

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 ± 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

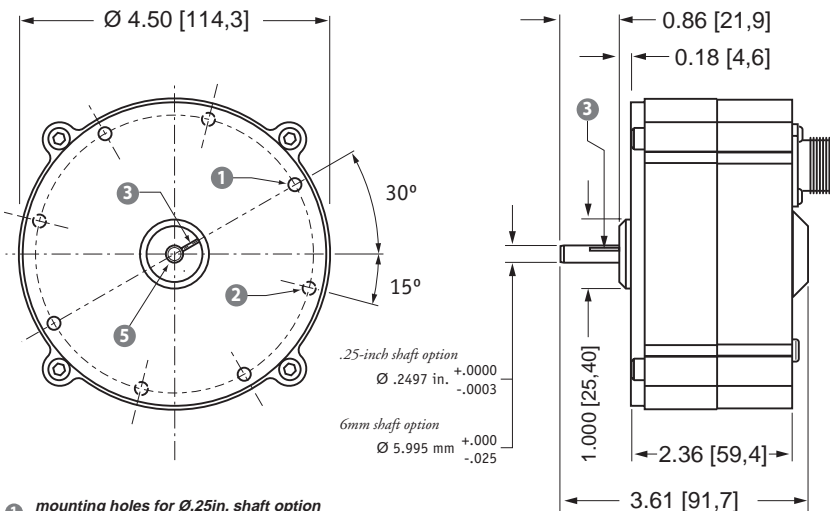
Input Resistance 500, 1K, 5K, 10K ohms ($\pm 10\%$) or adjustable bridge, see ④
 Power Rating, Watts 2.0 at 70°F (derated to 0 @ 250°F)
 Recommended Maximum Input Voltage 30 V(AC or DC)
 Output Signal Change Over Measurement Range 94% $\pm 4\%$ of input voltage

ENVIRONMENTAL

Environmental Suitability NEMA 4/4X/6, IP 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.

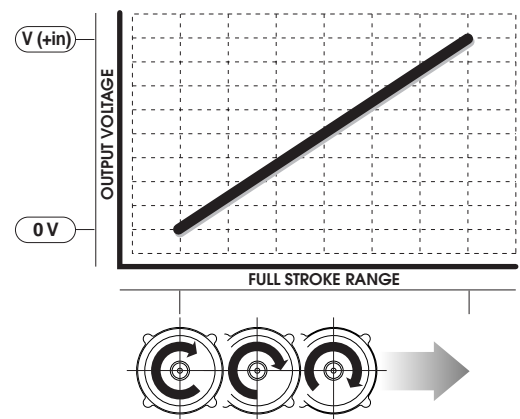
This innovative sensor from Celeco, designed to meet tough NEMA-4 and IP67 environmental standards, is available in full-stroke measurement ranges of 1/4 to 50 turns. Because the sensor is potentiometric, the RT9101 is absolute and will maintain position information even after a loss of power.



- ① mounting holes for $\varnothing .25$ in. shaft option
#8-32 x 0.180 @ 90° apart on a 4.15 in. dia. BC (4 places)
- ② mounting holes for $\varnothing 6$ mm shaft option
M4 x 4.5mm @ 90° apart on a 105.4mm dia. BC (4 places)
- ③ reference mark
full counter-clockwise position - align mark on shaft to mark on face for start of measurement range

ALL DIMENSIONS ARE IN INCHES [MM]

Electrical Output Signal:



Celeco Transducer Products, Inc.
 20630 Plummer Street • Chatsworth, CA • 91311
 tel: (800) 423-5483 • (818) 701-2750 • fax: (818) 701-2799
www.celesco.com • info@celesco.com

RT9101 • Rotational Transducer • Potentiometric Output

Ordering Information

Model Number:

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

Full Stroke Range:

	R order code: 0R25	0R50	0001	0002	0003
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*:	2.5×10^6	2.5×10^6	2.5×10^6	2.5×10^6	2.5×10^6

	R order code: 0005	0010	0020	0030	0050
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*:	5×10^5	2.5×10^5	2.5×10^5	2.5×10^5	2.5×10^5

*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:

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

Shaft Diameter:

B order code:	1	2	3	4
	0.25-in. diameter	6 mm diameter	0.25-in. dia. w/flats	6 mm dia. w/flats
	.2497 in. (+.0000 - .0003)	5.995 mm (+.000 - .025)	0.33 in. 0.025 in.	8.4 mm 0.64 mm

Output Signals:

	D order code: 1	2	3	4	5
④ sensing circuit:	500 Ω	1K Ω	5K Ω	10K Ω	0...30 mV/V adjustable bridge
					full scale output: adjustable from 0 to 30mV/V zero adjust: from full retraction to 50% of full stroke

RT9101 • Rotational Transducer • Potentiometric Output

Electrical Connection:

⑤ 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> standard A = +IN B = COMMON C = +OUT </td> <td> bridge A = +IN B = -IN C = -OUT D = +OUT </td> </tr> </table>		connections		standard A = +IN B = COMMON C = +OUT	bridge A = +IN B = -IN C = -OUT D = +OUT	<table border="1"> <tr> <td colspan="2">connections</td> </tr> <tr> <td> standard WHT = +IN BLK = COMMON GRN = OUT </td> <td> bridge not available </td> </tr> </table>	connections		standard WHT = +IN BLK = COMMON GRN = OUT	bridge not available	<table border="1"> <tr> <td rowspan="2"> </td> <td colspan="2">connections</td> </tr> <tr> <td> standard A = +IN B = COMMON C = +OUT </td> <td> bridge A = +IN B = -IN C = -OUT D = +OUT </td> </tr> </table>		connections		standard A = +IN B = COMMON C = +OUT	bridge A = +IN B = -IN C = -OUT D = +OUT	<table border="1"> <tr> <td colspan="2">connections</td> </tr> <tr> <td> standard RED = +IN BLK = COMMON GRN = OUT </td> <td> bridge RED = +IN BLK = -IN WHT = -OUT GRN = +OUT </td> </tr> </table>	connections		standard RED = +IN BLK = COMMON GRN = OUT	bridge RED = +IN BLK = -IN WHT = -OUT GRN = +OUT
	connections																					
	standard A = +IN B = COMMON C = +OUT	bridge A = +IN B = -IN C = -OUT D = +OUT																				
connections																						
standard WHT = +IN BLK = COMMON GRN = OUT	bridge not available																					
	connections																					
	standard A = +IN B = COMMON C = +OUT	bridge A = +IN B = -IN C = -OUT D = +OUT																				
connections																						
standard RED = +IN BLK = COMMON GRN = OUT	bridge RED = +IN BLK = -IN WHT = -OUT GRN = +OUT																					
IP rating:	67	67, 68*	67	67																		
NEMA rating:	6, 4X**	6, 4X**	4	6																		

note: *requires factory submersion test

**applies to stainless steel enclosure, see ③

Sample Model Number

RT9101-0005 - 1 1 1 - 1 1 1 0
order code: R A B C D E F G

Specifications: Full Stroke Range: 5 turns (5 clockwise shaft rotations)
 Enclosure Material: powder-painted aluminum
 Shaft Diameter: 0.25 inches
 Output Signal: 500 ohm voltage divider
 Electrical Connection: 6-pin plastic connector