

# RTE100

## ANGLE ROTARY SENSOR

Hall effect single turn encoder external magnet kit



DATASHEET - Rev.3 - 13062019



### CHARACTERISTICS

Angle Range: 0° to 360°
Linearity up to $\pm 0.5^\circ$
Aluminum anodized housing
Dimensions $\varnothing 55 \times 15$ mm
High protection level IP67
CANopen, SSI, Incremental output



### ADVANTAGES

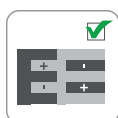
HALL Effect technology
High life time
High accuracy at economic prices
Different output types
Customizable magnet
Easy to mount



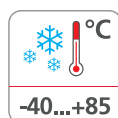
High protection level



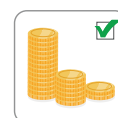
Shock/vibration resistant



Reverse polarity protection



Wide range temperature



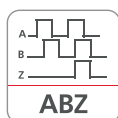
Cost saving



CANopen output



Synchronous serial interface



Incremental output



EU conformity



Directive 2011/65/EU

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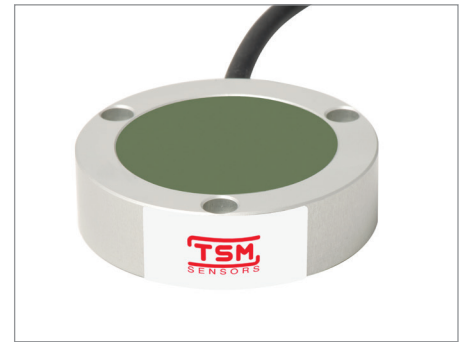


### PRODUCT DESCRIPTION

RTE100 (ø 55 mm) is a contact-less magnetic encoder series featuring high operation speed employed in harsh environments such as, automation and process control fields.

Can Open, incremental and SSI output is available, as well as anodized aluminum body material.

The operating principle of single-turn encoders is magnetic, suitable for industries where elevated speed, IP protection sealing and excellent wear and temperature resistance are needed.



### PRODUCT CODE

RTE100. \_<sup>a</sup>. 2<sup>b</sup>. 360<sup>c</sup>. \_<sup>d</sup>. \_<sup>e</sup>. \_<sup>f</sup> ← ORDER CODE

a	Counting direction
1	← = CW*
2	← = CCW

c	Angle degree
360	← = 360°

e	Type of connection
1	← = Male connector M12x5, PUR cable 30cm*
7	← = Male connector DB9, PVC cable 30cm**

b	Power supply
2	← = 9 ... 30 V DC

d	Output
6	← = CANopen*
10	← = AB 512 ppr
11	← = ABZ 512 ppr
12	← = AB 1024 ppr
13	← = ABZ 1024 ppr
21	← = SSI 8192 ppr code gray 13 bit

f	Type of magnet
0	← = Custom
1	← = Rotor STD *
2	← = Screw Magnet "M8, SW13"
3	← = Magnet 10 x 2 mm

\* TSM standard

\*\* Only for SSI output

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### TECHNICAL SPECIFICATION

Measuring range	0 ... 360°
Operating speed max	6000 rpm
Housing	Anodized aluminum ø 55 x 15 mm
Protection	IP67
Temperature drift	100 ppm/K
Temperature range	-40°C ... +85°C [-40°F ...+185°F]
Weight	approx. 99 g [3.49 oz]
Shock resistance	acc. to CEI EN 60068-2-27
Vibration resistance	acc. to CEI EN 60068-2-6:2009

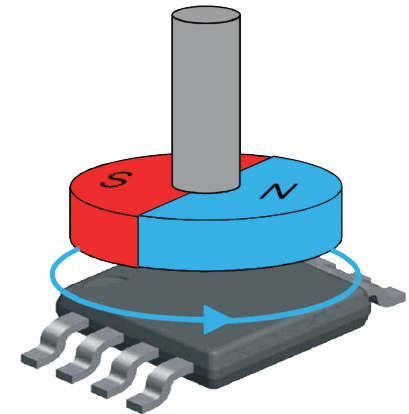
### ELECTRICAL CHARACTERISTICS

Power supply	9 ... 30 V DC
CANopen	resolution 0.01° and accuracy ±1°
SSI code gray 13 bit	resolution 8192 ppr and accuracy < ±1°
Interface Incremental AB (Z optional)	resolution 512 / 1024 ppr and accuracy < ±1°
Electromagnetic compatibility	acc. to EN 61000-6-2, EN 61000-6-4
CE compliant	acc. to EMC guideline 2014/30/EU RoHS guideline 2011/65/EU

### OPERATING PRINCIPLE

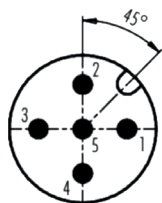
#### HALL effect

the production of a potential difference across an electrical conductor when a magnetic field is applied in a direction perpendicular to that of the flow of current.



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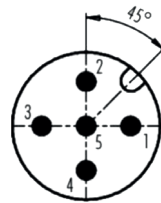
#### CANOPEN ELECTRICAL CONNECTION M12 X 5 PINS



Pinout

1	GND
2	+Vin
3	CAN-GND
4	CAN-H
5	CAN-L

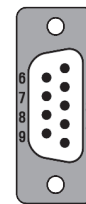
#### INCREMENTAL ELECTRICAL CONNECTION M12 X 5 PINS



Pinout

1	+Vin
2	GND
3	A
4	B
5	Z (available only for ABZ version)

#### SSI ELECTRICAL CONNECTION DB9



Pinout

1	GND
2	+Vin
3	n.c.
4	Data +
5	RESET
6	Clk +
7	Clk -
8	Data -
9	n.c.

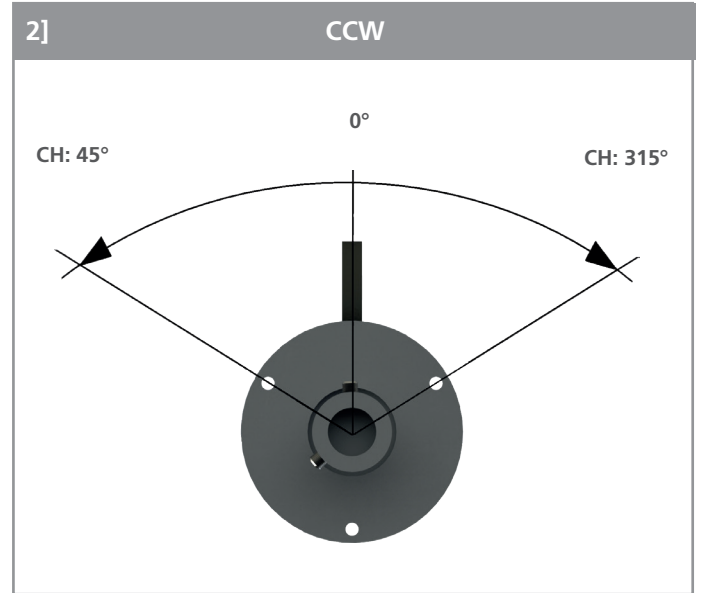
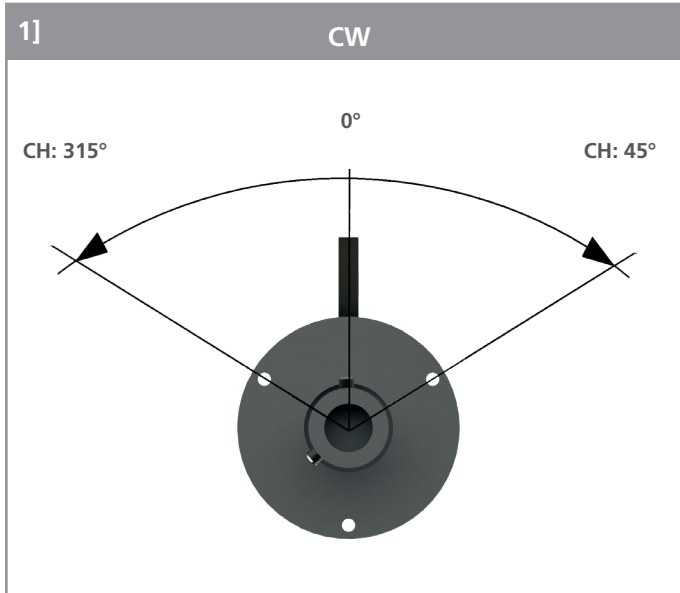
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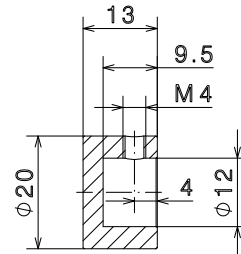
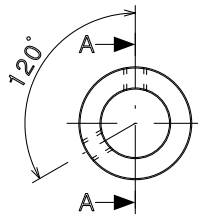
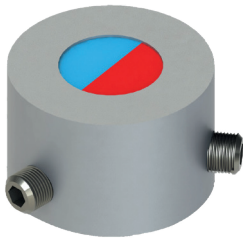


### COUNTING DIRECTION (BOTTOM VIEW)



### TYPE OF MAGNET [mm]

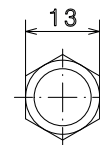
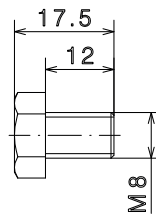
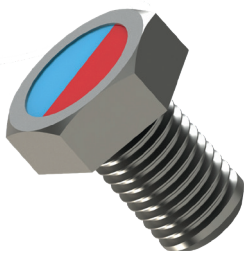
#### 1] Rotor STD



Section A-A

Recommended shaft  $\phi$  12 fix threaded x2 pin M4 (included in delivery)

#### 2] Screw magnet "M8, SW13"

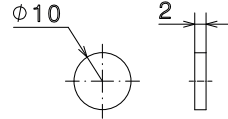


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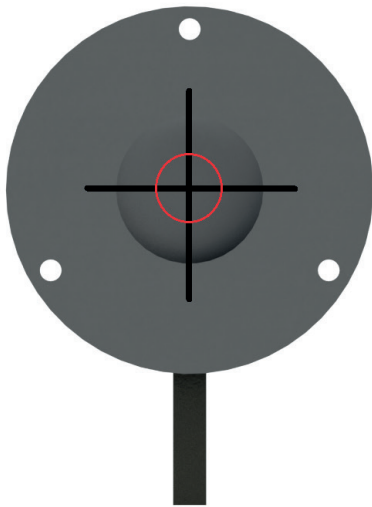
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### 3] Magnet 10 x 2 mm

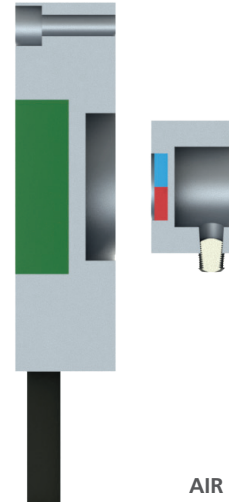


### POSITION MAGNET TOLERANCES

Max radial X - Y misalignment: 1 mm



AIR GAP Z: 1 – 8 mm



AIR GAP Z: 1 – 8 mm



**NOTE:** each offset from the axis misalignment or magnetic, will increase the non-linearity.

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### DIMENSIONS [mm]

