



HAZARDOUS LOCATIONS

Class I Division 1 Intrinsically Safe

Class I Division 2 Non-Incendive

UL & ATEX Listed

MACRO HLR 750 LVDT Position Sensor

Overview

Macro Sensors HLR 750 Series LVDT position sensors are specially designed for use in gas turbine environments. These hermetically sealed AC-LVDTs are UL and ATEX listed and although these ratings share a common LVDT, each set of approvals retains specific operating requirements. Available in measuring ranges from ± 1 inch to ± 10 inches, HLR 750 Series LVDT position sensors feature high resolution, excellent repeatability, and low hysteresis (typically better than 0.01% of full scale output for each). The maximum linearity error of these sensors is $\pm 0.25\%$ of full range output.

Constructed entirely of stainless steel for environmental robustness, they feature a through-bore design which permits access to either or both ends of the LVDT's core for better mechanical support and core guidance, and easier cleanout in dusty or dirty locations. An HLR LVDT's lead wires exit through a radially mounted 1/2-14 NPT male threaded fitting for easy attachment to conduit or an explosion-proof enclosure.

HLR 750 LVDTs can be customized with Teflon® bore liners and metric threaded core options. Macro Sensors also offers a full line of LVDT signal conditioners that will deliver optimum performance from any HLR 750 Series LVDT.

Class 1, Div. 1

Groups A, B, C and D T3C Class 1, Zone 1, Group IIC

Ambient Temp: -50°C to 100°C (-58°F to 212°F)

Max. Input: 6V rms @ 2.5 kHz

ONLY WHEN INSTALLED PER MACROSENSORS 011600000113

or

Class 1, Div. 2 Groups A, B, C and D T3C

Class 1, Zone 2, AEx nA IIC T3

Ex nA IIC T3 Gc

Ambient Temp: -50°C to 150°C (-58°F to 300°F)

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Benefits

- UL/ULc, ATEX listed
- Ranges of ± 1 inch to ± 10 inches
- All stainless steel construction
- 1/2" conduit leads outlet

Applications

- Gas turbine servo controls
- Fuel valve position feedback
- Petrochemical process plants
- Pulp plants and paper mills

Performance @ 25°C (77°F)

Linearity Error $\leq \pm 0.25\%$ of Full Range

Repeatability Error $\leq 0.01\%$ of Full Range

Environmental Data

Operating Temperature

Class I, Division 1 -50 to 100°C (-58 to 212°F)*

Class I, Division 2 -50 to 150°C (-58 to 300°F)

Temperature Sensitivity -0.02%/°C (-0.01%/°F) nominal

Vibration Tolerance 20 g to 2 kHz

Shock Survival 1000 g, 11 ms

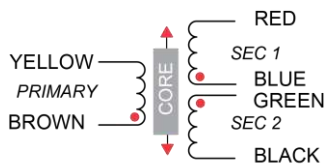
*Maximum input: 6Vrms @ 2.5 kHz, and only when installed per Macro Sensors 011600000113 standards (see drawing)

Electrical Data

Input Voltage 3 Vrms (nominal)
6 Vrms (maximum)

Input Frequency 2.5 kHz (maximum)

Wiring Diagram



CONNECT BLUE AND GREEN
FOR DIFFERENTIAL OUTPUT

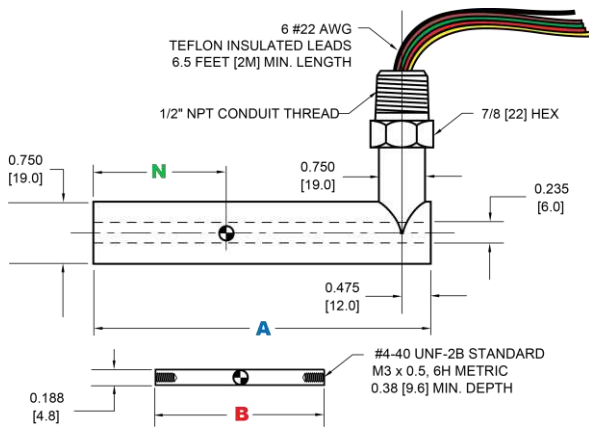
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Ordering Information

HLR	750	10000	0	1	0
Series					
0.750" (19 mm) Body Diameter					
Range					
1000 = ±1.00" (±25 mm)	5000 = ±5.00" (±125 mm)				
2000 = ±2.00" (±50 mm)	6000 = ±6.00" (±150 mm)				
3000 = ±3.00" (±75 mm)	7500 = ±7.50" (±190 mm)				
4000 = ±4.00" (±100 mm)	10000 = ±10.00" (±250 mm)				
Teflon Bore Liner Option					
0 = No Liner Included					
1 = Teflon Bore Liner Included					
Metric Threaded Core Option					
0 = #4-40 UNC-2B Thread					
6 = M3 x 0.5, 6H Metric Thread					

Dimensions



Parameter	Range Code	1000	2000	3000	4000	5000	6000	7500	10000
Range	inches	±1.00	±2.00	±3.00	±4.00	±5.00	±6.00	±7.50	±10.00
	mm	±25	±50	±75	±100	±125	±150	±190	±250
Sensitivity	V/inch	0.34	0.20	0.21	0.17	0.11	0.10	0.11	0.075
	V/mm	13.4	7.9	8.3	6.7	4.3	3.9	4.3	3.0
Primary Impedance	Ω	785	575	170	420	540	450	775	620
Body Length "A"	inches	7.34	10.91	13.65	16.17	18.65	18.65	23.85	31.65
	mm	186.4	277.1	346.7	410.7	473.7	473.7	605.8	803.9
Core Length "B"	inches	4.00	5.30	6.20	6.20	6.20	5.30	7.00	9.50
	mm	101.6	134.6	157.5	157.5	157.5	134.6	177.8	241.3
Core Position "C" (at null position)	inches	3.32	5.07	6.29	7.65	8.94	8.94	11.52	15.42
	mm	84.3	128.8	159.8	194.3	227.1	227.1	292.6	391.7
Weight - Body	ounces	10.3	12.2	14.2	15.1	16.0	16.0	22.6	24.3
	g	292	346	400	428	454	454	640	690
Weight - Core	ounces	0.50	0.65	0.78	0.78	0.78	0.65	0.88	1.20
	g	14.2	18.4	22.1	22.1	22.1	18.4	25.0	34.0

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HLR 750 11/01/15