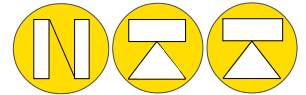




# Cable-Extension Position Transducer



- ▼ Medium to Long Range
- ▼ Industrial Grade
- ▼ **Position and Velocity Transducer**

# PT9301

## Specification Summary:

Full Stroke Ranges-on this datasheet ..... 0-4m / 0-14m see ① next page

**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

Input Resistance ..... 500, 1K, 5K, and 10K ohms  $\pm 10\%$ , see ⑦

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%  $\pm 3\%$  of input voltage

**VELOCITY**

Output Signal ..... 361 mV DC @ 100 IPM

Linearity ..... better than  $\pm 0.10\%$  of output at any velocity

Repeatability .....  $\pm 0.10\%$  of reading

Maximum velocity ..... see ④

Sensor ..... tach generator

Input Voltage ..... none

Output Voltage @ 100 IPM ..... 361 mV

Output Impedance ..... 350 ohm  $\pm 10\%$

Output Ripple .....  $\leq 3\%$  of velocity output (for velocity outputs  $\geq 280$  mV)

**GENERAL**

Measuring Cable ..... nylon-coated stainless steel or thermoplastic, see ⑥

Enclosure Material ..... powder-painted aluminum or stainless steel, see ②

Maximum Retraction Acceleration ..... see ⑤

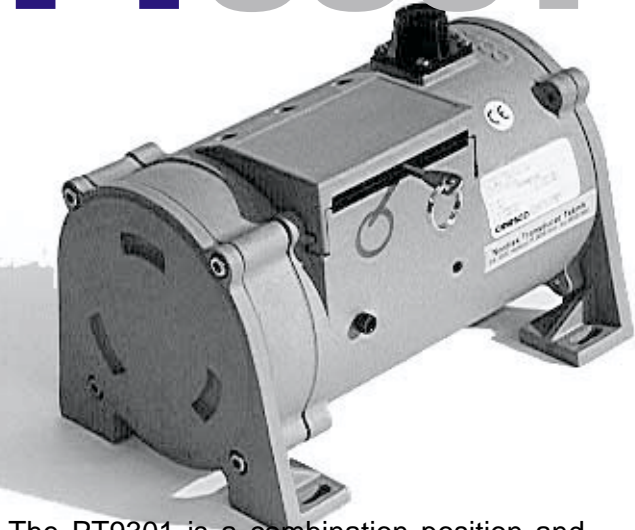
Weight, Aluminum (Stainless Steel) Enclosure ..... 4 kg ( 7kg), max.

**ENVIRONMENTAL**

Enclosure Design ..... NEMA 4/4X, IP 65/67/68, see ⑧ and ⑨

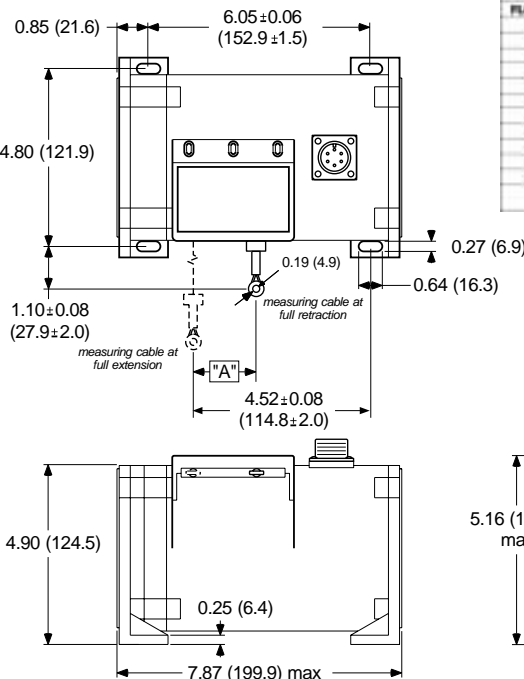
Operating Temperature .....  $-10^\circ$  to  $60^\circ\text{C}$

Vibration ..... up to 10 G's to 2000 Hz maximum



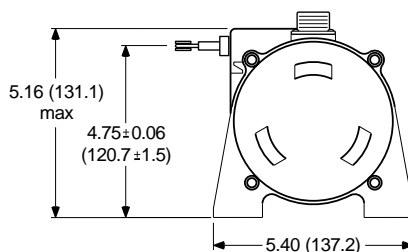
The PT9301 is a combination position and velocity transducer for demanding long-range applications requiring a linear position measurements in ranges up to 1700". A precision plastic-hybrid potentiometer provides accurate position feedback while a self-generating DC tachometer provides a velocity signal 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, works without perfect parallel alignment, and when it's stainless-steel cable is retracted, it measures only 6".

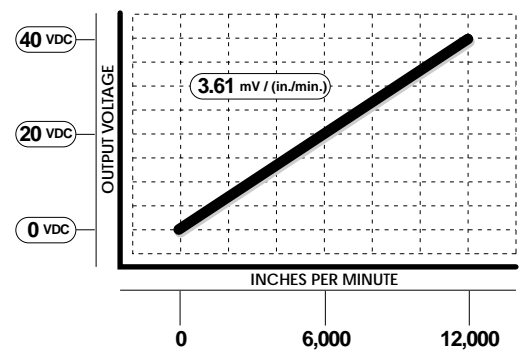


RANGE	"A" DIMENSION MEASURING CABLE DIAMETER		
	0.034 in.	0.047 in.	0.062 in.
75	0.22	0.29	0.37
100	0.29	0.39	0.49
150	0.44	0.55	0.73
200	0.58	0.79	0.98
250	0.73	0.94	1.29
350	0.88	1.15	1.47
350	1.02	1.39	1.71
400	1.17	1.57	1.98
450	1.31	1.77	N/A
500	1.45	1.97	N/A
550	1.61	N/A	N/A

UNITS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

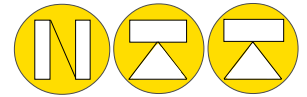


## Velocity Output Signal:





# PT9301 • Cable-Extension Transducer • Position and Velocity Transducer



## ▼ Ordering Information

### Model Number:

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

### Full Stroke Range:

<b>R</b> <i>order code:</i>	<b>0075</b>	<b>0100</b>	<b>0150</b>	<b>0200</b>	<b>0250</b>	<b>0300</b>
① full stroke range, min:	75 inches	100 inches	150 inches	200 inches	250 inches	300 inches
<b>R</b> <i>order code:</i>	<b>0350</b>	<b>0400</b>	<b>0450*</b>	<b>0500*</b>	<b>0550*</b>	
full stroke range, min:	350 inches	400 inches	450 inches	500 inches	550 inches	

*note: \*42 oz. cable tension (see ③ below) for these ranges is strongly recommended!*

### Enclosure Material and Measuring Cable Tension:

<b>A</b> <i>order code:</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
enclosure:	see front page	refer to supplement 9-A	see front page	refer to supplement 9-A
② enclosure material:	powder-painted aluminum		303 stainless steel	
③ cable tension (±30%):	26 oz.	42 oz.	26 oz.	42 oz.
④ maximum velocity:	60 inches per second	200 inches per second	20 inches per second	80 inches per second
⑤ max. retraction acceleration:	1 G	5 G's	0.33 G	2 G's

### Measuring Cable:

<b>B</b> <i>order code:</i>	<b>1*</b>	<b>2**</b>	<b>3***</b>
⑥ cable construction:	nylon-coated stainless steel	stainless steel	thermoplastic

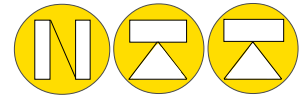
*notes:*                      \*available in all ranges                      \*\*available in ranges up to 500-inches only                      \*\*\*available in ranges up to 400-inches only

### Cable Exit:

<b>G</b> <i>order code:</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
direction:	front	top	rear	bottom



# PT9301 • Cable-Extension Transducer • Position and Velocity Transducer

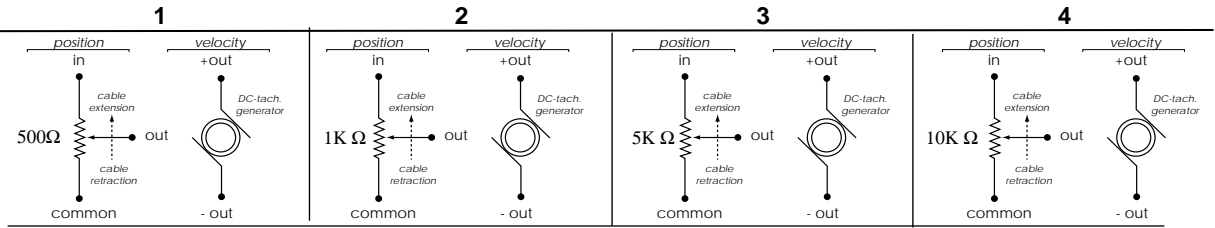


## Output Signals:

① order code:

position & velocity circuits:

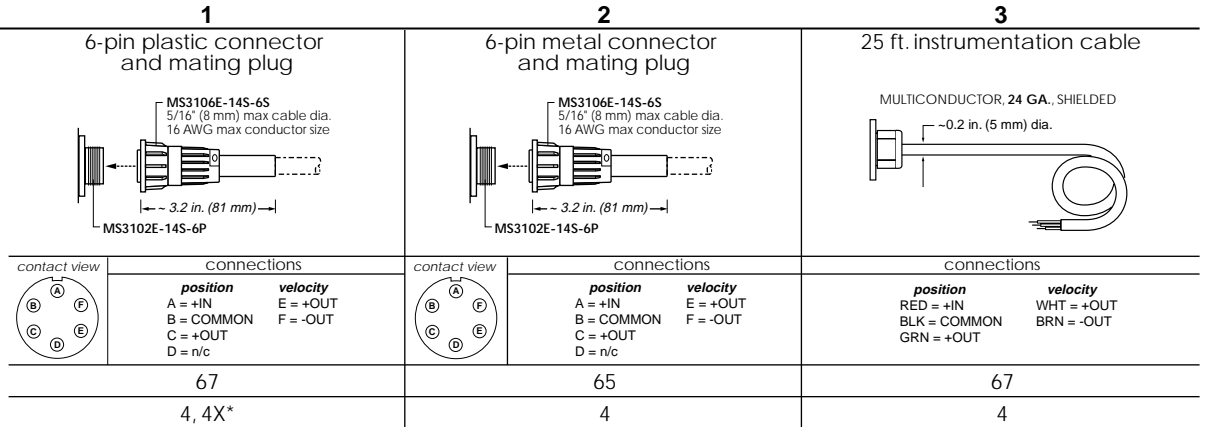
⑦



## Electrical Connection:

① order code:

electrical connection:



⑧

⑨

note: \*applies to stainless steel enclosure, see ②

## ▼ Sample Model Number

**PT9301-0200 - 1 1 1 - 1 1 1 0**  
order code: ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

Specifications: Full Stroke Range: 200 inches  
 Enclosure Material: powder-painted aluminum  
 Measuring Cable: 0.034-in dia. nylon coated stainless steel cable  
 Cable Exit: front  
 Output Signals: DC tachometer generated velocity signal and 500 ohm potentiometer for position  
 Electrical Connection: 6-pin plastic connector

