



Linear Position Transducer Rod Version

HLT 2100-R1

Description:

The sensor works on the principle of magnetostriction.

The measuring principle determines with high accuracy the position, distance and/or speed, and is based on elapsed time measurement.

Utilizing this non-contact and wear-free measuring system, HYDAC offers a version in a pressure-resistant, tubular casing in stainless steel, for direct installation into hydraulic cylinders.

The different output signals (analog/digital) facilitate the connection of all HYDAC ELECTRONIC GMBH measurement and control devices as well as connection to standard evaluation systems (e.g. also to PLC controls).

The HLT 2100-R1 is primarily used in stationary applications as a semi-integrated solution in hydraulic cylinders.

Special features:

- Accuracy $\leq \pm 0.05\% \text{ FS B.F.S.L.}$
- Very robust housing
- High resistance to shock and vibration
- Excellent EMC characteristics
- Non-contact and wear-free
- Persuasive price / performance ratio

Technical data:

Input data

Measuring ranges	50 .. 4000 mm
Measured variable	Distance, position, speed
Mechanical connection	Threaded flange M18x1.5
Housing	Aluminum
Hydraulic tube	Stainless steel Pressure resist. 6526 psi, 10877 psi peak

Output data

Signal output analog	Current: 4 .. 20 mA or 20 ... 4 mA Voltage: 0 .. 10 V or 10 .. 0 V
Signal output digital	Profibus, CANopen, Device Net, SSI, EtherCAT

Measuring accuracy

Resolution	max. 0.005 mm, 16 bit
Non-linearity	$\pm 0.1 \text{ mm}$ to 1,500 mm $\pm 0.15 \text{ mm}$ $>$ 1,500 mm
Repeatability	$\leq 0.005 \text{ mm}$ - $\leq 0.05 \text{ mm}$ (length-dependent)
Temperature coefficient	$< 0.0024\% \text{ FS} / ^\circ\text{F}$ (analog) $< 0.0009\% \text{ FS} / ^\circ\text{F}$ (digital)

Installation position and travel speed

No restrictions

Environmental conditions

Operating temperature range	32 .. +158°F
Relative humidity	98 %, non-condensing
Storage temperature range	-22 .. +185 °F, dry
Vibration resistance to DIN EN 60068-2-6 at 50 .. 2000 Hz	$\leq 10 \text{ g}$
Shock resistance to DIN EN 60068-2-27	$\leq 100 \text{ g} / 11 \text{ ms} / \text{half sine}$

CE mark

EN 61000-6-1 / 2 / 3 / 4

EMC

- Emitted interference	DIN EN 61000-6-3
- Interference resistance	DIN EN 61000-6-2

Housing / Protection class to IEC 60529

Aluminum / IP 65¹⁾

Other data

Electrical connection	
- Analog	- Flying lead, length 1 m ¹⁾ - Male M16, 6 pole - Male M16, 8 pole
- CANopen, Device Net	Female M12x1, 5 pole + male M12x1, 5 pole
- Profibus	Female M12x1, 5 pole + male M12x1, 5 pole + male M8, 4 pole
- Synchronous Serial Interface	CONTACT male, 12 pole
- EtherCAT	2 female M12x1, 4 pole + male M8, 4 pole
Supply voltage	24 V DC $\pm 10\%$
Current consumption without load	$< 250 \text{ mA}$
Weight	Depends on length

Note: Reverse polarity protection of the supply voltage and excess voltage protection are provided.

FS (Full Scale) = relative to the complete measuring range

¹⁾ Other versions are possible.

Model code:Stationary **HLT 2 1 0 0 - R1 - XXX - XXX - XXXX - 000****Design/Geometry type**

1 = Rod

Mechanical connection

R1 = Threaded flange M18x1.5

Electrical connection

Signal output analog

K01 = Flying lead, length 1 m

M06 = Male M16, 6 pole

M08 = Male M16, 8 pole

Signal output CANopen, Device Net

C61 = Female M12x1, 5 pole + male M12x1, 5 pole

Signal output Profibus

P61 = Female M12x1, 5 pole + male M12x1, 5 pole
+ male M8, 4 pole

Signal output Synchronous Serial Interface

S01 = CONTACT male, 12 pole

Signal output EtherCAT

E51 = 2 female M12x1, 4 pole + male M8, 4 pole

Signal output

C01 = Analog 4 .. 20 mA, 3 conductor

C02 = Analog 20 .. 4 mA, 3 conductor

B01 = Analog 0 .. 10 V

B02 = Analog 10 .. 0 V

ETC = EtherCAT

SSI = Synchronous Serial Interface

CAN = CANopen

PRO = Profibus

DVN = Device Net

Measuring range in mm (50 to 4000 mm)

Example

0150 = 150 mm

Modification

000 = Standard

Items supplied:

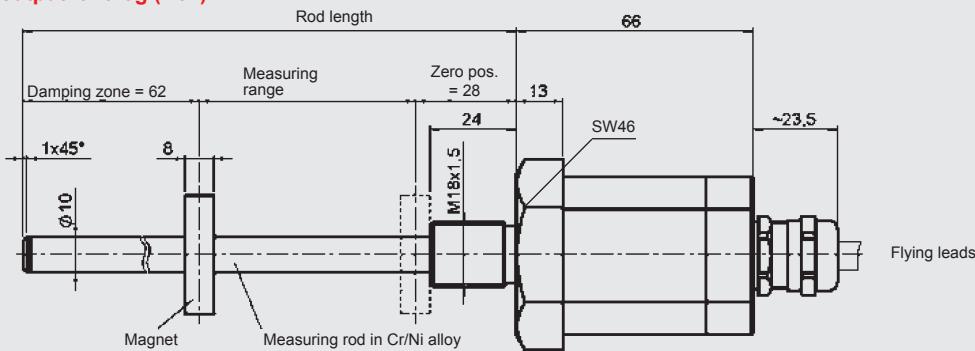
- HLT 2100-R1
- Installation instructions German/English
- HLT 2000 CD incl. case

Accessories:

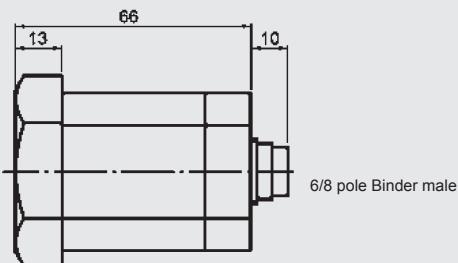
Appropriate accessories, such as position magnets, etc. can be found in the Accessories section of the Electronics brochure. The recommended position magnet ZBL MR33, part no. 6084207, must be ordered separately.

Dimensions:

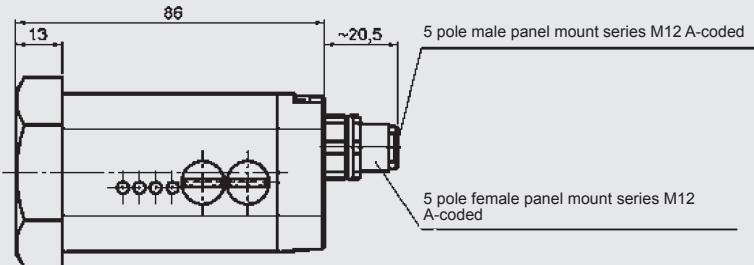
Signal output: analog (K01)



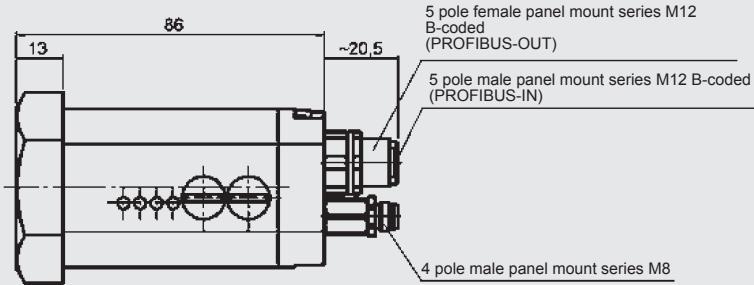
Signal output: analog (M06, M08)



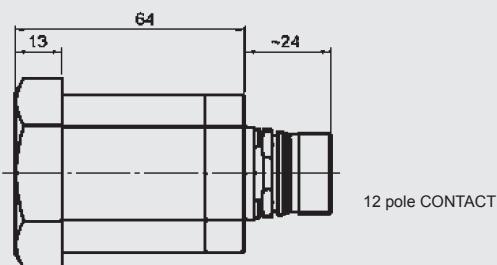
Signal output: CANopen
Device Net (C61)



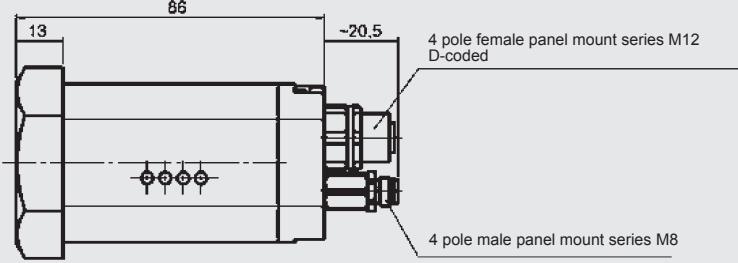
Signal output: Profibus (P61)



Signal output: Synchronous Serial
Interface (S01):



Signal output: EtherCAT (E51)



Note:

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

HYDAC ELECTRONICS

90 Southland Drive,

Bethlehem, PA 18017

Telephone +1 (610) 266-0100

E-mail: electronics@hydacusa.com

Website: www.hydacusa.com

