

# 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

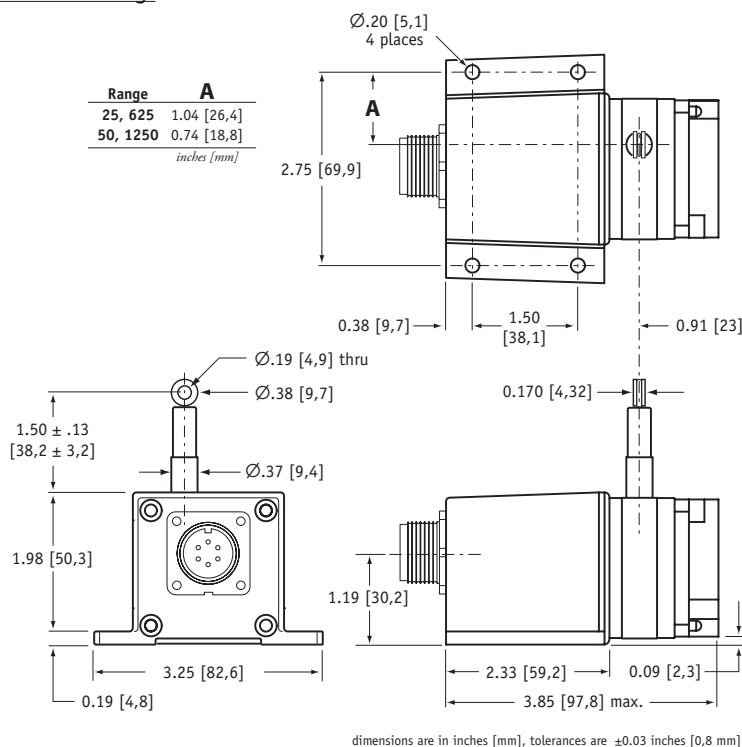
Enclosure ..... NEMA 4, IP 65  
 Operating Temperature ..... 0° to 160°F (-17° to 71°C)  
 Vibration ..... up to 10 G's to 2000 Hz maximum



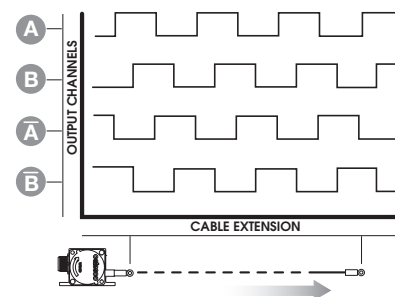
The heart of the PT1E is an incremental optical encoder which delivers a quadrature formatted digital pulse train. This compact transducer is available with several resolution options for a wide variety of applications from high accuracy position feedback to slow velocity feedback requirements.

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**

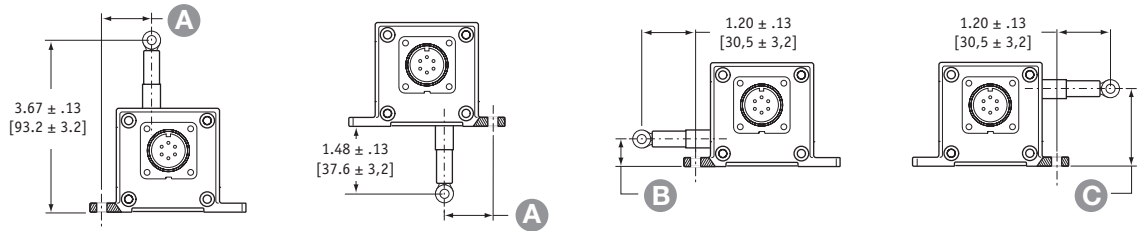
- R** range: 25 inches
- A** measuring cable exit: up
- B** resolution: 50 pulses per inch
- C** electrical connection: 4-pin micro connector
- D** output signal: TTL/CMOS driver, Channels A,B
- E** cable guide: spring-loaded guide

**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:*  
output driver:

AB-TTL	AB-OC	ABC-LD	ABC-UD
TTL - CMOS	Open Collector	5 V - Line Driver	Universal Line Driver
Input voltage (V+): 4.5...13.2 Vdc Sink current: 20 mA max. Input current: 80 mA max.	Input voltage (V+): 10.8...26.4 Vdc Sink current: 20 mA max. Input current: 80 mA max.	Input voltage (V+): 5 Vdc Sink current: 20 mA max. Input current: 150 mA max.	Input voltage (V+): 5...30 VDC Source/Sink: 20 mA max. Input current: 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 Open Collector	pin	Open Collector	5 V Line Driver Universal Line Driver	color	TTL/CMOS Open Collector	5 V Line Driver Universal Line Driver
1	RED-BLK TR.	input voltage	A	input voltage	input voltage	red	input voltage	input voltage
2	RED-WHT TR.	channel A	B	common	common	black	common	common
3	RED	channel B	C	channel A	channel A	green	channel A	channel A
4	GREEN	common	D	channel B	channel B	white	channel B	channel B
			E	-	channel A'	blue	-	channel A'
			F	-	channel B'	brown	-	channel B'

Cable Guide:

③ *order code:*

blank	SG
standard cable guide	spring-loaded guide

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