

LINEAR POSITION SENSOR

ILPS-18S SERIES SPRING LOADED LVIT LINEAR POSITION SENSOR

Rugged Frictionless LVIT Linear Position Sensor

FEATURES

- Sensing element is wear-free
- Excellent stroke-to-length ratio
- Stroke lengths from 3.3 to 100 mm (0.13 to 4 inches)
- 19 mm (0.75 inch) diameter housing sealed to IP67
- A more robust alternative to Linear Potentiometers



APPLICATIONS

- Laboratory R&D Testing
- Industrial Test Stands
- Factory Automation

OVERVIEW

The ILPS-18S series Spring Loaded Linear Variable Inductive Transducer (LVIT) Position Sensor are used to monitor and track the linear motion or position of a target. These spring-loaded ruggedized sensors are ideal for use in industrial and laboratory applications including automotive R&D, motorsports, industrial, motion control, medical, military and aerospace.

The inductive coil and spoiler combination is a contactless solution, eliminating the wear and dithering issues commonly experienced with Potentiometer type sensors. The amplifier electronics are contained within the housing, no need for an external signal conditioner.

The ILPS-18S series sensor is made from industrial duty materials for resistance to dust, water, temperature, shock, and vibration.

The SenSet Field Programmability feature allows for quick and easy recalibration of the units' zero and full scale electrical output.

SPECIFICATIONS

Analog I/Os:

0 to 3 VDC output	(5 to 30 VDC power, ≤ 20 mA)
0.5 to 4.5 VDC output	(8 to 30 VDC power, ≤ 35 mA)
0 to 5 VDC output	(8 to 30 VDC power, ≤ 35 mA)
0 to 10 VDC output	(12 to 30 VDC power, ≤ 35 mA)
4 to 20 mA output	(18 to 30 VDC power, ≤ 60 mA)

Linearity Error:

$\pm 0.15\%$ of FSO

Resolution:

0.025% of FS

Repeatability:

0.025% of FS

Bandwidth:

300 Hz update rate (nominal)

Spring Force:

1.0 Lbf (0.45 kgf) maximum

Operating Temperature:

Voltage Output: -40 to +105°C (-40 to +220°F)

Current Output: -20 to +75°C (-5 to +167°F)

Temperature Coefficient:

$\leq \pm 0.015\%$ of FS / °C

Life Expectancy:

> 100 million cycles

Integral Cable:

28 AWG, stranded, FEP insulated, foil shielded, with drain wire, PUR polyurethane outer jacket

Integral Cable Temp Rating:

-40 to +85°C (-40 to +185°F)

Shock Rating:

1000g, 11 mS

Vibration Rating:

5 to 20 Hz, 0.5 inch p-p; 20 to 2000 Hz, 4.2 g p-p

IP Rating:

IEC IP67

Country of Manufacture:

Made in the USA



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THE SENSOR CONNECTION

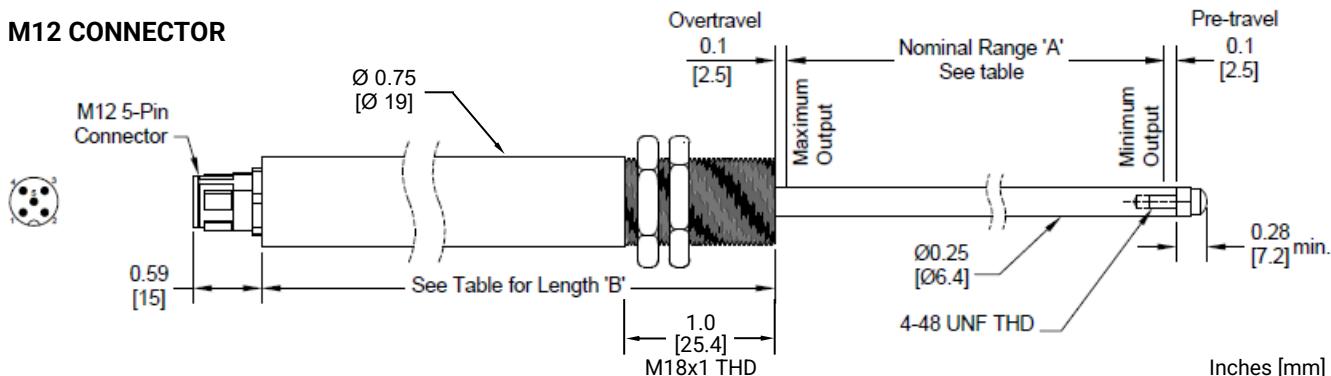
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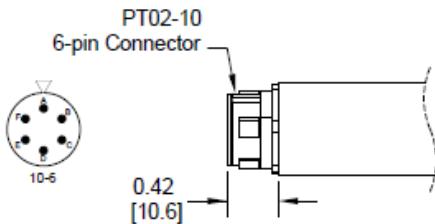
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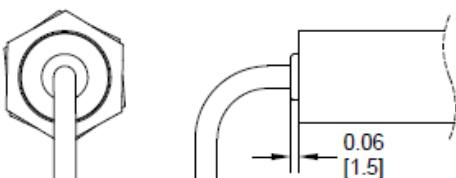
M12 CONNECTOR



PT02 CONNECTOR



INTEGRAL CABLE



DIMENSIONS

Measuring Range 'A'	Length 'B'	Spring Rate
0.13 inch [3.3 mm]	3.25 inches [82.6 mm]	0.75 lbf/in [0.13 kgf/cm]
0.25 inch [6.4 mm]	3.25 inches [82.6 mm]	0.75 lbf/in [0.13 kgf/cm]
0.5 inch [12.5 mm]	3.50 inches [88.9 mm]	0.75 lbf/in [0.13 kgf/cm]
1.0 inch [25 mm]	4.00 inches [101.6 mm]	0.75 lbf/in [0.13 kgf/cm]
2.0 inches [50 mm]	5.08 inches [129.0 mm]	0.45 lbf/in [0.08 kgf/cm]
3.0 inches [75 mm]	6.16 inches [156.5 mm]	0.30 lbf/in [0.05 kgf/cm]
4.0 inches [100 mm]	7.25 inches [184.1 mm]	0.23 lbf/in [0.04 kgf/cm]

WIRING PIN OUT

	M12 Connector	PT02 Connector	Integral Cable
DC Power In	Pin #1	E	Red
Ground	Pin #2	D	Black
Output (Voltage)	Pin #3	A	Green
Output (Current)	Pin #4	A	Green
SenSet (Calibration)	Pin #5	B	White

ORDERING INFORMATION

Model	Measuring Range	Position	Termination	Output	Housing
ILPS-18S	-□□□	- A	- □□	- □□	- □
	3.3 3.3 mm [0.130"] 6.4 6.4 mm [0.250"] 013 12.5 mm [0.500"] 025 25 mm [1.0"] 050 50 mm [2.0"] 075 75 mm [3.0"] 100 100 mm [4.0"]	A Axial	00 Cable, 1 m 01 M12 Connector 02 PT02 Connector	03 0 to 3 VDC 05 0.5 to 4.5 VDC 10 0 to 10 VDC 20 4 to 20 mA 50 0 to 5 VDC	A Aluminum S Stainless Steel

ORDERING EXAMPLE

ILPS-18S-025-A-00-50-A: 0 to 25 mm Range, 1 m Axial Cable, 0 to 5 VDC Output, Aluminum Housing



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