



**mm PT5MA**

**Description**

- 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 our 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.

**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**

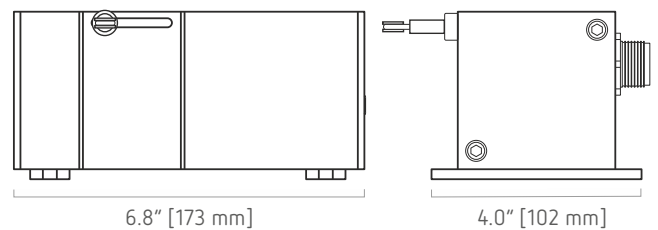
Input Voltage	see ordering information
Input Current	20 mA max.
Maximum Loop Resistance (Load)	(loop supply voltage – 8)/0.020
Circuit Protection	38 mA max.
Impedance	100 M ohms @ 100 VDC, min.
Signal Adjust, Zero	from factory set zero to 50% of full stroke range
Signal Adjust, Span	to 50% of factory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

**ENVIRONMENTAL**

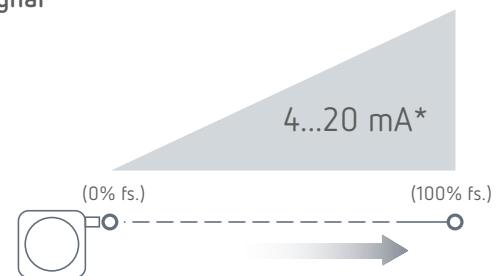
Enclosure	NEMA 4/6, IP 65/67
Operating Temperature	-40° to 200°F (-40° to 90°C)
Vibration	up to 10 G's to 2000 Hz maximum

**EMC COMPLIANCE PER DIRECTIVE 89/336/EEC**

Emission / Immunity	EN50081-2 / EN50082-2
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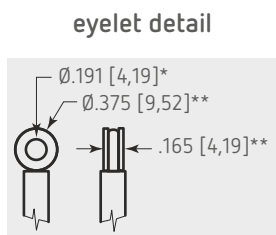
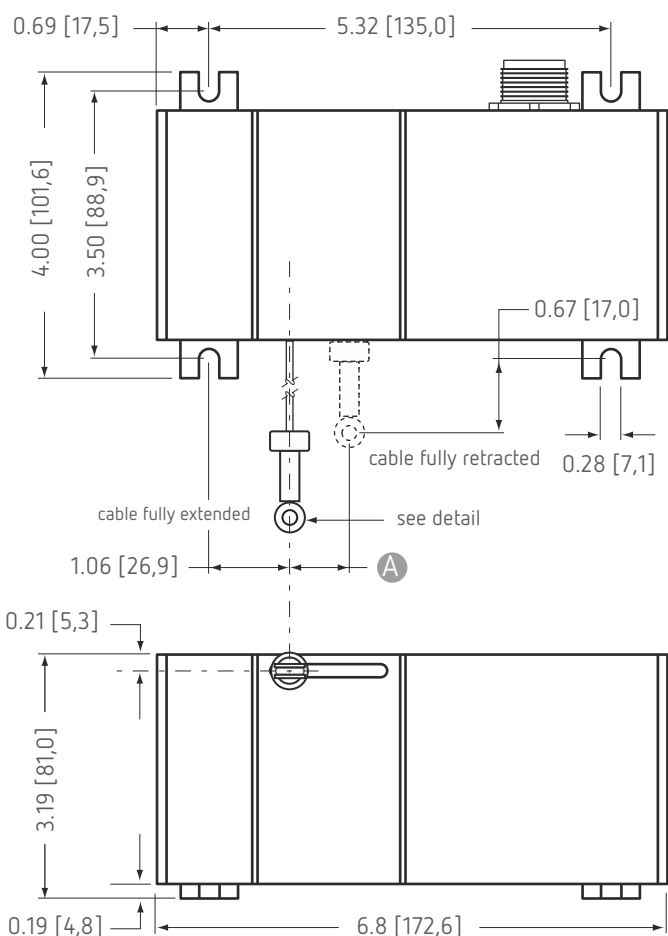


**Output signal**



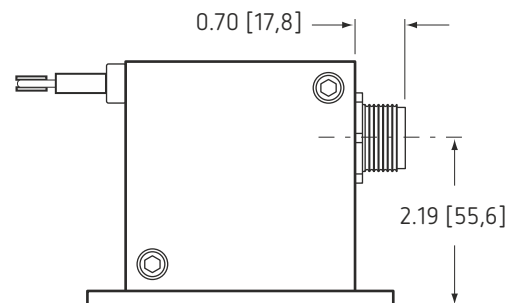
\*Optional 3-wire, 0...20mA output signal

**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:      **R**      **A**      **B**      **C**      **D**

Sample Model Number:

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

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

**Full Stroke Range:**

<b>R</b> 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								

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Outline Drawing

Measuring Cable:

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

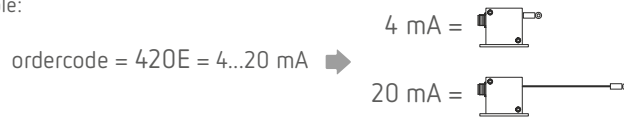
Cable Exit:

B order code:	UP	DN	FR	BK
	up	down	front	back
	inches [mm]			

Output Signals:

C 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:



Electrical Connection:

D order code:	M6	M6M	MC4	C25
	6-pin plastic connector with mating plug IP 67, NEMA 6	6-pin metal connector with mating plug IP 65, NEMA 4	4-pin micro-connector with 12 ft [3.5 M] cordset IP 67, NEMA 6	25-ft. instrumentation cable 24 AWG, shielded IP 67, NEMA 6
	.30 - .39 in. [8 - 10 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P 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:

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

contact view

4-pin mating plug and cordset:

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	-

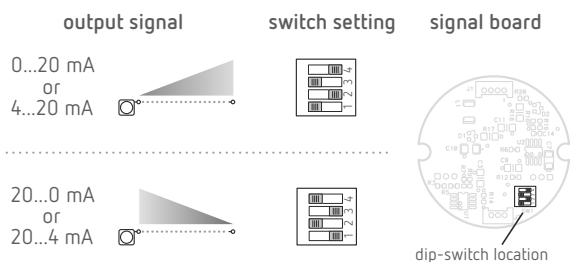
contact view

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

