

Rotational Transducer

- ▼ Industrial Grade – Up to 50 Turns
- ▼ 4...20 mA Output Signal
- ▼ Intrinsically Safe



RT9420



Specification Summary:

GENERAL

Full Stroke Range 0-0.25 to 0-50 turns, see ① next page
 Output Signal 4 - 20 mA (2-wire), 0 - 20 mA (3-wire), see ④
 Sensitivity, 2-wire 16 mA/full stroke, $\pm 0.25\%$
 Sensitivity, 3-wire 20 mA/full stroke, $\pm 0.25\%$
 Accuracy ± 0.30 to $\pm 0.15\%$ full stroke, see ②
 Repeatability $\pm 0.05\%$ full stroke, max.
 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 12 to 40 VDC
 Input Current 4 - 20 mA
 Loop Resistance (Load) (loop supply voltage - 12) / 0.02, max
 Circuit Protection 38 mA maximum
 Impedance 100 MW @ 100 VDC, min.
 Zero and Span Adjustment 2:1 turndown

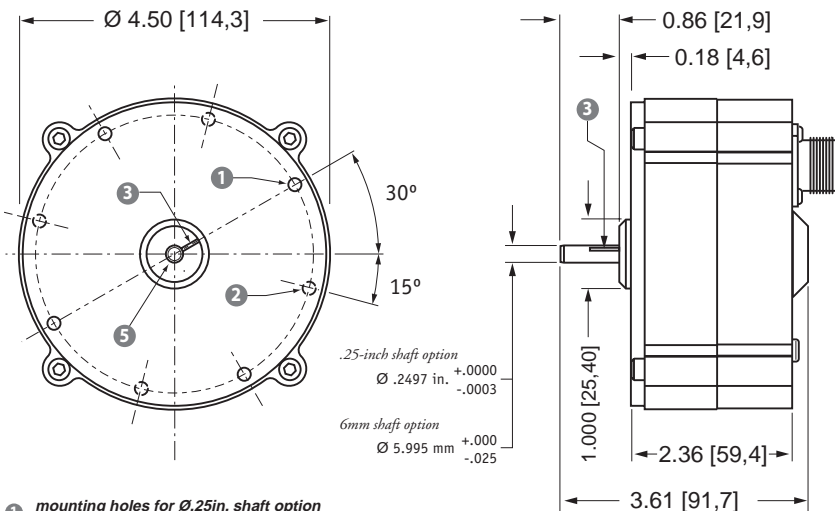
ENVIRONMENTAL

Enclosure Design NEMA 4/4X/6, IP 67/68, see ⑤ and ⑥
 Hazardous Area Certification (see ④)
 CSA 22.2: Class 1, Groups A, B, C and D
 Cenelec: LCIE EEx IIc T4
 Operating Temperature -40° F to 200° F
 Thermal Effects
 Zero 0.01% full stroke / °F, max.
 Span 0.01% / °F, max.
 Vibration up to 10 G's to 2000 Hz max.



EMC COMPLIANCE PER DIRECTIVE 89/336/EEC

Emission / Immunity EN50081-2 / EN50082-2



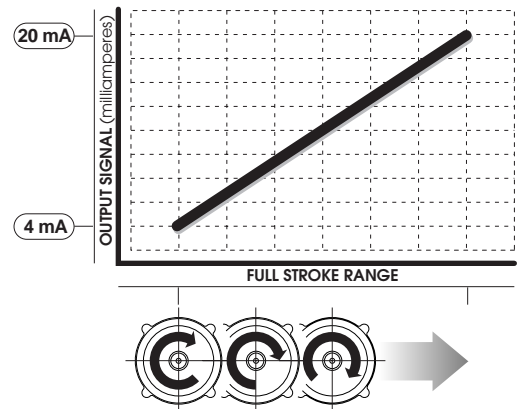
- ① mounting holes for $\varnothing 0.25$ in. shaft option
#8-32 x 0.180 @ 90° apart on a 4.15 in. dia. BC (4 places)
- ② mounting holes for $\varnothing 6$ mm shaft option
M4 x 4.5mm @ 90° apart on a 105.4mm dia. BC (4 places)
- ③ reference mark
full counter-clockwise position - align mark on shaft to mark on face for start of measurement range

ALL DIMENSIONS ARE IN INCHES [MM]

The RT9420 provides rotational position feedback via 4...20 mA current loop signal. This device combines the superb linearity and resolution of a plastic-hybrid potentiometer and the durability of Celesco's 4...20mA circuit to provide an accurate and reliable electrical signal. Additionally the zero and span settings are adjustable through access holes in the housing.

This innovative sensor from Celesco, designed to meet NEMA-4 and IP67 standards, is available in full stroke ranges of 1/4 to 50 turns.

Electrical Output Signal:



celesco

Celesco Transducer Products, Inc.
 7800 Deering Avenue • Canoga Park, CA • 91309
 tel: (800) 423-5483 • (818) 884-6860 • fax: (818) 340-1175
www.celesco.com • info@celesco.com

Ordering Information

Model Number:

RT9420- _____ **1** - **1** _____ **0**
 order code: **R** **A** **B** **C** **D** **E** **F** **G**

Full Stroke Range:

	R 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





	R 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 measurable degradation of the output signal occurs.

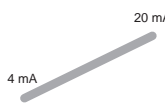

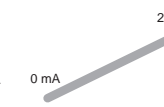
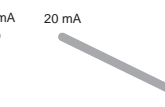
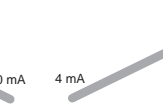
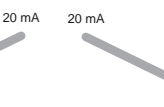


Enclosure Material:

	A order code: 1	2
③ enclosure material:	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:

E order code:	1	2	3	4	5*	6*
④ output signal configuration:	4...20 mA (2-wire)	20...4 mA (2-wire)	0...20 mA (3-wire)	20...0 mA (3-wire)	4...20 mA (2-wire)	20...4 mA (2-wire)
						
	max.CCW rotation	max.CW rotation	max.CCW rotation	max.CW rotation	max.CCW rotation	max.CW rotation
⑤ hazardous area certification	none	none	none	none	 CSA Standard 22.2 Class 1 Groups A, B, C and D	 Cenelec LCIE EEx ia IIc T4

*Important: Intrinsically Safe when powered from a CSA certified zener barrier rated 28 VDC max, 110 mA max as per Installation Drawing 677984.

RT9420 • Rotational Transducer • 4...20 mA Output Signal

Electrical Connection:

⑥ 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																																																												
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IP rating:	67	67, 68*	67	67																																																												
NEMA rating:	6, 4X**	6, 4X**	4	6																																																												
notes:	* requires factory submersion test		** applies to stainless steel enclosure, see ③																																																													

⑥
⑦

Sample Model Number

RT9420-0005 - 1 1 1 - 1 1 1 0
order code: ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

Specifications: Full Stroke Range: 5 turns (5 clockwise shaft rotations)
 Enclosure Material: powder-painted aluminum
 Shaft Diameter: 0.25 inches
 Output Signals: 4-20 mA, 2-wire, output increasing with clockwise shaft rotation
 Electrical Connection: 6-pin plastic connector