

# Cable-Extension Position Transducer

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

Ranges: 0-2 to 0-60 inches

Industrial Grade



# PT8420

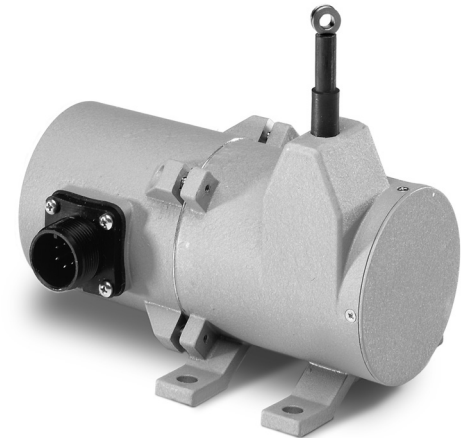
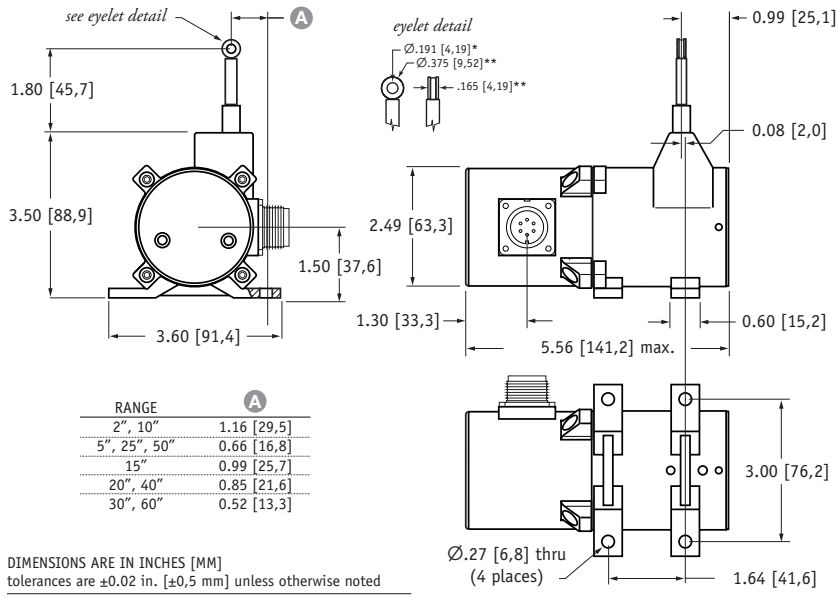
## Specification Summary:

**GENERAL**  
 Full Stroke Range Options ..... 0-2 to 0-60 inches  
 Output Signal Options ..... 4...20 mA (2-wire) and 0...20 mA (3-wire)  
 Accuracy .....  $\pm 0.28\%$  to  $\pm 0.15\%$  full stroke *see ordering information*  
 Repeatability .....  $\pm 0.05\%$  full stroke  
 Resolution ..... essentially infinite  
 Measuring Cable Options ..... nylon-coated stainless steel or thermoplastic  
 Enclosure Material ..... powder-painted aluminum or stainless steel  
 Sensor ..... plastic-hybrid precision potentiometer  
 Potentiometer Cycle Life ..... *see ordering information*  
 Maximum Retraction Acceleration ..... *see ordering information*  
 Weight, Aluminum (Stainless Steel) Enclosure ..... 3 lbs. (6 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  
 Thermal Effects  
 Zero ..... 0.01% f.s./°F, max.  
 Span ..... 0.01% f.s./°F, max.

**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

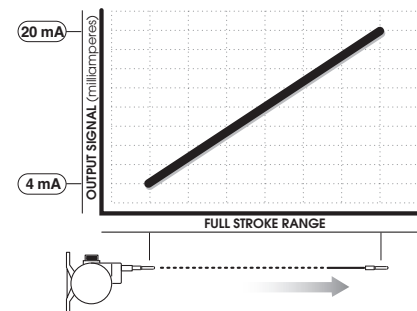
**EMC COMPLIANCE PER DIRECTIVE 89/336/EEC**  
 Emission/Immunity ..... EN50081-2/EN50082-2



The PT8420 with its 4-20 mA feedback signal, is ideal for monitoring the stroke of a hydraulic cylinder and other applications requiring position data acquisition in harsh environments.

As a member of Celesco's family of NEMA 4-rated cable-extension transducers, the PT8420 provides a feedback signal that is proportional to the linear movement of a traveling stainless-steel extension cable. Simply mount the body of the transducer to a fixed surface and attach the extension cable to the moving object.

### Output Signal



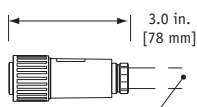
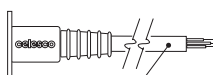
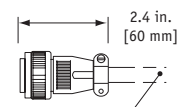

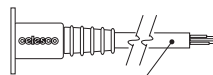
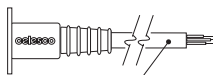
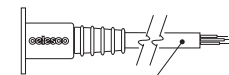
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**Electrical Connection:**

**F order code:**

<p><b>1</b></p> <p>6-pin plastic connector w/mating plug <b>IP 67, NEMA 4X**, 6</b></p>  <p>3.0 in. [78 mm]</p> <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><b>2</b></p> <p>10-ft. [3 M] waterproof cable <b>IP 67, NEMA 4X**, 6</b></p>  <p>10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW</p>	<p><b>3</b></p> <p>6-pin metal connector w/mating plug <b>IP 65, NEMA 4</b></p>  <p>2.4 in. [60 mm]</p> <p>3/8-in. [9 mm] max cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S</p>	<p><b>4</b></p> <p>25-ft. [7.5 M] instrumentation cable <b>IP 67, NEMA 6</b></p>  <p>25 ft. x 0.2-in. dia. [7.5 M x 5 mm dia.] 24 AWG, shielded</p>
<p><b>5</b></p> <p>100-ft. [30 M] waterproof cable <b>IP 67, NEMA 4X**, 6</b></p>  <p>100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 18 AWG, type SJTW</p>	<p><b>6</b></p> <p>10-ft. [3 M] <b>pressure tested*</b> waterproof cable <b>IP 68, NEMA 4X**, 6P</b></p>  <p>10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW</p>	<p><b>7</b></p> <p>100-ft. [30 M] <b>pressure tested*</b> waterproof cable <b>IP 68, NEMA 4X**, 6P</b></p>  <p>100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 18 AWG, type SJTW</p>	

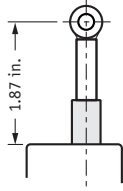
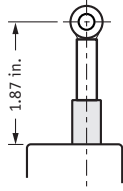
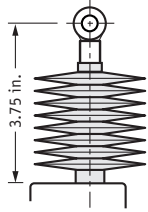
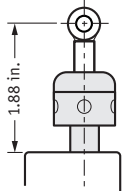
6-pin Mating Plug			Waterproof Cable			Instrumentation Cable			
pin	2-wire	3-wire		color code	2-wire	3-wire	color code	2-wire	3-wire
A	8...40 vdc***	14...29 vdc common	(A)	WHITE	8...40 vdc***	14...29 vdc common	RED	8...40 vdc***	14...29 vdc common
B	4...20 mA out	0...20 mA out	(B)	BLACK	4...20 mA out	0...20 mA out	BLACK	4...20 mA out	n/a
C	-	-	(C)	GREEN	case ground	-	WHITE	n/a	n/a
D	case ground	-	(D)				GREEN	case ground	0...20 mA out

contact view

\*-Test pressure: 100 feet [30 meters] H<sub>2</sub>O (40 PSID) Test Medium: Air; Duration: 2 hours. \*\*-applies to stainless steel enclosure only. \*\*\*14-32 VDC for hazardous area option.

**Cable Guide Options:**


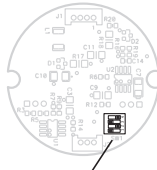

**G order code:**

<p><b>0</b></p> <p>standard cable guide</p>  <p>1.87 in.</p>	<p><b>1</b></p> <p>stainless steel cable guide</p>  <p>1.87 in.</p>	<p><b>2*</b></p> <p>polyurethane cable bellows</p>  <p>3.75 in.</p>	<p><b>3</b></p> <p>integral cable brush</p>  <p>1.88 in.</p>
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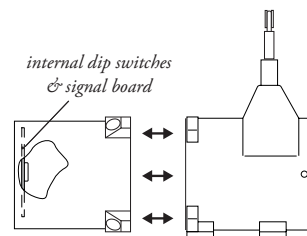
\*note: all ranges up to 25 inches only

**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.

output signal	switch setting	signal board
0...20 mA or 4...20 mA		
20...0 mA or 20...4 mA		

dip-switch location



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

version: 8.1 last updated: December 2, 2011