

Rotational Position Transducer

0/4...20 mA Output

Ranges: 0-45° to 0-200 Turns

Industrial Grade

RT8420



Specification Summary:

GENERAL

Full Stroke Range Options 0-0.125 to 0-200 turns
 Output Signal Options 4...20 mA (2-wire) and 0...20 mA (3-wire)
 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

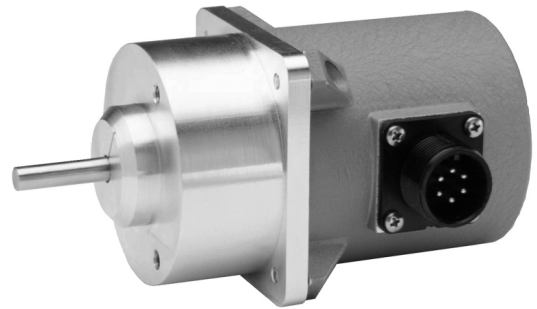
Input Voltage *see ordering information*
 Input Current 20 mA max.
 Maximum Loop Resistance (Load) (loop supply voltage - 8)/0.020
 Circuit Protection 38 mA max.
 Impedance 100M ohms@100 VDC, min.
 Output Signal Adjustment
 Zero Adjustment from factory set zero to 50% of full stroke range
 Span Adjustment to 50% of factory set span
 Thermal Effects
 Zero 0.01% f.s./°F, max.
 Span 0.01% f.s./°F, max.

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

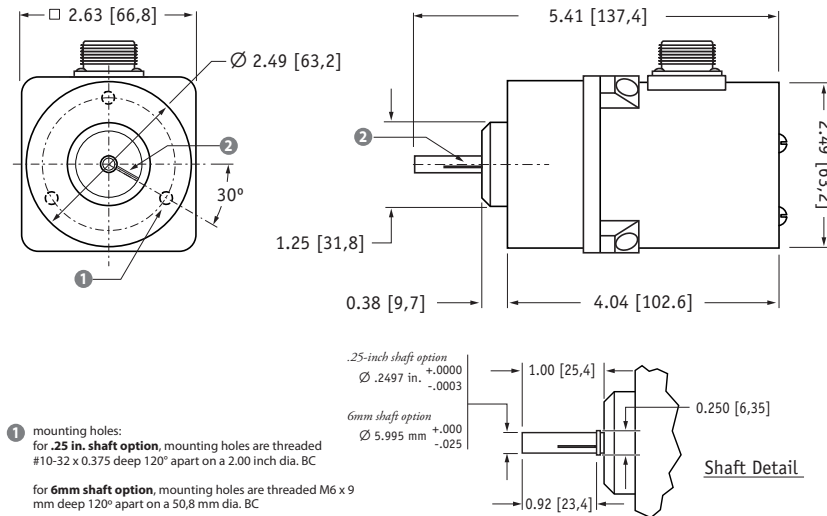
EMC COMPLIANCE PER DIRECTIVE 89/336/EEC

Emission/Immunity EN50081-2/EN50082-2



Celesco's model RT8420 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. The RT8420 combines the superb linearity and resolution of a plastic-hybrid potentiometer with the durability of Celesco's 4...20 mA circuit to provide an accurate and reliable electrical signal over all ranges.

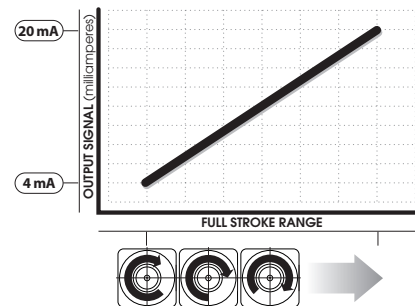
Additionally, the RT8420 has fully accessible zero and span settings allowing precise matching of the output signal to the required measurement.



- 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

ALL DIMENSIONS ARE IN INCHES [MM]

Output Signal

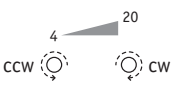
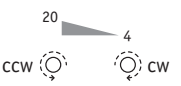

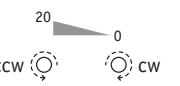


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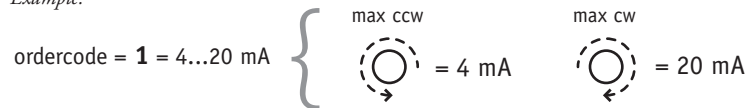
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Ordering Information:

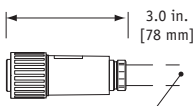
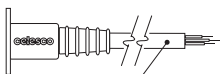
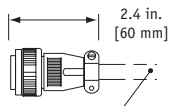

Output Signals:

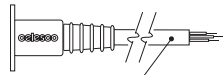
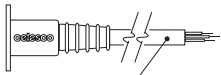
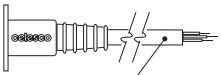
order code:	1	2	3	4
output signal options:	4...20 mA 	20...4 mA 	0...20 mA 	20...0 mA 
sensitivity:	16 mA/full stroke ±0.25%		20 mA/full stroke ±0.25%	
wiring configuration:	2 - wire		3 - wire	
input voltage:	8 - 40 vdc		14 - 29 vdc	


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

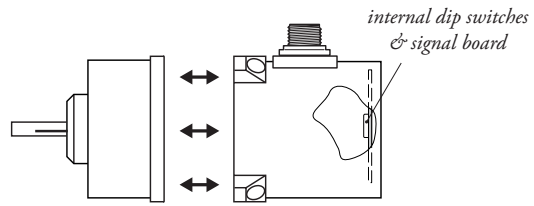
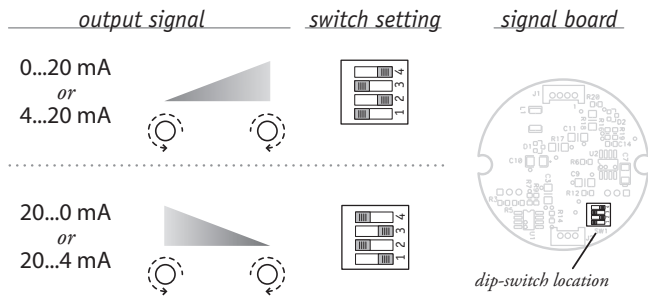
order code:	5	6	7
	100-ft. [30 M] waterproof cable IP 67, NEMA 4X**,6	10-ft. [3 M] pressure tested* waterproof cable IP 68, NEMA 4X**, 6P	100-ft. [30 M] pressure tested* waterproof cable IP 68, NEMA 4X**, 6P
	 100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 18 AWG, type SJTW	 10 ft. x 0.4-in. dia. [3 M x 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			Waterproof Cable		Instrumentation Cable			
pin	2-wire	3-wire	 contact view	color code	2-wire	3-wire	color code	2-wire	3-wire
A	8...40 vdc	14...29 vdc common		WHITE	8...40 vdc	14...29 vdc common	RED	8...40 vdc	14...29 vdc common
B	4...20 mA out	-		BLACK	4...20 mA out	-	BLACK	4...20 mA out	n/a
C	-	0...20 mA out		GREEN	case ground	0...20 mA out	WHITE	n/a	n/a
D	case ground	-					GREEN	case ground	0...20 mA out

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.