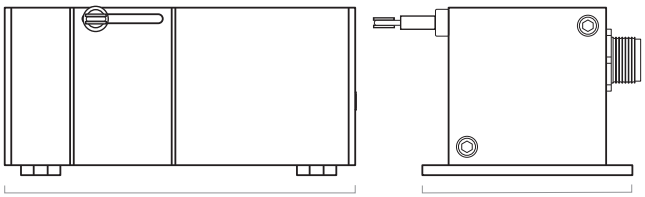
PT5AV

Industrial Grade • Position/Velocity Output

Linear Position/Velocity to 250 inches (6350 mm)
Hard Anodized Aluminum Enclosure
High Cycle Applications
IP67 • NEMA 6 Protection



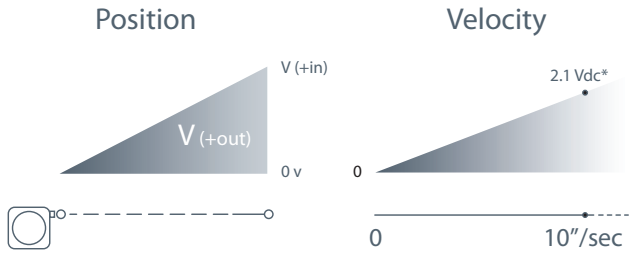


GENERAL	
Full Stroke Range Options	0-10 to 0-250 inches
POSITION	
Output Signal	voltage divider (potentiometer)
Accuracy	see ordering information
Repeatability	see ordering information
Resolution	essentially infinite
Sensor	plastic-hybrid precision potentiometer
Potentiometer Cycle Life	see ordering 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 Acceleration	see ordering information
Sensor	tach generator
Input Voltage	none required
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
GENERAL	
Measuring Cable Options	stainless steel, nylon-coated or thermoplastic
Enclosure Material	hard anodized aluminum
Weight	5 lbs. max.
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

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.

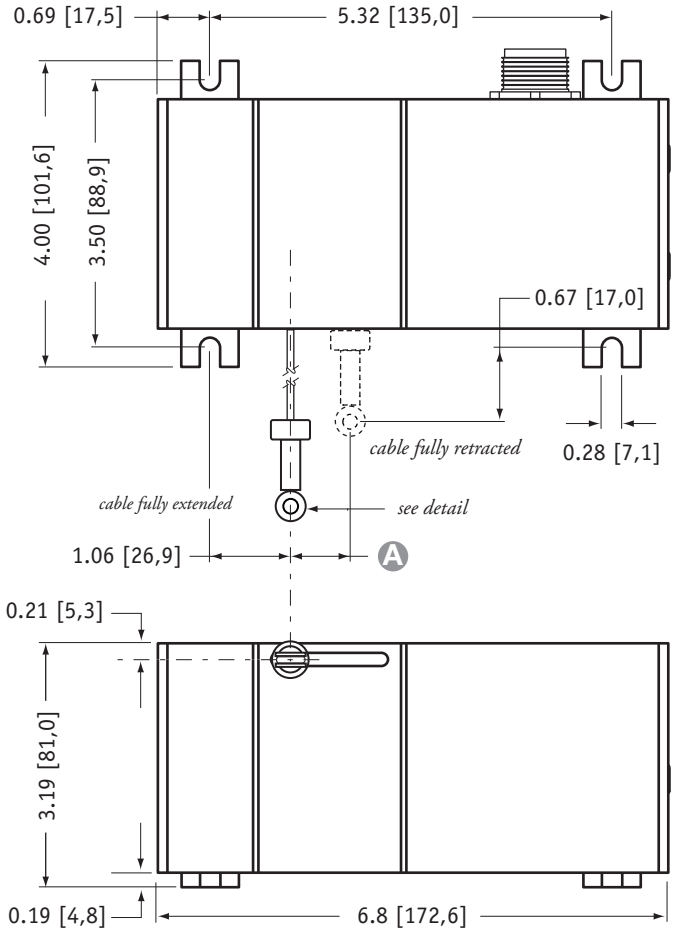
Output Signal:



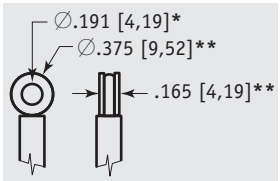
**velocity output rate = 354 mV ± 4% @ 100 inches per min.*

20630 Plummer Street • Chatsworth, CA 91311
tel: 800.423.5483 • +1.818.701.2750 • fax: +1.818.701.2799

Outline Drawing:

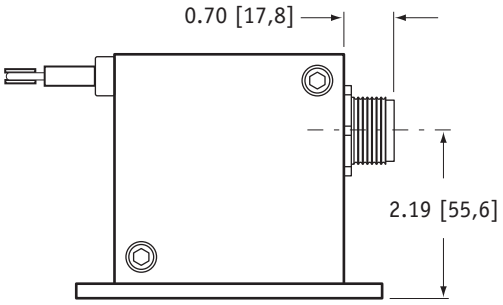


eyelet detail



A DIMENSION (inches[mm])

RANGE	N34 *measuring cable*	S47 & V62 *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:

Sample Model Number:

PT5AV - 100 - N34 - FR - 500 - M6

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

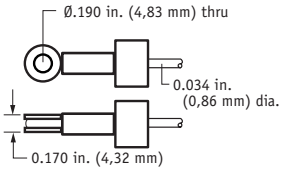
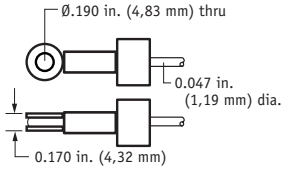
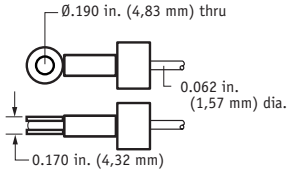
Full Stroke Range:

Ⓡ *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	

Ordering Information (cont.):

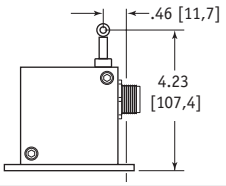
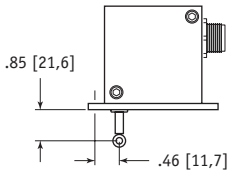
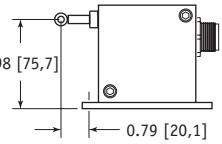
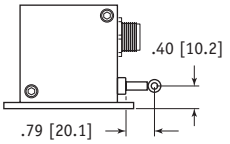
Measuring Cable:

Ⓐ 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:

Ⓑ order code:

UP	DN	FR	BK
up	down	front	back
			

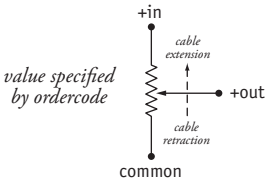
inches [mm]

Output Signals:

Ⓒ 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

	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)

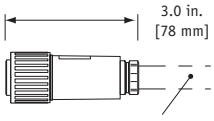
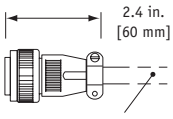
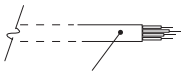
velocity sensing circuit



**–tolerance = ±10%*

Electrical Connection:

Ⓓ 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	25 ft. x 0.2-in. dia. [7,5 M x 5 mm dia.] 24 AWG, shielded

6-pin mating plug:

pin	signal	
A	+ in	position
B	common	position
C	+ out	position
D	-	
E	+ out	velocity
F	- out	velocity



contact view

25-ft. instrumentation cable:

color	signal	
red	+ in	position
black	common	position
green	+ out	position
white	+ out	velocity
brown	- out	velocity

version: **5.0** last updated: **March 19, 2014**