

Pressure transducer for hydraulic applications

RE 30270/01.12
Replaces: 09.11

1/4

Type HM 20

Component series 1X
CE, UL

H7879

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Features

- Measuring pressures in hydraulic systems
- Conversion of the measured pressure into a standardized electric analog signal
- Sensor with thick-film measuring cell
- Components that are in contact with the media are of stainless steel
- Operational reliability due to high bursting pressure, reverse polarity, overvoltage and short-circuit protection
- Compact design
- Very good temperature behavior
- Accuracy class 0.5
- 4-pin M12 connector at the housing
- Hydraulic port G1/4A
- Protection class IP65/IP67
- UL approval for the US and Canadian market

Ordering code

HM 20 -1X/ - -K35

Pressure transducer

Component series 10 to 19
(10 to 19: Identical technical data and pinout)

= 1X

K35 = Connector, 4-pin, M12x1

C = Current output 4 to 20 mA

H = Voltage output 0.1 to 10 V

Pressure measuring ranges

up to 100 bar	= 100
up to 250 bar	= 250
up to 400 bar	= 400

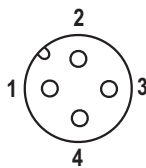
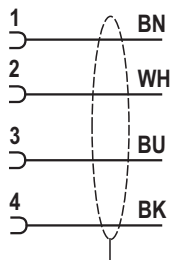
Replacement seal ring

Denomination	Material no.
Seal ring NBR	R900012467

Cable sets or mating connectors are not included in the scope of delivery; please order separately

Accessories: Cable sets and mating connectors

Technical data	
general	
Current carrying capacity	4 A
Temperature range	-25 ... 85 °C
Protection class	IP 67 according to EN 60529
Cable sets, shielded	
Cable diameter	5.9 mm
Jacket material	PUR-OB
Line cross-section	4 x 0.34 mm ²
Mating connectors	
Cable diameter	4 to 6 mm
Line cross-section	4 x 0.75 mm ²
Type of connection	Screw connection
Connection diagram cable set	Socket con- tacts, viewed to socket side



Unit dimensions (in mm)	Denomination	Material no.
	4PM12 (L = 2 m)	R900773031
	4PM12 (L = 5 m)	R900779498
	4PM12 (L = 2 m)	R900779504
	4PM12 (L = 5 m)	R900779503
	4PE11508	R900773042
	4PE11509	R900779509

Technical data

Input variables

Operating voltage	U_S	16 to 36 VDC		
Residual ripple	U_{PP}	2.5 V (40 to 400 Hz)		
Current consumption	I_{max}	6 mA (with voltage output)		
Measurement range	p_N [bar]	100	250	400
Overload protection	p_{max} [bar]	200	500	800
Bursting pressure	p [bar]	800	1000	1600

Output variables

Output signal and admissible load R_A	I_{Sig}	4 to 20 mA, two-wire, $R_A = (U_S - 8.5 \text{ V}) / 0.02 \text{ A}$ with R_A in Ω and U_S in V		
	U_{Sig}	0.1 to 10 V, three-wire, $R_A > 20 \text{ k}\Omega$		
	Resolution	11 bit		
Accuracy		< 0,5 % Related to the complete measurement range, including non-linearity, hysteresis, zero point and end value deviation (corresponds to the measuring deviation according to IEC 61298-2)		
Temperature coefficient (TK) 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 %)	t	< 1 ms		
Long-term drift (1 year) with reference conditions		< 0.1 % ¹⁾		

Environmental conditions

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

Further characteristics

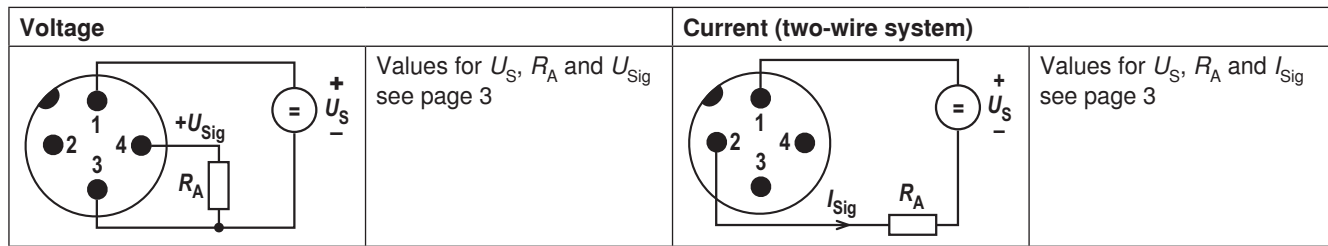
Pressure port		G1/4 male thread (pressure channel with throttle \varnothing 0.6 mm), seal ring according to DIN 3869
Materials:		
– Measuring cell, hydraulic port, housing		CrNi steel 1.4404
– Throttle		CrNi steel 1.4305
– Seal		NBR
Hydraulic fluids		HL, HLP, HFC, other media upon request
Tightening torque	M_A	20 to 25 Nm
Electrical connection		4-pin M12 connector at the housing ²⁾
Protection class according to EN 60529		IP65/IP67 with mating connector correctly mounted and locked
Weight	m	0.07 kg
Service life		40 million load cycles or 40000 h
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
Electromagnetic compatibility (EMC)		DIN EN 61326-2-3

¹⁾ Related to the complete measurement range

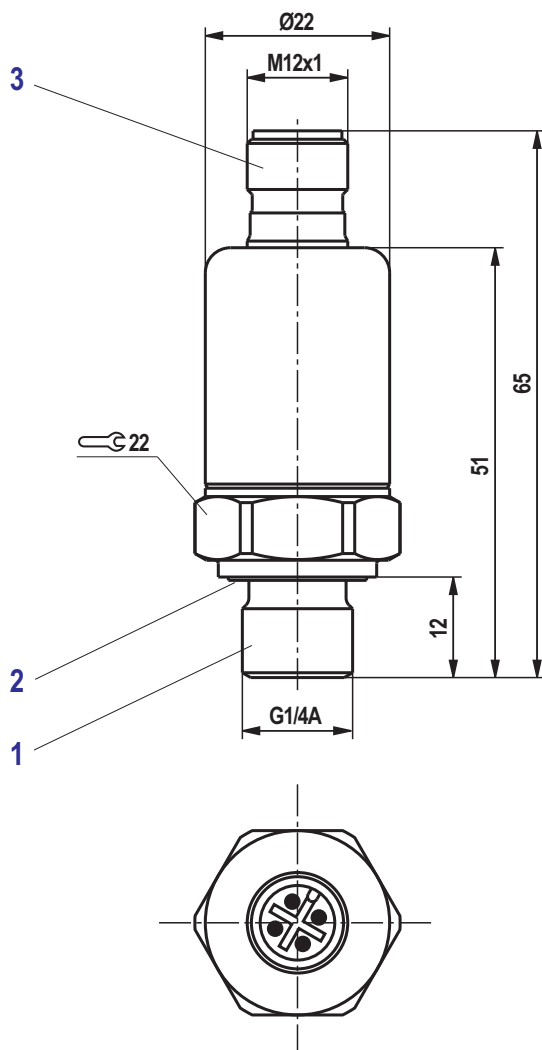
²⁾ Recommendation:
Use of shielded connection cable, see cable set on page 2

Electrical connection

4-pin M12 connector, view to connection side



Unit dimensions (dimensions in mm)



- 1 Pressure port G1/4 male thread
- 2 Seal ring
- 3 4-pin M12 connector