DC-EC AccuSens™ Series

General Purpose LVDT

DESCRIPTION

The DC-EC AccuSens™ Series incorporates a unique monolithic chip combined with a computer-designed AC LVDT to achieve premium performance.

The ratiometric design of the monolithic circuitry compensates for power supply deviations for continuously stable operation. Unaffected by input variations, the transducer provides highly accurate, repeatable measurement.

Innovative manufacturing techniques further enhance the AccuSens operation and cost efficiency. Micro-miniature components used in the construction of each unit are selected for maximum stability.

Vacuum encapsulation of all elements produces an assembly tolerant to shock, vibration and other forms of physical abuse. Double magnetic shielding protects against stray electrical fields.

FEATURES

- Linearity 0.25% of FS or Better
- CE Certified
- Integrated Signal Conditioning
- Rugged Stainless Steel Construction
- Calibration Certificates Supplied with All Models

APPLICATIONS

- General

OPTIONS

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

specifications

Input Voltage	±15 VDC (nominal), ±25 mA
Operating Temperature Range	32°F to 160°F(0°C to 70°C)
Survival Temperature Range	-65°F to 200°F(-55°C to 95°C)
Null Voltage	0 VDC
Ripple	Less than 25 mV rms
Linearity	0.25% full range
Stability	0.125% full scale
Temperature—Coefficient of Scale Factor	0.04%/°F (0.08%/°C)
Shock Survival	250 g for 11 milliseconds
Vibration Tolerance	10 g up to 2 kHz
Coil Form Material	High density, glass-filled polymer
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

ordering information

Specify the DC-EC Model followed by the desired option number(s) added together.

Ordering Example:
Model Number050 DC-EC-200 is an DC-EC Series LVDT with a ±0.050" range (050 DC-EC), with the captive core option (200).

DC-EC Model

050 DC-EC
125 DC-EC
250 DC-EC
500 DC-EC
1000 DC-EC
2000 DC-EC
3000 DC-EC
5000 DC-EC
10000 DC-EC

options

Number	Description
006	Metric Thread Core
010	Guided Core
020	Small Diameter, Low Mass Core[1]
200	Captive Core[2]

[1]Consult factory for mass, dimensions and thread size.
[2] Available on 050 DC-EC through 3000 DC-EC models only.

measurement SPECIALTIES

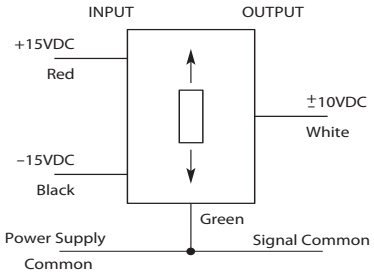
DC-EC AccuSens™ Series

performance and electrical specifications[1]

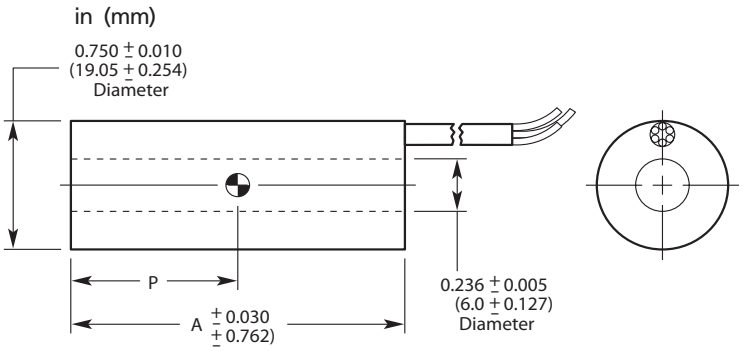
DC–EC Series Model Number	Nominal Linear Range inches	Nominal Linear Range mm	Scale Factor V/inch	Scale Factor V/mm	Response -3 dB Hz
050 DC–EC	±0.050	±1.25	200.0	8.00	500
125 DC–EC	±0.125	±3.0	80.0	3.20	500
250 DC–EC	±0.250	±6.0	40.0	1.60	500
500 DC–EC	±0.500	±12.5	20.0	0.80	200
1000 DC–EC	±1.000	±25	10.0	0.40	200
2000 DC–EC	±2.000	±50	5.0	0.20	200
3000 DC–EC	±3.000	±75	3.3	0.13	200
5000 DC–EC	±5.000	±125	2.0	0.08	200
10000 DC–EC	±10.00	±250	1.0	0.04	200

[1]All calibration is performed at room ambient temperature.

wiring

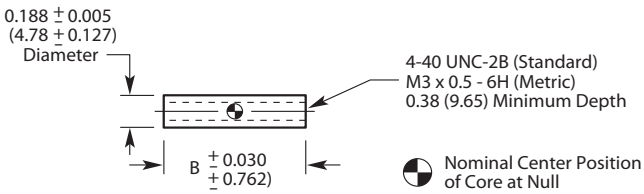


dimensions

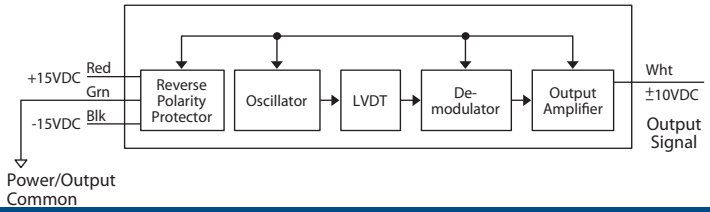


new captive core option!

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 are field replaceable.



block diagram



mechanical specifications

DC-EC Series Model Number	Weight Body oz	Weight Body gm	Weight Core oz	Weight Core gm	Dimensions A (Body) in	Dimensions A (Body) mm	Dimensions B (Core) in	Dimensions B (Core) mm	Dimensions P in	Dimensions P mm
050 DC–EC	2.19	62	0.07	2	2.10	53.5	0.75	19.1	0.50	12.7
125 DC–EC	2.44	69	0.11	3	2.93	74.5	1.25	31.8	0.93	23.6
250 DC–EC	2.58	73	0.18	5	3.80	96.5	2.00	50.8	1.35	34.3
500 DC–EC	2.93	82	0.28	8	5.49	139.5	3.00	76.0	2.20	55.9
1000 DC–EC	4.24	120	0.35	10	7.75	196.9	3.80	96.5	3.18	80.8
2000 DC–EC	5.47	155	0.46	13	11.12	282.5	5.30	135.0	4.88	134.6
3000 DC–EC	9.39	266	0.49	14	16.32	414.5	6.20	157.5	7.55	191.8
5000 DC–EC	11.47	325	0.60	17	20.15	511.8	6.20	157.5	9.53	242.0
10000 DC–EC	15.71	445	0.85	24	35.38	898.5	12.00	305.0	16.58	421.1

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DC-EC-0207