

# Cable-Extension Position Transducer

## Precision Potentiometric Output

Ranges: 0-2 to 0-50 inches

Compact Size • OEM Applications



# PT1A

### Specification Summary:

#### GENERAL

Full Stroke Range Options ..... 0-2 to 0-50 inches  
 Output Signal Options..... voltage divider (potentiometer)  
 Accuracy .....  $\pm 0.25\%$  to  $\pm 0.10\%$  full stroke *see ordering information*  
 Repeatability .....  $\pm 0.02\%$  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 Resistance Options ..... 500, 1K, 5K, 10K or bridge, *see ordering information*  
 Power Rating, Watt ..... *see ordering information*  
 Recommended Maximum Input Voltage ..... *see ordering information*  
 Output Signal Change Over Full Stroke Range..... 94%  $\pm 4\%$  of input voltage

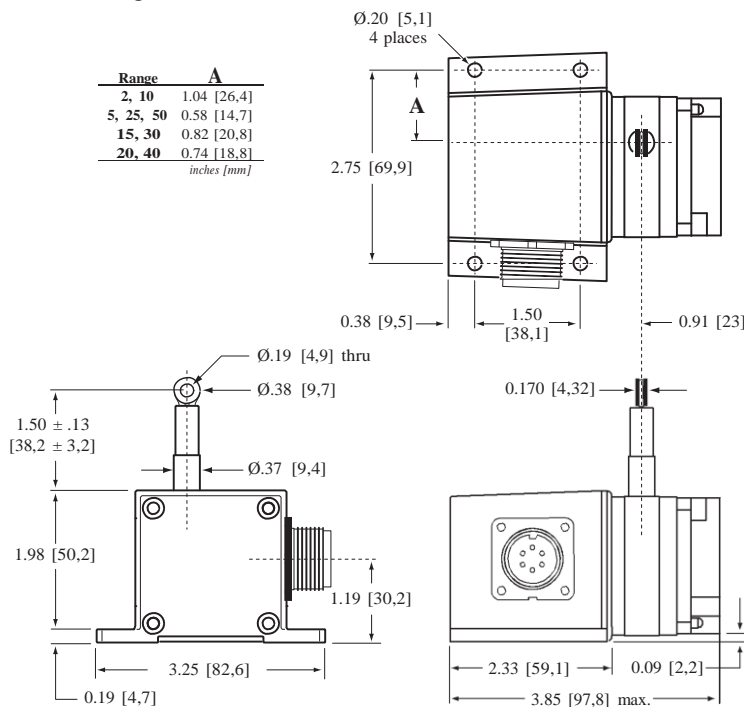
#### ENVIRONMENTAL

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

### Outline Drawing

Range	A
2, 10	1.04 [26,4]
5, 25, 50	0.58 [14,7]
15, 30	0.82 [20,8]
20, 40	0.74 [18,8]

*inches [mm]*



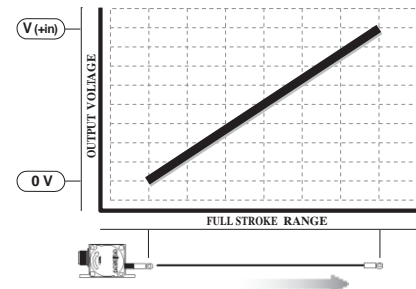
dimensions are in inches [mm], tolerances are 0.03 inches [0,8 mm]



The PT1A is perfect where space and money are limited. The PT1A is part of Celesco's compact line of cable-extension transducers. Using a high cycle plastic-hybrid potentiometer, the PT1A provides a precision voltage divider position feedback signal for full-scale measurement ranges from 2 to 50 inches.

The PT1A has many features to offer including 500 to 10K ohm potentiometer selection, adjustable bridge circuit and multiple measuring cable exit options.

### Output Signal



# PT1A • Cable-Extension Transducer: Precision Potentiometric Output

## Ordering Information:

### Model Number:

**PT1A** - **R** - **A** - **B** - **C** - **D**  
*order code:*

Sample Model Number:

**PT1A - 30 - UP - 500 - MC4 - SG**

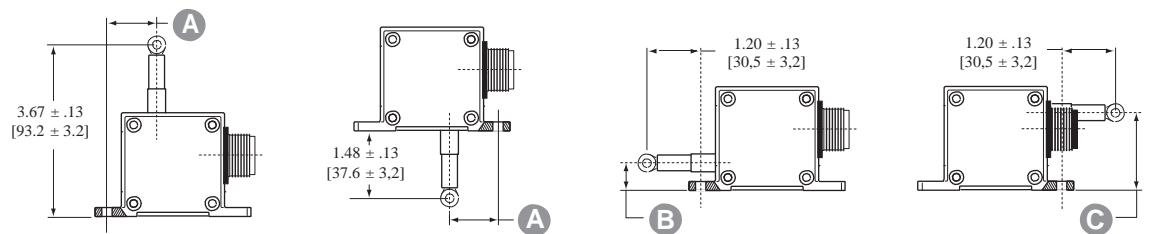
**R** range: 30 inches  
**A** measuring cable exit: up  
**B** output signal: 500-ohm pot.  
**C** electrical connection: 4-pin micro connector  
**D** cable guide: spring-loaded guide

### Full Stroke Range:

<b>R</b> <i>order code:</i>	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.
stroke accuracy (% of f.s.):	0.25%			0.15%			0.10%		
accumulator cycle life:	2,500,000 cycles			500,000 cycles			250,000 cycles		
potentiometric									
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

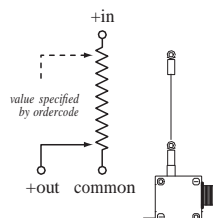
### Output Signals:

**B** *order code:* **500** **1K** **5K** **10K** **AB**  
 500 ohm\* 1000 ohm\* 5000 ohm\* 10,000 ohm\* adjustable bridge  
 (\*tolerance = ±10%)

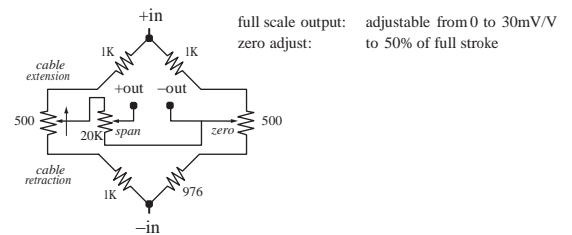
#### max. input voltage and power rating, options: 500, 1K, 5K, 10K

	2-inch, 5-inch range	10-inch to 50-inch range
500-ohms:	20 V AC/DC (1 W)	30 V AC/DC (2 W)
1K to 10K-ohms:	30 V AC/DC (1 W)	30 V AC/DC (2 W)

#### circuit options: 500, 1K, 5K, 10K



#### circuit option: AB (adjustable bridge)

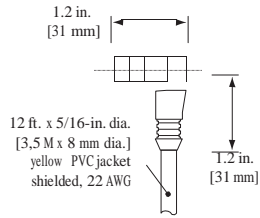


**Ordering Information (cont.)**

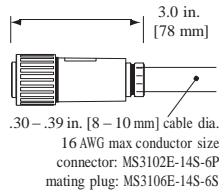
**Electrical Connection:**

① *order code:*

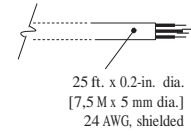
**MC4**  
4-pin micro-connector  
with 12 ft [3.5 M] cordset



**M6**  
6-pin plastic connector  
with mating plug



**C25**  
25-ft. instrumentation cable  
24 AWG, shielded



**4-pin mating plug and cord set:**



pin	color code	standard	bridge
1	RED-BLK TR.	+IN	+IN
2	RED-WHT TR.	COMMON	-IN
3	RED	+OUT	+OUT
4	GREEN	-	-OUT

**6-pin mating plug:**



pin	standard	bridge
A	+IN	+IN
B	COMMON	-IN
C	+OUT	-OUT
D	-	+OUT

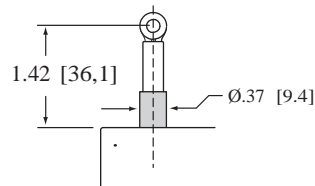
**25-ft. cable:**

color code	standard	bridge
RED	+IN	+IN
BLACK	COMMON	-IN
GREEN	+OUT	+OUT
WHITE	-	-OUT

**Cable Guide:**

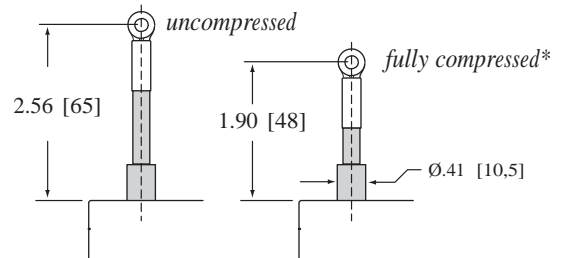
① *order code:*

**blank**  
standard cable guide



**SG**  
spring-loaded guide

*cable-guide cushions impact from accidental free release*



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