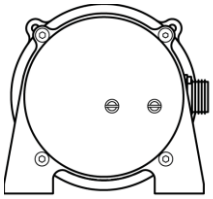
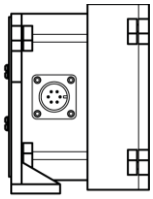


5.4″ [137 mm]



3.7″ [95 mm]

IT9420

Inclinometer • 4..20 mA

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

Aluminum or Stainless Steel Enclosure Options

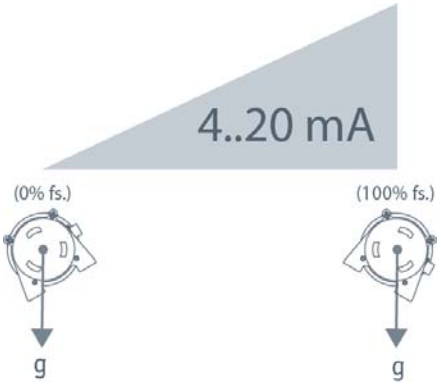
Perfect for Water Management/ Tainter Gate Position

IP68 • NEMA 6 Protection • Hazardous Area Certification

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



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, ± 0.25%
Accuracy*	± 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°

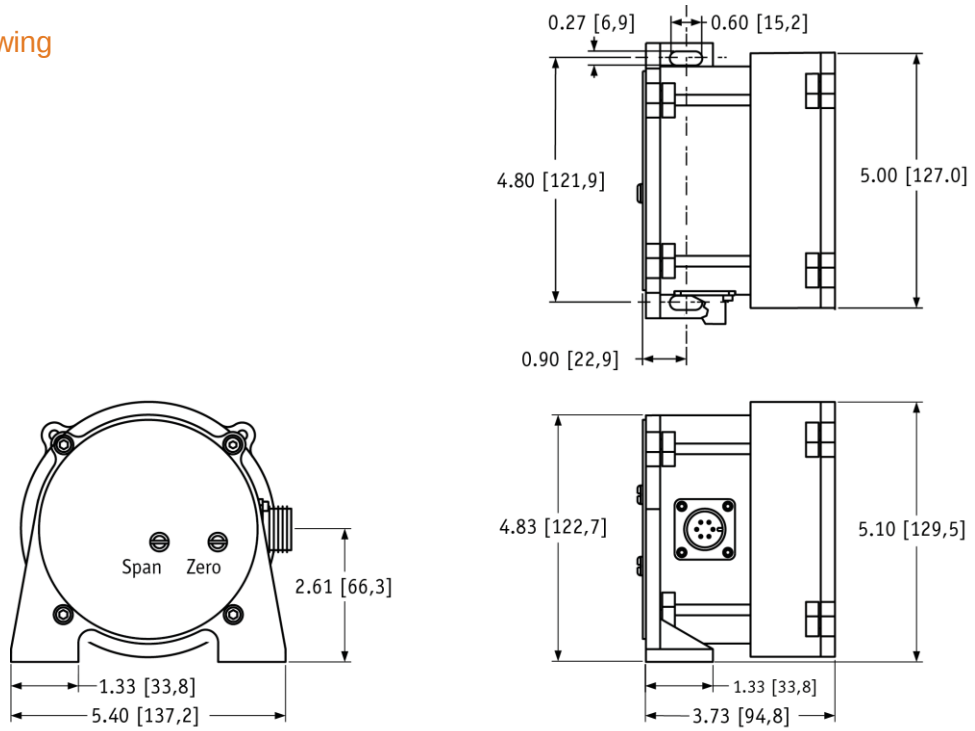
Zero Adjustment	from factory set zero to 40% of full stroke range
Span Adjustment	to 40% of factory set span

**–when plane of pendulum motion parallel to plane of rotation within ± 3˚*

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

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 Ⓐ Ⓑ Ⓒ Ⓓ

Sample Model Number:
IT9420 - 060 - 120 - 1110

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

Full Clockwise Rotation:

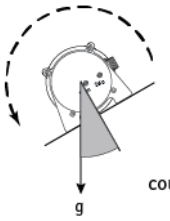
CW *order code:*	000	015	030	045	060	075	090	105	120
	0°	15°	30°	45°	60°	75°	90°	105°	120°

clockwise rotation

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°



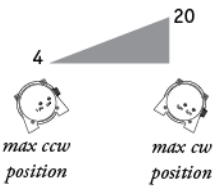
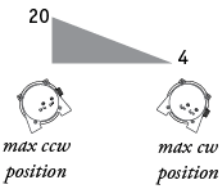
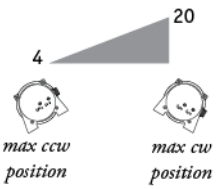
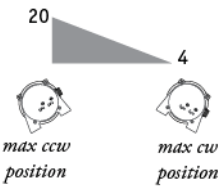
counter-clockwise rotation

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

Enclosure Material:

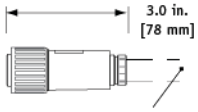
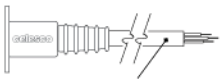
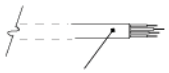
Ⓐ order code:	1	2
	powder-painted aluminum	303 stainless steel

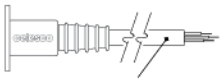
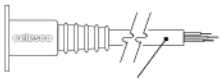
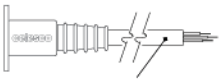
Output Signal:

Ⓑ 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		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:

Ⓒ order code:	1	2	4
	6-pin plastic connector w/mating plug	10-ft. [3 M] waterproof cable	25-ft. [7.5 M] instrumentation cable
	IP 67, NEMA 4X,6**	**IP 67, NEMA 4X**, 6**	**IP 67, NEMA 6**
			
	1/2 - 5/16" [14 - 8 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW	25 ft. x 0.2-in. dia. [7,5 M x 5 mm dia.] 24 AWG, shielded

Ⓒ order code:	5	6	7
	100-ft. [30 M] waterproof cable	10-ft. [3 M] **pressure tested*** waterproof cable	100-ft. [30 M] **pressure tested*** waterproof cable
	IP 67, NEMA 4X,6**	**IP 68, NEMA 4X**, 6P**	**IP 68, NEMA 4X**, 6P**
			
	100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 18 AWG, type SJTW	10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW	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

contact view

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

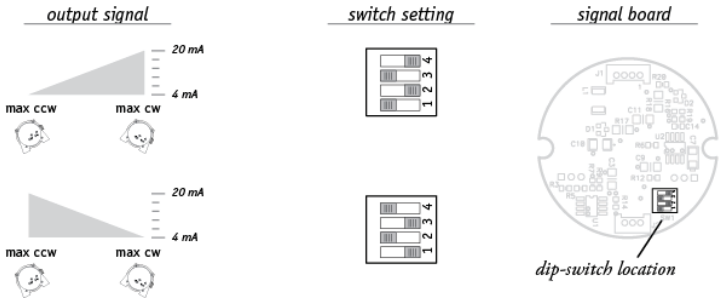
**–Test pressure: 100 feet [30 meters] H_2O (40 PSID) Test Medium: Air; Duration: 2 hours. **–applies to stainless steel enclosure only.*

Dampening Option:

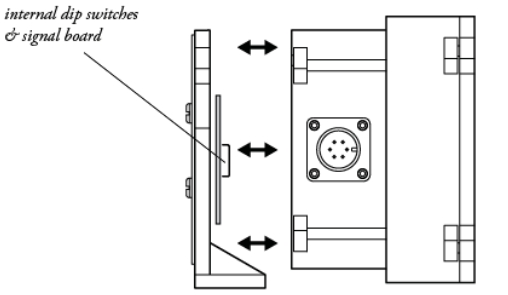
Ⓓ order code:	0	1
	with magnetic dampening	without magnetic dampening

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.



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



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

IT9420 12/01/2015