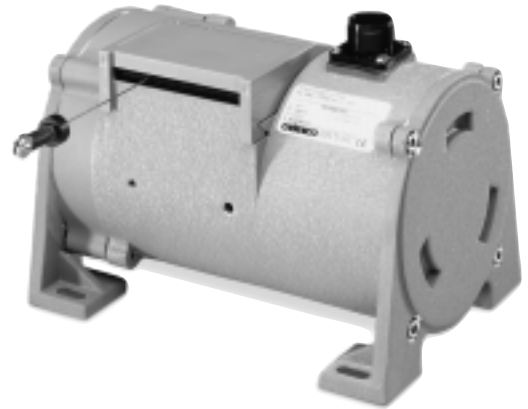


# Cable-Extension Position Transducer

- ▼ Medium to Long Range
- ▼ Industrial Grade
- ▼ Precision Potentiometric Output



# PT9101



## Specification Summary:

### GENERAL

Full Stroke Ranges-*on this datasheet*..... 0-75 to 0-550 inches, see ① next page  
 Output Signal ..... voltage divider (potentiometer)  
 Accuracy .....  $\pm 0.10\%$  full stroke  
 Repeatability .....  $\pm 0.02\%$  full stroke  
 Resolution ..... essentially infinite  
 Measuring Cable ..... stainless steel, nylon-coated or thermoplastic, see ⑥  
 Enclosure Material ..... powder-painted aluminum or stainless steel, see ②  
 Sensor ..... plastic-hybrid precision potentiometer  
 Potentiometer Cycle Life\* ..... 250,000 cycles, min.  
 Maximum Retraction Acceleration ..... see ⑤  
 Maximum Velocity ..... see ④  
 Weight, Aluminum (Stainless Steel) Enclosure ..... 8 lbs. (16 lbs.), max.

### ELECTRICAL

Input Resistance ..... 500, 1K, 5K, 10K ohms ( $\pm 10\%$ ) or bridge, see ⑦  
 Power Rating, Watts ..... 2.0 at 70°F (derated to 0 @ 250°F)  
 Recommended Maximum Input Voltage ..... 30 V(AC or DC)  
 Output Signal Change Over Measurement Range ..... 94%  $\pm 4\%$  of input voltage

### ENVIRONMENTAL

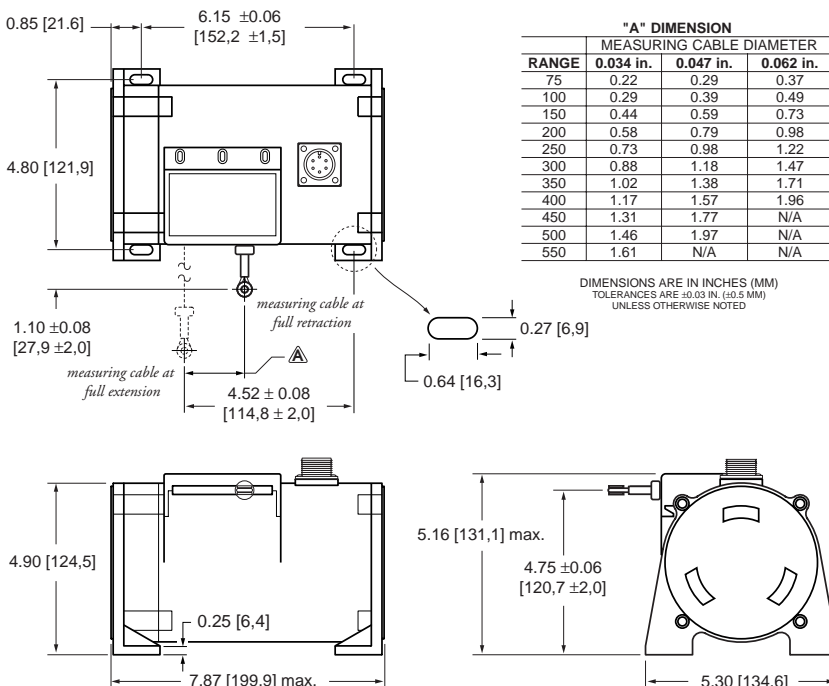
Environmental Suitability ..... NEMA 4/4X/6, IP 65/67/68, see ⑧ and ⑨  
 Operating Temperature ..... -40° to 200°F  
 Vibration ..... up to 10 G's to 2000 Hz maximum

*\*note: potentiometer cycle life is defined as the minimum number of times the measuring cable can be fully extended and retracted before any measureable degradation of the output signal occurs.*

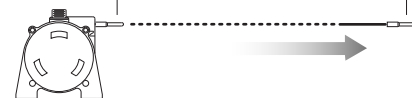
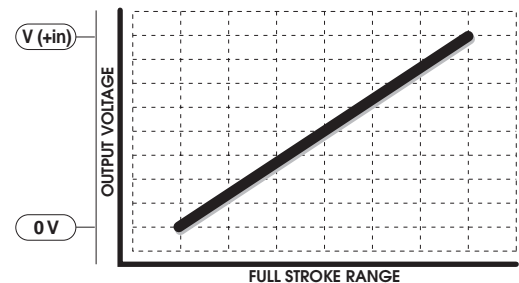
The PT9101 is a work-horse for demanding long-range applications requiring a linear position measurements in ranges up to 1700 inches. Available with either a 500, 1K, 5K, or 10K ohm potentiometer, the PT9101 operates with any basic panel meter or programmable controller.

As a member of Celesco's innovative family of NEMA 4 rated cable-extension transducers, the PT9101 offers numerous benefits. It installs in minutes, works without perfect parallel alignment, and when it's stainless-steel cable is retracted, it measures only 6".

**IMPORTANT!** Dimensions are only valid for Enclosure/Cable-Tension Options 1 & 3 only refer to Supplement 9-A for increased cable tension.



### Electrical Output Signal:



Latin Tech, Inc.

www.lt-automation.com • info@lt-automation.com

# PT9101 • Cable-Extension Transducer • Potentiometric Output

## ▼ Ordering Information

### Model Number:

**PT9101-** \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ **1** \_\_\_\_\_ **0**  
*order code:*                      **R**                      **A**                      **B**                      **C**                      **D**                      **E**                      **F**                      **G**

### Full Stroke Range:

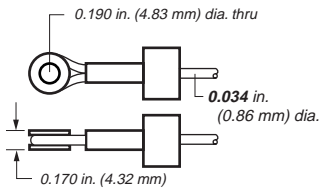
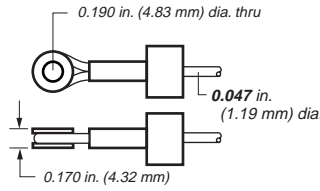
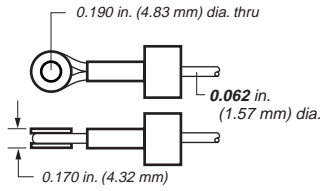
<b>R</b> <i>order code:</i>	<b>0075</b>	<b>0100</b>	<b>0150</b>	<b>0200</b>	<b>0250</b>	<b>0300</b>
① full stroke range, min:	75 inches	100 inches	150 inches	200 inches	250 inches	300 inches
<b>R</b> <i>order code:</i>	<b>0350</b>	<b>0400</b>	<b>0450*</b>	<b>0500*</b>	<b>0550*</b>	
full stroke range, min:	350 inches	400 inches	450 inches	500 inches	550 inches	

*note: \*42 oz. cable tension (see ③ below) for these ranges is strongly recommended!*

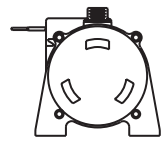
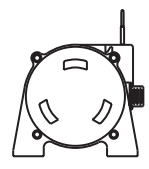
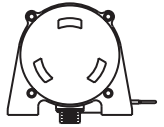
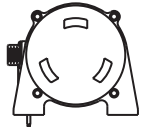
### Enclosure Material and Measuring Cable Tension:

<b>A</b> <i>order code:</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
enclosure:	see drawing (front page)	see Supplement 9-A	see drawing (front page)	see Supplement 9-A
② enclosure material:	powder-painted aluminum		303 stainless steel	
③ cable tension (±30%):	26 oz.	42 oz.	26 oz.	42 oz.
④ maximum velocity:	60 inches per second	200 inches per second	20 inches per second	80 inches per second
⑤ max. retraction acceleration:	1 G	5 G's	0.33 G	2 G's

### Measuring Cable:

<b>B</b> <i>order code:</i>	<b>1*</b>	<b>2**</b>	<b>3***</b>
⑥ cable construction:	.034 nylon-coated stainless steel	.047 stainless steel	.062 thermoplastic
			
<i>notes:</i>	<i>*available in all ranges</i>	<i>**available in ranges up to 500-inches only</i>	<i>***available in ranges up to 400-inches</i>

### Cable Exit:

<b>C</b> <i>order code:</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
direction:	front	top	rear	bottom
				

# PT9101 • Cable-Extension Transducer • Potentiometric Output

## Output Signals:

⑦	<b>D</b> order code:	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
	sensing circuit:	500 ohm	1K ohm	5K ohm	10K ohm	2 mV/V bridge	0...30 mV/V bridge
						full scale output: adjustable from 0 to 30mV/V zero adjust: from full retraction to 50% of full stroke	

## Electrical Connection:

⑧	<b>F</b> order code:	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>																																																										
	electrical connection:	6-pin plastic connector and mating plug	10 ft. waterproof cable	6-pin metal connector and mating plug	25 ft. instrumentation cable																																																										
		<table border="1"> <tr> <th>contact view</th> <th colspan="2">connections</th> </tr> <tr> <td></td> <td><b>standard</b></td> <td><b>bridge</b></td> </tr> <tr> <td></td> <td>A = +IN</td> <td>A = +IN</td> </tr> <tr> <td></td> <td>B = COMMON</td> <td>B = -IN</td> </tr> <tr> <td></td> <td>C = +OUT</td> <td>C = -OUT</td> </tr> <tr> <td></td> <td></td> <td>D = +OUT</td> </tr> </table>	contact view	connections			<b>standard</b>	<b>bridge</b>		A = +IN	A = +IN		B = COMMON	B = -IN		C = +OUT	C = -OUT			D = +OUT	<table border="1"> <tr> <th colspan="2">connections</th> </tr> <tr> <td><b>standard</b></td> <td><b>bridge</b></td> </tr> <tr> <td>WHT = +IN</td> <td>not available</td> </tr> <tr> <td>BLK = COMMON</td> <td></td> </tr> <tr> <td>GRN = OUT</td> <td></td> </tr> </table>	connections		<b>standard</b>	<b>bridge</b>	WHT = +IN	not available	BLK = COMMON		GRN = OUT		<table border="1"> <tr> <th>contact view</th> <th colspan="2">connections</th> </tr> <tr> <td></td> <td><b>standard</b></td> <td><b>bridge</b></td> </tr> <tr> <td></td> <td>A = +IN</td> <td>A = +IN</td> </tr> <tr> <td></td> <td>B = COMMON</td> <td>B = -IN</td> </tr> <tr> <td></td> <td>C = +OUT</td> <td>C = -OUT</td> </tr> <tr> <td></td> <td></td> <td>D = +OUT</td> </tr> </table>	contact view	connections			<b>standard</b>	<b>bridge</b>		A = +IN	A = +IN		B = COMMON	B = -IN		C = +OUT	C = -OUT			D = +OUT	<table border="1"> <tr> <th colspan="2">connections</th> </tr> <tr> <td><b>standard</b></td> <td><b>bridge</b></td> </tr> <tr> <td>RED = +IN</td> <td>RED = +IN</td> </tr> <tr> <td>BLK = COMMON</td> <td>BLK = -IN</td> </tr> <tr> <td>GRN = OUT</td> <td>WHT = -OUT</td> </tr> <tr> <td></td> <td>GRN = +OUT</td> </tr> </table>	connections		<b>standard</b>	<b>bridge</b>	RED = +IN	RED = +IN	BLK = COMMON	BLK = -IN	GRN = OUT	WHT = -OUT		GRN = +OUT
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	NEMA rating:	6, 4X**	6, 4X**	4	6																																																										

note: \*requires factory submersion test      \*\*applies to stainless steel enclosure, see ②

## Sample Model Number

**PT9101-0200 - 1 1 1 - 1 1 1 0**  
order code:      R      A      B      C      D      E      F      G

Specifications: Full Stroke Range: 200 inches  
 Enclosure Material: powder-painted aluminum  
 Measuring Cable: 0.034-in dia. nylon coated stainless steel cable  
 Cable Exit: front  
 Output Signals: 500 ohm potentiometer  
 Electrical Connection: 6-pin plastic connector

- ▼ All High Acceleration Applications
- ▼ 450-550 inch Full Stroke Applications

**General:**

Celeco strongly recommends increased cable tension for:

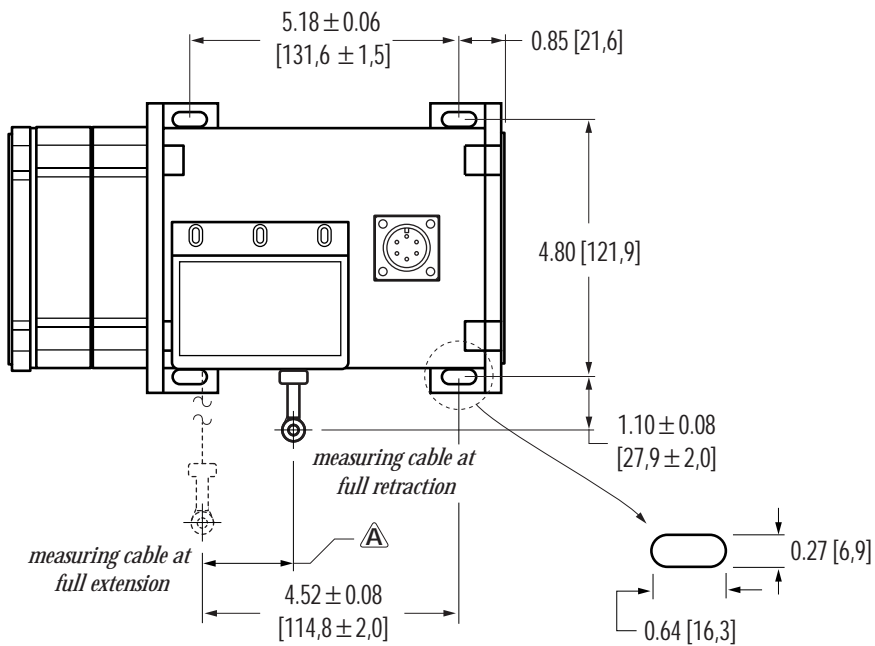
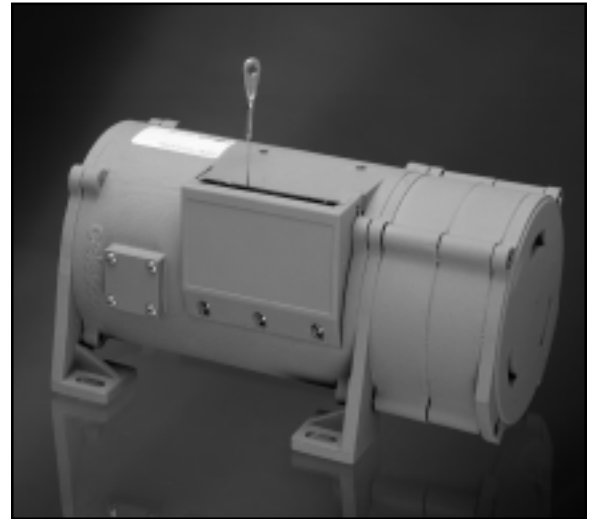
- Cable velocities greater than 60 inches per second
- Cable retraction accelerations exceeding:
  - 1 G (for aluminum enclosure)
  - 0.33 G (for stainless-steel enclosure)
- Applications with ranges 450 inches and greater to minimize cable sag and maintain dynamic capabilities.

**Transducer Models:**

PT9101	PT9150	PT9301
PT9420	PT9510	PT9600

**Available Ranges:**

75 to 550 inches



"A" DIMENSION			
MEASURING CABLE DIAMETER			
RANGE	0.034 in.	0.047 in.	0.062 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 ± 0.02 IN. (± 0.5 MM)  
UNLESS OTHERWISE NOTED

