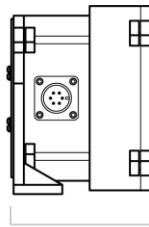


5.4" [137 mm]

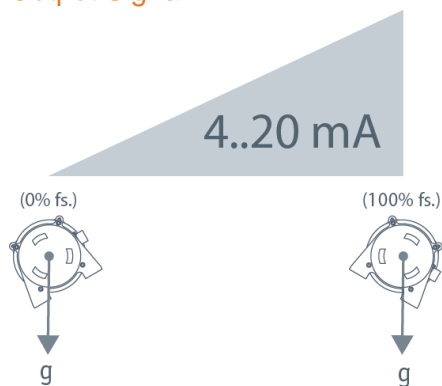


3.7" [95 mm]

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 $\pm 3^\circ$

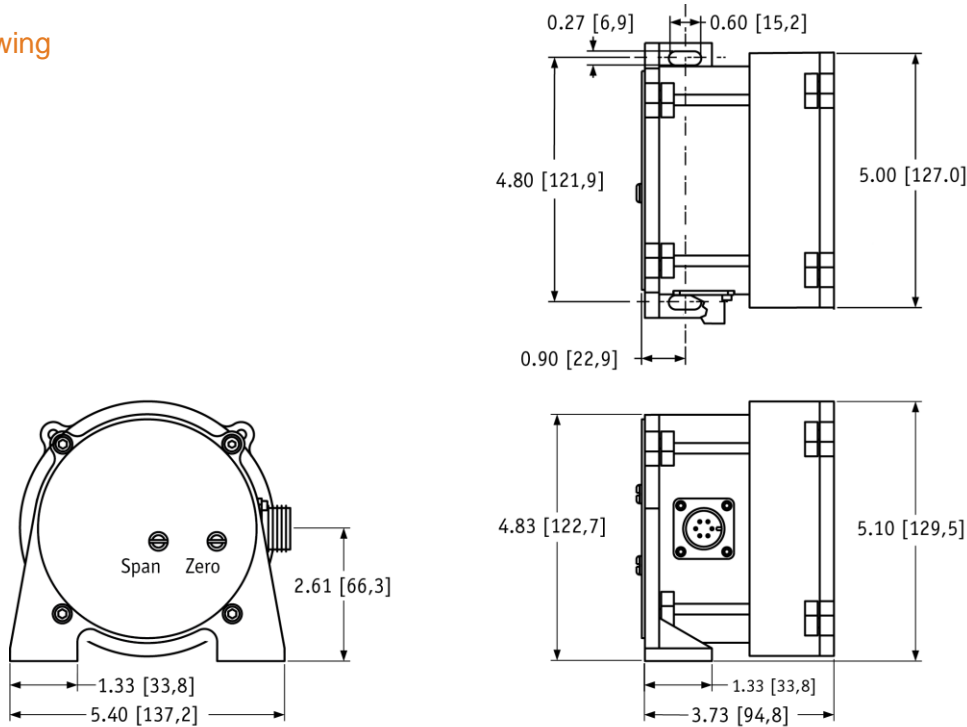
Environmental

| | |
|------------------------------|-------------------------------|
| 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**

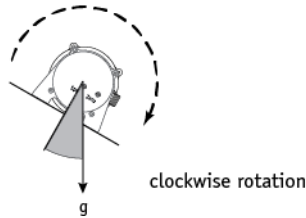
Sample Model Number:

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:

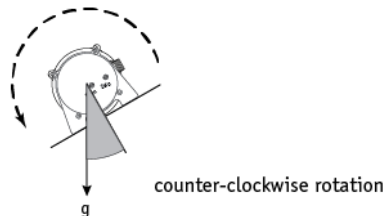
| | | | | | | | | | |
|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| CW order code: | 000 | 015 | 030 | 045 | 060 | 075 | 090 | 105 | 120 |
| | 0° | 15° | 30° | 45° | 60° | 75° | 90° | 105° | 120° |



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 | 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 | 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

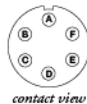
Electrical Connection:

| | | | |
|----------------------|---|--|--|
| C order code: | 1 | 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 |
| | 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 |

| | | | |
|----------------------|--|--|--|
| 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 |
| | 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 |



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.