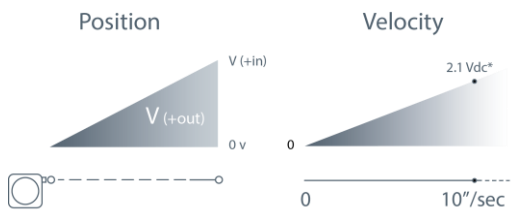


The PT5AV is a combination position and velocity transducer. A precision plastic-hybrid potentiometer provides accurate position feedback while a self-generating DC tachometer provides a velocity signal that is proportional to the speed of the traveling measuring cable.

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 for high-cycle applications.

Output Signal



*velocity output rate = 354 mV ± 4% @ 100 inches per min.

PT5AV

Cable Actuated Sensor Industrial Grade • Position/Velocity Output

Linear Position/Velocity to 250 inches (6350 mm)

Hard Anodized Aluminum Enclosure

High Cycle Applications

IP67 • NEMA 6 Protection

General

Full Stroke Range Options 0-10 to 0-250 inches

Position

Full Stroke Range Options 0-10 to 0-250 inches

Output Signal voltage divider (potentiometer)

Accuracy ±0.18% to ±0.75% full stroke (see ordering information)

Repeatability ±0.02% to ±0.1% full stroke (see ordering information)

Resolution essentially infinite

Sensor plastic-hybrid precision potentiometer

Potentiometer Cycle Life see ordering information

Input Resistance Options 500, 1K, 5K or 10K Ω

Power Rating, Watts see ordering information

Recommended Maximum Input Voltage see ordering information

Output Signal Change Over Full Stroke Range 94% ±4% of input voltage

Velocity

Output Signal DC voltage

Linearity better than ±0.10% of output at any velocity

Repeatability ±0.10% of reading

Maximum Velocity • Retraction see ordering information

Acceleration

Sensor tach generator

Output Voltage @ 100 in. per minute (varies slightly w/measuring cable)

N34 cable option 354 mV ±4%

S47 cable option 352 mV ±4%

V62 cable option 351 mV ±4%

Output Impedance 350 ohms ±10%

Output Ripple (for velocity ≥ 1.35 inches per second) ±3% rms

Environmental

Enclosure NEMA 4/6, IP 65/67

Operating Temperature -40° to 200°F (-40° to 90°C)

Vibration up to 10 g to 2000 Hz maximum

General

Measuring Cable stainless steel or thermoplastic

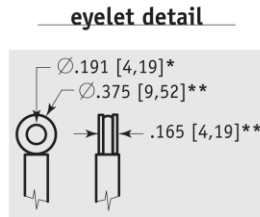
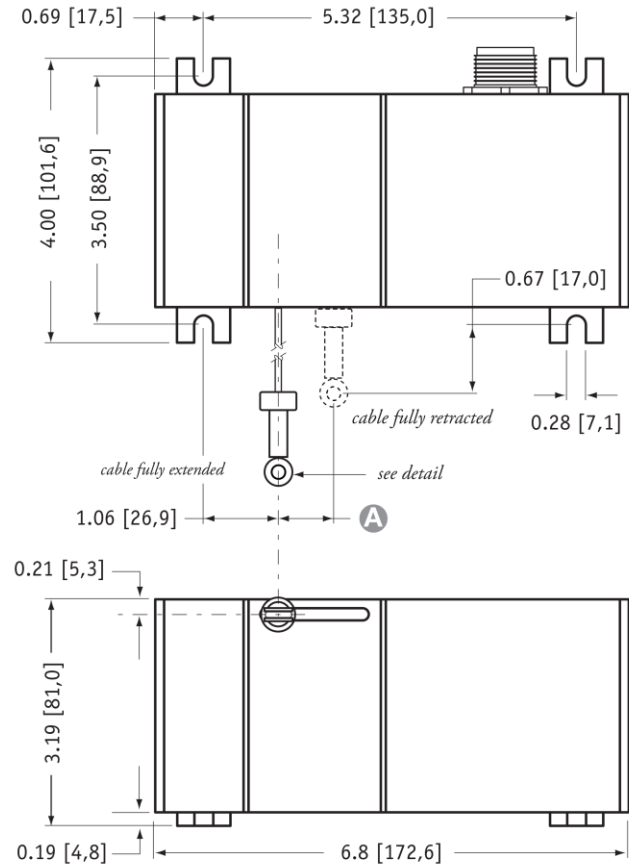
Enclosure hard anodized aluminum

Weight 5 lbs. max.

PT5AV

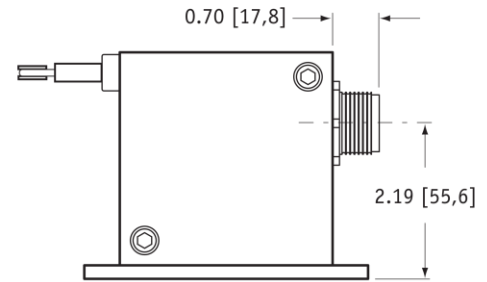
Industrial Grade • Position/Velocity Output

Outline Drawing



A DIMENSION (inches[mm])

RANGE	N34	S47 & V62
	measuring cable	measuring cable
10	0.05 [1,2]	0.08 [2,0]
15	0.07 [1,8]	0.12 [3,0]
20	0.09 [2,4]	0.16 [3,9]
30	0.14 [3,5]	0.23 [5,9]
40	0.19 [4,7]	0.31 [7,9]
50	0.23 [5,9]	0.39 [9,9]
60	0.28 [7,0]	0.47 [11,8]
80	0.37 [9,4]	0.62 [15,8]
100	0.46 [11,7]	0.78 [19,7]
125	0.58 [14,7]	0.97 [24,7]
150	0.69 [17,6]	1.16 [29,6]
200	0.92 [23,5]	n/a
250	1.16 [29,3]	n/a



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

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

Ordering Information

Model Number:

PT5AV - _____
order code: R A B C D

Sample Model Number:

PT5AV - 100 - N34 - FR - 500 - M6

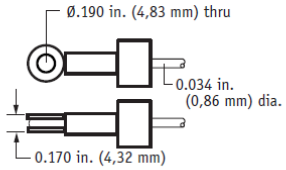
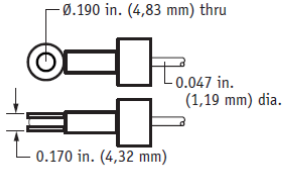
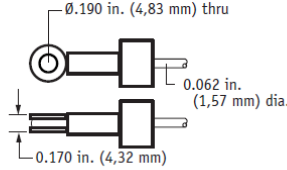
- R range: 100 inches
- A measuring cable: .034 nylon-coated stainless
- B cable exit: front
- C output signal: 500 ohm potentiometer
- D electrical connection: 6-pin plastic connector

Full Stroke Range:

R 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												120 in./sec • 2 g	

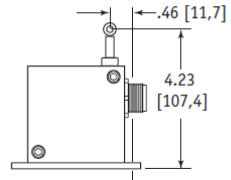
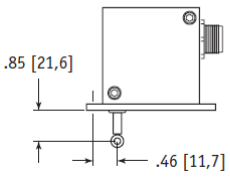
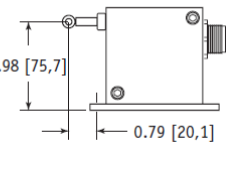
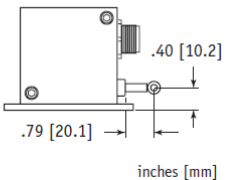
Measuring Cable:

A order code:

N34	S47	V62
.034 nylon-coated stainless steel available in all ranges	.047 stainless steel all ranges up to 150 inches	.062 thermoplastic all ranges up to 150 inches
		

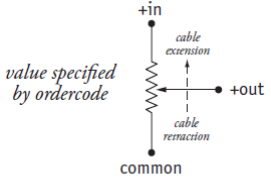
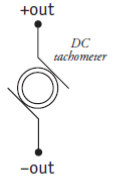
Cable Exit:

B order code:

UP up	DN down	FR front	BK back
			
inches [mm]			

Output Signals:

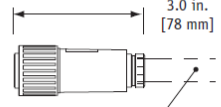
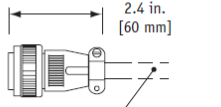

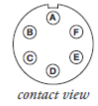
C order code:

	500	1K	5K	10K									
position sensing potentiometer:	500 ohms*	1000 ohms*	5000 ohms*	10,000 ohms*									
position sensing circuit	position circuit max input voltage & power rating		velocity sensing circuit										
	<table border="1"> <tr> <td></td> <td>10 to 30-inch range</td> <td>40 to 250-inch range</td> </tr> <tr> <td>500-ohms:</td> <td>20 V AC/DC (1 W)</td> <td>30 V AC/DC (2 W)</td> </tr> <tr> <td>1K to 10K-ohms:</td> <td>30 V AC/DC (1 W)</td> <td>30 V AC/DC (2 W)</td> </tr> </table>			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)		
	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)											

*-tolerance = ±10%

Electrical Connection:

D order code:

M6	M6M	C25																														
6-pin plastic connector with mating plug IP 67, NEMA 6	6-pin metal connector with mating plug IP 65, NEMA 4	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																															
6-pin mating plug: <table border="1"> <tr> <td>pin</td> <td>signal</td> <td rowspan="6">} position</td> </tr> <tr> <td>A</td> <td>+ in</td> </tr> <tr> <td>B</td> <td>common</td> </tr> <tr> <td>C</td> <td>+ out</td> </tr> <tr> <td>D</td> <td>-</td> </tr> <tr> <td>E</td> <td>- out</td> </tr> <tr> <td>F</td> <td>- out</td> <td>} velocity</td> </tr> </table> 		pin	signal	} position	A	+ in	B	common	C	+ out	D	-	E	- out	F	- out	} velocity	25-ft. instrumentation cable: <table border="1"> <tr> <td>color</td> <td>signal</td> <td rowspan="3">} position</td> </tr> <tr> <td>red</td> <td>+ in</td> </tr> <tr> <td>black</td> <td>common</td> </tr> <tr> <td>green</td> <td>+ out</td> <td rowspan="3">} velocity</td> </tr> <tr> <td>white</td> <td>+ out</td> </tr> <tr> <td>brown</td> <td>- out</td> </tr> </table>	color	signal	} position	red	+ in	black	common	green	+ out	} velocity	white	+ out	brown	- out
pin	signal	} position																														
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PT5AV

Industrial Grade • Position/Velocity Output
