



## Linear Position Transmitter HLT 2100-R1

Magnetostrictive

For partial integration

Resolution 1 µm

Profibus



### Description:

The sensor works on the principle of magnetostriction.

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

Utilising 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.

In the Profibus version, the measured value is digitised and made available to the field bus system via the Profibus protocol.

HLT 2100 is primarily used in stationary applications as partially integrated solutions in hydraulic cylinders.

### Technical data:

#### Input data

Measuring ranges	50 .. 4000 mm
Model	Rod with M18x1.5 screw-in flange acc. to ISO 6149 Operating pressure: ≤ 450 bar Peak pressure acc. to DIN EN ISO 19879: 750 bar
Tightening torque, recommended	≤ 50 Nm
Material	Rod: Stainless steel 1.4571 Housing: Aluminium

#### Output data

Output signal	Profibus
Resolution	0.001 mm <sup>1)</sup>
Non-linearity	± 0.1 mm (measuring range ≤ 1500 mm) ± 0.15 mm (measuring range > 1500 mm)
Hysteresis	0.02 mm (measuring range ≤ 1500 mm) 0.1 mm (measuring range > 1500 mm)
Repeatability	≤ 0.005 mm - ≤ 0.05 mm (depends on length)
Temperature coefficient	≤ ± 0.0015 % FS / °C
Sampling rate	Depending on length: ≤ 1 m: 1.0 ms ≤ 1.5 m: 1.5 ms ≤ 2 m: 2.0 ms ≤ 2.5 m: 2.5 ms > 2.5 m: 3.0 ms

#### Environmental conditions

Operating temperature range	0 .. +70 °C
Storage temperature range	-30 .. +85 °C
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance acc. to DIN EN 60068-2-6 at 50 .. 2000 Hz	≤ 10 g
Shock resistance acc. to DIN EN 60068-2-27 (11 ms / half sine)	≤ 100 g
Protection class acc. to DIN EN 60529 <sup>2)</sup>	IP 65
Installation position	No restrictions

#### Protocol data for Profibus

Profibus DP V0	IEC 61158, IEC 61784
PNO encoder profile	Class 1 and 2
Transmission rate parameter	9.6 .. 12000 kbit/s

#### Other data

Supply voltage	24 V DC ± 10 %
Residual ripple of supply voltage	≤ 250 mV <sub>PP</sub>
Current consumption without output	≤ 150 mA
Weight	Depending on length: 50 mm: 600 g 4000 mm: 1500 g

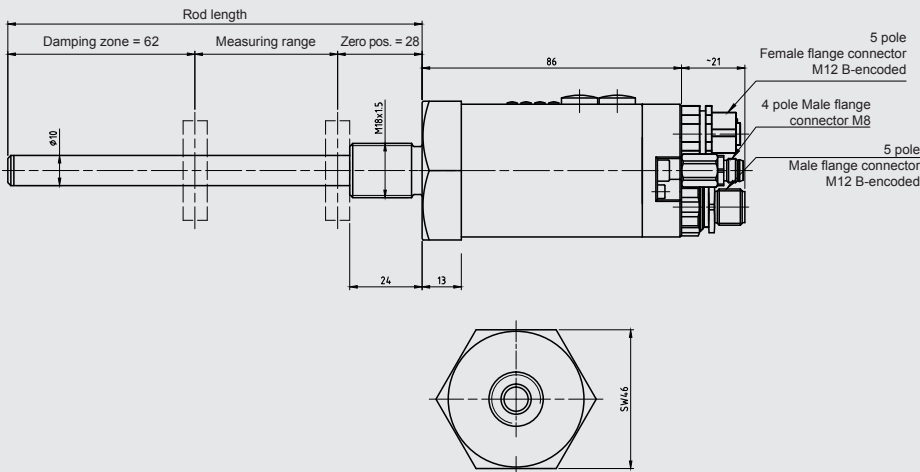
Note: Reverse polarity protection of the supply voltage, overvoltage and short circuit protection are provided.

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

<sup>1)</sup> Other models on request

<sup>2)</sup> With mounted mating connector in corresponding protection class

## Dimensions:



## Model code:

HLT 2 1 0 0 - R1 - P61 - F41 - XXXX - 000

### Design / geometry type

1 = rod

### Model

R1 = rod with M18x1.5 screw-in flange

### Electrical connection

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

### Output signal

F41 = Profibus

### Measuring range in mm (50 .. 4000 mm)

Example

0150 = 150 mm

### Modification

000 = standard

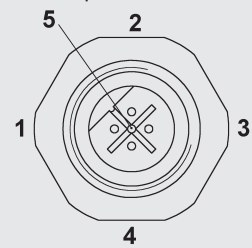
### Accessories available: (not supplied with instrument)

ZBL MR17.4	position magnet	part no.: 6119372
ZBL MR22	position magnet	part no.: 6084453
ZBL MR33	position magnet	part no.: 6084207
ZBL MV63	position magnet	part no.: 6084454
ZBL MU38-20	position magnet	part no.: 6084455
Intermediate ring	AD17.4xID13.5x5	part no.: 3903233
Intermediate ring	AD33xID13.5x5	part no.: 3887829

More detailed information on accessories as well as on further accessories, such as mating connectors, can be found in the Accessories brochure.

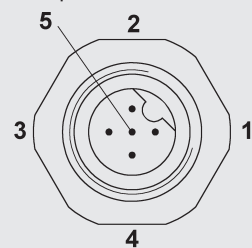
## Pin connections:

Female M12x1, 5 pole, B-encoded



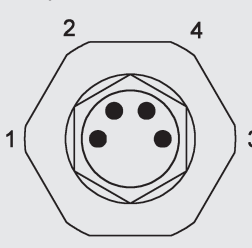
Pin	Profibus_OUT
1	VP, +5 V DC
2	Profibus, Data A
3	0 V
4	Profibus, Data B
5	n.c.
screw connection	Shield/housing

Male M12x1, 5 pole, B-encoded



Pin	Profibus_IN
1	n.c.
2	Profibus, Data A
3	n.c.
4	Profibus, Data B
5	n.c.
screw connection	Shield/housing

Male M8x1, 4 pole



Pin	Profibus_IN
1	+U <sub>B</sub>
2	n.c.
3	0 V
4	n.c.

## Note:

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

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC ELECTRONIC GMBH**  
 Hauptstr. 27, 66128 Saarbrücken  
 Germany  
 Telephone +49 (0)6897 509-01  
 Fax +49 (0)6897 509-1726  
 e-mail: [electronic@hydac.com](mailto:electronic@hydac.com)  
 Internet: [www.hydac.com](http://www.hydac.com)