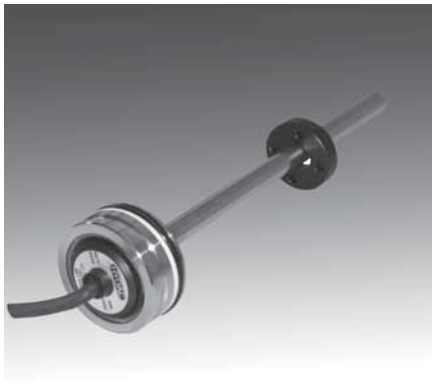


Linear Position Transducer
HLT 1100-R2
for Applications with Increased Functional Safety

Functional Safety
PL d
SIL 2

TÜV NORD Safety Approved
DIN EN 61508
DIN EN 13849-1
SIL 2
PL d

Description:

This version of the linear position sensor series HLT 1100 has been specially developed for use in safety circuits / safety functions as part of the functional safety of machinery and equipment up to SIL 2 (IEC 61508) or PL d (ISO 13849).

The sensor works on the principle of magnetostriction.

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

Based on this non-contact and wear-free measuring system, HYDAC offers this version in a pressure-resistant stainless steel housing for full integration in hydraulic cylinders.

Special features:

- Very robust housing
- High resistance to shock and vibration
- Excellent EMC characteristics
- Non-contact and wear-free
- SIL 2 / PL d certification

Technical data:

Input data	
Measuring ranges	200 .. 2500 mm
Measured variable	Distance
Pressure resistance	6525 psi
Peak pressure	9135 psi
Parts in contact with medium	Stainless steel (1.4301 / 1.4571)
Output data	
Output signal	4 .. 20 mA, CANopen
Resolution	12 bit
Load resistance to GND	200 .. 500 Ohm
Accuracy to DIN 16086	≤ ± 0.5 % FS
Repeatability	≤ ± 0.1 % FS
Hysteresis	≤ ± 0.1 % FS
Non-linearity	≤ ± 0.1 % FS
Dynamics	≤ 30 ms (10 .. 90 %)
Environmental conditions	
Operating temperature range	-40 .. +185 °F
Storage temperature range	-40 .. +212 °F
Media temperature range	-40 .. +248 °F
Protection class to IEC 60529	IP67
Vibration resistance to DIN EN 60068-2-6	7.5 mm (5 .. 8.2 Hz) 2.0 g (8.2 .. 150 Hz)
Shock resistance to DIN EN 60068-2-27	20 g (11ms)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Other data	
Supply voltage (Vin) nominal	9 ... 36 VDC
Residual ripple of supply voltage	≤ 250 mV
Current consumption (without output)	≤ 100 mA
Electrical connection	PUR cable, 3-core; flying leads Separate panel mount connection M12x1
Measurement principle	magnetostrictive
Installation position and travel speed	No restrictions
Weight (dependent on measurement and cable lengths)	~ 1000 g
Safety-related data	
Performance level	
Based on	DIN EN ISO 13849-1:2008
PL	d
Architecture	Category 2
Safety Integrity Level	
Based on	DIN EN 61508:2002
SIL	2

Note: Reverse polarity protection of the supply voltage, excess voltage and short circuit protection are provided.
FS (**F**ull **S**cale) = relative to the full measuring range

Model code:

Mobile **HLT 1 1 0 0 – R2 – XXX – XXX – XXXX – S2PD – 000**

Design/ Geometry type
1 = Rod

Mechanical connection
R2 = Cylinder-integrated

Electrical connection
Cable output
K01 = Flying lead, length 1 m
K02 = Flying lead, length 2 m
K05 = Flying lead, length 5 m
K10 = Flying lead, length 10 m

Separate panel mount connection
M12x1 (4 pole for signal output analog
5 pole for signal output CANopen)
L06 = 60 mm cable length
L18 = 180 mm cable length
L24 = 240 mm cable length

Signal output
C01 = Analog 4 .. 20 mA, 3 conductor
CAN = CANopen

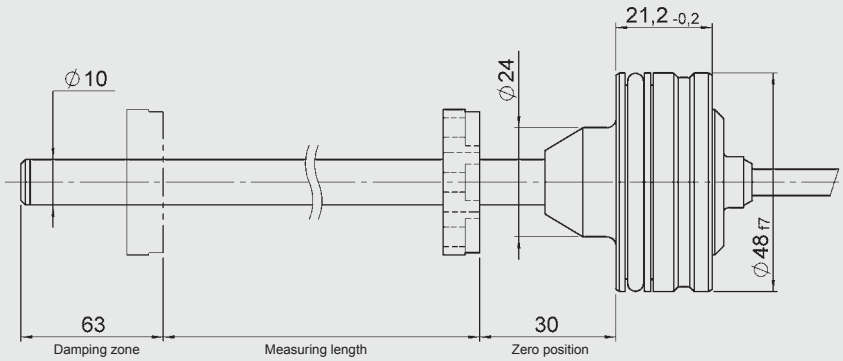
Measuring range in mm (200 to 2500 mm)
Example
0250 = 250 mm

Functional safety
S2PD = SIL 2 acc. to IEC 61508
and PLd – Cat 2 acc. to DIN EN 13849-1

Modi ication
000 = Standard

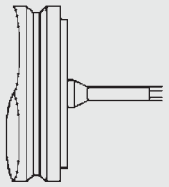
Accessories:
Appropriate accessories, such as position magnets, etc. can be found in the Accessories section of the Electronics brochure.
The recommended position magnet ZBL MR33, part no. 6084207, must be ordered separately.

Dimensions:



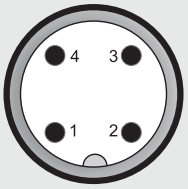
Pin connections:

Cable outlet



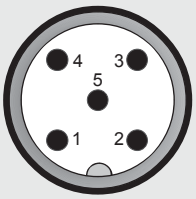
Core	Analog	CANopen
brown	$+U_B$	$+U_B$
white	0 V	0 V
green	Analog	CAN_L
yellow	n.c.	CAN_H

M12x1, 4 pole



Pin	
1	$+U_B$
2	n.c.
3	0 V
4	Signal

M12x1, 5 pole



Pin	Signal	Description
1	n.c.	
2	$+U_B$	supply+
3	0 V	supply-
4	CAN_H	bus line dominant high
5	CAN_L	bus line dominant low

Note:

The information in this brochure relates to the operating conditions and applications described.
For applications and operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

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