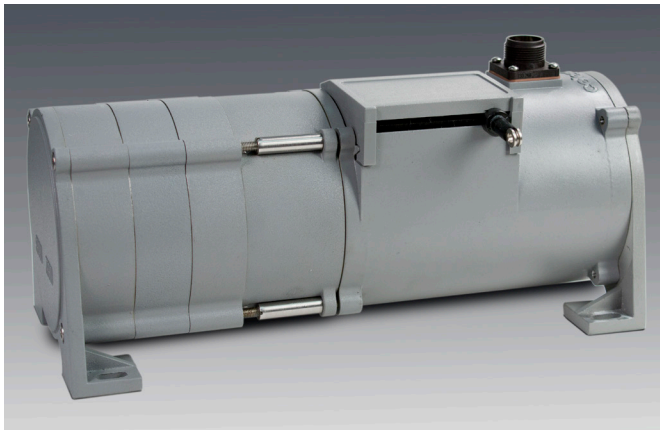
PT9150 (Extended Range)

Extended Ranges • Incremental Encoder

Linear Position to 1700 inches (4300 cm)
Stroke Range Options: 0-600 to 0-1700 inches
VLS Option To Prevent Free-Release Damage
IP67 • NEMA 6 Protection



GENERAL

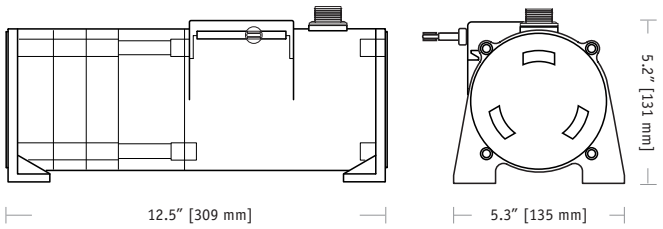
Full Stroke Range Options (on this datasheet)	0-600 to 0-1700 inches
Output Signal	incremental encoder (quadrature)
Output Driver Options	TTL/CMOS, open collector or line driver
Accuracy	0.04% full stroke
Repeatability	± 0.02% full stroke
Resolution Options	10 to 250 pulses per inch
Measuring Cable	nylon-coated stainless steel
Enclosure Material	powder-painted aluminum or stainless steel
Sensor	optical incremental encoder
Maximum Retraction Acceleration	see ordering information
Maximum Velocity	see ordering information
Weight, Aluminum (Stainless Steel) Enclosure	14 lbs. (28 lbs.) max.

ELECTRICAL

Input Voltage	see ordering information
Input Current	see ordering information

ENVIRONMENTAL

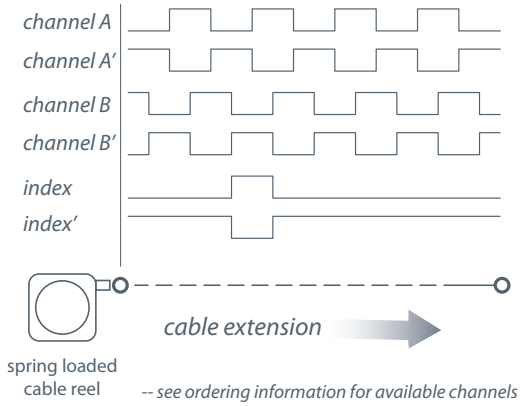
Enclosure	NEMA 4/4X/6, IP 67
Operating Temperature	0° to 160°F (-17° to 71°C)
Vibration	up to 10 g to 2000 Hz maximum



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. This model is available in a wide variety of resolutions and output stages to fit virtually any requirement.

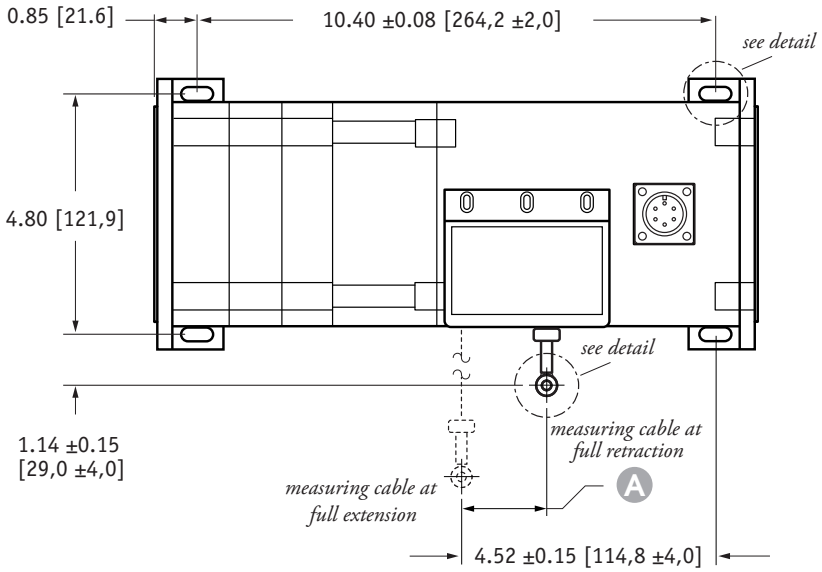
It can measure up to 1700", yet when its cable is retracted it is only 6" long. Its small size and low-cost-to-measurement ratio offers remarkable flexibility and value.

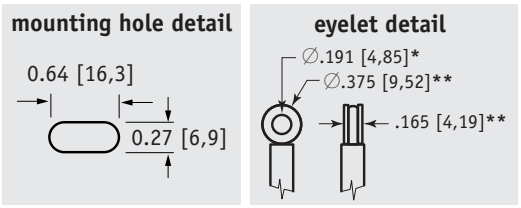
Output Signal Options:



20630 Plummer Street • Chatsworth, CA 91311 • Meas-Spec.com
tel: 800.423.5483 • +1.818.701.2750 • fax: +1.818.701.2799

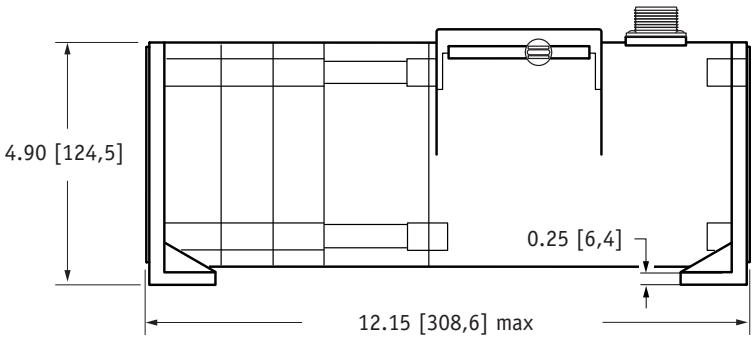
Outline Drawing

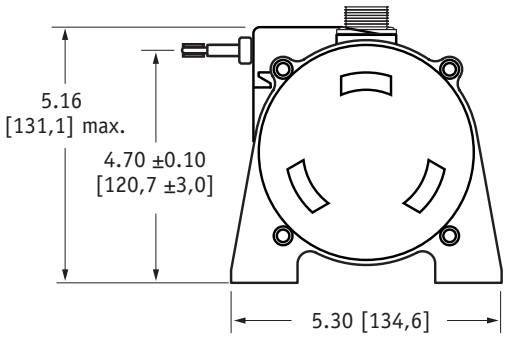




A DIMENSION

RANGE	inches [mm]
600	1.76 [44,7]
800	1.58 [40,1]
1000	1.98 [50,2]
1200	1.98 [50,2]
1500	1.86 [47,2]
1700	2.11 [53,6]





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]

VLS Option - Free Release Protection

The patented Celesco Velocity Limiting System (VLS) is an option for PT9000 Series cable extension transducers that limits cable retraction to a safe 40 to 55 inches per second for the single spring option and 40 to 80 inches per second for the higher tension dual spring option.

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.

How To Configure Model Number for VLS Option:

1. using guide below, select PT9150 model **PT9150-1200-111-1110**
2. remove "PT" from the model number **~~PT~~ 9150-1200-111-1110**
3. add "VLS" **VLS + 9150-1200-111-1110**
4. completed model number! **VLS9150-1200-111-1110**

VLS9150- ____ (R) **-** ____ (A) ____ (B) ____ (C) **-** ____ (D) ____ (E) ____ (F) **0** (G)

	(R)	(A)	(B)	(C)	(D)	(E)	(F)
english ranges	0600 to 1700	1 3	1 2	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
metric ranges	15000 to 40000						

= available options.

Ordering Information:

Model Number:

PT9150- ____ **-** ____ ____ ____ **-** ____ ____ ____ **0**
order code: Ⓡ Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ

Sample Model Number:

PT9150 - 0800 - 111 - 1110

Ⓡ	range:	500 inches
Ⓐ	enclosure:	aluminum
Ⓑ	measuring cable:	nylon-coated stainless
Ⓒ	cable exit:	front
Ⓓ	output signal:	TTL/CMOS driver
Ⓔ	resolution:	100 ±2 pulses per inch

Full Stroke Range:

	Ⓡ order code:	0600	0800	1000	1200	1500	1700
english ranges	full stroke range, min:	600 in.	800 in.	1000 in.	1200 in.	1500 in.	1700 in.
	cable tension (±35%):	27 oz.	24 oz.	20 oz.	19 oz.	18 oz.	17 oz.

	Ⓡ order code:	15000	20000	25000	30000	35000	40000
metric ranges	full stroke range, min:	15.000 mm	20.000 mm	25.000 mm	30.000 mm	35.000 mm	40.000 mm
	cable tension (±35%):	7,5 N	6,7 N	5,6 N	5,3 N	5,0 N	4,7 N

Enclosure Material:

Ⓐ order code:	1	3
enclosure material:	powder-painted aluminum	303 stainless steel
max. acceleration:	1g	1g
max. velocity:	60 inches/sec.	60 inches/sec.

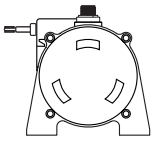
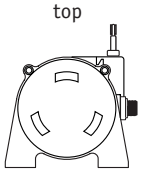
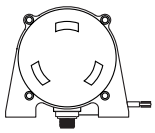
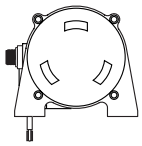
Measuring Cable:

Ⓑ order code:	1	2
cable construction:	nylon-coated stainless steel rope*	bare stainless steel rope*
general use:	*indoor*	*outdoor, debris, high temperature*

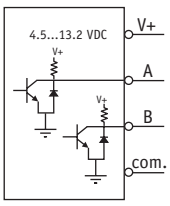
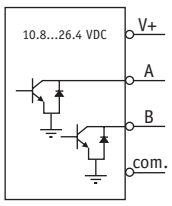
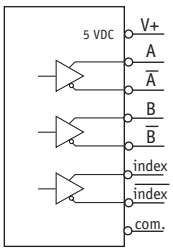
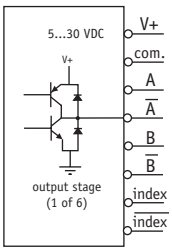
**cable diameter:*

stroke range:	0600	0800	1000	1200	1500	1700
nylon-coated stainless:	.034 in.	.019 in.	.019 in.	.019 in.	.014 in.	.014 in.
bare stainless:	.031 in.	.018 in.	.018 in.	.018 in.	.015 in.	.015 in.

Cable Exit:

Ⓒ order code:	1	2	3	4
	front	top	back	down
				

Output Signals:

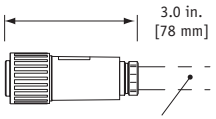
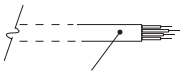
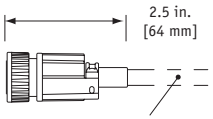
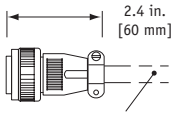
Ⓓ order code:	1	2	3	4
output driver:	TTL - CMOS	Open Collector	5 V - Line Driver	Universal Line Driver
	Input voltage (V+): 4.5...13.2 Vdc Sink current: 20 mA max. Input current: 80 mA max.	Input voltage (V+): 10.8...26.4 Vdc Sink current: 20 mA max. Input current: 80 mA max.	Input voltage (V+): 5 Vdc 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
				

Ordering Information (cont.):

Resolution:

order code:	1	2	3	4
english ranges:	100 ±2 pulses per in.	200 ±4 pulses per in.	250 ±5 pulses per in.	10 ±0.2 pulses per in.
metric ranges:	5 ±0,1 pulses per mm	10 ±0,2 pulses per mm	12,5 ±0,25 pulses per mm	0,5 ±0,01 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. [6,6 – 7,6 mm] cable dia. 20 – 24 AWG conductor size connector: Conxall 14282-18PG-300-K mating plug: Conxall 13282-18SG-326-K	3/8-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.*

version: **9.0** last updated: **February 11, 2016**