



Linear Position Transmitter HLT 2100-R1

Magnetostrictive

For partial integration

Resolution 5 µm

Analogue

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.

The different output signals (analogue current / voltage) enable connection to all HYDAC ELECTRONIC GmbH measurement and control devices as well as connection to standard evaluation systems (e.g. to PLC controls).

External set inputs for the analogue start point and end point offer an additional possibility of a customised adjustment.

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, permitted load resistance	Current: 4 .. 20 mA or 20 .. 4 mA, Load resist.: 200 .. 500 Ω Voltage: 0 .. 10 V or 10 .. 0 V, Load resist.: min. 2 kΩ
Resolution	16 bit; min. 0.005 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	≤ ± 0.004 % FS / °C
Sampling rate	Depending on length: ≤ 1 m: 0.5 ms ≤ 2 m: 1.0 ms ≤ 4 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 ¹⁾	IP 65
Installation position	No restrictions

Other data

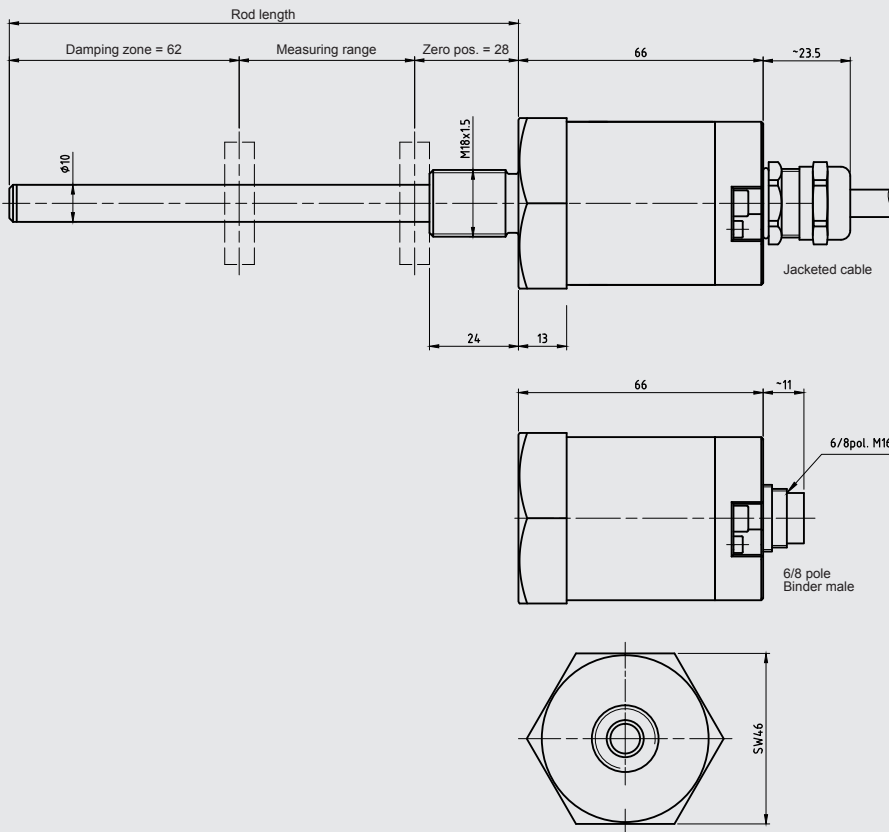
Supply voltage	24 V DC ± 10 %
Residual ripple of supply voltage	≤ 250 mV _{PP}
Current consumption without output	≤ 100 mA
Weight	Depending on length: 50 mm: 500 g 4000 mm: 1400 g

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

FS (Full Scale) = relative to complete measuring range

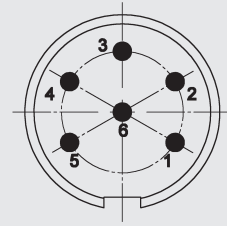
¹⁾ With mounted mating connector in corresponding protection class

Dimensions:



Pin connections:

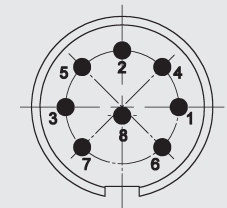
Male M16, 6 pole



Pin

1	Signal
2	0 V (analogue output)
3	Start point
4	End point
5	0 V
6	+U _B

Male M16, 8 pole



Pin

1	n.c.
2	0 V (analogue output)
3	Start point
4	End point
5	Signal
6	0 V
7	+U _B
8	n.c.

Cable outlet

Lead

brown	0 V (analogue output)
green	Start point
yellow	End point
grey	Signal
pink	0 V
blue	+U _B

Model code:

HLT 2 1 0 0 - R1 - XXX - XXX - XXXX - 000

Design / geometry type

1 = rod

Model

R1 = rod with M18x1.5 screw-in flange

Electrical connection

K01 = jacketed cable, length 1 m

M06 = male M16, 6 pole

M08 = male M16, 8 pole

Output signal

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

C02 = analogue 20 .. 4 mA, 3-conductor

B01 = analogue 0 .. 10 V

B02 = analogue 10 .. 0 V

Measuring range in mm (50 .. 4000 mm)

Example

0150 = 150 mm

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.

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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