

Rotational Position Transducer

0...5, 0...10 VDC Output
Ranges: 0-45° to 0-200 Turns
Industrial Grade

RT8510



Specification Summary:

GENERAL

Full Stroke Range Options 0-0.125 to 0-200 turns
 Output Signal Options 0...5, 0...10 VDC
 Accuracy *see ordering information*
 Repeatability $\pm 0.05\%$ full stroke
 Resolution essentially infinite
 Enclosure Material 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 14.5-40 VDC (10.5-40 VDC for 0...5 volt output)
 Input Current 10 mA maximum
 Output Impedance 1000 ohms
 Maximum Load 5000 ohms
 Zero Adjustment from factory set zero to 50% of full stroke range
 Span Adjustment to 50% of factory set span

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

EMC COMPLIANCE PER DIRECTIVE 89/336/EEC

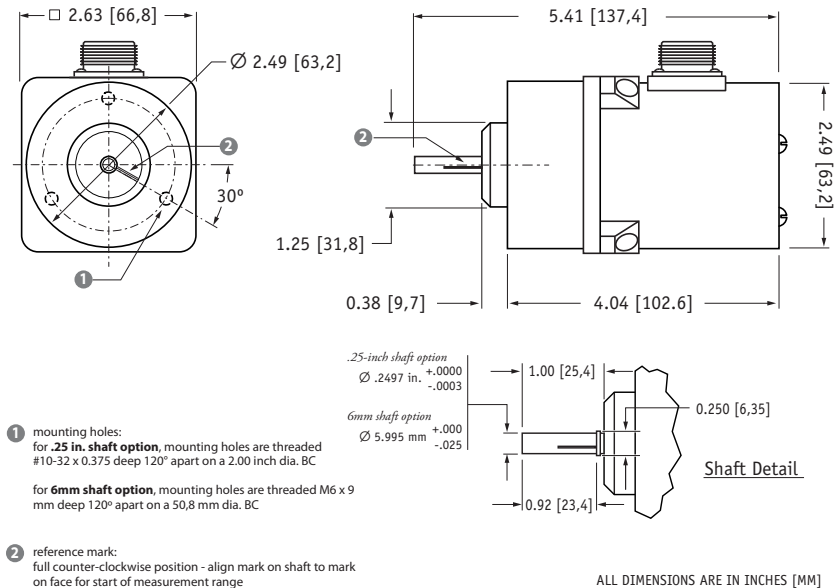
Emission/Immunity EN50081-2 / EN50082-2



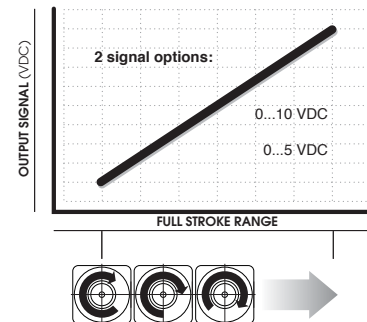
The RT8510 can operate from an unregulated 14.5 to 40 VDC power supply while providing a regulated output signal over its full range from 1/8 of a turn up to 200 turns. It provides a 0 - 10 VDC position feedback signal proportional to the rotational position of the shaft.

As a member of Celesco's innovative family of NEMA-4/ IP67 rotational transducers, the RT8510 offers numerous benefits including a zero and span adjust and a potentiometric sensor which provides an "absolute" feedback signal that is unaffected by power loss.

Outline Drawing



Output Signal



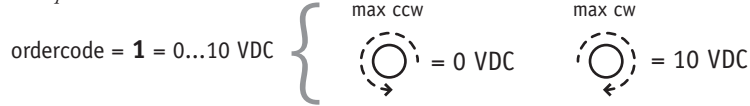
RT8510 • Rotational Transducer: 0...5, 0...10 VDC Output Signal

Ordering Information:

Output Signals:

order code:	1	2	3	4
output signal options:	0...10 VDC 	10...0 VDC 	0...5 VDC 	5...0 VDC
input voltage:	14.5...40 VDC		10.5...40 VDC	

Example:



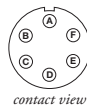
Electrical Connection:

order code:	1	2	3	4
	6-pin plastic connector w/mating plug IP 67, NEMA 4X**, 6	10-ft. [3 M] waterproof cable IP 67, NEMA 4X**, 6	6-pin metal connector w/mating plug IP 65, NEMA 4	25-ft. [7.5 M] instrumentation cable IP 67, NEMA 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. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW	 3/8-in. [9 mm] max cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	 25 ft. x 0.2-in. dia. [7,5 M x 5 mm dia.] 24 AWG, shielded

order code:	5	6	7
	100-ft. [30 M] waterproof cable IP 67, NEMA 4X**, 6	10-ft. [3 M] pressure tested* waterproof cable IP 68, NEMA 4X**, 6P	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	 10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW	 100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 18 AWG, type SJTW

6-pin Mating Plug

pin	signal
A	input voltage
B	output signal
C	common



Waterproof Cable

color code	signal
WHITE	input voltage
GREEN	output signal
BLACK	common

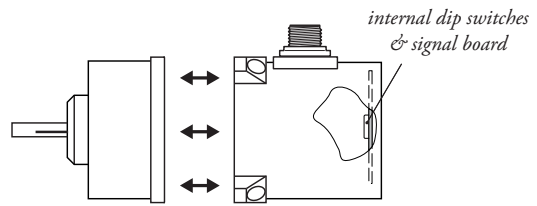
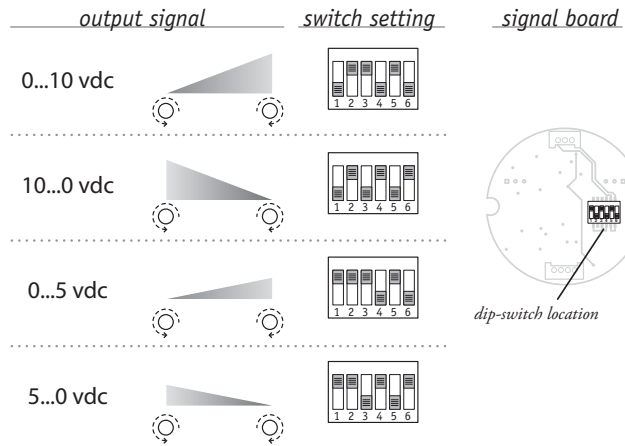
Instrumentation Cable

color code	signal
RED	input voltage
GREEN	output signal
BLACK	common

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

Output Signal Selection:

The output signal direction can be reversed at any time by simply changing the dip-switch settings found on the internal signal board. After the settings have been changed, adjustment of the Zero and Span trimpots will be required to precisely match signal values to the beginning and end points of the stroke.



To gain access to the signal board, remove four Allen-Head Screws and separate the two case halves.