

# **LORD MicroStrain®** Displacement Overview

Displacement Sensors • Signal Conditioners

## Displacement Sensors

[microstrain.com/displacement](http://microstrain.com/displacement)

*Our line of displacement sensors (including gauging and non-gauging and micro- and subminiature) delivers a very high linear stroke range to body length ratio, and they can be used in environments where traditional LVDTs are too large. They are extremely robust and capable of operating at temperatures up to 175°C in corrosive media such as saline, oil, and brake fluid. The near frictionless design enables sensors to operate over millions of cycles without wear or degradation in signal quality.*



### **M-DVRT®**

#### **MICROMINIATURE FREE-SLIDING DVRT®**

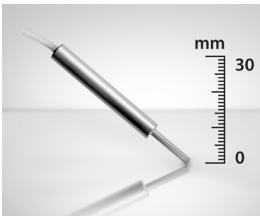
- Outside Diameter: 1.5 mm (standard version), 1.8 mm (high resolution)
- Linear Stroke Length: 3, 6, 9 mm (standard), 1.5 mm (high resolution)
- Approx. Body Length: 4mm + 2.5x stroke length



### **MG-DVRT®**

#### **MICROMINIATURE SPRING-LOADED, CAPTIVE (GAUGING) DVRT®**

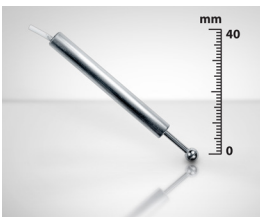
- Outside Diameter: 1.8 mm (smooth body)
- Linear Stroke Length: 3, 6, 9 mm (standard), 1.5 mm (high resolution)
- Approx. Body Length: 4mm + 6x stroke length



### **S-DVRT®**

#### **SUBMINIATURE FREE-SLIDING DVRT®**

- Outside Diameter: 4.76 mm (3/16 inch)
- Linear Stroke Length: 4, 8, 24, 38 mm (std.), 6 mm (hi-res), 500 µm or less (nano)
- Approx. Body Length: 10mm + 3x stroke length



### **SG-DVRT®**

#### **SUBMINIATURE SPRING-LOADED, CAPTIVE (GAUGING) DVRT®**

- Outside Diameter: 6.0 mm (smooth body), 8.0 mm for 38 mm stroke
- Linear Stroke Length: 4, 8, 24, 38 mm (std.), 6 mm (hi-res), 500 µm or less (nano)
- Approx. Body Length: 10mm + 5x stroke length

## Ideal Applications

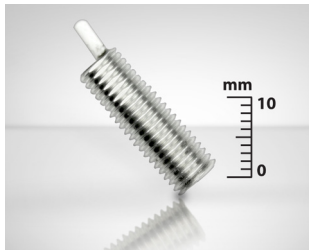
- Production-Line Monitoring Process Control
- Miniature Position Control Elements
- Linear and Angular Motion Control
- Measuring Material/Structure Strain and Deflection
- Dimensional Gauging for Quality Control



# Non-Contact Displacement Sensors

[microstrain.com/displacement/nc-dvrt](http://microstrain.com/displacement/nc-dvrt)

*Ideal for difficult sensing applications, the NC-DVRT® is designed to measure the displacement and proximity of a metal target without physical contact. The measurement is unaffected by non-metallic, non-conductive materials, such as polymers and biomaterials. The stainless steel shell of the device houses two coils; one for sensing and the other for temperature compensation.*



## NC-DVRT®

### NON-CONTACT DISPLACEMENT SENSOR

- Stroke length: 1 mm, 2.5 mm
- Diameter x length: 4.83 mm x 19.0 mm, 12.70 mm x 19.0 mm
- Operating temperature: -55° to 175° C

# Signal Conditioners

[microstrain.com/displacement/signal-conditioners](http://microstrain.com/displacement/signal-conditioners)



## DEMOD-DVRT-2®

### SIGNAL CONDITIONER FOR DISPLACEMENT SENSORS

- Signal-to-noise ratio: 7600 to 1
- Drift over time: 9  $\mu$ V/hr
- Operating temperature: -20° to 60° C
- 70 x 95 x 20 mm

*Designed for ease of use and versatility, the one-channel DVRT-2 provides complete conditioning for all LORD MicroStrain DVRTs. It offers exceptional resolution and linearity in a small, convenient module. A separate backplane accessory increases the DVRT-2's capability to four channels.*



Also available: the **DEMOD-DC®** in-line signal conditioner. With integral electronics, the user connects power, ground, and analog-out, and the DEMOD-DC outputs a buffered, high-frequency response voltage proportional to linear position.

## Also available from LORD MicroStrain

### Wireless Sensing Systems

[microstrain.com/wireless](http://microstrain.com/wireless)

LXRS lossless protocol enables synchronized burst and continuous high-speed sampling from multiple inputs as part of a scalable network. Custom/OEM also available.



### Inertial Sensors

[microstrain.com/inertial](http://microstrain.com/inertial)

Miniature sensors for orientation, heading, attitude, position, and velocity. IMU, AHRS, and GPS/INS sensors available, including tactical-grade and ruggedized options.

