



Displacement Sensors

General Description

Depending on the desired resolution and travel to be monitored, the following sensors are available:

Model 404 BI Technologies

Spring return linear actuation conductive plastic position sensor.

Typical Applications

- Structural beam travel
- Construction material shrinkage and movement

Series 350 LVDT Transtekinc Displacement Sensor

DC Gaging LVDT - Spring loaded spindle with precision linear variable differential transformer. Designed for excellent linearity and high sensitivity.

Typical Applications

- Stucco or masonry crack monitoring

Features

Model 404 Resistance Based Sensor

- 0.5 inch travel, linear motion with spring
- Accurate position feedback
- Low cost
- Compact design for small spaces
- Conductive plastic technology
- Long life – 5 million actuations
- 8 sensors per SMT Industrial WiDAQ

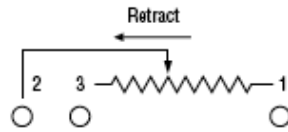
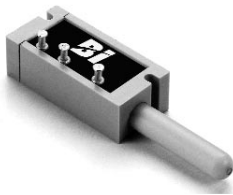
Series 350 Gaging LVDT Sensor

- Working range ± 0.05 inch (1.27mm)
- Mechanical travel 0.14 inch (3.56mm)
- High sensitivity
- Non-linearity <5%
- One sensor per SMT Industrial WiDAQ

Ordering Information

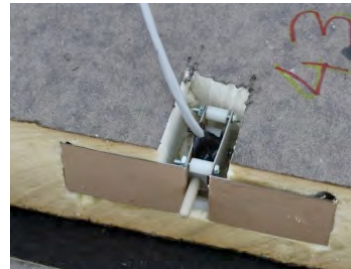
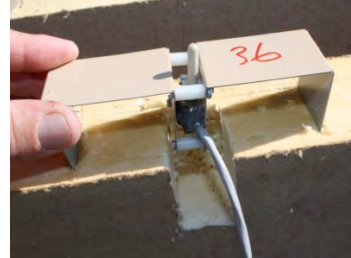
Model 404 Low Resolution	DS-404
Series 350 LVDT - High Resolution	DS-350

Model 404 Resistance



Mounting

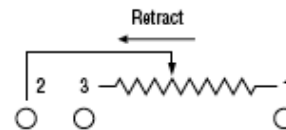
Flange mounts for insertion into insulation panels. Custom mounts can be made to fit specific applications.



Model 404 Electrical Characteristics

Resistance Range	1KΩ to 150KΩ
Standard Resistance Tolerance	±10%
Minimum Practical Resistance Tolerance	±5%
Independent Linearity	±1%
Minimum Practical Independent Linearity	±0.5%
Input Voltage, Maximum	400VDC
Power Rating	0.25W at 70°C
Dielectric Strength	1000V rms
Insulation Resistance, Minimum	1000MΩ
Actual Electrical Travel, Nominal	0.50" ± 0.15 (12.7mm ±0.38mm)
Resolution (with WiDAQ)	0.003" (0.085mm)
Temperature Coefficient	-800 ppm/°C

WiDAQ Connectivity



Model 404 Sensor Pin-out

Environmental (MIL-R-39023)

Operating Temperature	Static -55° to 125°C Dynamic -40° to 125°C
Load Life	1 million full 5 million dither cycles.

**Industrial WiDAQ
(8 Resistance Channels)**

Wire resistance pairs to channels 17 to 24. Example pin-out for channel 17:

WiDAQ Inputs	Sensor Pin	Function
17-1	1	Displacement
17-2	2	Displacement

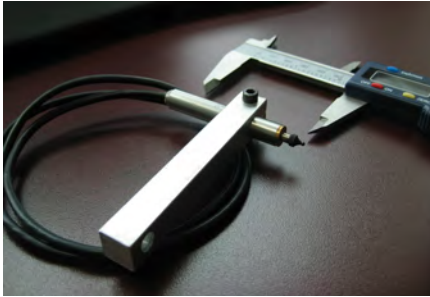
Mechanical

Total Mechanical Travel	0.56" ± 0.015" (14.2mm ±0.38mm)
Actuating Force, Maximum	14 oz
Backlash, Maximum	0.03"
Static Stop Strength	20 lb
Body Style	Rectangular
Termination Style	Turret Terminals

Mobile WiDAQ.



Plug audio jack into either MC/T port.

Model 350 LVDT

Series 350-0010 Electrical Characteristics

Nominal FS Output (5V Input)	±1VDC
Linearity	±0.5%
Output Impedance	2500Ω
Resolution (with WiDAQ)	0.00005" (0.00127mm)

Environmental

Operating Temperature	-54° to 93°C
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Mechanical

Working Range	±0.05 inch (1.27mm)
Mechanical travel	0.14 inch (3.56mm)
Connector	MS3101A-14S-5P. Mates with MS3101A-14S-5S.

Specifications are subject to change without notice

Mounting

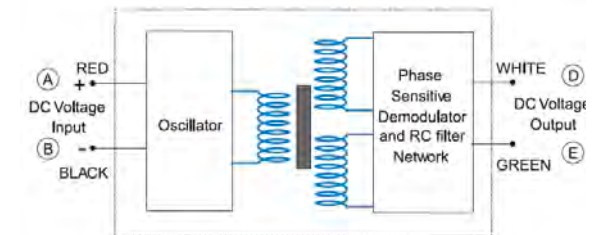
Example of mount secured to masonry. Used for monitoring crack expansion and contraction

IP54 rated enclosure or seal required to be placed over assembly.


Industrial WiDAQ Connectivity

Connect to WiDAQ expansion board differential voltage input.

MS3101A-14S-5S required to interface to LVDT connector.



WiDAQ Inputs	350 Pin	Function
+	RED	Power
G	BLACK	Ground
V1+	WHITE	Voltage+
V1-	GREEN	Voltage-

- Polarity must be observed for proper function. Reversal will not damage the unit.
- For best accuracy, recalibrate with designated WiDAQ.