

Cable-Extension Position Transducer

Position and Velocity Output Signals
Ranges: 0-600 to 0-1700 inches
Industrial Grade

<Extended Range>

PT9301

Specification Summary:

GENERAL

Full Stroke Range Options—on this datasheet 0-600 to 0-1700 inches

POSITION

Output Signal voltage divider (potentiometer)
 Accuracy $\pm 0.10\%$ full stroke
 Repeatability $\pm 0.02\%$ full stroke
 Resolution *essentially infinite*
 Sensor plastic-hybrid precision potentiometer
 Potentiometer Cycle Life 250,000, min. —before signal degradation can occur
 Input Resistance Options 500, 1K, 5K or 10K Ω —see ordering information
 Power Rating, Watts 2.0 at 70°F derated to 0 at 250° F
 Recommended Maximum Input Voltage 30V (AC/DC)
 Output Signal Change Over Full Stroke Range 94% $\pm 4\%$ of input voltage

VELOCITY

Output Signal DC tachometer output
 Linearity better than $\pm 0.10\%$ of output at any velocity
 Repeatability $\pm 0.10\%$ of reading
 Maximum Velocity • Retraction Acceleration see ordering information
 Sensor tach generator
 Input Voltage none required
 Output Voltage @ 100 inches per minute 361 mV $\pm 3\%$
 Output Impedance 350 ohms $\pm 10\%$
 Output Ripple (for velocity ≥ 1.29 inches per second) $\pm 3\%$ rms

GENERAL

Measuring Cable nylon-coated stainless steel
 Enclosure Material powder-painted aluminum or stainless steel
 Weight, Aluminum (Stainless Steel) Enclosure 14 lbs. (28 lbs.) max.

ENVIRONMENTAL

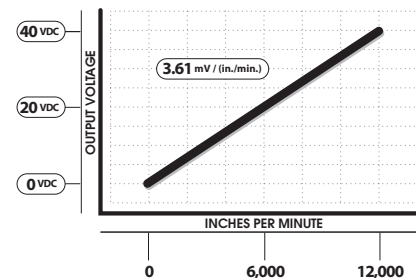
Enclosure NEMA 4/4X/6, IP 67/68
 Operating Temperature -40° to 200°F (-40° to 90°C)
 Vibration up to 10 G's to 2000 Hz maximum



The PT9301 is a combination position and velocity transducer for demanding long-range applications requiring a linear position measurements in ranges up to 1700". 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.

As a member of Celesco's innovative family of NEMA-4 rated cable-extension transducers, the PT9301 offers numerous benefits. It installs in minutes, functions properly without perfectly parallel alignment, and when its cable is retracted, it measures only 6".

Velocity Output Signal



Ordering Information:

Model Number:

PT9301 - - **1** - **1** - **0**
order code: R A B C D E F G

Sample Model Number:

PT9301 - 1200 - 111 - 1110

- R** range: 1200 inches
- A** enclosure: aluminum
- C** cable exit: front
- D** output signal: 500 ohm position / DC tachometer velocity
- F** electrical connection: 6-pin plastic connector

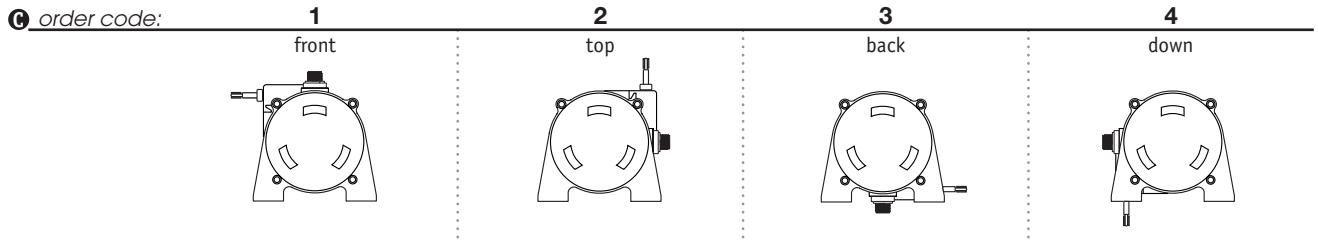
Full Stroke Range:

R order code:	0600	0800	1000	1200	1500	1700
full stroke range, min:	600 in.	800 in.	1000 in.	1200 in.	1500 in.	1700 in.
cable tension (±35%):	27 oz.	24 oz.	20 oz.	19 oz.	18 oz.	17 oz.
measuring cable:	.034-in. dia. nylon-coated stainless	.019-in. dia. nylon-coated stainless	.019-in. dia. nylon-coated stainless	.019-in. dia. nylon-coated stainless	.014-in. dia. nylon-coated stainless	.014-in. dia. nylon-coated stainless

Enclosure Material:

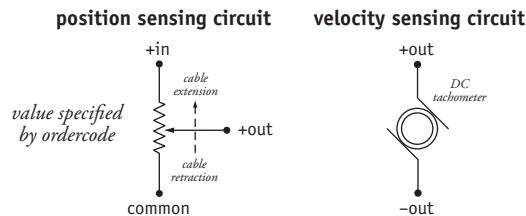
A order code:	1	3
enclosure material:	powder-painted aluminum	303 stainless steel
max. acceleration:	1G	.33G
max. velocity:	60 inches/sec.	20 inches/sec.

Cable Exit:



Output Signals:

D order code:	1	2	3	4
position sensing potentiometer:	500 ohms*	1000 ohms*	5000 ohms*	10,000 ohms*



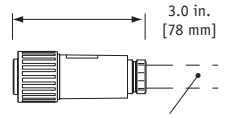
*-tolerance = ±10%

Ordering Information:

Electrical Connection:

① order code:

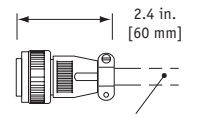
1
6-pin plastic connector with mating plug
IP 67, NEMA 4X*, 6



3.0 in. [78 mm]

1/2 - 5/16" [14 - 8 mm] cable dia.
16 AWG max conductor size connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S

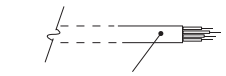
3
6-pin metal connector with mating plug
IP 65, NEMA 4



2.4 in. [60 mm]

3/8-in. [9 mm] max cable dia.
16 AWG max conductor size connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S

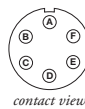
4
25-ft. instrumentation cable
24 AWG, shielded
IP 67, NEMA 6



25 ft. x 0.2-in. dia. [7.5 M x 5 mm dia.]
24 AWG, shielded

6-pin mating plug:

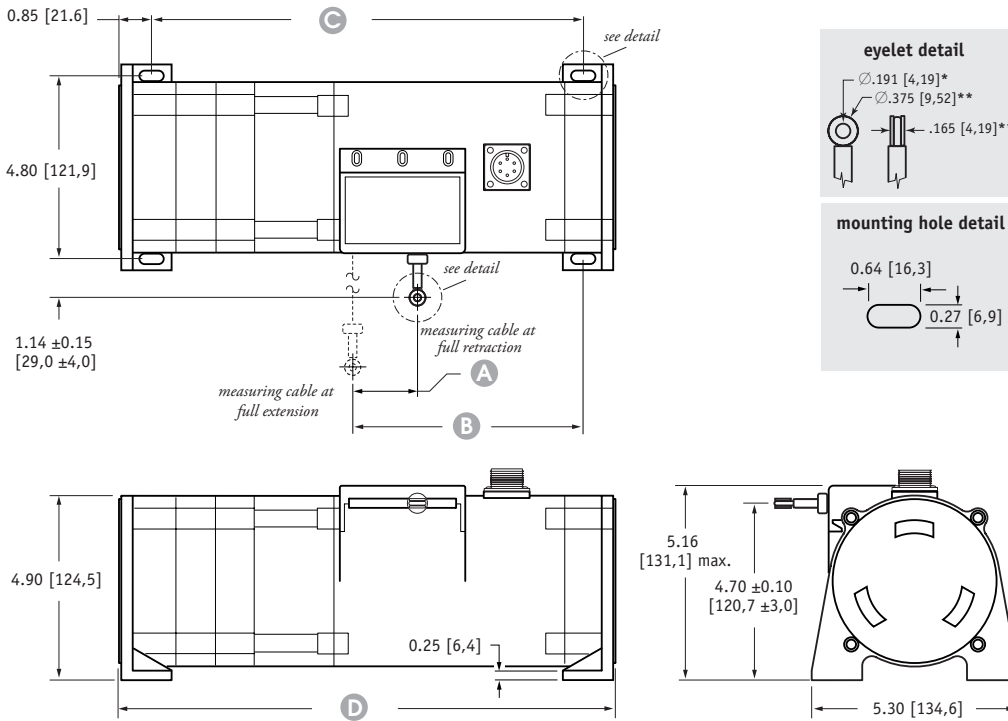
pin	signal	} position
A	+ in	
B	common	
C	+ out	
D	-	
E	+ out	} velocity
F	- out	



25-ft. instrumentation cable:

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

Outline Drawing



*-applies to stainless steel enclosure only

	full stroke range					
	600 in.	800 in.	1000 in.	1200 in.	1500 in.	1700 in.
A	1.76 [44,7]	1.58 [40,1]	1.98 [50,2]	1.49 [37,8]	1.86 [47,2]	2.11 [53,6]
B	4.52 ±0.15 [114,8 ±4,0]			5.46 ±0.15 [138,7 ±4,0]		
C	10.40 ±0.08 [264,2 ±2,0]			11.34 ±0.08 [288,0 ±2,0]		
D	12.15 [308,6] max.			13.09 [332,5] max.		

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]

version: 4.0 last updated: September 6, 2011

PT9301 Extended Range | 174