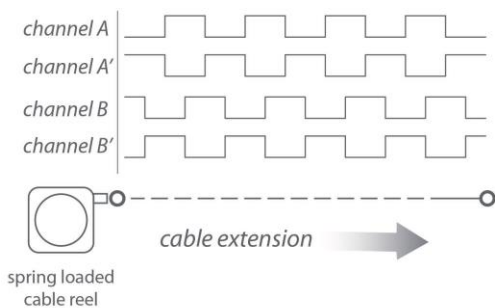


The heart of the PT1E is an incremental optical encoder which delivers a quadrature formatted digital pulse train. This compact transducer is available with several resolution options for a wide variety of applications from high accuracy position feedback to slow velocity feedback requirements.

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.

#### Output Signal



-- see ordering information for available channels

## PT1E

### Cable Actuated Sensor Industrial Grade • Incremental Encoder

**Linear Position to 50 inches (1270 mm)**

**Aluminum and Polycarbonate Enclosure**

**Compact Design • Incremental Encoder Output Signal**

**IP65 • NEMA 4 Protection**

#### General

<b>Full Stroke Range</b>	0-2 to 0-50 inches
<b>Output Signal</b>	incremental encoder (quadrature)
<b>Accuracy</b>	± 0.04% full stroke
<b>Repeatability</b>	± 0.02% full stroke
<b>Resolution Options</b>	25 to 1250 pulses per inch
<b>Measuring Cable</b>	.019-in. dia. nylon-coated stainless steel
<b>Enclosure</b>	glass-filled polycarbonate and black anodized aluminum
<b>Sensor</b>	optical encoder
<b>Maximum Retraction</b>	see ordering information
<b>Acceleration</b>	
<b>Weight</b>	1 lb. max.

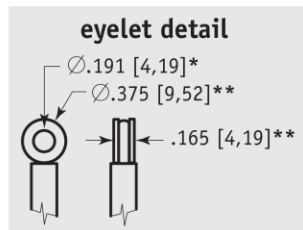
#### Electrical

<b>Input Voltage</b>	see ordering information
<b>Input Current</b>	see ordering information

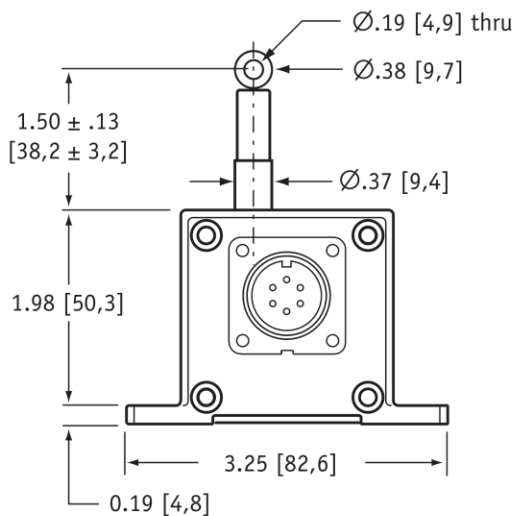
#### Environmental

<b>Enclosure</b>	NEMA 4, IP 65
<b>Operating Temperature</b>	0° to 160°F (-17° to 71°C)
<b>Vibration</b>	up to 10 g to 2000 Hz maximum

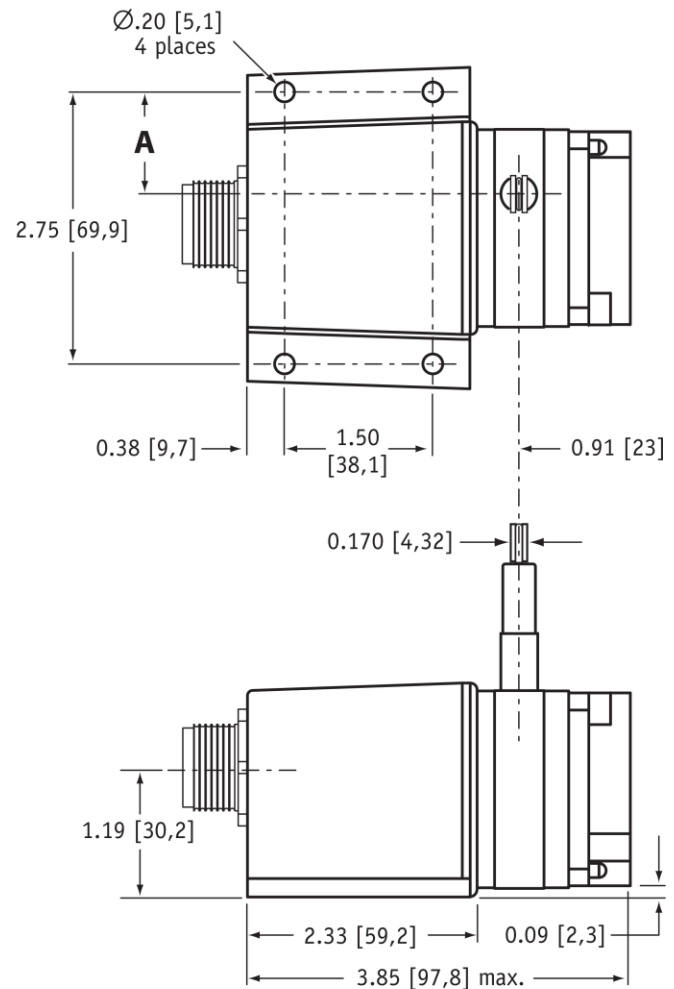
## Outline Drawing



Range	A
25, 625	1.04 [26,4]
50, 1250	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:

**PT1E** -      -      -      -      -      -     

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

Sample Model Number:

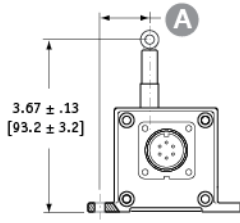
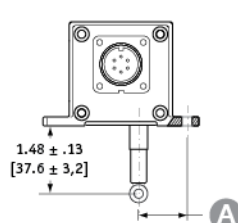
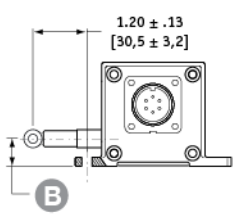
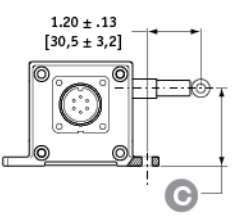
**PT1E - 25 - UP - 50 - AB-TTL - MC4 - SG**

**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	4 g	11 g	4 g
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

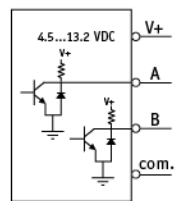
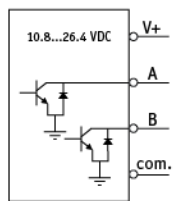
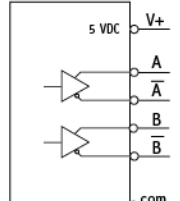
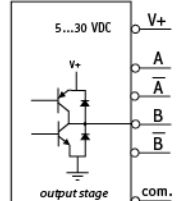
## Cable Exit:

<b>A</b> order code:	<b>UP</b>	<b>DN</b>	<b>FR</b>	<b>BK</b>	
direction:	up	down	front	back	
					
	$3.67 \pm .13$ [93.2 ± 3.2]	$1.48 \pm .13$ [37.6 ± 3.2]	$1.20 \pm .13$ [30.5 ± 3.2]	$1.20 \pm .13$ [30.5 ± 3.2]	
		<b>A</b>	<b>B</b>	<b>C</b>	
	measurement range — 25 50 625 1250				
	<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

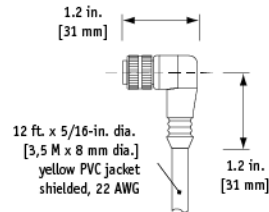
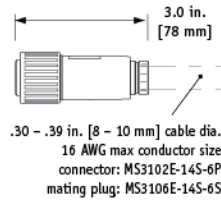
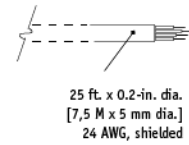
## Resolution

<b>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

## Output Signal

<b>C</b> order code:	<b>AB-TTL</b>	<b>AB-OC</b>	<b>ABC-LD</b>	<b>ABC-UD</b>
output driver:	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**4-pin micro-connector  
with 12 ft [3.5 M] cordset**M6**6-pin plastic connector  
with mating plug**C25**25-ft. instrumentation cable  
24 AWG, shielded

## 4-pin mating plug and cordset



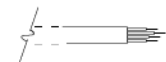
pin	color code	TTL/CMOS Open Collector input voltage
1	RED-BLK TR.	channel A
2	RED-WHT TR.	channel B
3	RED	common
4	GREEN	common

## 6-pin mating plug



pin	TTL/CMOS Open Collector input voltage	5 V Line Driver Universal Line Driver input voltage
A	channel A	channel A
B	channel B	channel B
C	common	channel A'
D	common	channel B'
E	-	-
F	-	-

## 25-ft. cable

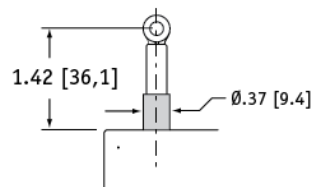


color	TTL/CMOS Open Collector input voltage	5 V Line Driver Universal Line Driver input voltage
red	channel A	channel A
green	channel B	channel B
white	common	channel A'
blue	-	channel B'
brown	-	channel B'

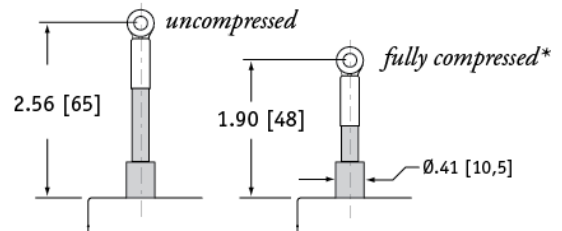
## Cable Guide:

② *order code:***blank**

standard cable guide

**SG**

spring-loaded guide

*cushions impact from accidental free release**\*note: start of full stroke range begins at full compression point***NORTH AMERICA**

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PT1E 12/01/2015