

# HAZARDOUS LOCATIONS

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



### Benefits

- ◆ 4-20 mA output
- ◆ CSA listed
- ◆ Ranges from 2 to 20 inches
- ◆ All stainless steel construction
- ◆ ½" conduit leads outlet

### Applications

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

### Overview

Macro Sensors HLIR 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, HLIR 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 HLIR 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 HLIR 750 LVDTs can be customized with Teflon® bore liners and metric threaded core options.

### 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

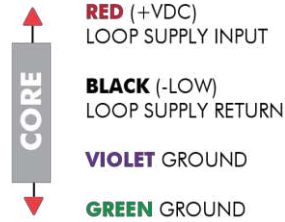
**Output** 4-20mA

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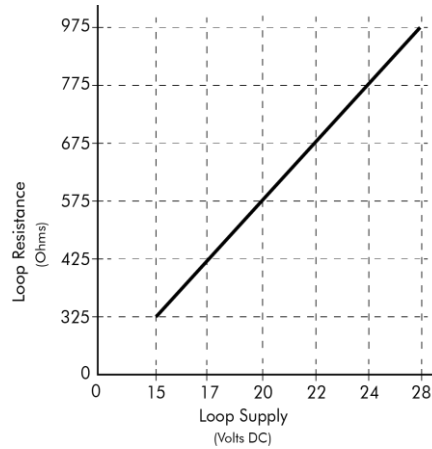
HLIR 750 Position Sensors

## 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

<b>HLIR</b>	<b>750</b>	<b>10000</b>	<b>0</b>	<b>1</b>	<b>0</b>
<b>Series</b>					
<b>0.750" (19 mm) Body Diameter</b>					
<b>Range</b>					
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) ◆					
<b>Teflon Bore Liner Option</b>					
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

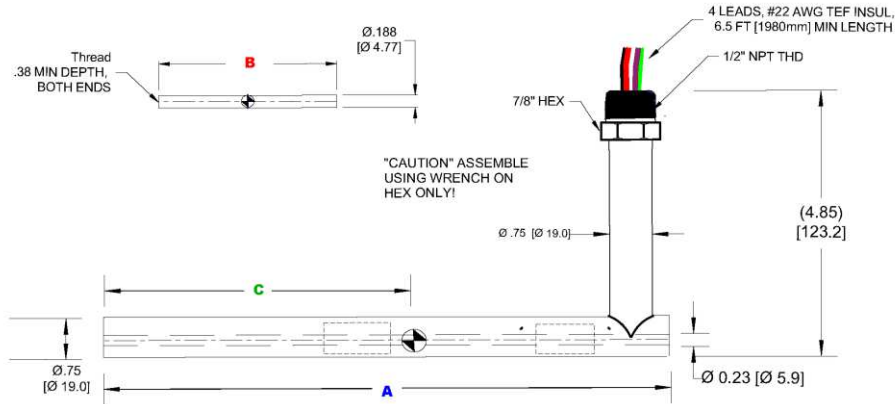
• Class I, Division I Group D T3C - Intrinsically Safe  
Ex ia IIA T4C Ga  
Class I, Zone 0, Aex ia IIA T4C Ga  
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## HLIR 750 Position Sensors

### Dimensions

All dimensions in inches [mm].



English	Range Code	2000	4000	6000	8000	10000	12000	15000	20000
<b>Parameter</b>									
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
<b>Parameter</b>									
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

### NORTH AMERICA

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HLIR 750 11/01/15