

# IT9101

## Inclinometer • Voltage Divider

Measuring Range Options from 0-105° to 0-240°  
 Aluminum or Stainless Steel Enclosure Options  
 Perfect for Water Management/ Tainter Gate Position  
 IP68 • NEMA 6 Protection



### 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)
Full Scale Output Signal Change (Vdc)	92% ± 6% of input voltage

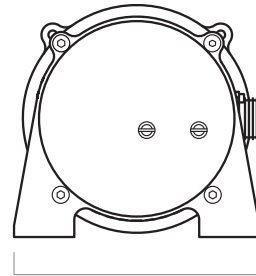
### PERFORMANCE

Accuracy*	± 1% full stroke
Accuracy Option	± 0.5% full stroke—please contact factory
Resolution	essentially infinite

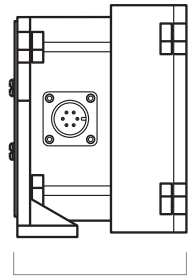
\*—when plane of pendulum motion parallel to plane of rotation within ± 3°

### ENVIRONMENTAL

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



5.4" [137 mm]

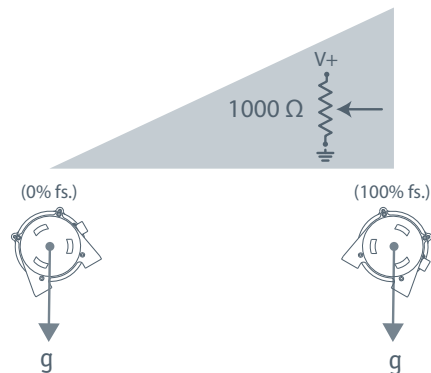


3.7" [95 mm]

The model IT9101 is a rugged and simple device which provides a voltage divider feedback signal for incline position up to 240 degrees. 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.

### Output Signal:

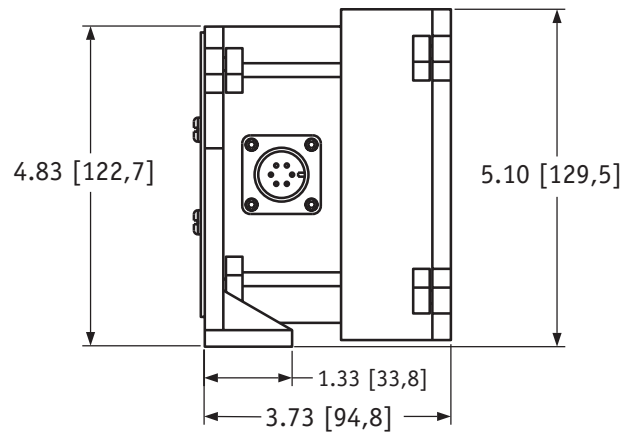
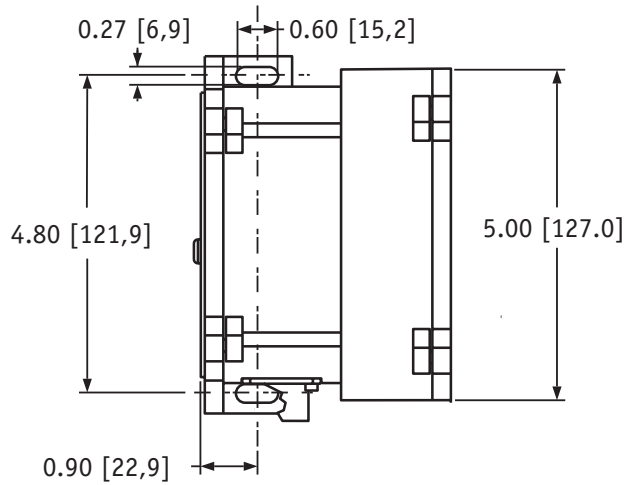
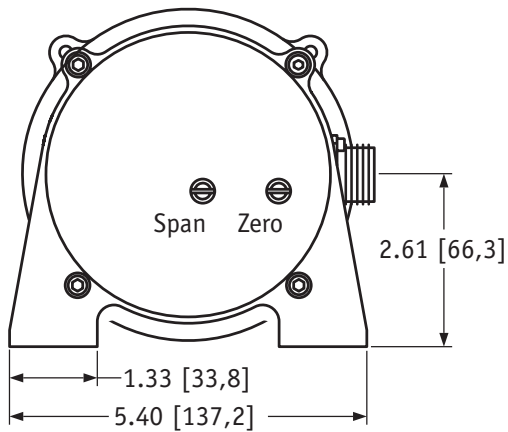


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Outline Drawing



DIMENSIONS ARE IN INCHES [MM]  
tolerances are ±0.02 in. [±0,5 mm] unless otherwise noted

Ordering Information:

Model Number:

**IT9101** -            **CW** -            **CCW** -            **A**            **1**            **B**            **C**            **D**

order code:

Sample Model Number:

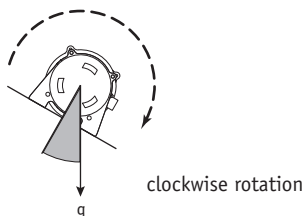
**IT9101 - 060 - 120 - 1110**

- |            |                             |                         |                         |
|------------|-----------------------------|-------------------------|-------------------------|
| <b>CW</b>  | clockwise rotation:         | 60°                     | } total rotation = 180° |
| <b>CCW</b> | counter-clockwise rotation: | 120°                    |                         |
| <b>A</b>   | enclosure:                  | aluminum                |                         |
| <b>C</b>   | electrical connection:      | 6-pin plastic connector |                         |
| <b>D</b>   | 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°

Ordering Information (cont.):

**Full Counter-Clockwise Rotation:**

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



counter-clockwise rotation

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

**Enclosure Material:**

<b>A</b> order code:	<b>1</b>	<b>2</b>
	powder-painted aluminum	303 stainless steel

**Electrical Connection:**

<b>G</b> order code:	<b>1</b>	<b>2</b>	<b>4</b>																												
	6-pin plastic connector w/mating plug <b>IP 67, NEMA 4X**, 6</b>	10-ft. [3 M] waterproof cable <b>IP 67, NEMA 4X**, 6</b>	25-ft. [7.5 M] instrumentation cable <b>IP 67, NEMA 6</b>																												
<b>C</b> order code:	<b>5</b>	<b>6</b>	<b>7</b>																												
	100-ft. [30 M] waterproof cable <b>IP 67, NEMA 4X**, 6</b>	10-ft. [3 M] <b>pressure tested*</b> waterproof cable <b>IP 68, NEMA 4X**, 6P</b>	100-ft. [30 M] <b>pressure tested*</b> waterproof cable <b>IP 68, NEMA 4X**, 6P</b>																												
	<p><b>6-pin Mating Plug</b></p> <table border="1"> <tr><th>pin</th><th>signal</th></tr> <tr><td>A</td><td>+ in</td></tr> <tr><td>B</td><td>common</td></tr> <tr><td>C</td><td>+ out</td></tr> <tr><td>D</td><td>-</td></tr> </table> <p> contact view</p>	pin	signal	A	+ in	B	common	C	+ out	D	-	<p><b>Waterproof Cable</b></p> <table border="1"> <tr><th>color code</th><th>signal</th></tr> <tr><td>WHITE</td><td>+ in</td></tr> <tr><td>BLACK</td><td>common</td></tr> <tr><td>GREEN</td><td>+ out</td></tr> </table>	color code	signal	WHITE	+ in	BLACK	common	GREEN	+ out	<p><b>Instrumentation Cable</b></p> <table border="1"> <tr><th>color code</th><th>signal</th></tr> <tr><td>RED</td><td>+ in</td></tr> <tr><td>BLACK</td><td>common</td></tr> <tr><td>GREEN</td><td>+ out</td></tr> <tr><td>WHITE</td><td>-</td></tr> </table>	color code	signal	RED	+ in	BLACK	common	GREEN	+ out	WHITE	-
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\*-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:**

<b>D</b> order code:	<b>0</b>	<b>1</b>
	with magnetic dampening	without magnetic dampening



version: 4.0 last updated: August 13, 2014