

**For use in:**

Industrial Fluid Power Equipment
Steel, Aluminum, and Paper Mills
Steam and Hydro Power Plants
Factory Automation Systems

LRS-18 Series

Spring Loaded LVIT Linear Position Sensor

Long Lasting, Contactless, Inductive Sensors

The LRS-18 series of LVIT (Linear Variable Inductance Transducer) spring loaded position sensors by Alliance Sensors Group are contactless devices designed for dimension or position measuring applications in factory automation and in various industrial and commercial applications such as automotive testing, mil/aero test stands, robotic arms, and packaging equipment, where the sensing element cannot be attached to the object being measured. LRS-18s are offered in full scale ranges from 12.5 to 100 mm (0.5 to 4.0 inches) with excellent resolution and high stroke-to-body-length ratios. The maximum tip force on the item being measured is 1 pound. LRS-18 sensors have a 19 mm (0.75 inch) diameter aluminum or stainless steel body with an M18 x 1 thread and come with two hex jam nuts for easy installation in place of an 18 mm analog prox sensor. These sensors use a 0.25 inch diameter probe equipped with an AGD No. 9 contact tip, and are offered with either an axial cable or a connector. Operating from a variety of DC voltages, the sensors are available with a choice of four analog outputs and they all include ASG's proprietary SenSet™ field calibration feature.

Additional information can be found at www.alliancesensors.com.

Features:

- Spring loaded LVIT Technology™ (Linear Variable Inductance Transducer)
- Ranges from 0.5 to 4.0 inches (12.5 to 100 mm)
- Contactless operation prevents internal wearout from dithering or rapid cycling
- Excellent stroke-to-body-length ratio
- Proprietary SenSet™ field adjustable range scaling

Specifications:

Analog I/Os	0 - 5 V or 0.5 - 4.5 V DC output with 8 - 30 V input, 35 mA max. 0 - 10 V DC output with 12 - 30 V input, 35 mA max. 4 - 20 mA (3-wire) output with 18 - 30 V input, 60 mA max. (75 C max.)
Measuring Ranges	12.5 mm to 100 mm (0.5 to 4.0 inches) full scale
Linearity Error	±0.15% of Full Scale Output (FSO) typical, ±0.25% max.
Resolution	0.025% of FS
Operating Temperature	-20 to 85 C (-40 to 105 C Extended Range)
Temperature Coefficient	≤±0.015% of FS/K
Vibration	5-20 Hz 0.5 inch p-p; 20-2000 Hz 4.2 g p-p
Shock	1000 g, 11 msec.
Terminations	IEC IP-67
Humidity	95% RH, non-condensing



LRS-18 Series

Technical drawing showing dimensions and electrical connections for the LRS-18 Series sensor. Dimensions include: PT02-10 6-pin Connector (0.42 [10.6]), M12 5-Pin Connector (0.59 [15]), Overtravel (0.1 [2.5]), Nominal Range 'A' (See table), Pre-travel (0.1 [2.5]), Maximum Output, Minimum Output, Ø0.25 [Ø6.4], 4-48 UNF THD, 0.28 [7.2] min., Ø0.75 [Ø19], 0.17 [4.3] 2 PLCS, M18 x 1 Nuts, 2 PLCS, 0.06 [1.5], 1.25 [31.8] M18 x 1 THD, 0.94 A/F [24] 2 PLCS, and 4-Conductor Cable.

Function	Pin	PT02-10 Pin	Cable Color
+DC Power Input	1	E	Red
Ground	2	D	Black
Voltage output*	3	A	Green
Current output*	4		Green
SenSet™	5	B	White

'A' Nominal Range	'B' Body Length	Spring Rate	Max. Force
inches [mm]	inches [mm]	Lbf/in [kgf/cm]	Lbf [kgf]
0.5 [12.5]	3.04 [77.2]	0.75 [0.134]	0.9 [0.41]
1.0 [25]	3.54 [89.9]	0.75 [0.134]	0.9 [0.41]
2.0 [50]	4.62 [117.3]	0.43 [0.077]	1.0 [0.45]
3.0 [75]	5.69 [144.5]	0.30 [0.054]	1.0 [0.45]
4.0 [100]	6.80 [172.7]	0.23 [0.041]	1.0 [0.45]

Ordering Information

Series	Output	Housing Thread	Range (mm)	Electrical Termination		Output	Housing Material
				Axial or Radial	Termination		
LRS	X-	XX-	XXX-	X-	XX-	XX	X-
	E- Voltage	18- M18	013 (12.7 mm)	A- Axial	00- 1 m cable	05 - 0.5-4.5 VDC	A- Aluminum
	I- Current		025		01- 5-pin M12	06 - 4.5-0.5 VDC	S- 300 Series SS
			050		02- 6-pin PT02	10 - 0-10 VDC	
			075		03- 3 m cable	11 - 10-0 VDC	
			100			20 - 4-20 mA	
						21 - 20-4 mA	
						50 - 0-5 VDC	
						51 - 5-0 VDC	

Off The Shelf Connection Solutions



Standard ADG Contact Tip



Industry Standard M18 x 1 Threads



Industry Standard Connectors and Cable Options