PT8150

Cable Actuated Sensor
Heavy Industrial • Incremental Encoder

Linear Position to 60 inches • 1250mm (metric range)

Aluminum or Stainless Steel Enclosure Options

VLS Option to Prevent Free-Release Damage

IP67 • NEMA 6 Protection

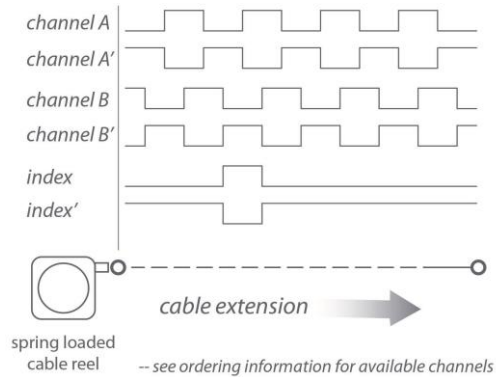3.6″ [91 mm]   5.6″ [141 mm]

With its incremental optical encoder and industrial design, this rugged transducer provides the highest accuracy and longest life of any measurement device of its kind. For measurements up to 60 inches, this model is available in a variety of resolutions and output stages to fit virtually any requirement.

The PT8150 offers numerous advantages over other industrial-grade sensors: It installs in minutes by mounting its body to a fixed surface and attaching its cable to the movable object, fits into areas unsuited for rod-type measurement devices, and works without perfect parallel alignment.

Output Signal

channel A
channel A′
channel B
channel B′
index
index′

cable extension

spring loaded cable reel

-- see ordering information for available channels

General

Full Stroke Ranges	0-30, 0-60 inches, 0-625, 0-1250 mm
Output Signal	incremental encoder (quadrature)
Accuracy	± 0.04% full stroke
Repeatability	± 0.02% full stroke
Resolution	20 to 500 pulses per inch
Measuring Cable	stainless steel or thermoplastic
Enclosure Material	powder-painted aluminum or stainless steel
Sensor	optical encoder
Maximum Retraction Acceleration	see ordering information
Weight, Aluminum (Stainless Steel) Enclosure	3 lbs. (6 lbs.), max.

Electrical

Input Voltage	see ordering information
Input Current	see ordering information
Output Driver Options	see ordering information

Environmental

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

Outline Drawing

see eyelet detail

A

1.80 [45,7]

eyelet detail
Ø.191 [4,19]*
Ø.375 [9,52]**
.165 [4,19]**

3.50 [88,9]

1.50 [37,6]

3.60 [91,4]

0.99 [25,1]

0.08 [2,0]

2.49 [63,3]

1.30 [33,3]

5.56 [141,2] max.

0.60 [15,2]

Ø.27 [6,8] thru
(4 places)

3.00 [76,2]

1.64 [41,6]

RANGE	A
30", 60"	0.66 [16,8]
625, 1250mm	0.85 [21,6]

DIMENSIONS ARE IN INCHES [MM]
tolerances are ±0.02 in. [±0,5 mm] unless otherwise noted

note: *tolerance = +.005 −.001 [+.13 −.03] **tolerance = +.005 −.005 [+.13 −.13]
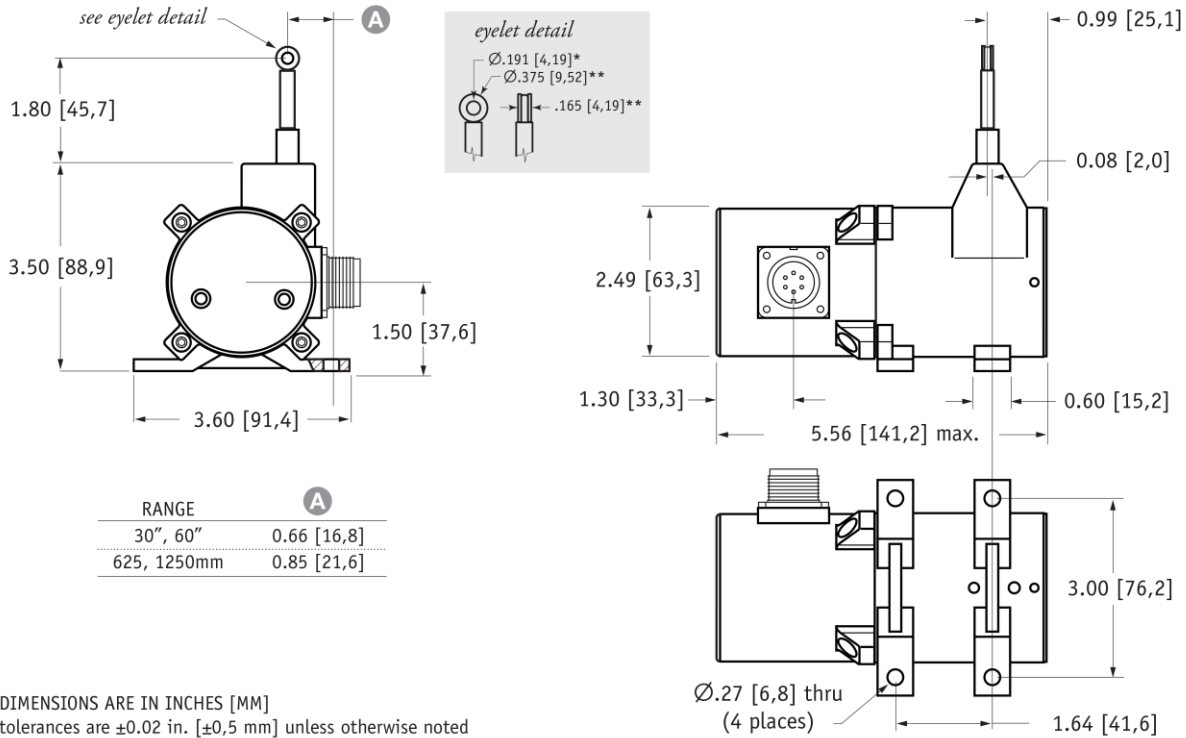
Ordering Information

Model Number:

PT8150-_____-__ __ 1 -__ __ __ __
order code: R   A B C   D E F G

Full Stroke Range:

R order code:	0030	0060	0625	1250
full stroke range, min:	30 in.	60 in.	625 mm	1250 mm

Enclosure Material and Measuring Cable Tension:

A order code:	1	5	2	3	6	4	8	7	9
enclosure:	aluminum			303 stainless			316 stainless		
cable tension:	standard	medium	high	standard	medium	high	standard	medium	high
max. acceleration:	15 g	25 g	40 g	6 g	12 g	18 g	6 g	12 g	18 g

cable tension option specifications
(tension tolerance: ± 50%)

Range:	30 in.	60 in.	625 mm	1250 mm
Standard:	16 oz.	16 oz.	4,5 N	4,5 N
Medium:	26 oz.	26 oz.	7,2 N	7,2 N
High:	47 oz.	47 oz.	13,1 N	13,1 N

Measuring Cable:

B *order code:*	**1**	**2**	**3**	**4**
cable construction:	Ø.034-inch nylon-coated stainless steel rope	Ø.047-inch bare stainless steel rope	Ø.058-inch PVC jacketed vectra fiber rope	Ø.031-inch bare stainless steel rope
available ranges:	*all ranges*	*30 inch & 625 mm only*	*30 inch & 625 mm only*	*60 inch & 1250 mm only*
general use:	indoor	outdoor, debris, high temperature	high voltage or magnetic field	outdoor, debris, high temperature

Output Signal:

D *order code:*	**1**	**2**	**3**	**4**
output driver:	TTL - CMOS	Open Collector	5 V - Line Driver	Universal Line Driver

1 — TTL - CMOS
Input voltage (V+): 4.5...13.2 Vdc
Sink current: 20 mA max.
Input current: 80 mA max.

2 — Open Collector
Input voltage (V+): 10.8...26.4 Vdc
Sink current: 20 mA max.
Input current: 80 mA max.

3 — 5 V - Line Driver
Input voltage (V+): 5 Vdc
Sink current: 20 mA max.
Input current: 150 mA max.

4 — Universal Line Driver
Input voltage (V+): 5...28 VDC
Source/Sink: 20 mA max.
Input current: 100 mA max, no load

Resolution:

E *order code:*	**1**	**2**	**3**	**4**
english ranges:	200 ±4 pulses per in.	400 ±8 pulses per in.	500 ±10 pulses per in.	20 ±0.4 pulses per in.
metric ranges:	10 ±0,2 pulses per mm	20 ±0,4 pulses per mm	25 ±0,5 pulses per mm	1 ±0,02 pulses per mm

Electrical Connection:

F *order code:*	**1**	**2**	**3**	**4**
	6-pin plastic connector with mating plug **IP 67, NEMA 4X*,6**	25-ft. instrumentation cable 24 AWG, shielded **IP 67, NEMA 6**	18-pin plastic connector with mating plug **IP 65, NEMA 4**	6-pin metal connector with mating plug **IP 67, NEMA 6**
dimension	3.0 in. [78 mm]	25 ft. x 0.2-in. dia. [7,5 M x 5 mm dia.]	2.5 in. [64 mm]	2.4 in. [60 mm]
	.30 – .39 in. [8 – 10 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	24 AWG, shielded	.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	.375 in. [9 mm] max cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S

6-pin mating plug:

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'

contact view

18-pin mating plug:

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'

contact view

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'

* —applies to stainless steel enclosure only.