

# Cable-Extension Position Transducer

**Precision Potentiometric Output**  
**Ranges: 0-10 to 0-250 inches**  
**Industrial Grade • High Cycle Applications**



# PT5A

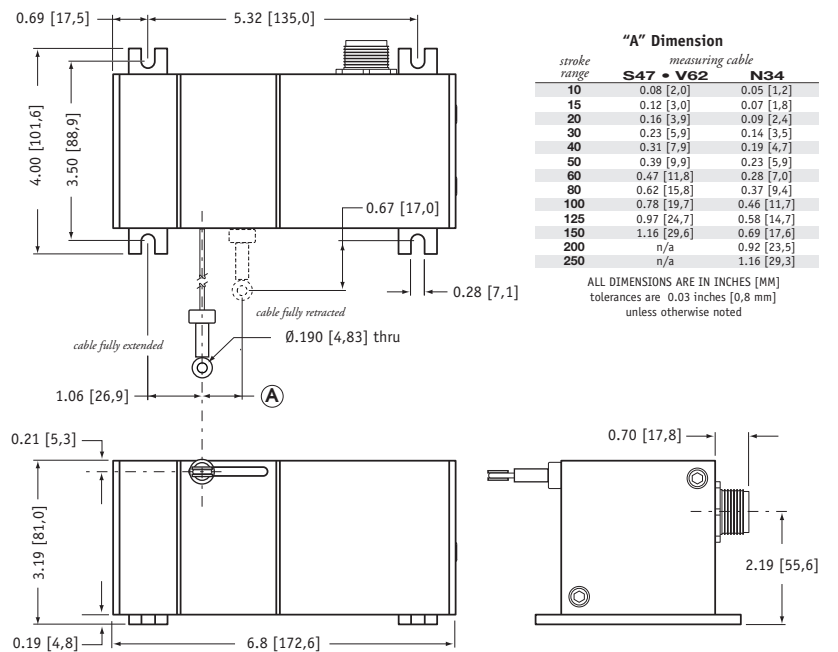
## Specification Summary:

**GENERAL**  
 Full Stroke Range Options ..... 0-10 to 0-250 inches  
 Output Signal Options..... voltage divider (potentiometer)  
 Accuracy .....  $\pm 0.75\%$  to  $\pm 0.18\%$  full stroke *see ordering information*  
 Repeatability..... *see ordering information*  
 Resolution ..... essentially infinite  
 Measuring Cable Options..... stainless steel or thermoplastic  
 Enclosure Material..... hard anodized aluminum  
 Sensor ..... plastic-hybrid precision potentiometer  
 Potentiometer Cycle Life ..... *see ordering information*  
 Maximum Measuring Cable Velocity ..... *see ordering information*  
 Maximum Retraction Acceleration ..... *see ordering information*  
 Weight..... 5 lbs. max.

**ELECTRICAL**  
 Input Resistance Options ..... 500, 1K, 5K, 10K or bridge, *see ordering information*  
 Power Rating, Watt ..... *see ordering information*  
 Recommended Maximum Input Voltage ..... *see ordering information*  
 Output Signal Change Over Full Stroke Range..... 94%  $\pm 4\%$  of input voltage

**ENVIRONMENTAL**  
 Enclosure ..... NEMA 4/6, IP 65/67  
 Operating Temperature .....  $-40^{\circ}$  to  $200^{\circ}$ F ( $-40^{\circ}$  to  $90^{\circ}$ C)  
 Vibration..... up to 10 G's to 2000 Hz maximum

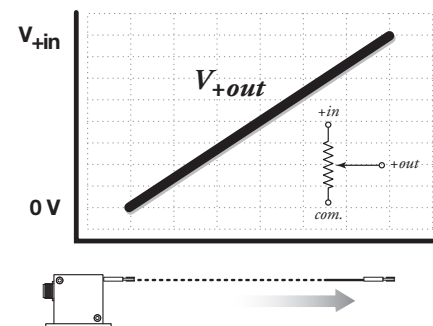
### Outline Drawing



The PT5A potentiometric cable-extension transducer uses a unique thermoplastic cable that has virtually an infinite fatigue life. This cable, known as V62, has properties that are superior for high cycle and rugged applications.

Like Celesco's other transducers, the PT5A installs in minutes, functions properly without perfectly parallel alignment, and fits easily into small areas. The PT5A offers additional installation flexibility since its cable exit can be rotated relative to the mounting surface, providing four different cable exit orientations.

### Output Signal



**Ordering Information:**

**Model Number:**

**PT5A** - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_  
*order code:*                      **R**                      **A**                      **B**                      **C**                      **D**

Sample Model Number:

**PT5A - 100 - N34 - FR - 500 - M6**

- R** range: 100 inches
- A** measuring cable: .034 nylon-coated stainless
- B** cable exit: front
- C** output signal: 500 ohm potentiometer
- D** electrical connection: 6-pin plastic connector

**Full Stroke Range:**

<b>R</b> order code:	10	15	20	25	30	40	50	60	80	100	125	150	200	250	
full stroke range, min:	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.	60 in.	80 in.	100 in.	125 in.	150 in.	200 in.	250 in.	
accuracy (±% of f.s.):	.75%	.6%	.5%	.5%	.5%	.3%	.3%	.25%	.25%	.25%	.25%	.18%	.18%	.18%	
repeatability (±% of f.s.):	.1%	.1%	.05%	.05%	.05%	.05%	.05%	.02%	.02%	.02%	.02%	.02%	.02%	.02%	
potentiometer cycle life:	2,500,000 cycles						500,000 cycles						250,000 cycles		
cable tension (20%):	41 ounces						21 ounces								
max. cable velocity/acceleration:	300 in./sec • 5 G's						120 in./sec • 2 G's								

**Measuring Cable:**

<b>A</b> order code:	N34	S47	V62
	.034 nylon-coated stainless steel <i>available in all ranges</i>	.047 stainless steel <i>all ranges up to 150 inches</i>	.062 thermoplastic <i>all ranges up to 150 inches</i>
	Ø.190 in. (4,83 mm) thru 0.034 in. (0,86 mm) dia. 0.170 in. (4,32 mm)	Ø.190 in. (4,83 mm) thru 0.047 in. (1,19 mm) dia. 0.170 in. (4,32 mm)	Ø.190 in. (4,83 mm) thru 0.062 in. (1,57 mm) dia. 0.170 in. (4,32 mm)

**Cable Exit:**

<b>B</b> order code:	UP	DN	FR	BK
	up	down	front	back
	inches [mm]			

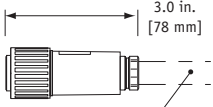
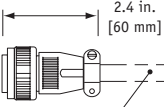
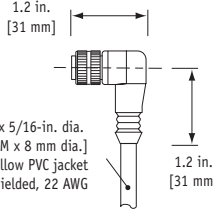

**Output Signals:**

<b>C</b> order code:	500	1K	5K	10K	B
	500 ohm*	1000 ohm*	5000 ohm*	10,000 ohm*	adjustable bridge (0...30 mV/V)
	*tolerance = ±10%				
	<b>max. input voltage and power rating</b>				
	10 to 30-inch range		40 to 250-inch range		
	500-ohms: 20 V AC/DC (1 W)		30 V AC/DC (2 W)		
	1K to 10K-ohms: 30 V AC/DC (1 W)		30 V AC/DC (2 W)		
	full scale output: adjustable from 0 to 30mV/V				
	zero adjust: to 50% of full stroke				

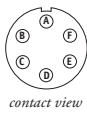
Ordering Information (cont.)

Electrical Connection:

① order code:

M6	M6M	MC4	C25
6-pin plastic connector with mating plug IP 67, NEMA 6	6-pin metal connector with mating plug IP 65, NEMA 4	4-pin micro-connector with 12 ft [3.5 M] cordset IP 67, NEMA 6	25-ft. instrumentation cable 24 AWG, shielded IP 67, NEMA 6
			
.30 - .39 in. [8 - 10 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	.375 in. [9 mm] max cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	12 ft. x 5/16-in. dia. [3.5 M x 8 mm dia.] yellow PVC jacket shielded, 22 AWG	25 ft. x 0.2-in. dia. [7.5 M x 5 mm dia.] 24 AWG, shielded

6-pin mating plug:



pin	standard	bridge
A	+IN	+IN
B	COMMON	-IN
C	+OUT	-OUT
D	-	+OUT

4-pin mating plug and cord set:



pin	color code	standard	bridge
1	RED-BLK TR.	+IN	+IN
2	RED-WHT TR.	COMMON	-IN
3	RED	+OUT	+OUT
4	GREEN	-	-OUT

25-ft. cable:

color code	standard	bridge
RED	+IN	+IN
BLACK	COMMON	-IN
GREEN	+OUT	+OUT
WHITE	-	-OUT