0/4...20 mA Output
Ranges: 0-10 to 0-250 inches
Industrial Grade

PT5MA

CE

Specification Summary:

GENERAL

Full Stroke Range Options ..... 0-10 to 0-250 inches
Output Signal Options ..... 4...20 mA (2-wire) and 0...20 mA (3-wire)
Accuracy ..... ± 0.75% to ±0.18% full stroke *see ordering information*
Repeatability ..... *see ordering information*
Resolution ..... essentially infinite
Measuring Cable Options ..... stainless steel or thermoplastic
Enclosure Material ..... hard anodized aluminum
Sensor ..... plastic-hybrid precision potentiometer
Potentiometer Cycle Life ..... *see ordering information*
Maximum Measuring Cable Velocity ..... *see ordering information*
Maximum Retraction Acceleration ..... *see ordering information*
Weight ..... 5 lbs. max.

ELECTRICAL

Input Voltage ..... *see ordering information*
Input Current ..... 20 mA max.
Maximum Loop Resistance (Load) ..... (loop supply voltage – 8)/0.020
Circuit Protection ..... 38 mA max.
Impedance ..... 100 M ohms @ 100 VDC, min.
Output Signal Adjustment
Zero Adjustment ..... from factory set zero to 50% of full stroke range
Span Adjustment ..... to 50% of factory set span

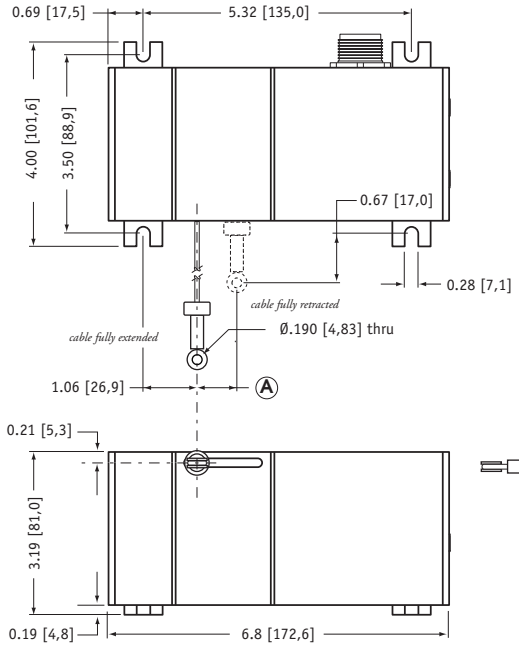
ENVIRONMENTAL

Enclosure ..... NEMA 4/6, IP 65/67
Operating Temperature ..... -40° to 200°F (-40° to 90°C)
Vibration ..... up to 10 G's to 2000 Hz maximum

EMC COMPLIANCE PER DIRECTIVE 89/336/EEC

Emission / Immunity ..... EN50081-2 / EN50082-2

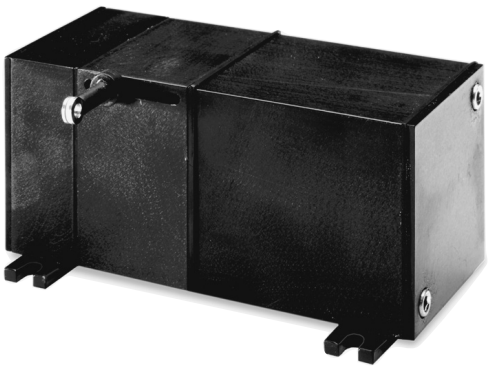
Outline Drawing



"A" Dimension

stroke range	measuring cable S47 • V62	measuring cable N34
10	0.08 [2,0]	0.05 [1,2]
15	0.12 [3,0]	0.07 [1,8]
20	0.16 [3,9]	0.09 [2,4]
30	0.23 [5,9]	0.14 [3,5]
40	0.31 [7,9]	0.19 [4,7]
50	0.39 [9,9]	0.23 [5,9]
60	0.47 [11,8]	0.28 [7,0]
80	0.62 [15,8]	0.37 [9,4]
100	0.78 [19,7]	0.46 [11,7]
125	0.97 [24,7]	0.58 [14,7]
150	1.16 [29,6]	0.69 [17,6]
200	n/a	0.92 [23,5]
250	n/a	1.16 [29,3]

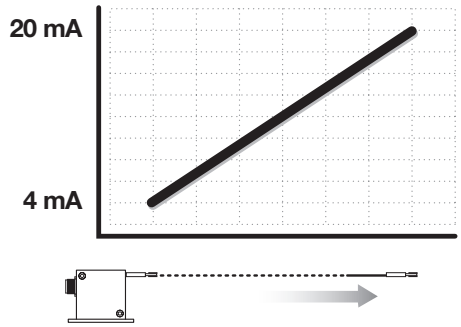
ALL DIMENSIONS ARE IN INCHES [MM]
tolerances are 0.03 inches [0,8 mm]
unless otherwise noted



The PT5MA potentiometric cable-extension transducer uses a unique thermoplastic cable that has virtually an infinite fatigue life. This cable, known as V62, has properties that are superior for high cycle and rugged applications.

Like Celesco's other transducers, the PT5MA installs in minutes, functions properly without perfectly parallel alignment, and fits easily into small areas. The PT5MA offers additional installation flexibility since its cable exit can be rotated relative to the mounting surface, providing four different cable exit orientations.

Output Signal



Ordering Information:

Model Number:

PT5MA - _____ - ___ - ___ - ___ - ___ - ___
order code: Ⓡ Ⓐ Ⓑ Ⓒ Ⓓ

Sample Model Number:

PT5MA - 100 - N34 - FR - 420E - M6

Ⓡ	range:	100 inches
Ⓐ	measuring cable:	.034 nylon-coated stainless
Ⓑ	cable exit:	front
Ⓒ	output signal:	4...20 mA
Ⓓ	electrical connection:	6-pin plastic connector

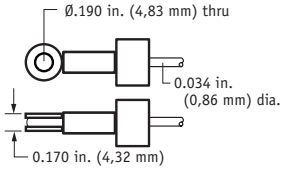
Full Stroke Range:

Ⓡ order code:	10	15	20	25	30	40	50	60	80	100	125	150	200	250
full stroke range, min:	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.	60 in.	80 in.	100 in.	125 in.	150 in.	200 in.	250 in.
accuracy (±% of f.s.):	.75%	.6%	.5%	.5%	.5%	.3%	.3%	.25%	.25%	.25%	.25%	.18%	.18%	.18%
repeatability (±% of f.s.):	.1%	.1%	.05%	.05%	.05%	.05%	.05%	.02%	.02%	.02%	.02%	.02%	.02%	.02%
potentiometer cycle life:	2,500,000 cycles					500,000 cycles						250,000 cycles		
cable tension (20%):	41 ounces												21 ounces	
max. cable velocity/acceleration:	300 in./sec • 5 G's												120 in./sec • 2 G's	

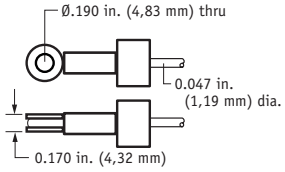
Measuring Cable:

Ⓐ order code:

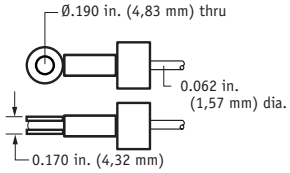
N34
.034 nylon-coated stainless steel
available in all ranges



S47
.047 stainless steel
all ranges up to 150 inches



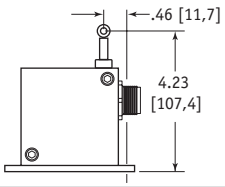
V62
.062 thermoplastic
all ranges up to 150 inches



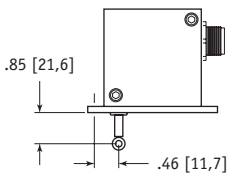
Cable Exit:

Ⓑ order code:

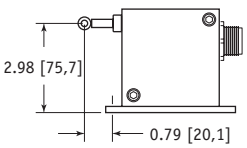
UP
up



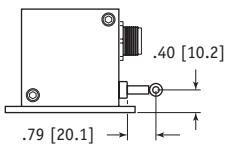
DN
down



FR
front



BK
back



inches [mm]

Output Signals:

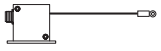
Ⓒ order code:

output signal options:	420E	420R	020E	020R
	4...20 mA (4 → 20)	20...4 mA (20 → 4)	0...20 mA (0 → 20)	20...0 mA (20 → 0)
sensitivity:	16 mA/full stroke ±0.25%		20 mA/full stroke ±0.25%	
wiring configuration:	2 – wire		3 – wire	
input voltage:	8 – 34 vdc		14 – 29 vdc	

example:

ordercode = **420E** = 4...20 mA

4 mA = 

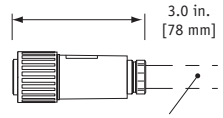
20 mA = 

Ordering Information (cont.)

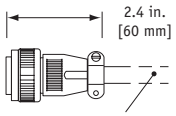
Electrical Connection:

order code:

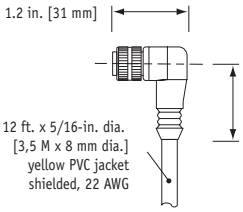
M6	M6M	MC4	C25
6-pin plastic connector with mating plug	6-pin metal connector with mating plug	4-pin micro-connector with 12 ft [3.5 M] cordset	25-ft. instrumentation cable 24 AWG, shielded
IP 67, NEMA 6	**IP 65, NEMA 4**	**IP 67, NEMA 6**	**IP 67, NEMA 6**



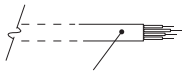
.30 – .39 in. [8 – 10 mm] cable dia.
16 AWG max conductor size
connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S



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

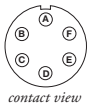


12 ft. x 5/16-in. dia.
[3,5 M x 8 mm dia.]
yellow PVC jacket
shielded, 22 AWG



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

6-pin mating plug:



contact view

pin	2-wire	3-wire
A	8...34 vdc	14...29 vdc
B	4...20 mA	common
C	-	0...20 mA
D	earth ground	-

4-pin mating plug and cordset:

contact view

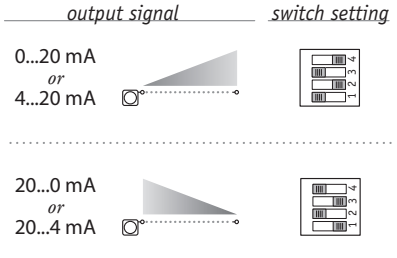
pin	color code	2-wire	3-wire
1	RED-BLK TR.	8...34 vdc	14...29 vdc
2	RED-WHT TR.	4...20 mA	0...20 mA
3	RED	-	common
4	GREEN	earth ground	-

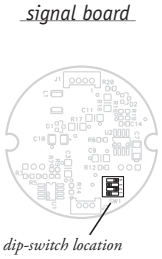
25-ft. cable:

color code	2-wire	3-wire
RED	8...34 vdc	14...29 vdc
BLACK	4...20 mA	common
WHITE	-	-
GREEN	earth ground	0...20 mA

Output Signal Selection:

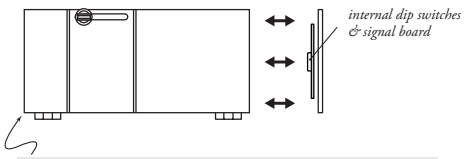
The output signal direction can be reversed at any time by simply changing the dip-switch settings found on the internal signal board. After the settings have been changed, adjustment of the Zero and Span trimpots will be required to precisely match signal values to the beginning and end points of the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





dip-switch location

To gain access to the signal board, remove four Allen-Head Screws and remove end cover bracket.



Caution! Do Not Remove Spring-Side End Cover
Removing spring-side end cover could cause spring to become unseated and permanently damaged.