

# Cable-Extension Position Transducer

- ▼ Short to Medium Range
- ▼ Industrial Grade - High Cycle Applications
- ▼ Position and Velocity Transducer

# PT5AV



## Specification Summary:

Full Stroke Ranges ..... 0-10 to 0-250 inches, see ① next page

### POSITION

Output Signal ..... voltage divider (potentiometer)  
 Accuracy .....  $\pm 0.25$  to  $0.10\%$  full stroke, see ②  
 Repeatability .....  $\pm 0.02\%$  full stroke  
 Resolution ..... essentially infinite  
 Sensor ..... plastic-hybrid precision potentiometer  
 Input Resistance ..... 500, 1K, 5K, and 10K ohms  $\pm 10\%$ , see ④  
 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

### VELOCITY

Output Signal ..... 345 mV DC @ 100 IPM  
 Linearity ..... better than  $\pm 0.10\%$  of output at any velocity  
 Repeatability .....  $\pm 0.10\%$  of reading  
 Sensor ..... tach generator  
 Input Voltage ..... none  
 Output Voltage @ 100 IPM ..... 345 mV  
 Output Impedance ..... 350 ohm  $\pm 10\%$   
 Output Ripple ..  $\leq 3\%$  rms of velocity output (for velocities  $\geq 1.35$  inches per second)

### GENERAL

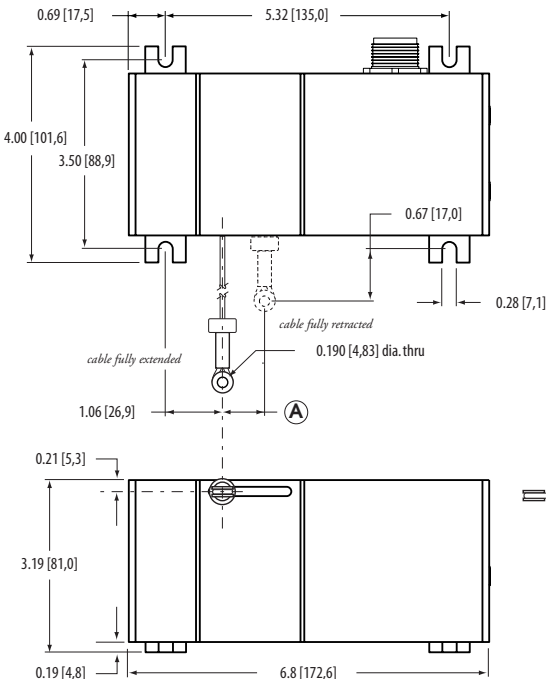
Measuring Cable ..... nylon-coated stainless steel or thermoplastic, see ③  
 Enclosure Material ..... hard-anodized aluminum  
 Maximum Measuring Cable Velocity ..... 300 inches per second  
 Maximum Measuring Cable Retraction Acceleration ..... 5 g's  
 Weight ..... 8 lbs., max.

### ENVIRONMENTAL

Enclosure Design ..... NEMA 4, IP 65/67/68, see ⑤ and ⑥  
 Operating Temperature ..... -40° to 200°F  
 Vibration ..... up to 10 G's to 2000 Hz maximum

The PT5AV is a combination position and velocity transducer. A precision plastic-hybrid potentiometer provides accurate position feedback while a self-generating DC tachometer provides a velocity signal that is proportional to the speed of the traveling stainless-steel measuring cable.

Like Celesco's other transducers, the PT5AV installs in minutes, functions properly without perfectly parallel alignment, and fits easily into small areas. The PT5AV also has an optional unique thermoplastic measuring cable that has virtually an infinite fatigue life.

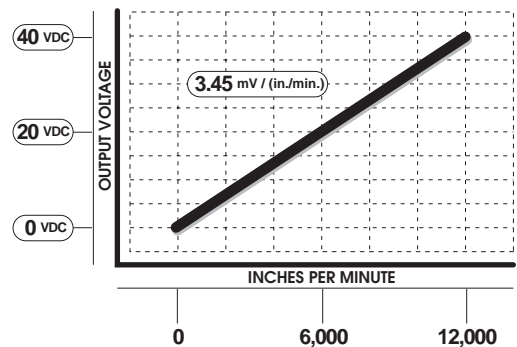


**(A) Dimension**

stroke range	measuring cable		
	S47	V62	N34
10	0.06 [1,5]	0.08 [2,0]	n/a
15	0.09 [2,3]	0.12 [3,1]	n/a
20	0.12 [3,1]	0.16 [4,1]	n/a
30	0.18 [4,6]	0.23 [5,8]	n/a
40	0.24 [6,1]	0.31 [7,9]	n/a
50	0.30 [7,6]	0.39 [9,9]	n/a
60	0.36 [9,1]	0.47 [11,9]	n/a
80	0.48 [12,2]	0.62 [15,7]	n/a
100	0.60 [15,2]	0.78 [19,8]	n/a
125	0.75 [19,1]	0.97 [24,6]	n/a
150	0.90 [22,9]	1.17 [29,7]	n/a
200	n/a	n/a	0.86 [21,9]
250	n/a	n/a	1.08 [27,4]

ALL DIMENSIONS ARE IN INCHES [MM]  
 tolerances are  $\pm 0.03$  inches [0,8 mm]  
 unless otherwise noted

### Velocity Output Signal:

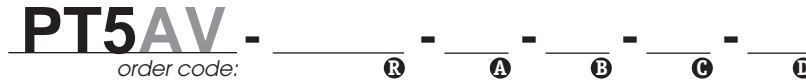


Latin Tech, Inc.

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## ▼ Ordering Information

### Model Number:

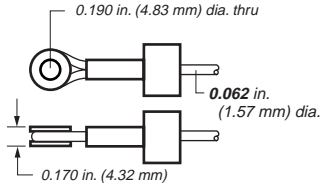
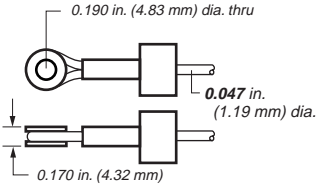
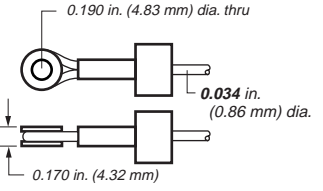


### Full Stroke Range:

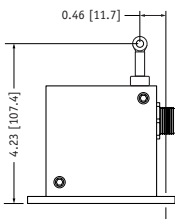
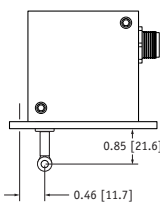
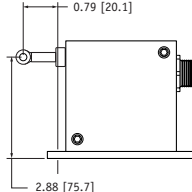
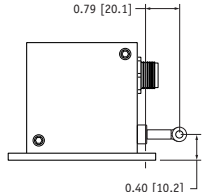
order code:	10	15	20	25	30	40	50	60	80	100	125	150	200	250
① full stroke range, min:	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.	60 in.	80 in.	100 in.	125 in.	150 in.	200 in.	250 in.
② accuracy (% of f.s.):	0.25 %	0.25 %	0.25 %	0.25 %	0.25 %	0.15 %	0.15 %	0.15 %	0.15 %	0.15 %	0.15 %	0.10 %	0.10 %	0.10 %
std. cable tension (±30%):	42 oz.	42 oz.	42 oz.	42 oz.	42 oz.	42 oz.	42 oz.	42 oz.	42 oz.	42 oz.	42 oz.	42 oz.	21 oz.	21 oz.
potentiometer cycle life*:	2.5 x 10 <sup>6</sup>	2.5 x 10 <sup>6</sup>	2.5 x 10 <sup>6</sup>	2.5 x 10 <sup>6</sup>	2.5 x 10 <sup>6</sup>	5 x 10 <sup>5</sup>	5 x 10 <sup>5</sup>	5 x 10 <sup>5</sup>	5 x 10 <sup>5</sup>	5 x 10 <sup>5</sup>	5 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>

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

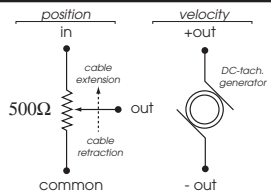
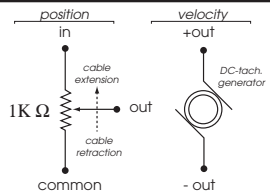
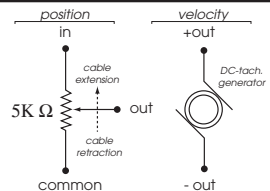
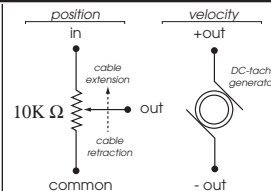
### Measuring Cable:

order code:	V62	S47	N34
③ available full stroke ranges:	all ranges up to 150 inches	all ranges up to 150 inches	200 and 250 inches only
cable construction:	.062 thermoplastic	.047 stainless steel	.034 nylon-coated stainless steel
			

### Cable Exit:

order code:	UP	DN	FR	BK
direction:	up	down	front	back
				

### Output Signals:

order code:	500	1K	5K	10K
④ position & velocity circuits:				

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## Electrical Connection:

① order code:

	M6	M6M	C25																																		
electrical connection:	6-pin plastic connector and mating plug	6-pin metal connector and mating plug	25 ft. instrumentation cable																																		
	<table border="1"> <thead> <tr> <th colspan="2">connections</th> </tr> <tr> <th>position</th> <th>velocity</th> </tr> </thead> <tbody> <tr> <td>A = +IN</td> <td>E = +OUT</td> </tr> <tr> <td>B = COMMON</td> <td>F = -OUT</td> </tr> <tr> <td>C = +OUT</td> <td></td> </tr> <tr> <td>D = n/c</td> <td></td> </tr> </tbody> </table>	connections		position	velocity	A = +IN	E = +OUT	B = COMMON	F = -OUT	C = +OUT		D = n/c		<table border="1"> <thead> <tr> <th colspan="2">connections</th> </tr> <tr> <th>position</th> <th>velocity</th> </tr> </thead> <tbody> <tr> <td>A = +IN</td> <td>E = +OUT</td> </tr> <tr> <td>B = COMMON</td> <td>F = -OUT</td> </tr> <tr> <td>C = +OUT</td> <td></td> </tr> <tr> <td>D = n/c</td> <td></td> </tr> </tbody> </table>	connections		position	velocity	A = +IN	E = +OUT	B = COMMON	F = -OUT	C = +OUT		D = n/c		<table border="1"> <thead> <tr> <th colspan="2">connections</th> </tr> <tr> <th>position</th> <th>velocity</th> </tr> </thead> <tbody> <tr> <td>RED = +IN</td> <td>WHT = +OUT</td> </tr> <tr> <td>BLK = COMMON</td> <td>BRN = -OUT</td> </tr> <tr> <td>GRN = +OUT</td> <td></td> </tr> </tbody> </table>	connections		position	velocity	RED = +IN	WHT = +OUT	BLK = COMMON	BRN = -OUT	GRN = +OUT	
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⑤ IP rating:	67	65	67																																		
⑥ NEMA rating:	6	4	4																																		

## ▼ Sample Model Number

**PT5AV - 30 - V62 - UP - 10K - M6**

Specifications:	Full Stroke Range:	30 inches
	Measuring Cable:	0.062-in dia. thermoplastic cable
	Measuring Cable Exit:	Up
	Output Signals:	10K ohm potentiometer sensor
	Electrical Connection:	6-pin plastic connector