PT5E

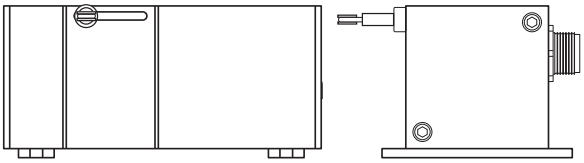
Cable Actuated Sensor
Industrial Grade • Incremental Encoder

Absolute Linear Position to 250 inches (6350 mm)

Hard Anodized Aluminum Enclosure

High Cycle Applications

IP67 • NEMA 6 Protection



The PT5E encoder-based cable-extension transducer offers a unique thermoplastic cable that has virtually an infinite fatigue life. This cable, known as V62, has properties that are superior for high cycle and rugged applications.

Like our other transducers, the PT5E installs in minutes, functions properly without perfectly parallel alignment, and fits easily into small areas. The PT5E offers additional installation flexibility since its cable exit can be rotated relative to the mounting surface, providing four different cable exit orientations.

GENERAL

Full Stroke Range Options	0-50 to 0-250 inches
Output Signal Options	incremental encoder (quadrature)
Accuracy	.04% to .1% f.s. – see ordering info
Repeatability	.01% to .02% f.s. – see ordering info
Resolution	10 to 250 pulses per inch
Measuring Cable Options	stainless steel or thermoplastic
Enclosure Material	hard anodized aluminum
Sensor	optical encoder
Max Measuring Cable Velocity	see ordering information
Max Retraction Acceleration	see ordering information
Weight	5 lbs. max.

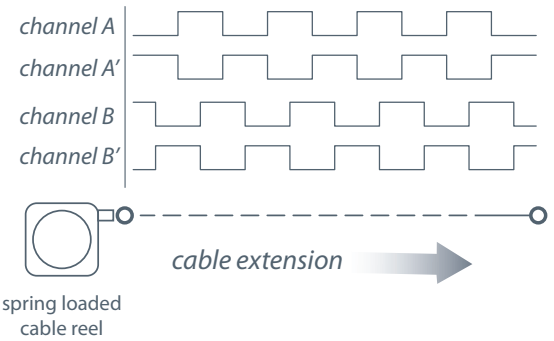
ELECTRICAL

Input Voltage	see ordering information
Input Current	see ordering information

ENVIRONMENTAL

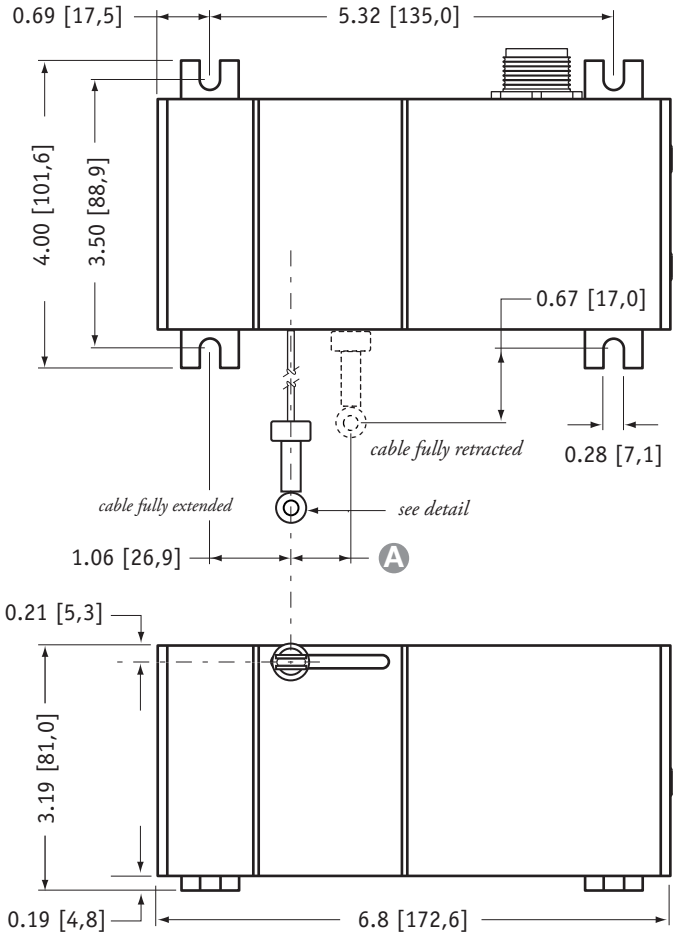
Enclosure	NEMA 4/6, IP 65/67
Operating Temperature	0° to 160°F (-17° to 71°C)
Vibration	up to 10 g to 2000 Hz maximum

Output Signal



-- see ordering information for available channels

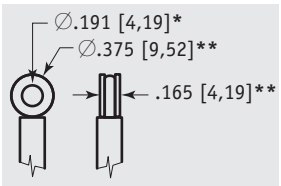
Outline Drawing:

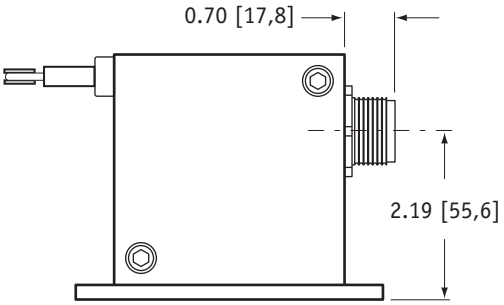


A DIMENSION (inches[mm])

RANGE	N34 *measuring cable*	S47 & V62 *measuring cable*
50	0.23 [5,9]	0.39 [9,9]
100	0.46 [11,7]	0.78 [19,7]
150	0.69 [17,6]	1.16 [29,6]
200	0.92 [23,5]	n/a
250	1.16 [29,3]	n/a

eyelet detail





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:

PT5E - ____ - ____ - ____ - ____ - ____ - ____
order code: Ⓡ Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Sample Model Number:

PT5E - 100 - N34 - FR - 100 - AB-TTL - M6

Ⓡ	range:	100 inches
Ⓐ	measuring cable:	.034 nylon-coated stainless
Ⓑ	cable exit:	front
Ⓒ	resolution:	100±2 pulses per inch
Ⓓ	output signal:	TTL/CMOS compatible driver
Ⓔ	electrical connection:	6-pin plastic connector

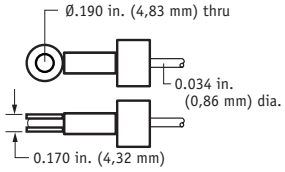
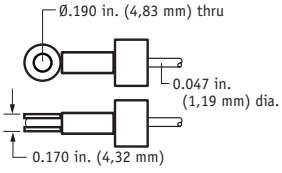
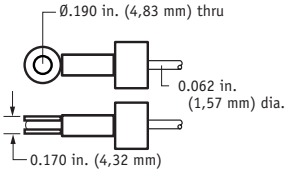
Full Stroke Range:

Ⓡ *order code:*	50	100	150	200	250	1250	2500	3750	5000	6250
full stroke range, min:	50 in.	100 in.	150 in.	200 in.	250 in.	1250 mm	2500 mm	3750 mm	5000 mm	6250 mm
① accuracy (± % of f.s.):	.1	.07	.06	.05	.04	.1	.07	.06	.05	.04
repeatability (± % of f.s.):	.02	.01	.01	.01	.01	.02	.01	.01	.01	.01
cable tension (±20%):	41 ounces			21 ounces		11,4 N			5,8 N	
. cable velocity • acceleration:	300 in./sec • 5 g			120 in./sec • 2 g		8 M/sec • 5 g			3 M/sec • 2 g	

Ordering Information (cont.):

Measuring Cable:

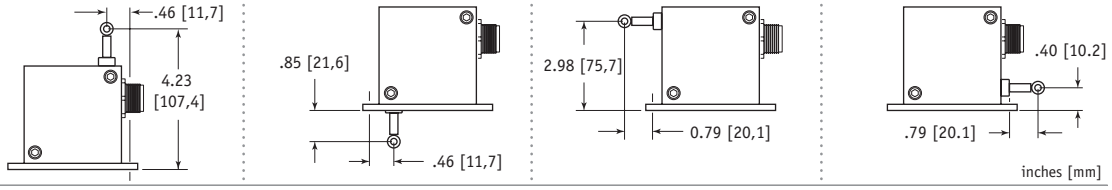
Ⓐ *order code:*

N34	S47	V62
.034 nylon-coated stainless steel *available in all ranges*	.047 stainless steel *all ranges up to 150 inches*	.062 thermoplastic *all ranges up to 150 inches*
		

Cable Exit:

Ⓑ *order code:*

UP	DN	FR	BK
up	down	front	back



Resolution:

Ⓒ *order code:*

	10	100	200	250
resolution for **english** ranges:	10 ±0.2 pulses per inch	100 ±2 pulses per inch	200 ±4 pulses per inch	250 ±5 pulses per inch

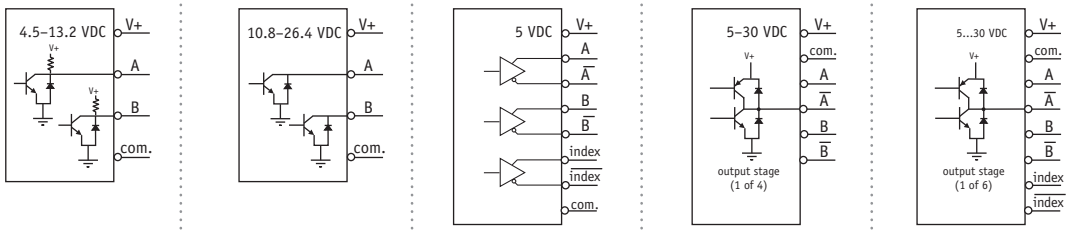
Ⓒ *order code:*

	.5	5	10	12.5
resolution for **metric** ranges:	0.5 ±0.01 pulses per mm	5 ±0.1 pulses per mm	10 ±0.2 pulses per mm	12.5 ±0.3 pulses per mm

Output Signals:

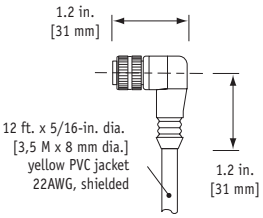
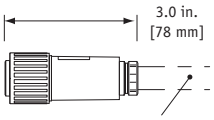
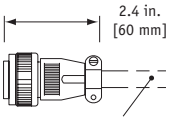
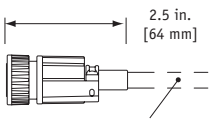
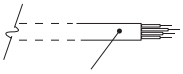
Ⓓ *order code:*

	AB-TTL	AB-OC	ABC-LD	ABC-UD	ABZCUD
output driver:	TTL/CMOS compatible	open collector	5-volt line driver	universal line driver *(no index)*	universal line driver *(with index)*
input voltage:	4.5...13.2 VDC	10.8...26.4 VDC	5 VDC	5...30 VDC	5...30 VDC
max. source/sink current:	20 mA sink	20 mA sink	20 mA sink	20 mA source/sink	20 mA source/sink
max. input current:	80 mA	80 mA	150 mA	100 mA, no load	100 mA, no load



Ordering Information (cont.):

Electrical Connection:

order code:	MC4	M6	M6M	M18	C25
	4-pin micro-connector with 12 ft [3.5 M] cord set	6-pin plastic connector with mating plug	6-pin metal connector with mating plug	18-pin plastic connector with mating plug	25-ft. instrumentation cable 24 AWG, shielded
	IP 67, NEMA 6	**IP 67, NEMA 6**	**IP 65, NEMA 4**	**IP 67, NEMA 6**	**IP 67, NEMA 6**
					
		.30 – .39 in. [8 – 10 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	.375 in. [9 mm] max cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	.26 – .30 in. [7 – 8 mm] cable dia. 20 – 24 AWG conductor size connector: Conxall 14282-18PG-300-K mating plug: Conxall 13282-18SG-326-K	25 ft. x 0.2-in. dia. [7,5 M x 5 mm dia.] 24 AWG, shielded

4-pin cordset:

contact view

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

6-pin mating plug:

contact view

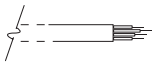
pin	TTL/CMOS Open Collector	5 V Line Driver Universal Line Driver
A	input voltage	input voltage
B	common	common
C	channel A	channel A
D	channel B	channel B
E	-	channel A'
F	-	channel B'

18-pin mating plug:

contact view

pin	TTL/CMOS Open Collector	5 V Line Driver Universal Line Driver
1	input voltage	input voltage
2	common	common
3	channel B	channel B
6	channel A	channel A
7	-	index
11	-	channel B'
12	-	channel A'
15	-	index'

25-ft. instrumentation cable:



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

1 *Total accuracy includes uncertainty due to resolution and is calculated:* {± [(%FS)(FS) + length of 1 pulse]}

Example: *Model Number:* PT5E-100-N34-FR100-AB-TTL-M6
Full Stroke: 100 inches
Accuracy: [.07% (100 in.) + 1/100 in.] = ± .08 inches