

MicroStrain Sensing Product Datasheet

DEMOD-DVRT®-2

Displacement Sensor Signal Conditioner



Our Differential Variable Reluctance Transducer (DVRT) systems enable precise micro-position measurement for a wide variety of applications. From slow, slight movements over time to high frequency vibration, the DVRT system provides accurate, repeatable measurement. Each system consists of a sensor, cable, and signal conditioning module calibrated using a linear fit, multi-segment fit, and polynomial fit, so interpretation of the measurements can scale to best suit the application requirements.

A wide selection of inductive contact, non-contact, slide, and spring-actuated sensors are available in various stroke lengths. All have a very high linear stroke to body length ratio and fit in spaces where traditional LVDT's are too large. The sensors are robust and capable of operating in extreme heat and corrosive environments over millions of cycles without degradation in performance.

Our three versions of signal conditioners include a stackable module for multi-sensor applications; a compact, lower-cost, module; and a temperature-compensated module for sensors with temperature gradients. Available data outputs include analog voltage, serial, and wireless data transmission.

PRODUCT HIGHLIGHTS

- Accurate, repeatable signal processing for LORD MicroStrain DVRT's
- Modular form-factor for stand-alone single sensor use or use in a four-channel backplane with optional DIN-rail mount
- Filtered and buffered output provides clean, high-level signals to coaxial connections

FEATURES AND BENEFITS

HIGH PERFORMANCE

- Precision synchronous demodulation
- Paired and calibrated with each DVRT sensor for high accuracy outputs
- Line voltage transient filtering and constant current excitation source to the sensor bridge

EASY TO USE

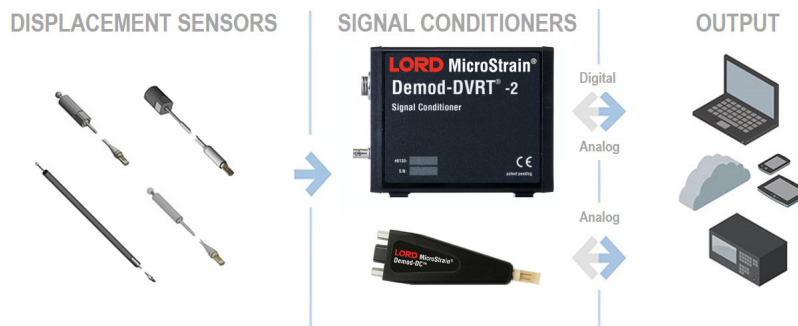
- Factory-adjustable output filtering and calibration-model options to match application needs
- Rapid warm-up time
- Analog backplane available for connection optimization

COST EFFECTIVE

- Complete solution with no integration to other systems
- Volume discounts

APPLICATIONS

- Linear and angular position measurements
- Strain, deflection, and deformation measurements
- Motion and position control
- Dimensional gauging



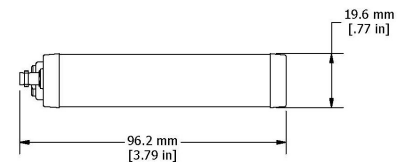
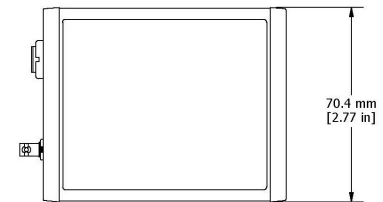
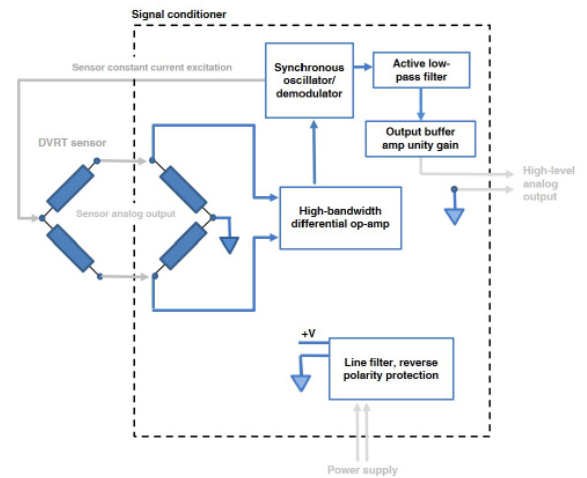
ENGINEERING YOUR SUCCESS.

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Displacement Sensor Signal Conditioner

Sensor Specifications

General	
Sensor Input channels	Single channel, inductive DVRT
Sensor Input Channel	
Demodulation	Synchronous, DC output
Sensor excitation	Alternating constant current, 156 kHz typical
Analog Output	
Analog output voltage	0 to 10 V dc (standard), 0 to 5 V dc (optional)
Output gain	Adjustable from 14 to 10,000 (factory set during calibration)
Analog low pass filter	Two-pole, active Butterworth, -3 dB @ 800 Hz (standard), factory adjustable 10 Hz to 20 kHz
Operating Parameters	
Power source	12 V dc nominal ± 1 V dc (Universal voltage wall AC/DC converter provided)
Power consumption	30 mA
Power indicator	Green power on indicator
Operating temperature	-20°C to +60°C
Device warm-up time	5 minutes recommended
Physical Specifications	
Dimensions	70 mm x 95 mm x 20 mm
Weight	113 grams
Enclosure material	Black anodized aluminum
Environmental rating	Indoor use
Mounting	Desktop with rubber feet (standard) analog backplane (optional)
Integration	
Connectors	Center-positive DC barrel socket (power supply) 4 pin receptacle (sensor input); HDBNC (analog output) Backplane connector
Sensor cable	4-pin receptacle to 4-pin mini, calibrated with sensor and signal conditioner
Compatible sensors	LORD MicroStrain DVRT sensors
Analog backplane	Four channel bus (see backplane specifications)
Regulatory compliance	CE, ROHS



Analog Backplane Specifications

General	
Input channels	Four channels, Demod-DVRT®-2 modules
Operating Parameters	
Power source	12 V dc nominal ± 1 V dc (Universal voltage wall AC/DC converter provided)
Physical Specifications	
Dimensions	70 mm x 95 mm x 105 mm
Mounting	Desktop with rubber feet (standard) DIN rail mount (optional)
Integration	
Connectors	Center-positive DC barrel socket (power supply) Backplane module connectors Screw terminal (analog outputs)



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