ALTHEN SENSORS & CONTROLS

mm PT1DC

Description

- Absolute Linear Position to 50 inches (1270 mm)
- Aluminum and Polycarbonate Enclosure
- Compact Designl
- P65 · NEMA 4 Protection

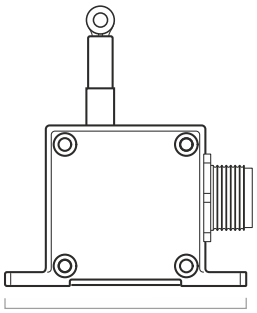
CE

The PT1DC 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 it's measuring cable. The PT1DC has a maximum measurement range up to 50" and has 4 output signal options to choose from: 0...10, 0...5, -10...+10 and -5...+5 Vdc.

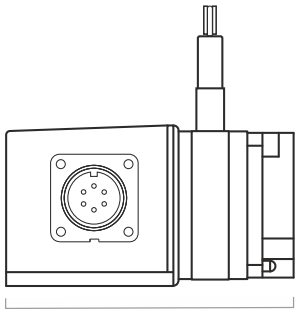
Just like the rest of the PT1 series, the PT1DC also offers several options including forward and reverse output signals, zero and span adjustments and alternate measuring cable exits.

GENERAL

Full Stroke Range Options	0-2 to 0-50 inches
Output Signal Options	0...5, 0...10, -5...+5, -10...+10 VDC
Accuracy	see ordering information
Repeatability	± 0.05% full stroke
Resolution	essentially infinite
Measuring Cable	.019-in. dia. nylon-coated stainless steel
Enclosure	glass-filled polycarbonate and black anodized aluminum
Sensor	plastic-hybrid precision potentiometer
Potentiometer Cycle Life	see ordering information
Maximum Retraction Acceleration	see ordering information
Weight	1 lb. max.



3.3" [83 mm]



3.9" [98 mm]

ELECTRICAL

Input	14.5-40 VDC (10.5-40 VDC for 0...5 and -5...+5 volt output)
Input Current	10 mA
maximum Output Impedence	1000 ohms
Maximum Load	5000 ohms
Zero and Span Adjustment	see ordering information

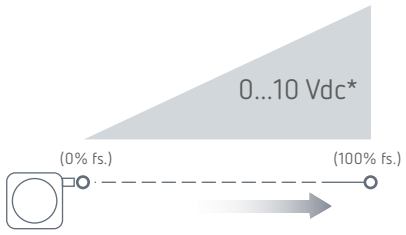
ENVIRONMENTAL

Enclosure	NEMA 4, IP 65
Operating Temperature	0° to 200°F (-17° to 90°C)
Vibration	up to 10 g to 2000 Hz maximum

EMC COMPLIENCE PER DIRECTIVE 89/336/EEC

Emission/Immunity	EN50081-2 / EN50082-2

Output signal



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

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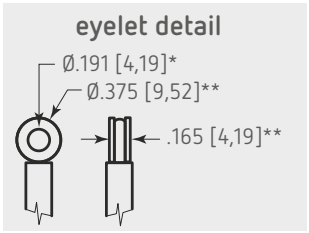
Outline drawing



Range	A
2, 10	1.04 [26,4]
5, 25, 50	0.58 [14,7]
15, 30	0.82 [20,8]
20, 40	0.74 [18,8]

inches [mm]

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]

Ordering Information:

Model Number:

PT1DC - _____ - _____ - _____ - _____ - _____
order code: Ⓡ Ⓐ Ⓑ Ⓒ Ⓓ

Sample Model Number:

PT1DC - 30 - UP - Z10 - MC4 - SG

Ⓡ	range:	30 inches
Ⓐ	measuring cable exit:	up
Ⓑ	output signal:	0...10 VDC
Ⓒ	electrical connection:	4-pin micro connector
Ⓓ	cable guide:	spring-loaded guide

Full Stroke Range:

Ⓡ order code:	2	5	10	15	20	25	30	40	50
full stroke range, min:	2 in.	5 in.	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.
accuracy (% of f.s.):	0.28%		0.18%				0.15%		
potentiometer cycle life:	2,500,000 cycles		500,000 cycles				250,000 cycles		
cable tension (20%):	12 oz.	5 oz.	12 oz.	9 oz.	6 oz.	5 oz.	9 oz.	6 oz.	5 oz.
max. cable acceleration:	11 g	3 g	11 g	5 g	4 g	3 g	5 g	4 g	3 g

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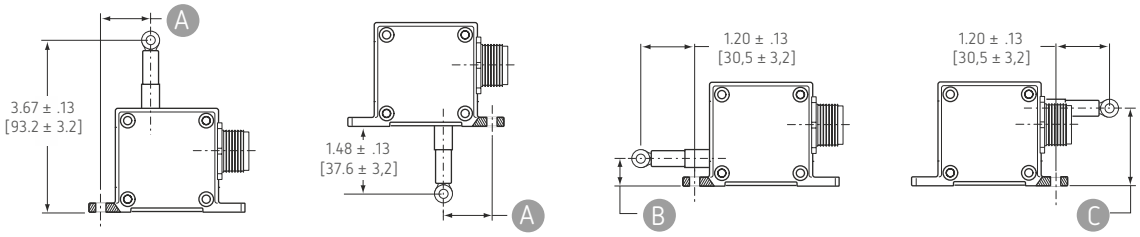
Ordering Information (cont.):

Cable Exit:

Ⓐ order code:	UP	DN	FR	BK
direction:	up	down	front	back



measurement range — 2	5	10	15	20	25	30	40	50
A	1.04 in. 26,4 mm	0.58 in. 14,7 mm	1.04 in. 26,4 mm	0.82 in. 20,8 mm	0.74 in. 18,8 mm	0.58 in. 14,7 mm	0.82 in. 20,8 mm	0.74 in. 18,8 mm	0.58 in. 14,7 mm
B	0.75 in. 19,1 mm	0.29 in. 6,1 mm	0.75 in. 19,1 mm	0.53 in. 13,5 mm	0.45 in. 11,5 mm	0.29 in. 6,1 mm	0.53 in. 13,5 mm	0.45 in. 11,5 mm	0.29 in. 6,1 mm
C	1.43 in. 36,3 mm	1.89 in. 48,0 mm	1.43 in. 36,3 mm	1.65 in. 41,9 mm	1.73 in. 43,9 mm	1.89 in. 48,0 mm	1.65 in. 41,9 mm	1.73 in. 43,9 mm	1.89 in. 48,0 mm

Output Signals:

Ⓑ order code:	Z10	10Z	Z5	5Z	M0P0	P0M0	M5P5	P5M5
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		10.5 – 40 vdc		14.5 – 40 vdc		10.5 – 40 vdc	
adjustment: zero	from 100% to 50% of full stroke range				from 100% to 75% of full stroke range			
adjustment:	from factory set zero to 50% of full stroke range				from factory set zero to 25% of full stroke range			

example:

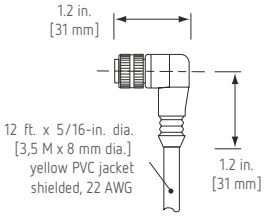
ordercode = Z10 = 0...10 VDC

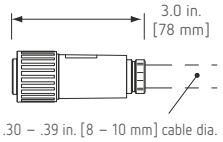
0 vdc =

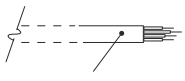
10 vdc =

Electrical Connection:

Ⓒ order code:	MC4	M6	C25
	4-pin micro-connector with 12 ft [3.5 M] cordset	6-pin plastic connector with mating plug	25-ft. instrumentation cable 24 AWG, shielded







4-pin mating plug and cord set:

pin	color code	signals
1	RED-BLK TR.	input voltage
2	RED-WHT TR.	output signal
3	RED	common

6-pin mating plug:

pin	signals
A	input voltage
B	output signal
C	common

25-ft. cable:

color code	standard
RED	input voltage
BLACK	common
GREEN	output signal

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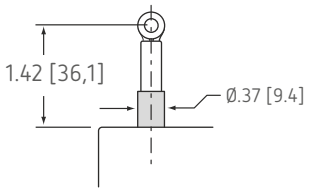
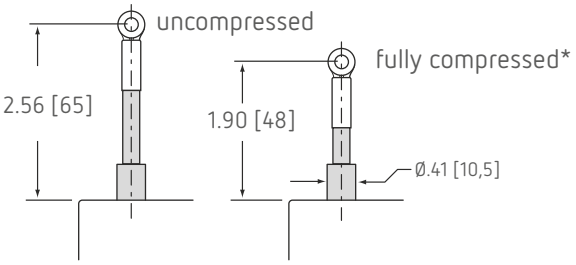
Ordering Information (cont.):

Cable Guide:

Ⓓ order code:	blank	SG
	standard cable guide	spring-loaded guide

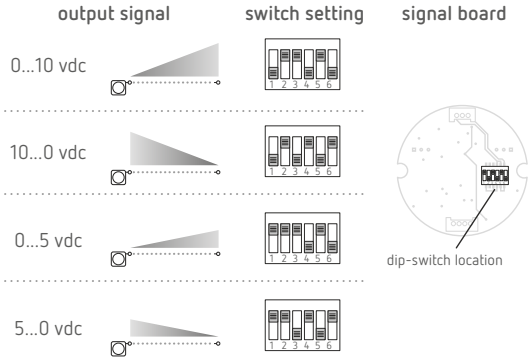


cable-guide cushions impact from accidental free release

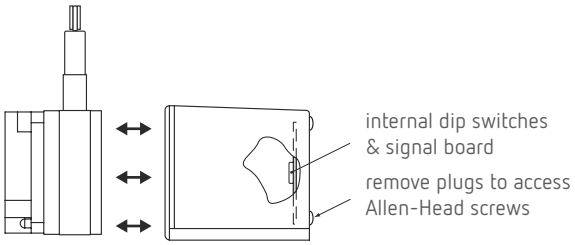


*note: start of full stroke range begins at full compression point (except 2-inch and 5-inch ranges).

Output Signal Selection (does not apply to -5...+5 & -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 the two Allen-Head Screws and remove rear cover.

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