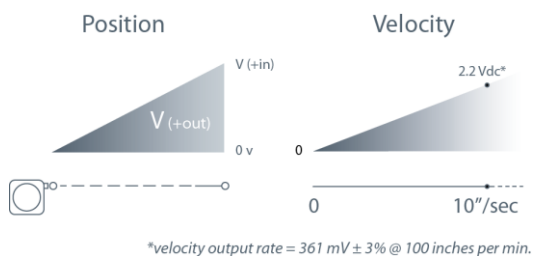


The PT9301 is a combination position and velocity transducer for demanding long-range applications requiring a linear position measurements in ranges up to 1700". A precision plastic-hybrid potentiometer provides accurate position feedback while a self-generating DC tachometer provides a velocity signal 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".

### Output Signal



## PT9301 (Extended Range)

### Cable Actuated Sensor

### Extended Ranges • Position/Velocity Output

**Linear Position/Velocity to 1700 inches (4300 cm)**

**Stroke Range Options: 0-600 to 0-1700 inches**

**VLS Option to Prevent Free-Release Damage**

**IP68 • NEMA 6 Protection**

### General

<b>Full Stroke Range</b>	0-600 to 0-1700 inches
<b>Measuring Cable</b>	stainless steel or thermoplastic
<b>Enclosure Material</b>	powder-painted aluminum
<b>Sensor, Position</b>	plastic-hybrid precision potentiometer
<b>Sensor, Velocity</b>	DC tach generator
<b>Potentiometer Cycle Life</b>	≥ 250,000 cycles
<b>Maximum Retraction</b>	see ordering information
<b>Acceleration</b>	
<b>Maximum Velocity</b>	see ordering information
<b>Weight, Aluminum (Stainless Steel) Enclosure</b>	14 lbs. (28 lbs.), max.

### Position

<b>Output Signal</b>	voltage divider (potentiometer)
<b>Accuracy</b>	± 0.10% full stroke
<b>Repeatability</b>	± 0.02% full stroke
<b>Resolution</b>	essentially infinite
<b>Sensor, Position</b>	plastic-hybrid precision potentiometer
<b>Potentiometer Cycle Life</b>	≥250,000
<b>Input Resistance Options</b>	500, 1K, 5K or 10K Ω (see ordering information)
<b>Power Rating, Watts</b>	2.0 at 70°F derated to 0 at 250°F
<b>Recommended Maximum Input Voltage</b>	30V (AC/DC)
<b>Output Signal Change Over Full Stroke Range</b>	94% ±4% of input voltage

### Velocity

<b>Output Signal</b>	DC tachometer output
<b>Linearity</b>	better than ±0.10% of output at any velocity
<b>Repeatability</b>	±0.10% of reading
<b>Sensor</b>	tach generator
<b>Input Voltage</b>	none required
<b>Output Voltage @ 100 inches per minute</b>	361 mV ±3%
<b>Output Impedance</b>	350 ohms ±10%
<b>Output Ripple (for velocity ≥ 1.29 inches per second)</b>	±3% rms

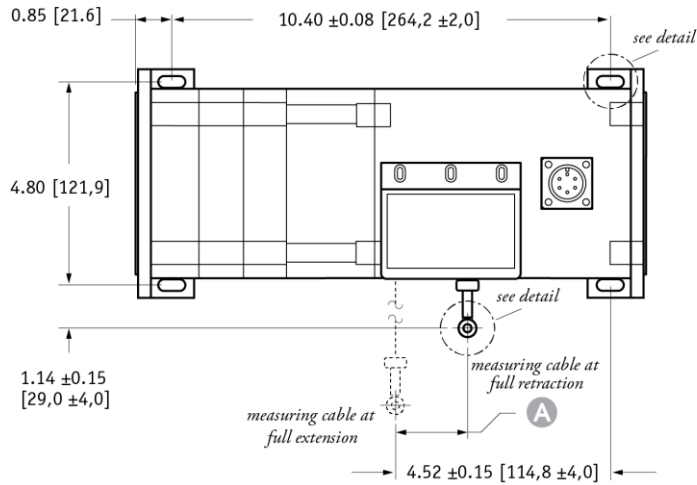
### Environmental

<b>Enclosure</b>	NEMA 4/4X/6, IP 67
<b>Operating Temperature</b>	-40° to 200°F (-40° to 90°C)
<b>Vibration</b>	up to 10 g to 2000 Hz maximum

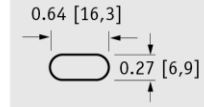
# PT9301

Position/Velocity Output • Extended Ranges

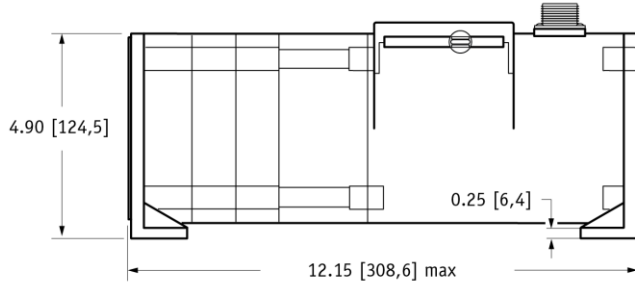
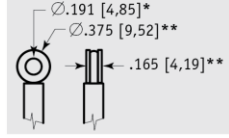
## Outline Drawing



### mounting hole detail

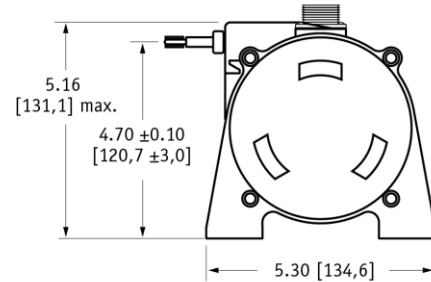


### eyelet detail



### A DIMENSION

RANGE	inches [mm]
600	1.76 [44,7]
800	1.58 [40,1]
1000	1.98 [50,2]
1200	1.98 [50,2]
1500	1.86 [47,2]
1700	2.11 [53,6]



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:

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

Sample Model Number:

**PT9301 - 1200 - 111 - 1110**

- R** range: 1200 inches
- B** measuring cable: nylon-coated stainless
- C** cable exit: front
- D** output signal: 500 ohm position / DC tachometer velocity
- F** electrical connection: 6-pin plastic connector

### Full Stroke Range:

<b>R</b> 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:

<b>B</b> order code:	1	2
cable construction:	nylon-coated stainless steel rope*	bare stainless steel rope*
general use:	indoor	outdoor, debris, high temperature

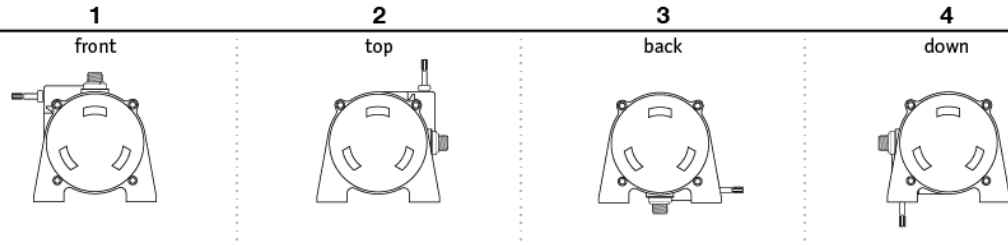
*cable diameter:	stroke range:	0600	0800	1000	1200	1500	1700
	nylon-coated stainless:	.034 in.	.019 in.	.019 in.	.019 in.	.014 in.	.014 in.
bare stainless:	.031 in.	.018 in.	.018 in.	.018 in.	.015 in.	.015 in.	

# PT9301

Position/Velocity Output • Extended Ranges

## Cable Exit:

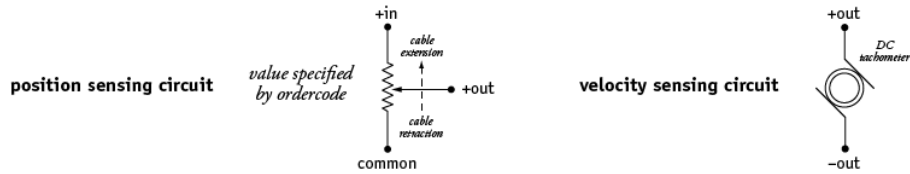
① order code:



## Output Signals:

① order code:

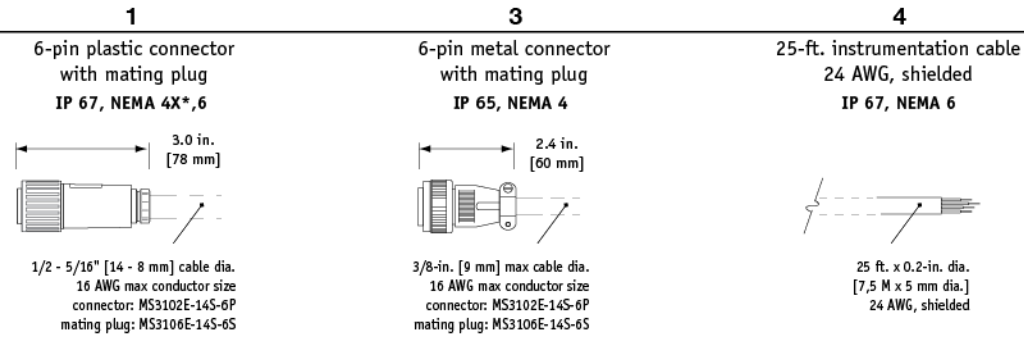
	1	2	3	4
position sensing potentiometer:	500 ohms*	1000 ohms*	5000 ohms*	10,000 ohms*



\*tolerance = ±10%

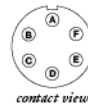
## Electrical Connection:

① order code:



### 6-pin mating plug:

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



### 25-ft. instrumentation cable:

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

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PT9301 Extended Range 12/01/2015