

# Cable-Extension Position Transducer

- ▼ Short to Medium Range
- ▼ Compact Size • OEM Applications
- ▼ Incremental Encoder Output Signals

# PT1E



## Specification Summary:

### GENERAL

Full Stroke Ranges ..... 0-2 to 0-50 inches, see ① next page  
 Output Signal ..... incremental encoder (quadrature) signal  
 Output Driver ..... TTL/CMOS, open collector or line driver, see ②  
 Accuracy  
 Typical ..... the lesser of 0.02% f.s. or 0.04% of measurement  $\pm 1/2$  pulse max.  
 Best ..... not less than 0.001 in. (0.03 mm)  
 Repeatability ..... 0.02% of measurement  $\pm 1/2$  pulse max.  
 Resolution ..... 25 to 1250 pulses per inch  
 Measuring Cable ..... 0.019-in. dia. nylon-coated stainless steel  
 Enclosure Material ..... ABS plastic and black anodized aluminum  
 Sensor ..... optical encoder  
 Weight ..... 1 lb., max.

### ENVIRONMENTAL

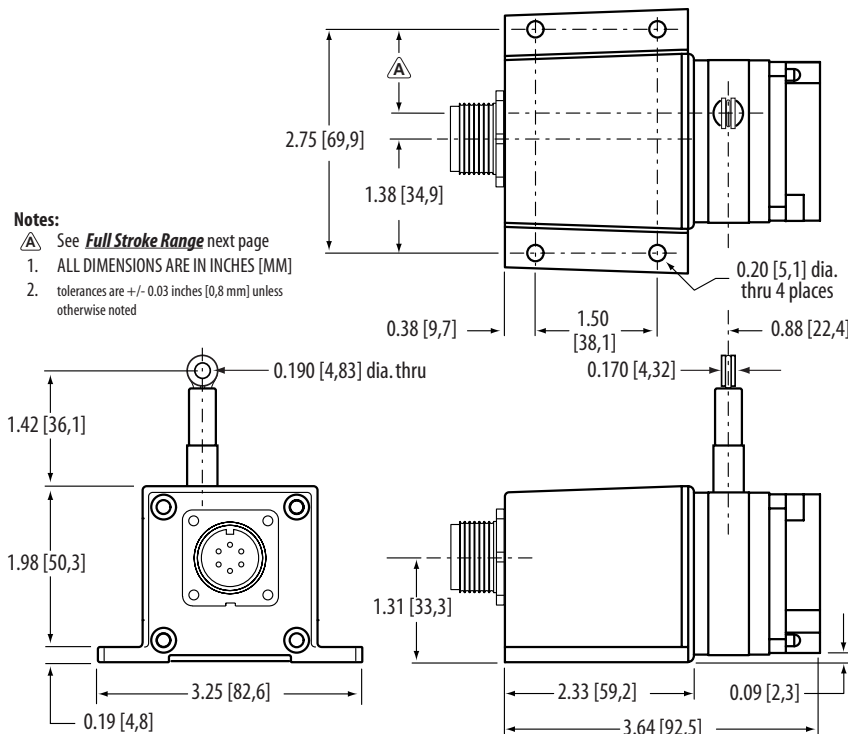
Enclosure Design ..... NEMA 4, IP 67  
 Operating Temperature ..... 0° to 160°F  
 Vibration ..... up to 10 G's to 2000 Hz maximum

The heart of the PT1E is an incremental optical encoder which delivers a quadrature formatted digital pulse train. This compact transducer is available with several resolution options for a wide variety of applications from high accuracy position feedback to slow velocity feedback requirements.

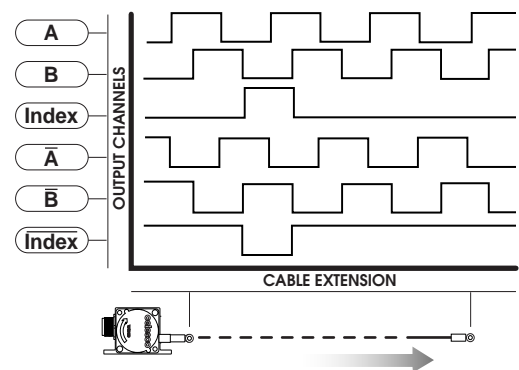
The PT1E has many options available including full stroke measurement ranges from 0-2 inches up to 0-50 inches, different output drivers and alternate measuring cable exits.

### Notes:

- Ⓐ See **Full Stroke Range** next page
- 1. ALL DIMENSIONS ARE IN INCHES [MM]
- 2. tolerances are +/- 0.03 inches [0,8 mm] unless otherwise noted



## Electrical Output Signal:



Latin Tech, Inc.

# PT1E • Cable-Extension Transducer • Incremental Encoder Output

## Ordering Information

### Model Number:

**PT1E** -      -      -      -      -      -      -      -     

order code:    **R**        **A**        **B**        **C**        **D**        **E**

Sample Model Number:

**PT1E - 25 - UP - 50 - AB-TTL - MC4 - SG**

- R** range: 25 inches
- A** measuring cable exit: up
- B** resolution: 50 pulses per inch
- C** electrical connection: 4-pin micro connector
- D** output signal: TTL/CMOS driver, Channels A,B
- E** cable guide: spring-loaded guide

### Full Stroke Range:

<b>R</b> order code:	<b>25</b>	<b>50</b>	<b>625</b>	<b>1250</b>
① full stroke range, min:	25 inches	50 inches	625 mm	1250 mm
max. cable acceleration:	11 G's	4 G's	11 G's	4 G's
std. cable tension (±30%):	12 oz.	6 oz.	12 oz.	6 oz.
<b>A</b> *	1.04 in.	0.74 in.	12,4 mm	18,8 mm
<b>B</b> *	0.75 in.	0.45 in.	19,1 mm	11,5 mm
<b>C</b> *	1.46 in.	1.73 in.	37,1 mm	43,7 mm
resolution options:	50, 500, 1000, 1250 pulses per inch	25, 250, 500, 625 pulses per inch	2, 20, 40, 50 pulses per mm	1, 10, 20, 25 pulses per mm

note:    \*refer to **Cable Exit** below

### Cable Exit:

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

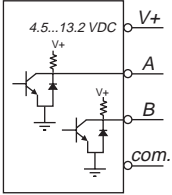
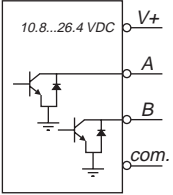
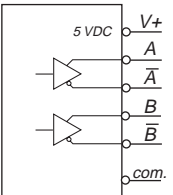
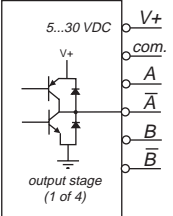
note:    **A** — see ② above        **B** — see ③ above        **C** — see ④ above

### Resolution:

<b>B</b> order code:	<b>50</b>	<b>500</b>	<b>1000</b>	<b>1250</b>
25-inch full stroke range:	50 ±1 pulses per inch	500 ±10 pulses per inch	1000 ±20 pulses per inch	1250 ±24 pulses per inch
<b>B</b> order code:	<b>25</b>	<b>250</b>	<b>500</b>	<b>625</b>
50-inch full stroke range:	25 ±0.5 pulses per inch	250 ±5 pulses per inch	500 ±10 pulses per inch	625 ±12 pulses per inch
<b>B</b> order code:	<b>2</b>	<b>20</b>	<b>40</b>	<b>50</b>
625 mm full stroke range:	2 ±0,04 pulses per mm	20 ±0,4 pulses per mm	40 ±0,8 pulses per mm	50 ±1 pulses per mm
<b>B</b> order code:	<b>1</b>	<b>10</b>	<b>20</b>	<b>25</b>
1250 mm full stroke range:	1 ±0,02 pulses per mm	10 ±0,2 pulses per mm	20 ±0,4 pulses per mm	25 ±0,5 pulses per mm

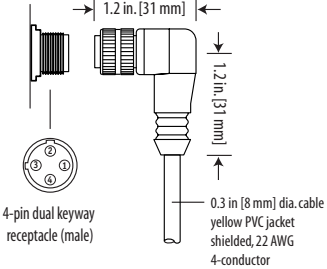
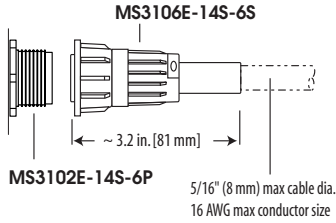
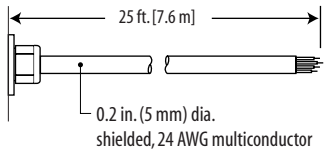
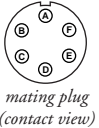
**Ordering Information (cont.)**

**Output Signals:**

<p>② <b>order code:</b> output driver:</p>	<p><b>AB-TTL</b></p> <p>TTL/CMOS compatible</p> <p>Input voltage (V+): 4.5...13.2 Vdc Sink current: 20 mA max. Input current: 80 mA max.</p> 	<p><b>AB-OC</b></p> <p>Open Collector</p> <p>Input voltage (V+): 10.8...26.4 Vdc Sink current: 20 mA max. Input current: 80 mA max.</p> 	<p><b>ABC-LD*</b></p> <p>5 V - Line Driver</p> <p>Input voltage (V+): 5 Vdc Sink current: 20 mA max. Input current: 150 mA max.</p> 	<p><b>ABC-UD*</b></p> <p>Universal Line Driver</p> <p>Input voltage (V+): 5...30 VDC Source/Sink: 20 mA max. Input current: 50 mA max, no load</p> 
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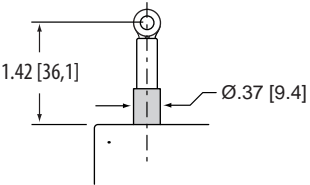
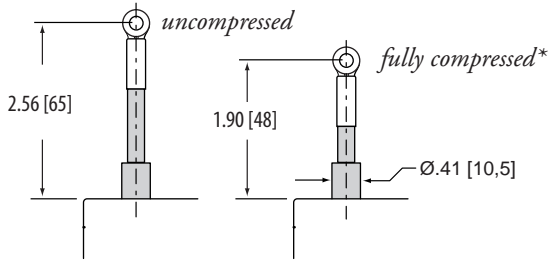
\*note: not available with 4-pin micro-connector

**Electrical Connections:**

<p>① <b>order code:</b> electrical connection:</p>	<p><b>MC4</b></p> <p>4-pin micro-connector and 12 ft. [3.7 m] cable assembly</p>  <p>4-pin dual keyway receptacle (male)</p>	<p><b>M6</b></p> <p>6-pin plastic connector and mating plug</p> 	<p><b>C25</b></p> <p>25 ft. [7.6 m] instrumentation cable</p> 														
<table border="1"> <thead> <tr> <th>pin</th> <th>color-code</th> <th>i/o signals</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>RED-BLK. TR.</td> <td>input voltage</td> </tr> <tr> <td>2</td> <td>RED-WHT. TR.</td> <td>channel A</td> </tr> <tr> <td>3</td> <td>RED</td> <td>channel B</td> </tr> <tr> <td>4</td> <td>GREEN</td> <td>common (ground)</td> </tr> </tbody> </table>	pin	color-code	i/o signals	1	RED-BLK. TR.	input voltage	2	RED-WHT. TR.	channel A	3	RED	channel B	4	GREEN	common (ground)	 <p>mating plug (contact view)</p> <p>A = input voltage (V+) B = common (gnd.) C = channel A D = channel B E = channel A* F = channel B*</p>	<p>RED = input voltage (V+) BLK = common (gnd.) GRN = channel A WHT = channel B BLU = channel A* BRN = channel B*</p>
pin	color-code	i/o signals															
1	RED-BLK. TR.	input voltage															
2	RED-WHT. TR.	channel A															
3	RED	channel B															
4	GREEN	common (ground)															

\*note: available with line driver option only

**Cable Guide:**

<p>③ <b>order code:</b> description:</p>	<p><b>blank</b></p> <p>standard cable guide</p> 	<p><b>SG</b></p> <p>spring-loaded guide</p>  <p>cable-guide cushions impact from accidental free release</p>
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\*note: start of full stroke range begins at **full compression** point