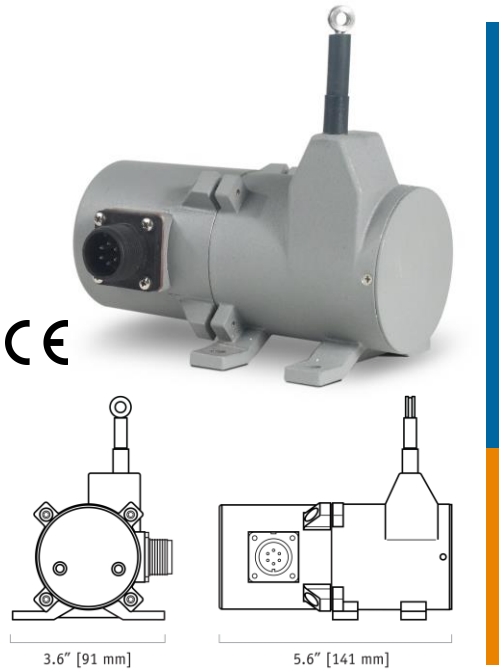


PT8510

Cable Actuated Sensor
Heavy Industrial • 0...5, 0...10 Vdc

Absolute Linear Position to 60 inches (1524 mm)

Aluminum or Stainless Steel Enclosure Options

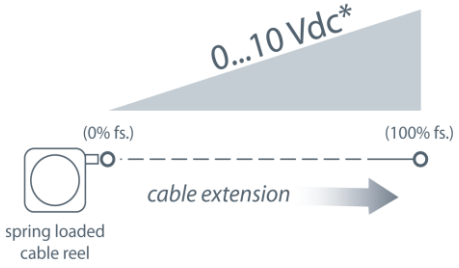
VLS Option to Prevent Free-Release Damage

IP68 • NEMA 6 Protection

The PT8510 can operate from an unregulated 14.5 to 40 VDC power supply while providing an output signal that is proportional to the linear movement of its measuring cable. The PT8510 has a maximum measurement range up to 60" and has 4 output signal options to choose from: 0...10, 0...5, -10...+10 and -5...+5 Vdc.

As a member of our innovative family of NEMA-4 rated cable-extension transducers, the PT8510 offers numerous benefits. It installs in minutes, fits into areas unsuited for rod-type measurement devices, and works without perfectly parallel alignment.

Output Signal



*Also Available: 0...5, ⁻5...⁺5, ⁻10...⁺10 Vdc

General

Full Stroke Range Options	0-2 to 0-60 inches
Output Signal	0...5, 0...10, -5...+5, -10...+10 VDC
Accuracy	± 1.00% to ± 0.15% full stroke (see ordering information)
Repeatability	± 0.05% full stroke
Resolution	essentially infinite
Measuring Cable	nylon-coated stainless steel or thermoplastic
Enclosure Material	powder-painted aluminum or stainless steel
Sensor	plastic-hybrid precision potentiometer
Potentiometer Cycle Life	see ordering information
Maximum Retraction Acceleration	see ordering information
Weight	3 lbs. (6 lbs.) max.

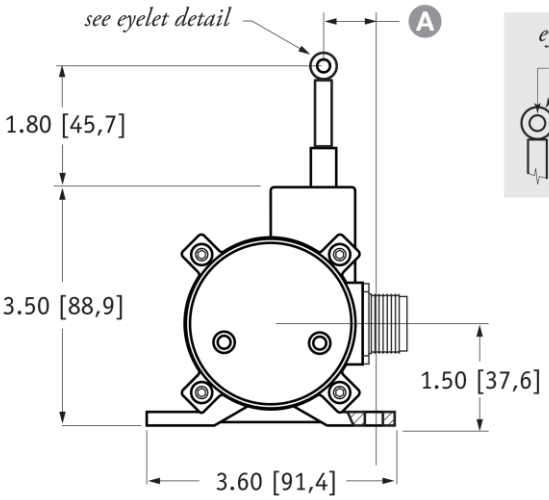
Electrical

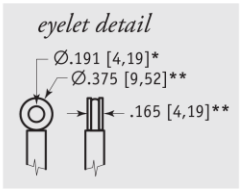
Input Voltage	see ordering information
Input Current	10 mA maximum
Output Impedance	1000 ohms
Maximum Load	5000 ohms
Zero and Span Adjustment	see ordering information

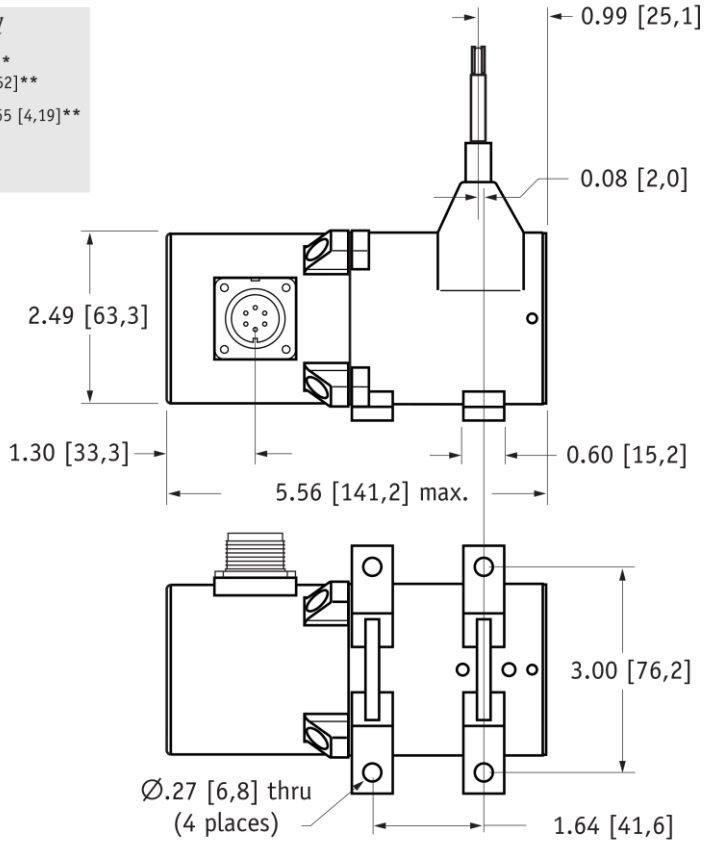
Environmental

Enclosure	NEMA 4/4X/6, IP 67/68
Operating Temperature	-40º to 200ºF (-40º to 90ºC)
Vibration	up to 10 g to 2000 Hz maximum

Outline Drawing:







RANGE	A
2″, 10″	1.16 [29,5]
5″, 25″, 50″	0.66 [16,8]
15″	0.99 [25,7]
20″, 40″	0.85 [21,6]
30″, 60″	0.52 [13,3]

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:

PT8510- ____ Ⓡ **-** __ Ⓐ __ Ⓑ **1** Ⓒ **-** **1** Ⓓ __ Ⓔ __ Ⓕ __ Ⓖ
order code:

Sample Model Number:

PT8510 - 0030 - 111 - 1110

Ⓡ	range:	30 inches
Ⓐ	enclosure/cable tension:	aluminum/standard (9 oz.)
Ⓑ	measuring cable:	.034 nylon-coated stainless
Ⓔ	output signal:	0...10 vdc
Ⓕ	electrical connection:	6-pin plastic connector
Ⓖ	cable guide option:	standard nylon cable guide

Full Stroke Range:

Ⓡ *order code:*	0002	0005	0010	0015	0020	0025	0030	0040	0050	0060
full stroke range, min:	2 in.	5 in.	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.	60 in.
accuracy (% of f.s.):	1.00%	1.00%	0.18%	0.18%	0.18%	0.18%	0.18%	0.15%	0.15%	0.15%
potentiometer cycle life*:	2.5×10^6	2.5×10^6	5×10^5	5×10^5	5×10^5	5×10^5	5×10^5	2.5×10^5	2.5×10^5	2.5×10^5

**–1 cycle is defined as the travel of the measuring cable from full retraction to full extension and back to full retraction*

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

Range:	2 in.	5 in.	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.	60 in.
Standard:	39 oz.	16 oz.	39 oz.	26 oz.	20 oz.	16 oz.	13 oz.	20 oz.	16 oz.	13 oz.
Medium:	65 oz.	26 oz.	65 oz.	43 oz.	33 oz.	26 oz.	22 oz.	33 oz.	26 oz.	22 oz.
High:	116 oz.	47 oz.	116 oz.	77 oz.	60 oz.	47 oz.	40 oz.	60 oz.	47 oz.	40 oz.

tension tolerance: ± 50%

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*	*5, 15, 20, 25, 30-inch only*	*thru 30 inches only*	*40, 50, 60-inch only*
general use:	indoor	outdoor, debris, high temperature	high voltage or magnetic field	outdoor, debris, high temperature

Output Signals:

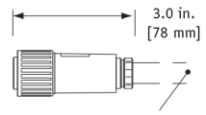
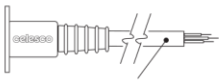
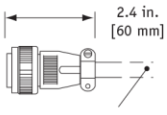
Ⓔ *order code:*	1	2	3	4	5	6	7	8
output signal options:	0...10 VDC	10...0 VDC	0...5 VDC	5...0 VDC	-10...+10 VDC	+10...-10 VDC	-5...+5 VDC	+5...-5 VDC
input voltage:	14.5 – 40 vdc		10.5 – 40 vdc		14.5 – 40 vdc		10.5 – 40 vdc	
span adjustment:	to 50% of factory set span				to 75% of factory set span			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

Example:

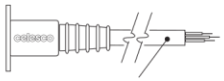
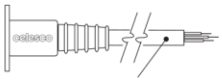
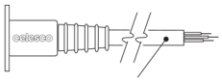
ordercode = **1** = 0...10 vdc { = 0 vdc = 10 vdc

Electrical Connection:

F *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**
			
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.] 3-conductor, 18 AWG type SJTOW	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.] 6-conductor, 24 AWG shielded

F *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.] 3-conductor, 18 AWG type SJTOW	100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 3-conductor, 18 AWG type SJTOW

6-pin Mating Plug

pin	signal
A	input voltage
B	output signal
C	common

contact view

Waterproof Cable

color code	signal
WHITE	input voltage
GREEN	output signal
BLACK	common

Instrumentation Cable

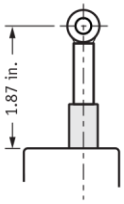
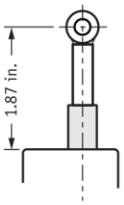
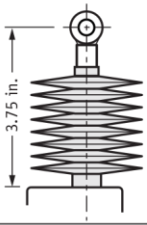
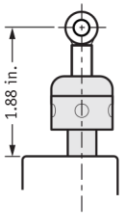
color code	signal
RED	input voltage
GREEN	output signal
BLACK	common

Note: WHITE, BLUE, BROWN are not used.

**–Test pressure: 100 feet [30 meters] H_2O (40 PSID); Test Medium: Air; Duration: 2 hours. ** –Applies to stainless steel enclosure only.*

Cable Guide Options:

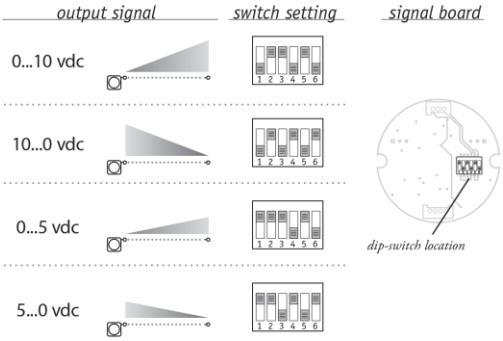
G *order code:*

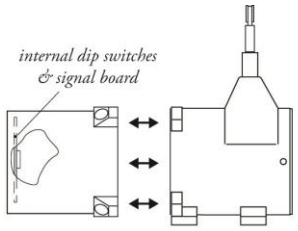
0	1	2*	3
standard cable guide	stainless steel cable guide	polyurethane cable bellows	integral cable brush
			

**note: all ranges up to 25 inches only*

Output Signal Selection (does not apply to -5...+5 and -10...+10 VDC options)

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 rear cover.

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 or 2, 5 and 15-inch stroke ranges.

How to Configure Model Number for VLS

VLS8510-____(R) - 1(A) ____(B) 1(C) - 1(D) ____(E) ____(F) ____(G)

(R)	(B)	(E)	(F)	(G)
0015	1	1	1	0
0020	2	2	2	1
0025	3	3	3	3
0030	4	4	4	
0040		5	5	
0050		6	6	
0060		7	7	
		8		

= available options**

creating VLS model number (example):

1. select PT8420 model — PT8510-0060-111-1110
2. remove "PT" from the model number — ~~PT~~ 8510-0060-111-1110
3. add "VLS" — VLS + 8510-0060-111-1110
4. completed model number! — VLS8510-0060-111-1110

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