

# LRSE18/LRSI18 LVIT Linear Position Sensors


**LRSE18-050A-00-10A**


## Low cost, compact, high performance gauging probes

The LRSE-18/LRSI-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 where the sensing element cannot be attached to the object being measured. Typical applications include the following:

- Automotive testing
- Robotic arms
- Packaging equipment
- Mil/aero test stands

LRSE-18/LRSI-18 Linear Variable Inductance Transducers are offered in full scale ranges from 0.5 to 4.0 in [12.7 to 101.6 mm] with excellent resolution and high stroke-to-body-length ratios. The maximum tip force on the item being measured is 1lbf [0.454 kgf].

LRSE-18/LRSI-18 series sensors have a 0.75 in [19mm] diameter aluminum or stainless steel body with an M18x1 thread. These sensors are supplied with two hex jam nuts for easy installation.

These sensors use a 0.25 in [6.35 mm] diameter probe equipped with an AGD No. 9 contact tip and are offered with an axial cable. Operating from a variety of DC voltages, models are available with either 0-10 V or 4-20 mA output (see table below). All include ASG's proprietary SenSet™ field calibration feature.

## Features

- Spring loaded LVIT Technology™ (Linear Variable Inductance Transducer)
- Ranges from 0.5 to 4.0 in [12.7 to 101.6 mm]
- Contactless operation prevents internal wear out from dithering or rapid cycling
- Excellent stroke-to-body-length ratio
- Proprietary SenSet™ field adjustable range scaling



### LRSE18/LRSI18 Series Linear Position Sensors Selection Chart

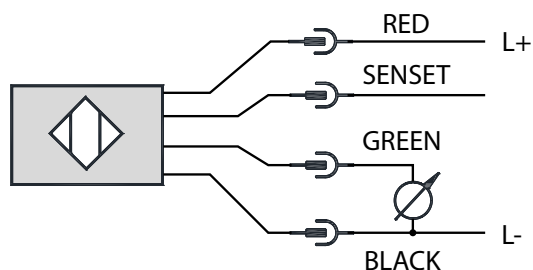
| Part Number                        | Price    | Drawing Link        | Nominal Range (in [mm]) | Body Length (in [mm]) | Spring Rate (lbf/in [kgf/cm]) | Maximum Force (lbf [kgf]) |
|------------------------------------|----------|---------------------|-------------------------|-----------------------|-------------------------------|---------------------------|
| <b>0-10V models</b>                |          |                     |                         |                       |                               |                           |
| <a href="#">LRSE18-013A-00-10A</a> | \$459.00 | <a href="#">PDF</a> | 0.5 [12.7]              | 3.04 [77.2]           | 0.75 [0.134]                  | 0.9 [0.41]                |
| <a href="#">LRSE18-025A-00-10A</a> | \$484.00 | <a href="#">PDF</a> | 1.0 [25.4]              | 3.54 [89.9]           | 0.75 [0.134]                  | 0.9 [0.41]                |
| <a href="#">LRSE18-050A-00-10A</a> | \$509.00 | <a href="#">PDF</a> | 2.0 [50.8]              | 4.62 [117.3]          | 0.43 [0.077]                  | 1.0 [0.45]                |
| <a href="#">LRSE18-075A-00-10A</a> | \$534.00 | <a href="#">PDF</a> | 3.0 [76.2]              | 5.69 [144.5]          | 0.30 [0.054]                  | 1.0 [0.45]                |
| <a href="#">LRSE18-100A-00-10A</a> | \$559.00 | <a href="#">PDF</a> | 4.0 [101.6]             | 6.80 [172.7]          | 0.23 [0.041]                  | 1.0 [0.45]                |
| <b>4-20mA models</b>               |          |                     |                         |                       |                               |                           |
| <a href="#">LRSI18-013A-00-20A</a> | \$459.00 | <a href="#">PDF</a> | 0.5 [12.7]              | 3.04 [77.2]           | 0.75 [0.134]                  | 0.9 [0.41]                |
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### LRSE18/LRSI18 Series Linear Position Sensors Specifications

|                                |                                                                                                                                |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Analog I/Os</b>             | 0-10VDC output with 12-30V power source, 35mA max; 4-20mA (3-wire) output with 18-30V power source, 60mA max, 167°F [75°C] max |
| <b>Measuring Ranges</b>        | 0.5 to 4.0 in [12.7 to 101.6 mm] full scale                                                                                    |
| <b>Linearity Error</b>         | ±0.15% of full scale output (FSO) typical, ±0.25% max                                                                          |
| <b>Resolution</b>              | 0.025% of full scale                                                                                                           |
| <b>Operating Temperature</b>   | -4 to 185°F [-20 to +85°C]; -40 to +221°F [-40 to +105°C] extended range                                                       |
| <b>Temperature Coefficient</b> | ±0.015% of FS/K                                                                                                                |
| <b>Vibration</b>               | 5-20 Hz, 0.5 in peak-to-peak; 20-2000 Hz, 4.2 g peak-to-peak                                                                   |
| <b>Shock</b>                   | 1000g, 11ms                                                                                                                    |
| <b>Terminations</b>            | IEC IP-67                                                                                                                      |
| <b>Humidity</b>                | 95% RH, non-condensing                                                                                                         |
| <b>Connection</b>              | 1M, PUR, 4 conductor, 24AWG                                                                                                    |

# LRSE18/LRSI18 LVIT Linear Position Sensors

## Wiring Diagram



| Wiring Table    |             |
|-----------------|-------------|
| Function        | Cable Color |
| +DC Power Input | Red         |
| Common Ground   | Black       |
| Analog Output   | Green       |
| SenSet™         | White       |