

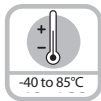
Sendix absolute, singleturn encoder type 3651 (shaft) / 3671 (blind hollow shaft) analog



Safety-Lock™



High rotational speed



Temperature



High IP



High shaft load capacity



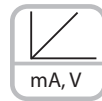
Shock/vibration resistant



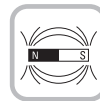
Short-circuit proof



Reverse polarity protection



Output



Magnetic sensor



Seawater-resistant version on request

Rugged

- Non-contact measuring system: **Ensures long service life and the reliability of the application.**
- **Stays sealed even when subjected to harsh everyday use.** Solid die-cast housing with up to IP69K protection **offers security against failures in the field.**
- Wide temperature range of -40 to +185°F (-40 to +85°C).
- **Increased ability to withstand vibration and installation errors.** High shock (> 500 g) and vibration resistance (> 30 g) **eliminates machine downtime and repairs.**



Sendix[®] absolute



Compact

- **Can be used where space is tight:** Overall diameter of only 36 mm.
- **Shaft version can be mounted on a tight radius:** fixing holes on Ø 26 mm.
- **Hollow shaft version is ideal for large shafts:** blind hollow shaft up to 10 mm.

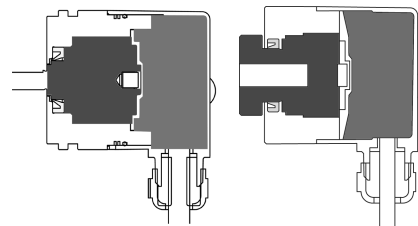
Versatile

- **Interface of 4-20 mA, 0-10 V:** One size available for different applications.
- **Measuring range of 45°, 90°, 180° and 360°.**
- **Easy diagnosis in case of fault condition:** Error indication via red LED (only current output).
- **Hollow shaft version may be fixed individually:** Torque stop and flex coupling available.
- **May be used in outdoor applications with large fluctuations in temperature:** Resistant against humidity and condensation.

Mechanical characteristics:

Max. speed:	6,000 RPM
Starting torque:	< 8.5 oz-in (< 0.06 Nm)
Radial load capacity of shaft:	9.0 lbs (40 N)
Axial load capacity of shaft:	4.5 lbs (20 N)
Weight:	approx. 0.44 lbs (0.2 kg)
Protection acc. to EN 60 529 / DIN 40050-9:	IP67 / IP69K
EX approval for hazardous areas:	optional zone 2 and 22
Working temperature range::	-40 to +185°F (-40 to +85°C)
Materials:	Shaft: stainless steel, Flange: aluminium, Housing: die cast zinc, Cable: PUR
Shock resistance acc. to EN 60068-2-27:	500 g (5,000 m/s ²), 6 ms
Vibration resistance acc. to EN 60068-2-6:	30 g (300 m/s ²), 10-2,000 Hz
Permanent shock resistance acc. to EN 60068-2-29:	100 g (1,000 m/s ²), 2 ms
Vibration (broad-band random) to EN 60068-2-64:	5-2,500 Hz, 10 g (100 m/s ²) - rms

All-round protection thanks to Safety-Lockplus™ and Sensor-Protect™ technology



Safety-Lockplus™:

IP69K protection on the flange side, robust bearing assemblies with interlocking bearings, mechanically protected shaft seal.

Sensor-Protect™:

Fully encapsulated electronics, separate mechanical bearing assembly.

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Electrical characteristics current interface 4-20 mA:

Sensor:

Supply voltage:	10-30 VDC
Current consumption (without output load):	max. 38 mA
Reverse polarity protection at power supply (+V):	Yes
Measuring range:	45°, 90°, 180° or 360°
Resolution/Code:	12 Bit
Linearity 77°F (25°C):	< 1° (360° measurement range)
Repeat accuracy 77°F (25°C):	< 0.1° (360° measurement range)
Status LED:	Red: sensor break detection, input too high Green: reference point (CW: 0° to 1°) (CCW: 0° to -1°)

4-20 mA current loop:

Output load:	max. 200 ohms at 10 VDC max. 900 ohms at 24 VDC
Setting time:	1 ms (Rload = 400 Ohm, 77°F (25°C))
Short-circuit proof outputs: when the supply voltage is correctly applied, then output to output is short-circuit protected, but not output to 0 V or to +V.	
Supply voltage and sensor output signal are not galvanically isolated.	

Electrical characteristics voltage interface

Sensor:

Supply voltage:	0.5 V, 10-30 VDC 0-10V, 15-30 VDC
Current consumption (without output load):	max. 35 mA
Reverse polarity protection at power supply (+V):	Yes
Measuring range:	45°, 90°, 180° or 360°
Resolution/Code:	12 Bit
Linearity 77°F (25°C):	< 1° (360° measurement range)
Repeat accuracy:	< 0.1° (360° measurement range)

Voltage output:

Current output:	max. 10 mA
Setting time:	< 1 ms (Rload ≥ 1 KOhm, 77°F (25°C))
Supply voltage and sensor output signal are not galvanically isolated.	
Short-circuit proof outputs: when the supply voltage is correctly applied, then output to output is short-circuit protected, but not output to 0 V or to +V.	
Status LED	Green: reference point display turns on at cw: between 0° and 1° at ccw: between 0° and -1°

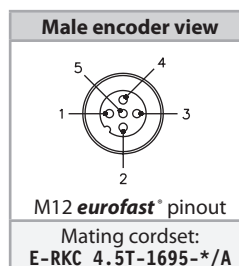
General Electrical characteristics:

RoHS compliant:	acc. to EU guideline 2002/95/EG
CE compliant:	acc. to EN 61000-6-2, EN 61000-6-4, EN 61000-6-3, and EN 61000-4-8, (behavior under magnetic influence)
e1 compliant:	acc. to EU guideline 2009/19/EG (acc. to EN 55025, ISO 11452 and ISO 7637)

Pin configuration:

Signal:	Common (0 V)	+V	+I	-I
Color:	WH	BN	GN	YE
M12 pin:	3	2	4	5

Wiring Diagram:



* Length in meters.

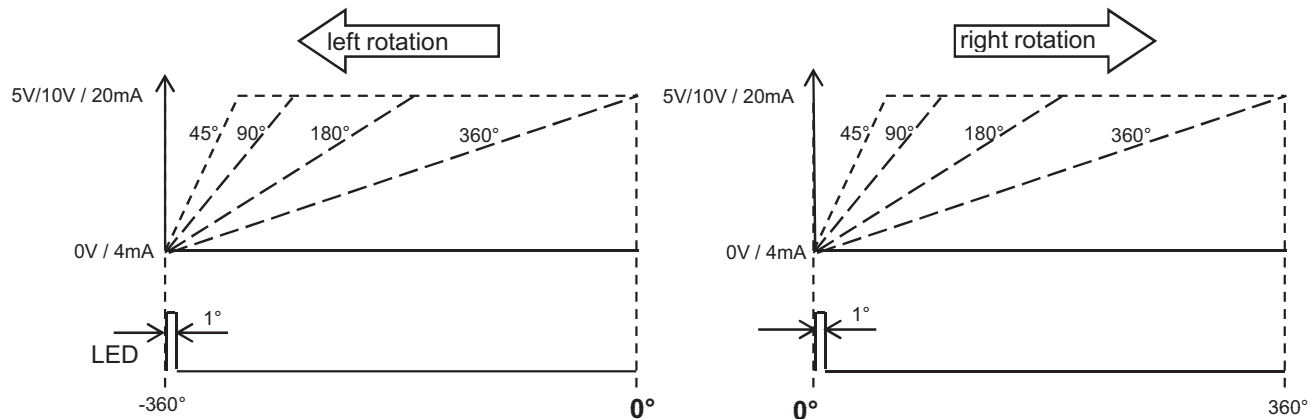
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Note: Encoders must be ordered with a clockwise or counterclockwise profile. This determines whether the analog output increases or decreases in the given direction.

Example (output signal profile):

Measuring range 45° / 90° / 180° / 360°

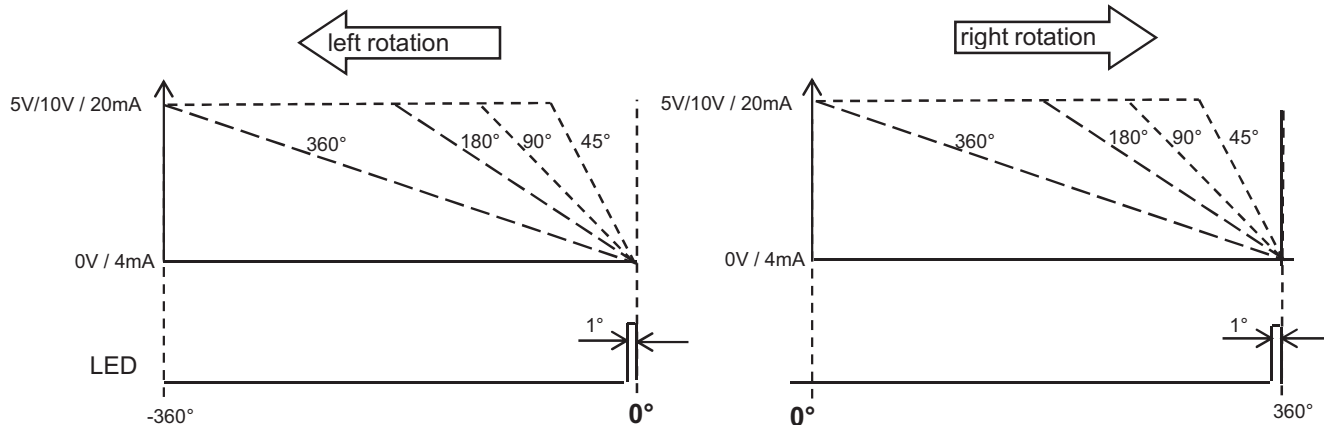
Clockwise (CW) version



Example (output signal profile):

Measuring range 45° / 90° / 180° / 360°

Counterclockwise (CCW) version



Sendix absolute, singleturn encoder type 3651 (shaft) / 3671 (blind hollow shaft) analog

Part number key: 3651 shaft version

T8.3651.XXXX.XXXX

Type	Option 1
	1 = IP67 2 = IP69K
Flange	Option 1
2 = servo flange	1 = count direction cw* 2 = count direction ccw*
Shaft (Ø x L)	Output and voltage supply
3 = Ø 6 mm x 12.5 mm 5 = Ø 6.35 mm (1/4") x 12.5 mm 6 = Ø 8 mm x 12.5 mm	3 = 4-20 mA, 10-30 VDC 4 = 0-10 V, 15-30 VDC 5 = 0-5 V, 10-30 VDC
Output	Measurement range
3 = current output 4 = voltage output	1 = 1 x 360° 2 = 1 x 180° 3 = 1 x 90° 4 = 1 x 45°
Type of connection	
1 = axial cable (1 m PUR) 2 = radial cable (1 m PUR) 3 = axial 5-pin M12 euromast connector 4 = radial 5-pin M12 euromast connector	

*cw = increasing code values when shaft turning clockwise (cw).
Top view on shaft.

Part number key: 3671 blind hollow shaft version

T8.3671.XXXX.XXXX

Type	Option 1
	1 = IP67 2 = IP69K
Flange	Option 1
2 = flange with long torque stop 5 = flange with slotted flex mount	1 = count direction cw* 2 = count direction ccw*
Blind hollow shaft (18 mm insertion depth)	Output and voltage supply
2 = Ø 6 mm 3 = Ø 6.35 mm (1/4") 4 = Ø 8 mm 6 = Ø 10 mm	3 = 4-20 mA, 10-30 VDC 4 = 0-10 V, 15-30 VDC 5 = 0-5 V, 10-30 VDC
Output and voltage supply	Measurement range
3 = current output 4 = voltage output	1 = 1 x 360° 2 = 1 x 180° 3 = 1 x 90° 4 = 1 x 45°
Type of connection	
1 = axial cable (1 m PUR) 2 = radial cable (1 m PUR) 3 = axial 5-pin M12 euromast connector 4 = radial 5-pin M12 euromast connector	

*cw = increasing code values when shaft turning clockwise (cw).
Top view on shaft.

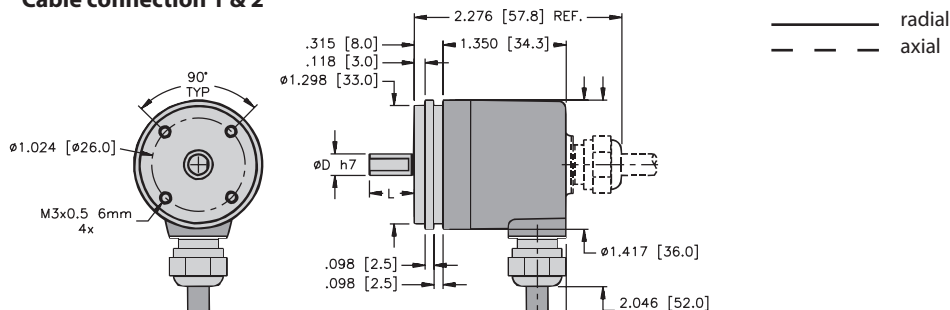
Accessories:

- See page J1, Connectivity, for cables and connectors
- See page G1, Accessories, for mounting attachments and couplings

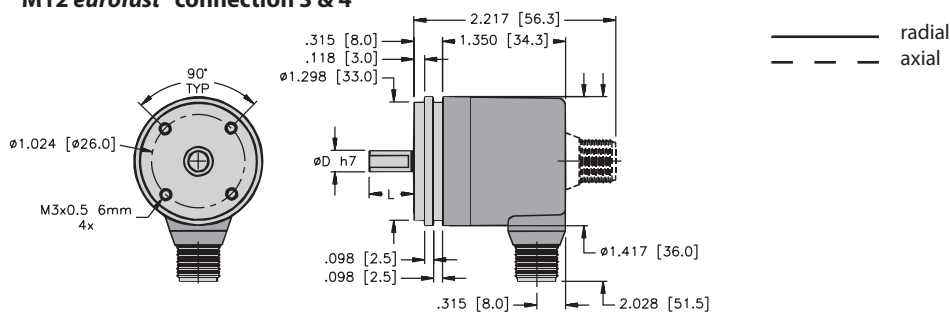
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Dimensions: 3651 shaft version

3651 flange 2
Cable connection 1 & 2



3651 flange 2
M12 eurofast® connection 3 & 4

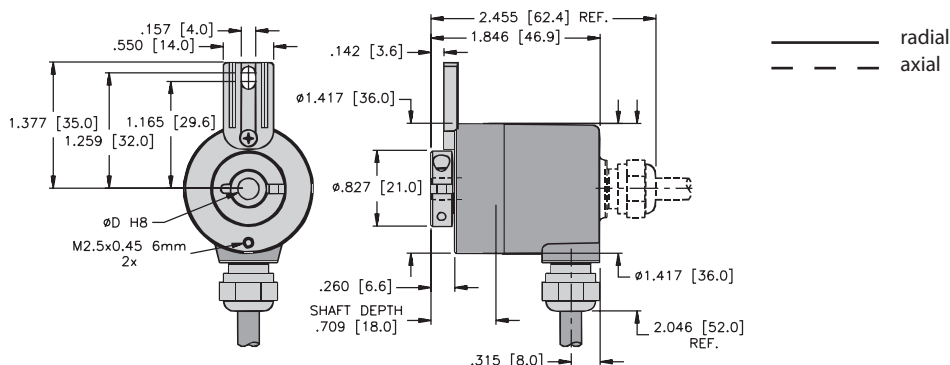


Mounting advice:

The flanges and shafts of the encoder and drive should not be rigidly coupled together at the same time. We recommend the use of suitable couplings (see page G1, Accessories).

Dimensions: 3671 blind hollow shaft version

3671 flange 2
Cable connection 1 & 2



3671 flange 5
M12 eurofast connection 3 & 4

