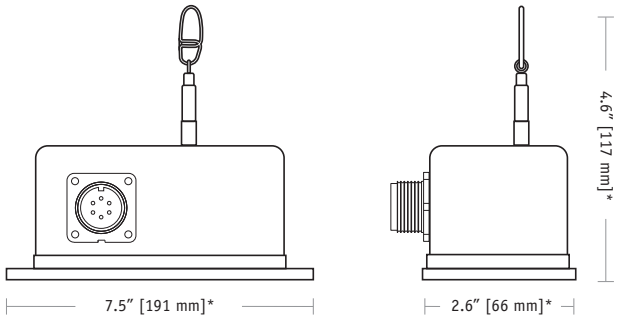
PT510

Instrument Grade • 0..5 Vdc / 0..10 Vdc

Absolute Linear Position • Classic Stringpot Design
Stroke Range Options: 0–2 to 0–100 inches
Powder Painted & Anodized Aluminum Enclosure
Industrial Automation & Testing Applications





**50-inch range model, dimensions may differ for other ranges*

GENERAL

Full Stroke Range Options	0-2 to 0-100 inches
Output Signal Options	0...5, 0...10 VDC
Accuracy	see ordering information
Repeatability	± 0.05% full stroke
Resolution	essentially infinite
Measuring Cable	see ordering information
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 Impedence	1000 ohms
Maximum Load	5000 ohms
Signal Adjustment, Zero	from factory set zero to 50% of full stroke range
Signal Adjustment, Span	to 50% of factory set span

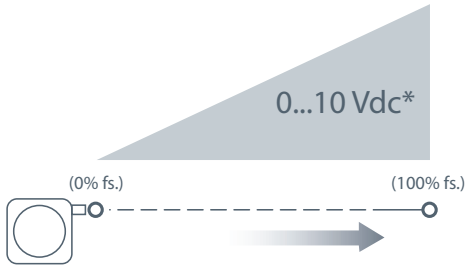
ENVIRONMENTAL

Enclosure	IP50, NEMA 1
Operating Temperature	-40° to 200°F (-40° to 90°C)
Vibration	up to 10 g to 2000 Hz maximum

Based on Celesco's original string pot design dating back to the late 1960's, the PT510 has become a standard throughout the years for literally thousands of applications including aircraft structural testing, hydraulic cylinder control, valve stem opening, and factory automation.

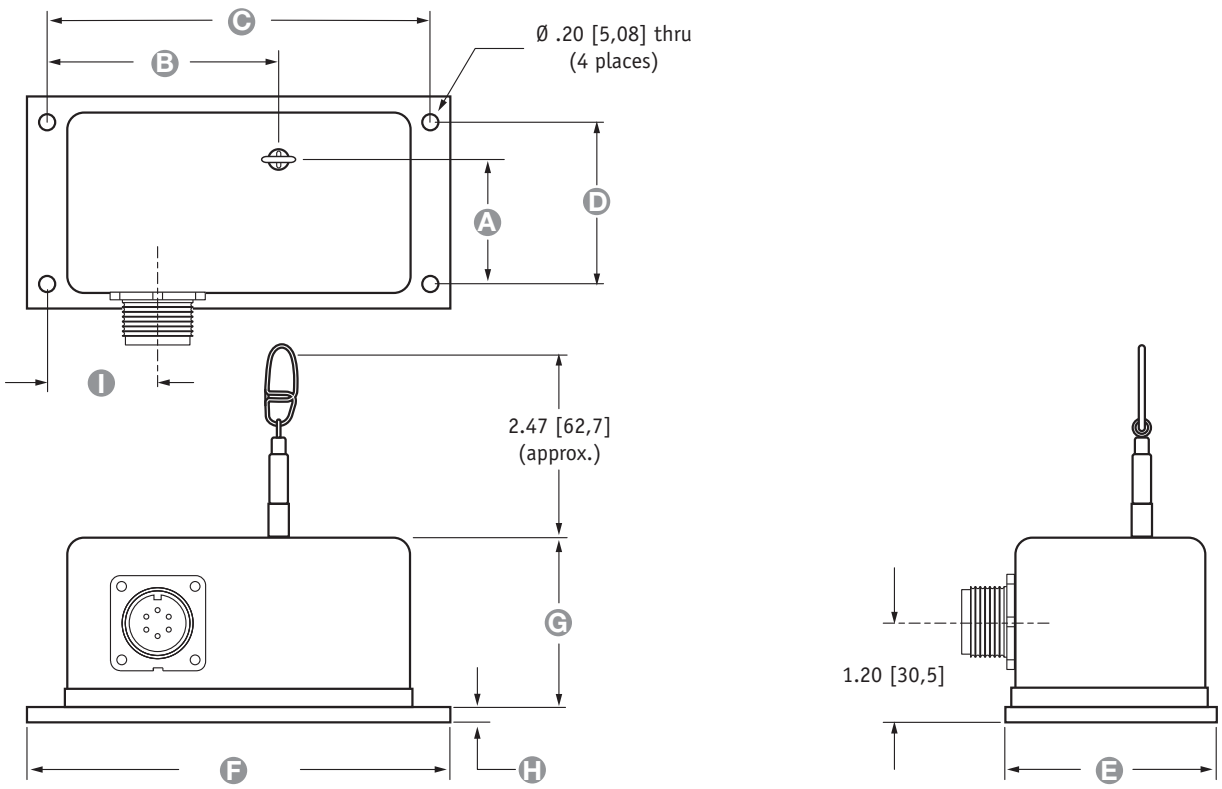
Available in full stroke ranges up to 100-inches, the PT510 provides a regulated voltage feedback signal linearly proportional to the position of its traveling stainless steel measuring cable. Output signal options include 0-5 and 0-10 vdc.

Electrical Output Signal



**Additional Output Options: 0...5, ⁻5...⁺5, ⁻10...⁺10 Vdc*

Fig. 1, Top Exit:



ALL DIMENSIONS ARE IN **INCHES [MM]** • tolerances are ±0.02 in. [±0,5mm]

Range	A	B	C	D	E	F	G	H	I
2", 10", 20"	1.34 [34,0]	4.00 [101,6]	7.00 [177,8]	2.00 [50,8]	2.63 [66,8]	7.50 [190,5]	2.10 [53,3]	.16 [4,1]	1.37 [34,8]
5", 25", 50"	1.83 [46,5]	4.00 [101,6]	7.00 [177,8]	2.00 [50,8]	2.63 [66,8]	7.50 [190,5]	2.10 [53,3]	.16 [4,1]	1.37 [34,8]
15", 30"	1.56 [39,6]	4.00 [101,6]	7.00 [177,8]	2.00 [50,8]	2.63 [66,8]	7.50 [190,5]	2.10 [53,3]	.16 [4,1]	1.37 [34,8]
40"	1.64 [41,6]	4.00 [101,6]	7.00 [177,8]	2.00 [50,8]	2.63 [66,8]	7.50 [190,5]	2.10 [53,3]	.16 [4,1]	1.37 [34,8]
60"	2.16 [54,9]	4.19 [106,4]	7.00 [177,8]	2.37 [60,2]	3.25 [82,5]	7.50 [190,5]	2.60 [66,0]	.19 [4,8]	1.37 [34,8]
75", 80"	2.45 [62,2]	4.38 [111,3]	6.75 [171,4]	2.50 [63,5]	3.63 [92,2]	7.50 [190,5]	2.86 [72,6]	.19 [4,8]	1.37 [34,8]
100"	3.10 [78,7]	4.19 [106,4]	7.38 [187,5]	3.00 [76,2]	4.25 [108,0]	8.00 [203,2]	3.79 [96,3]	.19 [4,8]	3.69 [93,7]

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:

R 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*:	2.5×10^6	2.5×10^6	5×10^5	5×10^5	5×10^5	5×10^5	5×10^5	2.5×10^5	2.5×10^5	2.5×10^5	2.5×10^5	2.5×10^5

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

Ordering Information (cont.):

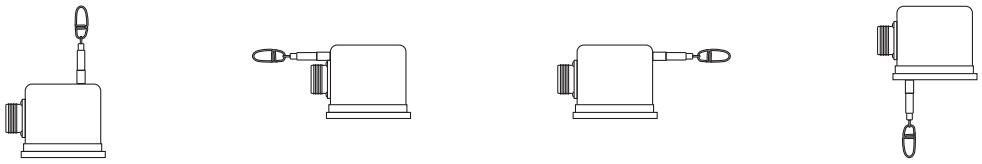
Measuring Cable Tension:

Ⓐ order code:	1		H		2*	3*
	standard tension		high tension		*note – outline dimensions for these options are not controlled on this datasheet!	
	tension, ±20%	*max acceleration*	*tension, ±40%*	*max acceleration*		
2, 10, 20 inch range:	12 oz.	11 g	65 oz.	53 g	72 oz.	144 oz.
5, 25, 50 inch range:	5 oz.	2 g	26 oz.	11 g	30 oz.	60 oz.
15, 30 inch range:	8 oz.	3 g	43 oz.	23 g	48 oz.	96 oz.
40 inch range:	6 oz.	4 g	33 oz.	16 g	36 oz.	72 oz.
60 inch range:	13 oz.	4 g	22 oz.	8 g	26 oz.	52 oz.
75, 80 inch range:	10 oz.	3 g	31 oz.	12 g	20 oz.	40 oz.
100 inch range:	13 oz.	5 g	52 oz.	20 g	26 oz.	52 oz.
measuring cable:	.019-in. dia. nylon-coated stainless steel				.024-in. dia. stainless steel	

Reorder Only

Measuring Cable Exit:

Ⓒ order code:	1	2	3	4
	top exit (see fig. 1)	front exit*	rear exit*	bottom exit*



–note: dimensions for optional cable exits not controlled on this datasheet, please contact factory

Sensing Circuit:

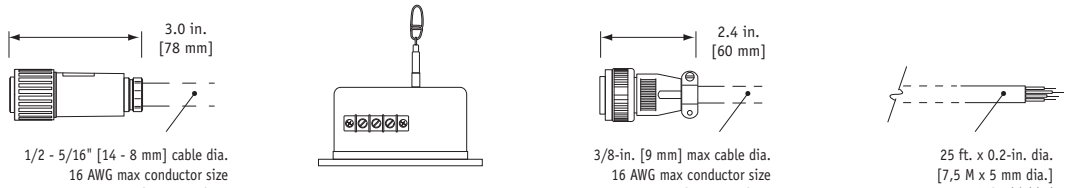
Ⓓ order code:	1	2	3	4
output signal options:	0...10 VDC	0...5 VDC	10...0 VDC	5...0 VDC
input voltage:	14.5 - 40 vdc	10.5 - 40 vdc	14.5 - 40 vdc	10.5 - 40 vdc

Example:

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

Electrical Connection:

Ⓕ order code:	1	2	3	4
	6-pin plastic connector with mating plug	terminal strip	6-pin metal connector with mating plug	25-ft. instrumentation cable 24 AWG, shielded



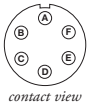
1/2 - 5/16" [14 - 8 mm] cable dia.
16 AWG max conductor size
connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S

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

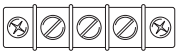
6-pin mating plug:

pin	signals
A	input voltage
B	output signal
C	common



contact view

Terminal Strip:



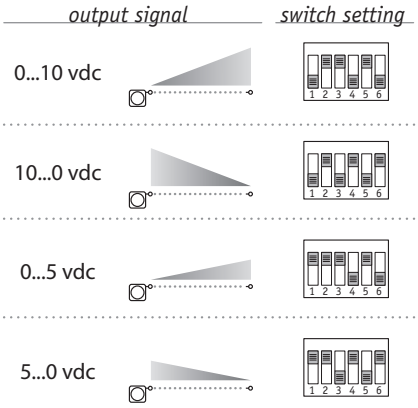
terminal	signals
1	input voltage
2	output signal
3	common

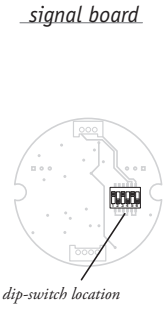
25-ft. instrumentation cable:

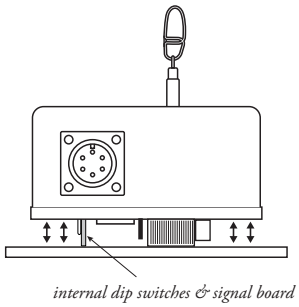
color code	signals
RED	input voltage
BLACK	common
GREEN	output signal

Output Signal Selection:

The output signal direction can be reversed at any time by simply changing the dip-switch settings found on the internal signal board. After the settings have been changed, adjustment of the Zero and Span trimpots will be required to precisely match signal values to the beginning and end points of the stroke.







To gain access to the signal board, remove the two 4-40 screws on top and lift up cover.

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