

DRAW WIRE SENSOR



Series LX

Key-Features:

- Low cost series for use in dry environments
- Available 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: jacketed stainless steel
- Easy installation

Content:

Technical Data2
Electrical Connection2
Technical Drawing3
Accessories4
Order Code5

TECHNICAL DATA

Model		LX-PA	LX-EP
Measurement Range MR	[mm]	50 to 1250 (see table below)	250 to 1250 (see Table below)
Sensor element		Potentiometer	Incremental Encoder
Protection class		IP40	
Voltage supply	[V]	max. 25	5, ±0.25
Current consumption	[mA]	-	max. 30
Resolution		depends on the signal quality of the reference voltage	up to 4.46 Pulses/mm (see table below) *
Linearity	[% MR]	±1, for MR up to 120 mm ±0.5, for MR up to 625 mm ±0.25, for MR up to 1250 mm	±0.1
Repeatability	[% MR]	±0.03	±0.015
Working temperature	[°C]	-25...+75	-40...+75
Output signal		0 to 1 kOhm, ±15 % (5 kOhm and 10 kOhm on request)	A/B signal, TTL compatible (not differential)
Wire rope		standard: jacketed stainless steel, Ø 0.46 mm	
Housing material		thermoplastic body	
Weight	[g]	85	
Electrical connection		standard: solder terminal	5 square pins
Life cycle		MR up to 120 mm: 1.000.000 full stroke cycles MR up to 625 mm: 250.000 full stroke cycles MR up to 1250 mm: 125.000 full stroke cycles	MR up to 625 mm: 2.000.000 full stroke cycles MR up to 1250 mm: 1.000.000 full stroke cycles

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

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

** At 1 VDC Excitation Voltage. To calculate nominal output voltage in application, multiply nominal output shown by excitation voltage of application.

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

ELECTRICAL CONNECTION

LX-PA

● PIN1 / CCW: V+
● PIN2 / S,UX: cursor
● PIN3 / CW: V-, GND

LX-PA-10 to LX-PA-50

LX-PA-2 to LX-PA-4,7

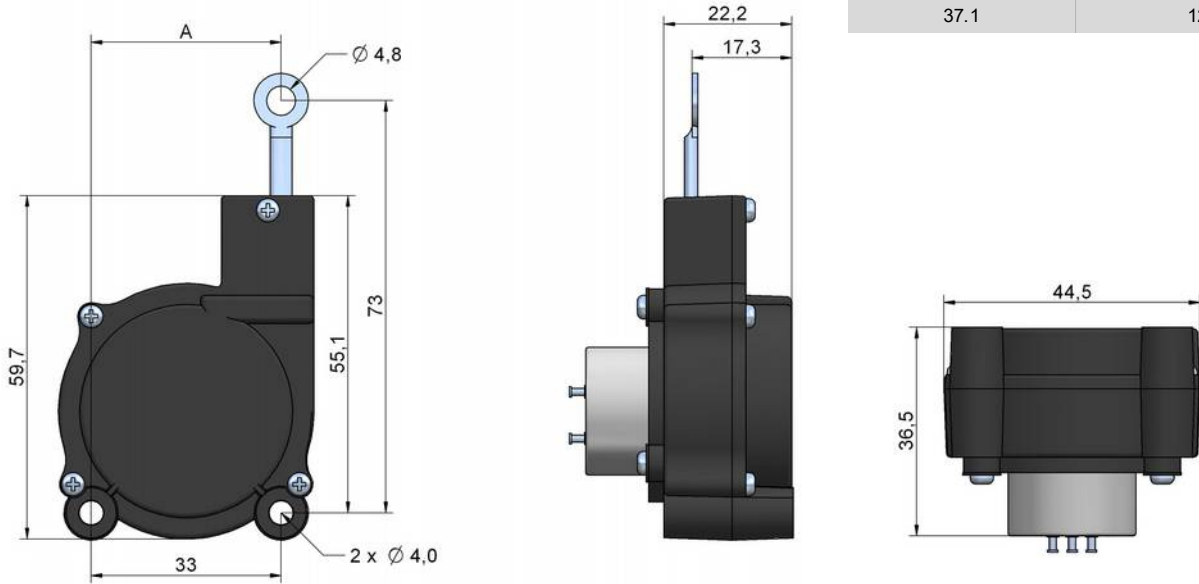
LX-EP

n.c. A V+
GND B

A
B

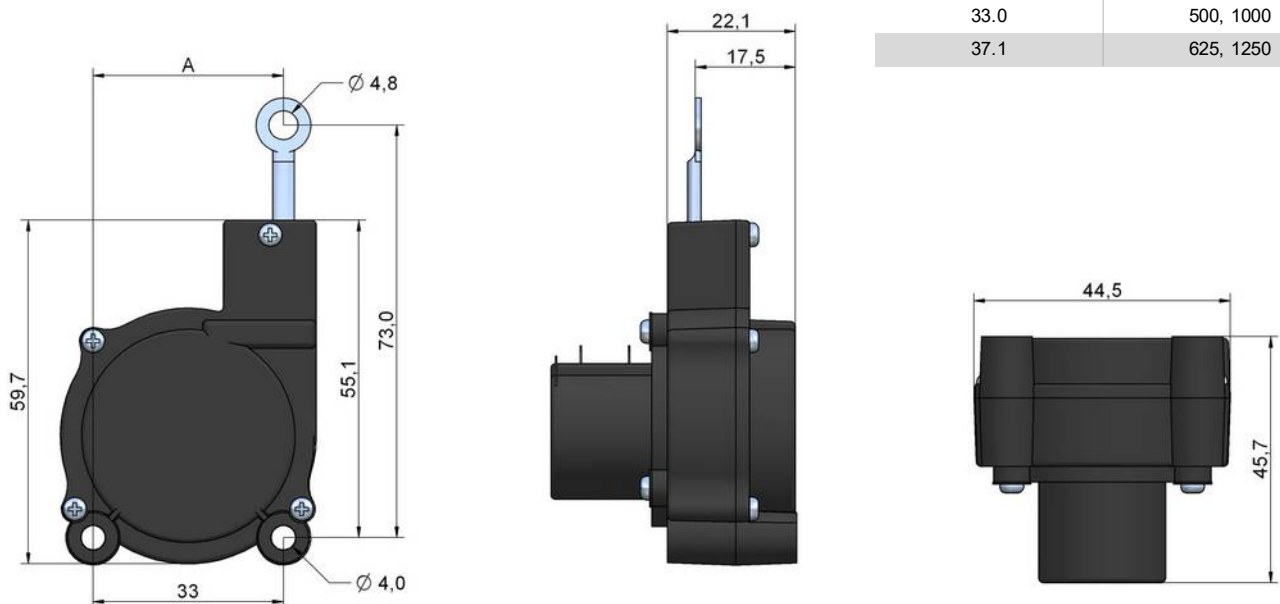
TECHNICAL DRAWING

LX-PA-2 to LX-PA-4,7



length A [mm]	measurement range [mm]
25.7	50
29.0	70
33.0	96
37.1	120

LX-PA-10 to LX-PA-50

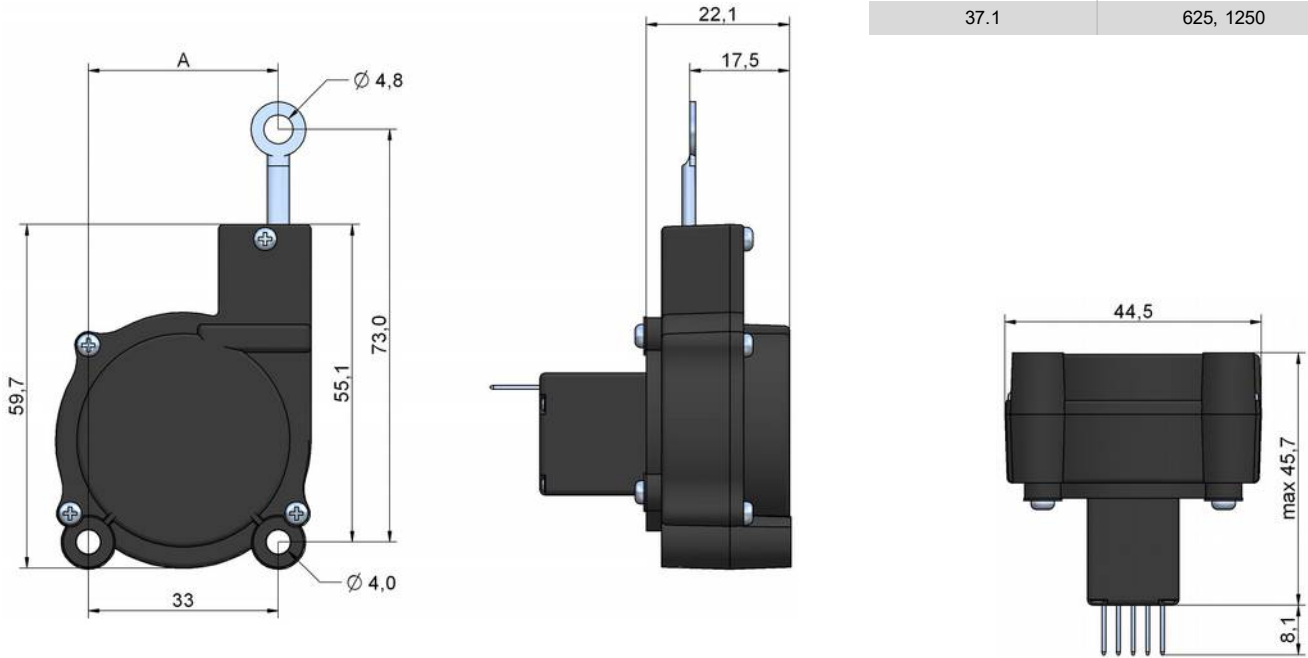


length A [mm]	measurement range [mm]
25.7	250
29.0	380, 750
33.0	500, 1000
37.1	625, 1250

TECHNICAL DRAWING

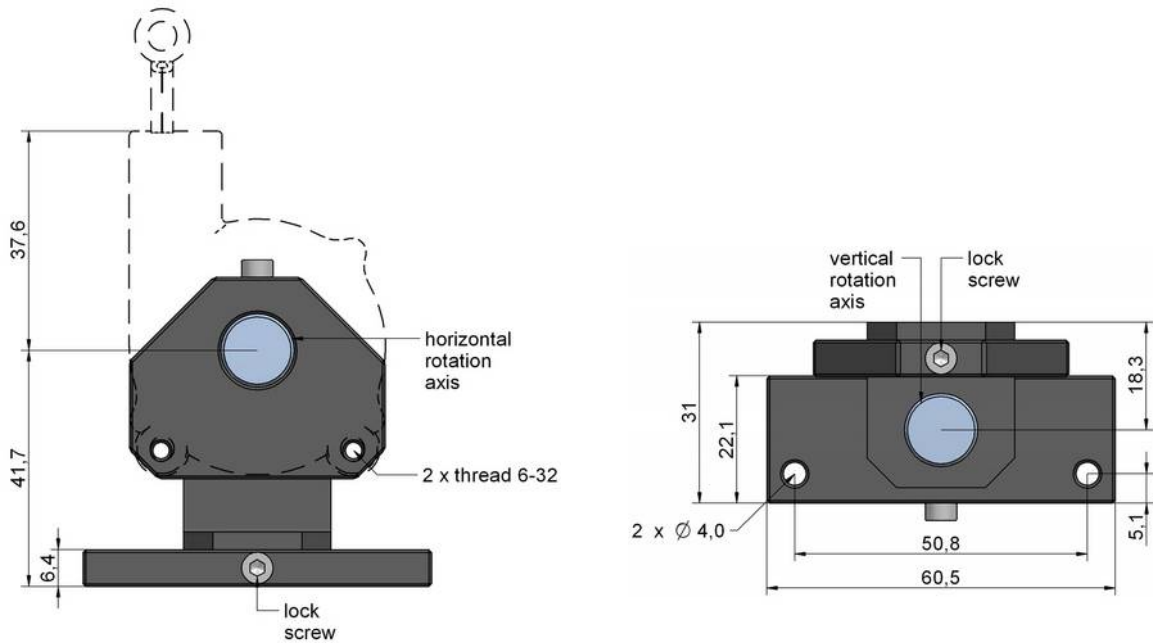
LX-EP

length A [mm]	measurement range [mm]
25.7	250
29.0	380, 750
33.0	500, 1000
37.1	625, 1250



ACCESSORIES

LX-Mount



ORDER CODE LX-PA

LX-PA - [] - [] [] N - N [] []

Measurement range see table on page 2	[]
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Wire rope material Standard: nylon jacketed stainless steel (∅0.45 mm) Stainless steel (∅0.4 mm)	N S
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Potentiometer value Standard 1 kΩ 2 kΩ 5 kΩ 10 kΩ	1 2 3 4
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Connection (see pictures below)	
N	Standard: no connector
C	Cable to cable connector with mating connector
K	Cable to cable connector without mating connector

Output	
N	Standard: solder terminal
P	Cable output with 0.15 m cable
1	Cable output with 1.0 m cable
2	Cable output with 2.0 m cable
3	Cable output with 3.0 m cable
4	Cable output with 4.0 m cable
5	Cable output with 5.0 m cable

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

Connection LX-PA



Standard
N: no connector (solder terminal)



N: no connector (cable output with open ends)



C: Cable to cable connector with mating connector



K: Cable to cable connector without mating connector

ORDER CODE LX-EP

LX-EP - []

Measurement range see table on page 2	[]
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Connection LX-EP



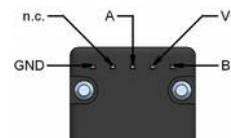
Standard: solder terminal



Accessory: connection cable with mating connector

Order code connection cable	Cable length
10172-1M	1 meter
10172-2M	2 meter
10172-3M	3 meter
10172-4M	4 meter
10172-5M	5 meter

Cable colour	Function
black	GND
n.c.	n.c.
white	Channel A
red	+V _{in}
green	Channel B



ORDER CODE STANDARD VERSIONS

LX-PA-2-N1N-NNN	50 mm	LX-EP-10	250 mm
LX-PA-2,8-N1N-NNN	70 mm	LX-EP-15	380 mm
LX-PA-3,8-N1N-NNN	96 mm	LX-EP-20	500 mm
LX-PA-4,7-N1N-NNN	120 mm	LX-EP-25	625 mm
LX-PA-10-N1N-NNN	250 mm	LX-EP-30	750 mm
LX-PA-15-N1N-NNN	380 mm	LX-EP-40	1000 mm
LX-PA-20-N1N-NNN	500 mm	LX-EP-50	1250 mm
LX-PA-25-N1N-NNN	625 mm		
LX-PA-30-N1N-NNN	750 mm		
LX-PA-40-N1N-NNN	1000 mm		
LX-PA-50-N1N-NNN	1250 mm		

Accessories

LX-Mount Mounting kit, adjustable in 2-dimensions

Connection cables for LX-EP

10172-1M	1 meter with mating connector
10172-2M	2 meter with mating connector
10172-3M	3 meter with mating connector
10172-4M	4 meter with mating connector
10172-5M	5 meter with mating connector

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.



Subject to change without prior notice.

WayCon Positionsmesstechnik GmbH

email: info@waycon.de
internet: www.waycon.biz

Head Office

Mehlbeerenstr. 4
82024 Taufkirchen
Tel. +49 (0)89 67 97 13-0
Fax +49 (0)89 67 97 13-250

Office Köln

Auf der Pehle 1
50321 Brühl
Tel. +49 (0)2232 56 79 44
Fax +49 (0)2232 56 79 45