

**0/4...20 mA Output**  
**Ranges: 0-2 to 0-50 inches**  
**Compact Size • OEM Applications**



# PT1MA

## Specification Summary:

**GENERAL**  
 Full Stroke Range Options ..... 0-2 to 0-50 inches  
 Output Signal Options ..... 4...20 mA (2-wire) and 0...20 mA (3-wire)  
 Accuracy ..... ± 0.28% to ± 0.15% full stroke *see ordering information*  
 Repeatability ..... ± 0.05% full stroke  
 Resolution ..... essentially infinite  
 Measuring Cable ..... .019-in. dia. nylon-coated stainless steel  
 Enclosure Material ..... glass-filled polycarbonate and black anodized aluminum  
 Sensor ..... plastic-hybrid precision potentiometer  
 Potentiometer Cycle Life ..... *see ordering information*  
 Maximum Retraction Acceleration ..... *see ordering information*  
 Weight ..... 1 lb. 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 ..... 100M 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  
 Thermal Effects  
 Zero ..... 0.01% f.s./°F, max.  
 Span ..... 0.01% f.s./°F, max.

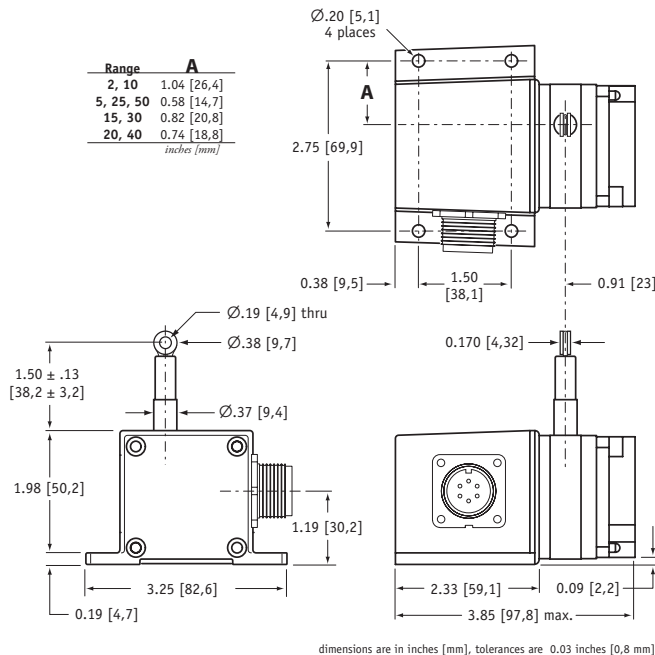
**ENVIRONMENTAL**  
 Enclosure ..... NEMA 4, IP 65  
 Operating Temperature ..... 0° to 200°F (-17° to 90°C)  
 Vibration ..... up to 10 G's to 2000 Hz maximum

**EMC COMPLIANCE PER DIRECTIVE 89/336/EEC**  
 Emission/Immunity ..... EN50081-2/EN50082-2

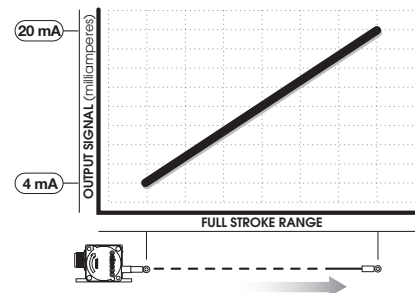


The PT1MA adds 4...20 mA position feedback signal to Celesco's compact line of cable-extension transducers. The PT1MA is available with full stroke ranges from as little as 2 inches on up to 50 inches with adjustable zero and span settings to precisely match the full scale output to your exact measurement range.

The PT1MA offers several options including forward and reverse 0...20 and 4...20 mA output signals, alternate measuring cable exits and a couple different electrical connection options.



### Output Signal



**Ordering Information:**

**Model Number:**

**PT1MA** - \_\_\_\_\_  
*order code:*            **R**            **A**            **B**            **C**            **D**

Sample Model Number:

**PT1MA - 30 - UP - 420E - MC4 - SG**

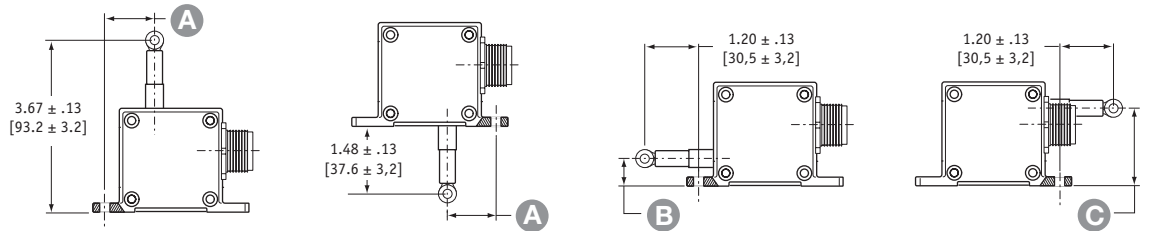
- R** range: 30 inches
- A** measuring cable exit: up
- B** output signal: 4...20mA
- C** electrical connection: 4-pin micro connector
- D** cable guide: spring-loaded guide

**Full Stroke Range:**

<b>R</b> order code:	2	5	10	15	20	25	30	40	50
full stroke range, min:	2 in.	5 in.	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.
accuracy (% of f.s.):	0.28%		0.18%			0.15%			
potentiometer cycle life:	2,500,000 cycles		500,000 cycles			250,000 cycles			
cable tension (20%):	12 oz.	5 oz.	12 oz.	9 oz.	6 oz.	5 oz.	9 oz.	6 oz.	5 oz.
maximum cable acceleration:	11 G's	3 G's	11 G's	5 G's	4 G's	3 G's	5 G's	4 G's	3 G's

**Cable Exit:**

**A** order code:            **UP**            **DN**            **FR**            **BK**  
 direction:            up            down            front            back



measurement range	2	5	10	15	20	25	30	40	50
<b>A</b>	1.04 in. 26,4 mm	0.58 in. 14,7 mm	1.04 in. 26,4 mm	0.82 in. 20,8 mm	0.74 in. 18,8 mm	0.58 in. 14,7 mm	0.82 in. 20,8 mm	0.74 in. 18,8 mm	0.58 in. 14,7 mm
<b>B</b>	0.75 in. 19,1 mm	0.29 in. 6,1 mm	0.75 in. 19,1 mm	0.53 in. 13,5 mm	0.45 in. 11,5 mm	0.29 in. 6,1 mm	0.53 in. 13,5 mm	0.45 in. 11,5 mm	0.29 in. 6,1 mm
<b>C</b>	1.43 in. 36,3 mm	1.89 in. 48,0 mm	1.43 in. 36,3 mm	1.65 in. 41,9 mm	1.73 in. 43,9 mm	1.89 in. 48,0 mm	1.65 in. 41,9 mm	1.73 in. 43,9 mm	1.89 in. 48,0 mm

**Output Signals:**

<b>B</b> 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 =

**Ordering Information (cont.)**

**Electrical Connection:**

④ *order code:*

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

**4-pin mating plug and cordset:**

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

**6-pin mating plug:**

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

**25-ft. cable:**

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

**Cable Guide:**

① *order code:*

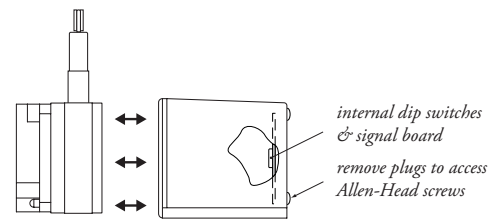
blank	SG
standard cable guide	spring-loaded guide
	<p><i>cable-guide cushions impact from accidental free release</i></p>

*\*note: start of full stroke range begins at full compression point (except 2-inch and 5-inch ranges).*

**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 trim pots will be required to precisely match signal values to the beginning and end points of the stroke.

output signal	switch setting	signal board
0...20 mA or 4...20 mA		
20...0 mA or 20...4 mA		



to gain access to the signal board, remove the two Allen-Head Screws and remove rear cover.

version: 8.0 last updated: May 21, 2013