one-analog K35 circuit and display controls; two-switching diagrams are contextual; Separately ordered mating connector and cable interface details; Optional mounting accessories and supplementary-document references; not included by inference

Electronic pressure switch

Type HEDE 10

RE 30277

Edition: 2017-02

Replaces: 2016-06



- ▶ Component series 3X
- ▶ Maximum operating pressure 600 bar



Features

- ▶ Suitable for measuring pressures in hydraulic systems as well as for transforming the measured values into electronic signal values
- ▶ Sensor thin film measuring cell
- ▶ Connection cable with 4-pole M12 connector on the housing
- ▶ Accuracy class 1.0
- ▶ Male thread or internal thread G1/4"
- ▶ Components in contact with the media made of stainless steel and FKM
- ▶ Compact design
- ▶ One switching output and one analog output or two switching outputs
- ▶ IO link V1.1

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Ordering code

01	02	03	04	05	06	07
HEDE10	-	3X	/	/	/-	*

01	Hydro-electric pressure switch	HEDE10
02	Component series 30 ... 39 (30 ... 39: unchanged installation and connection dimensions)	3X
03	Pressure rating maximum 100 bar	100
	Pressure rating maximum 250 bar	250
	Pressure rating maximum 400 bar	400
	Pressure rating maximum 600 bar	600

Output

04	1 switching and 1 analog output	1
	2 switching outputs	2

Hydraulic connection

05	Internal thread G1/4	Gi
	Male thread G1/4	Ga

Electrical connection

06	Individual connection	
	Without mating connector; connector M12 DIN EN 61076-2-101 without cable with M12 connector, A-coded	K35 ¹⁾

Seal material

07	FKM seals	V
	Without seal (with internal thread)	0
	Observe compatibility of seals with hydraulic fluid used! (other seals on request)	
08	Further details in the plain text	*

¹⁾ Mating connectors, separate order, see accessories

Accessories

- Mating connectors for the electrical connection see page 7.
- Mounting clamp and protective cap see page 8.

Technical data

(For application outside these values, please consult us!)

general		
Weight	kg	0.26
Installation position		Any
Ambient temperature range	°C	−25 ... +80
Storage temperature range	°C	−40 ... +100
Sine test according to DIN EN 60068-2-6:1996-05		10...2000 Hz, max. 20 g, 10 double cycles
Transport shock according to DIN EN 60068-2-27:1995-03		Half-sine 50 g / 11 ms, 3 x in positive direction, 3 x negative direction (a total of 18 single shocks)
Noise test according to DIN EN 60068-2-64: 1995-08		20...2000 Hz, 10 g _{RMS} , 24 h
Conformity	► CE	DIN EN 60947-1: 2007 / A1: 2011 / A2: 2014 DIN EN 60947-5-1: 2004 / A1: 2009 DIN EN 61058-1: 2002 / A2: 2008 DIN EN 60529: 1991 / A2: 2013
	► UL	UL, 508 17th edition File No E223220 (up to 350 bar)
Protection class according to DIN EN 60529		IP 65 / IP 67 with mating connector mounted and fitted
Protection class according to EN 50178		III

hydraulic					
Pressure rating (measurement range)	bar	100	250	400	600
Admissible overload pressure	bar	300	500	800	800
Bursting pressure	bar	400	1000	1600	2500
Switching point	bar	1.0 ... 100	2 ... 250	4 ... 400	6 ... 600
Switch-back point, rP	bar	0.5 ... 99.5	1 ... 249	2 ... 398	3 ... 597
in steps of	bar	0.5	1	2	3
Hydraulic fluid ¹⁾		See table below			
Hydraulic fluid temperature range (at the working port of the pressure switch)	°C	−25 ... +80			
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⁾			
Material in contact with medium		V4A (1.4542), FKM (with male thread)			
Pressure port	► Internal thread "Gi"	G1/4			
	► Male thread "Ga"	G1/4			

- ¹⁾ 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.

Hydraulic fluid		Classification	Suitable sealing materials	Standards	Data sheet
Mineral oils		HL, HLP, HLPD, HVLP, HVLDP	NBR, FKM, low-temperature seals	DIN 51524	90220
Bio-degradable	► Insoluble in water	HETG	NBR, FKM	ISO 15380	90221
		HEES	FKM		
	► Soluble in water	HEPG	FKM	ISO 15380	
Flame-resistant	► Water-free	HFDU, HFDR	FKM	ISO 12922	90222
	► Containing water	HFC (Fuchs Hydrotherm 46M, Petrofer Ultra Safe 620)	NBR	ISO 12922	90223

Technical data

(For application outside these values, please consult us!)



Important information on hydraulic fluids:

- ▶ For more information and data on the use of other hydraulic fluids, please refer to the data sheets above or contact us!
- ▶ There may be limitations regarding the technical valve data (temperature, pressure range, life cycle, maintenance intervals, etc.)!
- ▶ The flash point of the hydraulic fluid used must be 40 K higher than the maximum solenoid surface temperature.

▶ Flame-resistant – containing water:

- Maximum pressure differential per control edge 50 bar
- Pressure pre-loading at the tank port >20% of the pressure differential, otherwise increased cavitation
- Life cycle as compared to operation with mineral oil HL, HLP 50 to 100%

- ▶ **Bio-degradable and flame-resistant:** When using hydraulic fluids that are simultaneously zinc-solving, zinc may accumulate (700 mg zinc per pole tube).

electric			
Electrical connection			M12 plug-in connection, gold-plated contacts
Input variables			
Supply voltage		U_B	18 to 30 VDC
Current consumption		I	< 50 mA
Isolation resistance		mΩ	>100 (500 VDC)
Output parameters			
Analog output	► Current carrying capacity	U	0 ... 10 VDC (minimum load 2000 Ω)
	► Voltage	I	4 ... 20 mA (max. load ($U_B - 10$) x 50 Ω)
	► Rise time (10 to 90 %)	t	3 ms
Switching output	► Output function		Normally open contact / normally closed contact programmable
	► Current carrying capacity	I	150; 200 (...60 °C); 250 (...40 °C) mA
	► Voltage drop	U	< 2.5 V short-circuit protection clocked
	► Overload-resistant		Yes
	► Switching frequency	f	≤ 170 Hz
Accuracy / variations			
Characteristic curve deviation: (according to end point setting DIN16086)			< ±0.5 %
Temperature coefficient in nominal temperature range	► largest TK of the zero point		0.2 % / 10 k
	► largest TK of the range		0.2 % / 10 k
Hysteresis			< ± 0.25 %
Switching point accuracy			< ± 0.5 %
Repetition accuracy			0.1 %
Programming options			Hysteresis / window; normally open contact / normally closed contact; activation, deactivation delay; damping; indicator unit / diagnosis output
Long-term drift under reference conditions (6 months)			0.05 %
EMC	► EN 61000-4-2 ESD	kV	4 / 8
	► EN 61000-4-3 HF radiated	V/m	10
	► EN 61000-4-4 Burst	kV	2
	► EN 61000-4-5 Surge	kV	1
	► EN 61000-4-6 HF conducted	V	10
Reaction times			
Readiness delay time		s	0.3
Min. reaction time switching output		ms	< 3
Adjustable delay time dS, dr		s	0...50
Damping switching output (dAP)		s	0...4
Damping analog output (dAA)		s	0...4
Rise time analog output		ms	< 3
Watchdog integrated			Yes
Switching cycles min.			100 million / 50 million with pressure rating 600 bar

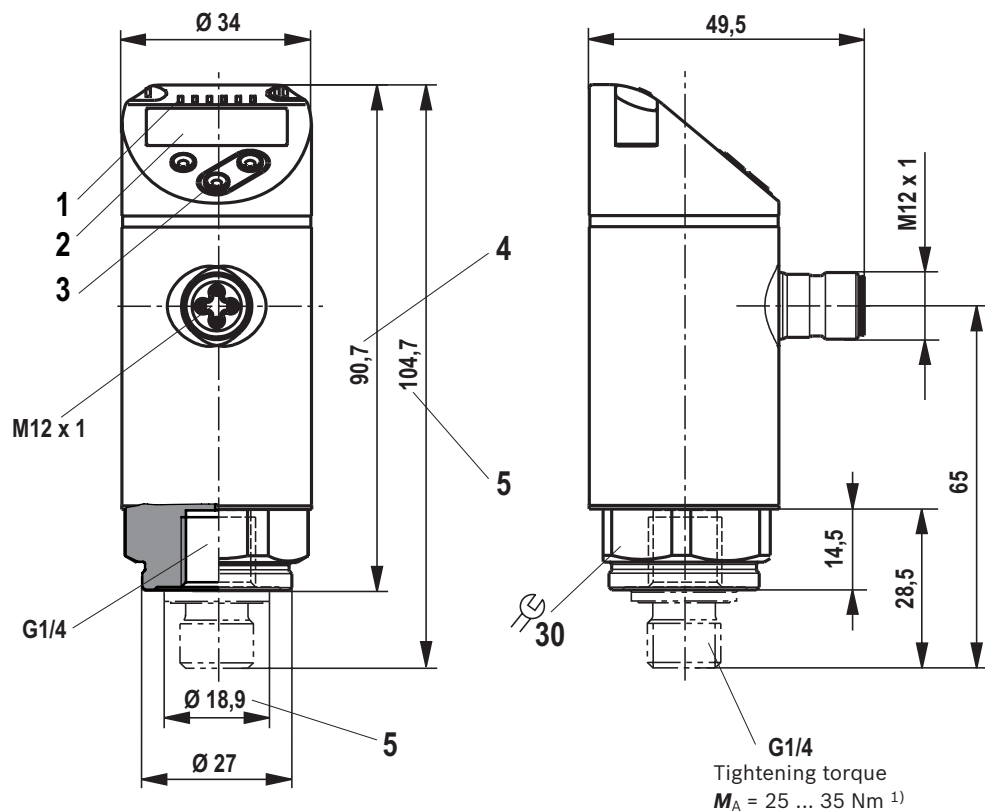
Technical data

(For application outside these values, please consult us!)

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	1
Process data binary	2
Min. process cycle time t	ms 2.3
Display	
► Indicator unit	3 x LED green (bar, psi, MPa)
► Switching status	2 x LED yellow
► Measured values	4-digit alphanumerical display / alternating display (red and green)

Dimensions

(dimensions in mm)



- 1 Status LEDs
- 2 4-digit alphanumerical display
- 3 Programming button
- 4 Dimension for "Gi" version with internal thread G1/4"
- 5 Dimension for "Ga" version with male thread G1/4"

¹⁾ Depending on lubrication, seal and pressurization



Notice:

Oscillation-free installation is recommended.

Operating and display elements

	1 ... 8: indicator LEDs	
	LED 1	Switching status OUT1 (is illuminated when output 1 is switched through)
	LED 8	Switching status OUT2 (is illuminated when output 2 is switched through)
	LED 2 ... 7 ¹⁾	System pressure in the specified unit of measurement
	9: Enter key [•]	
	Selection of the parameters and confirmation of the parameter values	
	10 and 11: Arrows up [▲] and down [▼]	
	Setting of the parameter values (permanent by continuous pressure; step-wise by pressing individually)	
	12: Alphanumerical display, 4-digit	
	Display of the current system pressure	
	Display of the parameters and parameter values	

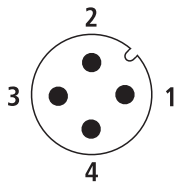
1) With variant 1 switching and 1 analog output, these LEDs don't have any function.

Electrical connection according to DIN EN 175301-803

"K35" two 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	OUT1: Switching output or IO-Link OUT2: Switching output Color marking according to DIN EN 60947-5-2
"K35" one switching and one analog output:	
OUT1: Switching output or IO-Link OUT2: 4...20 mA / 0...10 V Color marking according to DIN EN 60947-5-2	

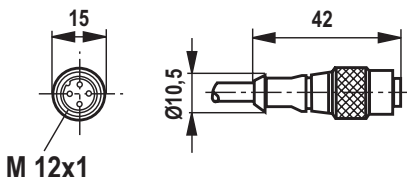
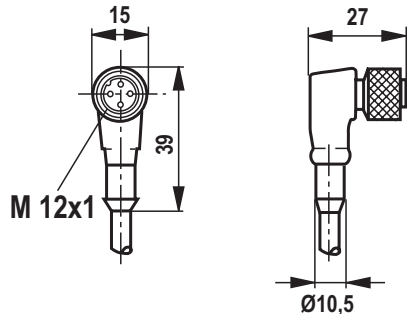
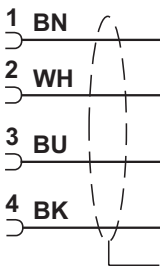
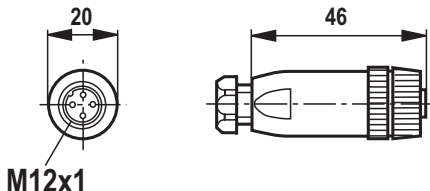
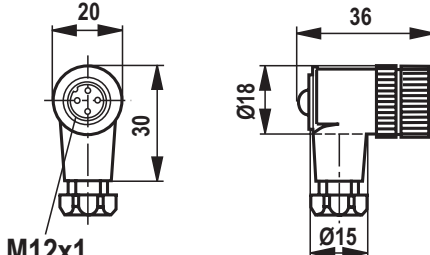
Electrical connection according to DIN EN 175301-803

Connector view at the device:



When establishing the electrical connection, the protective earthing conductor (PE $\perp$) must be connected correctly.

Mating connectors according to DIN EN 175301-803

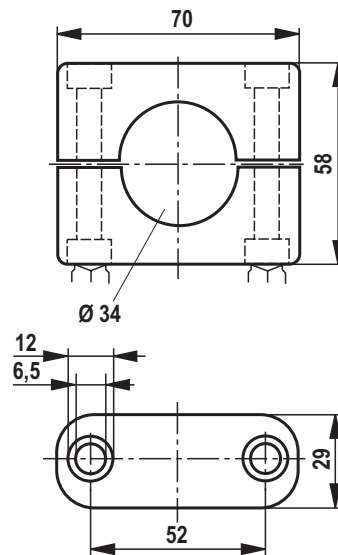
Technical data:		Designation	Material no.
		04 POL (with 2 m cable)	R900773031
		04 POL (with 3 m cable)	R900064381
		04 POL (with 5 m cable)	R900779498
		04 POL (with 10 m cable)	R913005668
		04 POL (with 2 m cable)	R900779504
		04 POL (with 5 m cable)	R900779503
		04 POL (with 10 m cable)	R913011722
Connection:  		04 POL (without cable) ¹⁾	R900773042
			04 POL (without cable) ¹⁾
¹⁾ Protection class IP68			

For more details and other lengths refer to RE8006 or upon request

Accessories

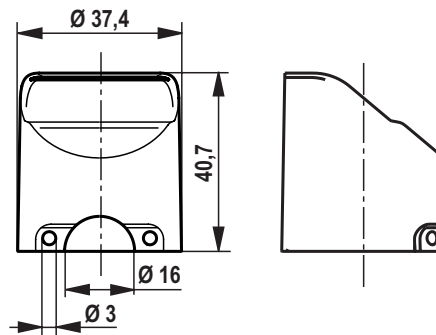
Mounting clamp for HEDE 10

Designation	Material no.
Mounting clamp	R900786138



Protective cap for HEDE 10

Designation	Material no.
Protective cap M12	R901453193



Further information

Notice:

For general information on safety, installation or commissioning, see operating instructions:

07600-B	Hydraulic valves for industrial applications
30277-01-B	HEDE10-3x with two switching outputs
30277-02-B	HEDE10-3x with switching output and analog output
30277-PA	Parameter description IO-Link

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