



**For use in:**  
Mil/Aero Test Stands  
Packaging Equipment  
Robotic Arms  
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 dimensional 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. An ideal solution for when the sensing element cannot be attached to the object being measured. LRS-18s are offered in full scale ranges from 0.5 to 4.0 inches (12.5 to 100 mm) with excellent resolution and high stroke-to-length ratios. Maximum tip force on the item being measured is 1 pound.

LRS-18 sensors have a 0.75 inch (19 mm) 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. These sensors are available with a choice of four analog outputs and they all include ASG's proprietary SenSet™ field recalibration feature.

### 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-length ratio
- Proprietary SenSet™ field adjustable range scaling

### Specifications:

<b>Analog I/Os:</b>	0-5 V or 0.5-4.5 V 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).
<b>Measuring Ranges:</b>	12.5-100 mm (0.5 to 4 inches) Full Scale (nominal)
<b>Linearity Error:</b>	± 0.15% of FSO typical, ± 0.25% of FSO max
<b>Resolution:</b>	0.025% of FSO
<b>Operating Temperature:</b>	-20 to 85 C (-40 to 105 C extended temperature range)
<b>Temperature Coefficient:</b>	≤0.015% of FS/deg C
<b>Vibration:</b>	5-20 Hz, 0.5 inch p-p; 20-2000 Hz, 4.2 g p-p
<b>Shock:</b>	1000 g, 11 msec.
<b>Terminations:</b>	IEC IP-67
<b>Humidity:</b>	95% RH, non-condensing

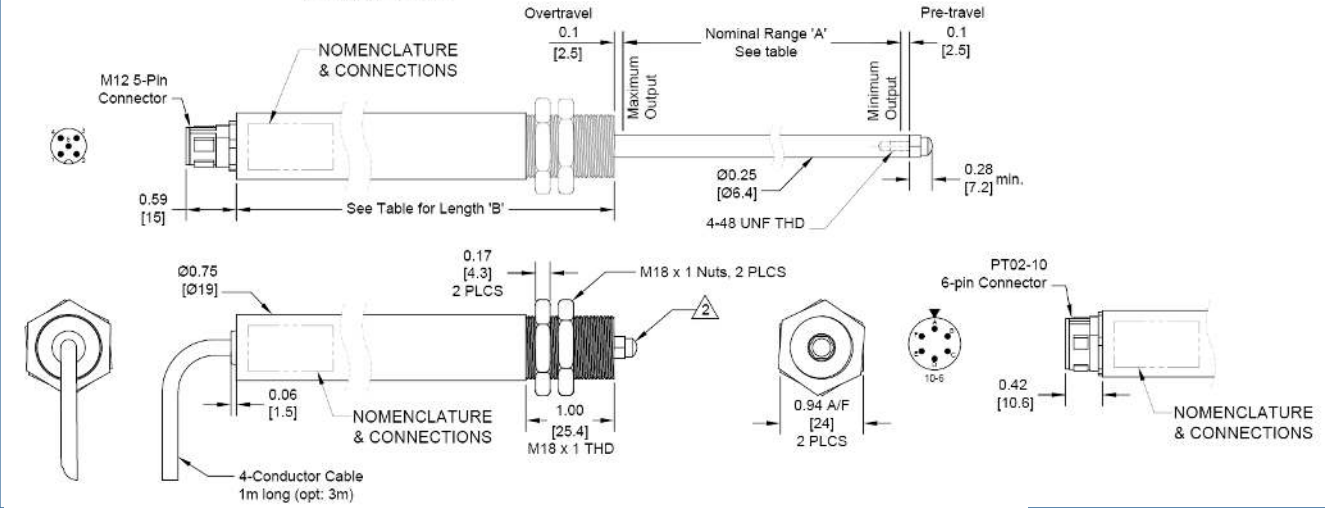
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Wiring Table			
I/O Function	Cable Color	M12 Pin	PT02-10 Pin
+DC Power input	Red	1	E
Ground	Black	2	D
Analog output	Green	3	A
Current output	Green	4	A
SenSet™	White	5	B

Unit Length Table			
Nominal Range 'A' Inches [mm]	Body Length "B" Inches [mm]	Spring Rate Lbf/in [kgf/cm]	Max. Force Lbf [kgf]
0.5 [12.7]	3.50 [88.9]	0.75 [0.134]	0.9 [0.41]
1.0 [25]	4.00 [101.6]	0.75 [0.134]	0.9 [0.41]
2.0 [50]	5.08 [129.0]	0.43 [0.077]	1.0 [0.45]
3.0 [75]	6.16 [156.5]	0.30 [0.054]	1.0 [0.45]
4.0 [100]	7.25 [184.1]	0.23 [0.041]	1.0 [0.45]



## Ordering Information:

Series	Output Type	Housing Thread	Range, Metric	Termination Direction	Termination	Output	Housing Material
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 to 4.5 VDC	A- Aluminum
	I- Current		025- 25 mm		01- 5-pin M12	06- 4.5 to 0.5 VDC	S- 300 Series SS
			050- 50 mm		02 6-pin PT02	10- 0 to 10 VDC	
			075- 75 mm		00- 3 m cable	11- 10 to 0 VDC	
			100- 100 mm			20- 4 to 20 mA	
						21- 20 to 4 mA	
						50- 0 to 5 VDC	
						51- 5 to 0 VDC	

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