PT8101

Heavy Industrial • Voltage Divider

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



GENERAL

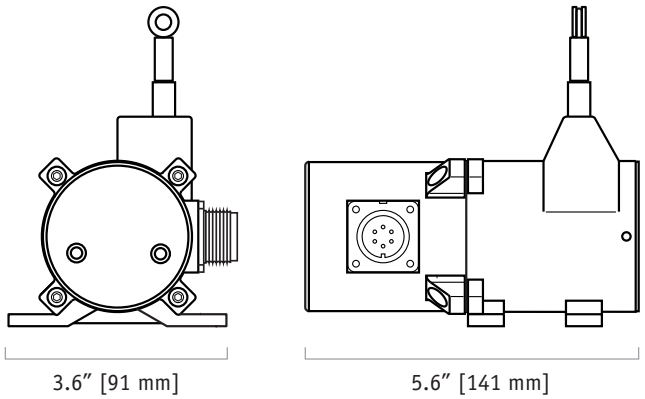
Full Stroke Range Options	0-2 to 0-60 inches
Output Signal Options	voltage divider (potentiometer)
Accuracy	.1% to 1% f.s. (see ordering information
Repeatability	± 0.02% full stroke
Resolution	essentially infinite
Measuring Cable Options	stainless steel or thermoplastic
Enclosure Material	powder-painted aluminum or stainless steel
Sensor	plastic-hybrid precision potentiometer
Potentiometer Cycle Life	see ordering information
Maximum Retraction Acceleration	see ordering information
Weight, Aluminum (Stainless Steel) Enclosure	3 lbs. (6 lbs.) max.

ELECTRICAL

Input Resistance Options	see ordering information
Power Rating, Watts	see ordering information
Recommended Maximum Input Voltage	see ordering information
Output Signal Change Over Full Stroke Range	94% ±4% of input voltage

ENVIRONMENTAL

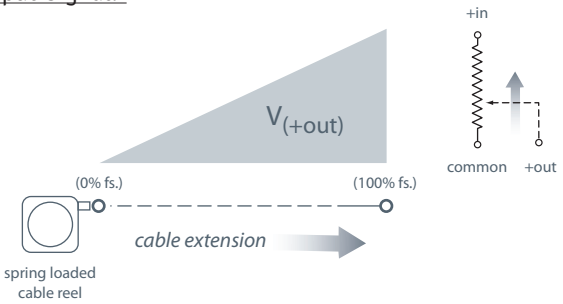
Enclosure	NEMA 4/4X/6, IP 67/68
Operating Temperature	-40° to 200°F (-40° to 90°C)
Vibration	up to 10g to 2000 Hz maximum



The PT8101, using a high cycle plastic-hybrid potentiometer, operates with any basic panel meter or programmable controller in factories and harsh environments requiring linear position measurements in ranges up to 60".

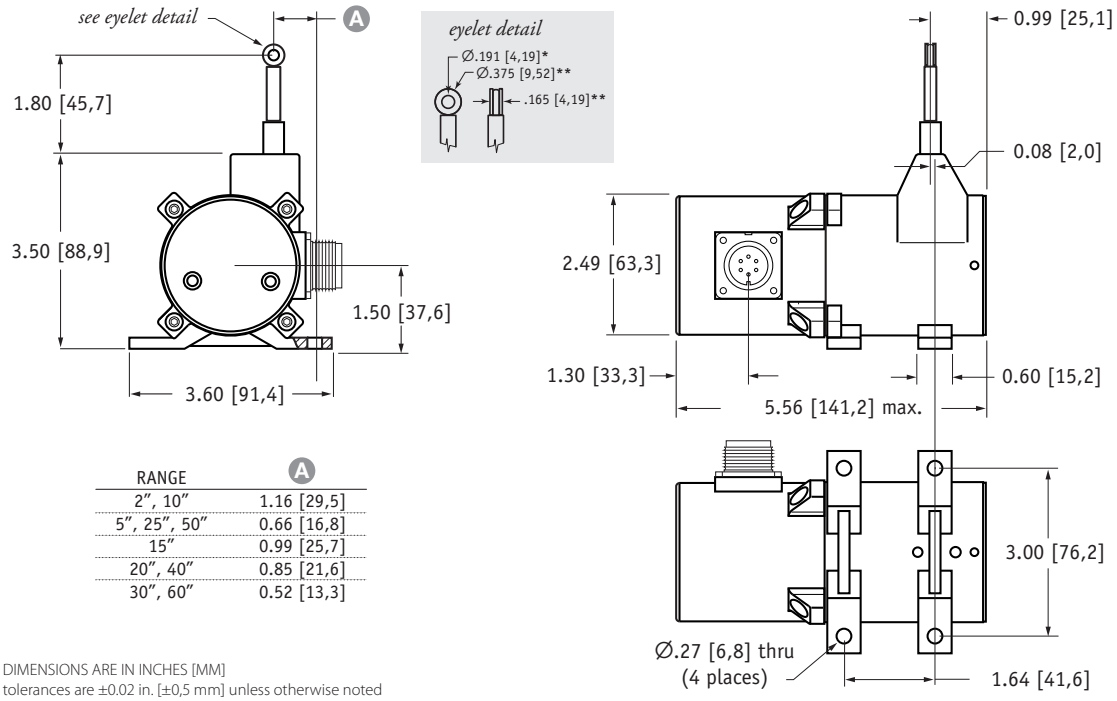
As a member of our innovative line of cable actuated sensors, the PT8101 installs in minutes by mounting it's body to a fixed surface and attaching it's cable to the movable object, works without perfect parallel alignment, and when it's stainless-steel cable is retracted, it measures only 5". Cable actuated sensors are simple to install, exceptionally reliable and will fit into areas unsuited for rod-type measurement devices.

Output Signal:



-- bridge circuit option available, see ordering information

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:

PT8101- _____ **-** ___ ___ **1** **-** ___ **1** ___ ___
order code: Ⓡ Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ

Sample Model Number:

PT8101 - 0030 - 111 - 1110

Ⓡ	range:	30 inches
Ⓐ	enclosure/cable tension:	aluminum/standard (13 oz.)
Ⓑ	measuring cable:	.034 nylon-coated stainless
Ⓓ	output signal:	500 ohm potentiometer
Ⓕ	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	60
accuracy (% of f.s.) 500...10K ohm options:	1.00%	1.00%	0.15%	0.15%	0.15%	0.15%	0.15%	0.10%	0.10%	0.10%
accuracy (% of f.s.) bridge circuit options:	0.30%	0.30%	0.20%	0.20%	0.20%	0.20%	0.15%	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:

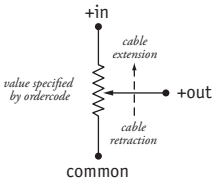
Ⓓ order code:	1	2	3	4	5	6
	500 ohm*	1000 ohm*	5000 ohm*	10,000 ohm*	fixed bridge (2 mV/V)	adjustable bridge (0...30 mV/V)

**tolerance = ±10%*

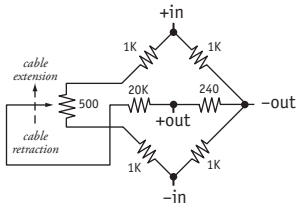
max. input voltage and power rating, options: 1 – 4

	2-inch, 5-inch range	*10-inch to 60-inch range*
500-ohms:	20 V AC/DC (1 W)	30 V AC/DC (2 W)
1K to 10K-ohms:	30 V AC/DC (1 W)	30 V AC/DC (2 W)

circuit, options 1-4

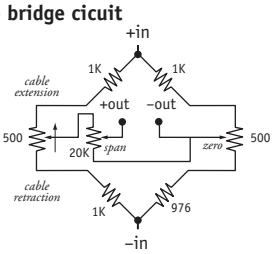


fixed bridge circuit



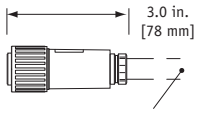
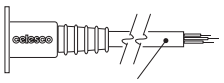
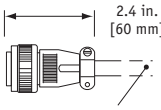
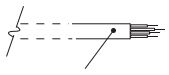
full scale output: 2 mV/V
zero adjust: not available

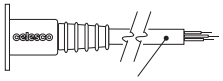
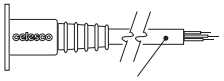
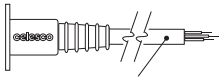
adjustable bridge cicuit



full scale output: adjustable from 0 to 30mV/V
zero adjust: to 50% of full stroke

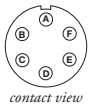
Electrical Connection:

Ⓕ 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**
				
	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

Ⓕ 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.] 3-conductor, 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	standard	bridge
A	+ in	+ in
B	common	– in
C	+ out	– out
D	-	+ out



contact view

Waterproof Cable

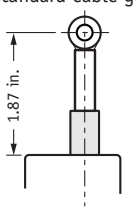
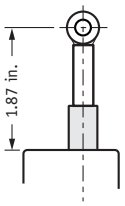
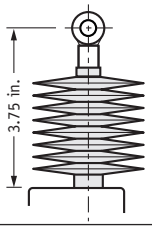
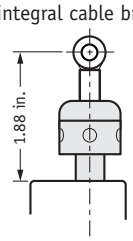
color code	standard	bridge
WHITE	+ in	n/a
BLACK	common	n/a
GREEN	+ out	n/a

Instrumentation Cable

color code	standard	bridge
RED	+ in	+ in
BLACK	common	– in
GREEN	+ out	+ out
WHITE	-	– out
BLUE	-	-
BROWN	-	-

**–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:

Ⓖ 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*

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, steel enclosure, cable bellows or 2, 5 and 15-inch stroke ranges.

How To Configure Model Number for VLS Option:

VLS8101 - ____ Ⓡ **-** 1 Ⓐ ___ Ⓑ 1 Ⓒ **-** ___ Ⓓ 1 Ⓔ ___ Ⓕ ___ Ⓖ

Ⓡ	Ⓑ	Ⓓ	Ⓕ	Ⓖ
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	

= available options**

creating VLS model number (example):

1. select PT8101 model — **PT8101-0060-111-1110**
2. remove "PT" from the model number — ~~PT~~ **8101-0060-111-1110**
3. add "VLS" — **VLS + 8101-0060-111-1110**
4. completed model number ! — **VLS8101-0060-111-1110**

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

version: **10.2** last updated: **January 22, 2016**