

# Inclinometer

## Precision Potentiometric Output

Ranges: 0-105° to 0-240°

Industrial Grade



# IT9101

### Specification Summary:

#### GENERAL

Available Full Stroke Ranges ..... 0-105 to 0-240 degrees  
 Enclosure Material Options ..... powder-painted aluminum or stainless steel  
 Sensor ..... plastic-hybrid precision potentiometer  
 Electrical Connector ..... MS3102E-14S-6P  
 Mating Plug (included) ..... MS3106E-14S-6S  
 Weight, Aluminum (Stainless Steel) Enclosure ..... 5 lbs. (10 lbs.) max.

#### ELECTRICAL

Output Signal ..... voltage divider (potentiometer)  
 Input Resistance ..... 1000 Ω (±10%)  
 Recommended Maximum Input Voltage ..... 30 V (AC/DC)  
 Output Signal Change Over Measurement Range ..... 92% ± 6% of input voltage

#### PERFORMANCE

Accuracy\* ..... ± 1% full stroke  
 Accuracy Option ..... ± 0.5% full stroke—please contact factory  
 Resolution ..... essentially infinite  
 \*—when plane of pendulum motion parallel to plane of rotation within ± 3°

#### ENVIRONMENTAL

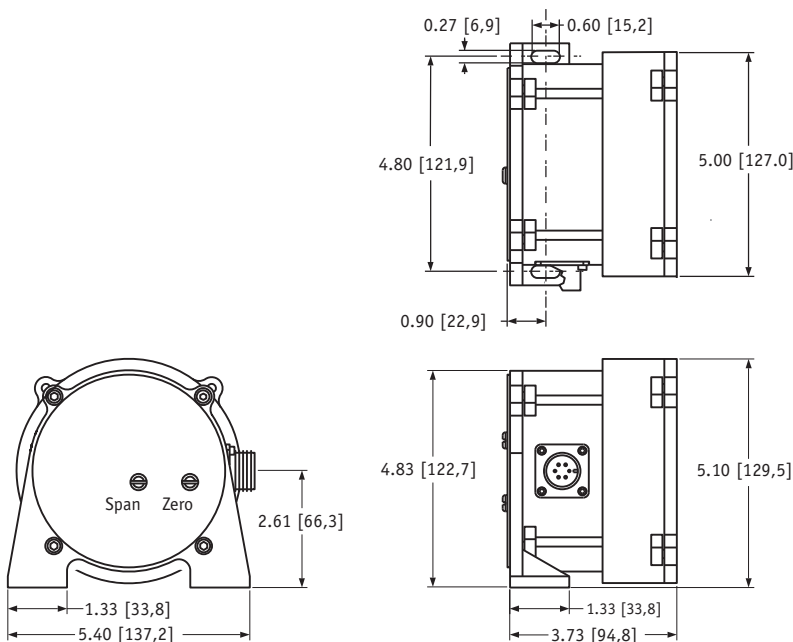
Enclosure ..... NEMA 4/4X/6, IP 67/68  
 Operating Temperature ..... -30° to 200°F (-34° to 90°C)  
 Vibration ..... up to 10 G's to 2000 Hz maximum



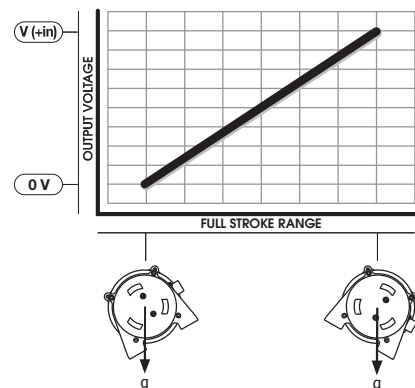
The model IT9101 is a rugged and simple device which provides a voltage divider feedback signal for incline position. The heart of the IT9101 is a magnetically-damped pendulum coupled to a conductive plastic precision potentiometer.

A highly linear relationship between inclination and the output signal is maintained over the full range of the IT9101.

### Outline Drawing



### Output Signal



Ordering Information:

Model Number:

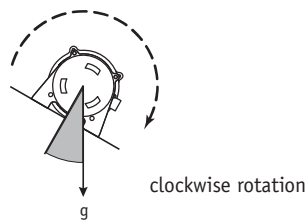
IT9101 -          CW -          CCW -      A      B      C      D

Sample Model Number:  
IT9101 - 060 - 120 - 1110

CW clockwise rotation: 60°  
CCW counter-clockwise rotation: 120° } total rotation = 180°  
A enclosure: aluminum  
C electrical connection: 6-pin plastic connector  
D magnetic dampening: yes

Full Clockwise Rotation:

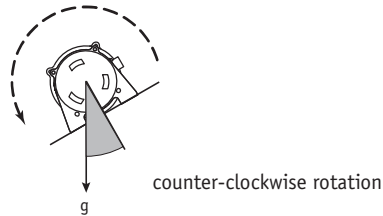
CW order code: 000 015 030 045 060 075 090 105 120  
0° 15° 30° 45° 60° 75° 90° 105° 120°



**Important--**  
the sum of the Clockwise and Counter-Clockwise Rotations must be in the range of 105° to 240°

Full Counter-Clockwise Rotation:

CCW order code: 000 015 030 045 060 075 090 105 120  
0° 15° 30° 45° 60° 75° 90° 105° 120°



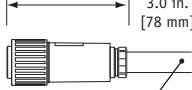
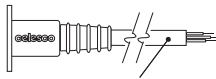
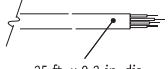
**Important--**  
the sum of the Clockwise and Counter-Clockwise Rotations must be in the range of 105° to 240°

Enclosure Material:

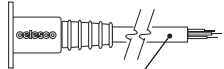
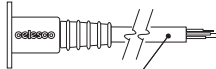
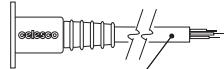
A order code:          1          2  
powder-painted aluminum 303 stainless steel

**Electrical Connection:**

ⓐ order code:

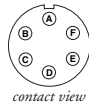
<p><b>1</b></p> <p>6-pin plastic connector w/mating plug <b>IP 67, NEMA 4X**, 6</b></p>  <p>1/2 - 5/16" [14 - 8 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S</p>	<p><b>2</b></p> <p>10-ft. [3 M] waterproof cable <b>IP 67, NEMA 4X**, 6</b></p>  <p>10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW</p>	<p><b>4</b></p> <p>25-ft. [7.5 M] instrumentation cable <b>IP 67, NEMA 6</b></p>  <p>25 ft. x 0.2-in. dia. [7.5 M x 5 mm dia.] 24 AWG, shielded</p>
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ⓐ order code:

<p><b>5</b></p> <p>100-ft. [30 M] waterproof cable <b>IP 67, NEMA 4X**, 6</b></p>  <p>100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 18 AWG, type SJTW</p>	<p><b>6</b></p> <p>10-ft. [3 M] <b>pressure tested*</b> waterproof cable <b>IP 68, NEMA 4X**, 6P</b></p>  <p>10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW</p>	<p><b>7</b></p> <p>100-ft. [30 M] <b>pressure tested*</b> waterproof cable <b>IP 68, NEMA 4X**, 6P</b></p>  <p>100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 18 AWG, type SJTW</p>
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**6-pin Mating Plug**

pin	signal
A	+ in
B	common
C	+ out
D	-



**Waterproof Cable**

color code	signal
WHITE	+ in
BLACK	common
GREEN	+ out

**Instrumentation Cable**

color code	signal
RED	+ in
BLACK	common
GREEN	+ out
WHITE	-

\*-Test pressure: 100 feet [30 meters] H<sub>2</sub>O (40 PSID) Test Medium: Air; Duration: 2 hours. \*\* -applies to stainless steel enclosure only.

**Dampening Option:**

ⓐ order code:

<p><b>0</b></p> <p>with magnetic dampening</p>	<p><b>1</b></p> <p>without magnetic dampening</p>
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