

Rotational Position Transducer

- ▼ Up to 50 Turns
- ▼ Industrial Grade
- ▼ 0...10 VDC Output Signal



RT9510



Specification Summary:

GENERAL

Full Stroke Ranges 0.25 to 0-50 turns, see ① next page
 Output Signal 0-10, 0-5 VDC, see ④
 Accuracy ± 0.30 to $\pm 0.15\%$ full stroke, see ②
 Repeatability $\pm 0.05\%$ 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 Voltage 14.5-40VDC (10.5-40VDC for 0-5 volt output)
 Input Current 10 mA maximum
 Output Impedance 1000 ohms
 Maximum Output Load 5000 ohms
 Zero and Span Adjustment 2:1 turndown

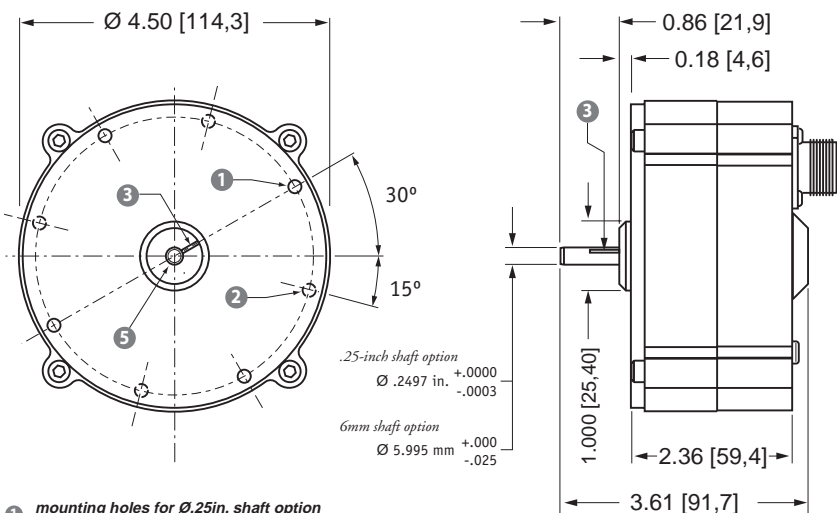
ENVIRONMENTAL

Enclosure Design NEMA 4/4X/6, IP67/68, see ⑤ and ⑥
 Operating Temperature -40° to 200° F
 Vibration up to 10 G's to 2000 Hz maximum

The RT9510 is an incredibly simple device which provides a regulated 0...10 VDC rotational-position feedback signal with a 14.5...40 VDC unregulated input voltage.

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 RT9510 is absolute and will maintain position information even after a loss of power.

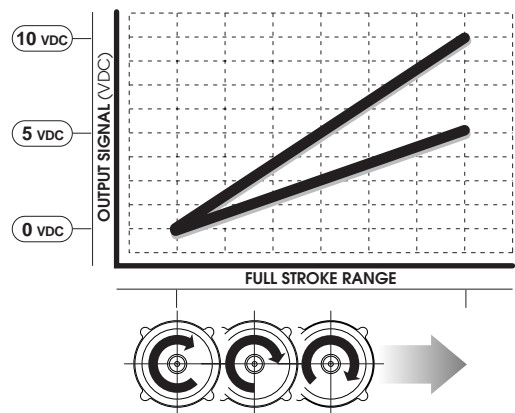
CE EMC COMPLIANCE PER DIRECTIVE 89/336/EEC
 Emission / Immunity EN50081-2 / EN50082-2



- ① mounting holes for $\varnothing 0.25$ 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:



celesco

Celesco 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

RT9510 • Rotational Transducer • 0...10 VDC Output Signal

Ordering Information

Model Number:

RT9510- _____ **1** - **1** _____ **0**
order code: R A B C D E F G

Full Stroke Range:

| <small>R</small> 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 x 10 ⁶ | 2.5 x 10 ⁶ | 2.5 x 10 ⁶ | 2.5 x 10 ⁶ | 2.5 x 10 ⁶ |

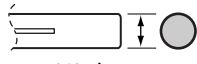



| <small>R</small> order code: | 0005 | 0010 | 0020 | 0030 | 0050 |
|---------------------------------|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| clockwise shaft rotations, min: | 5 | 10 | 20 | 30 | 50 |
| accuracy (% of f.s.):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

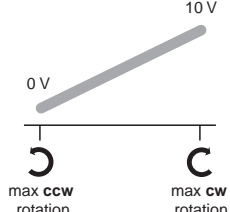
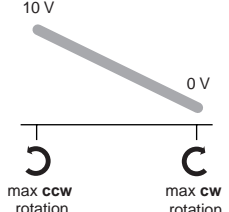
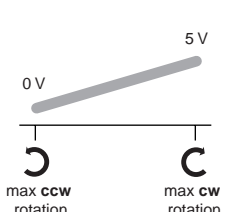
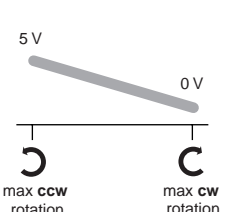
Enclosure Material:

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

Mounting Configuration and Shaft Diameter:

| <small>B</small> 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:

| <small>B</small> order code: | 1 | 2 | 3 | 4 |
|--------------------------------|---|---|--|---|
| ④ output signal configuration: | 0...10 VDC | 10...0 VDC | 0...5 VDC | 5...0 VDC |
| |  |  |  |  |

RT9510 • Rotational Transducer • 0...10 VDC Output Signal

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 |
| | | | | |
| | | <p>connections</p> <p>WHT = input voltage GRN = output signal BLK = common</p> | | <p>connections</p> <p>RED = input voltage GRN = output signal BLK = common</p> |
| 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

RT9510-0005 - 1 1 1 - 1 1 1 0
order code: B A E 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: 0-10 VDC, output increasing with clockwise shaft rotation
 Electrical Connection: 6-pin plastic connector