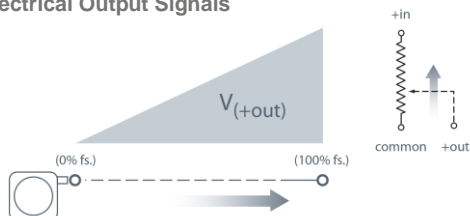


\*50-inch range model, dimensions may differ for other ranges

Based on Celesco's original string pot design dating back to the late 1960's, the PT101 has become a standard throughout the years for literally thousands of applications including aircraft structural testing, hydraulic cylinder control, valve stem opening, and factory automation.

Available in full stroke ranges up to 100-inches, the PT101 provides a voltage feedback signal linearly proportional to the position of its traveling stainless steel measuring cable. Additionally the PT101 installs in minutes and doesn't require perfect parallel alignment. Simply secure the base to a fixed surface and attach the measuring cable to your moving object.

### Electrical Output Signals



-- bridge circuit option available, see ordering information

## PT101

### Cable Actuated Sensor Instrument Grade • Voltage Divider

**Absolute Linear Position • Classic Stringpot Design**

**Stroke Range Options: 0–2 to 0–100 inches**

**Powder Painted & Anodized Aluminum Enclosure**

**Industrial Automation & Testing Applications**

### General

<b>Full Stroke Range Options</b>	0-2 to 0-100 inches
<b>Output Signal Options</b>	voltage divider (potentiometer)
<b>Accuracy</b>	± 0.25% - ± 0.10% full stroke (see ordering information)
<b>Repeatability</b>	± 0.02% full stroke
<b>Resolution</b>	essentially infinite
<b>Measuring Cable</b>	.019-inch dia. nylon-coated stainless steel rope
<b>Enclosure Material</b>	powder-painted and anodized aluminum
<b>Sensor</b>	plastic-hybrid precision potentiometer
<b>Potentiometer Cycle Life</b>	see ordering information
<b>Maximum Retraction</b>	see ordering information
<b>Acceleration</b>	
<b>Weight</b>	2 lbs. max.

### Electrical

<b>Input Resistance Options</b>	500, 1K, 5K, 10K or bridge
<b>Maximum Input Voltage</b>	see ordering information
<b>Power Rating</b>	see ordering information
<b>Output Signal Change Over Full Stroke Range</b>	94% ±4% of input voltage

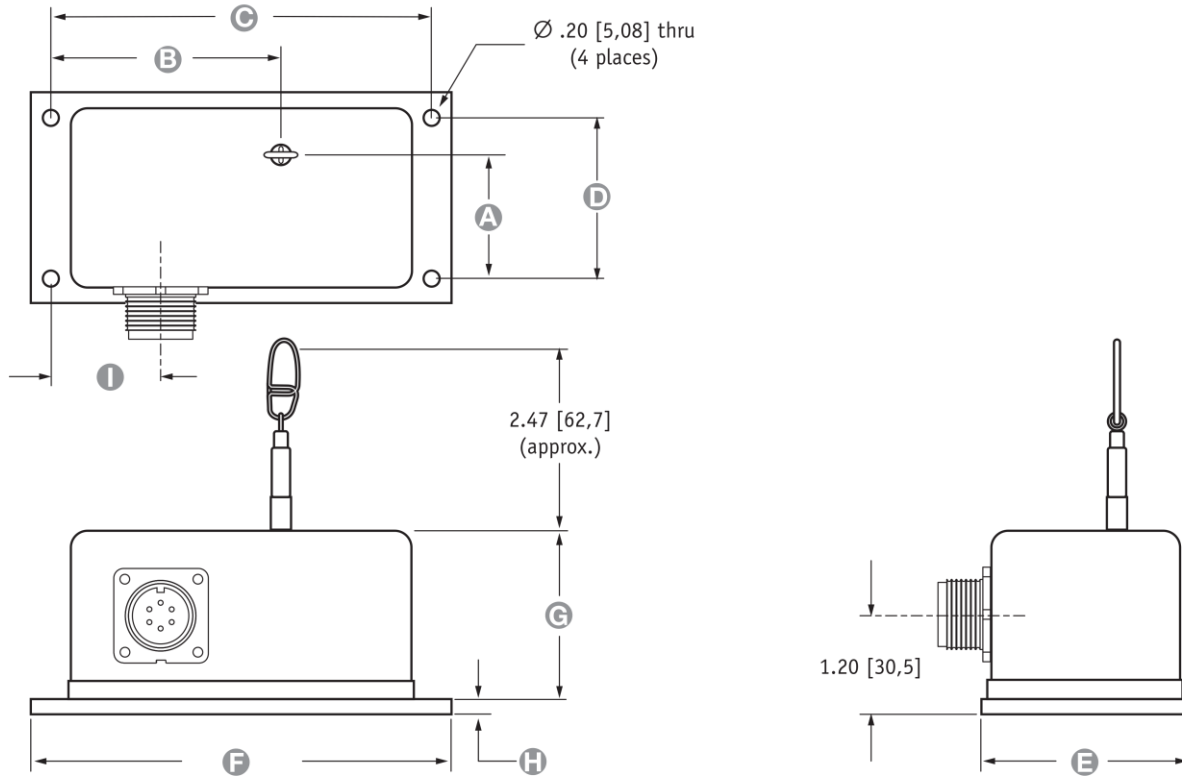
### Environmental

<b>Enclosure</b>	IP50, NEMA 1
<b>Temperature Coefficient of Sensing Element</b>	88 PPM/°F
<b>Humidity</b>	100% RH @ 90°F (32° C)
<b>Operating Temperature</b>	-40° to 200°F (-40° to 90°C)
<b>Vibration</b>	up to 10 g to 2000 Hz maximum

**PT101**

Instrument Grade • Voltage Divider

Fig. 1 - Top Exit



ALL DIMENSIONS ARE IN INCHES [MM] • tolerances are ±0.02 in. [±0,5mm]

Range	A	B	C	D	E	F	G	H	I
2", 10", 20"	1.34 [34,0]	2.88 [73,1]	4.75 [120,6]	2.00 [50,8]	2.63 [66,8]	5.25 [133,4]	2.10 [53,3]	.16 [4,1]	1.37 [34,8]
5", 25", 50"	1.83 [46,5]	2.88 [73,1]	4.75 [120,6]	2.00 [50,8]	2.63 [66,8]	5.25 [133,4]	2.10 [53,3]	.16 [4,1]	1.37 [34,8]
15", 30"	1.56 [39,6]	2.88 [73,1]	4.75 [120,6]	2.00 [50,8]	2.63 [66,8]	5.25 [133,4]	2.10 [53,3]	.16 [4,1]	1.37 [34,8]
40"	1.64 [41,6]	2.88 [73,1]	4.75 [120,6]	2.00 [50,8]	2.63 [66,8]	5.25 [133,4]	2.10 [53,3]	.16 [4,1]	1.37 [34,8]
60"	2.16 [54,9]	2.88 [73,1]	6.75 [171,4]	2.37 [60,2]	3.25 [82,5]	7.50 [190,5]	2.60 [66,0]	.19 [4,8]	1.37 [34,8]
75"	2.45 [62,2]	2.38 [60,4]	6.75 [171,4]	2.50 [63,5]	3.63 [92,2]	7.50 [190,5]	2.86 [72,6]	.19 [4,8]	1.37 [34,8]
100"	3.10 [78,7]	2.47 [62,8]	7.38 [187,5]	3.00 [76,2]	4.25 [108,0]	8.00 [203,2]	3.79 [96,3]	.19 [4,8]	3.69 [93,7]

Ordering Information

Model Number:

**PT101** -      -      **1** -      **1**      **0**  
 order code:    **R**    **A**    **B**    **C**    **D**    **E**    **F**    **G**

Sample Model Number:

**PT101 - 0025 - 111 - 1110**

- R** range: 25 inches
- A** measuring cable tension: standard - 5 oz.
- C** cable exit: top
- D** sensing circuit: 500 ohms
- F** electrical connection: 6-pin plastic connector

Full Stroke Range:

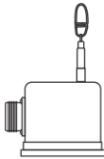
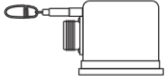
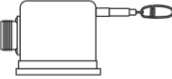
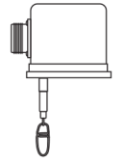
<b>R</b> order code:	0002	0005	0010	0015	0020	0025	0030	0040	0050	0060	0075	0100
full stroke range, min:	2 in.	5 in.	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.	60 in.	75 in.	100 in.
accuracy (% of f.s.):	0.25%		0.15%		0.10%		0.15%		0.10%			
potentiometer cycle life*:	2.5 x 10 <sup>6</sup>		5 x 10 <sup>5</sup>		2.5 x 10 <sup>5</sup>		5 x 10 <sup>5</sup>		2.5 x 10 <sup>5</sup>			

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

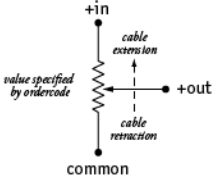
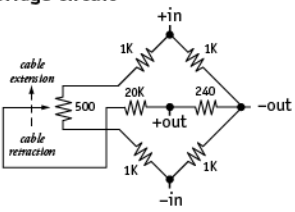
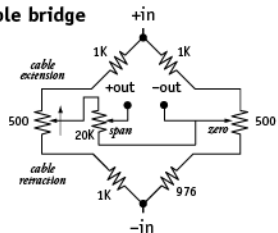
**Measuring Cable Tension:**

	<b>1</b>		<b>H</b>	
	standard tension		high tension	
	tension, ±20%	max acceleration	tension, ±40%	max acceleration
2, 10, 20 inch range:	12 oz.	• 11 g	65 oz.	• 53 g
5, 25, 50 inch range:	5 oz.	• 2 g	26 oz.	• 11 g
15, 30 inch range:	8 oz.	• 3 g	43 oz.	• 23 g
40 inch range:	6 oz.	• 4 g	33 oz.	• 16 g
60 inch range:	13 oz.	• 4 g	22 oz.	• 8 g
75 inch range:	10 oz.	• 3 g	31 oz.	• 12 g
100 inch range:	13 oz.	• 5 g	52 oz.	• 20 g

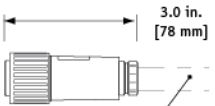
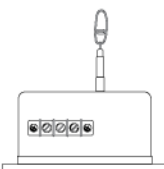
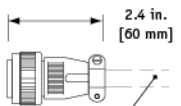

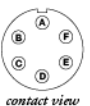

**Measuring Cable Exit:**

<b>C order code:</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	top exit (see fig. 1)	front exit (see fig. 3)	rear exit (see fig. 4)	bottom exit (see fig. 2)
				

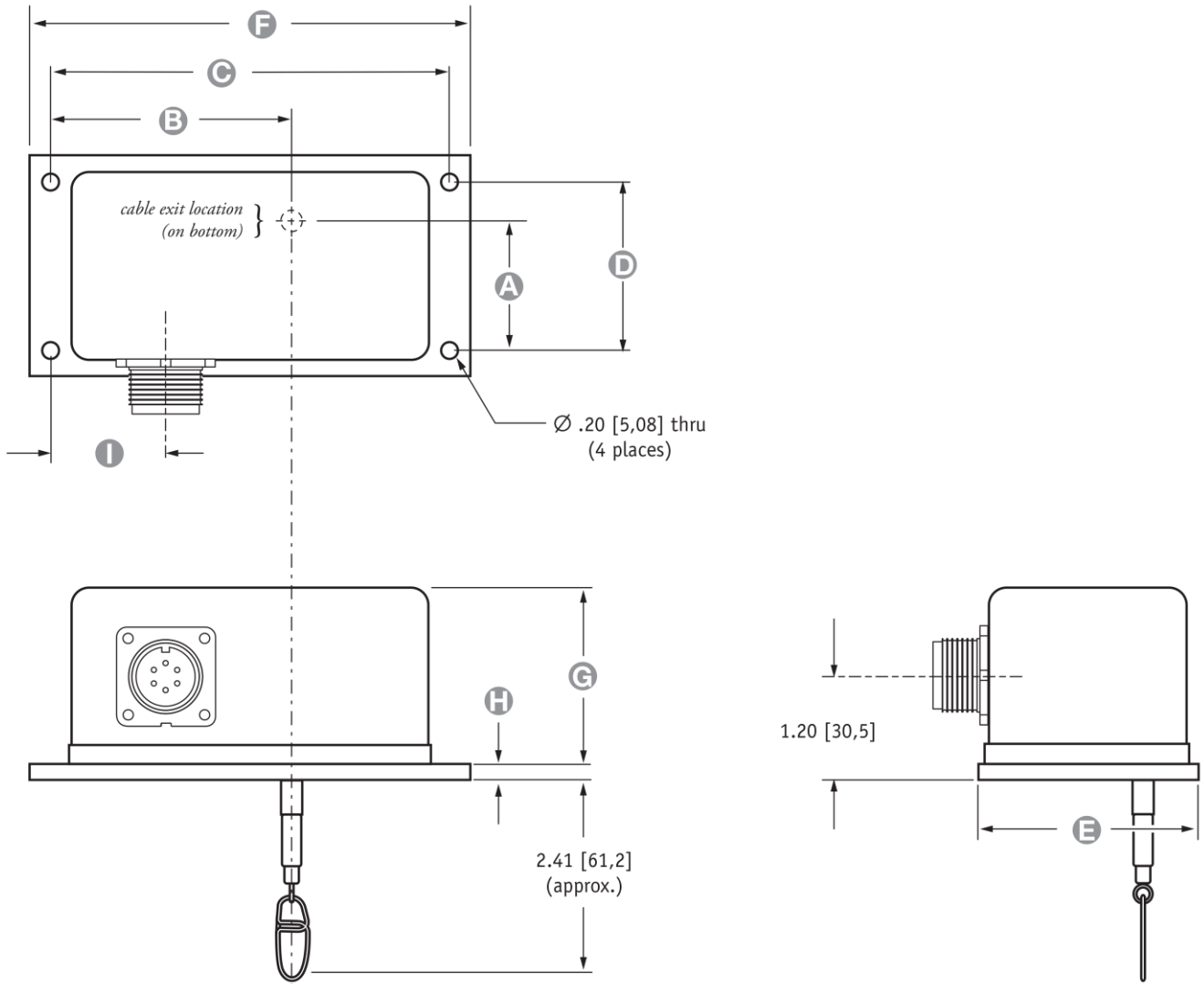
**Sensing Circuit:**

<b>D order code:</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
	500 ohm*	1000 ohm*	5000 ohm*	10,000 ohm*	fixed bridge (2 mV/V)	adjustable bridge (0...30 mV/V)
				*tolerance ±10%		
<b>max. input voltage and power rating, options 1-4</b>						
		2-inch, 5-inch range	10-inch to 100-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)			
<b>circuit, options 1-4</b>		<b>fixed bridge circuit</b>		<b>adjustable bridge</b>		
						
		full scale output: 2 mV/V zero adjust: not available		full scale output: adjustable from 0 to 30mV/V zero adjust: to 50% of full stroke		

**Electrical Connection:**

<b>F order code:</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>			
	6-pin plastic connector with mating plug	terminal strip	6-pin metal connector with mating plug	25-ft. instrumentation cable 24 AWG, shielded			
							
	3.0 in. [78 mm]		2.4 in. [60 mm]				
	1/2 - 5/16" [14 - 8 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S		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			
<b>6-pin mating plug:</b>		<b>Terminal Strip:</b>		<b>25-ft. instrumentation cable:</b>			
pin	standard	bridge	terminal	signals	color code	standard	bridge
A	+ in	+ in	1	+ in	RED	+ in	+ in
B	common	- in	2	common	BLACK	common	- in
C	+ out	- out	3	+ out	GREEN	+ out	+ out
D	-	+ out			WHITE	-	- out
							

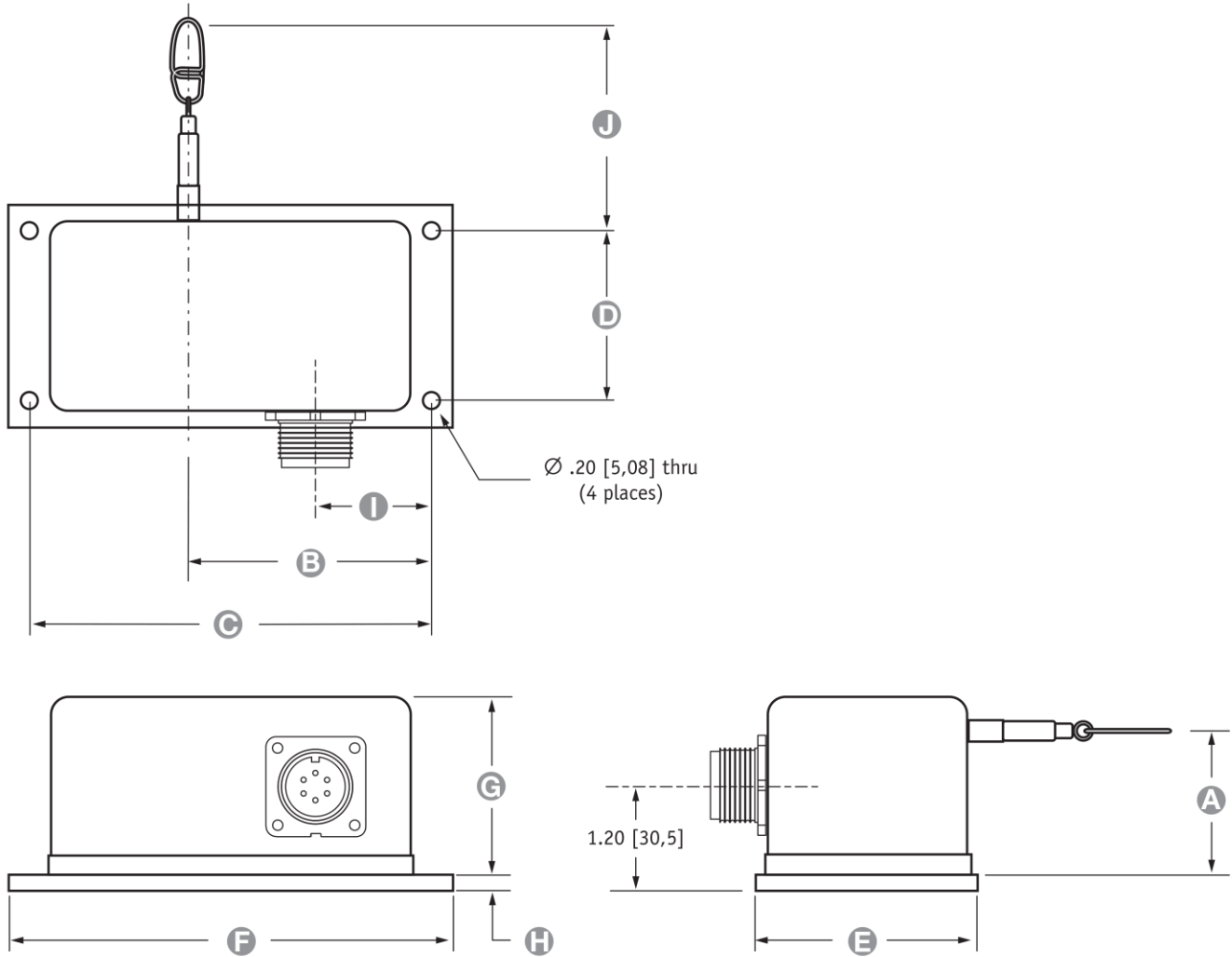
**Fig. 2 - Bottom Exit**



ALL DIMENSIONS ARE IN INCHES [MM] • tolerances are ±0.02 in. [±0,5mm]

Range	A	B	C	D	E	F	G	H	I	J
2", 10", 20"	1.34[34,0]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
5", 25", 50"	1.83[46,5]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
15", 30"	1.56[39,6]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
40"	1.64[41,6]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
60"	2.16[54,9]	2.88[73,1]	6.75[171,4]	2.37[60,2]	3.25[82,5]	7.50[190,5]	2.60[66,0]	.19[4,8]	1.37[34,8]	2.63[66,8]
75"	2.45[62,2]	2.38[60,4]	6.75[171,4]	2.50[63,5]	3.63[92,2]	7.50[190,5]	2.86[72,6]	.19[4,8]	1.37[34,8]	2.69[68,3]
100"	3.10[78,7]	2.47[62,8]	7.38[187,5]	3.00[76,2]	4.25[108,0]	8.00[203,2]	3.79[96,3]	.19[4,8]	3.69[93,7]	2.90[73,7]

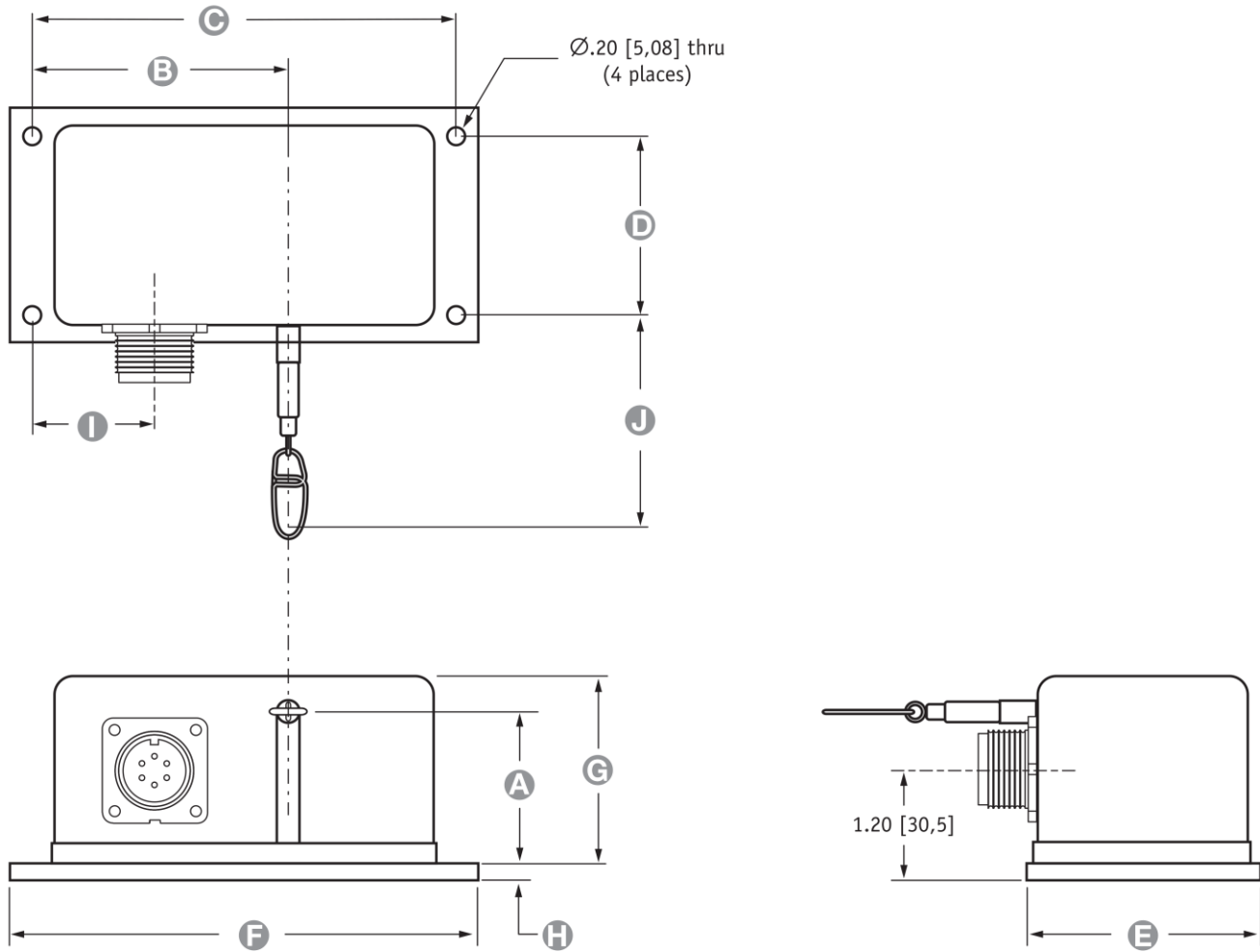
Fig. 3 - Rear Exit



ALL DIMENSIONS ARE IN INCHES [MM] • tolerances are ±0.02 in. [±0,5mm]

Range	A	B	C	D	E	F	G	H	I	J
2", 10", 20"	1.34[34,0]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
5", 25", 50"	1.83[46,5]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
15", 30"	1.56[39,6]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
40"	1.64[41,6]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
60"	2.16[54,9]	2.88[73,1]	6.75[171,4]	2.37[60,2]	3.25[82,5]	7.50[190,5]	2.60[66,0]	.19[4,8]	5.38[136,7]	2.63[66,8]
75"	2.45[62,2]	2.38[60,4]	6.75[171,4]	2.50[63,5]	3.63[92,2]	7.50[190,5]	2.86[72,6]	.19[4,8]	5.38[136,7]	2.69[68,3]
100"	3.10[78,7]	2.47[62,8]	7.38[187,5]	3.00[76,2]	4.25[108,0]	8.00[203,2]	3.79[96,3]	.19[4,8]	3.69[93,7]	2.90[73,7]

Fig. 4 - Front Exit



ALL DIMENSIONS ARE IN INCHES [MM] • tolerances are ±0.02 in. [±0.5mm]

Range	A	B	C	D	E	F	G	H	I	J
2", 10", 20"	1.34[34,0]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
5", 25", 50"	1.83[46,5]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
15", 30"	1.56[39,6]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
40"	1.64[41,6]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
60"	2.16[54,9]	2.88[73,1]	6.75[171,4]	2.37[60,2]	3.25[82,5]	7.50[190,5]	2.60[66,0]	.19[4,8]	1.37[34,8]	2.63[66,8]
75"	2.45[62,2]	2.38[60,4]	6.75[171,4]	2.50[63,5]	3.63[92,2]	7.50[190,5]	2.86[72,6]	.19[4,8]	1.37[34,8]	2.69[68,3]
100"	3.10[78,7]	2.47[62,8]	7.38[187,5]	3.00[76,2]	4.25[108,0]	8.00[203,2]	3.79[96,3]	.19[4,8]	3.69[93,7]	2.90[73,7]



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PT101 12/01/2015