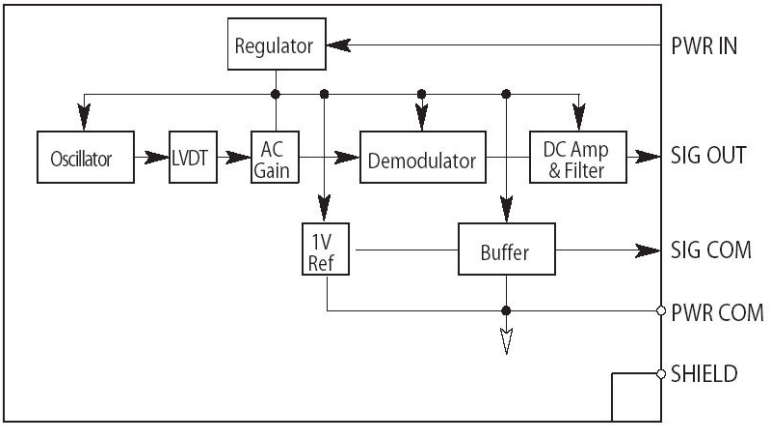
DC-SE Series (General Purpose LVDT)

The DC-SE AccuSens Series has been designed to meet today's requirements for operation from a single ended power supply. The output is also single ended over the full range displacement of the LVDT making the unit compatible with unipolar inputs on analog-to-digital converters and programmable logic controllers, etc.

The DC-SE design features internal regulation which provides immunity from line ripple and allows operation from an unregulated 8.5 to 28 VDC supply. The DC-SE current draw is 6 mA (typical), making remote or portable operation from batteries possible. The incorporation of a new high stability oscillator provides improved temperature stability, while the synchronous demodulator insures excellent noise rejection.

`The electronics design uses surface mount technology to keep costs and size of the unit to a minimum. Built-in EMI/ESD protection and shielded cable allows operation in industrial environments. The DC-SE meets CE requirements.

block diagram



Block Diagram

FEATURES

- CE Certified
- Operates from Single-Ended, unregulated 8.5 – 28 VDC Supply
- 0-5 VDC or 1-6 VDC Output Voltage, depending on Customer Hook Up
- Low Power Consumption
- 200 Hz Frequency Response
- 1 meter shielded cable
- Calibration Certificates Supplied with All Models

APPLICATIONS

- Positioning Sensing Feedback, Test Labs, Ram Guide and Platen Position Feedback

OPTIONS

- Metric Thread Core
- Captive Core Option for Convenient Installation
- Guided Core
- Small Diameter, Low Mass Core

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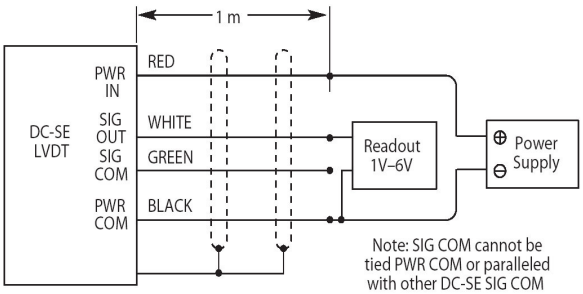
DC-SE Series (General Purpose LVDT)

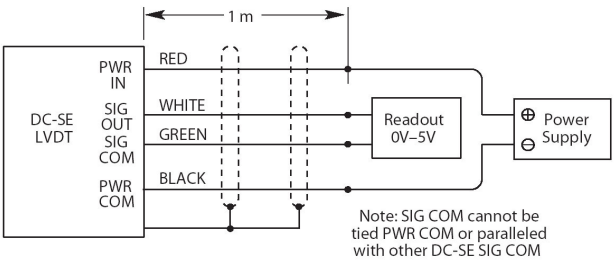
Specifications

Input Voltage	+8.5 to +28 VDC
Input Current	<10 mA (6 mA typical)
Line Regulation	<1 mV/V (0.2mV/V typical)
Operating Temperature Range	-13°F to 185°F (-25°C to 85°C)
Storage Temperature Range	-65°F to 257°F (-55°C to 125°C)
Output Voltage	0-5 VDC (4 wire), 1-6 VDC (3 wire)
Ripple and Noise	Less than 10 mV rms
Linearity	0.25% full range
Stability	0.125% full scale
Temperature – Coefficient of Scale Factor	0.025%/°F (0.05%/°C) max
Shock Survival	250 g for 11 msec
Vibration Tolerance	10 g up to 2 kHz
Housing Material	AISI 400 Series Stainless Steel
Cable	4 Conductor, 28 AWG, stranded copper with braided shield and polyurethane jacket, 1 meter
EMC	CE Certified (The DC-EC series, when correctly installed, comply with the EMC Directive 89/336/EEC generic standards for residential commercial, light industrial and industrial environments.)
Output Impedance	Less than 1 ohm

DC-SE 3-wire hookup: 1 to 6V out



DC-SE 4-wire hookup: 0 to 5V out



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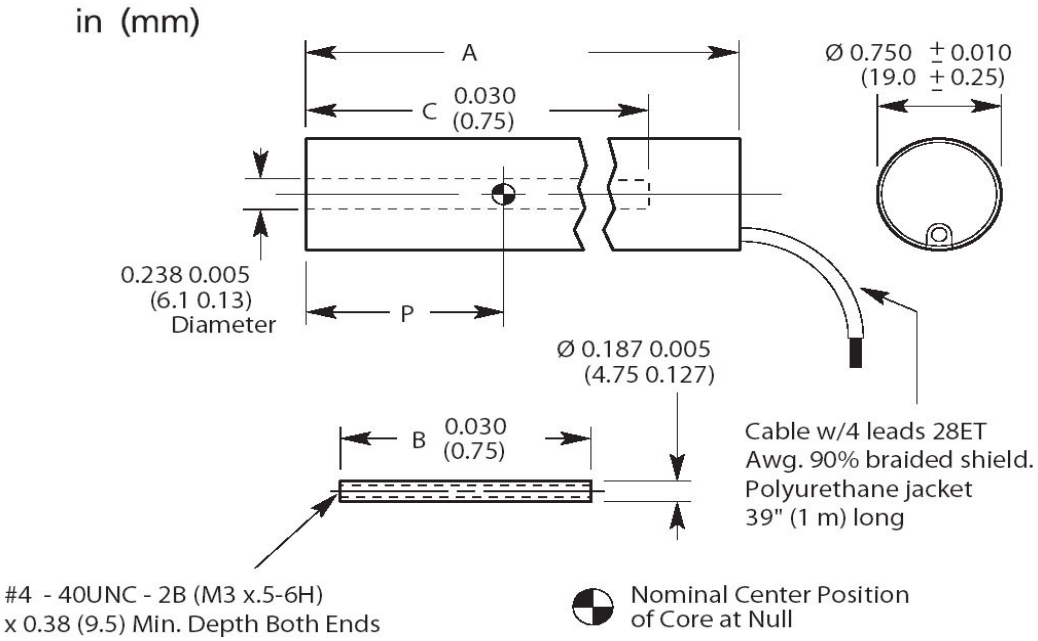
DC-SE Series (General Purpose LVDT)

dimensions



Performance and Electrical Specifications

DC-SE Series Model Number	Nominal Linear Range		Scale Factor		Response (-3 dB)
	Inches	Mm	V/inch	V/mm	Hz
100 DC-SE	0-0.100	0-2.5	50	2.00	200
250 DC-SE	0-0.250	0-6.25	20	0.80	200
500 DC-SE	0-0.500	0-12.5	10	0.40	200
1000 DC-SE	0-1.000	0-25	5	0.20	200
2000 DC-SE	0-2.000	0-50	2.5	0.10	200
4000 DC-SE	0-4.000	0-100	1.25	0.05	200
6000 DC-SE	0-6.000	0-150	0.83	0.03	200

Mechanical Specifications

DC-SE Series Model Number	Weight				Dimensions							
	Body		Core		A (Body)		B (Core)		C		P	
	Oz	gm	Oz	gm	In	mm	In	mm	In	mm	In	mm
100 DC-SE	2.54	72	0.035	1	3.51	89.2	0.59	14.9	1.21	30.7	0.51	13.0
250 DC-SE	3.21	91	0.11	3	4.36	110.7	1.10	27.9	2.06	52.2	0.93	23.6
500 DC-SE	3.39	96	0.18	5	5.20	132.1	1.80	45.7	2.91	73.8	1.35	34.3
1000 DC-SE	4.38	124	0.28	8	6.89	175.0	3.00	76.2	4.59	116.7	2.20	55.9
2000 DC-SE	6.25	177	0.35	10	8.87	225.3	3.80	96.5	6.57	166.8	3.19	81.0
4000 DC-SE	8.33	236	0.53	15	12.25	311.2	5.30	134.6	9.95	252.8	4.88	124.0
6000 DC-SE	10.48	297	0.64	18	17.30	439.4	6.20	157.5	15.06	382.5	7.56	192.0

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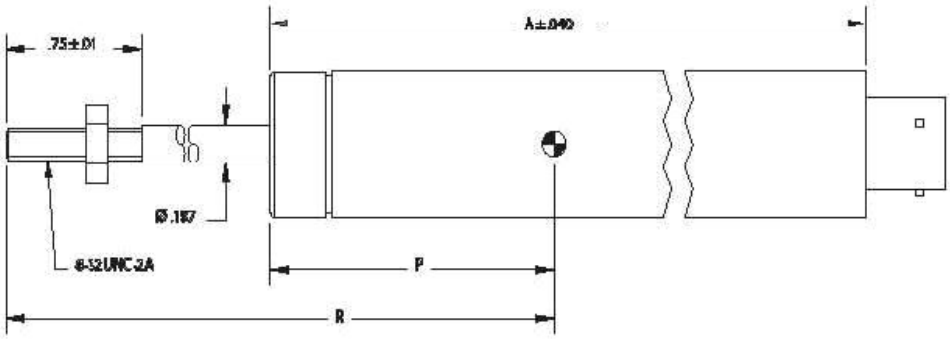
Captive Core Option



new captive core option

The DC-EC features a captive core design that greatly simplifies installation. The design utilizes a core rod and bearing assembly that is captured and guided within the LVDT providing low friction travel throughout the stroke length. The assembly incorporates two Delrin bearings on the core rod traveling through the stainless steel boreliner. A bronze bearing on the front end utilizes a self-aligning feature to accommodate lateral LVDT movement during operation, the core rod and bearing assembly is field replaceable.

Dimensions

DC-SE Series Model	Nominal Linear Range		A		P		R	
Number	Inches	mm	In	mm	In	mm	In	mm
100 DC-SE	0-0.100	0-2.5	3.85	97.8	.85	21.6	3.69	93.7
250 DC-SE	0-0.250	0-6.25	4.70	119.4	1.27	32.3	4.28	108.7
500 DC-SE	0-0.500	0-12.5	5.54	140.7	1.69	42.9	4.75	120.7
1000 DC-SE	0-1.000	0-25	7.23	183.6	2.54	64.5	6.04	453.4
2000 DC-SE	0-2.000	0-50	9.21	233.9	3.53	89.7	7.90	200.7
4000 DC-SE	0-4.000	0-100	12.59	319.8	5.22	132.6	10.52	267.2
6000 DC-SE	0-6.000	0-150	17.64	448.1	7.90	200.7	15.27	387.9

ordering info

Specify the DC-SE Model followed by the desired option number(s) ordered together.

Ordering Example:
Model Number 250 DC-SE-200 is a DC-SE Series LVDT with a 0.250" range with the captive core option (200).

HR Model

100 DC-SE
250 DC-SE
500 DC-SE
1000 DC-SE
2000 DC-SE
4000 DC-SE
6000 DC-SE

options

Number	Description
006	Metric Thread Core
010	Guided Core
020	Small Diameter, Low Mass Core[1]
200	Captive Core

[1]Consult factory for mass dimension and thread size

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