

# Rotational Transducer

- ▼ Up to 50 Turns
- ▼ Industrial Grade
- ▼ Precision Potentiometric Output



# RT9101

## Specification Summary:

### GENERAL

Full Stroke Ranges ..... 0-0.25 to 0-50 turns, see ① next page  
 Output Signal ..... voltage divider (potentiometer)  
 Accuracy .....  $\pm 0.30$  to  $\pm 0.15\%$  full stroke, see ②  
 Repeatability .....  $\pm 0.02\%$  full stroke  
 Resolution ..... essentially infinite  
 Enclosure Material ..... powder-painted aluminum or stainless steel, see ③  
 Sensor ..... plastic-hybrid precision potentiometer  
 Shaft Loading ..... up to 35 lbs. radial and 5 lbs. axial  
 Weight, Aluminum (Stainless Steel) Enclosure ..... 5 lbs. (10 lbs.), max.

### ELECTRICAL

Input Resistance .... 500, 1K, 5K, 10K ohms ( $\pm 10\%$ ) or adjustable bridge, see ④  
 Power Rating, Watts ..... 2.0 at 70°F (derated to 0 @ 250°F)  
 Recommended Maximum Input Voltage ..... 30 V(AC or DC)  
 Output Signal Change Over Measurement Range ..... 94%  $\pm 4\%$  of input voltage

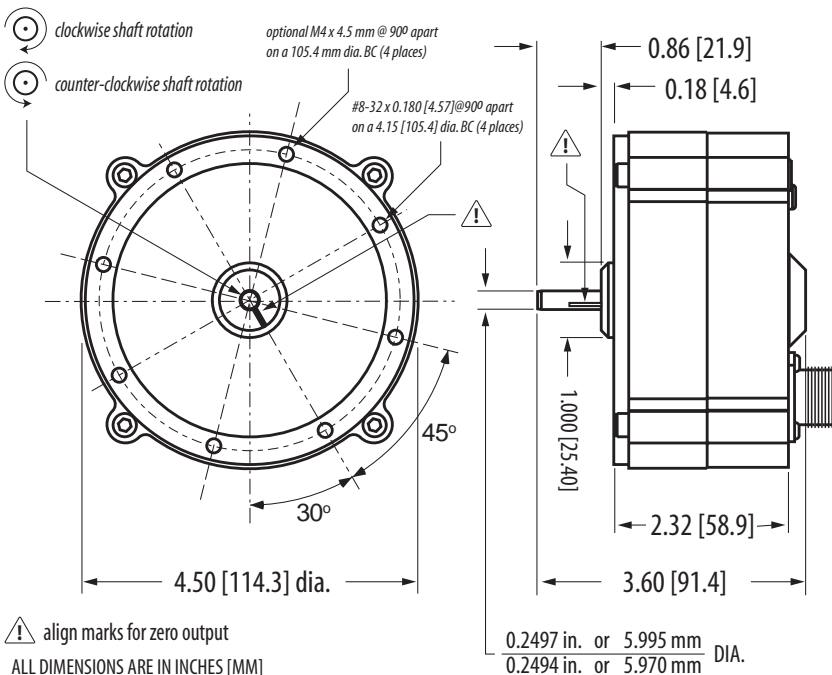
### ENVIRONMENTAL

Environmental Suitability ..... NEMA 4/4X/6, IP 65/67/68, see ⑤ and ⑥  
 Operating Temperature ..... -40° to 200°F  
 Vibration ..... up to 10 G's to 2000 Hz maximum

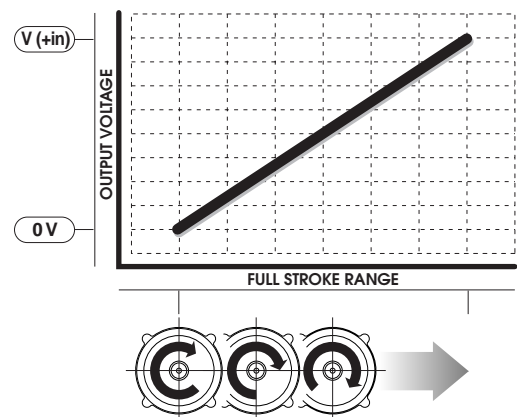


Celeco's model RT9101 provides a voltage feedback signal for rotational position. The sensing element of this device is a precision plastic-hybrid potentiometer which provided superb linearity and resolution.

This innovative sensor from Celeco, designed to meet tough NEMA-4 and IP67 environmental standards, is available in full-stroke measurement ranges of 1/4 to 50 turns. Because the sensor is potentiometric, the RT9101 is absolute and will maintain position information even after a loss of power.



### Electrical Output Signal:



**celesco**

**Tope Co., Ltd.**

tel: +886-2-8228-0658  
 fax: +886-2-8228-0659

http://www.sensor.com.tw  
 e-mail: tope@ms1.hinet.net

▼ **Ordering Information**

**Model Number:**

**RT9101-** \_\_\_\_\_ **-** \_\_\_\_\_ **1** \_\_\_\_\_ **-** \_\_\_\_\_ **1** \_\_\_\_\_ **0**  
order code:                      R                      A                      B                      C                      D                      E                      F                      G

**Full Stroke Range:**

	<b>R</b> order code: <b>0R25</b>	<b>0R50</b>	<b>0001</b>	<b>0002</b>	<b>0003</b>
① clockwise shaft rotations, min:	0.25	0.50	1	2	3
② accuracy (% of f.s.):	0.30%	0.30%	0.30%	0.30%	0.30%
potentiometer cycle life*:	2.5 x 10 <sup>6</sup>	2.5 x 10 <sup>6</sup>	2.5 x 10 <sup>6</sup>	2.5 x 10 <sup>6</sup>	2.5 x 10 <sup>6</sup>

	<b>R</b> order code: <b>0005</b>	<b>0010</b>	<b>0020</b>	<b>0030</b>	<b>0050</b>
clockwise shaft rotations, min:	5	10	20	30	50
accuracy (% of f.s.):	0.20%	0.15%	0.15%	0.15%	0.15%
potentiometer cycle life*:	5 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>

\*note: **potentiometer cycle life** is defined as the minimum number of times the sensor can be cycled back and forth, from beginning to end, before any measureable degradation of the output signal occurs.

**Enclosure Material:**

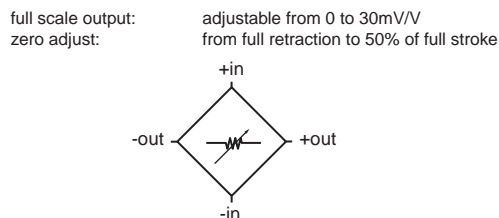
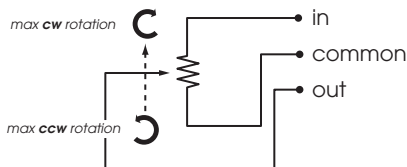
	<b>A</b> order code: <b>1</b>	<b>2</b>
③ enclosure material:	powder-painted aluminum	303 stainless steel

**Mounting Configuration and Shaft Diameter:**

	<b>B</b> order code: <b>1</b>	<b>2</b>
shaft diameter:	0.25 inch diameter	6 mm diameter
mounting holes:	8-32 x 0.25 in.	M4 x 6 mm

**Output Signals:**

	<b>D</b> order code: <b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
④ sensing circuit:	500 Ω	1K Ω	5K Ω	10K Ω	0...30 mV/V adjustable bridge



# PT9101 • Rotational Transducer • Potentiometric Output

## Electrical Connection:

① order code:

	1	2	3	4																		
electrical connection:	6-pin plastic connector and mating plug	10 ft. waterproof cable	6-pin metal connector and mating plug	25 ft. instrumentation cable																		
	<table border="1"> <tr> <td rowspan="2"> </td> <td colspan="2">connections</td> </tr> <tr> <td> <b>standard</b>                      A = +IN                      B = COMMON                      C = +OUT                 </td> <td> <b>bridge</b>                      A = +IN                      B = -IN                      C = -OUT                      D = +OUT                 </td> </tr> </table>		connections		<b>standard</b> A = +IN B = COMMON C = +OUT	<b>bridge</b> A = +IN B = -IN C = -OUT D = +OUT	<table border="1"> <tr> <td colspan="2">connections</td> </tr> <tr> <td> <b>standard</b>                      WHT = +IN                      BLK = COMMON                      GRN = OUT                 </td> <td> <b>bridge</b>                      not available                 </td> </tr> </table>	connections		<b>standard</b> WHT = +IN BLK = COMMON GRN = OUT	<b>bridge</b> not available	<table border="1"> <tr> <td rowspan="2"> </td> <td colspan="2">connections</td> </tr> <tr> <td> <b>standard</b>                      A = +IN                      B = COMMON                      C = +OUT                 </td> <td> <b>bridge</b>                      A = +IN                      B = -IN                      C = -OUT                      D = +OUT                 </td> </tr> </table>		connections		<b>standard</b> A = +IN B = COMMON C = +OUT	<b>bridge</b> A = +IN B = -IN C = -OUT D = +OUT	<table border="1"> <tr> <td colspan="2">connections</td> </tr> <tr> <td> <b>standard</b>                      RED = +IN                      BLK = COMMON                      GRN = OUT                 </td> <td> <b>bridge</b>                      RED = +IN                      BLK = -IN                      WHT = -OUT                      GRN = +OUT                 </td> </tr> </table>	connections		<b>standard</b> RED = +IN BLK = COMMON GRN = OUT	<b>bridge</b> RED = +IN BLK = -IN WHT = -OUT GRN = +OUT
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IP rating:	67	67, 68*	65	67																		
NEMA rating:	6, 4X**	6, 4X**	4	6																		

note: \*requires factory submersion test

\*\*applies to stainless steel enclosure, see ③

## ▼ Sample Model Number

IT9101- 030 - 120 - 1 1 1 - 1  
order code: CW CCW 0 0 0 0

Specifications: Full Clockwise Rotation: 5 turns (5 clockwise shaft rotations)  
 Full Counter-Clockwise Rotation: 120 degrees  
 Enclosure Material: powder-painted aluminum  
 Electrical Connection: 6-pin plastic connector  
 Dampening: magnetic dampening