LTL POSITION SENSOR

The LTL position sensor uses an array of Hall sensors to measure positions without contact, thanks to the presence of a magnet inside the cylinder.
It uses a smart algorithm to adapt dynamically to the magnets during operation, so that the output signal is always linear and reproducible.
This technology allows the position sensor to adapt dynamically to changes in the intensity of the magnetic field connected with ageing of the magnet and the different operating temperatures.
A magnetic field intensity of between 2 and 15 mT is required for correct operation.
The LTL can be set by means of a TEACH-PAD capacitive button that allows rapid actuation of the position sensor and adaptation to the user's requirements. Just press slightly with the fingers to:

- select an output current (4-20 mA) or output voltage (0-10 V);
- establish the desired measuring range;
- reset the position sensor to the factory setting.

The button is designed to prevent unintentional changes to the parameters.
LED1 (operating light) comes on when the piston is in the measuring range:

- yellow on - optimal signal power;
- yellow on and red flashing - signal power not optimal.

When the piston is outside the measuring range, LED1 goes out.
LED2 tells you which analogue output is active:

- green – voltage analogue output;
- blue – current analogue output.

The position sensor is secured by means of brackets near one of the actuator T-slots.
For longer strokes please contact our sales department.

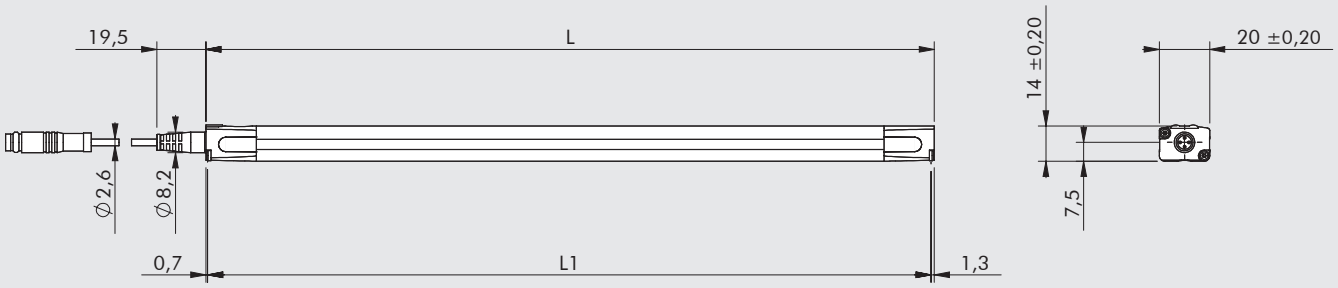
TECHNICAL DATA

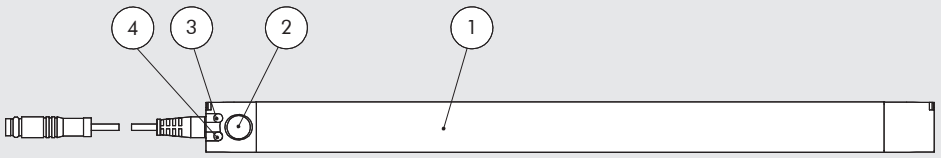
Measuring length (± 1 mm)	mm	from 257 to 503
Electrical connection		M8x1 – 4 pin
Electromagnetic compatibility in accordance with standard		EN 60947-5-7
Sample time	ms	1.15
IEC 60068-2-6 shock test		30 g, 11 ms
IEC 60068-2-6 vibration test		10 Hz ... 55 Hz, 1 mm
Maximum displacement speed	m/s	< 3
Linearity*	mm	0.5
Resolution	mm	0.03 % FSR (≥ 0.06 mm)
Repeatability	mm	0.06 % FSR (≥ 0.1 mm)
Operating temperature	°C	–20 to +70
Index of protection		IP 65, IP 67
Protection class		III
Voltage	V	15 to 30
Black current (without load)	mA	< 35
Analogue output (voltage)	V	0 to 10
Analogue output (current)	mA	4 to 20
Max. load resistance (current output)	Ω	< 500
Min. load resistance (voltage output)	Ω	> 2000
Polarity inversion protection		YES
Short-circuit protection		YES

* In some applications, linearity may be higher than the value indicated.

METAL WORK PNEUMATIC

DIMENSIONS AND ELECTRICAL CONNECTION

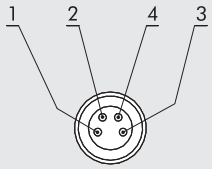




① LTL
② TEACH PAD button
③ LED1 (yellow/red)
④ LED2 (blue/green)

L = Total length
L1 = Measuring range

Type	L [mm]	L1 [mm]
LTL-287	289	287
LTL-359	361	359
LTL-431	433	431
LTL-503	505	503



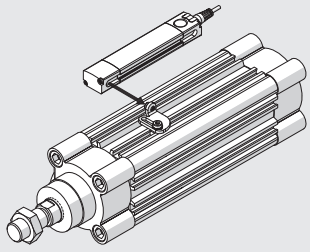
PIN	Colour	Function
1	Brown	Power supply +
2	White	Current output
3	Blue	Power supply -
4	Black	Voltage output

FIXING ON THE ACTUATOR AND START-UP

1. Position the brackets (code W0950000721) in one of the T-slots in the cylinder liner (fig. A);
2. Fix the brackets in the position sensor slot at least 30 mm from the ends of the position sensor (fig. B). The brackets are used to adjust the position along the axis of the piston rod, including perpendicular to the T-slot (fig. C). This allows you to fix the position sensor in as central a position as possible (fig. D);
3. Connect the position sensor to the power supply using the M8x1 4-pin connector, wiring the voltage or the current output;
4. If you wish to determine a specific measuring range, perform the procedure with the Teach pad (②) (see user manual).

N.B. If a measuring range is not set, the maximum range is used automatically.

Ⓐ



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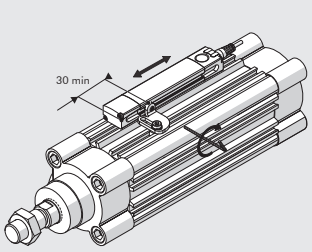

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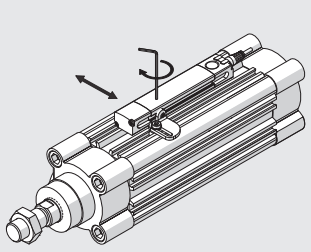

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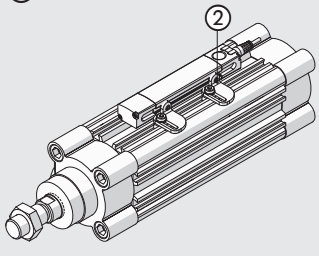
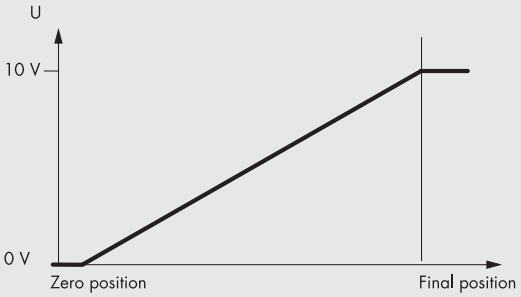
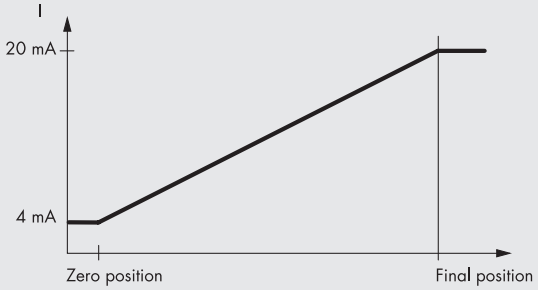


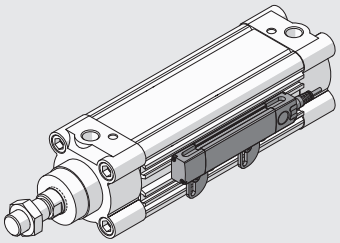
GRAPH OF THE VOLTAGE OR CURRENT ANALOGUE OUTPUT SIGNAL VALUE AND THE OUT-OF-RANGE VALUE





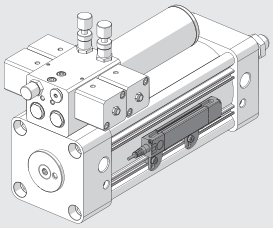
CHOICE OF POSITION SENSOR BASED ON THE ACTUATOR MEASURING STROKE

ISO 15552 TYPE A CYLINDERS



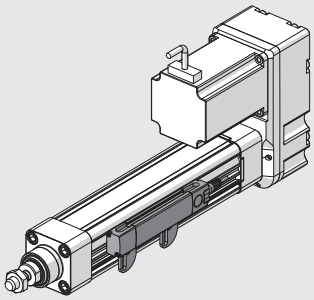
Ø 32 - Ø 40 - Ø 50 - Ø 63 - Ø 80 - Ø 100 - Ø 125	
Cylinder stroke [mm]	Position sensor model
from 255 to 287	LTL-287
from 288 to 359	LTL-359
from 360 to 431	LTL-431
from 432 to 503	LTL-503

INTEGRATED HYDRAULIC BRAKES



Ø 50 - Ø 63 - Ø 80 - Ø 100	
Integrated hydraulic brakes stroke [mm]	Position sensor model
350	LTL-359
400	LTL-431
500	LTL-503

ELECTRIC CYLINDER SERIES ELEKTRO ISO 15552



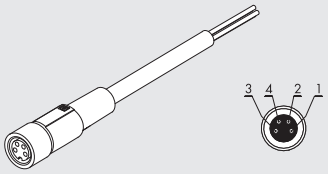
Ø 32 - Ø 50 - Ø 63	
Cylinder stroke [mm]	Position sensor model
from 255 to 287	LTL-287
from 288 to 359	LTL-359
from 360 to 431	LTL-431
from 432 to 503	LTL-503

ORDERING CODE

Code	Description
W0950000478	LTL-287 Position sensor with M8 4-PIN 0.3 m connector
W0950000479	LTL-359 Position sensor with M8 4-PIN 0.3 m connector
W0950000480	LTL-431 Position sensor with M8 4-PIN 0.3 m connector
W0950000481	LTL-503 Position sensor with M8 4-PIN 0.3 m connector

ACCESSORIES

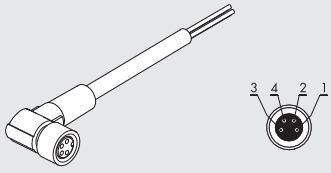
STRAIGHT M8 CONNECTORS WITH SHIELDED CABLE



Pin	Cable colour
1	Brown
2	White
3	Blue
4	Black

Code	Description
0240009100	M8 4-pin female, straight connector with shielded cable L = 2 m
0240009101	M8 4-pin female, straight connector with shielded cable L = 5 m

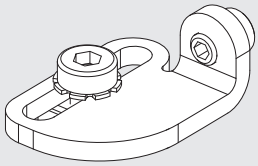
90° M8 CONNECTORS WITH SHIELDED CABLE



Pin	Cable colour
1	Brown
2	White
3	Blue
4	Black

Code	Description
0240009102	M8 4-pin female, 90° connector with shielded cable L = 2 m
0240009103	M8 4-pin female, 90° connector with shielded cable L = 5 m

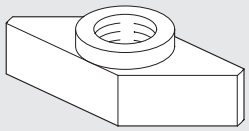
T-SLOT BRACKET



Code	Description
W0950000721	Bracket for mounting LTL on cylinder with T-slot

Bracket for fixing the LTL position sensor in the T-slot of the actuator.

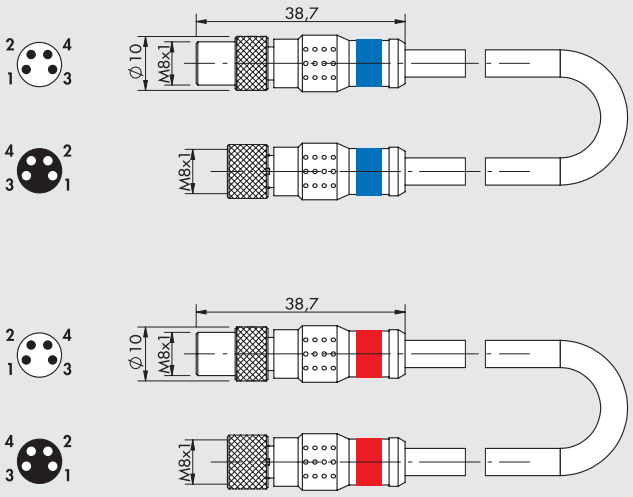
SLOTTED FIXING PLATE WITH INSERTION FROM ABOVE



Code	Description	Weight [g]
0950003001	M4 T-slotted fixing plate	4

Note: Individually packed.
N.B. To be used with the T-slot bracket W0950000721 when the T-slot is not a through one (e.g. in cylinders series ELEKTRO ISO 15552 and in the integrated hydraulic brakes).

M8 SHIELDED ADAPTER CABLE FOR CONNECTION TO THE EB 80 ANALOGUE INPUTS MODULE



Code	Description
0240010601	M8-M, M8-F 4-pole adapter with shielded cable L = 0.3 m (**blue collar**)

Note: Can be used for connecting the **4/20 mA** analog output to the module of analog INPUT **S04** of the EB 80 valves.

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 2	pin 2	Signal 4/20 mA
pin 3	pin 3	Power supply –
pin 4	disconnect	

Code	Description
0240010701	M8-M, M8-F 4-pole adapter with shielded cable L = 0.3 m (**red collar**)

Note: Can be used for connecting the **0/10 VDC** analog output to the module of analog INPUT **S04** of the EB 80 valves

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 4	pin 2	Signal 0/10 V
pin 3	pin 3	Power supply –
pin 2	disconnect	

NOTES