

Cable-Extension Position Transducer

- ▼ Short to Medium Range
- ▼ Compact Size • OEM Applications
- ▼ Precision Potentiometric Output



PT1A



Specification Summary:

GENERAL

Full Stroke Ranges 0-2 to 0-50 inches, see ① next page
 Output Signal voltage divider (potentiometer)
 Accuracy ± 0.25 to 0.10% full stroke, see ②
 Repeatability $\pm 0.02\%$ full stroke
 Resolution essentially infinite
 Measuring Cable 0.019-in. dia. nylon-coated stainless steel
 Enclosure Material ABS plastic and black anodized aluminum
 Sensor plastic-hybrid precision potentiometer
 Weight 1 lb., max.

ELECTRICAL

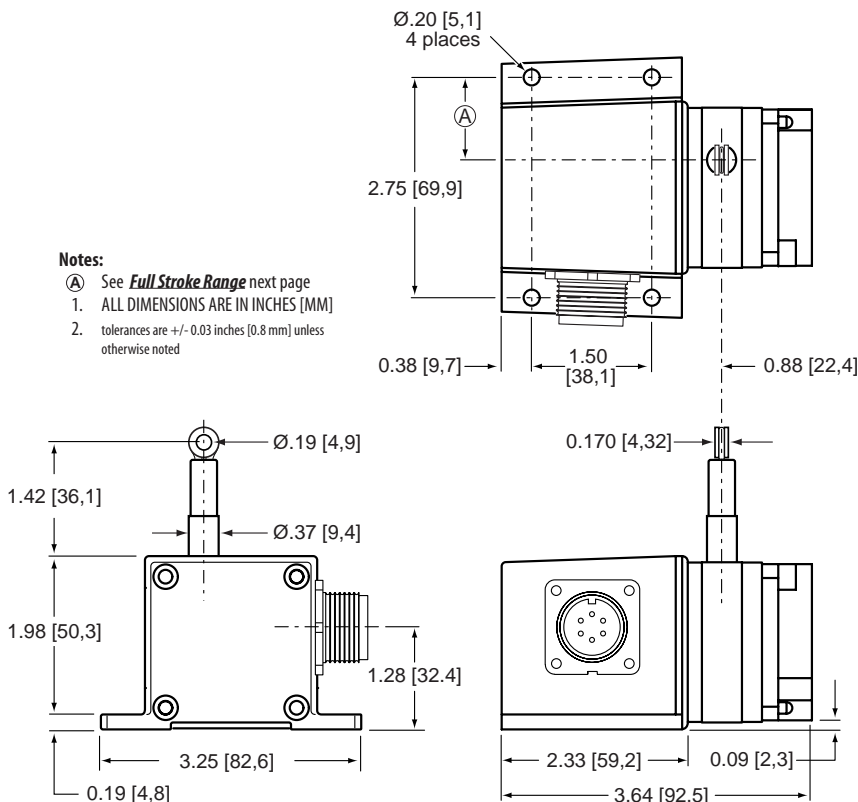
Input Resistance 500, 1K, 5K, 10K ohms ($\pm 10\%$) or adj. bridge, see ③
 Power Rating, Watts 2.0 at 70°F (derated to 0 @ 250°F)
 Recommended Maximum Input Voltage 30 V(AC or DC)
 Output Signal Change Over Measurement Range $94\% \pm 4\%$ of input voltage

ENVIRONMENTAL

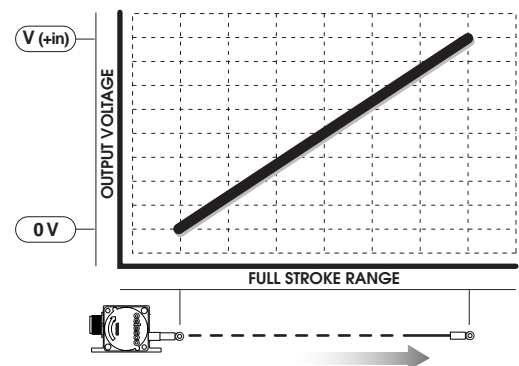
Enclosure Design NEMA 4, IP67
 Operating Temperature -40° to 200°F
 Vibration up to 10 G's to 2000 Hz maximum

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: 500 to 10K ohm potentiometer selection, adjustable bridge circuit, up to 4 different measuring cable exits and 2 types of electrical connections.



Electrical Output Signal:



Latin Tech, Inc.

PT1A • Cable-Extension Transducer • Potentiometric Output

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:

	R order code:	2	5	10	15	20	25	30	40	50
① full stroke range, min:		2 in.	5 in.	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.
② accuracy (% of f.s.):		0.25%	0.25%	0.15%	0.15%	0.15%	0.15%	0.10%	0.10%	0.10%
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
std. cable tension (±30%):		12 oz.	5 oz.	12 oz.	9 oz.	6 oz.	5 oz.	9 oz.	6 oz.	5 oz.
potentiometer cycle life*:		2.5 x 10 ⁶	2.5 x 10 ⁶	5 x 10 ⁵	5 x 10 ⁵	5 x 10 ⁵	5 x 10 ⁵	5 x 10 ⁵	2.5 x 10 ⁵	2.5 x 10 ⁵
③ A - inches (mm)**:		1.04 (26.3)	0.54 (13.8)	1.04 (26.3)	0.82 (20.7)	0.74 (18.7)	0.54 (13.8)	0.82 (20.7)	0.74 (18.7)	0.54 (13.8)
④ B - inches (mm)**:		0.75 (19.1)	0.29(6.1)	0.75 (19.1)	0.53 (13.5)	0.45 (11.5)	0.29 (6.1)	0.53 (13.5)	0.45 (11.5)	0.29 (6.1)
⑤ C - inches (mm)**:		1.43 (36.3)	1.89 (48.0)	1.43 (36.3)	1.65 (41.9)	1.73 (43.7)	1.89 (48.0)	1.65 (41.9)	1.73 (43.7)	1.89 (48.0)

*note: **potentiometer cycle life** is defined as the minimum number of times the measuring cable can be fully extended and retracted before any measurable degradation of the output signal occurs.

note: refer to **Cable Exit below.

Cable Exit:

A order code:	UP	DN	FR	BK
direction:	up	down	front	back
note:	A — see ③ above	B — see ④ above	C — see ⑤ above	

Output Signals:

B order code:	500	1K	5K	10K	AB
sensing circuit:	500 Ω	1K Ω	5K Ω	10K Ω	adjustable bridge
⑥					f.s. output: adjustable 0...30mV/V zero adjust: from 0 to 50% of full range

Ordering Information (cont.)

Electrical Connections:

⑥ *order code:*

electrical connection:

		MC4	M6	C25																																												
		4-pin micro-connector and 12 ft. [3.7 m] cable assembly	6-pin plastic connector and mating plug	25 ft. [7.6 m] instrumentation cable																																												
		<p>4-pin dual keyway receptacle (male)</p>																																														
		<table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2"><i>i/o signals</i></th> </tr> <tr> <th><i>pin</i></th> <th><i>color-code</i></th> <th><i>standard</i></th> <th><i>adj. bridge</i></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>RED-BLK. TR.</td> <td>+IN</td> <td>+IN</td> </tr> <tr> <td>2</td> <td>RED-WHT. TR.</td> <td>COMMON</td> <td>-IN</td> </tr> <tr> <td>3</td> <td>RED</td> <td>+OUT</td> <td>+OUT</td> </tr> <tr> <td>4</td> <td>GREEN</td> <td>-</td> <td>-OUT</td> </tr> </tbody> </table>			<i>i/o signals</i>		<i>pin</i>	<i>color-code</i>	<i>standard</i>	<i>adj. bridge</i>	1	RED-BLK. TR.	+IN	+IN	2	RED-WHT. TR.	COMMON	-IN	3	RED	+OUT	+OUT	4	GREEN	-	-OUT	<table border="1"> <thead> <tr> <th><i>standard</i></th> <th><i>bridge</i></th> </tr> </thead> <tbody> <tr> <td>A = +IN</td> <td>A = +IN</td> </tr> <tr> <td>B = COMMON</td> <td>B = -IN</td> </tr> <tr> <td>C = +OUT</td> <td>C = -OUT</td> </tr> <tr> <td></td> <td>D = +OUT</td> </tr> </tbody> </table> <p><i>mating plug (contact view)</i></p>	<i>standard</i>	<i>bridge</i>	A = +IN	A = +IN	B = COMMON	B = -IN	C = +OUT	C = -OUT		D = +OUT	<table border="1"> <thead> <tr> <th><i>standard</i></th> <th><i>bridge</i></th> </tr> </thead> <tbody> <tr> <td>RED = +IN</td> <td>RED = +IN</td> </tr> <tr> <td>BLK = COMMON</td> <td>BLK = -IN</td> </tr> <tr> <td>GRN = OUT</td> <td>WHT = -OUT</td> </tr> <tr> <td></td> <td>GRN = +OUT</td> </tr> </tbody> </table>	<i>standard</i>	<i>bridge</i>	RED = +IN	RED = +IN	BLK = COMMON	BLK = -IN	GRN = OUT	WHT = -OUT		GRN = +OUT
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Cable Guide:

⑩ *order code:*

description:

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

*note: start of full stroke range begins at **full compression point**