



Linear Position Transmitter HLT 2100-R1

Magnetostrictive

For partial integration

Resolution 1 µm



EtherCAT

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 EtherCAT version, the measured value is digitised and made available to the field bus system via the EtherCAT 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	EtherCAT
Resolution	0.001 mm ¹⁾
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: ≤ 0.5 m: 0.5 ms ≤ 1.0 m: 1.0 ms ≤ 2.0 m: 1.5 ms > 2.0 m: 2.0 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 ²⁾	IP 65
Installation position	No restrictions

Protocol data for EtherCAT

EtherCAT	IEC 61158-1-6, IEC 61784-2
Physical Layer	Fast Ethernet, ISO/IEC 8802-3
Device profile	CoE, CiA DS-406
Transmission rate parameter	100 Mbit/s
Cycle time	100 .. 20000 µs

Other data

Supply voltage	24 V DC ± 10 %
Residual ripple of supply voltage	≤ 250 mV _{PP}
Current consumption without output	≤ 300 mA
Weight	Depending on length: 50 mm: 600 g 4000 mm: 1500 g

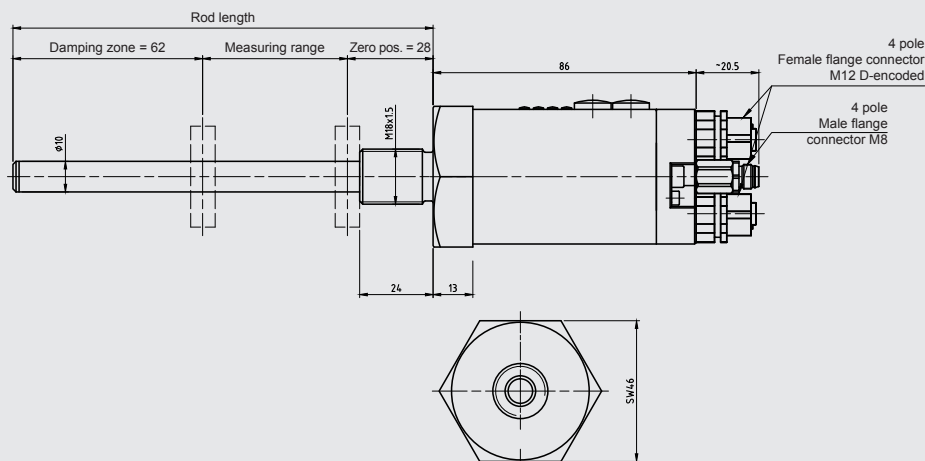
Note: Reverse polarity protection of the supply voltage, overvoltage and short circuit protection are provided.

FS (Full Scale) = relative to complete measuring range

¹⁾ Other models on request

²⁾ With mounted mating connector in corresponding protection class

Dimensions:



Model code:

HLT 2 1 0 0 - R1 - E51 - F51 - XXXX - 000

Design / geometry type

1 = rod

Model

R1 = rod with M18x1.5 screw-in flange

Electrical connection

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

Output signal

F51 = EtherCAT

Measuring range in mm (50 .. 4000 mm)

Example

0150 = 150 mm

Modification

000 = standard

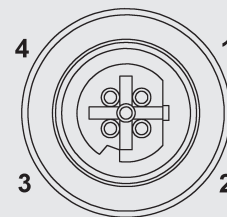
Accessories available: (not supplied with instrument)

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	AD17.4xD13.5x5	part no.: 3903233
Intermediate ring	AD33xD13.5x5	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.

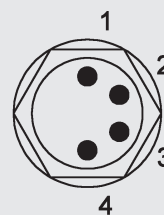
Pin connections:

Female M12x1, 4 pole, D-encoded



Pin	Port IN / Port OUT
1	Transmission data +
2	Receive data +
3	Transmission data -
4	Receive data -

Male M8x1, 4 pole



Pin	Port IN / Port OUT
1	+U _B
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.

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