

Submersible LVDT Position Transmitters



SSI 937

SSIR 937



Due to their extraordinary repeatability despite variations in pressure and temperature, Macro Sensors SS 937 Series submersible LVDTs are ideal for incorporation into a wide variety of subsea measurement systems. These rugged, .94 inch [nom.] (24 mm) diameter sensors are available in standard ranges of 2.00 inches (50 mm), 3.00 inches (75 mm) or 4.00 inches (100 mm), although other ranges are available at special request.

To withstand deepsea environments with external pressures to 5000 psi, SS Series LVDTs are constructed of Inconel. Inconel enhances the already high-reliability of the LVDT assembly, ensuring that it can meet service life requirements of at least 20 years, even if the device is fully exposed to seawater.

SS Series LVDTs also resolve the problem of getting a signal back to the surface, even at great water depths. To minimize the number of pressure sealed I/O connections and to minimize noise over long transmission lines, a 4-20 mA two-wire, loop-powered I/O is utilized. Offsets can be easily made in the data acquisition system on the platform above. Electrical termination is through a high pressure axial or radial Seacon-Brantner subsea connector.

Some typical applications include monitoring structural movement for long-term FEA (Finite Element Analysis) of pipelines, derricks, moorings and other critical high stress members on offshore oil platforms. SS Series LVDTs are designed for use in either pressure-balanced, oil-filled containers or directly in seawater.

Environmental Data

Operating Pressure	5000 PSIG*
Proof Pressure	7500 PSIG*
Operating Temperature	-30 to 80°C (-20 to 175°F)
Temperature Sensitivity	0.027%/°C (0.015%/°F) max.
Vibration Tolerance	20 g to 2 kHz
Shock Survival	100 g, 11 ms
Ingress Protection	IP69K*

*with appropriate Seacon-Brantner mating connector

Performance

Linearity Error	≤ ±0.10% of Full Range
Repeatability Error	≤ 0.01% of Full Range

Benefits

- Long term reliability (20+ years)
- Inconel construction standard
- High pressure applications (to 5,000 psi)
- 4-20mA two-wire, loop-powered I/O
- Non-linearity of ±0.10% of FRO or better
- High pressure Seacon-Brantner subsea connector standard
- Available in either inline axial or radial connector configurations
- Welded connector also available

Applications

- Off-shore drilling platforms
- Pipeline monitoring
- Choke valves
- ROV and exploration
- Mooring cables
- Extensometers

Electrical Data

Output	4-20mA
Input	12-28VDC
Loop Resistance:	50 Ω (min.) see graph at right
Current Consumption:	-
Output Noise & Ripple:	<10 μArms
Bandwidth; Electrical:	(-3dB): DC to 50 Hz

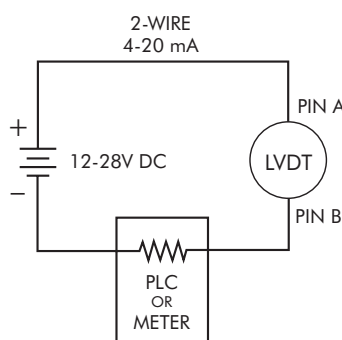
Connector Wiring



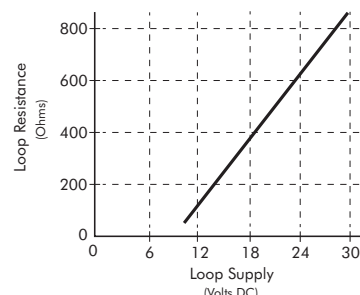
XSEE-6-BCR
Connector

Pin A	Loop +
Pin B	Loop -
Pin C	Do Not Connect
Pin D	Do Not Connect
Pin E	Not Connected
Pin F	Case Ground

Electrical Connection



SSI (4-20 mA)
Loop Resistance (Max.) vs. Loop Supply Voltage

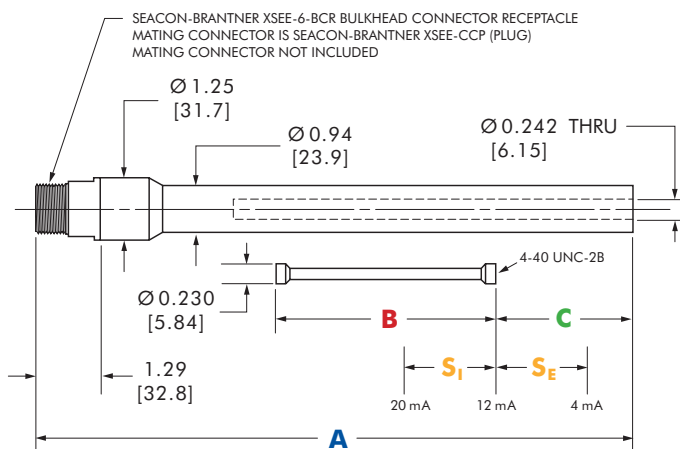


Dimensional Data

SSI 937 Parameter	Range Code	2000	3000	4000
Range	inches mm	2.00 50.8	3.00 76.2	4.00 101.6
Scale Factor	mA/inch mA/mm	8.0 0.31	5.33 0.21	4.0 0.16
Body Length "A"	inches mm	12.85 326.4	16.25 412.8	16.25 412.8
Core Length "B"	inches mm	4.36 111.0	6.22 158.0	6.22 158.0
Core Position "C" (at 12 mA)	inches mm	1.70 43.2	2.42 61.5	2.42 61.5
Stroke "S" (S _I = Insert Stroke) (S _E = Extend Stroke)	inches mm	1.00 25.4	1.50 38.1	2.00 50.8
Weight - Body	ounces g	30 850	40 1130	40 1130
Weight - Core	ounces g	0.50 14	0.65 18	0.65 18

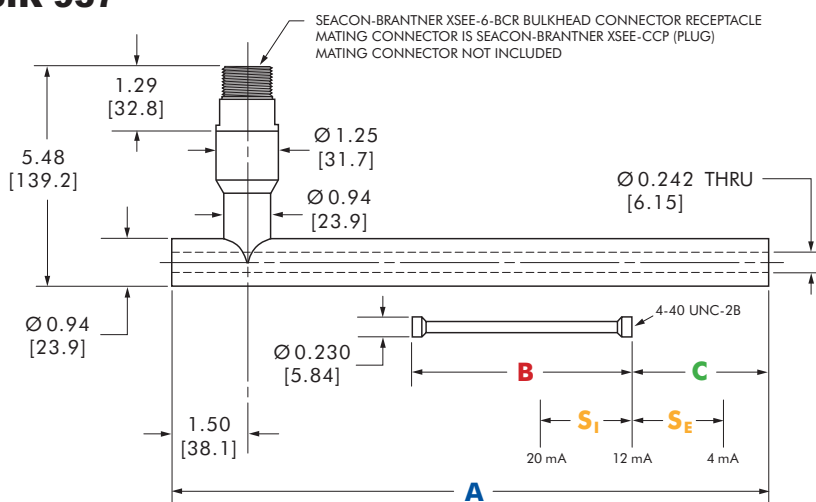
SSI 937

All dimensions in inches [mm].



SSIR 937 Parameter	Range Code	2000	3000	4000
Range	inches mm	2.00 50.8	3.00 76.2	4.00 101.6
Scale Factor	mA/inch mA/mm	8.0 0.31	5.33 0.21	4.0 0.16
Body Length "A"	inches mm	8.80 223.5	11.95 303.5	11.95 303.5
Core Length "B"	inches mm	4.36 111.0	6.33 161.0	6.33 161.0
Core Position "C" (at 12 mA)	inches mm	1.70 43.2	2.70 68.6	2.70 68.6
Stroke "S" (S _I = Insert Stroke) (S _E = Extend Stroke)	inches mm	1.00 25.4	1.50 38.1	2.00 50.8
Weight - Body	ounces g	30 850	40 1130	40 1130
Weight - Core	ounces g	0.50 14	0.65 18	0.65 18

SSIR 937



Ordering Information

SS **I** **R** **937** - **4000** - **006**

Series

Outputs

I = 4-20mA

Connector

R = Radial
Leave Blank for Axial

0.937" (23.8 mm) Body Diameter

Range (see table above)

2000 = 2.00" (50.8 mm) 4000 = 4.00" (101.6 mm)
3000 = 3.00" (76.2 mm)

Metric Threaded Core Option

006 = M3 x 0.5, 6H Metric Thread
No suffix required for standard #4-40 UNC-2B Thread

For other connection options, please contact factory.