

# Cable-Extension Position Transducer

0/4...20 mA Output • Hazardous Area Certification

Ranges: 0-75 to 0-550 inches

Industrial Grade



# PT9420



## Specification Summary:

### GENERAL

Full Stroke Range Options—on this datasheet..... 0-75 to 0-550 inches  
 Output Signal Options ..... 4...20 mA (2-wire) and 0...20 mA (3-wire)  
 Accuracy ..... ± 0.12% full stroke  
 Repeatability ..... ± 0.05% full stroke  
 Resolution ..... essentially infinite  
 Measuring Cable Options ..... nylon-coated stainless steel or thermoplastic  
 Enclosure Material ..... powder-painted aluminum or 303 stainless steel  
 Sensor ..... plastic-hybrid precision potentiometer  
 Potentiometer Cycle Life ..... 250,000, min.—before signal degradation can occur  
 Maximum Retraction Acceleration/ Velocity ..... see ordering information  
 Weight, Aluminum (Stainless Steel) Enclosure ..... 8 lbs. (16 lbs.) max.

### ELECTRICAL

Input Voltage ..... see ordering information  
 Input Current ..... 20 mA max.  
 Maximum Loop Resistance (Load) ..... (loop supply voltage – 8)/0.020  
 Circuit Protection ..... 38 mA max.  
 Impedance ..... 100M ohms @ 100 VDC, min.  
 Output Signal Adjustment  
 Zero Adjustment ..... from factory set zero to 50% of full stroke range  
 Span Adjustment ..... to 50% of factory set span

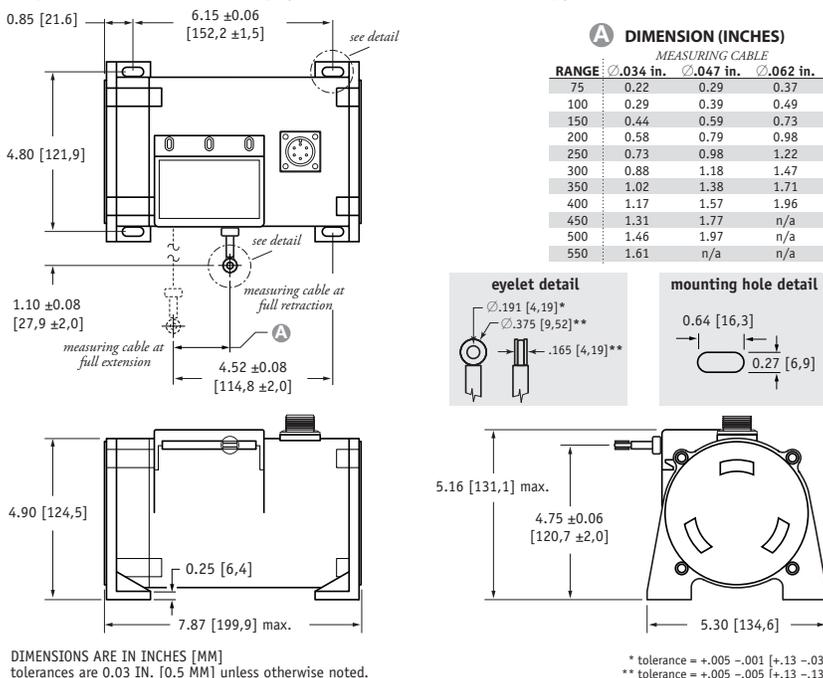
### ENVIRONMENTAL

Enclosure ..... NEMA 4/4X/6, IP 67/68  
 Hazardous Area Certification ..... see ordering information  
 Operating Temperature ..... -40° to 200°F (-40° to 90°C)  
 Vibration ..... up to 10 G's to 2000 Hz maximum  
 Thermal Effects  
 Zero ..... 0.01% f.s./°F, max.  
 Span ..... 0.01%/°F, max.

### EMC COMPLIANCE PER DIRECTIVE 89/336/EEC

Emission / Immunity ..... EN50081-2 / EN50082-2

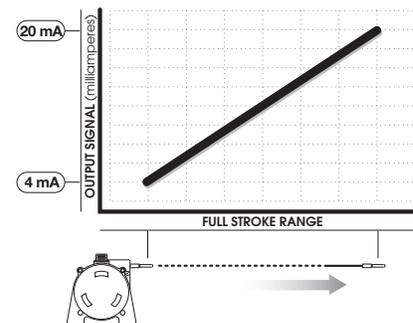
Fig. 1 – Outline Drawing (26 oz. cable tension only)



The PT9420 is a great value for demanding long-range applications requiring a 4 - 20 mA linear position feedback signal. Sealed to meet NEMA 4 standards, this Cable-Extension Transducer will perform even under the harshest of environmental conditions.

As a member of Celesco's innovative family of NEMA-4 rated cable-extension transducers, the PT9420 offers numerous benefits. It installs in minutes, functions properly without perfectly parallel alignment, and when its cable is retracted, it measures only 6".

### Output Signal



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**celesco**  
 celesco.com • info@celesco.com

**Ordering Information:**

**Model Number:**

**PT9420-** \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - **1** - \_\_\_\_\_ - \_\_\_\_\_ - **0**  
*order code:*                      **R**                      **A**                      **B**                      **C**                      **D**                      **E**                      **F**                      **G**

Sample Model Number:

**PT9420 - 0500 - 111 - 1110**

- R** range: 500 inches
- A** enclosure/cable tension: aluminum/26 oz.
- B** measuring cable: .034 nylon-coated stainless
- C** cable exit: front
- E** output signal: 4...20 mA, 2-wire
- F** electrical connection: 6-pin plastic connector

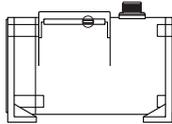
**Full Stroke Range:**

<b>R</b> order code:	0075	0100	0150	0200	0250	0300	0350	0400	0450*	0500*	0550*
full stroke range, min:	75 in.	100 in.	150 in.	200 in.	250 in.	300 in.	350 in.	400 in.	450 in.	500 in.	550 in.

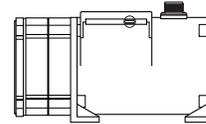
\* – 52 oz. cable tension strongly recommended

**Enclosure Material and Measuring Cable Tension:**

<b>A</b> order code:	1	3	2	4
tension ( $\pm 30\%$ ):		26 oz.		52 oz.
enclosure material:	powder-painted aluminum	303 stainless steel	powder-painted aluminum	303 stainless steel
max. acceleration:	1 G	.33 G	5 G	2 G
max. velocity:	60 inches/sec	20 inches/sec	200 inches/sec	80 inches/sec



standard housing  
see fig 1.



dual-spring housing  
see fig 2.

**Measuring Cable:**

<b>B</b> order code:	1	2	3
	∅.034-inch nylon-coated stainless steel available in <b>all</b> ranges	∅.047-inch stainless steel all ranges up to <b>500 inches</b>	∅.062-inch thermoplastic all ranges up to <b>400 inches</b>

**Cable Exit:**

<b>C</b> order code:	1	2	3	4
	front	top	back	down

# PT9420 • Cable-Extension Transducer: 0/4...20 mA Output Signal

## Ordering Information:

### Output Signals:

Order code:	1	2	3	4	5*	6*
output signal options:	4...20 mA 	20...4 mA 	0...20 mA 	20...0 mA 	4...20 mA 	20...4 mA 
sensitivity:	16 mA/full stroke $\pm 0.25\%$		20 mA/full stroke $\pm 0.25\%$		16 mA/full stroke $\pm 0.25\%$	
wiring configuration:	2 - wire		3 - wire		2 - wire	
input voltage:	8 - 40 vdc		14 - 40 vdc		14 - 32 vdc	
hazardous area certification:	not certified				CSA • Cenelec	

*Output Signal Example:*  
ordercode = 1 = 4...20 mA →

*Hazardous Area Certifications:*  
 CSA Standard 22.2 Class 1 Groups A, B, C and D  
 Cenelec LCIE EEx ia IIC T4

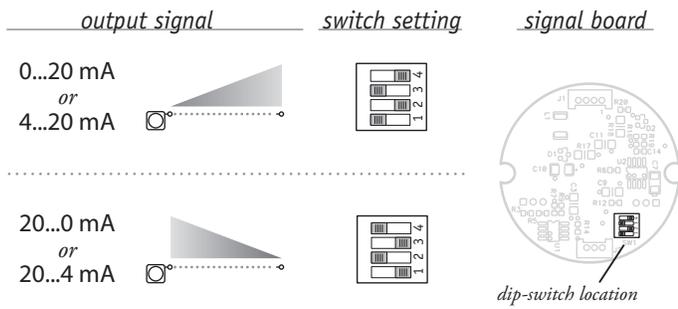
**IMPORTANT:** intrinsically safe when powered from a CSA certified zener barrier rated 28 VDC max, 110 mA max per installation drawing#677984

### Electrical Connection:

Order code:	1	2	3	4																											
	6-pin plastic connector w/mating plug IP 67, NEMA 4X**, 6  3.0 in. [78 mm]	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	6-pin metal connector w/mating plug IP 65, NEMA 4  2.4 in. [60 mm]	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																											
	1/2 - 5/16" [14 - 8 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S		3/8-in. [9 mm] max cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S																												
Order code:	5	6	7																												
	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	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	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																												
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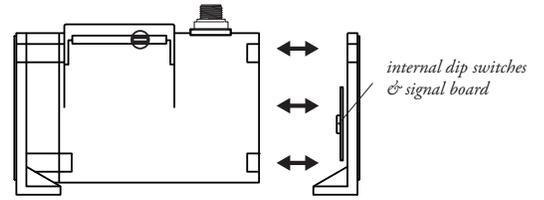
Notes: { \* -Test pressure: 100 feet [30 meters] H<sub>2</sub>O (40 PSID); Test Medium: Air; Duration: 2 hours.  
 \*\* -NEMA 4X applies to stainless steel enclosure only.  
 \*\*\* -14-32 VDC for hazardous area option.

**Output Signal Selection:**



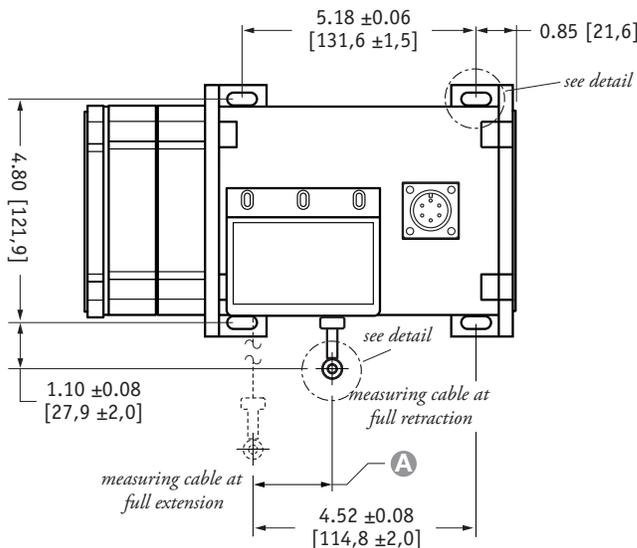
The output signal direction can be reversed at any time by simply changing the dip-switch settings found on the internal signal board. After the settings have been changed, adjustment of the Zero and Span trimpots will be required to precisely match signal values to the beginning and end points of the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

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



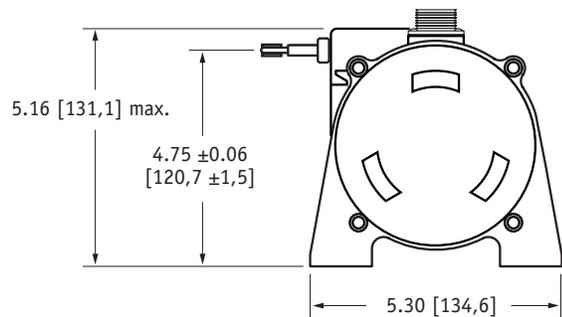
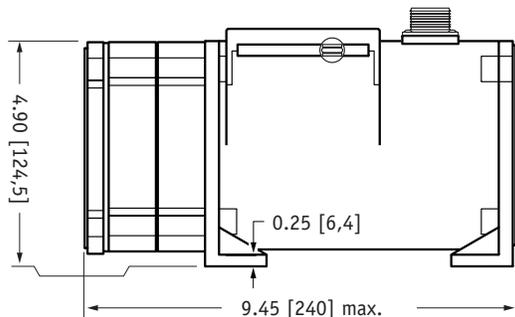
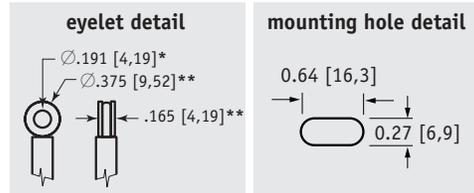
**Caution! Do Not Remove Spring-Side End Cover**  
 Removing spring-side end cover could cause spring to become unseated and permanently damaged.

Fig. 2 – Outline Drawing (52 oz. cable tension only)



**A DIMENSION (INCHES)**  
 MEASURING CABLE

RANGE	Ø.034 in.	Ø.047 in.	Ø.062 in.
75	0.22	0.29	0.37
100	0.29	0.39	0.49
150	0.44	0.59	0.73
200	0.58	0.79	0.98
250	0.73	0.98	1.22
300	0.88	1.18	1.47
350	1.02	1.38	1.71
400	1.17	1.57	1.96
450	1.31	1.77	n/a
500	1.46	1.97	n/a
550	1.61	n/a	n/a



DIMENSIONS ARE IN INCHES [MM]  
 tolerances are 0.03 IN. [0.5 MM] unless otherwise noted.

\* tolerance = +.005 -.001 [+0.13 -.03]  
 \*\* tolerance = +.005 -.005 [+0.13 -.13]

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