

RT8101

0–45° to 0–200 Turns • Voltage Divider

Industrial Grade Rotational Position Sensor
Absolute Rotary Position up to 200 turns
Aluminum or Stainless Steel Enclosure Options
IP68 / NEMA 6



GENERAL

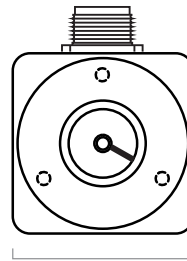
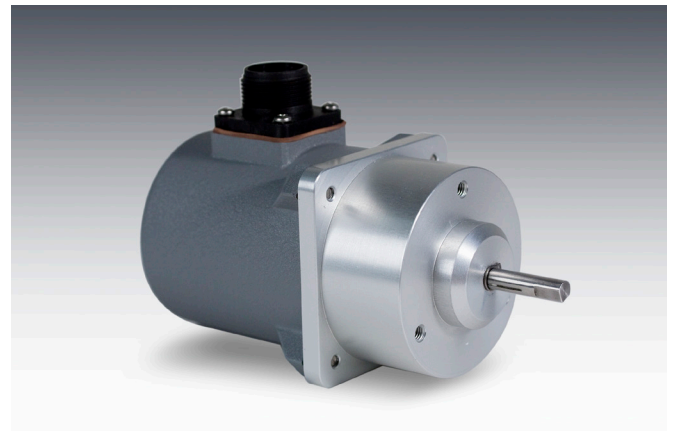
Full Stroke Range Options	0-0.125 to 0-200 turns
Output Signal Options	voltage divider (potentiometer)
Accuracy	see ordering information
Repeatability	± 0.05% full stroke
Resolution	essentially infinite
Enclosure Material Options	powder-painted aluminum or stainless steel
Sensor	plastic-hybrid precision potentiometer
Potentiometer Cycle Life	see ordering information
Shaft Loading	up to 10 lbs. radial and 5 lbs. axial
Starting Torque (25°C)	2.0 in.-oz., max.
Weight, Aluminum (Stainless Steel) Enclosure	3 lbs. (6 lbs.) max.

ELECTRICAL

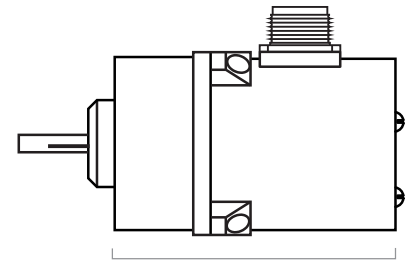
Input Resistance Options	see ordering information
Power Rating, Watt	2.0 at 70°F derated to 0 at 250°
Recommended Maximum Input Voltage	30 V (AC/DC)
Output Signal Change Over Full Stroke Range	94% ±4% of input voltage

ENVIRONMENTAL

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



2.5" [64 mm]

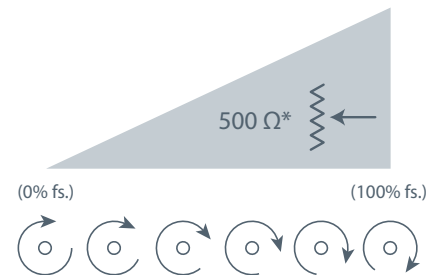


4.0" [102 mm]

Celeco's model RT8101 provides a voltage feedback signal for rotational position. The sensing element of this device is a precision plastic-hybrid potentiometer which provides superb linearity and resolution.

The RT8101 provides extended rotational position feedback from as little as 1/8 of a turn f.s. all the way up to 200 turns f.s. Because the sensor is potentiometric, the RT8101 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.



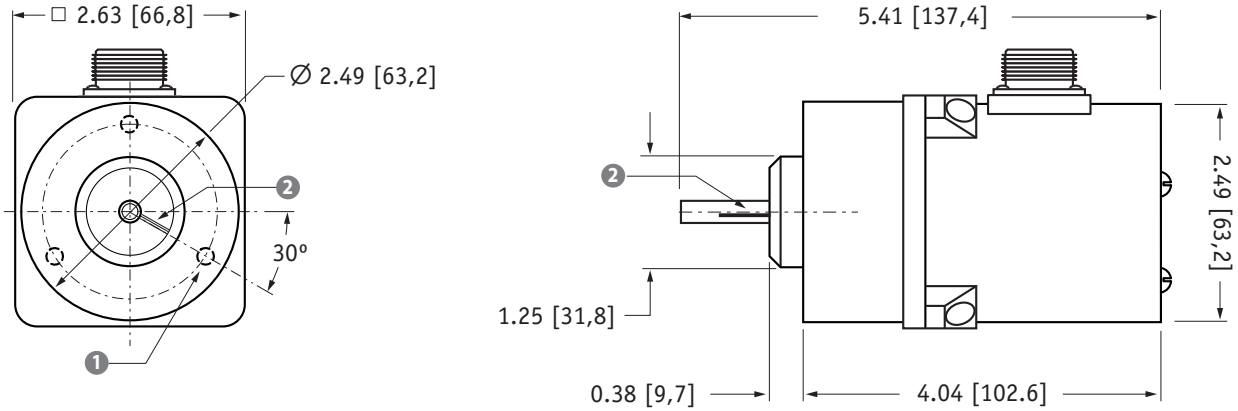
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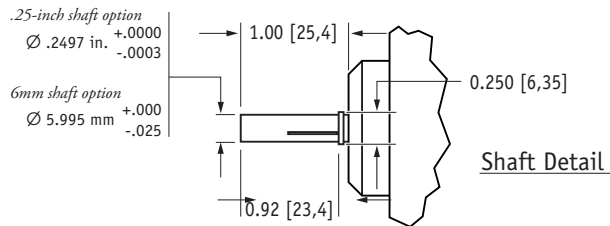
celesco

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Outline Drawing:



- 1 mounting holes:
for .25 in. shaft option, mounting holes are threaded #10-32 x 0.375 deep 120° apart on a 2.00 inch dia. BC
for 6mm shaft option, mounting holes are threaded M6 x 9 mm deep 120° apart on a 50,8 mm dia. BC
- 2 reference mark:
full counter-clockwise position - align mark on shaft to mark on face for start of measurement range



DIMENSIONS ARE IN INCHES [MM]
tolerances are ±0.02 in. [±0,5 mm] unless otherwise noted

Ordering Information:

Model Number:

RT8101 - - - - - - - -

order code: R A B C D E F G

Sample Model Number:

RT8101 - 0005 - 111 - 1110

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

Full Stroke Range:

R order code:	R125	OR25	OR50	0001	0002	0003	0005	0010	0020
clockwise shaft rotations, min:	0.125	0.25	0.50	1	2	3	5	10	20
accuracy (% of f.s.):	1.25%	1.25%	0.5%	0.5%	0.5%	0.2%	0.2%	0.15%	0.15%
potentiometer cycle life*:	2.5 x 10 ⁶	2.5 x 10 ⁶	2.5 x 10 ⁶	2.5 x 10 ⁶	2.5 x 10 ⁶	5 x 10 ⁵	5 x 10 ⁵	2.5 x 10 ⁵	2.5 x 10 ⁵

R order code:	0030	0040	0050	0080	0100	0120	0140	0180	0200
clockwise shaft rotations, min:	30	40	50	80	100	120	140	180	200
accuracy (% of f.s.):	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
potentiometer cycle life*:	2.5 x 10 ⁵	2.5 x 10 ⁵	2.5 x 10 ⁵	2.5 x 10 ⁵	2.5 x 10 ⁵	2.5 x 10 ⁵	2.5 x 10 ⁵	2.5 x 10 ⁵	2.5 x 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

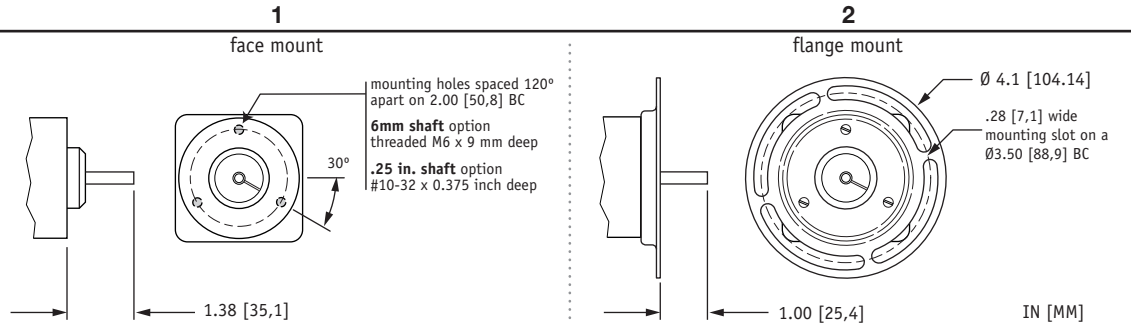
Shaft Diameter:

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 -0.0003)	5.995 mm (+.000 -0.025)	0.33 in. ±0.025 in.	8.4 mm ±0.64 mm

Ordering Information (cont.):

Mounting Style:

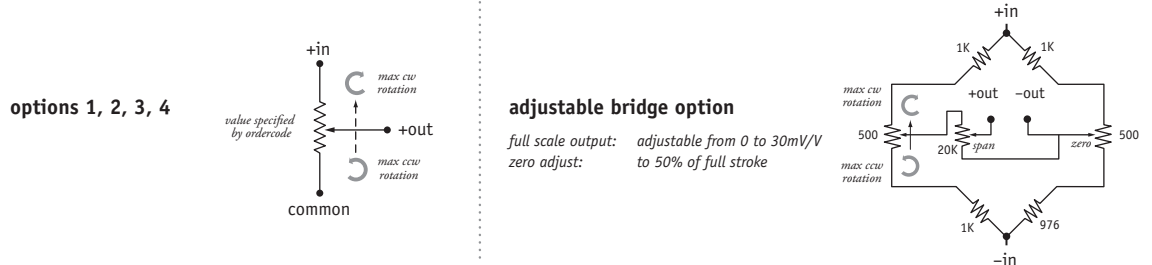
④ order code:



Output Signals:

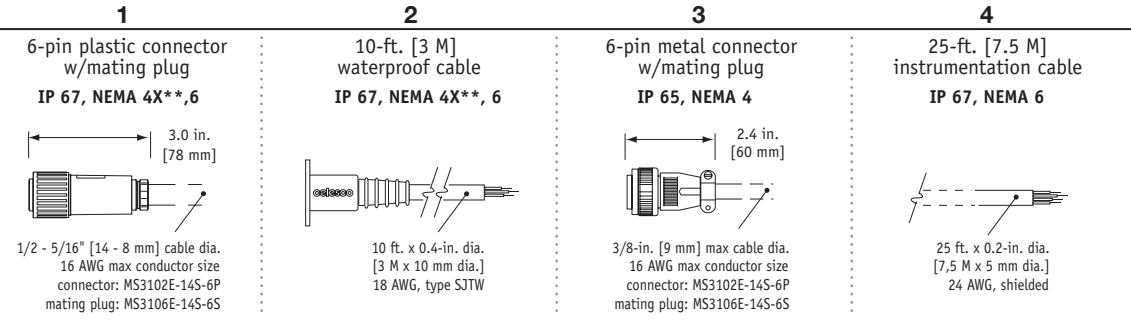
① order code:

1	2	3	4	5
500 ohm*	1000 ohm*	5000 ohm*	10,000 ohm*	adjustable bridge (0...30 mV/V)
available ranges: all ranges	not available for .125-turn (R125) and .25-turn (OR25) range options			
*tolerance = ±10%				

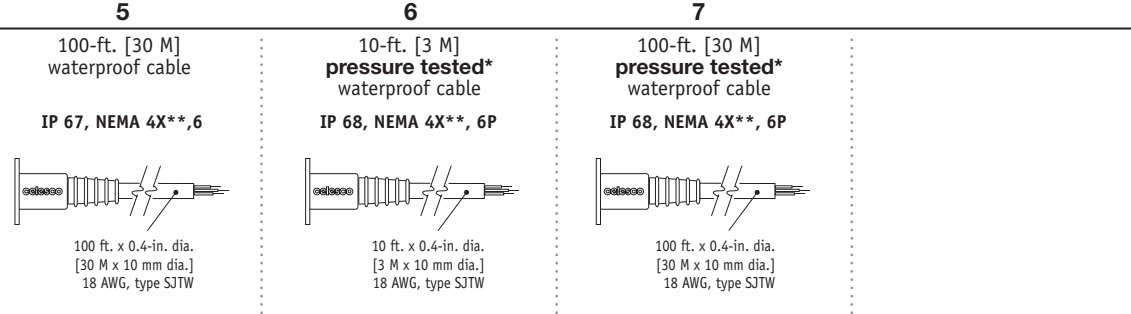


Electrical Connection:

⑤ order code:



⑥ order code:



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

Notes: * -Test pressure: 100 feet [30 meters] H₂O (40 PSID); Test Medium: Air; Duration: 2 hours.
 ** -NEMA 4X applies to stainless steel enclosure only.

version: 8.0 last updated: November 19, 2013

