



HAZARDOUS LOCATIONS

Class I Division 1 Intrinsically Safe, Exia, 4-20 Ma Position Sensors MACRO HLR 750

Overview

Macro Sensors HLR 750 Series LVDT 4-20 mA position sensors are specially designed for use in areas where an intrinsically safe sensor is required. These hermetically sealed LVDTs are CSA listed for use in hazardous locations. Available in measuring ranges from 2 inches to 20 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 clean out 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.

The HLR 750 LVDTs can be customized with Teflon® bore liners and metric threaded core options.

Benefits

- 4-20 mA output
- CSA listed
- Ranges from 2 to 20 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 -40 to 80°C (-40 to 176°F)

Temperature Sensitivity -0.027%/°C (-0.015%/°F) nominal

Vibration Tolerance 20 g to 2 kHz

Shock Survival 1000 g, 11 ms

Electrical Data

Input Voltage 15-28 VDC

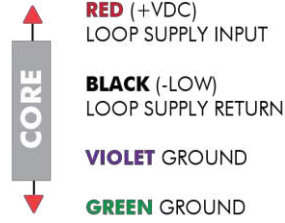
Output 4-20mA

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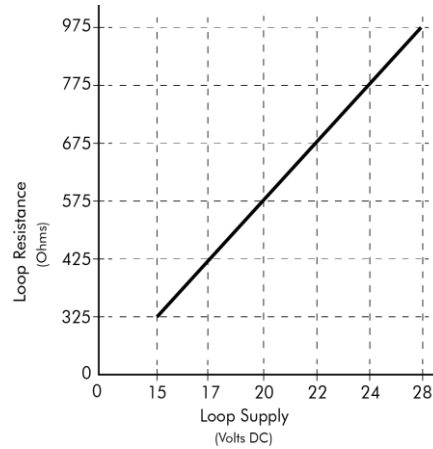
HLIR 750 Position Sensors

Wiring Diagrams

LOOP CIRCUIT
(NON-HAZARDOUS
LOCATION)



NOTE: **VIOLET & GREEN** ARE FOR FACTORY USE ONLY; THEY MUST BE GROUNDED OUTSIDE THE HAZARDOUS AREA TO COMPLY WITH HAZLOC REGULATIONS.



Ordering Information

HLIR	750	10000	0	1	0
Series					
0.750" (19 mm) Body Diameter					
Range					
2000 = 2.00" (50 mm) •					
4000 = 4.00" (100 mm) •					
6000 = 6.00" (150 mm) ◆					
8000 = 8.00" (200 mm) ◆					
10000 = 10.00" (250 mm) ◆					
12000 = 12.00" (300 mm) ◆					
15000 = 15.00" (380 mm) ◆					
20000 = 20.00" (500 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

Certifications

See ordering information ranges for appropriate certification group.

◆ Class I, Division I Group C & D T4C - Intrinsically Safe
Ex ia IIB T4C Ga
Class I, Zone 0, Aex ia IIB T3C Ga
-40°C ≤ Ta ≤ 80°C (-40°F ≤ Ta ≤ 176°F)
ONLY WHEN INSTALLED PER MACRO SENSORS 011600000118

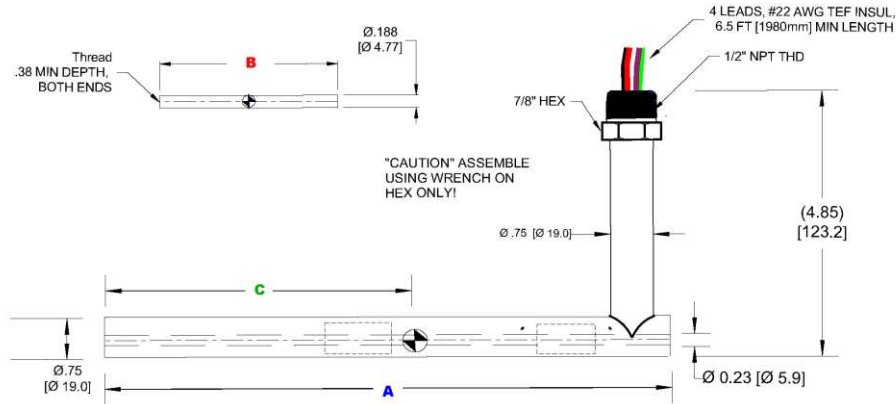
• Class I, Division I Group D T3C - Intrinsically Safe
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Dimensions

All dimensions in inches [mm].



English	Range Code	2000	4000	6000	8000	10000	12000	15000	20000
Parameter									
Range	inches	2.00	4.00	6.00	8.00	10.00	12.00	15.50	20.00
Scale Factor	mA/in	8	4	2.67	2	1.60	1.33	1.06	0.8
Body Length "A"	inches	7.34	10.91	13.65	13.65	18.65	18.65	31.65	31.65
Core Length "B"	inches	4.00	5.3	4.00	4.00	5.3	5.3	9.5	9.5
Core Position "C" (at 12mA position)	inches	3.32	5.07	6.29	6.29	15.42	15.42	15.42	15.42
Weight - Body	ounces	8.8	11.2	12.8	12.8	15.2	15.2	23.2	23.2
Weight - Core	ounces	0.5	0.65	0.5	0.5	0.65	0.65	1.2	1.2

Metric	Range Code	2000	4000	6000	8000	10000	12000	15000	20000
Parameter									
Range	mm	50	100	150	200	250	300	380	500
Scale Factor	mA/mm	0.32	0.16	0.11	0.08	0.064	0.053	0.043	0.032
Body Length "A"	mm	186.4	277.1	346.7	346.7	473.7	473.7	803.9	803.9
Core Length "B"	mm	101.6	134.6	101.6	101.6	134.6	134.6	241.3	241.3
Core Position "C" (at 12mA position)	mm	84.3	128.8	159.8	159.8	391.7	391.7	391.7	391.7
Weight - Body	grams	249	318	363	363	431	431	658	658
Weight - Core	grams	14.2	18.4	14.2	14.2	18.4	18.4	34.0	34.0

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