

# Cable-Extension Position Transducer

0...5, 0...10 VDC Output Options

Ranges: 0-2 to 0-100 inches

Instrument Grade



# PT510



## Specification Summary:

### GENERAL

Full Stroke Range Options ..... 0-2 to 0-100 inches  
 Output Signal Options ..... 0...5, 0...10 VDC  
 Accuracy .....  $\pm 0.28\%$  to  $\pm 0.15\%$  full stroke *see ordering information*  
 Repeatability .....  $\pm 0.05\%$  full stroke  
 Resolution ..... essentially infinite  
 Measuring Cable  
   with standard tension ..... 0.019-in. dia. nylon-coated stainless steel  
   with increased or high tension ..... 0.024-in. dia. nylon-coated stainless steel  
 Enclosure Material ..... powder-painted and anodized aluminum  
 Sensor ..... plastic-hybrid precision potentiometer  
 Potentiometer Cycle Life ..... *see ordering information*  
 Maximum Retraction Acceleration ..... *see ordering information*  
 Weight ..... 2 lbs. max.

### ELECTRICAL

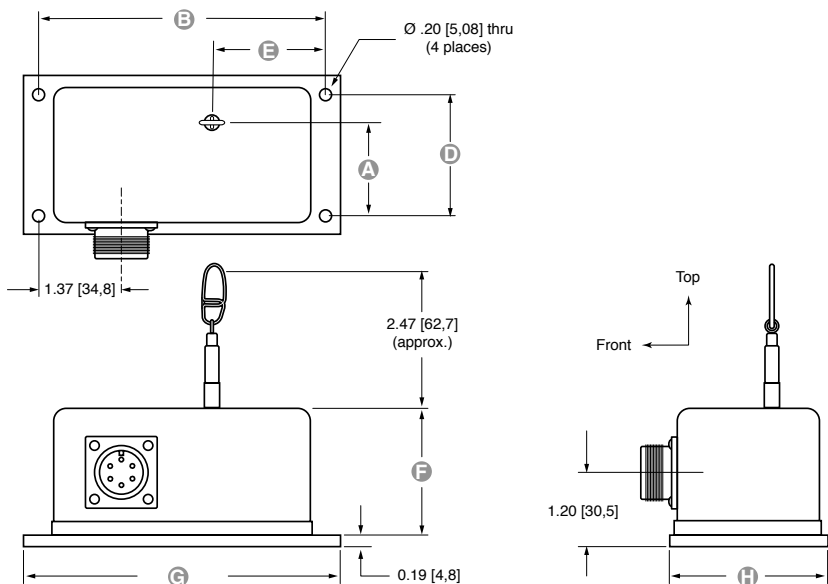
Input ..... *see ordering information*  
 Input Current ..... 10 mA maximum  
 Output Impedance ..... 1000 ohms  
 Maximum Load ..... 5000 ohms  
 Zero Adjustment ..... from factory set zero to 50% of full stroke range  
 Span Adjustment ..... to 50% of factory set span

### ENVIRONMENTAL

Enclosure ..... NEMA 1  
 Operating Temperature .....  $-40^{\circ}$  to  $200^{\circ}\text{F}$  ( $-40^{\circ}$  to  $90^{\circ}\text{C}$ )  
 Vibration ..... up to 10 G's to 2000 Hz maximum

The PT510 Cable-Extension Transducer provides a regulated 0-10V feedback signal that is linearly proportional to the position of a traveling stainless steel extension cable.

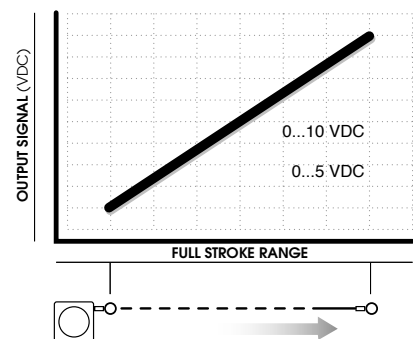
The PT510 installs in minutes by mounting its base to a fixed surface and attaching its cable to the movable object. The PT510 works without perfect parallel alignment, and when its stainless steel cable is retracted, its height is less than 5".



Range	A	F	D	E	F	G	H
2", 10", 20"	1.34 [34,0]	7.00 [177,8]	2.00 [50,8]	3.00 [76,2]	2.10 [53,3]	7.50 [190,5]	2.63 [66,8]
5", 25", 50"	1.85 [47,0]	7.00 [177,8]	2.00 [50,8]	3.00 [76,2]	2.10 [53,3]	7.50 [190,5]	2.63 [66,8]
15", 30"	1.51 [38,4]	7.00 [177,8]	2.00 [50,8]	3.00 [76,2]	2.10 [53,3]	7.50 [190,5]	2.63 [66,8]
40"	1.67 [42,4]	7.00 [177,8]	2.00 [50,8]	3.00 [76,2]	2.10 [53,3]	7.50 [190,5]	2.63 [66,8]
60"	2.19 [55,6]	7.00 [177,8]	2.37 [60,2]	2.81 [71,4]	2.60 [66,0]	7.50 [190,5]	3.25 [82,6]
75", 80"	2.52 [64,0]	6.75 [171,5]	2.50 [63,5]	2.37 [60,2]	2.86 [72,6]	7.50 [190,5]	3.63 [92,2]
100"	3.18 [80,8]	7.38 [187,5]	3.00 [76,2]	3.19 [81,0]	3.80 [96,5]	8.00 [203,2]	4.25 [108,0]

ALL DIMENSIONS ARE IN INCHES [MM] tolerances are  $\pm 0.02$  in. [ $\pm 0,5$ mm] unless otherwise noted

## Electrical Output Signal



**Ordering Information:**

**Model Number:**

PT510 - 1 - 1 - 0  
order code:      R      A      B      C      D      E      F      G

Sample Model Number:

**PT510 - 0025 - 111 - 1110**

- R** range: 25 inches
- A** measuring cable tension: standard - 5 oz.
- C** cable exit: top
- E** output signal: 0...10 VDC
- F** electrical connection: 6-pin plastic connector

**Full Stroke Range:**

<b>R</b> order code:	0002	0005	0010	0015	0020	0025	0030	0040	0050	0060	0075	0100
full stroke range, min:	2 in.	5 in.	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.	60 in.	75 in.	100 in.
accuracy (% of f.s.):	0.28%	0.28%	0.18%	0.18%	0.15%	0.18%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
potentiometer cycle life*:	2.5 x 10 <sup>6</sup>	2.5 x 10 <sup>6</sup>	5 x 10 <sup>5</sup>	5 x 10 <sup>5</sup>	5 x 10 <sup>5</sup>	5 x 10 <sup>5</sup>	5 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>

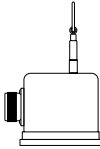
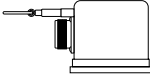
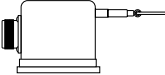
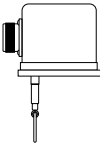
\*-1 cycle is defined as the travel of the measuring cable from full retraction to full extension and back to full retraction

**Measuring Cable Tension:**

<b>A</b> order code:	1	2**	3**
	standard tension* (max. acceleration)	increased tension*	high tension*
2, 10, 20 inch range:	12 oz. (11 G)	72 oz.	144 oz.
5, 25, 50 inch range:	5 oz. (2 G)	30 oz.	60 oz.
15, 30 inch range:	8 oz. (3 G)	48 oz.	96 oz.
40 inch range:	6 oz. (4 G)	36 oz.	72 oz.
60 inch range:	13 oz. (4 G)	26 oz.	52 oz.
75, 80 inch range:	10 oz. (3 G)	20 oz.	40 oz.
100 inch range:	13 oz. (5 G)	26 oz.	52 oz.





\*- tolerance: ±20%    \*\*-Options 2, 3 for re-orders only, Option 7 no longer available.

**Measuring Cable Exit:**



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

\*note: cable exit options 2, 3, 4 available for re-orders only!

**Sensing Circuit:**

<b>E</b> order code:	1	2	3	4
output signal options:	0...10 VDC 	0...5 VDC 	10...0 VDC 	5...0 VDC 
input voltage:	14.5 - 40 vdc	10.5 - 40 vdc	14.5 - 40 vdc	10.5 - 40 vdc

Example:

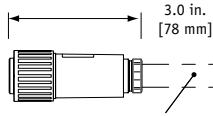
ordercode = **1** = 0...10 vdc {  = 0 vdc     = 10 vdc

**Ordering Information (cont.):**

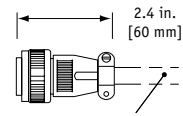
**Electrical Connection:**

**Order code:**

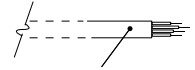
- |   |                            |   |  |
|---|----------------------------|---|--|
| <b>1</b><br>6-pin plastic connector<br>with mating plug | <b>2</b><br>terminal strip | <b>3</b><br>6-pin metal connector<br>with mating plug | <b>4</b><br>25-ft. instrumentation cable<br>24 AWG, shielded |
|---|----------------------------|---|--|



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



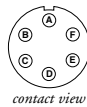
3/8-in. [9 mm] max cable dia.  
16 AWG max conductor size  
connector: MS3102E-14S-6P  
mating plug: MS3106E-14S-6S



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

**6-pin mating plug:**

pin	signal
A	input voltage
B	output signal
C	common



**25-ft. instrumentation cable:**

color code	signal
RED	input voltage
GREEN	output signal
BLACK	common