

# Cable-Extension Position Transducer

## Incremental Encoder Output

Ranges: 0-25, 0-50 in. • 0-625, 0-1250 mm

Compact Size • OEM Applications

# PT1E

### Specification Summary:

#### GENERAL

Full Stroke Range Options ..... 0-25 to 0-50 inches  
 Output Signal ..... incremental encoder (quadrature)  
 Accuracy ..... 0.04% full stroke *contact factory for higher accuracy*  
 Repeatability .....  $\pm 0.02\%$  full stroke  
 Resolution Options ..... 25 to 1250 pulses per inch  
 Measuring Cable Options ..... .019-in. dia. nylon-coated stainless steel  
 Enclosure Material ..... glass-filled polycarbonate and black anodized aluminum  
 Sensor ..... optical encoder  
 Maximum Retraction Acceleration ..... *see ordering information*  
 Weight ..... 1 lb. max.

#### ELECTRICAL

Input Voltage ..... *see ordering information*  
 Input Current ..... *see ordering information*

#### ENVIRONMENTAL

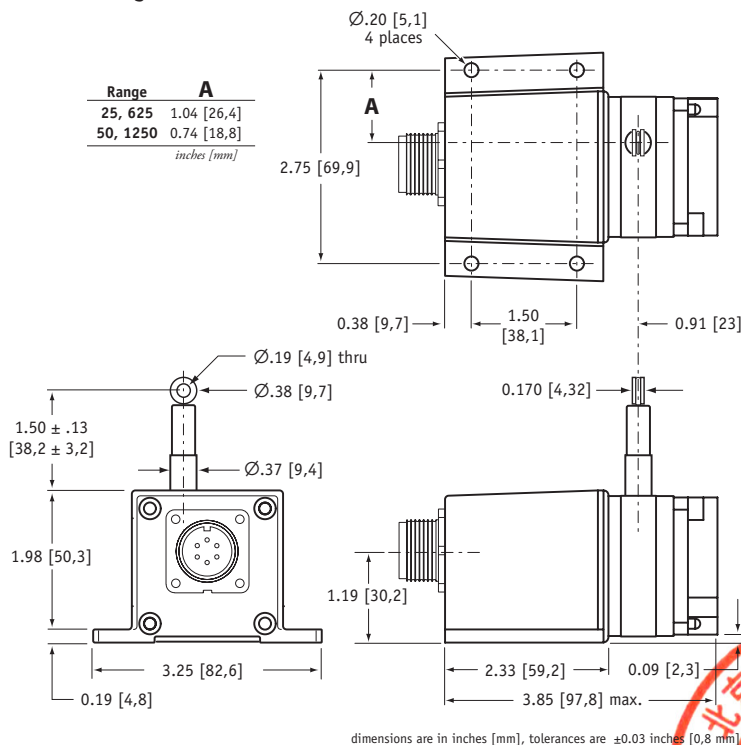
Enclosure ..... NEMA 4, IP 65  
 Operating Temperature ..... 0° to 160°F (-17° to 71°C)  
 Vibration ..... up to 10 G's to 2000 Hz maximum



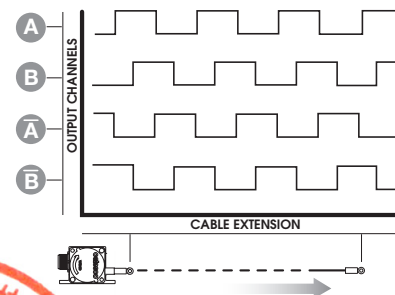
The heart of the PT1E is an incremental optical encoder which delivers a quadrature formatted digital pulse train. This compact transducer is available with several resolution options for a wide variety of applications from high accuracy position feedback to slow velocity feedback requirements.

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.

### Outline Drawing



### Output Signal



**Ordering Information:**

**Model Number:**

**PT1E** -      -      -      -      -      -       
*order code:*      **R**      **A**      **B**      **C**      **D**      **E**

Sample Model Number:

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

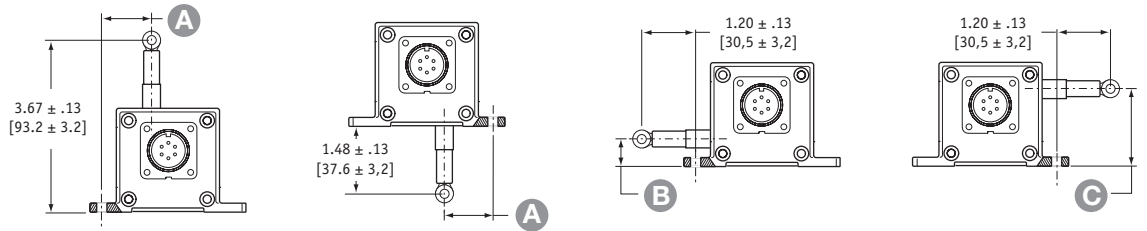
- R** range: 25 inches
- A** measuring cable exit: up
- B** resolution: 50 pulses per inch
- C** electrical connection: 4-pin micro connector
- D** output signal: TTL/CMOS driver, Channels A,B
- E** cable guide: spring-loaded guide

**Full Stroke Range:**

<b>R</b> order code:	<b>25</b>	<b>50</b>	<b>625</b>	<b>1250</b>
full stroke range, min:	25 in.	50 in.	625 mm	1250 mm
cable tension (±20%):	12 oz.	6 oz.	3,3 N	1,6 N
cable acceleration, max.:	11 G's	4 G's	11 G's	4 G's
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

**Cable Exit:**

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



measurement range	<b>25</b>	<b>50</b>	<b>625</b>	<b>1250</b>
<b>A</b>	1.04 in. 26,4 mm	0.74 in. 18,8 mm	1.04 in. 26,4 mm	0.74 in. 18,8 mm
<b>B</b>	0.75 in. 19,1 mm	0.45 in. 11,4 mm	0.75 in. 19,1 mm	0.45 in. 11,4 mm
<b>C</b>	1.43 in. 36,3 mm	1.73 in. 43,9 mm	1.43 in. 36,3 mm	1.73 in. 43,9 mm

**Resolution:**

**B** order code:      **50**      **500**      **1000**      **1250**  
 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** order code:      **25**      **250**      **500**      **625**  
 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** order code:      **2**      **20**      **40**      **50**  
 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** order code:      **1**      **10**      **20**      **25**  
 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:

④ order code:	AB-TTL	AB-OC	ABC-LD	ABC-UD
output driver:	TTL - CMOS	Open Collector	5 V - Line Driver	Universal Line Driver
Input voltage (V+):	4.5...13.2 Vdc	10.8...26.4 Vdc	5 Vdc	5...30 VDC
Sink current:	20 mA max.	20 mA max.	20 mA max.	20 mA max.
Input current:	80 mA max.	80 mA max.	150 mA max.	100 mA max, no load

Electrical Connection:

① 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	6-pin mating plug	25-ft. cable
pin	color code	TTL/CMOS	5 V Line Driver
1	RED-BLK TR.	Open Collector	Universal Line Driver
2	RED-WHT TR.	input voltage	input voltage
3	RED	channel A	channel A
4	GREEN	channel B	channel B
		common	channel A'
		common	channel B'
		common	common
		channel A	channel A
		channel B	channel B
		-	channel A'
		-	channel B'
		-	common
		-	common
		-	common
		-	common

Cable Guide:

⑤ order code:	blank	SG
	standard cable guide	spring-loaded guide

\*note: start of full stroke range begins at full compression point  
version: 4.0 last updated: April 28, 2010

