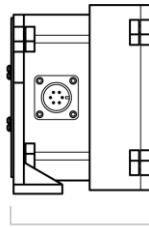


5.4" [137 mm]

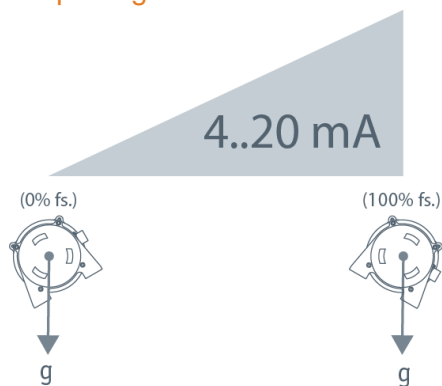


3.7" [95 mm]

The model IT9420 is a rugged yet simple device which provides a 4 to 20 mA current feedback signal for incline position. The heart of the IT9420 is a magnetically-damped pendulum coupled to a conductive plastic precision potentiometer. A highly linear relationship between inclination and a 4 to 20 mA output is maintained over the full range of the IT9420.

The IT9420 is easy to use: simply attach it to the object of measurement and install two wires for the current loop.

Output Signal



IT9420

Inclinometer • 4..20 mA

Measuring Range Options from 0-45° to 0-240°

Aluminum or Stainless Steel Enclosure Options

Perfect for Water Management/ Tainter Gate Position

IP68 • NEMA 6 Protection • Hazardous Area Certification

General

Available Full Stroke Ranges	0-45 to 0-240 degrees
Weight (aluminum enclosure)	5 lb. typical (aluminum enclosure)
Enclosure Material	aluminum (stainless steel available)
Sensor	precision potentiometer
Electrical Connector	MS3102E-14S-6P
Mating Plug (included)	MS3106E-14S-6S

Electrical

Output Signal	4...20 mA
Input Voltage	see ordering information
Input Current	20 mA max.
Circuit Protection	38 mA maximum

Performance

Sensitivity	16 mA/full stroke, $\pm 0.25\%$
Accuracy*	$\pm 1\%$ full stroke
Accuracy Option	0.5% full stroke (please contact factory)
Resolution	essentially infinite

Full Stroke Ranges of 45° - 105°

Zero Adjustment	from factory set zero to 20% of full stroke range
Span Adjustment	to 20% of factory set span

Full Stroke Ranges of 120° - 240°

Zero Adjustment	from factory set zero to 40% of full stroke range
Span Adjustment	to 40% of factory set span

*—when plane of pendulum motion parallel to plane of rotation within $\pm 3^\circ$

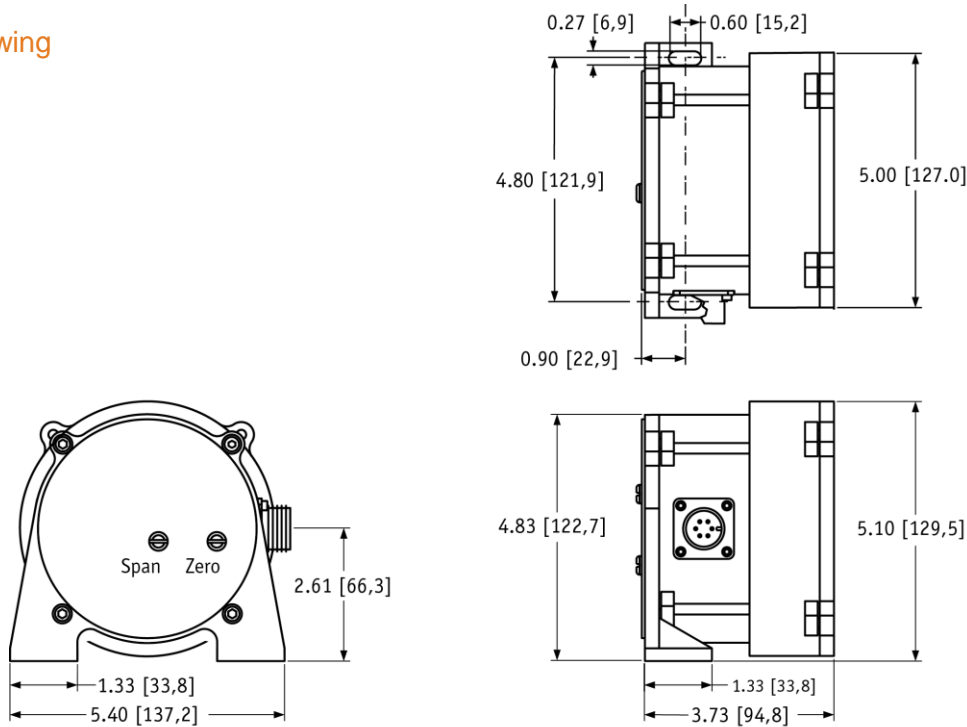
Environmental

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

IT9420

Inclinometer • 4..20 mA

Outline Drawing



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

Ordering Information

Model Number:

IT9420 - - - - - - -

order code: **CW** **CCW** **A** **B** **C** **D**

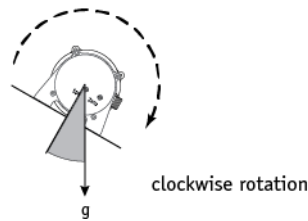
Sample Model Number:

IT9420 - 060 - 120 - 1110

- CW** clockwise rotation: 60°
- CCW** counter-clockwise rotation: 120° } total rotation = 180°
- A** enclosure: aluminum
- B** output signal: 4 mA @ 120° CCW
20 mA @ 60° CW
- C** electrical connection: 6-pin plastic connector
- D** magnetic dampening: yes

Full Clockwise Rotation:

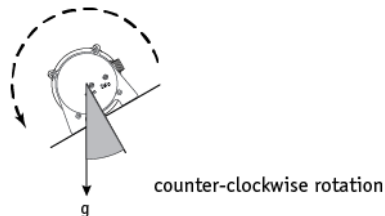
CW order code:	000	015	030	045	060	075	090	105	120
	0°	15°	30°	45°	60°	75°	90°	105°	120°



Important--
the sum of the Clockwise and Counter-Clockwise Rotations must be in the range of 45° 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 45° to 240°

IT9420

Inclinometer • 4...20 mA

Enclosure Material:

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

Output Signal:

B order code:	1	2	5	6
output signal options:	4...20 mA	20...4 mA	4...20 mA	20...4 mA
input voltage:	8 – 34 vdc		14 – 32 vdc	
hazardous area certification:	not certified			

***IMPORTANT:** intrinsically safe when powered from a CSA certified zener barrier rated 28 VDC max, 110 mA max per installation drawing#677984

Electrical Connection:

C order code:	1	2	4																												
	6-pin plastic connector w/mating plug IP 67, NEMA 4X**,6	10-ft. [3 M] waterproof cable IP 67, NEMA 4X**, 6	25-ft. [7,5 M] instrumentation cable IP 67, NEMA 6																												
	<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>10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW</p>	<p>25 ft. x 0.2-in. dia. [7,5 M x 5 mm dia.] 24 AWG, shielded</p>																												
C order code:	5	6	7																												
	100-ft. [30 M] waterproof cable IP 67, NEMA 4X**,6	10-ft. [3 M] pressure tested* waterproof cable IP 68, NEMA 4X**, 6P	100-ft. [30 M] pressure tested* waterproof cable IP 68, NEMA 4X**, 6P																												
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	6-pin Mating Plug <table border="1"> <tr> <th>pin</th> <th>signal</th> </tr> <tr> <td>A</td> <td>8...34 vdc</td> </tr> <tr> <td>B</td> <td>4...20 mA out</td> </tr> <tr> <td>C</td> <td>-</td> </tr> <tr> <td>D</td> <td>case ground</td> </tr> </table>	pin	signal	A	8...34 vdc	B	4...20 mA out	C	-	D	case ground	Waterproof Cable <table border="1"> <tr> <th>color code</th> <th>signal</th> </tr> <tr> <td>WHITE</td> <td>8...34 vdc</td> </tr> <tr> <td>BLACK</td> <td>4...20 mA out</td> </tr> <tr> <td>GREEN</td> <td>case ground</td> </tr> </table>	color code	signal	WHITE	8...34 vdc	BLACK	4...20 mA out	GREEN	case ground	Instrumentation Cable <table border="1"> <tr> <th>color code</th> <th>2-wire</th> </tr> <tr> <td>RED</td> <td>8...34 vdc</td> </tr> <tr> <td>BLACK</td> <td>4...20 mA out</td> </tr> <tr> <td>WHITE</td> <td>n/a</td> </tr> <tr> <td>GREEN</td> <td>case ground</td> </tr> </table>	color code	2-wire	RED	8...34 vdc	BLACK	4...20 mA out	WHITE	n/a	GREEN	case ground
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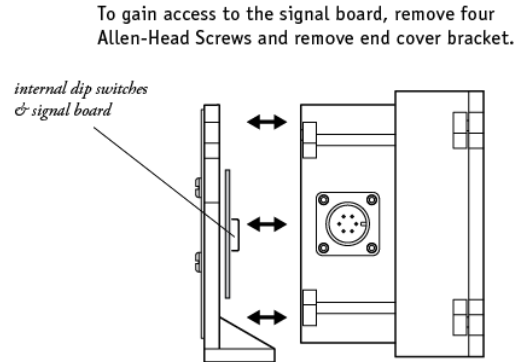
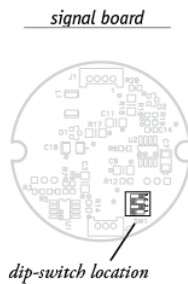
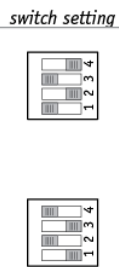
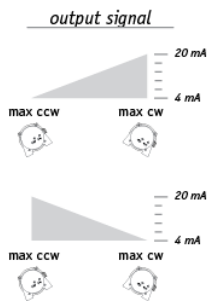
*--Test pressure: 100 feet [30 meters] H₂O (40 PSID) Test Medium: Air; Duration: 2 hours. **--applies to stainless steel enclosure only.

Dampening Option:

D order code:	0	1
	with magnetic dampening	without magnetic dampening

Output Signal Selection:

The output signal direction can be reversed at any time by simply changing the dip-switch settings found on the internal signal board. After the settings have been changed, adjustment of the Zero and Span trimpots will be required to precisely match the 4 mA and 20mA signal values to the beginning and end points of the stroke.



NORTH AMERICA

Measurement Specialties, Inc.,
a TE Connectivity company
20630 Plummer Street
Chatsworth, CA 91311
Tel +1 800 423 5483
Tel +1 818 701 2750
Fax +1 818 701 2799
info@celesco.com

TE.com/sensorsolutions

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IT9420 12/01/2015