PT5MA

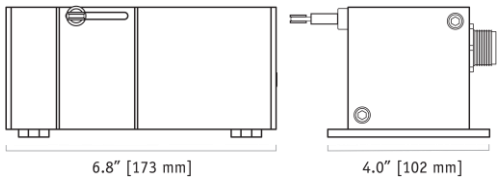
Cable Actuated Sensor
Industrial Grade • 0...5, 0...10 Vdc

Absolute Linear Position to 250 inches (6350 mm)

Hard Anodized Aluminum Enclosure

High Cycle Applications

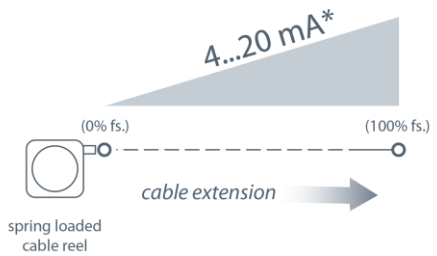
IP67 • NEMA 6 Protection



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



**Optional 3-wire, 0...20mA output signal available.*

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	±0.02% to ±0.1% f.s. (see ordering information)
Resolution	essentially infinite
Measuring Cable	stainless steel or thermoplastic
Enclosure	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	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.
Signal Adjust, Zero	from factory set zero to 50% of full stroke range
Signal Adjust, Span	to 50% of factory set span

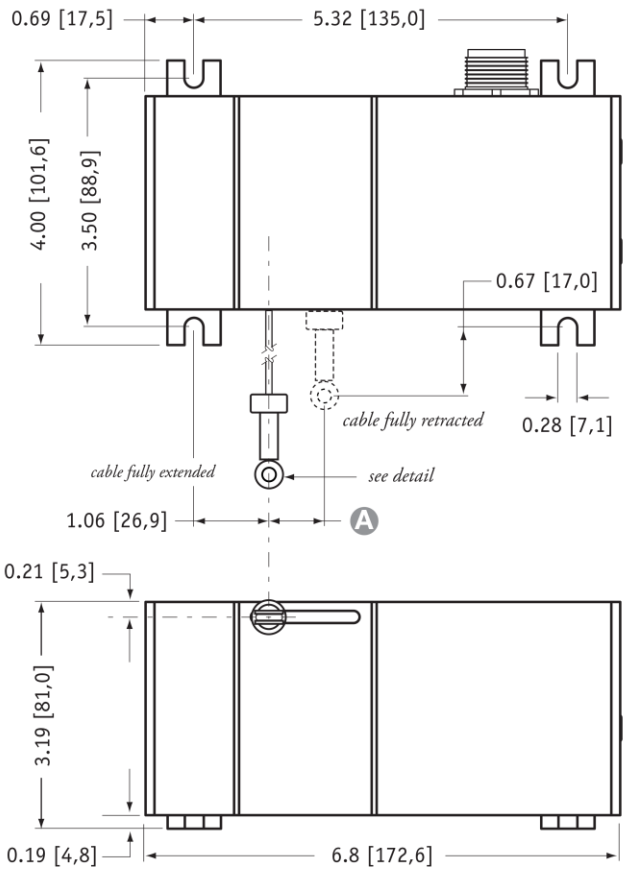
Environmental

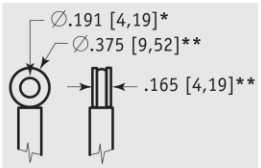
Enclosure	NEMA 4/6, IP 65/67
Operating Temperature	-40° to 200°F (-40° to 90°C)
Vibration	up to 10 g to 2000 Hz maximum

EMC COMPLIENCE PER DIRECTIVE 89/336/EEC

Emission/Immunity	EN50081-2 / EN50082-2

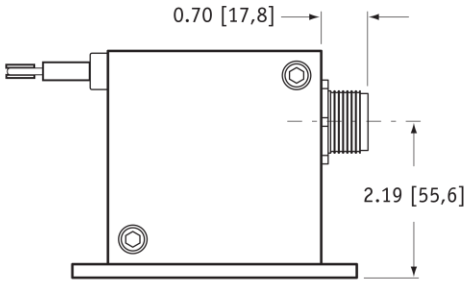
Outline Drawing





A DIMENSION (inches[mm])

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



DIMENSIONS ARE IN INCHES [MM]
tolerances are 0.03 IN. [0.5 MM] unless otherwise noted.

* tolerance = +.005 –.001 [+.13 –.03]
** tolerance = +.005 –.005 [+.13 –.13]

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

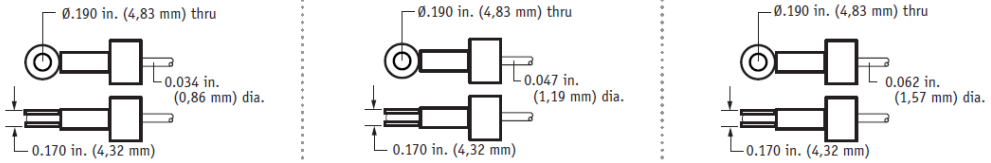
Full Stroke Range:

Ⓡ *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												120 in./sec • 2 g	

Measuring Cable:

Ⓐ *order code:*

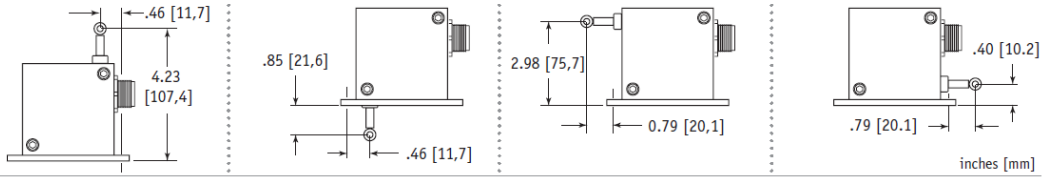
N34	S47	V62
.034 nylon-coated stainless steel	.047 stainless steel	.062 thermoplastic
available in all ranges	*all ranges up to 150 inches*	*all ranges up to 150 inches*



Cable Exit:

Ⓑ *order code:*

UP	DN	FR	BK
up	down	front	back



Output Signals:

Ⓒ *order code:*

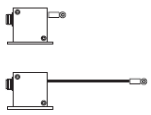
	420E	420R	020E	020R
output signal options:	4...20 mA	20...4 mA	0...20 mA	20...0 mA
sensitivity:	16 mA/full stroke ±0.25%		20 mA/full stroke ±0.25%	
wiring configuration:	2 – wire		3 – wire	
input voltage:	8 – 34 vdc		14 – 29 vdc	

example:

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

4 mA =

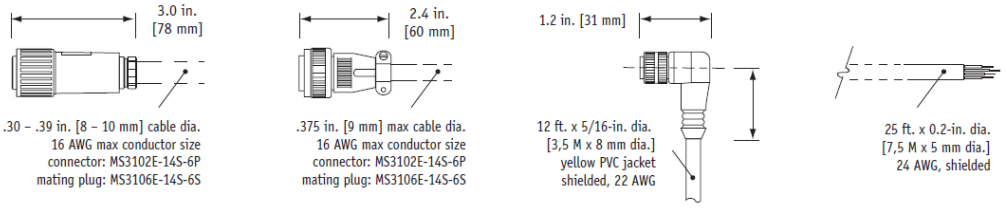
20 mA =



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**



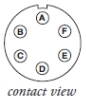
.30 – .39 in. [8 – 10 mm] cable dia.
16 AWG max conductor size
connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S

.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

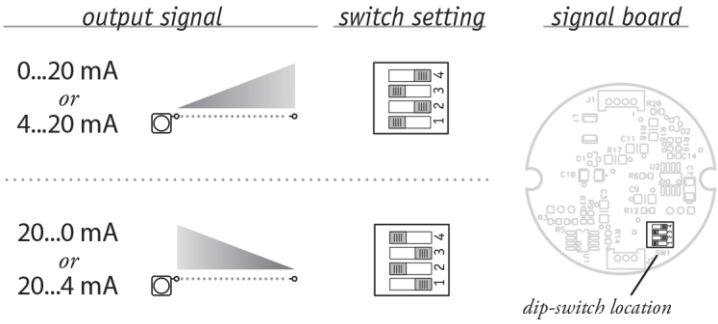
pin	color code	2-wire	3-wire
1	RED-BLK TR.	8...34 vdc	14...29 vdc
2	RED-WHT TR.	4...20 mA	0...20 mA
3	RED	-	common
4	GREEN	earth ground	-

25-ft. cable:

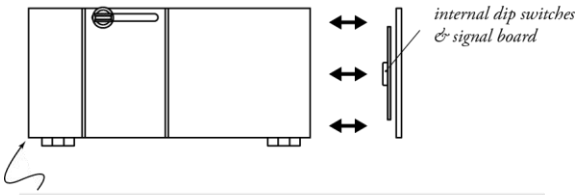
color code	2-wire	3-wire
RED	8...34 vdc	14...29 vdc
BLACK	4...20 mA	common
WHITE	-	-
GREEN	earth ground	0...20 mA

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.



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.

NORTH AMERICA

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