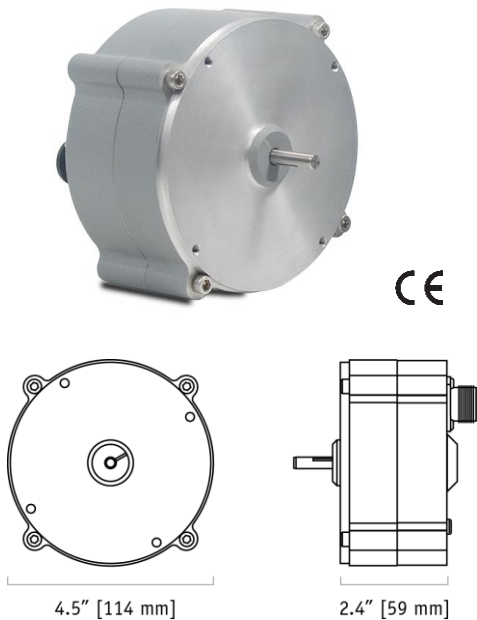
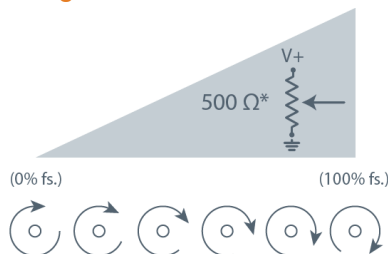




Celeco's model RT9101 provides a voltage feedback signal for rotational position. The sensing element of this device is a precision plastic-hybrid potentiometer which provide superb linearity and resolution.

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.

Output Signal



*—1K, 5K, 10K-ohm and bridge circuit also available.
see ordering info.

RT9101

0–90° to 0–50 Turns • Voltage Divider

Industrial Grade Rotational Position Sensor

Absolute Rotary Position up to 50 turns

Aluminum or Stainless Steel Enclosure Options

IP68 / NEMA 6

General

Full Stroke Range	0-0.25 to 0-50 turns
Output Signal Options	voltage divider (potentiometer)
Accuracy	see ordering information
Repeatability	$\pm 0.02\%$ full stroke
Resolution	essentially infinite
Enclosure Material Options	powder-painted aluminum or stainless steel
Sensor	plastic-hybrid precision potentiometer
Potentiometer Cycle Life	see ordering information
Shaft Loading	up to 35 lbs. radial and 5 lbs. axial
Weight, Aluminum (Stainless Steel) Enclosure	5 lbs. (10 lbs.) max.

Electrical

Input Resistance Options	see ordering information
Power Rating, Watt	2.0 at 70°F derated to 0 at 250°
Recommended Maximum Input Voltage	30 V (AC/DC)
Output Signal Change Over Full Stroke Range	94% $\pm 4\%$ of input voltage

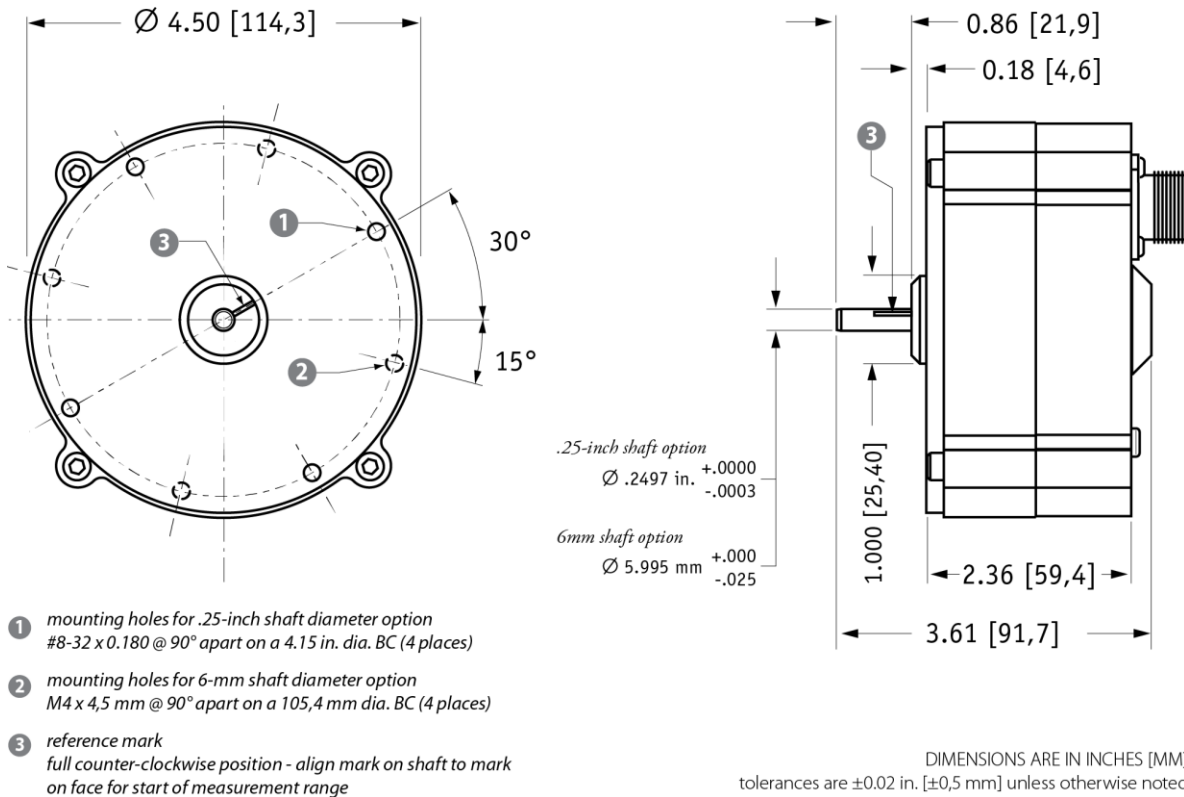
Environmental

Enclosure	see ordering information
Operating Temperature	-40° to 200°F (-40° to 90°C)
Vibration	up to 10 g to 2000 Hz maximum

RT9101

0–90° to 0–50 Turns • Voltage Divider

Outline Drawing



Ordering Information

Model Number:

RT9101- order code: **R** **A** **B** **1** **D** **1** **F** **0**

Sample Model Number:

RT9101 - 0005 - 111 - 1110

R range:	5 turns (clockwise shaft rotations)
A enclosure:	aluminum
B shaft diameter:	.25 inches
D output signal:	500 ohm potentiometer
F electrical connection:	6-pin plastic connector

Full Stroke Range:

R order code:	0R25	0R50	0001	0002	0003	0005	0010	0020	0030	0050
clockwise shaft rotations, min:	0.25	0.50	1	2	3	5	10	20	30	50
accuracy (% of f.s.):	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	0.15%	0.15%	0.15%	0.15%
potentiometer cycle life*:	2.5×10^6	2.5×10^6	2.5×10^6	2.5×10^6	2.5×10^6	5×10^5	2.5×10^5	2.5×10^5	2.5×10^5	2.5×10^5

*-number of times the sensor shaft can be cycled back and forth from beginning to end and back to the beginning before any measurable signal degradation may occur.

Enclosure Material:

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

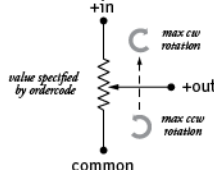
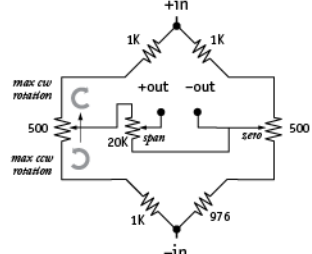
Shaft Diameter:

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

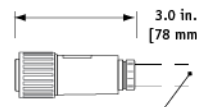
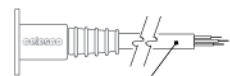
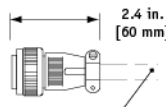
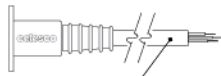
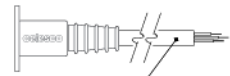
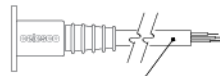
RT9101

0–90° to 0–50 Turns • Voltage Divider

Output Signals:

① order code:	1	2	3	4	5
	500 ohm*	1000 ohm*	5000 ohm*	10,000 ohm*	adjustable bridge (0...30 mV/V)
					*tolerance = ±10%
circuit options: 1, 2, 3, 4			circuit option: 5 (adjustable bridge)		
					
			full scale output: adjustable from 0 to 30mV/V		
			zero adjust: to 50% of full stroke		

Electrical Connection:

② order code:	1	2	3	4																																																						
	6-pin plastic connector w/mating plug IP 67, NEMA 4X**,6  1/2 - 5/16" [14 - 8 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	10-ft. [3 M] waterproof cable IP 67, NEMA 4X**, 6  10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW	6-pin metal connector w/mating plug IP 65, NEMA 4  3/8-in. [9 mm] max cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	25-ft. [7.5 M] instrumentation cable IP 67, NEMA 6  25 ft. x 0.2-in. dia. [7.5 M x 5 mm dia.] 24 AWG, shielded																																																						
③ order code:	5	6	7																																																							
	100-ft. [30 M] waterproof cable IP 67, NEMA 4X**,6  100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 18 AWG, type SJTW	10-ft. [3 M] pressure tested* waterproof cable IP 68, NEMA 4X**, 6P  10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW	100-ft. [30 M] pressure tested* waterproof cable IP 68, NEMA 4X**, 6P  100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 18 AWG, type SJTW																																																							
<table> <tr> <th colspan="3">6-pin Mating Plug</th> <th colspan="3">Waterproof Cable</th> <th colspan="3">Instrumentation Cable</th> </tr> <tr> <th>pin</th> <th>standard</th> <th>bridge</th> <th>color code</th> <th>standard</th> <th>bridge</th> <th>color code</th> <th>standard</th> <th>bridge</th> </tr> <tr> <td>A</td> <td>+ in</td> <td>+ in</td> <td>WHITE</td> <td>+ in</td> <td>n/a</td> <td>RED</td> <td>+ in</td> <td>+ in</td> </tr> <tr> <td>B</td> <td>common</td> <td>- in</td> <td>BLACK</td> <td>common</td> <td>n/a</td> <td>BLACK</td> <td>common</td> <td>- in</td> </tr> <tr> <td>C</td> <td>+ out</td> <td>- out</td> <td>GREEN</td> <td>+ out</td> <td>n/a</td> <td>GREEN</td> <td>+ out</td> <td>+ out</td> </tr> <tr> <td>D</td> <td>-</td> <td>+ out</td> <td></td> <td></td> <td></td> <td>WHITE</td> <td>-</td> <td>- out</td> </tr> </table>					6-pin Mating Plug			Waterproof Cable			Instrumentation Cable			pin	standard	bridge	color code	standard	bridge	color code	standard	bridge	A	+ in	+ in	WHITE	+ in	n/a	RED	+ in	+ in	B	common	- in	BLACK	common	n/a	BLACK	common	- in	C	+ out	- out	GREEN	+ out	n/a	GREEN	+ out	+ out	D	-	+ out				WHITE	-	- out
6-pin Mating Plug			Waterproof Cable			Instrumentation Cable																																																				
pin	standard	bridge	color code	standard	bridge	color code	standard	bridge																																																		
A	+ in	+ in	WHITE	+ in	n/a	RED	+ in	+ in																																																		
B	common	- in	BLACK	common	n/a	BLACK	common	- in																																																		
C	+ out	- out	GREEN	+ out	n/a	GREEN	+ out	+ out																																																		
D	-	+ out				WHITE	-	- out																																																		
 contact view																																																										

*-Test pressure: 100 feet [30 meters] H₂O (40 PSID); Test Medium: Air; Duration: 2 hours. **-Applies to stainless steel enclosure only.

RT9101

0–90° to 0–50 Turns • Voltage Divider

NORTH AMERICA

Measurement Specialties, Inc.,
a TE Connectivity company
20630 Plummer Street
Chatsworth, CA 91311
Tel +1 800 423 5483
Tel +1 818 701 2750
Fax +1 818 701 2799
info@celesco.com

TE.com/sensorsolutions

Measurement Specialties, Inc., a TE Connectivity company.

Measurement Specialties, TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2015 TE Connectivity Ltd. family of companies All Rights Reserved.

RT9101 12/01/2015