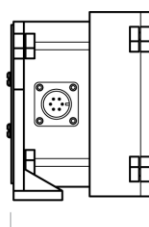


5.4" [137 mm]

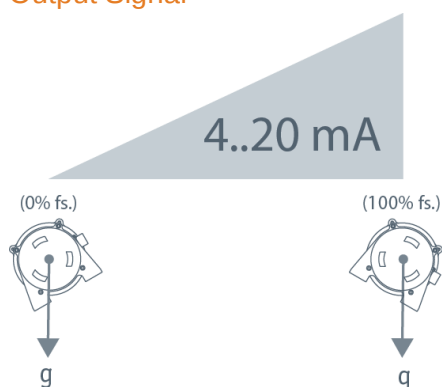


3.7" [95 mm]

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 $\pm 3^\circ$

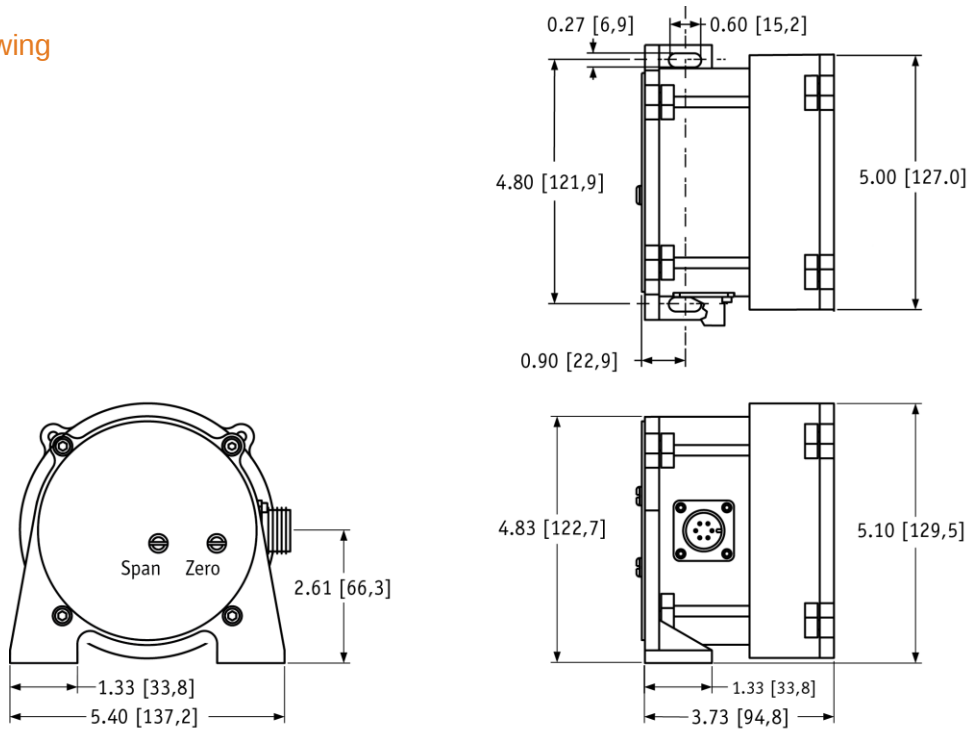
Environmental

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

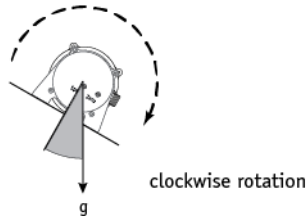
Sample Model Number:

IT9420 - 060 - 120 - 1110

CW clockwise rotation:	60°	} total rotation = 180°
CCW counter-clockwise rotation:	120°	
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:

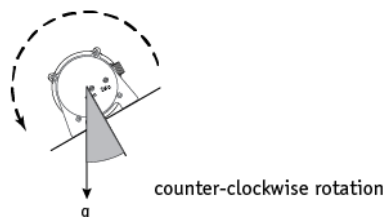
CW order code:	000	015	030	045	060	075	090	105	120
	0°	15°	30°	45°	60°	75°	90°	105°	120°



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
powder-painted aluminum

2
303 stainless steel

Output Signal:

B order code:

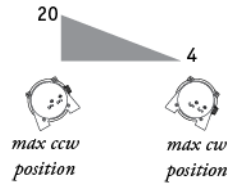
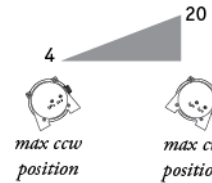
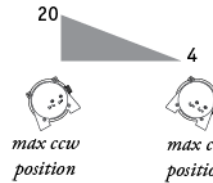
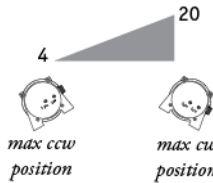
output signal options:

1
4...20 mA

2
20...4 mA

5
4...20 mA

6
20...4 mA



input voltage: 8 – 34 vdc

14 – 32 vdc

hazardous area certification:

not certified

CSA Standard 22.2
Class 1
Groups A, B, C and D

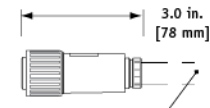
Cenelec
LCIE EEx
ia IIc T4

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

Electrical Connection:

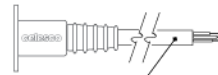
C order code:

1
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

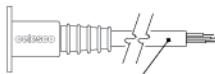
4
25-ft. [7.5 M]
instrumentation cable
IP 67, NEMA 6



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

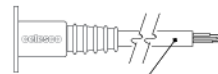
C order code:

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



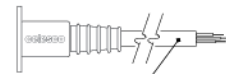
100 ft. x 0.4-in. dia.
[30 M x 10 mm dia.]
18 AWG, type SJTW

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

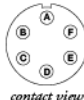
7
100-ft. [30 M]
pressure tested*
waterproof cable
IP 68, NEMA 4X**, 6P



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

6-pin Mating Plug

pin	signal
A	8...34 vdc
B	4...20 mA out
C	—
D	case ground



Waterproof Cable

color code	signal
WHITE	8...34 vdc
BLACK	4...20 mA out
GREEN	case ground

Instrumentation Cable

color code	2-wire
RED	8...34 vdc
BLACK	4...20 mA out
WHITE	n/a
GREEN	case ground

*—Test pressure: 100 feet [30 meters] H₂O (40 PSID) Test Medium: Air; Duration: 2 hours. **—applies to stainless steel enclosure only.

IT9420

Inclinometer • 4..20 mA

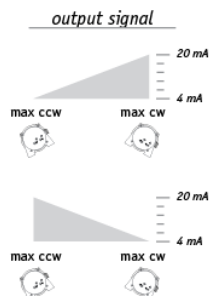
Dampening Option:

① <i>order code:</i>	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.

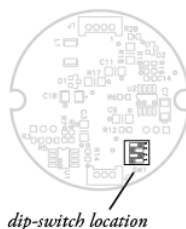
To gain access to the signal board, remove four Allen-Head Screws and remove end cover bracket.



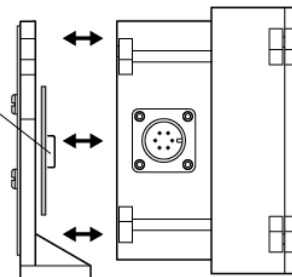
switch setting



signal board



*internal dip switches
& signal board*



NORTH AMERICA

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