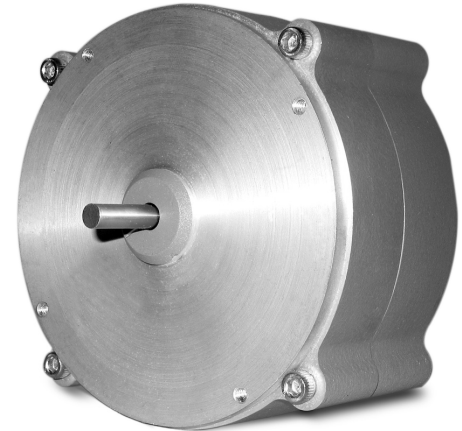


Precision Potentiometric Output
Ranges: 0-90° to 0-50 Turns
Industrial Grade



RT9101



Specification Summary:

GENERAL

Full Stroke Range Options 0-0.25 to 0-50 turns
 Output Signal Options..... voltage divider (potentiometer)
 Accuracy ± 0.30% to ±0.15% full stroke *see ordering information*
 Repeatability..... ± 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 500, 1K, 5K, 10K or bridge, *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% ±4% of input voltage

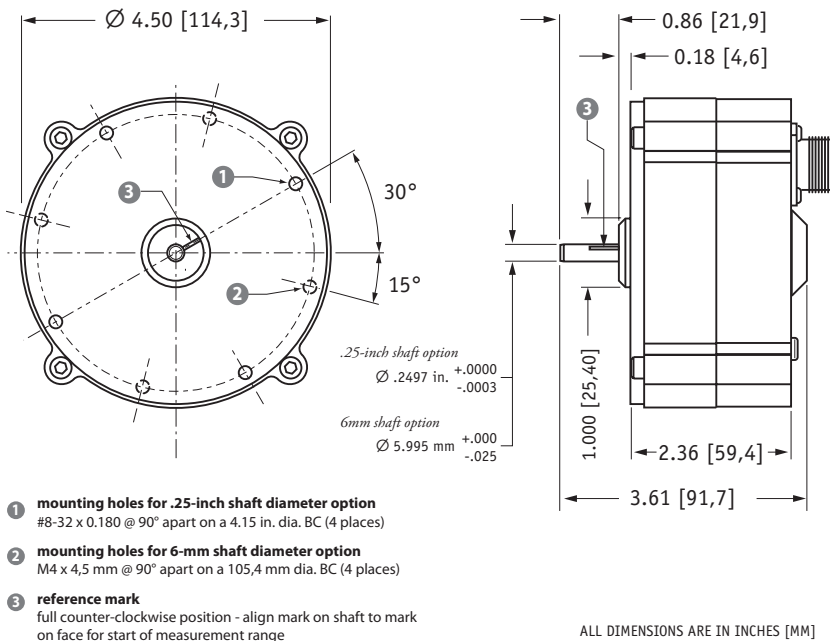
ENVIRONMENTAL

Enclosure NEMA 4/4X/6, IP 67/68
 Operating Temperature -40° to 200°F (-40° to 90°C)
 Vibration..... up to 10 G's to 2000 Hz maximum

Celesco'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.

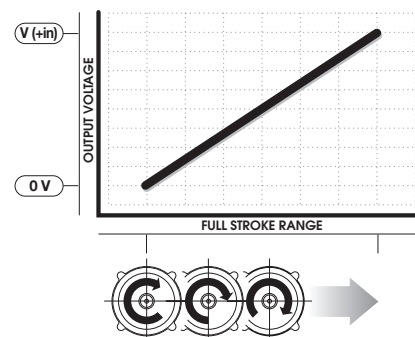
This innovative sensor from Celesco, designed to meet tough NEMA-4 and IP67 environmental standards, is available in full-stroke measurement ranges of 1/4 to 50 turns. Because the sensor is potentiometric, the RT9101 is absolute and will maintain position information even after a loss of power.

Outline Drawing



- 1 mounting holes for .25-inch shaft diameter option
#8-32 x 0.180 @ 90° apart on a 4.15 in. dia. BC (4 places)
- 2 mounting holes for 6-mm shaft diameter option
M4 x 4,5 mm @ 90° apart on a 105,4 mm dia. BC (4 places)
- 3 reference mark
full counter-clockwise position - align mark on shaft to mark on face for start of measurement range

Output Signal



Ordering Information:

Model Number:

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

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:

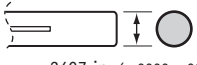


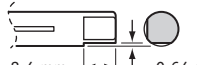
R order code:	0R25	0R50	0001	0002	0003	0005	0010	0020	0030	0050
clockwise shaft rotations, min:	0.25	0.50	1	2	3	5	10	20	30	50
accuracy (% of f.s.):	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	0.15%	0.15%	0.15%	0.15%
potentiometer cycle life*:	2.5×10^6	2.5×10^6	2.5×10^6	2.5×10^6	2.5×10^6	5×10^5	2.5×10^5	2.5×10^5	2.5×10^5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

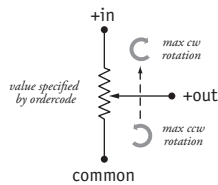
Shaft Diameter:

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

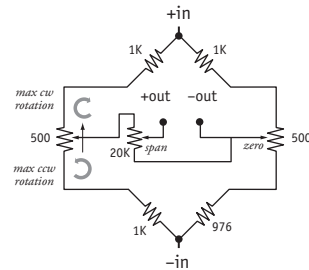
Output Signals:

D 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



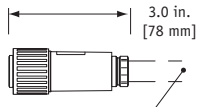
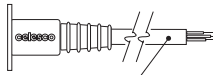
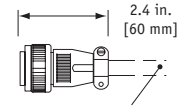

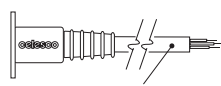
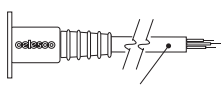
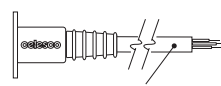

circuit option: 5 (adjustable bridge)



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

Ordering Information:

Electrical Connection:

1 6-pin plastic connector w/mating plug IP 67, NEMA 4X**, 6  3.0 in. [78 mm]			2 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			3 6-pin metal connector w/mating plug IP 65, NEMA 4  2.4 in. [60 mm]			4 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		
5 100-ft. [30 M] waterproof cable IP 67, NEMA 4X**, 6P  100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 18 AWG, type SJTW			6 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			7 100-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					
6-pin Mating Plug			Waterproof Cable			Instrumentation Cable					
pin	standard	bridge		color code	standard	bridge	color code	standard	bridge		
A	+ in	+ in	 contact view	WHITE	+ in	n/a	RED	+ in	+ in		
B	common	- in		BLACK	common	n/a	BLACK	common	- in	- in	
C	+ out	- out		GREEN	+ out	n/a	GREEN	+ out	+ out	+ out	
D	-	+ out					WHITE	-	- out	- out	

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