



Linear Position Transmitter HLT 2100-R1

Magnetostrictive

For partial integration

Resolution 1 µm



Synchronous serial interface

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 version with synchronous serial interface, the measured value is made available via synchronous and symmetrical clock and data signals.

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	SSI
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: ≤ 1.0 m: 0.5 ms ≤ 2.0 m: 1.0 ms ≤ 4.0 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

Relevant data for SSI

SSI clock input	Optocoupler
SSI data output	RS-422, 2-wire
SSI clock frequency	95 .. 1000 kHz
SSI monotime, typical	20 µs

Other data

Supply voltage	24 V DC ± 10 %
Residual ripple of supply voltage	≤ 250 mV _{PP}
Current consumption without output	≤ 100 mA
Weight	Depending on length: 50 mm: 500 g 4000 mm: 1400 g

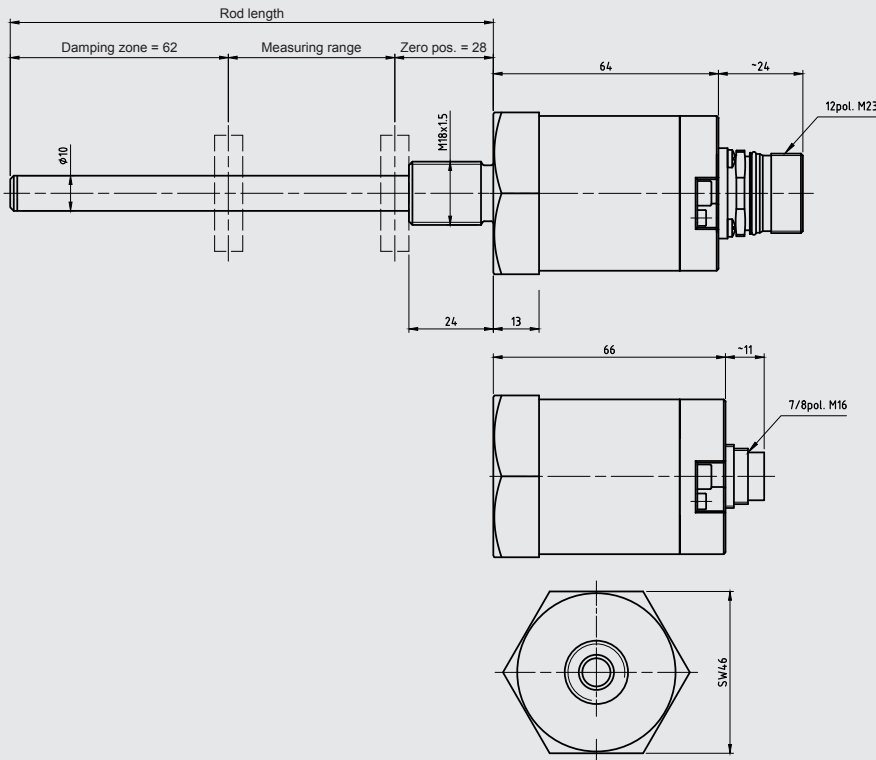
Note: Reverse polarity protection of the supply voltage, overvoltage and short circuit protection are provided.

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 - XXX - S16 - XXXX - XXX - XXX - 000

Design / geometry type

1 = rod

Model

R1 = rod with
M18x1.5 screw-in flange

Electrical connection

S00 = CONTACT male, 12 pole
M07 = male M16, 7 pole
M08 = male M16, 8 pole

Output signal

S16 = SSI

Measuring range in mm (50 .. 4000 mm)

Example
0150 = 150 mm

Code

B24 = binary code 24 bit
B25 = binary code 25 bit
G24 = Gray code 24 bit
G25 = Gray code 25 bit

System resolution

001 = 1 µm
002 = 2 µm
005 = 5 µm
010 = 10 µm
100 = 100 µm

Modification

000 = standard

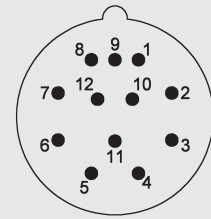
Accessories available: (not supplied with instrument)

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:

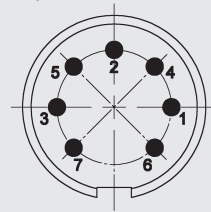
CONTACT male, 12 pole



Pin

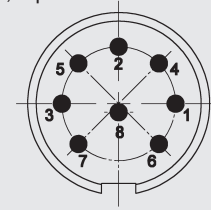
1	SSI_Clock- IN
2	SSI_Clock+ IN
3	SSI_DATA+ OUT
4	SSI_DATA- OUT
5	RS 485 + IN/OUT
6	RS 485 - IN/OUT
7	n.c.
8	Direction IN
9	Preset1 IN
10	n.c.
11	+U _B IN
12	0 V IN

Male M16x1, 7 pole



Pin	Signal	Description
1	SSI_DATA- OUT	Data output -
2	SSI_DATA+ OUT	Data output +
3	SSI_Clock+ IN	Clock input +
4	SSI_Clock- IN	Clock input -
5	Supply Voltage IN	Supply voltage
6	Ground IN	Ground
7	not connected	

Male M16x1, 8 pole



Pin	Signal	Description
1	SSI_Clock+ IN	Clock input +
2	SSI_DATA+ OUT	Data output +
3	SSI_Clock- IN	Clock input -
4	Ser.Program+ IN/OUT	Ser. programming interface RS485
5	SSI_DATA- OUT	Data output -
6	Ground IN	Ground
7	Supply Voltage IN	Supply voltage
8	Ser.Program- IN/OUT	Ser. programming interface RS485

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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