

DRAW WIRE SENSOR



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Series LX

Key-Features:

- Low cost series for use in dry environments
- Measurement ranges: 50 to 1250 mm
- Linearity up to ± 0.1 % of full scale
- Output signal: Potentiometer or optical Incremental-Encoder (TTL)
- Low weight: 85 g
- Thermoplastic body
- Compact size
- Wire rope: nylon jacketed stainless steel
- Easy installation

TECHNICAL DATA

		LX-PA	LX-EP
Measurement range MR	[mm]	50 to 1250 (see table below)	250 to 1250 (see table below)
Linearity	[%]	MR up to 120: ± 1 MR up to 625: ± 0.5 MR up to 1250: ± 0.25	± 0.1
Repeatability	[%]	± 0.03	± 0.015
Resolution		depends on the signal quality of the reference voltage	up to 4.46 pulses/mm (see table below) ¹⁾
Sensor element		Potentiometer	Incremental Encoder
Output signal		0...1 k Ω ± 15 % (optional: 5 k Ω or 10 k Ω)	A/B signal, TTL compatible (not differential)
Power supply	[VDC]	max. 30	5 ± 0.25
Current consumption	[mA]	-	max. 30
Connection		3 solder terminals	5 square pins
Protection class		IP40	
Operating temperature	[°C]	-25...+75	-40...+75
Shock resistance		50 g, max. 0.1 ms	
Vibration resistance		15 g, max. 0.1 ms	5 g, max. 0.1 ms
Life cycle		MR up to 120: 1,000,000 full stroke cycles MR up to 625: 250,000 full stroke cycles MR up to 1250: 125,000 full stroke cycles	MR up to 625: 2,000,000 full stroke cycles MR up to 1250: 1,000,000 full stroke cycles
Housing		thermoplastic	
Draw wire		nylon jacketed stainless steel, \varnothing 0.46 mm / optional: stainless steel, \varnothing 0.41 mm	
Weight	[g]	85	

Model LX-PA-...		...-2	...-2,8	...-3,8	...-4,7	...-10	...-15	...-20	...-25	...-30	...-40	...-50
Measurement range	[mm]	50	70	96	120	250	380	500	625	750	1000	1250
Output	[mV/V/mm] ²⁾	18.5	13.4	10.1	8.1	3.5	2.5	1.9	1.5	1.3	1	0.8
Extraction force	[N]	4.4	3.9	3.1	2.2	4.4	3.9	3.1	2.2	3.9	3.1	2.2

Model LX-EP-...		...-10	...-15	...-20	...-25	...-30	...-40	...-50
Measurement range	[mm]	250	380	500	625	750	1000	1250
Resolution	[Pulses/mm] ¹⁾	4.46	3.25	2.45	1.98	3.25	2.45	1.98
Extraction force	[N]	4.4	3.9	3.1	2.2	3.9	3.1	2.2

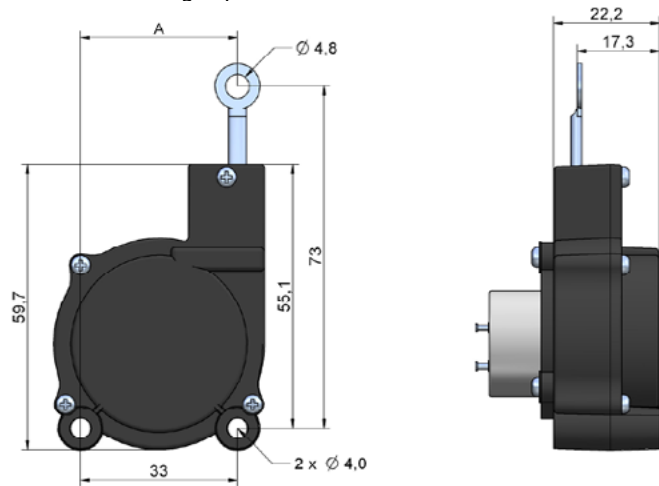
¹⁾ Resolution may be increased by a factor of four with interface electronics capable of quadrature times 4 counting mode.

²⁾ At 1 VDC excitation voltage. To calculate nominal output voltage in application, multiply nominal output shown by excitation voltage of application.

TECHNICAL DRAWING

LX-PA

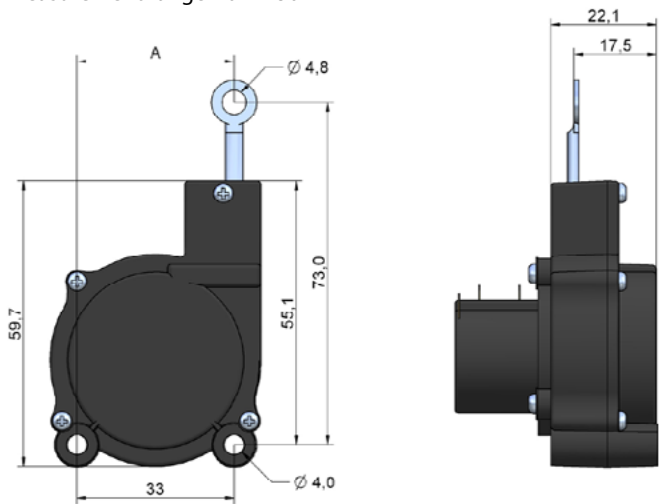
Measurement range up to 120 mm



Measurement range [mm]	A [mm]
50	25.7
70	29
96	33
120	37.1

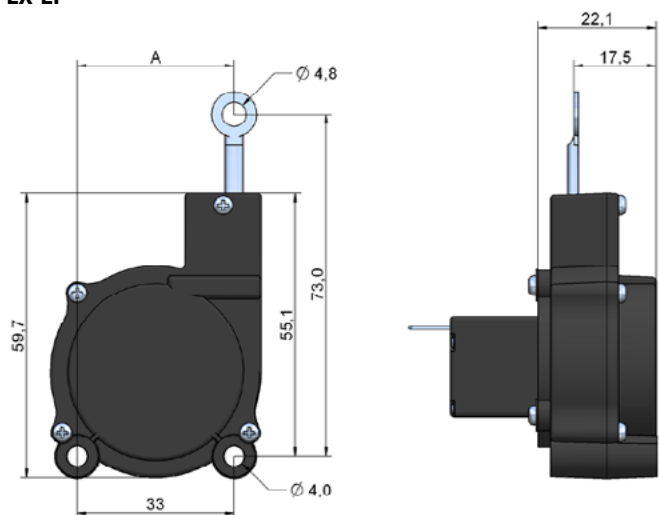
LX-PA

Measurement range from 250 mm



Measurement range [mm]	A [mm]
250	25.7
380 / 750	29
500 / 1000	33
625 / 1250	37.1

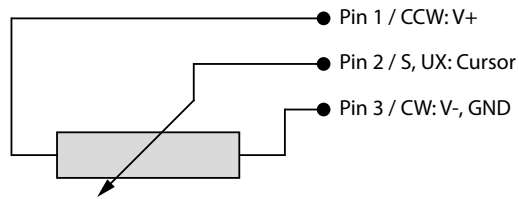
LX-EP



Measurement range [mm]	A [mm]
250	25.7
380 / 750	29
500 / 1000	33
625 / 1250	37.1

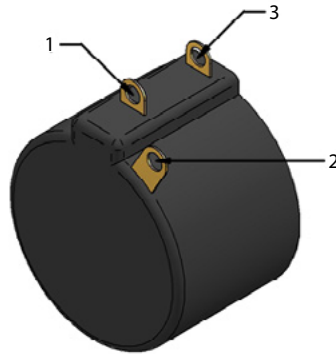
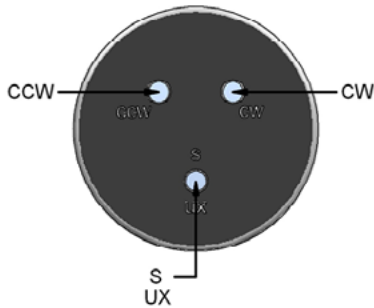
ELECTRICAL CONNECTION

LX-PA

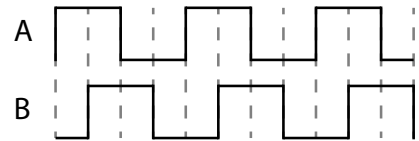
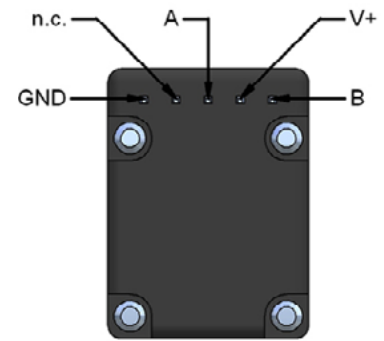


Measurement range up to 120 mm

Measurement range from 250 mm

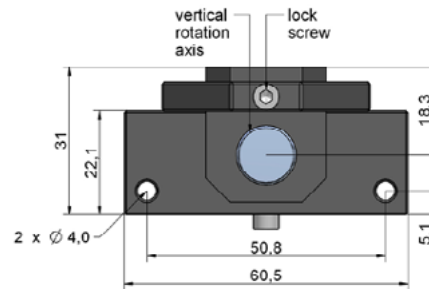
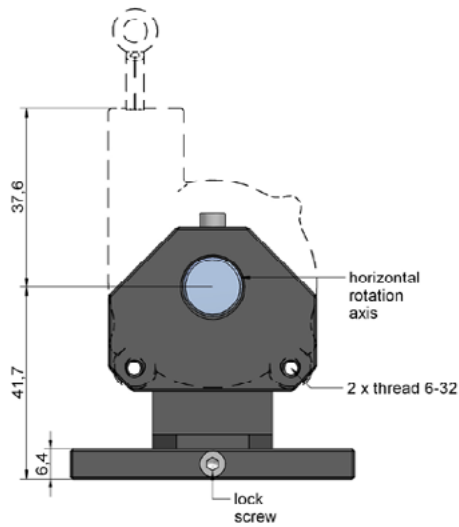


LX-EP



ACCESSORY MOUNTING KIT

LX-Mount



WARNING NOTICES

- Don't let the rope snap back. If the rope is retracted freely, this may lead to injuries (whiplash effect) and the device may be damaged. Caution when unhooking and retracting the rope into the sensor.
- Never exceed the specified measurement range when extracting the rope!
- Do not try to open the device. The stored energy of the spring drive may lead to injuries when being mishandled.
- Do not touch the rope when operating the sensor.
- Avoid guiding the rope over edges or corners. Use a deflection pulley instead.
- Do not operate the sensor if the rope is buckled or damaged. A ripping of the rope may lead to injuries or a damaging of the sensor.

ORDER CODE LX-PA

LX-PA — [] — [] [] N - N [] []

Measurement range
see „Technical Data“

Draw wire material
nylon jacketed stainless steel Ø 0.46 mm
stainless steel, Ø 0.41 mm

Potentiometer resistance

1 kΩ	1
5 kΩ	3
10 kΩ	4

Connector type (see below)

N	no connector
C	connector at cable with mating connector
K	con. at cable without mating connector

Connection type

N	solder terminals
P	Cable output (0.15 m)
1	Cable output (1 m)
2	Cable output (2 m)
3	Cable output (3 m)
4	Cable output (4 m)
5	Cable output (5 m)

The Standard versions LX-PA-...-N1N-NNN are usually in stock. Different versions have a typical delivery time of 3 weeks.

Connector type LX-PA



N: no connector (solder terminal)



Cable output



C: connector at cable with mating connector



K: connector at cable without mating connector

ORDER CODE LX-EP

LX-EP — []

Measurement range
see „Technical Data“

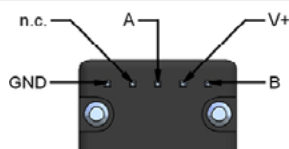
Accessory connection cable LX-EP



Pins



Accessory: connection cable with mating connector



Function	Cable colour	Order code	Cable length
GND	BK	10172-1M	1 m
n. c.	n. c.	10172-2M	2 m
Channel A	WH	10172-3M	3 m
V+	RD	10172-4M	4 m
Channel B	GN	10172-5M	5 m

ACCESSORIES

Mounting kit

LX-Mount Sensor mounting, adjustable in 2 dimensions

Connection cable for LX-EP

10172-1M 1 m, with mating connector

10172-2M 2 m, with mating connector

10172-3M 3 m, with mating connector

10172-4M 4 m, with mating connector

10172-5M 5 m, with mating connector

Digital displays for sensors with analog output LX-PA, 2 channel

WAY-AX-S touch screen, supply: 18...30 VDC

WAY-AX-S-AC touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-AX data sheet](#).

Digital displays for sensors with incremental output LX-EP, 2 channel

WAY-DXM-S touch screen, supply: 18...30 VDC

WAY-DXM-S-AC touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-DXM data sheet](#).