



Linear Position Transmitter HLT 2500-F1

Magnetostrictive

For external mount

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 flat profile housing version in aluminium.

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

The HLT 2500-F1 is primarily used in stationary applications, especially when a partially integrated solution in hydraulic cylinders is not possible.

Technical data:

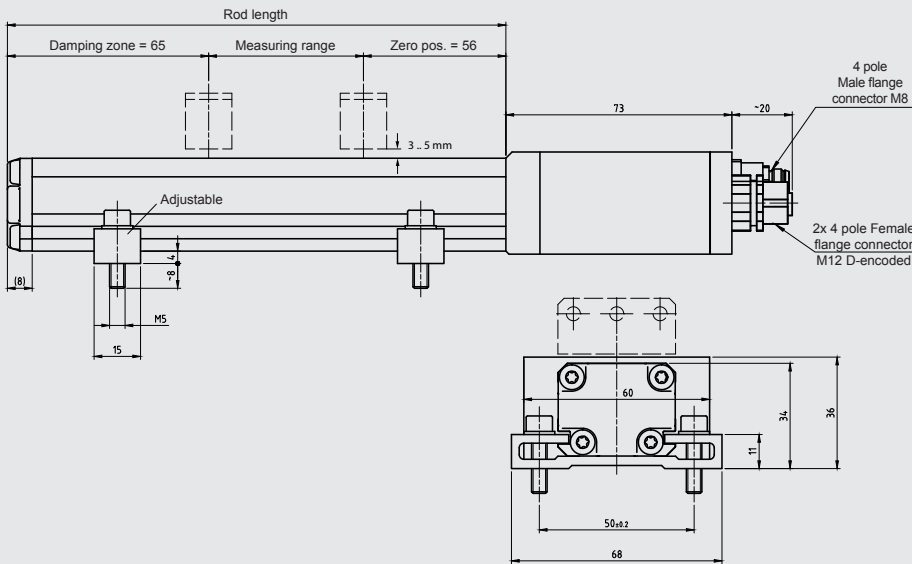
Input data	
Measuring ranges	50 .. 4000 mm
Model	Flat profile, without magnet guidance
Housing	Aluminium
Output data	
Output signal	EtherCAT
Resolution	0.001 mm
Non-linearity	± 0.1 mm (measuring range ≤ 1500 mm) ± 0.15 mm (measuring range > 1500 mm)
Hysteresis	0.02 mm (measuring range ≤ 1500 mm) 0.1 mm (measuring range > 1500 mm)
Repeatability	≤ 0.005 mm - ≤ 0.05 mm (depends on length)
Temperature coefficient	$\leq \pm 0.0015$ % FS / $^{\circ}\text{C}$
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 .. $+70$ $^{\circ}\text{C}$; optionally -20 .. $+70$ $^{\circ}\text{C}$
Storage temperature range	-30 .. $+85$ $^{\circ}\text{C}$
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 ¹⁾	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 -20 .. +10 %
Residual ripple of supply voltage	≤ 250 mV _{PP}
Current consumption without output	≤ 300 mA
Weight	Depending on length: 100 mm: 550 g 4000 mm: 4000 g

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

FS (Full Scale) = relative to complete measuring range

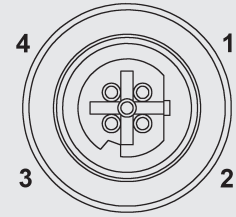
¹⁾ With mounted mating connector in corresponding protection class

Dimensions:



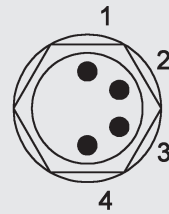
Pin connections:

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.

Model code:

HLT 2 5 0 0 - F1 - E51 - F51 - XXXX - 000

Design / geometry type

5 = profile

Model

F1 = flat profile, without magnet guidance

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: (not supplied with instrument)

ZBL MU38-18 position magnet part no.: 6084456
 ZBL mounting kit part no.: 6105653

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

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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