

Celeco'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 Celeco'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.

Output Signal



*Optional 3-wire, 0...20mA output signal available.

RT8420

0-45° to 0-200 Turns • 0..20mA • 4..20mA

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 | 0-0.125 to 0-200 turns |
| Output Signal Options | 4...20 mA (2-wire) and 0...20 mA (3-wire) |
| Accuracy | 0.15% to 1.25%, 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. |
| Thermal Effects, Span | 0.01% f.s./°F, max. |

EMC COMPLIANCE PER DIRECTIVE 89/336/EEC

| | |
|--------------------------|---------------------|
| Emission/Immunity | EN50081-2/EN50082-2 |
|--------------------------|---------------------|

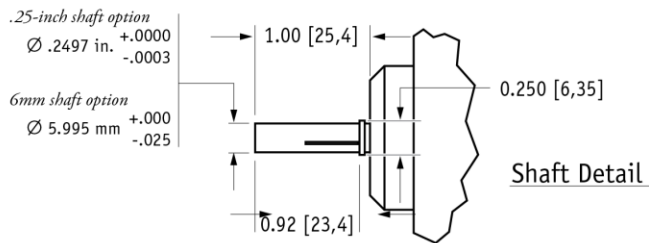
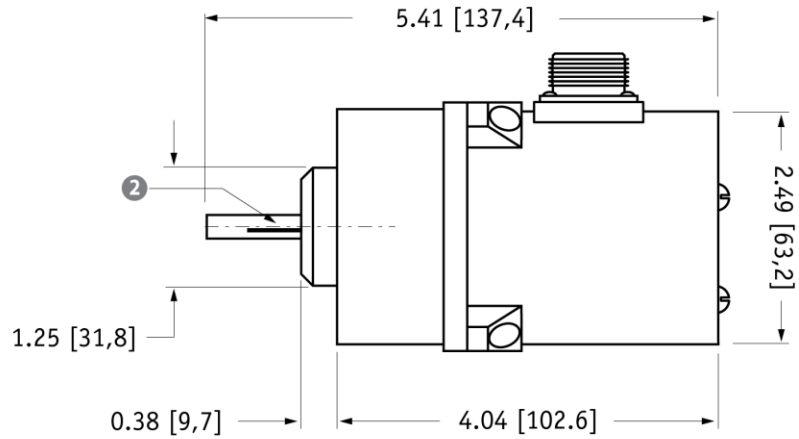
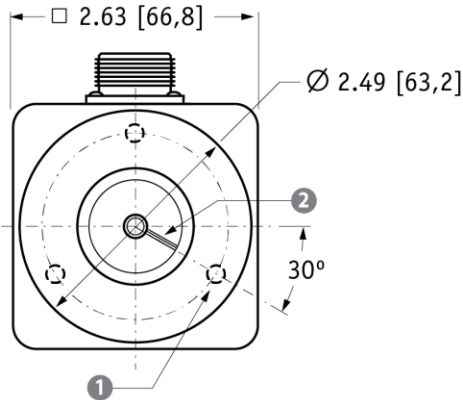
Environmental

| | |
|------------------------------|-------------------------------|
| 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 |

RT8420

0–45° to 0–200 Turns • 0..20mA • 4..20mA

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:

RT8420- - -

order code: R A B C D E F G

Sample Model Number:

RT8420 - 0005 - 111 - 1110

- R** range: 5 turns (clockwise shaft rotations)
- A** enclosure: aluminum
- B** shaft diameter: .25 inches
- C** mounting style: face mount
- E** output signal: 4..20 mA signal increasing clockwise
- F** 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.

RT8420

0–45° to 0–200 Turns • 0..20mA • 4..20mA

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 - .0003) | 5.995 mm (+.000 - .025) | 0.33 in. ← 0.025 in. | 8.4 mm ← 0.64 mm |

Mounting Style:

| | | |
|----------------------|---|---|
| C order code: | 1 | 2 |
| | face mount | flange mount |
| | | |
| | mounting holes spaced 120° apart on 2.00 [50,8] BC 6mm shaft option threaded M6 x 9 mm deep .25 in. shaft option #10-32 x 0.375 inch deep | Ø 4.1 [104.14] .28 [7,1] wide mounting slot on a Ø3.50 [88,9] BC |
| | 1.38 [35,1] | 1.00 [25,4] IN [MM] |

Output Signals:

| | | | | |
|------------------------|--------------------------|-----------|--------------------------|-----------|
| D 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 - 34 vdc | | 14 - 29 vdc | |

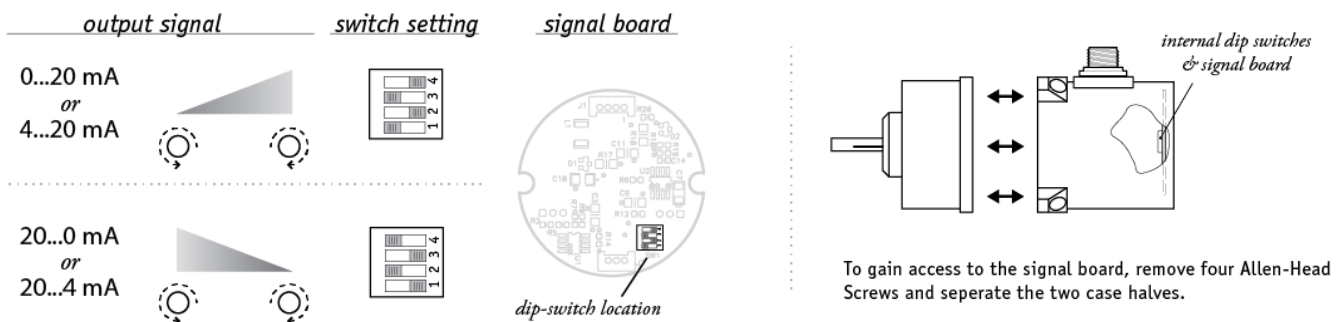
Example:

ordercode = **1** = 4...20 mA

= 4 mA
 = 20 mA

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.



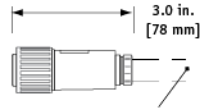
RT8420

0–45° to 0–200 Turns • 0..20mA • 4..20mA

Electrical Connection:

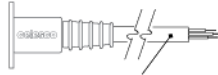
Order code:

1
6-pin plastic connector
w/mating plug
IP 67, NEMA 4X, 6**



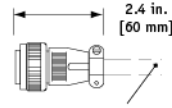
1/2 - 5/16" [14 - 8 mm] cable dia.
16 AWG max conductor size
connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S

2
10-ft. [3 M]
waterproof cable
IP 67, NEMA 4X, 6**



10 ft. x 0.4-in. dia.
[3 M x 10 mm dia.]
18 AWG, type SJTW

3
6-pin metal connector
w/mating plug
IP 65, NEMA 4



3/8-in. [9 mm] max cable dia.
16 AWG max conductor size
connector: MS3102E-14S-6P
mating plug: MS3106E-14S-6S

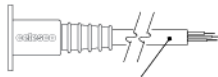
4
25-ft. [7.5 M]
instrumentation cable
IP 67, NEMA 6



25 ft. x 0.2-in. dia.
[7.5 M x 5 mm dia.]
24 AWG, shielded

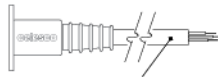
Order code:

5
100-ft. [30 M]
waterproof cable
IP 67, NEMA 4X, 6**



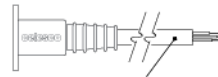
100 ft. x 0.4-in. dia.
[30 M x 10 mm dia.]
18 AWG, type SJTW

6
10-ft. [3 M]
pressure tested*
waterproof cable
IP 68, NEMA 4X, 6P**



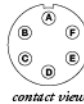
10 ft. x 0.4-in. dia.
[3 M x 10 mm dia.]
18 AWG, type SJTW

7
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

| 6-pin Mating Plug | | |
|-------------------|---------------|---------------|
| pin | 2-wire | 3-wire |
| A | 8...34 vdc | 14...29 vdc |
| B | 4...20 mA out | common |
| C | - | 0...20 mA out |
| D | case ground | - |



| Waterproof Cable | | |
|------------------|---------------|---------------|
| color code | 2-wire | 3-wire |
| WHITE | 8...34 vdc | 14...29 vdc |
| BLACK | 4...20 mA out | common |
| GREEN | case ground | 0...20 mA out |

| Instrumentation Cable | | |
|-----------------------|-------------|---------------|
| color code | 2-wire | 3-wire |
| RED | 8...34 vdc | 14...29 vdc |
| BLACK | 4...20A out | common |
| WHITE | n/a | n/a |
| 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.

NORTH AMERICA

Measurement Specialties, Inc.,
a TE Connectivity company
20630 Plummer Street
Chatsworth, CA 91311
Tel +1 800 423 5483
Tel +1 818 701 2750
Fax +1 818 701 2799
info@celesco.com

TE.com/sensorsolutions

Measurement Specialties, Inc., a TE Connectivity company.

Measurement Specialties, TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2015 TE Connectivity Ltd. family of companies All Rights Reserved.

RT8420 12/01/2015

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9