

Linear Position Transmitter HLT 1100-R2

Magnetostrictive

For full integration

Resolution min. 0.1 mm

Analogue
Increased Functional Safety

Functional Safety
PL d
SIL 2

Description:

This version of the linear position sensor HLT 1100 has been developed specifically 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 accuracy the position, distance and/or speed 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.

Technical data:

Input data

Measuring ranges	200 .. 2500 mm
Model	Rod Ø 10 mm for cylinder full integration ¹⁾ Operating pressure: ≤ 450 bar Peak pressure acc. to DIN EN ISO 19879: 630 bar
Material	Rod: Stainless steel 1.4571 Housing: Stainless steel 1.4301
Seal	O-ring: NBR Backup ring: PTFE

Output data

Output signal, permitted load resistance	4 .. 20 mA, load resist.: 200 .. 500 Ω
Resolution	12 bit, min. 0.1 mm
Non-linearity	≤ ± 0.05 % FS
Hysteresis	≤ ± 0.1 % FS
Repeatability	≤ ± 0.1 % FS
Temperature coefficient	≤ ± 0.01 % FS / °C
Sampling rate	≤ 30 ms (10 .. 90 %)

Environmental conditions

Operating temperature range	-40 .. +85 °C
Storage temperature range	-40 .. +100 °C
Fluid temperature range	-40 .. +120 °C

CE mark EN 61000-6-1 / 2 / 3 / 4

Vibration resistance acc. to
DIN EN 60068-2-6 at 5 .. 8.2 Hz ≤ 7.5 mm
at 8.2 .. 150 Hz ≤ 2.0 g

Shock resistance acc. to
DIN EN 60068-2-27 (11 ms) ≤ 20 g

Protection class acc. to DIN EN 60529 IP 67 (cable outlet)
IP 6K9K ²⁾ (separate male flange connector M12x1)

Installation position No restrictions

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

Other data

Supply voltage 9 .. 36 V DC

Residual ripple of supply voltage ≤ 250 mV_{PP}

Current consumption without output < 100 mA

Weight Depending on length:
100 mm (with 1 m cable): ~310 g
2500 mm (with 1 m cable): ~1030 g

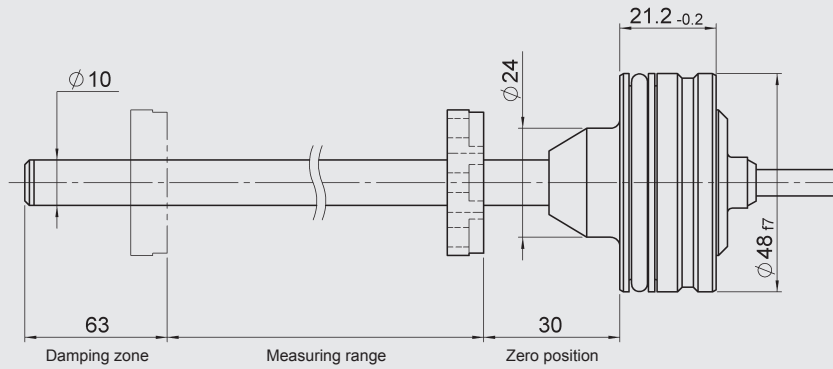
Note: Reverse polarity protection of the supply voltage, overvoltage and short circuit protection are provided.

FS (Full Scale) = relative to complete measuring range

¹⁾ Other variants available on request.

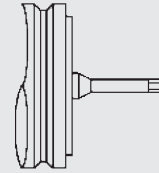
²⁾ With mounted mating connector in corresponding protection class

Dimensions:



Pin connections:

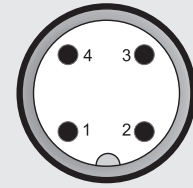
Cable outlet



Lead

brown	+U _B
white	0 V
green	Signal

M12x1, 4 pole



Pin	Mod. 000	Mod. 003	Mod. 004
1	+U _B	+U _B	n.c.
2	n.c.	Signal	+U _B
3	0 V	0 V	0 V
4	Signal	n.c.	Signal

Model code:

HLT 1 1 0 0 - R2 - XXX - C01 - XXXX - S2PD - 000

Design / geometry type

1 = rod

Model

R2 = rod for cylinder full integration

Electrical connection

Cable output

K01 = jacketed cable, length 1 m
 K02 = jacketed cable, length 2 m
 K05 = jacketed cable, length 5 m
 K10 = jacketed cable, length 10 m

Separate male flange connector M12x1, 4 pole

L06 = 60 mm lead length
 L18 = 180 mm lead length
 L24 = 240 mm lead length

Output signal

C01 = analogue 4 .. 20 mA, 3-conductor

Measuring range in mm (200 .. 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

Modification

000 = standard
 003 = modified pin assignment
 004 = modified pin assignment

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

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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