Cable-Extension Position Transducer

- Short to Medium Range
- Precision Potentiometric Output CE

PT101

The PT101 is available with full-scale measurement ranges from 2 to 100 inches, providing a voltage feedback signal that is linearly proportional to the position of a traveling stainless steel extension cable. The PT101 has been applied to literally thousands of applications, including automotive suspension testing, saw-blade depth, valve stem opening and aircraft structural testing.

The PT101 installs in minutes by mounting its base to a fixed surface and attaching its cable to the movable object. The PT101 works without perfect parallel alignment, and when its stainless steel cable is retracted, its height is less than 5".

Standard Specifications:

GENERAL

Range ..... 0-2, -5, -10, -15, -20, -25, -30, -40, -50, -60, -75, -100 inches
Weight ..... 2 lb. typical
Enclosure Materials ..... powder coated or anodized aluminum
Sensor ..... plastic-hybrid precision potentiometer
Electrical Connector MS3102E-14S-6P
Mating Plug (included) MS3106E-14S-6S

ELECTRICAL

Sensor Resistance ..... 500, 1K, 5K & 10K ohms
Optional Bridge Circuits ..... 2mV/V & adjustable 0-30 mV/V
Power Rating, Watts ..... 2.0 at 70°F (derated to 0 watts at 250°F)
Recommended Maximum Voltage 30V

PERFORMANCE

Accuracy:
- 2 and 5 inch ranges ..... +/- 0.25% full stroke
- 10, 15 and 25 inch ranges ..... +/- 0.15% full stroke
- 20 inch, 30 inch, and greater ..... +/- 0.10% full stroke

Resolution ..... essentially infinite
Repeatability ..... Greater of ± 0.001 inches or 0.02% full stroke

MECHANICAL

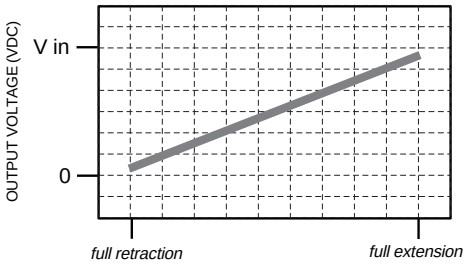
Measurement Range (Inches)	Cable Tension (Ounces, ±30%)	Max. Cable Acceleration (Gravities)
0- 2, -10, -20	12	11
0- 5, -25, -50	5	2
0-15, -30	8	3
0-40	6	4
0-60	13	4
0-75	10	3
0-100	13	5

Optional Cable Tension ..... see order code
Measuring Cable ..... 0.019-inch dia. nylon-coated stainless steel
Measuring Cable Fitting ..... crimp and swivel

ENVIRONMENTAL

Operating Temperature ..... -40° F to +200°F
Temperature Coefficient of Sensing Element ..... 88 P.P.M./°F
Humidity ..... 100% RH at 90°F
Vibration ..... up to 10 G's to 2000 Hz
Enclosure ..... NEMA 1

Electrical Output Signal



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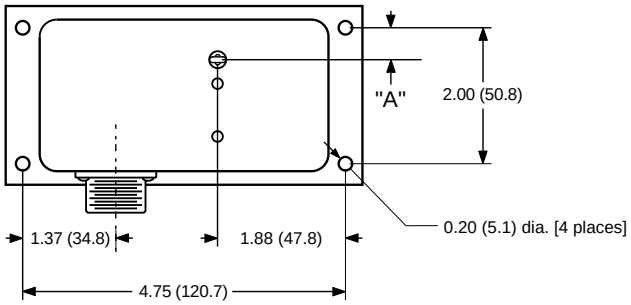
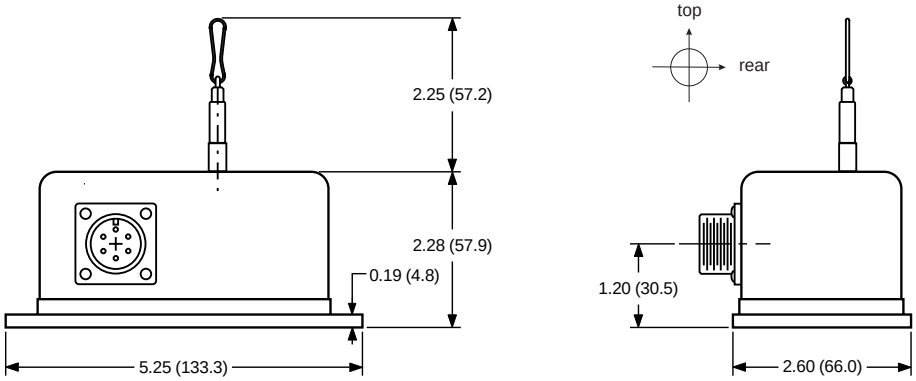
PT101 Short to Medium Range / Precision Potentiometric Output

outline drawing (2 thru 50 inch f.s. ranges)



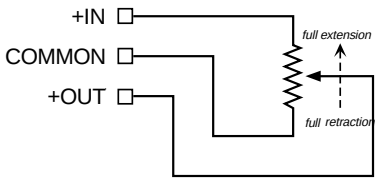
"A" DIMENSION	
RANGE	INCHES (MM)
2", 10", 20"	0.66 (16.7)
5", 25", 50"	0.17 (4.3)
15", 30"	0.44 (11.2)
40"	0.36 (9.2)

ALL DIMENSIONS ARE IN INCHES (MM)
tolerances are ±0.02 in. (+0.5mm) unless otherwise noted

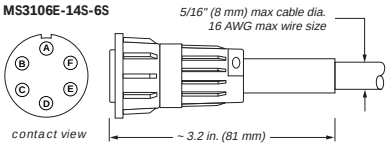


Electrical:

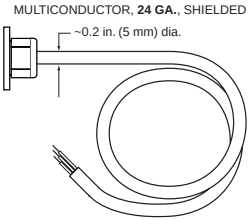
Sensing Circuit



Mating Plug



Instrumentation Cable



Electrical Connections

		STANDARD CIRCUIT			BRIDGE CIRCUIT			
		+IN	COM-MON	+OUT	+IN	-IN	+OUT	-OUT
6-pin conn.	A	●			●			
	B		●			●		
	C			●				●
	D						●	
	E							
	F							
instr. cable	WHT	●						●
	BLK		●			●		
	GRN			●			●	
	RED				●			

Ordering Information / Model Number:

PT101-____ **-** ___ **1** ___ **-** ___ **1** ___ **0**

order code: ☐ A B C D E F G

sample: PT101-0025-111-1110

☐ Full Stroke Range

0002 =	2 inches	**0030** =	30 inches
0005 =	5 inches	**0040** =	40 inches
0010 =	10 inches	**0050** =	50 inches
0015 =	15 inches	**0060** =	60 inches
0020 =	20 inches	**0075** =	75 inches
0025 =	25 inches	**0100** =	100 inches

A Measuring Cable Tension

1 = standard *(see MECHANICAL specifications)*

NOTE: options 2, 3, and 7 below are available for RE-ORDER only!

2 = increased *(approx. 6 x standard cable tension, 0.024 inch dia. measuring cable)**

3 = high *(approx. 12 x standard cable tension, 0.024 inch dia. measuring cable)**

7 = decreased *(same as standard cable tension)*

C Measuring Cable Exit

NOTE: options 2, 3, and 4 below are available for RE-ORDER only!

1 = top exit **2** = front exit **3** = rear exit **4** = bottom exit

D Sensing Circuit

1 = 500 ohm potentiometer	**4** = 10K ohm potentiometer
2 = 1K ohm potentiometer	**5** = 2 mV/V bridge
3 = 5K ohm potentiometer	**6** = 0-30 mV/V adjustable bridge

F Electrical Connection

1 = 6-pin plastic connector and mating plug
2 = terminal strip
3 = 6-pin metal connector and mating plug
4 = 25 ft. instrumentation cable

** note: mechanical dimensions may vary from outline drawing above*