



## Linear Position Transmitter

### HLT 2150-R1

IO-Link interface

Magnetostrictive

For partial integration

Resolution min. 10 µm



#### Features

- IO-Link interface
- Parameterisation and cyclical transmission of process and service data
- For partial integration
- Contactless and wear-free
- Compact design
- Robust hexagonal stainless steel housing

#### Description

The sensor works on the principle of magnetostriction. The measuring principle determines with a high degree of accuracy the position, the distance and/or a velocity signal based on elapsed time. Based on this non-contact and wear-free measuring system, HYDAC offers this version in a pressure-resistant stainless steel housing for partial integration in hydraulic cylinders with IO-Link interface.

IO-Link is the communication between the sensor/actuator (IO-Link device) and an IO-Link master based on a point-to-point interface.

The advantages:

- Process data, parameters and diagnostic information can be transmitted via the standard cable.
- Simple exchange, the IO-Link master saves the parameters of the connected position transmitter and transmits them to the newly connected position transmitter when replaced. Thus, time-consuming new parameterisations will no longer be required.

#### Application fields

HLT 2150 is primarily used in industrial applications as a partly integrated solution in hydraulic cylinders.

The high variety of information types delivered by the sensor via IO-Link facilitates the realisation of position limit value and speed monitoring, limit switch, temperature alerts (operation temperature) and operation hours counter.

## Technical details

Input data	
Measurement ranges	50 .. 3000 mm
Design	Rod with M18x1.5 screw-in flange acc. to ISO 6149 Operating pressure: ≤ 400 bar Peak pressure acc. to DIN EN ISO 19879: 450 bar
Material	Rod: Stainless steel 1.4301 Screw-in flange: Stainless steel 1.4571
Output data	
Resolution	0.01 mm
Non-linearity	≤ ± 0.015 % FS (min ± 0.05 mm)
Hysteresis	0.02 mm (measuring range ≤ 1.500 mm) 0.1 mm (measuring range > 1.500 mm)
Repeatability	≤ ± 0.005 % FS (min ± 0.01 mm)
Temperature coefficient	< 0.008 mm (measuring range ≤ 500 mm) < 0.015 mm (measuring range > 500 mm)
Sampling rate	≥ 1 ms
Environmental conditions	
Operating temperature range	-40 .. +80 °C
Storage temperature range	-40 .. +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 type to DIN EN 60529 <sup>1)</sup>	IP 67
Mounting position	No restrictions
IO-Link-specific data	
IO-Link revision	V1.1
Transmission rate, baud rate <sup>2)</sup>	230.4 kbit/s (COM3)
Minimum cycle time	≥ 1 ms
Process data width	16 bit
M-sequence capability	PREOPERATE = TYPE_0 OPERATE = TYPE_2_2 ISDU supported
Parameters / Functions, adjustable	Resolution, operation hours counter, pre-set parameter, temperature parameter, counting direction, speed parameters
Download the IO Device Description (IODD) from:	<a href="https://ioddfinder.io-link.com/#/">https://ioddfinder.io-link.com/#/</a>
Other data	
Supply voltage	24 V DC -20 to +10 %
Residual ripple of supply voltage	≤ 250 mV <sub>pp</sub>
Current consumption without output	< 100 mA
Weight	Depending on length 150 mm: ~240 g

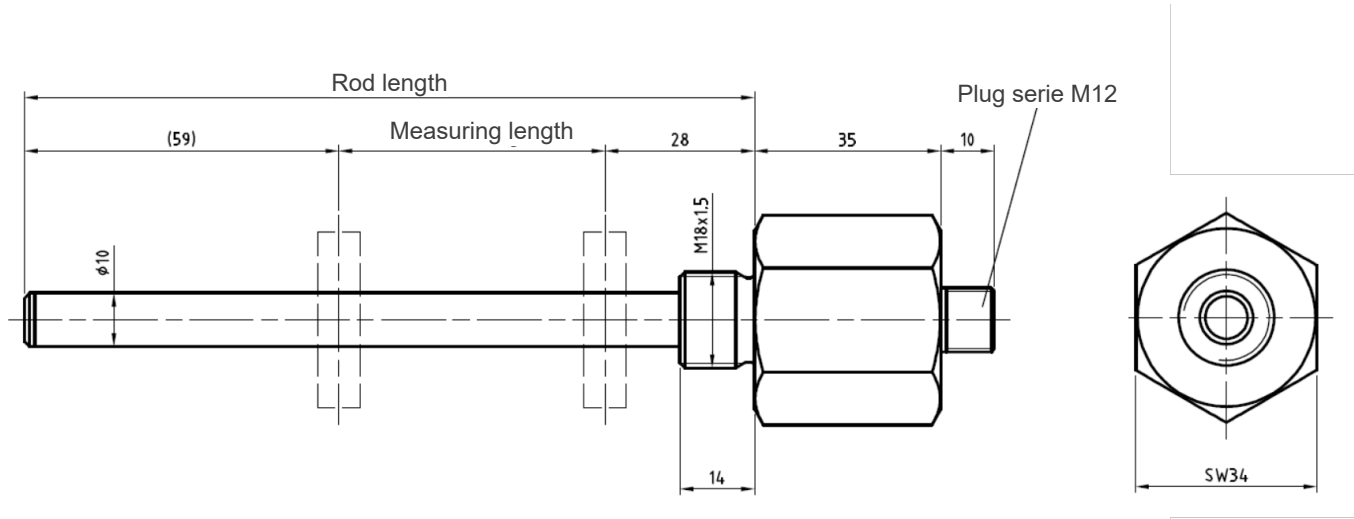
**Note:** Reverse polarity protection of the supply voltage, overvoltage, override and short circuit protection are provided.

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

<sup>1)</sup> With mounted mating connector in corresponding protection type

<sup>2)</sup> Connection with unscreened standard sensor line possible up to a max. line length of 20 m.

## Dimensions



## Pin connections

M12x1, 4-pin	Pin	Output signal: F31	
		Signal	Description
	1	L+	+U <sub>B</sub>
	2	n.c.	n.c.
	3	L-	0 V
	4	Q1	IO-Link communication

## Model code

**HLT 2150 - R1 - 006 - F31 - XXXX - 000**

### Design / Geometry type

1 = Rod

### Type of constr.

R1 = Rod with M18x1.5 threaded hole

### Connection code, electrical

006 = Plug connector M12x1, 4 pole

### Output signal

F31 = IO-Link interface

### Measurement range in mm (50 to 3000 mm)

Example:

0150 = 150 mm

### Modification number

000 = Standard

### Note:

The position magnet must be ordered separately.

### Scope of delivery:

- HLT 2150

- Operating manual

### Accessories available: (not included in delivery)

ZBL MR17.4 Position magnet Part no.: 6119372

ZBL MR22 Position magnet Part no.: 6084453

ZBL MR33 Position magnet Part no.: 6084207

ZBL MV 63 Position magnet Part no.: 6084454

Intermediate ring AD33xID13.5x5 Part no.: 3887829

More detailed information on accessories as well as on further accessories, such as socket connectors and more 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.

**HYDAC ELECTRONIC GMBH**  
Hauptstraße 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)