

HYD Series

Submersible precision stainless steel pressure transmitters

FEATURES

- 0...0.1 to 0...4 bar,
(0...1 to 0...40 mH₂O)
- For corrosive media
- 4...20 mA output
- Field interchangeable
- Intrinsically safe (option)⁹

MEDIA COMPATIBILITY

Wetted materials:
stainless steel 1.4404 (316L)⁸, Polyethylene,
Viton (EPDM)

Housing:
protection class IP 68 (according to DIN EN 60529)
respectively NEMA 6P¹



SPECIFICATIONS

Maximum ratings

Supply voltage ² (reverse polarity protection)	13...40 V
intrinsically safe version (option)	17...28 V

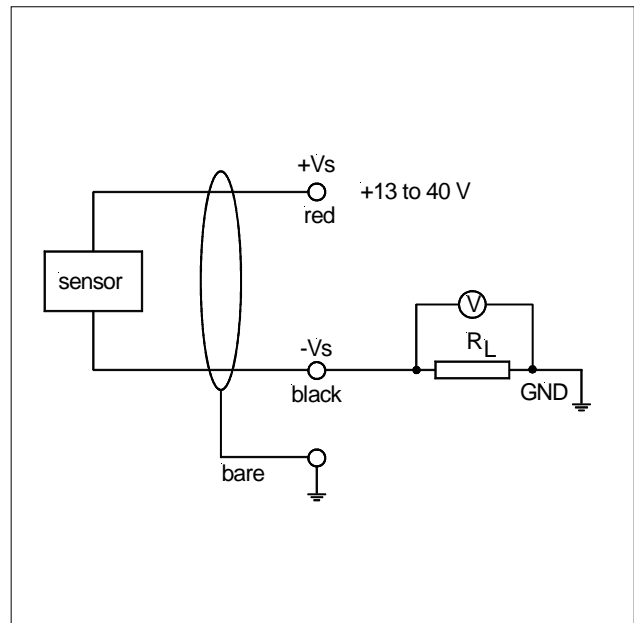
Temperature limits

Storage	-20 to +70°C
Operating	-10 to +70°C
Compensated	0 to +65°C

Proof pressure³

0.1 to 0.7 bar	6 bar
0.7 to 1.5 bar	10 bar
1.5 to 4.0 bar	15 bar

ELECTRICAL CONNECTION



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INDIVIDUAL PERFORMANCE CHARACTERISTICS

(unless otherwise noted, $V_s = 24\text{ V}$, $t_{\text{amb}} = 20^\circ\text{C}$, $R_L = 550\ \Omega$)

Characteristics		Min.	Typ.	Max.	Unit
Operating pressure	HYD0X1...	0		0.1	bar
	HYD0X2...	0		0.2	
	HYD0X4...	0		0.4	
	HYD0X7...	0		0.7	
	HYD1X0...	0		1.0	
	HYD1X5...	0		1.5	
	HYD2X0...	0		2	
	HYD3X0...	0		3	
	HYD4X0...	0		4	
Zero pressure offset		3.968	4.000	4.032	mA
Full scale span ⁶		15.968	16.000	16.032	
Full scale output			20.0		
Thermal effects (0 to 65°C) ⁴	Offset		±0.015		%FSS/°C
	Span		±0.015		
Non-linearity, hysteresis, repeatability ⁵				±0.2	%FSS
Long term stability				±0.1	%FSS/year
Response time (10 % to 90 %)			50		ms
Power consumption ($I_L = 20\text{ mA}$)			260		mW

LOAD LIMITATION

intrinsically safe version:

$$R_{\text{max}} = \frac{V_s - 13\text{ V}}{0.02\text{ A}}$$

$$R_{\text{max}} = \frac{V_s - 17\text{ V}}{0.02\text{ A}}$$

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ELECTROMAGNETIC CAPABILITY⁷

	Test conditions	Criterion
Radiated, radio frequency electromagnetic field immunity (RFI)	EN61000-4-3: Grade 3 10 V/m, 80 MHz to 1000 MHz 80 % AMC (1 kHz)	A
Electrical fast transient / burst immunity (EFT)	EN61000-4-4: Grade 3 ±2 kV	B
Electrostatic discharge immunity test (ESD)	EN61000-4-2: Grade 4 ±8 kV, contact discharge	B
Immunity to conducted disturbances induced by radio-frequency fields	EN61000-4-6: Grade 3 0,15 to 80 MHz 10 V, 80 % AMC (1 kHz)	A

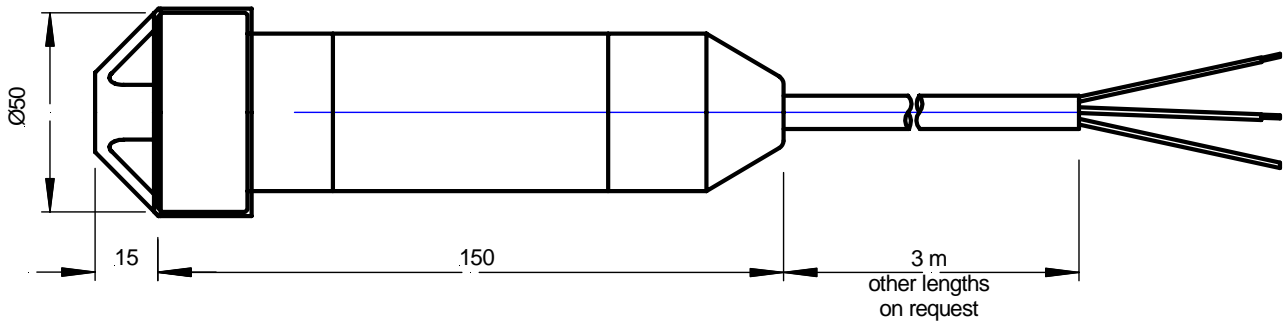
Specification notes (for all devices):

1. The package is an all-sealed housing. For proper function the gage port is vented to the atmosphere through the connecting cable. Thus the vent tube of the cable end must have access to the ambient pressure.
2. The minimum supply voltage is directly proportional to the load resistance seen by the transmitter. For more details see the [load limitation](#) formula.
3. Proof pressure is the maximum pressure which may be applied without causing damage to the sensing element.
4. Thermal effects tested and guaranteed from 0°C to 65°C relative to 20°C.
5. Non-linearity refers to the **Best Straight Line** fit measured for offset, full scale span and 1/2 full scale span.
6. Span is the arithmetic difference in transmitter output signal measured at zero pressure and the maximum operating pressure.
7. Tests are in accordance with EN61000-6-2, April 99.
8. On special request. Hastelloy© is available.
9. Certificate: ATEX II 1G (CENELEC EEx ia IIC T4).

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OUTLINE DRAWING

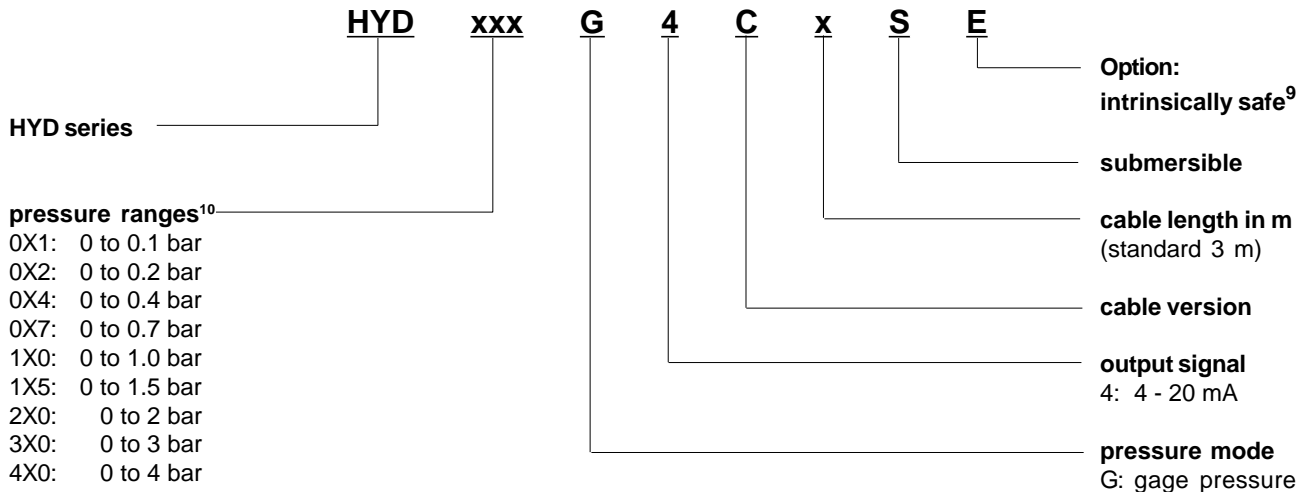


mass: typ. 800 g (without cable)

WIRE CONNECTION	
Color	Electrical connection
red	+Vs
black	-Vs
transparent	vent tube ¹
bare	case/shield

dimensions in mm

ORDERING INFORMATION



Note 10: Other pressure ranges between 0.1 and 4.0 bar are available on request

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