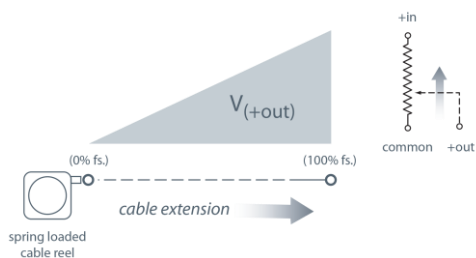


The PT1A is perfect where space and money are limited. The PT1A is part of Celesco's compact line of cable-extension transducers. Using a high cycle plastic-hybrid potentiometer, the PT1A provides a precision voltage divider position feedback signal for full-scale measurement ranges from 2 to 50 inches.

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



-- bridge circuit option available, see ordering information

## PT1A

### Cable Actuated Sensor Instrument Grade • Voltage Divider Output

Absolute Linear Position to 50 inches (1270 mm)

Aluminum and Polycarbonate Enclosure

Compact Design

IP65 • NEMA 4 Protection

#### General

<b>Full Stroke Range</b>	0-2 to 0-50 inches
<b>Options</b>	
<b>Output Signal Options</b>	voltage divider (potentiometer)
<b>Accuracy</b>	± 0.25% to ± 0.15% full stroke (see ordering information)
<b>Repeatability</b>	± 0.02% full stroke
<b>Resolution</b>	essentially infinite
<b>Measuring Cable</b>	.019-in. dia. nylon-coated stainless steel
<b>Enclosure</b>	glass-filled polycarbonate and black anodized aluminum
<b>Sensor</b>	plastic-hybrid precision potentiometer
<b>Potentiometer Cycle Life</b>	see ordering information
<b>Maximum Retraction</b>	see ordering information
<b>Acceleration</b>	
<b>Weight</b>	1 lb. max.

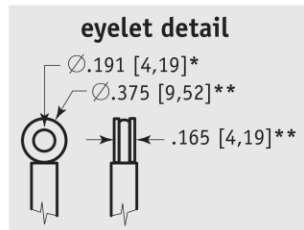
#### Electrical

<b>Input Resistance</b>	see ordering information
<b>Options</b>	
<b>Power Rating, Watt</b>	see ordering information
<b>Recommended</b>	see ordering information
<b>Maximum Input Voltage</b>	
<b>Output Signal Change Over Full Stroke Range</b>	94% ±4% of input voltage

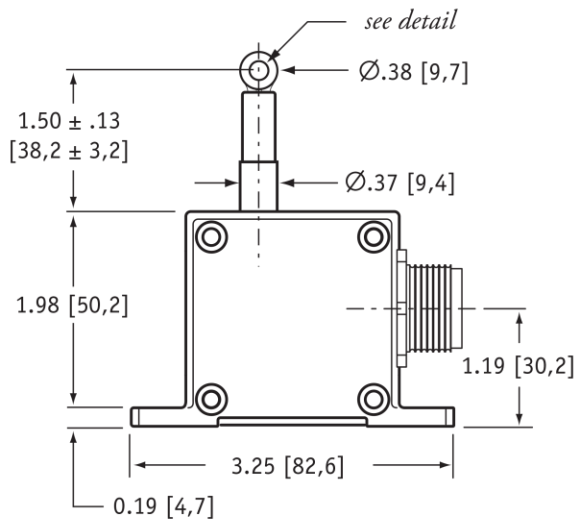
#### Environmental

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

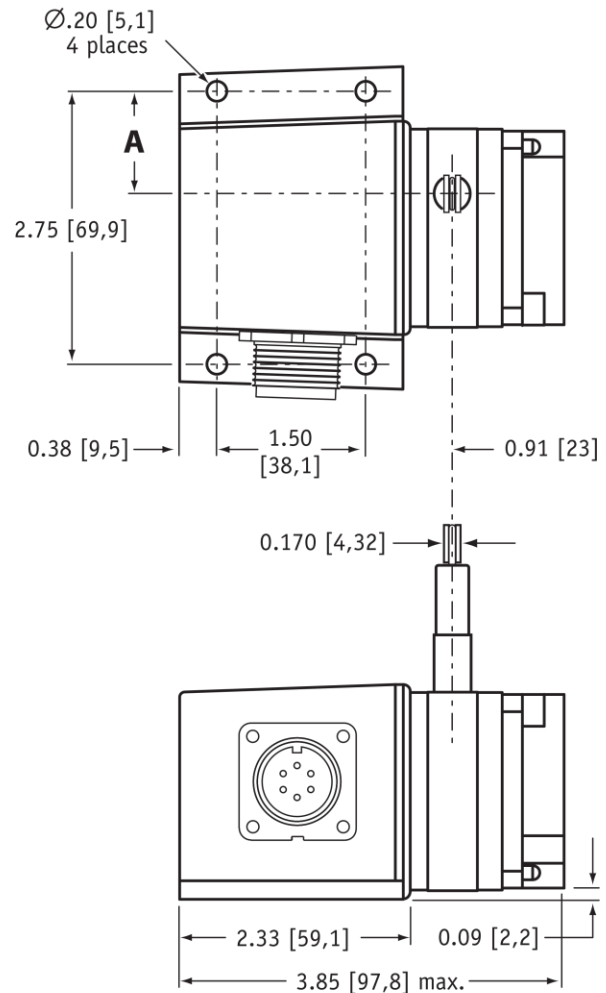
## Outline Drawing



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]
<i>inches [mm]</i>	



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:

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

## 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> 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.):	0.25%		0.15%				0.10%		
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.
max. cable acceleration:	11 g	3 g	11 g	5 g	4 g	3 g	5 g	4 g	3 g

## Cable Exit:

<b>A</b> order code:	<b>UP</b>	<b>DN</b>	<b>FR</b>	<b>BK</b>					
direction:	up	down	front	back					
	<b>A</b>	<b>A</b>	<b>B</b>	<b>C</b>					
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

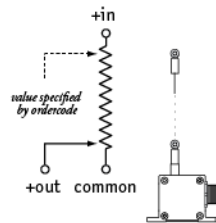
## Output Signals:

<b>B</b> order code:	<b>500</b>	<b>1K</b>	<b>5K</b>	<b>10K</b>	<b>AB</b>
	500 ohm*	1000 ohm*	5000 ohm*	10,000 ohm*	adjustable bridge (0...30 mV/V)
				*tolerance = ±10%	

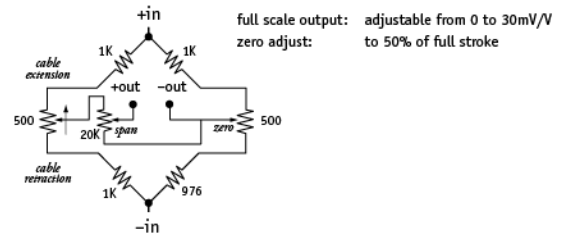
max. input voltage and power rating, options: 500, 1K, 5K, 10K

	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)



## Electrical Connection:

<b>G</b> order code:	<b>MC4</b>	<b>M6</b>	<b>C25</b>
	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
	12 ft. x 5/16-in. dia. [3,5 M x 8 mm dia.] yellow PVC jacket shielded, 22 AWG	.30 - .39 in. [8 - 10 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	
	<b>4-pin mating plug and cord set:</b>	<b>6-pin mating plug:</b>	<b>25-ft. cable:</b>
	 contact view	 contact view	
	pin 1 color code RED-BLK TR. pin 2 color code RED-WHT TR. pin 3 color code RED pin 4 color code GREEN	pin A standard +IN pin B standard COMMON pin C standard +OUT pin D standard -	color code RED standard +IN color code BLACK standard COMMON color code GREEN standard +OUT color code WHITE standard -
	standard +IN standard COMMON standard +OUT standard -	bridge +IN bridge -IN bridge -OUT bridge +OUT	bridge +IN bridge -IN bridge -OUT bridge +OUT

**PT1A**

Instrument Grade • Voltage Divider

**Cable Guide:**

① *order code:*

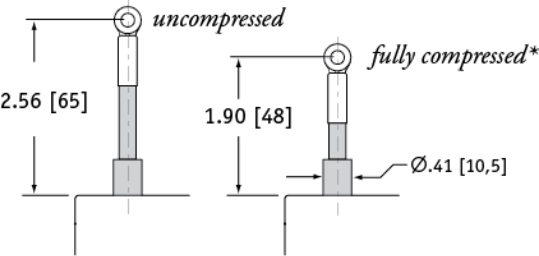
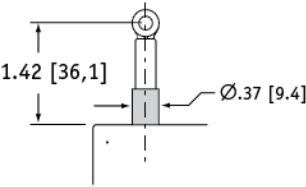
**blank**

**SG**

standard cable guide

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).*