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0...5, 0...10 VDC Output Options
Ranges: 0-2 to 0-100 inches
Instrument Grade

PT510

CE



Specification Summary:

GENERAL

Full Stroke Range Options ..... 0-2 to 0-100 inches
Output Signal Options ..... 0...5, 0...10 VDC
Accuracy ..... ± 0.28% to ±0.15% full stroke *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.

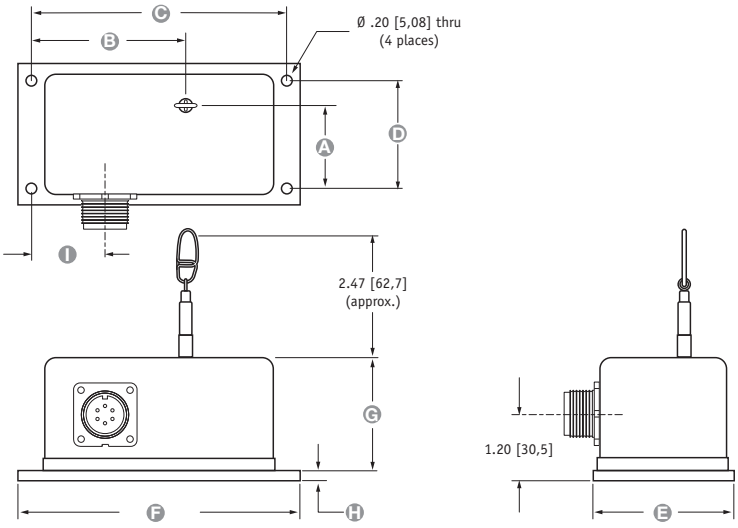
ELECTRICAL

Input ..... *see ordering information*
Input Current ..... 10 mA maximum
Output Impedence ..... 1000 ohms
Maximum Load ..... 5000 ohms
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° to 200°F (-40° to 90°C)
Vibration ..... up to 10 G's to 2000 Hz maximum

fig. 1: Top Exit Option



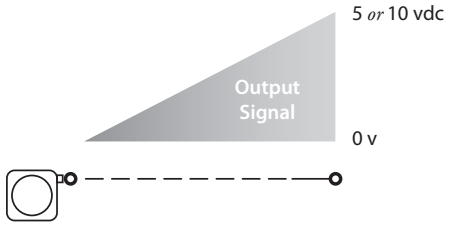
Range	A	B	C	D	E	F	G	H	I
2", 10", 20"	1.34 [34,0]	4.00 [101,6]	7.00 [177,8]	2.00 [50,8]	2.63 [66,8]	7.50 [190,5]	2.10 [53,3]	.16 [4,1]	1.37 [34,8]
5", 25", 50"	1.83 [46,5]	4.00 [101,6]	7.00 [177,8]	2.00 [50,8]	2.63 [66,8]	7.50 [190,5]	2.10 [53,3]	.16 [4,1]	1.37 [34,8]
15", 30"	1.56 [39,6]	4.00 [101,6]	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]

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

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



Ordering Information:

Model Number:

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

Sample Model Number:
PT510 - 0025 - 111 - 1110

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

Full Stroke Range:

Ⓡ 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*

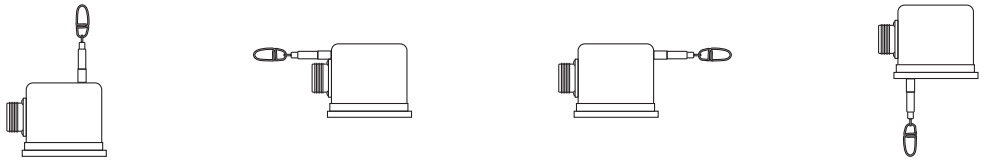
Measuring Cable Tension:

Ⓐ 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	40 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	

Reader Only Reader 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
	0 → 10	0 → 5	10 → 0	5 → 0
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 }

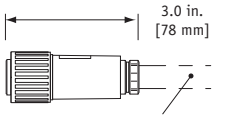


Ordering Information (cont.):

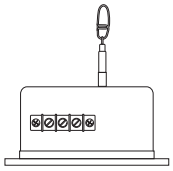
Electrical Connection:

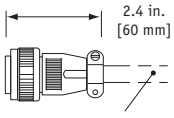
Ⓕ *order code:*

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

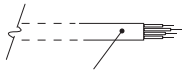


1/2 - 5/16" [14 - 8 mm] cable dia.
16 AWG max conductor size
connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S





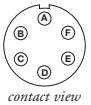
3/8-in. [9 mm] max cable dia.
16 AWG max conductor size
connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S



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

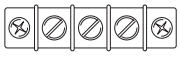
6-pin mating plug:

pin	signals
A	input voltage
B	output signal
C	common



contact view

Terminal Strip:



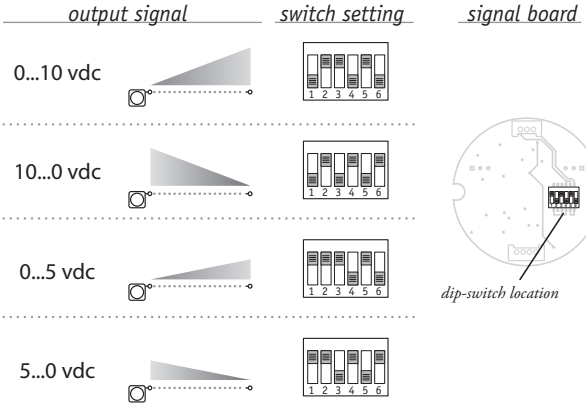
terminal	signals
1	input voltage
2	output signal
3	common

25-ft. instrumentation cable:

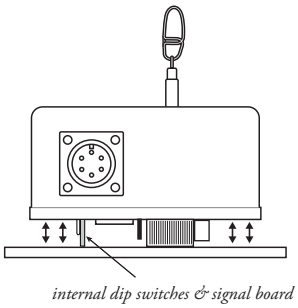
color code	signals
RED	input voltage
BLACK	common
GREEN	output signal

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.



dip-switch location



internal dip switches & signal board

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

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