

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

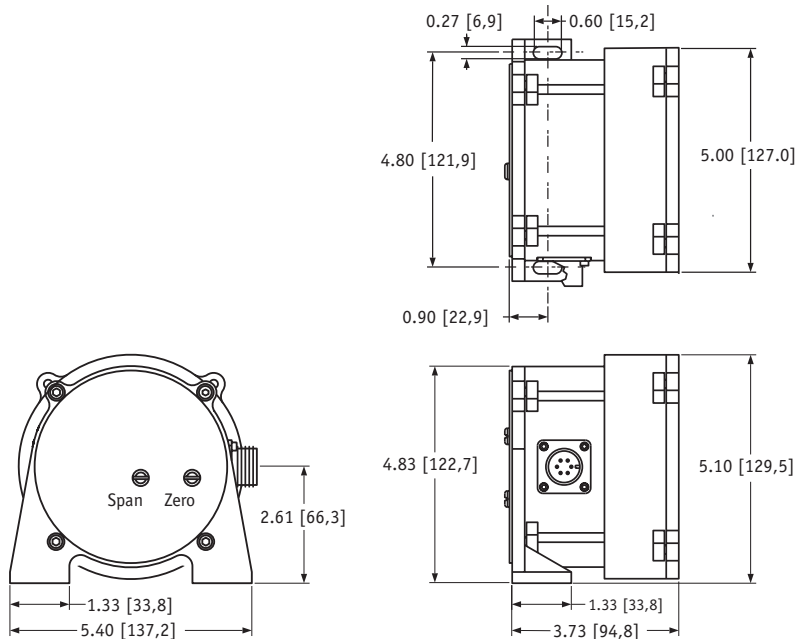
Enclosure NEMA 4/4X/6, IP 67/68
 Operating Temperature -30° to 200°F (-34° to 90°C)
 Vibration up to 10 G's to 2000 Hz maximum



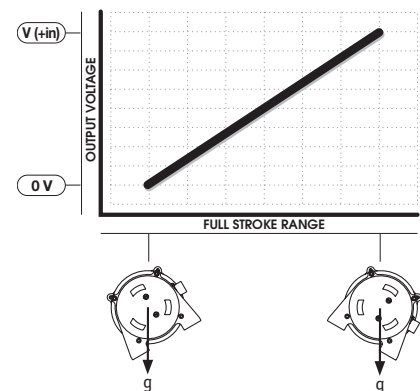
The model IT9101 is a rugged and simple device which provides a voltage divider feedback signal for incline position. The heart of the IT9101 is a magnetically-damped pendulum coupled to a conductive plastic precision potentiometer.

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:

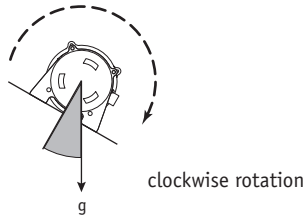
IT9101 - CW - CCW - A B C D

Sample Model Number:
IT9101 - 060 - 120 - 1110

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

Full Clockwise Rotation:

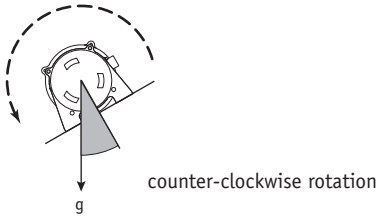
CW	order code:	000	015	030	045	060	075	090	105	120
		0°	15°	30°	45°	60°	75°	90°	105°	120°



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°

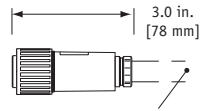
Enclosure Material:

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

Electrical Connection:

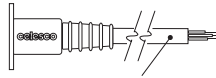
① order code:

1
6-pin plastic connector
w/mating plug
IP 67, NEMA 4X**, 6



1/2 - 5/16" [14 - 8 mm] cable dia.
16 AWG max conductor size
connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S

2
10-ft. [3 M]
waterproof cable
IP 67, NEMA 4X**, 6



10 ft. x 0.4-in. dia.
[3 M x 10 mm dia.]
18 AWG, type SJTW

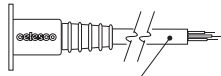
4
25-ft. [7.5 M]
instrumentation cable
IP 67, NEMA 6



25 ft. x 0.2-in. dia.
[7,5 M x 5 mm dia.]
24 AWG, shielded

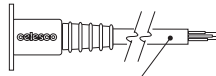
① order code:

5
100-ft. [30 M]
waterproof cable
IP 67, NEMA 4X**, 6



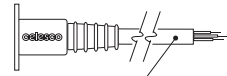
100 ft. x 0.4-in. dia.
[30 M x 10 mm dia.]
18 AWG, type SJTW

6
10-ft. [3 M]
pressure tested*
waterproof cable
IP 68, NEMA 4X**, 6P



10 ft. x 0.4-in. dia.
[3 M x 10 mm dia.]
18 AWG, type SJTW

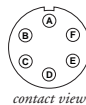
7
100-ft. [30 M]
pressure tested*
waterproof cable
IP 68, NEMA 4X**, 6P



100 ft. x 0.4-in. dia.
[30 M x 10 mm dia.]
18 AWG, type SJTW

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] H₂O (40 PSID) Test Medium: Air; Duration: 2 hours. **-applies to stainless steel enclosure only.

Dampening Option:

① order code:

0
with magnetic dampening

1
without magnetic dampening