

Digital Linear Encoder

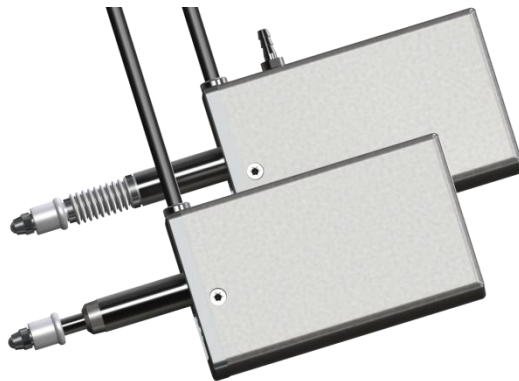
Orbit® 3 LE

Description

The Digital Linear Encoder range of gauges consists of high accuracy optical probes designed for use in applications where consistent sub micron measurement accuracy is required. In contrast to traditional gauging probes, the accuracy is maintained along the entire measurement range.

The Digital Linear Encoder incorporates Probe Interface Electronics (PIE) which can be connected directly to a Solartron Digital Readout, a PC or a PLC via Solartron's Orbit® 3 Network. The option to take readings of $<0.1 \mu\text{m}$ at speeds of up to 3906 readings per second per encoder into the Orbit® 3 Network, provides detailed profiling.

Various spring forces are available to make sure the encoders can operate at any attitude. The proven high repeatability is a testament to the excellent mechanics and bearing used in the range.



Features

- Read Burst command capable
- Dynamic capable
- Dynamic2 capable
- High speed Orbit® 3 (1.5 M Orbit® 3 Bus speed)
- Ultra-speed Orbit® 3 (2.25 M Orbit® 3 Bus speed)
- Upgradable firmware
- Diagnostic LEDs
- Reduced weight PIE case
- Improved mechanical latching
- Spring, free, pneumatic, cable release
- $0.4 \mu\text{m}$ accuracy
- $0.05 \mu\text{m}$ resolution

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Technical specification

Measurement performance

	Spring push		Pneumatic	
	LE/12/S	LE/25/S		
	LE/12/S	LE/25/S	LE/12/P	LE/25/P
Measurement range (mm)	12	25	12	25
Mechanical travel range (mm)	13	26	13	26
Accuracy (µm)	± 0.4			
Repeatability (µm)	< 0.1			
Resolution (µm)	0.05			
Reference mark position	Approximately 3mm from end stop			
Tip force (N) ±20%: Up	0.1			
Tip force (N) ±20%: Down	0.6			
Tip force (N) ±20%: Horizontal	0.5			
Temperature coefficient (µm / °C)	-0.35 to -0.5			
Max. gauge speed m/s	0.5			

Environmental

Storage temperature °C	-20 to +70
Operating temperature °C	+5 to +60
IP rating	IP50 or IP65

Materials

Scale	Quartz Glass
Shaft	Hardened stainless steel
Gaiter	Flouroelastomer (IP65 only)
Contact tip	Nylon, Tungsten Carbide, Ruby or Silicon Nitride
Cable	PUR

Mechanical

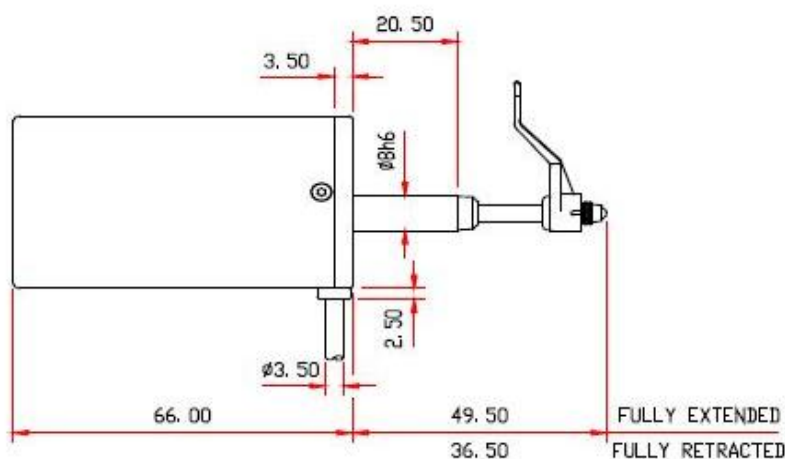
Mounting (stem diameter)	Ø 8h6

Digital Probe Interface Electronics

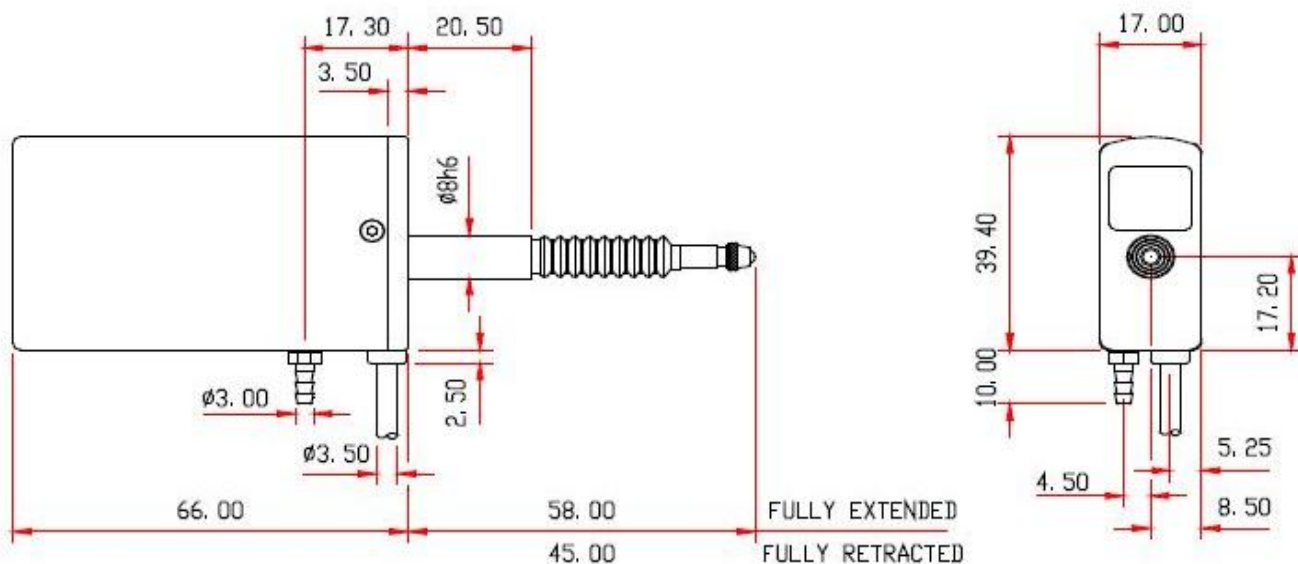
Output	Serial RS485 signal level
Power (VDC)	5 ± 0.25 @ 0.07 A (includes power for probe)
IP rating	IP43 (IP65 available)
CE marking	Immunity: EN61000-6-2 Emissions: EN61000-6-3
Operating Temperature °C	0 to +60
Measurement Modes	Standard, Dynamic, Dynamic2, Readburst
Reading Rate	3906 reading/s
Materials	Nylon and ABS plastic
Cable Length (m)	2.0 (standard, other options available)
Weight (grams)	PIE: 52 T-Con with DIN rail adapter fitted: 46

Dimensional drawings

Solartron pursues a policy of continuous development, specifications in this document may therefore be changed without notice. Dimensions are nominal and specified in millimeters.



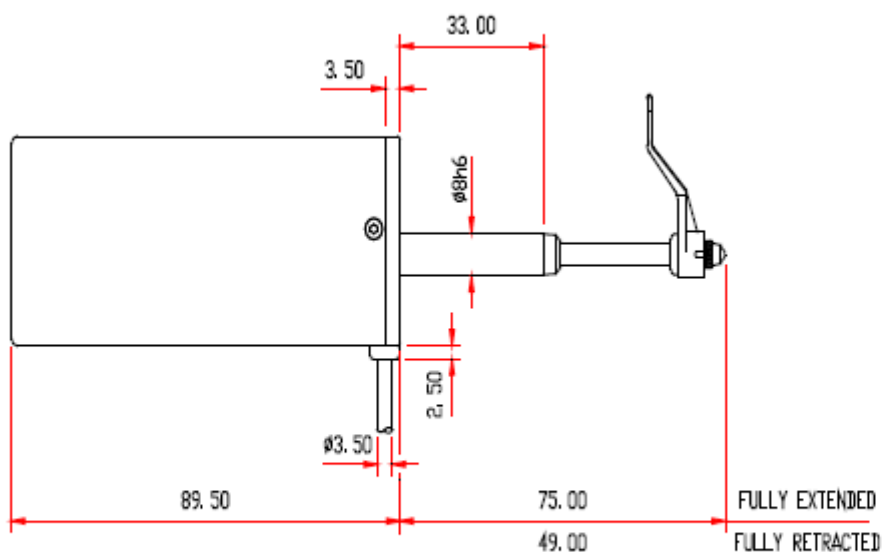
LE/I2/S IP50



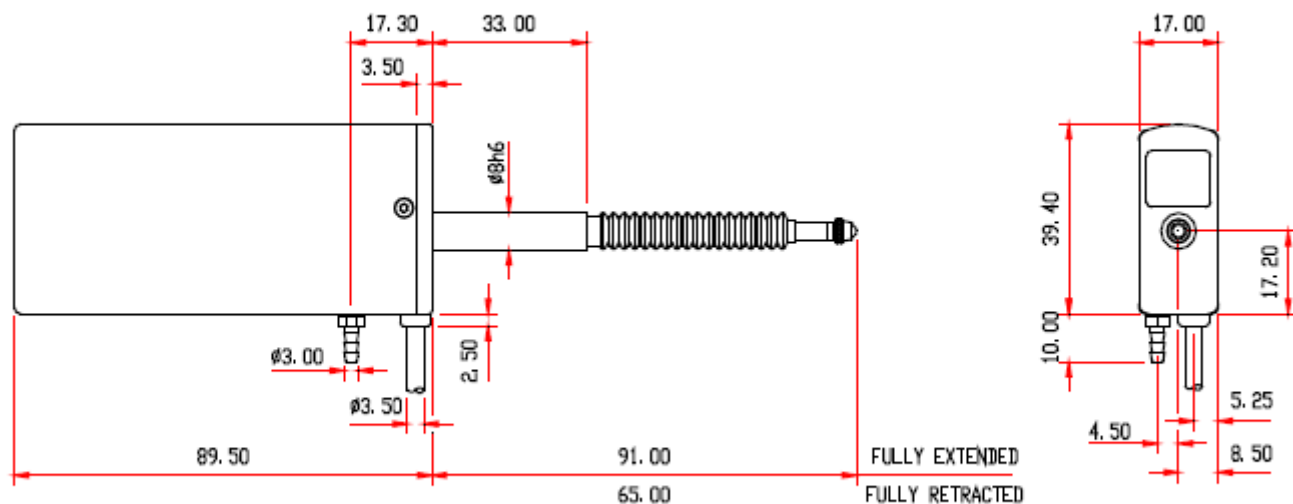
LE/I2/P IP65

Dimensional drawings

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LE/25/S IP50



LE/25/P IP65

Accessories

Finger Lifter

The Finger Lifter is used for manual operation of spring push linear encoders to prevent heat being transferred to the shaft.
Part number: 206678



Replacement gaiters

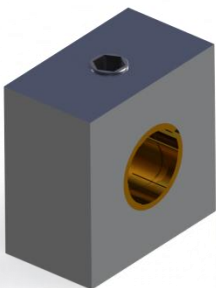
Gaiters can be replaced when damaged. Only pneumatic push probe require gaiter rings.



Spring push	Part number	Pneumatic push	Part number
LE/12/S	209562	LE/12/P	805098
LE/25/S	295906	LE/25/P	804241

Clamping collet

For use with all 8 mm clamping shaft sensors. The clamping collet distributes the clamping forces evenly around the shaft. Using the supplied grub screw, the probe can be loosened while holding the collet in place.
Part number: 805048



Imperial adapter sleeves

Adapter sleeves can be used to increase the body diameter of 8 mm sensors to 9.512 (3/8"). Available in lengths from 12 to 127 mm.



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