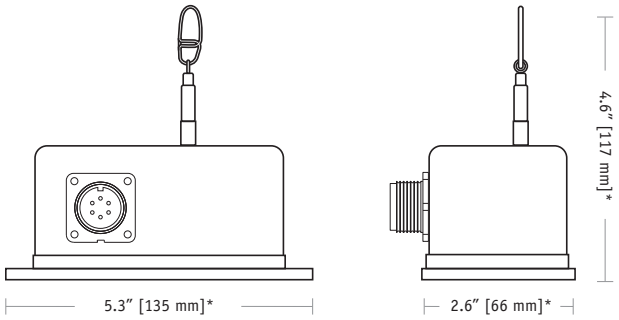
PT101

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



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

GENERAL

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

ELECTRICAL

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

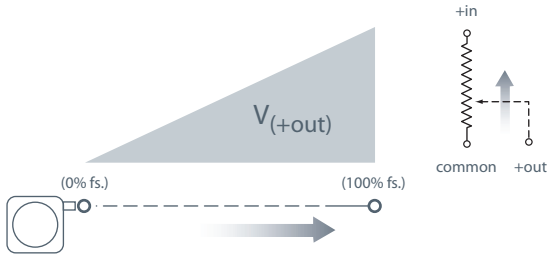
ENVIRONMENTAL

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

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 Signal



-- bridge circuit option available, see ordering information

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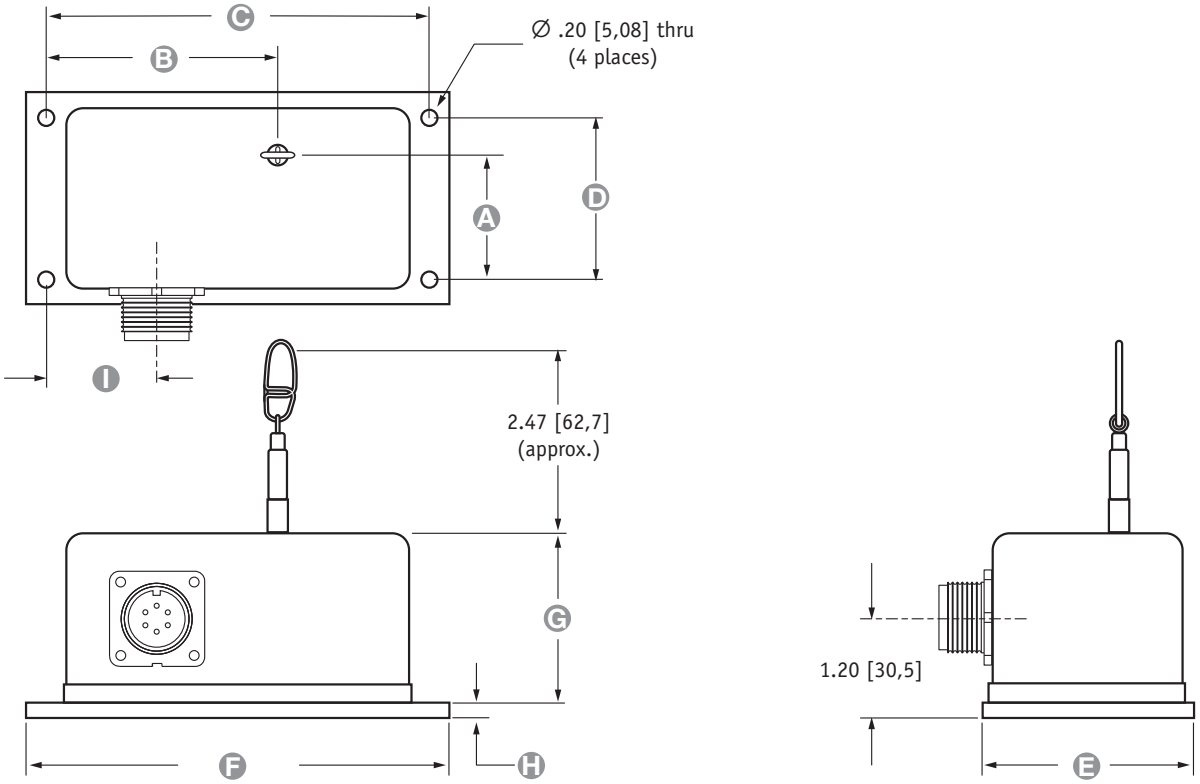
Fig. 1, Top Exit:



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:

R 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*:	2.5×10^6		5×10^5		2.5×10^5	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*

formally Celesco Transducer Products, Inc.
celesco.com • **info@celesco.com**

Ordering Information (cont.):

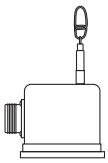
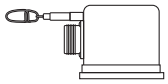
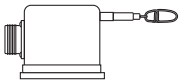
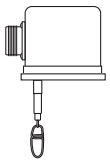
Measuring Cable Tension:

Ⓐ order code:	1			H		
	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:

Ⓒ order code:

1	2	3	4
top exit (see fig. 1)	front exit (see fig. 3)	rear exit (see fig. 4)	bottom exit (see fig. 2)

Sensing Circuit:

Ⓓ order code:

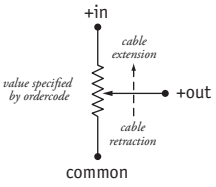
1	2	3	4	5	6
500 ohm*	1000 ohm*	5000 ohm*	10,000 ohm*	fixed bridge (2 mV/V)	adjustable bridge (0...30 mV/V)

*tolerance ±10%

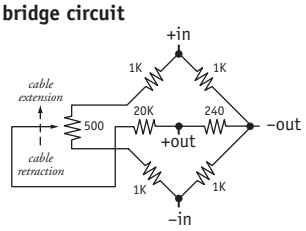
max. input voltage and power rating, options 1-4

	2-inch, 5-inch range	*10-inch to 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)

circuit, options 1-4

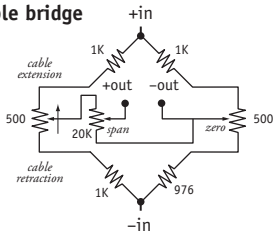


fixed bridge circuit



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

adjustable bridge

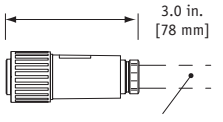


full scale output: adjustable from 0 to 30mV/V
zero adjust: to 50% of full stroke

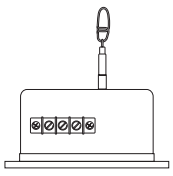
Electrical Connection:

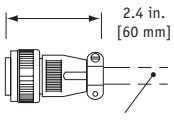
Ⓕ order code:

1	2	3	4
6-pin plastic connector with mating plug	terminal strip	6-pin metal connector with mating plug	25-ft. instrumentation cable 24 AWG, shielded

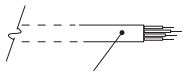


1/2 - 5/16" [14 - 8 mm] cable dia.
16 AWG max conductor size
connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S





3/8-in. [9 mm] max cable dia.
16 AWG max conductor size
connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S



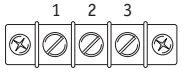
25 ft. x 0.2-in. dia.
[7,5 M x 5 mm dia.]
24 AWG, shielded

6-pin mating plug:

pin	standard	bridge
A	+ in	+ in
B	common	– in
C	+ out	– out
D	-	+ out

contact view

Terminal Strip:



terminal	signals
1	+ in
2	common
3	+ out

25-ft. instrumentation cable:

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

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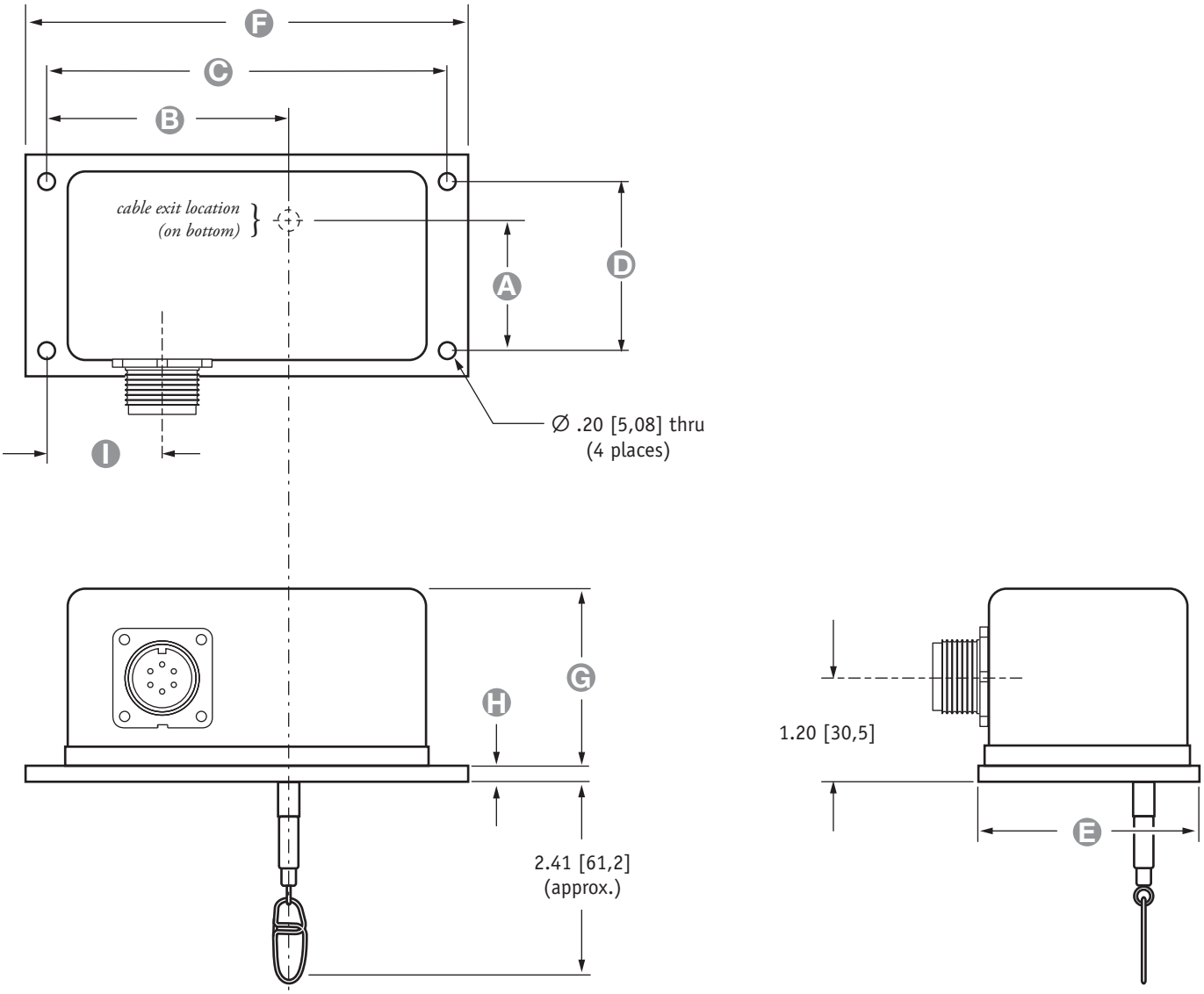
meas-spec.com
formally Celesco Transducer Products, Inc.
celesco.com • info@celesco.com

Fig. 2, Bottom Exit:



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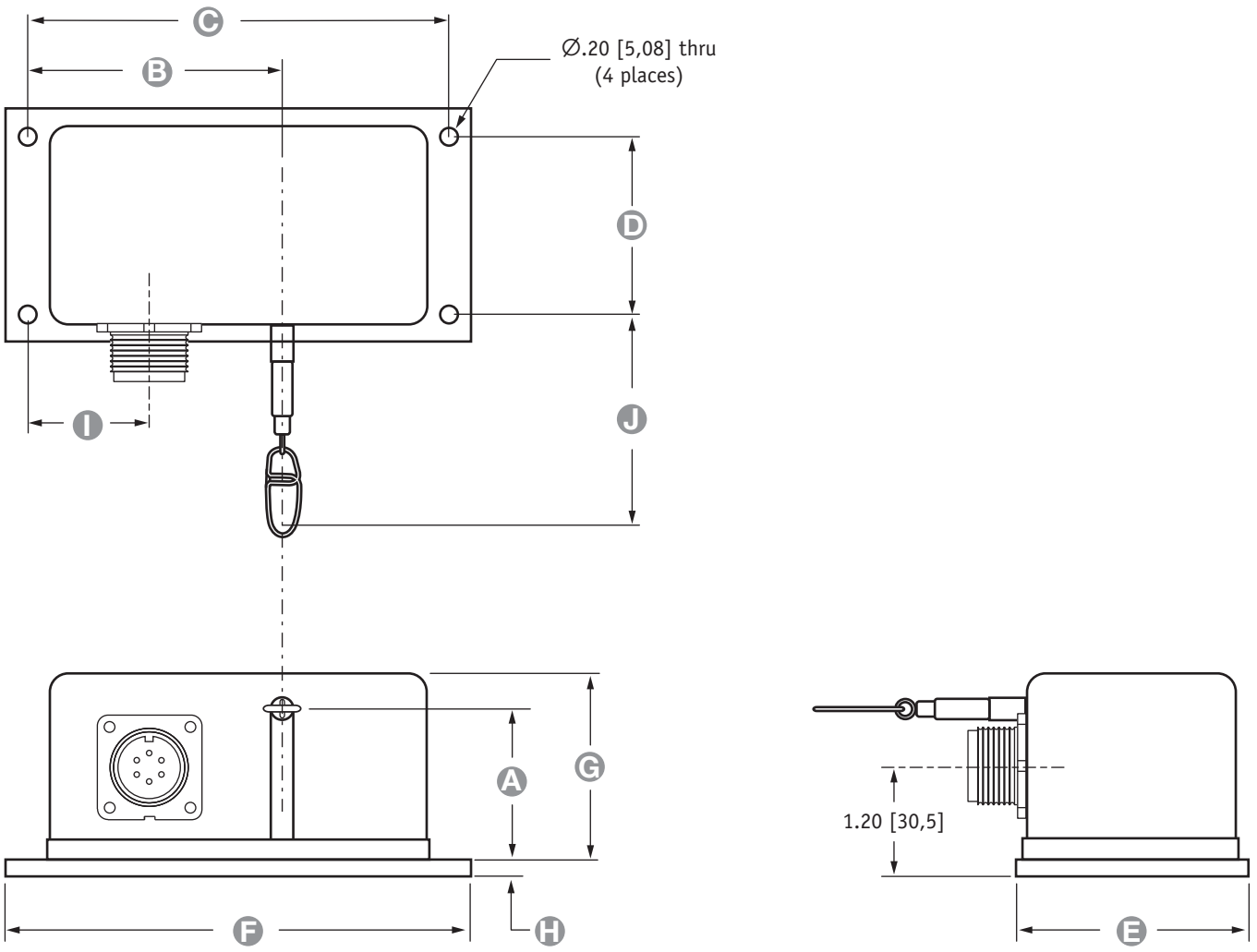
Range	A	B	C	D	E	F	G	H	I	J
2″, 10″, 20″	1.34[34,0]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
5″, 25″, 50″	1.83[46,5]	2.88[73,1]	4.75[120,6]	2.00[50,8]	2.63[66,8]	5.25[133,4]	2.10[53,3]	.16[4,1]	1.37[34,8]	2.57[65,3]
15″, 30″	1.56[39,6]	2.88[73,1]	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, Front Exit:



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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]
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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]
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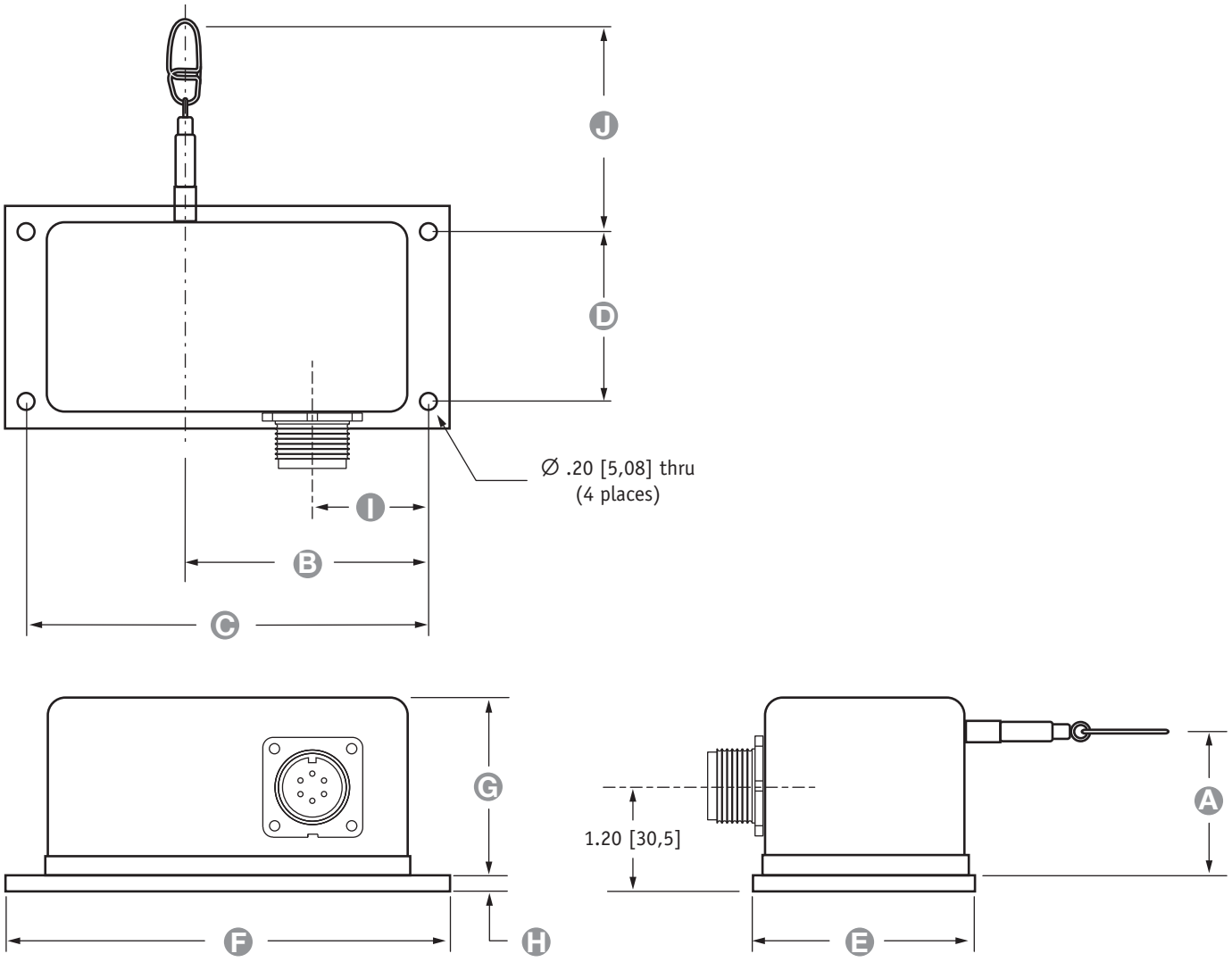
Fig. 4, Rear Exit:



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