

Electric Drives
and Controls

Hydraulics

Linear Motion and
Assembly Technologies

Pneumatics

Service

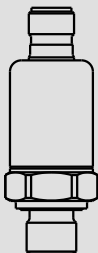
Rexroth
Bosch Group

Pressure transducer for hydraulic applications Type HM20

RE 30270-MON/08.13

Replaces: 10.11

Installation instructions



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1 Safety instructions

- Please read this document prior to installing the unit. Make sure that the product is suitable for your application without any restrictions.
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- Please check for all applications that the product materials (see Technical data) are compatible with the hydraulic media to be measured.

For the scope of cULus:

The device shall be supplied from an isolating transformer having a secondary Listed fuse rated either

- a) max 5 amps for voltages 0~20 Vrms (0~28.3 Vp) or
- b) 100/Vp for voltages of 20~30 Vrms (28.3~42.4 Vp).

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2 Intended use

The pressure sensor senses the system pressure and converts it into an analog output signal.

- 4...20 mA (HM20...C-K35)/0.1...10 V (HM20...H-K35)

2.1 Applications

Type of pressure: relative pressure

Type designation	Measuring range		Permissible overload pressure		Burst pressure	
	bar	PSI	bar	PSI	bar	PSI
HM20-1x/100-C-K35 HM20-1x/100-H-K35	0...100	0...1450	200	2900	800	11603
HM20-1x/250-C-K35 HM20-1x/250-H-K35	0...250	0...3625	500	7252	1000	14504
HM20-1x/400-C-K35 HM20-1x/400-H-K35	0...400	0...5802	800	11603	1600	23206

MPa = bar ÷ 10 / kPa = bar × 100



Avoid static or dynamic overpressures that exceed the specified measuring range. Even if the specified overload pressure is exceeded only briefly, the unit can be destroyed. Reaching the burst pressure poses a risk of injury!

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3 Installation



Before mounting and removing the sensor, make sure that the system is depressurized and de-energized.

- ▶ Insert the unit in a G $\frac{1}{4}$ process connection
- ▶ Tighten firmly. Tightening torque: max. 20 - 25 Nm
- ▶ Attention: Do not remove the throttle installed in the pressure channel!

4 Electrical connection

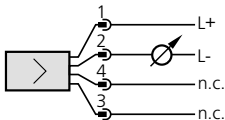


The unit must only be connected by an electrical specialist. The national and international regulations for the installation of electrical equipment must be observed.

Voltage supply to EN50178, SELV, PELV.

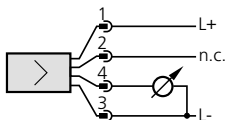
- ▶ Disconnect power.
- ▶ Connect the unit as follows:

HM20...C-K35 (4...20 mA analog)

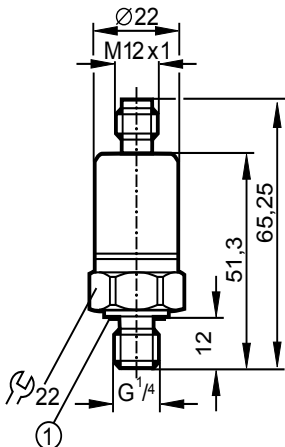


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HM20...H-K35 (0.1 ... 10 V analog)



5 Scale drawing



Dimensions in mm
1: Seal NBR /
DIN 3869-14

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6 Technical data

HM20...C-K35

Operating voltage 16...36 V DC
Analog output 4...20 mA
Load [Ω] ... max. ($U_S - 8.5$ V)/0.02 A; 775 at $U_S = 24$ V
Resolution 11 bit

HM20...H-K35

Operating voltage 16...36 V DC
Current consumption ≤ 6 mA
Analog output 0.1...10 V
Load min. 20 k Ω

Accuracy [% of the span] < 0.5
Temperature coefficient (TC) in the nominal temperature range for zero point and range < 0.1 %/10 K ¹⁾
Hysteresis < 0.15 % ¹⁾
Non-repeatability < 0.10 % ¹⁾
Setting time (10 to 90 %) < 1 ms
Long-term drift (1 year) with reference conditions < 0.1 % ¹⁾

Nominal temperature range -20...+80 °C
Limit temperature range -40...+85 °C
Storage temperature range -40...+100 °C
Hydraulic fluid temperature range -40...+90 °C

¹⁾ related to the full measurement range

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Materials in contact with the medium
..... Housing (BSI 316S12/AISI 316); NBR;
..... throttle (BSI 303S2/AISI 303)
Hydraulic fluids HL, HLP, HFC,
..... other media on request
Tightening torque [M_A] 20 to 25 Nm
Shock resistance, mechanical 15 g
..... according to IEC 60068-2-27
Vibration resistance in case of resonance.... 10 g
..... according to IEC 60068-2-6
Ingress protection to EN 60529 IP 65/67
Protection class III
Insulation resistance [$M\Omega$] > 100 (500 V DC)

EMC

EN 61000-4-2 ESD: 4 kV CD / 8 kV AD
EN 61000-4-3 HF radiated: . 10 V/m (80...2700 MHz)
EN 61000-4-4 Burst: 4 kV coupling clamp
EN 61000-4-5 Surge: 1 kV signal for DC units
EN 61000-4-6 HF conducted: 10 V

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