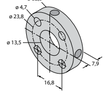
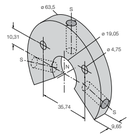
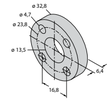
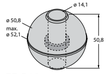
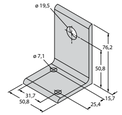
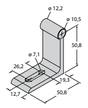
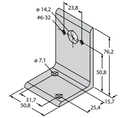
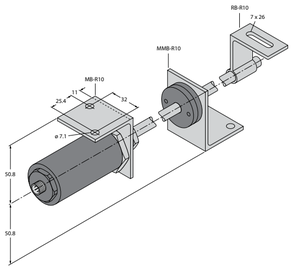
Accessories

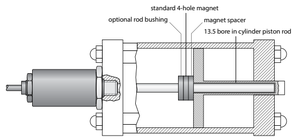
Type/dimension drawing			Description
			Standard positioning element Standard 4-hole positioning element Ring positioning element with slot
CM-R10	STM-AL-R10	LSPM-AC-R10	
			Standard spacer
STS-R10			
			Float, stainless steel, specific gravity 0.62 kg/m³
EF-R10			
			Mounting bracket, sensor head and rod Mounting bracket, positioning element
MB-R10		MMB-R10	

Mounting examples

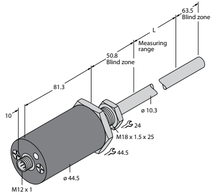
Mounting outside a cylinder

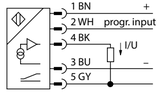
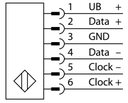


Application in a hydraulic cylinder



LTX – Types and Features



	Analog output	SSI output
Measuring range		
Blind zone a	50.8 mm	50.8 mm
Blind zone b	63.5 mm	63.5 mm
Repetition accuracy	≤ 0.01 % full scale	Corresponds to the resolution
Resolution	16 bit	Selectable, see type code
Linearity	≤ 0.01 % full scale	≤ 0.01 % full scale
Operating temperature, rod	-40…+105 °C	-40…+105 °C
Electronics operating temperature	-40…+85 °C	-40…+85 °C
Temperature drift	<10 ppm/°C	<10 ppm/°C
Electrical data		
Operating voltage	7…30 VDC	7…30 VDC
Current consumption	< 100 mA/15 VDC	< 100 mA/15 VDC
Short-circuit protection	Yes/cyclic	Yes/cyclic
Output function	5-wire, analog	6-wire, SSI
Design		
Design	cylindrical/smooth	cylindrical/smooth
Housing material	Metal, AL, black (also available as stainless steel variant)	Metal, AL, black (also available as stainless steel variant)
Material of active face	Metal, stainless steel, 316	Metal, stainless steel, 316
Vibration resistance	30 Hz (1 mm)	30 Hz (1 mm)
Shock resistance	100 g (11 ms)	100 g (11 ms)
Pressure resistance (momentary)	680 bar	680 bar
Pressure resistance (permanent)	340 bar	340 bar
Ingress protection	IP68	IP68
Miscellaneous		
Status display	3-color LED, green/yellow/red	3-color LED, green/yellow/red
Wiring diagram		

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Your Global Automation Partner

TURCK

LTX
Pressure Resistant Rod-Type Position Sensors

Pressure Resistant Rod-Type Position Sensors

LTX for position sensing in hydraulic cylinders

The LTX is a pressure resistant sensor for precise position sensing in hydraulic cylinders. Contactless, wear-free, shock and vibration proof – these are only some of the features that make Turck LTX linear position sensors a standard when it comes to cylinder installation. With the optimum configuration factory shipped, the magnetostrictive linear position sensor is available with an analog or SSI interface.

General features:

- High accuracy
- Wide input voltage range from 7 to 30 VDC, with low power consumption of typically 1 Watt
- High degree of protection to IP68
- Infinitely variable sensor lengths up to 7600 mm
- Also fully available as stainless steel variant
- Extensive range of accessories for external mounting or level monitoring
- Also available as complete set with corresponding connectors and block I/O

Your benefits

Faster commissioning…

- …with Autotuning
  The Autotuning function enables the sensor to adapt automatically to the positioning element and allows straightforward, fast and safe commissioning.
- …with adjustable blind zones
  The blind zones can be optimally adjusted onsite to customer requirements using an optionally available teach adapter or the sensor can be ordered as a variant.

Optimum configuration factory shipped…

- …with connectors compatible with market competitors
  This enables simple one-to-one replacement without any effort. The LTX sensors are shipped as standard with a 5-pin M12 connector.
- …with a wide range of output types
  Besides 4…20 mA and SSI outputs, 0…10 V, -10…10 V, 0…5 V, -5…5 V outputs are now also optionally available as standard.
- …with an infinitely variable measuring length
  Instead of using the conventional 25 mm increments, the sensor can be ordered with a measuring range of 25 mm to 7600 mm in 1 mm increments.

The preferred types are available with the following default settings:

Measuring range	Defaults
100…500 mm	25-mm increments
500…2000 mm	50-mm increments
2000…7600 mm	500-mm increments

Straightforward handling…

- … by replacing via removable sleeve
  The electronics housing together with the measuring system can be removed simply by separating the actual sensor from the pressure tube via two screws. The cylinder remains hydraulically sealed.
- … with multi-color diagnostics LED
  The LED indicates fault states in addition to the position signal. This saves time and costs for any fault finding.

Analog output

LTX 25 M – F10 – LI0 – X3 – H1 1 5 1

LTX 25 M Magnetostrictive position sensor – **F10** Design –

Unit
- **M** Millimeter

Measuring range
- **25** Measuring range from 25 to 7600 mm

Operating principle
- **LTX** Linear position sensor

Design
- **F10** Flat face, rod Ø 10.3 mm, aluminum
- **R10** Raised face, rod Ø 10.3 mm, aluminum
- **EF10** Flat face, rod Ø 10.3 mm, stainless
- **ER10** Raised face, rod Ø 10.3 mm, stainless steel

LI0 – X3 Electrical version – **H1 1 5 1** Electrical connection: Male

Number of LEDs
- **X3** 3-color LED

Output type
- **LI0** 4…20 mA*
- **LI1** 20…4 mA
- **LU0** 0…10 V
- **LU1** 10…0 V
- **LU2** -10…10 V
- **LU3** 10…-10 V
- **LU4** 0…5 V
- **LU5** 5…0 V
- **LU6** -5…5 V
- **LU7** 5…-5 V

Assignment
- **1** Standard assignment

Number of contacts
- **5** 5-pin

Connector type
- **1** straight

Connector type
- **H1** Male connector M12 x 1

*** Preference type**

SSI interface

LTX 25 M – F10 – SSI 2 – G A F 1 – X3 – H1 1 6 1

LTX 25 M Magnetostrictive position sensor – **F10** Design –

Unit
- **M** Millimeter

Measuring range
- **25** Measuring range from 25 to 7500 mm, variable

Operating principle
- **LTX** Linear position sensor

Design
- **F10** Flat face, rod Ø 10.3 mm, aluminum*
- **R10** Raised face, rod Ø 10.3 mm, aluminum
- **EF10** Flat face, rod Ø 10.3 mm, stainless steel
- **ER10** Raised face, rod Ø 10.3 mm, stainless steel

SSI 2 – G A F 1 – X3 Electrical version – **H1 1 6 1** Electrical connection: Male

Number of LEDs
- **X3** 3-color LED

Resolution
- **1** 0.005 mm*
- **2** 0.01 mm
- **3** 0.05 mm
- **4** 0.1 mm
- **5** 0.02 mm
- **6** 0.002 mm
- **7** 0.001 mm

Direction
- **F** forward*
- **R** backward
- **V** velocity

Data type
- **S** synchronous
- **A** asynchronous*

Data format
- **B** binary
- **G** gray*

Data length
- **1** 24 bit
- **2** 25 bit*
- **3** 26 bit

Data mode

Assignment
- **1** Standard assignment

Number of contacts
- **6** 6-pin

Connector type
- **1** straight

Connector type
- **H1** Male connector M12 x 1

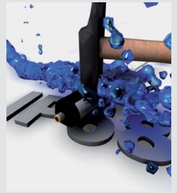
*** Preference type**

Further Documents

In addition to this document you will find the following documents on www.turck.com:

- Data sheet
- Instruction manuals

Contactless and wear-free
The magnetostrictive measurement principle works contactless and wear-free. Important characteristics such as accuracy, linearity, resistance to shock and vibration are maintained ingress protection.



Rugged housing easy installation
The compact LTX sensor meets the IP68 ingress protection category and is resistant to many chemicals and oils. The rod is made of high-quality stainless steel and offers optimal protection – even against aggressive media.

Flexible process connection
The LTX adapts perfectly to any application environment. The sensor is available in different versions, either with 0…10 VDC or 4…20 mA analog output, or with an SSI interface. The connection is established via standard M12 connectors – special connectors are not required.

Highest accuracy
High-quality components and an innovative QM system ensure accurately measured signals and form the basis for high linearity and repeatability. With Turck linear position sensors, even the most demanding applications can be solved in an economically and technically efficient way.

Shock and vibration resistance
The rugged construction ensures high stability in the event of vibration and mechanical load. A vibration resistance of 30 g RMS and a shock resistance of 100 g RMS prevent interference and machine downtimes, even under intense load in mechanically demanding applications.

Programmable measuring range
The LTX sensor can be easily programmed. The required measuring range can be adjusted in an instant. This helps you to reduce the inventory of different device types sustainably.