PT8150

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



GENERAL

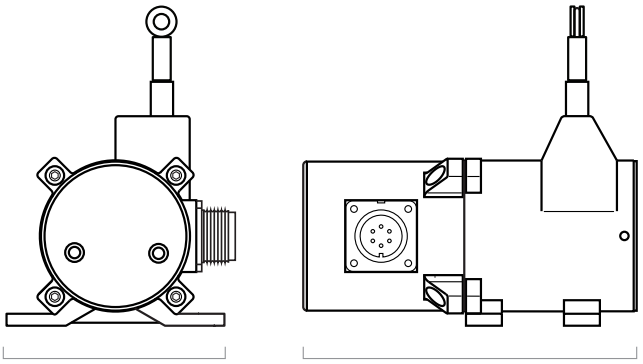
Full Stroke Range Options	0-30, 0-60 inches, 0-625, 0-1250 mm
Output Signal	incremental encoder (quadrature)
Accuracy	0.04% full stroke (contact factory for higher accuracy)
Repeatability	± 0.02% full stroke
Resolution Options	20 to 500 pulses per inch
Measuring Cable Options	stainless steel or thermoplastic
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

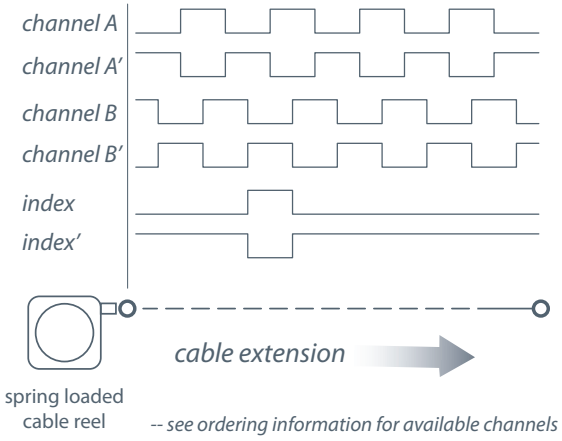
Enclosure	NEMA 4/4X/6, IP 67
Operating Temperature	0° to 160°F (-17° to 71°C)
Vibration	up to 10g to 2000 Hz maximum



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.

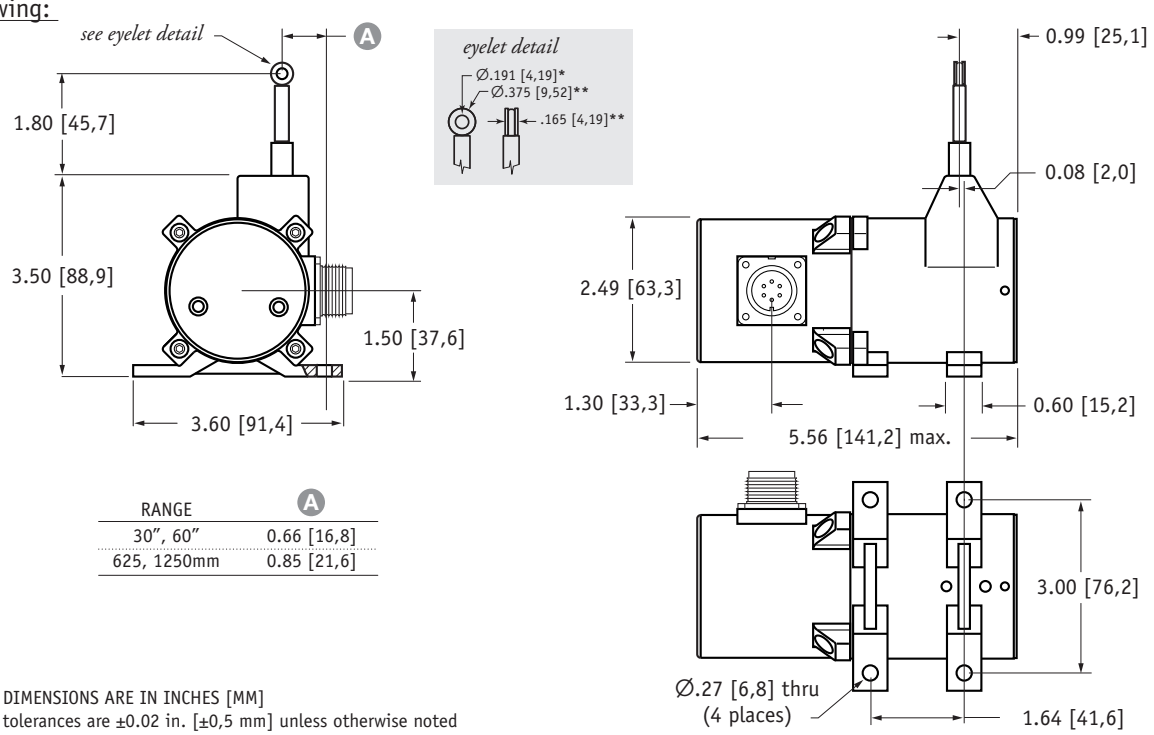
The PT8150 offers numerous advantages over other industrial-grade sensors: It installs in minutes by mounting its body to a fixed surface and attaching it's cable to the movable object, fits into areas unsuited for rod-type measurement devices, and works without perfect parallel alignment.

Output Signal Options:



-- see ordering information for available channels

Outline Drawing:



RANGE	Ⓐ
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: Ⓡ Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ

Sample Model Number:

PT8150 - 0030 - 111 - 1110

Ⓡ	range:	30 inches
Ⓐ	enclosure/cable tension:	aluminum/standard (12 oz.)
Ⓑ	measuring cable:	.034 nylon-coated stainless
Ⓓ	output signal:	TTL/CMOS driver
Ⓔ	resolution:	200 ±4 pulses per inch
Ⓕ	electrical connection:	6-pin plastic connector
Ⓖ	cable guide option:	standard nylon cable guide

Full Stroke Range:

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

Enclosure Material and Measuring Cable Tension:

Ⓐ *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%)

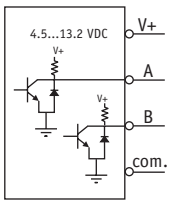
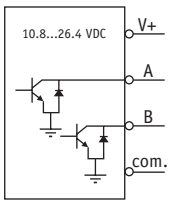
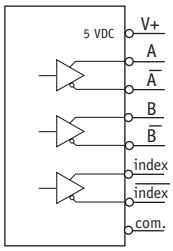
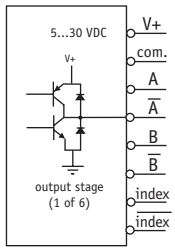
Range:	30 in.	60 in.	625 mm	1250 mm
Standard:	16 oz.	16 oz.	4,5 N	4,5 N
Medium:	26 oz.	26 oz.	7,2 N	7,2 N
High:	47 oz.	47 oz.	13,1 N	13,1 N

Ordering Information (cont.):

Measuring Cable:

Ⓑ 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

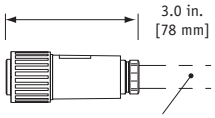
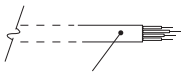
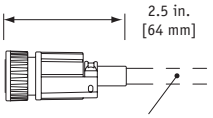
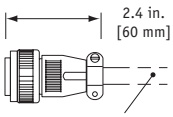
Output Signals:

Ⓓ order code:	1	2	3	4
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...28 VDC Source/Sink: 20 mA max. Input current: 100 mA max, no load
				

Resolution:

Ⓔ 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

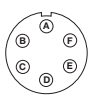
Electrical Connection:

Ⓕ 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**
				
	.30 – .39 in. [8 – 10 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	25 ft. x 0.2-in. dia. [7,5 M x 5 mm dia.] 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'

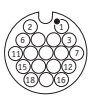
contact view



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



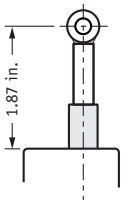
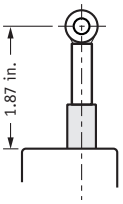
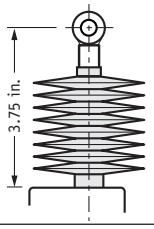
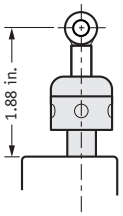
25-ft. instrumentation cable:

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.*

Cable Guide Options:

Ⓖ *order code:*

0	1	2*	3
standard cable guide	stainless steel cable guide	polyurethane cable bellows	integral cable brush
			

**important! – bellows limits measuring cable travel to 25 inches, contact factory before ordering.*

VLS Option - Free Release Protection

The patented Celesco Velocity Limiting System (VLS) is an option for PT8000 Series cable extension transducers that limits cable retraction to a safe 40 to 55 inches per second.

The VLS option prevents the measuring cable from ever reaching a damaging velocity during an accidental free release. This option is ideal for mobile applications that require frequent cable disconnection and reconnection. It prevents expensive unscheduled downtime due to accidental cable mishandling or attachment failure.

VLS is NOT available for medium and high cable tension options, stainless steel enclosure, cable bellows or 2, 5 and 15-inch stroke ranges.

How To Configure Model Number for VLS Option:

VLS8150- ____ Ⓡ **-** 1 Ⓐ ____ Ⓑ 1 Ⓒ **-** ____ Ⓓ ____ Ⓔ ____ Ⓕ ____ Ⓖ

Ⓡ	Ⓑ	Ⓓ	Ⓔ	Ⓕ	Ⓖ
0030	1	1	1	1	0
0060	2	2	2	2	1
0625	3	3	3	3	3
1250	4	4	4	4	

= available options**

creating VLS model number (example):

1. select PT8150 model — **PT8150-0060-111-1110**
2. remove "PT" from the model number — ~~PT~~ **8150-0060-111-1110**
3. add "VLS" — **VLS + 8150-0060-111-1110**
4. completed model number ! — **VLS8150-0060-111-1110**

***Note: please contact factory for a solution to options not supported.*

version: **8.2** last updated: **January 22, 2016**