

Designed to get into tight spaces, the subminiature gauging DVRT delivers high performance in a small package. A ruby bearing and hardened stainless steel ball guide the spring loaded tip, providing an exceptionally smooth static & dynamic response, and resistance to side loading.

Features of submini-gauging DVRT's include: micron to submicron resolution, linear analog output, flat dynamic response to kHz levels, and low temperature coefficients. Extremely lightweight, captive cores are small yet rugged. Corrosion resistant alloys allow complete submersion of the instrument.



Actual Size

APPLICATIONS

- ▲ automotive, robotic systems
miniature control elements
- ▲ micro/mini connector production
quality control, documentation
- ▲ materials science, civil engineering
structural deflections, strain extensometry
- ▲ optical components
linear/angular positioning
- ▲ medical biomaterials
implant micromotion measurement
- ▲ tactile arrays
shape discrimination

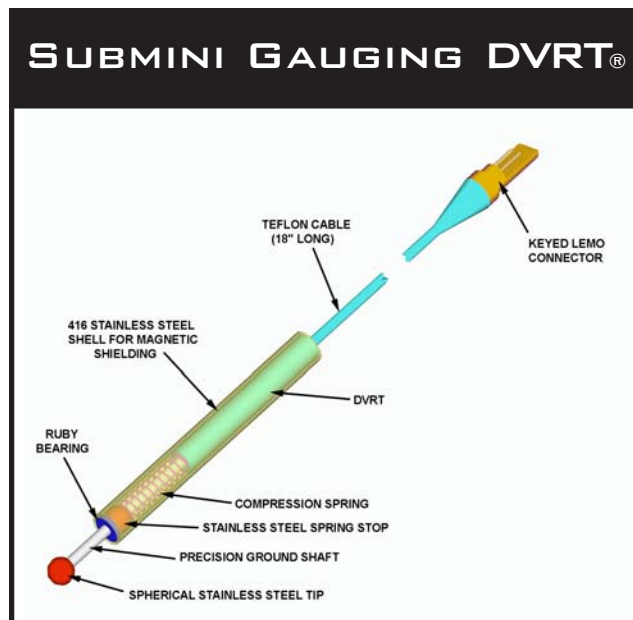
Multichannel signal conditioners are provided as "plug and play" enclosures, w/ keyed cables & UL approved supplies. Miniature circuit cards are also available for high volume OEM customers. As with all MicroStrain products, every device is carefully tested prior to shipment, and calibration data are included with each order.

To place an order, or for more information, call us today at 800-449-DVRT.

How it works

Core position is detected by measuring the coils' differential reluctance, using a sinewave excitation and synchronous demodulator. This differential detection method provides a very sensitive measure of core position, while cancelling out temperature effects.

The transducer's coils & multistranded leads are sealed in vacuum pumped epoxy, within the stainless steel case. This provides outstanding environmental resistance. The DVRT® has been successfully employed in harsh applications, including immersion in saline and pressurized oil.



U.S. Patent No. 4,813,435 and Patents Pending

ELECTRICAL SPECIFICATIONS

(with MicroStrain DVRT Demodulator)

▲ Linear Stroke Lengths	4, 8, 24, 38 mm (std full strokes)
▲ Nonlinearity	+/- .4% over 2/3 of full stroke +/- .7% over full stroke
▲ Sensitivity	1 volts/mm typical
▲ Signal to noise	4200 to 1 (with filter 3 dB down at 800 KHz, std.); 466 to 1 (unfiltered) noise measured peak to peak (p-p)
▲ Resolution	2.0 microns p-p, std. 0.5 microns p-p, high res.
▲ Frequency response	7 KHz (unfiltered)
▲ Temp. coeff. offset span	.002% / degree C .030% / degree C
▲ Hysteresis	+/- 1 micron
▲ Repeatability	+/- 1 micron
▲ Cycle life	fully operational after > 20 million cycles to full scale displacement

MECHANICAL SPECIFICATIONS

▲ Overall length	30.5 mm for 4 mm stroke 50.5 mm for 8 mm stroke 127 mm for 24 mm stroke 183 mm for 38 mm stroke
▲ Outside diameter	6.0 mm (smooth body)
▲ Spring stiffness	.245 Newtons/mm (1.4 lb/inch)
▲ Bearing materials	ruby & stainless steel (SS)
▲ Standard core tips	4.76 mm SS ball
▲ Housing material	SS smooth body, or 3/8-24 UNF 400 series SS threaded body
▲ Leadouts	45 cm (18"), multistranded, shielded, SS reinforced, teflon insulated
▲ Connector	keyed Lemo 4-pin, polyolefin relief
▲ Operating Temp	- 55 to 175 C std.
▲ Core material	stainless steel