

# LTS POSITION SENSOR

The LTS is a magnetic position sensor for measuring linear strokes of actuators. The position of the piston is measured without contact and given via a configurable analogue output signal, as voltage or current. The body of the LTS is very compact, so it can be used in applications where limited space is available.

This position sensor can measure the strokes of various families of actuators up to 256 mm.

Correct operation requires a magnetic field strength of between 4 and 30 mT.

The measurement range can be regulated accurately using the Teach-in button (zero point and end point). Teach-in can be performed regardless of the polarity of the magnetic field and the position of the sensor. The yellow ON light comes on when the piston is in measuring range.

The position sensor is out of the measuring range when:

- the yellow light is off; and
- the voltage signal is 11V (range 0-10V) or the current 3 mA (range 4-20 mA).

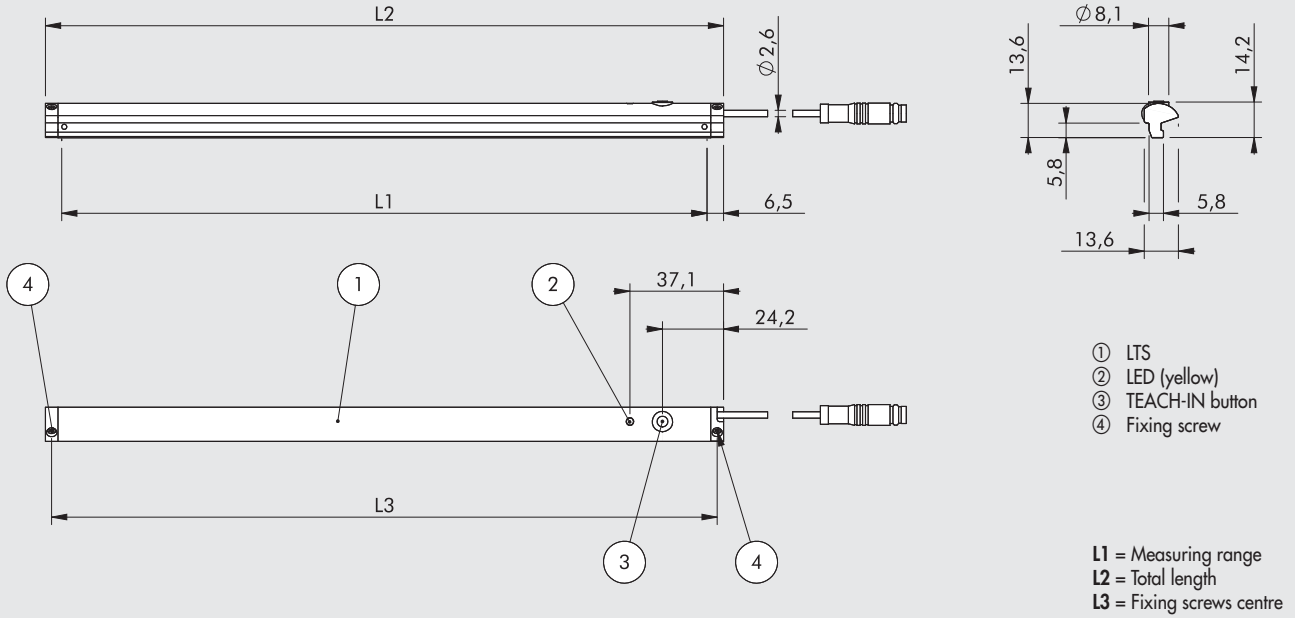


## TECHNICAL DATA

Measuring length ( $\pm 1$ mm)	mm	from 0 to 256
Electrical connection		M8x1 – 4 pin
Electromagnetic compatibility in accordance with standard		EN 60947-5-7
Sample time	ms	1
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	0.3
Resolution	mm	0.03 % FSR ( $\geq 0.05$ mm)
Repeatability	mm	0.06 % FSR ( $\geq 0.1$ mm)
Operating temperature	$^{\circ}\text{C}$	-20 to +70
Index of protection		IP 67
Protection class		III
Voltage	V	15 - 30
Black current (without load)	mA	< 25
Analogue output (voltage)	V	0 to 10
Out-of-range analogue output		11
Analogue output (current)	mA	4 to 20
Out-of-range analogue output	mA	3
Max. load resistance (current output)	$\Omega$	500
Min. load resistance (voltage output)	$\Omega$	2000
Polarity inversion protection		YES
Short-circuit protection		YES
Overload protection		YES

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

DIMENSIONS AND ELECTRICAL CONNECTION

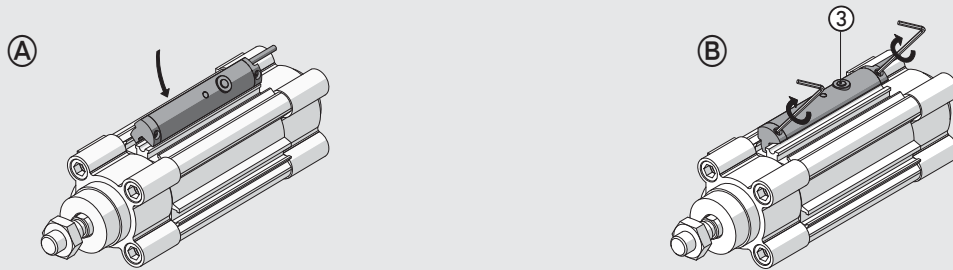


Type	L1 [mm]	L2 [mm]	L3 [mm]
LTS-032	32	45	40
LTS-064	64	77	72
LTS-096	96	109	104
LTS-128	128	141	136
LTS-160	160	173	168
LTS-192	192	205	200
LTS-224	224	237	232
LTS-256	256	269	264

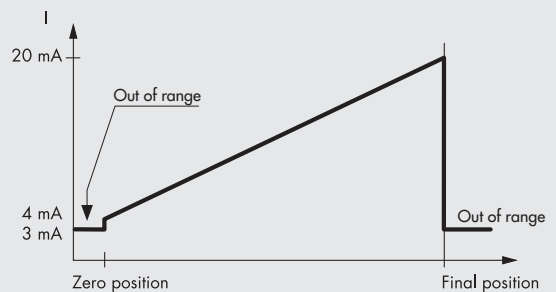
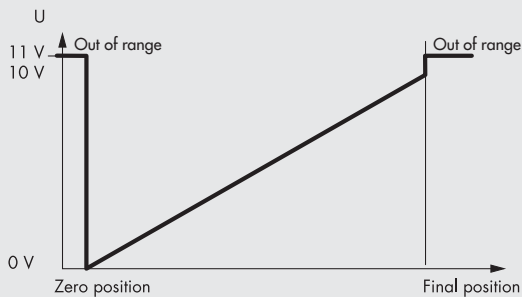
PIN	Colour	Function
1	Brown	Positive
2	White	Current output
3	Blue	Negative
4	Black	Voltage output

FIXING ON THE ACTUATOR AND START-UP

1. Connect the position sensor to the power supply using the M8x1 4-pin connector, wiring the voltage or the current output;
  2. Insert the position sensor in one of the T-slots in the actuator (fig. A) and tighten the two screws using the key provided (fig. B);
  3. If you wish to determine a specific measuring range, perform the procedure with the Teach-In button ③ (see instruction manual).
- N.B.** If a measuring range is not set, the maximum range is used automatically.



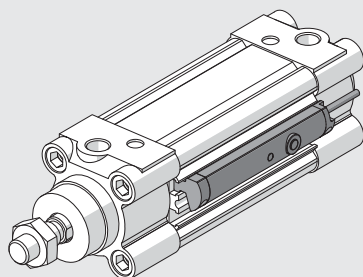
GRAPH OF THE VOLTAGE OR CURRENT ANALOGUE OUTPUT SIGNAL VALUE AND THE OUT-OF-RANGE VALUE



## CHOICE OF POSITION SENSOR BASED ON THE MEASURING STROKE

The tables below show the recommended position sensors model for some families of actuators. For other products it is necessary to determine whether the LTS operates correctly.

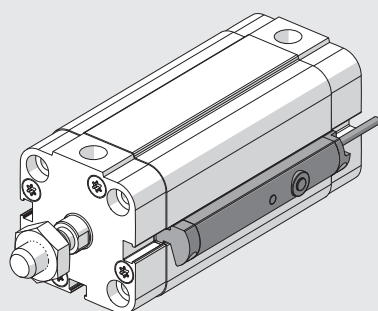
### ISO 15552 TYPE A CYLINDERS – SERIES 3



Stroke [mm]	Ø 32* - Ø 40 - Ø 50 - Ø 63 - Ø 80 - Ø 100 - Ø 125	
	Position sensors model	
up to 32	LTS-032	
from 33 to 64	LTS-064	
from 65 to 96	LTS-096	
from 97 to 128	LTS-128	
from 129 to 160	LTS-160	
from 161 to 192	LTS-192	
from 193 to 224	LTS-224	
from 225 to 256	LTS-256	

\* ISO 15552 series 3 cylinders cannot be used for strokes up to 3 mm.

### COMPACT CYLINDERS - SERIES CMPC



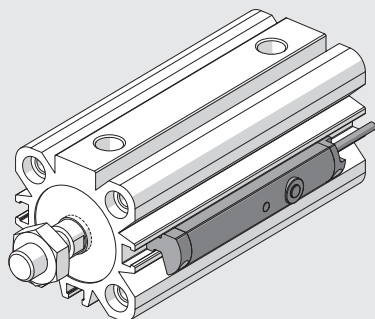
Stroke [mm]	Ø 12- Ø 16 - Ø 20	
	Position sensors model	Strokes for which the LTS projects beyond the cylinder heads, despite being fixed correctly.
up to 32	LTS-032	-
from 34 to 64	LTS-064	from 34 to 38
from 66 to 96	LTS-096	from 66 to 70
from 98 to 128	LTS-128	from 98 to 102
from 130 to 160	LTS-160	from 130 to 134
from 162 to 192	LTS-192	from 162 to 166
from 194 to 224	LTS-224	from 194 to 198
from 226 to 256	LTS-256	from 226 to 230

The LTS cannot be used with some strokes (e.g. 33 mm).

Stroke [mm]	Ø 25	
	Position sensors model	Strokes for which the LTS projects beyond the cylinder heads, despite being fixed correctly.
up to 32	LTS-032	-
from 33 to 64	LTS-064	from 33 to 37
from 65 to 96	LTS-096	from 65 to 69
from 97 to 128	LTS-128	from 97 to 101
from 129 to 160	LTS-160	from 129 to 133
from 161 to 192	LTS-192	from 161 to 165
from 193 to 224	LTS-224	from 193 to 197
from 225 to 256	LTS-256	from 225 to 229

Stroke [mm]	Ø 32 - Ø 40 - Ø 50 - Ø 63 - Ø 80 - Ø 100	
	Position sensors model	
up to 32	LTS-032	
from 33 to 64	LTS-064	
from 65 to 96	LTS-096	
from 97 to 128	LTS-128	
from 129 to 160	LTS-160	
from 161 to 192	LTS-192	
from 193 to 224	LTS-224	
from 225 to 256	LTS-256	

## ISO 21287 COMPACT CYLINDERS – LINER SERIES



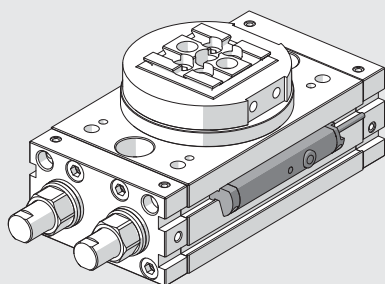
Stroke [mm]	Position sensor model	Ø 20	
		Strokes for which the LTS projects beyond the cylinder heads, despite being fixed correctly.	
up to 32	LTS-032		-
from 35 to 64	LTS-064		from 39 to 64
from 67 to 96	LTS-096		from 71 to 96
from 99 to 128	LTS-128		from 103 to 128
from 131 to 160	LTS-160		from 135 to 160
from 163 to 192	LTS-192		from 167 to 192
from 195 to 224	LTS-224		from 199 to 224
from 227 to 256	LTS-256		from 231 to 256

The LTS cannot be used with some strokes (e.g. 33 mm).

Stroke [mm]	Position sensor model	Ø 25	
		Strokes for which the LTS projects beyond the cylinder heads, despite being fixed correctly.	
up to 32	LTS-032		-
from 33 to 64	LTS-064		from 37 to 64
from 65 to 96	LTS-096		from 69 to 96
from 97 to 128	LTS-128		from 101 to 128
from 129 to 160	LTS-160		from 133 to 160
from 161 to 192	LTS-192		from 165 to 192
from 193 to 224	LTS-224		from 197 to 224
from 225 to 256	LTS-256		from 229 to 256

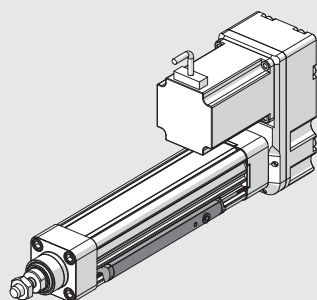
Stroke [mm]	Ø 32 - Ø 40 - Ø 50 - Ø 63 - Ø 80 - Ø 100	
	Position sensor model	
up to 32	LTS-032	
from 33 to 64	LTS-064	
from 65 to 96	LTS-096	
from 97 to 128	LTS-128	
from 129 to 160	LTS-160	
from 161 to 192	LTS-192	
from 193 to 224	LTS-224	
from 225 to 256	LTS-256	

## ROTARY ACTUATORS - SERIES R3



Bore [mm]	Position sensor model
16	LTS-64
20	LTS-64
22	LTS-64
25	LTS-64
30	LTS-64
40	LTS-64

## ELECTRIC CYLINDER SERIES ELEKTRO ISO 15552



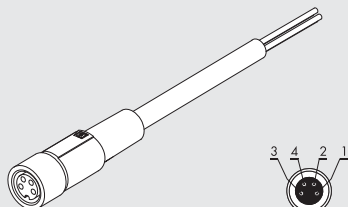
Bore [mm]	Ø 32 - Ø 50 - Ø 63	
	Position sensor model	
up to 32	LTS-032	
from 33 to 64	LTS-064	
from 65 to 96	LTS-096	
from 97 to 128	LTS-128	
from 129 to 160	LTS-160	
from 161 to 192	LTS-192	
from 193 to 224	LTS-224	
from 225 to 256	LTS-256	

## ORDERING CODES

Code	Description
W0950000470	LTS-032 position sensor with M8 4-PIN 0.3 m connector
W0950000471	LTS-064 position sensor with M8 4-PIN 0.3 m connector
W0950000472	LTS-096 position sensor with M8 4-PIN 0.3 m connector
W0950000473	LTS-128 position sensor with M8 4-PIN 0.3 m connector
W0950000474	LTS-160 position sensor with M8 4-PIN 0.3 m connector
W0950000475	LTS-192 position sensor with M8 4-PIN 0.3 m connector
W0950000476	LTS-224 position sensor with M8 4-PIN 0.3 m connector
W0950000477	LTS-256 position sensor with M8 4-PIN 0.3 m connector

## ACCESSORIES

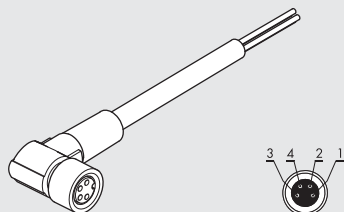
### STRAIGHT M8 CONNECTORS



Pin	Cable colour
1	Brown
2	White
3	Blue
4	Black

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

### 90° M8 CONNECTORS



Pin	Cable colour
1	Brown
2	White
3	Blue
4	Black

Code	Description
0240009102	M8 4-pin connector – female, 90° angle L = 2 m
0240009103	M8 4-pin connector – female, 90° angle L = 5 m

## NOTES