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.

FEATURES

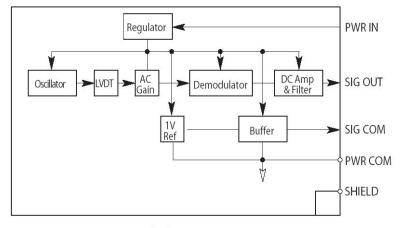
- CE Certified
- Operates from Single-Ended, unregulated 8.5 – 28 VDC Supply
- 0-5 VDC or 1-6 VDC Output Voltage, depending on Customer Hook Up
- Low Power Consumption
- 200 Hz Frequency Response
- 1 meter shielded cable
- Calibration Certificates Supplied with All Models

APPLICATIONS

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



block diagram



Block Diagram

OPTIONS

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



Output Voltage



Specifications

Input Voltage+8.5 to +28 VDCInput Current<10 mA (6 mA typical)</th>Line Regulation<1 mV/V (0.2mV/V typical)</th>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)

Ripple and NoiseLess than 10 mV rmsLinearity0.25% full rangeStability0.125% 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

Cable4 Conductor, 28 AWG, stranded copper with

braided shield and polyurethane jacket, 1 meter

0-5 VDC (4 wire), 1-6 VDC (3 wire)

EMC CE Certified (The DC-EC series, when correctly

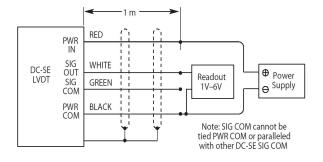
installed, comply with the EMC Directive 89/336/EEC generic standards for residential commercial, light industrial and industrial

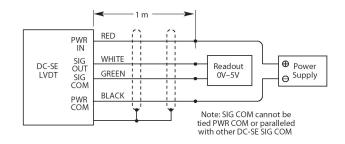
environments.)

Output Impedance Less than 1 ohm

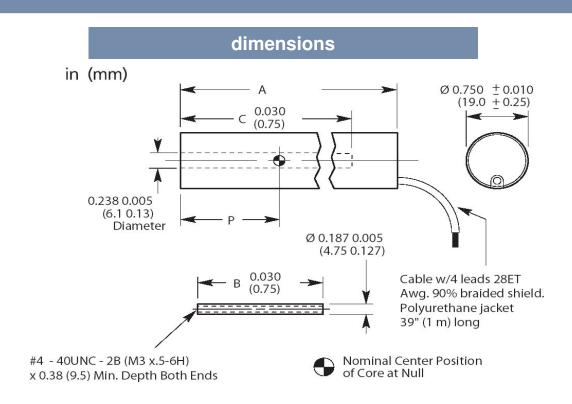
DC-SE 3-wire hookup: 1 to 6V out

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









Performance and Electrical Specifications

DC-SE Series Model	Nominal L	inear Range	Scale	e Factor	Response (-3 dB)		
Number	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		

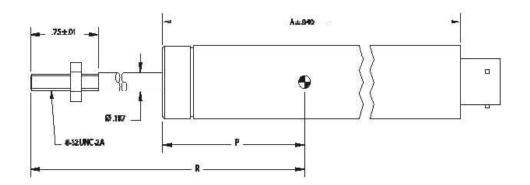
Mechanical Specifications

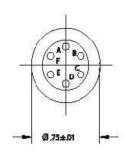
DC-SE Series Model		W	/eight					Din	nensions			
Number	Во	dy	Co	re	A (B	ody)	В (С	Core)	(C		P
	Oz	gm	Oz	gm	In	mm	In	mm	In	mm	In	mm
100 DC-SE	2.54	72	0.035	1	3.51	89.2	0.59	14.9	1.21	30.7	0.51	13.0
250 DC-SE	3.21	91	0.11	3	4.36	110.7	1.10	27.9	2.06	52.2	0.93	23.6
500 DC-SE	3.39	96	0.18	5	5.20	132.1	1.80	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





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		Α		P		R	
Number	Inches	mm	In	mm	ln	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

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ordering info	HR Model	options
Specify the DC-SE Model followed by the	100 DC-SE	Number Description
desired option number(s) ordered together.	250 DC-SE 500 DC-SE	006 Metric Thread Core 010 Guided Core
Ordering Example:	1000 DC-SE	020 Small Diameter, Low Mass C
Model Number 250 DC-SE-200 is a DC-SE Series LVDT with a 0.250" range with the	2000 DC-SE 4000 DC-SE	200 Captive Core
captive core option (200).	6000 DC-SE	¹ Consult factory for mass dimension and thread s