PT9510

Description

- Absolute Linear Position to 1700 inches (4300 cm)
- Stroke Range Options: 0-600 to 0-1700 inches
- VLS Option To Prevent Free-Release DamageI
- P68 · NEMA 6 Protection · Hazardous Area Certification
- Extended range

The PT9510 can operate from an unregulated 14.5 to 40 VDC power supply while providing a regulated output signal over it's full extended range of up to 1700". It provides a 0 - 10 VDC position feedback signal proportional to the linear movement of it's stainless steel measuring cable.

As a member of our innovative family of NEMA-4 rated cable-extension transducers, the PT9510 offers numerous benefits. It installs in minutes, functions properly without perfectly parallel alignment, and when its cable is retracted, it measures only 6".
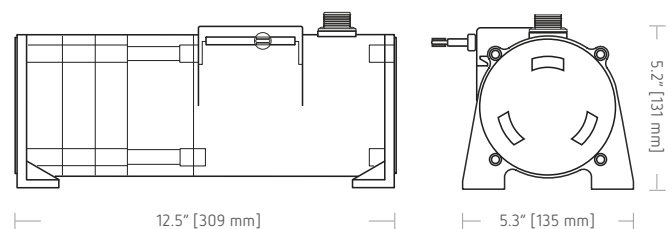
GENERAL

Full Stroke Range Options (on this datasheet)	0-600 to 0-1700 inches
Output Signal Options	0...10, 0...5, -5...+5, -10...+10 VDC
Accuracy	± 0.12% full stroke
Repeatability	± 0.05% full stroke
Resolution	essentially infinite
Measuring Cable Options	stainless steel or thermoplastic
Enclosure Material	powder-painted aluminum or 303 stainless steel
Sensor	plastic-hybrid precision potentiometer
Potentiometer Cycle Life	≥ 250,000
Maximum Retraction Acceleration	see ordering information
Maximum Velocity	see ordering information
Weight, Aluminum (Stainless Steel) Enclosure	14 lbs. (28 lbs.) max.

ELECTRICAL

Input Voltage	14.5-40VDC (10.5-40VDC for 0-5 volt output)
Input Current	10 mA maximum
Output Impedance	1000 ohms
Maximum Output Load	5000 ohms
Output Signal, Zero Adjust	up to 50% of full stroke range
Output Signal, Span Adjust	to 50% of factory set span

ENVIRONMENTAL

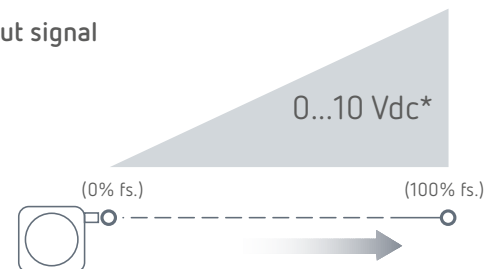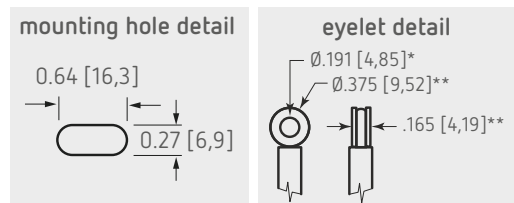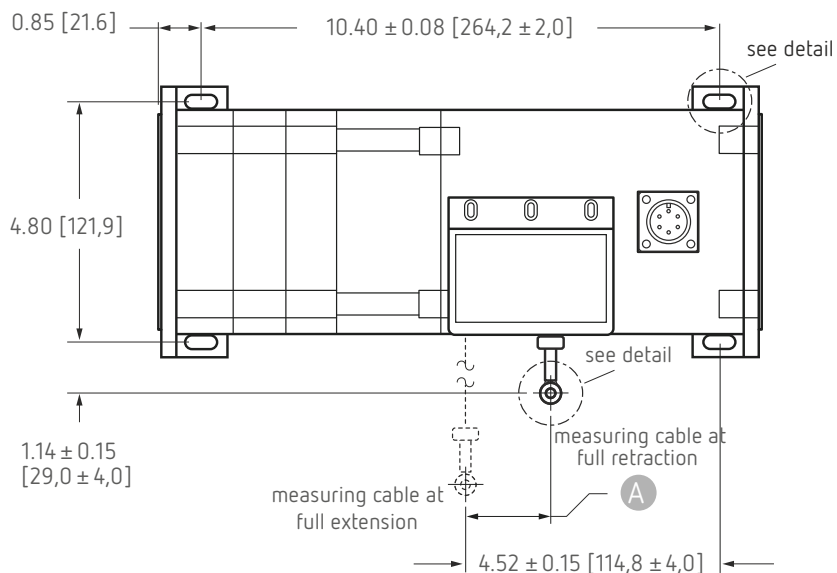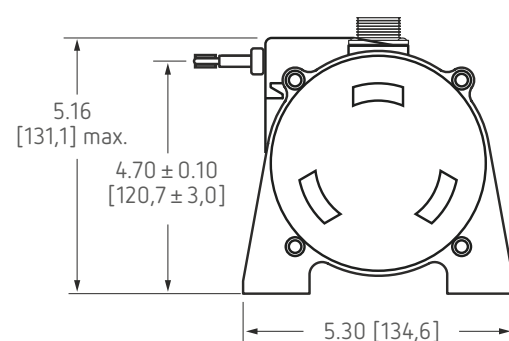|	
Enclosure	NEMA 4/4X/6, IP 67/68
Operating Temperature	-40° to 200°F (-40° to 90°C)
Vibration	up to 10 g to 2000 Hz maximum

EMC COMPLIANCE PER DIRECTIVE 89/336/EEC

Emission / Immunity	EN50081-2 / EN50082-2

5.2" [131 mm]

12.5" [309 mm]   5.3" [135 mm]

Output signal

0...10 Vdc*

(0% fs.)   (100% fs.)

*Additional Output Options: 0...5, −5...+5, −10...+10 Vdc

Outline Drawing

0.85 [21.6]

10.40 ± 0.08 [264,2 ± 2,0]

see detail

4.80 [121,9]

1.14 ± 0.15 [29,0 ± 4,0]

see detail

measuring cable at full retraction

measuring cable at full extension

Ⓐ

4.52 ± 0.15 [114,8 ± 4,0]

mounting hole detail

0.64 [16,3]

0.27 [6,9]

eyelet detail

Ø.191 [4,85]*
Ø.375 [9,52]**

.165 [4,19]**

Ⓐ	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]

4.90 [124,5]

0.25 [6,4]

12.15 [308,6] max

5.16 [131,1] max.

4.70 ± 0.10 [120,7 ± 3,0]

5.30 [134,6]
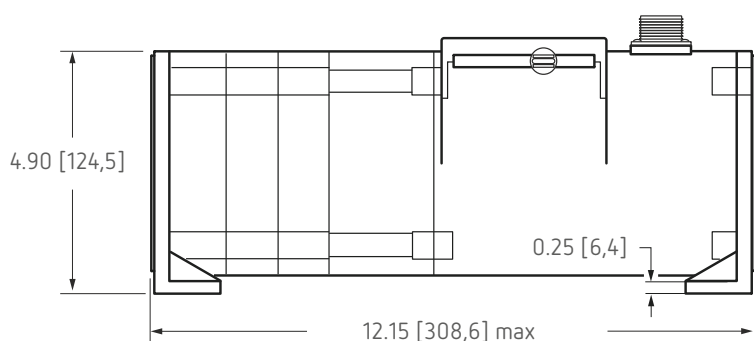
DIMENSIONS ARE IN INCHES [MM]
tolerances are 0.03 IN. [0.5 MM] unless otherwise noted.

* tolerance = +.005 −.001 [+.13 −.03]
** tolerance = +.005 −.005 [+.13 −.13]

VLS Option – Free Release Protection

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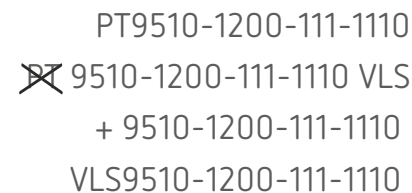
The VLS option prevents the measuring cable from ever reaching a damaging velocity during an accidental free release. This option is ideal for mobile applications that require frequent cable disconnection and reconnection. It prevents expensive unscheduled downtime due to accidental cable mishandling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

How To Configure Model Number for VLS

VLS 9510 - _____ - __ __ - __ __ __
Ⓡ   Ⓐ Ⓑ   Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ

creating VLS model number (example)...

1. select PT9510 model   PT9510-1200-111-1110

2. remove "PT" from the model number   ⊠9510-1200-111-1110 VLS

3. add "VLS"   + 9510-1200-111-1110

4. completed model number !   VLS9510-1200-111-1110

ALTHEN
SENSORS & CONTROLS

Model Number

PT9510- ____ - __ __ __ - 1 __ __ 0

order code: Ⓡ   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ

Sample Model Number:
PT9510 - 1200 - 111 - 1110

Ⓡ	range:	500 inches
Ⓐ	enclosure/cable tension:	aluminum
Ⓑ	measuring cable:	nylon-coated stainless
Ⓒ	cable exit:	front
Ⓔ	output signal:	0...10 vdc
Ⓕ	electrical connection:	6-pin plastic connector

Full Stroke Range

Ⓡ order code:	0600	0800	1000	1200	1500	1700
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.

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

Ⓒ Ordercode:	1	2	3	4
	front	top	back	down

Output Signals

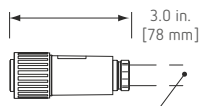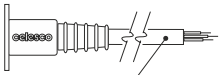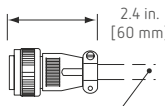| Ⓔ order code:	1	2	3	4	5	6	7	8
output signal options:	0...10 VDC	10...0 VDC	0...5 VDC	5...0 VDC	-10...+10 VDC	+10...-10 VDC	-5...+5 VDC	+5...-5 VDC
input voltage: span	14.5 − 40 vdc				14.5 − 40 vdc			
			10.5 − 40 vdc				10.5 − 40 vdc	
adjustment:	to 50% of full stroke range				to 75% of full stroke range			
zero adjustment:	from factory set zero to 50% of full stroke range				from factory set zero to 25% of full stroke range			

example:
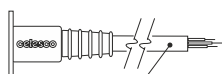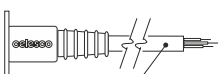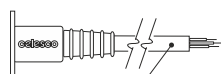
ordercode = 1 = 0...10 VDC ➡ 0 vdc =

10 vdc =
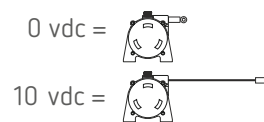
■ Ordering Information (cont.)

Electrical Connection

Ⓕ order code:	1	2	3	4
	6-pin plastic connector w/mating plug	10-ft. [3 M] waterproof cable	6-pin metal connector w/mating plug	25-ft. [7.5 M] instrumentation cable
	IP 67, NEMA 4X**,6	IP 67, NEMA 4X**, 6	IP 65, NEMA 4	IP 67, NEMA 6

3.0 in. [78 mm]

1/2 - 5/16" [14 - 8 mm] cable dia.
16 AWG max conductor size
connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S

10 ft. x 0.4-in. dia.
[3 M x 10 mm dia.]
18 AWG, type SJOW

2.4 in. [60 mm]

3/8-in. [9 mm] max 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

Ⓕ order code:	5	6	7
	100-ft. [30 M] waterproof cable	10-ft. [3 M] pressure tested* waterproof cable	100-ft. [30 M] pressure tested* waterproof cable
	IP 67, NEMA 4X**,6	IP 68, NEMA 4X**, 6P	IP 68, NEMA 4X**, 6P

100 ft. x 0.4-in. dia.
[30 M x 10 mm dia.]
18 AWG, type SJTOW

10 ft. x 0.4-in. dia.
[3 M x 10 mm dia.]
18 AWG, type SJTOW

100 ft. x 0.4-in. dia.
[30 M x 10 mm dia.]
18 AWG, type SJTOW

6-pin Mating Plug

pin	signal
A	input voltage
B	output signal
C	common

contact
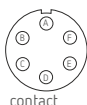
Waterproof Cable
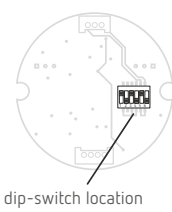
color code	signal
WHITE	input voltage
GREEN	output signal
BLACK	common

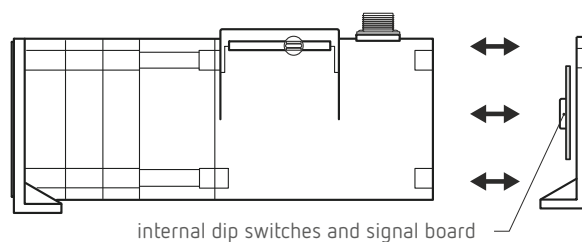**Instrumentation Cable**

color code	signal
RED	input voltage
GREEN	output signal
BLACK	common

Notes: { * — Test pressure: 100 feet [30 meters] H_2O (40 PSID); Test Medium: Air; Duration: 2 hours.
{ ** — NEMA 4X applies to stainless steel enclosure only.

■ Output Signal Settings (does not apply to -5...+5 & -10...+10 vdc options)

output signal   switch setting   signal board

0...10 vdc   1 2 3 4 5 6

10...0 vdc   1 2 3 4 5 6

0...5 vdc   1 2 3 4 5 6

5...0 vdc   1 2 3 4 5 6

dip-switch location

The output signal direction can be reversed at any time by simply changing the dip-switch settings found on the internal signal board. After the settings have been changed, adjustment of the Zero and Span trimpots will be required to precisely match signal values to the beginning and end points of the stroke.

To gain access to the signal board, remove four Allen-Head Screws and remove end cover bracket.

internal dip switches and signal board

⚠ **Caution! Do Not Remove Spring-Side End Cover**
Removing spring-side end cover could cause spring to become unseated and permanently damaged.

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