

Rotary Position Technology

Absolute Encoders, Multiturn



Sendix absolute, multiturn type 5868 (shaft) / 5888 (blind hollow shaft) PROFIBUS®-DP



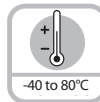
Mechanical drive



Safety-Lock™



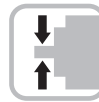
High rotational speed



Temperature
-40 to 80°C



High IP



High shaft load capacity



Shock/vibration resistant



Magnetic field proof



Short-circuit proof



Reverse polarity protection



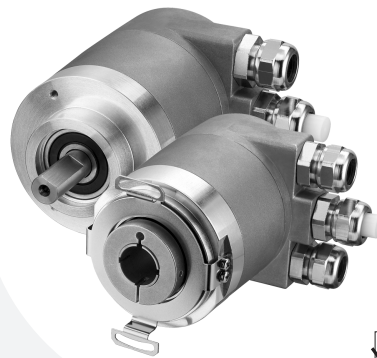
Optical sensor



Seawater-resistant version on request

Reliable

- **Increased ability to withstand vibration and installation errors.** Sturdy Safety-Lock™ Design bearing structure **eliminates machine downtime and repairs.**
- **Fewer components and connection points increase the operational reliability:** TURCK OptoASIC technology with highest integration density (Chip-on-Board).
- Die cast housing and protection up to IP67: **Remains sealed even when subjected to harsh everyday use.**
- Wide temperature range.
- **Immediate recognition of bus operation.**



Sendix® absolute
**PROFI
BUS**



Fast

- **Fast data availability with reduced loading on the bus and controller:** Intelligent functions like the transmission of speed, acceleration or exiting a working area.
- **Fast, simple, error-free connection.**

Versatile

- **Up-to-the minute fieldbus performance:** PROFIBUS-DPV0 supports Class I and II.
- **Connection options:** Bus cover with M12 connector or cable connection.
- **Fast start-up** with pre-defined GSD file: A variety of scaling options, 16 bit singleturn resolution, 12 bit multiturn resolution.
- Comprehensive diagnostics, programmable to Class II.

Mechanical characteristics:

Max. speed without shaft sealing (IP65) up to 158°F (70°C):	9,000 RPM, continuous 7,000 RPM
Max. speed without shaft sealing (IP65) up to Tmax:	7,000 RPM, continuous 4,000 RPM
Max. speed with shaft sealing (IP67) up to 158°F (70°C):	8,000 RPM, continuous 6,000 RPM
Max. speed with shaft sealing (IP67) up to Tmax:	6,000 RPM, continuous 3,000 RPM
Starting torque without shaft seal (IP65):	1.4 oz-in (< 0.01 Nm)
Starting torque with shaft seal (IP67):	4.25 oz-in (< 0.03 Nm)
Moment of inertia:	Shaft version: 0.219 oz-in² (4.0 x 10⁻⁶ kgm²) Hollow shaft version: 0.41 oz-in² (7.5 x 10⁻⁶ kgm²)
Radial load capacity of shaft:	18 lbs (80 N)
Axial load capacity of shaft:	9 lbs (40 N)
Weight:	approx. 1.26 lbs (0.57 kg) with bus terminal cover approx. 1.15 lbs (0.52 kg) with fixed connection
Protection acc. to EN 60 529:	Housing: IP67, Shaft: IP65, opt. IP67
EX approval for hazardous areas:	optional zone 2 and 22
Working temperature:	-40 to +176°F (-40 to +80°C)
Materials:	Shaft: stainless steel, Flange: aluminum, Housing: die cast zinc
Shock resistance acc. to DIN-IEC 68-2-27:	> 250 g (> 2,500 m/s²), 6 ms
Vibration resistance acc. to DIN-IEC 68-2-6:	> 10 g (> 100 m/s²), 55-2,000 Hz



- Safe operation in strong magnetic fields
- Special gears with specific tooththing

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General electrical characteristics:

Supply voltage:	10-30 VDC
Current consumption (w/o output load):	Max. 120 mA
Reverse polarity protection	Yes at power supply (+V)
Conforms to CE requirements according to EN 61000-6-2, EN 61000-6-4 and EN 61000-6-3	
UL certified	File 224618
RoHS compliant according to EU guideline 2002/95/EG	

SET control button (zero or defined value, option):

Protected against accidental activation, can only be depressed with the tip of a ballpoint pen or similar.

Diagnostic LED (yellow):

LED on with: sensor error (Profibus error)

Interface characteristics PROFIBUS-DP:

Singleturn resolution	1-65536 (16 bits), default 8192 (13 bits)
Total resolution:	28 Bit (scalable 1-2 ²⁸ steps)
Number of Revolutions:	4096 (12 bits), (scalable 1-4096)
Code:	Binary
Interface:	Specification according to PROFIBUS-DP 2.0 Standard (DIN 19245 Part 3) RS485 driver galvanically isolated.

Protocol:	PROFIBUS Encoder Profile V1.1 Class 1 and Class 2 with manufacturer-specific enhancements
Baud rate:	Max. 12 Mbits/s
Node address:	1-127 (set by rotary switches)
Termination switchable:	Set by DIP switches

PROFIBUS Encoder-Profile V1.1

The PROFIBUS-DP device profile describes the functionality of the communication and the user-specific component within the PROFIBUS fieldbus system. The encoder profile is definitive. Here the individual objects are defined independent of the manufacturer. Furthermore, the profiles offer space for additional manufacturer-specific functions. This means that Profibus compliant device systems can be used now with the guarantee that they are ready for the future as well.

The following parameters may be programmed:

- Direction of rotation
- Scaling
 - Number of steps per revolution
 - Number of revolutions
 - Total resolution over Singleturn/Multiturn
- Preset value
- Diagnostics mode
- Position 16/32 Bit
- Speed UPM or Unit/s (16/32) Bit

The following functionality is integrated:

- Galvanic isolation of the bus stage with DC/DC converter
- Line driver according to RS485; max. 12 MB
- Address programmable via DIP switches
- Diagnostics LED
- Full Class I and Class II functionality

Pin configuration with terminal box (Connection 1):

Signal:	BUS IN				BUS OUT			
	B	A	Common (0 V)	+V	Common (0 V)	+V	B	A
Pin:	1	2	3	4	5	6	7	8

Pin configuration M12 - 3 connector version (Connection 2):

Bus In	Signal:	-	BUS-A	-	BUS-B	Shield
Pin:	1	2	3	4	5	

Power Supply	Signal:	+V	-	Common (0 V)	-
Pin:	1	2	3	4	

Bus Out	Signal:	BUS-VDC ¹⁾	BUS-A	BUS_GND ¹⁾	BUS-B	Shield
Pin:	1	2	3	4	5	

Wiring Diagrams:

Bus In	Power Supply	Bus Out
Male encoder view	Male encoder view	Female encoder view
M12 eurofast [®] pinout	M12 eurofast pinout	M12 eurofast pinout
Mating cordset: ^{2) 3)} RKSW-455-*M	Mating cordset: ²⁾ RK 4.4T-*	Mating cordset: ^{2) 3)} RSSW-455-*M

¹⁾ For powering an external PROFIBUS-DP terminating resistor.

²⁾ See cable section for additional options.

³⁾ "S" denotes shield tied to coupling nut.

* Length in meters. Available in 0.1 meter increments ≥ 0.2 meters.

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Part number key shaft version:

T8.5868.XX3X.311X

Type		Options (service)
		2 = no option 3 = SET button
Flange		Fieldbus profile
1 = clamping flange Ø 58 IP65 2 = servo flange Ø 58 mm, IP65 3 = clamping flange Ø 58 mm, IP67 4 = servo flange Ø 58 mm, IP67 5 = square flange 2.5" / 63.5 mm, IP65 6 = servo flange 2.5" / 63.5 mm, IP65 7 = square flange 2.5" / 63.5 mm, IP67 8 = servo flange 2.5" / 63.5 mm, IP67		31 = PROFIBUS-DP-V0 encoder profile Class 2
Shaft (Ø x L)		Type of connection
1 = Ø 6 mm x 10 mm 2 = Ø 10 mm x 20 mm 3 = Ø 1/4" x 7/8" 4 = Ø 3/8" x 7/8"		1 = with removable bus terminal cover, with radial cable gland fitting 2 = removable bus terminal cover with 3 x M12 eurofast ™ connectors
Voltage supply and output circuit		
3 = 10-30 VDC, PROFIBUS-DP V0 encoder Profile V 1.1		

Part number key: 5888 blind hollow shaft version

T8.5888.XX3X.311X

Type		Options (service)
		2 = no option 3 = SET button
Flange		Fieldbus profile
1 = flange with torque stop IP65 2 = flange with torque stop IP67 3 = flange with flex mount pitch circle Ø 65, IP65 4 = flange with flex mount pitch circle Ø 65, IP67 5 = flange with slotted flex mount pitch circle Ø 63, IP65 6 = flange with slotted flex mount pitch circle Ø 63, IP67		31 = PROFIBUS-DP-V0 encoder profile Class 2
Blind hollow shaft (30 mm depth)		Type of connection
3 = Ø 10 mm 4 = Ø 12 mm 5 = Ø 14 mm 6 = Ø 15 mm 8 = Ø 9.52 mm (3/8") 9 = Ø 12.7 mm (1/2")		1 = with removable bus terminal cover, with radial cable gland fitting 2 = removable bus terminal cover with 3 x M12 eurofast connectors
Voltage supply and output circuit		
3 = 10-30 VDC, PROFIBUS-DP V0 encoder Profile V 1.1		

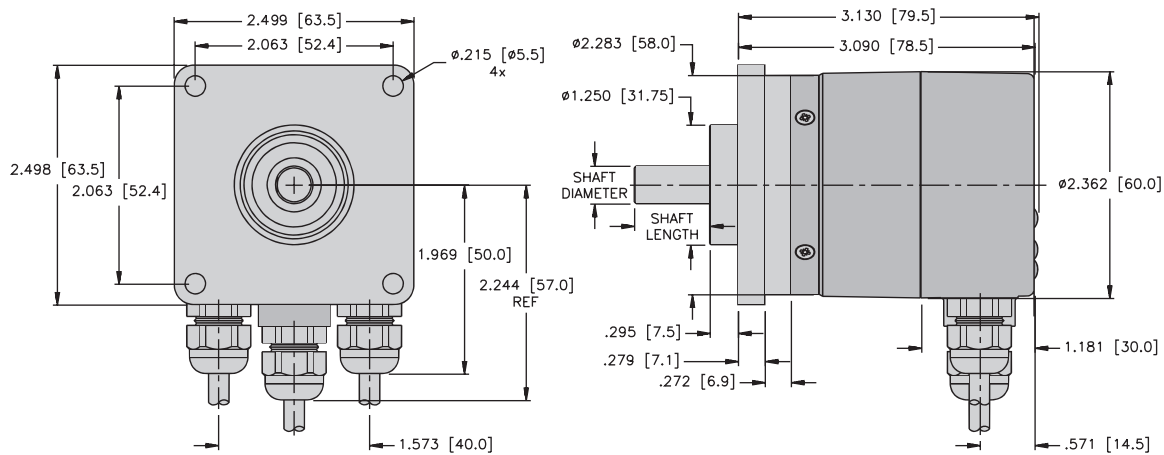
Accessories:

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

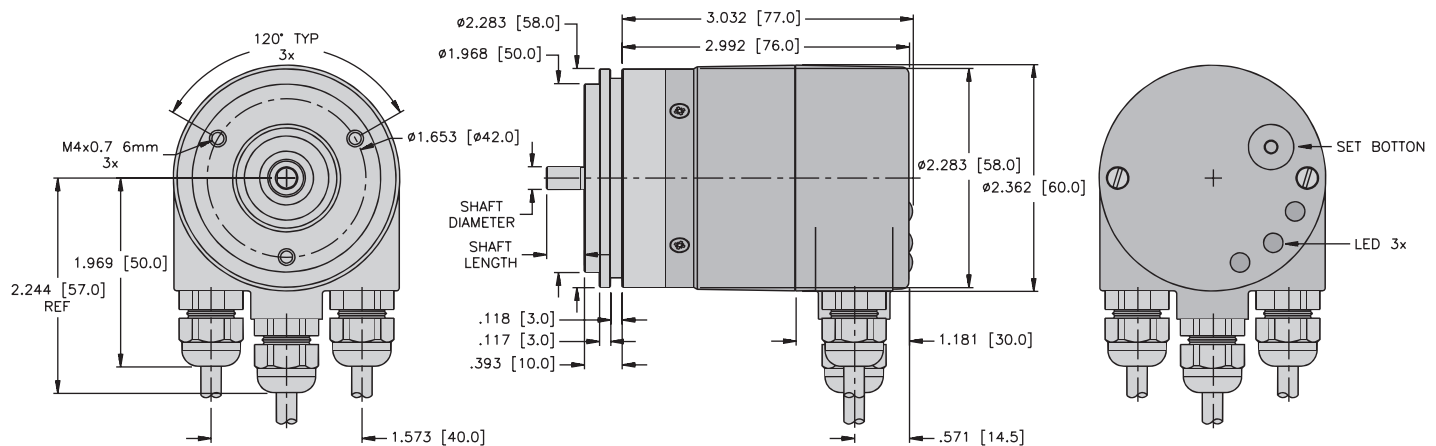
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Dimensions: 5868 shaft version

**5868 flanges 5 & 7
 Cable connection 1**



**5868 flanges 2 & 4
 Cable connection 1**

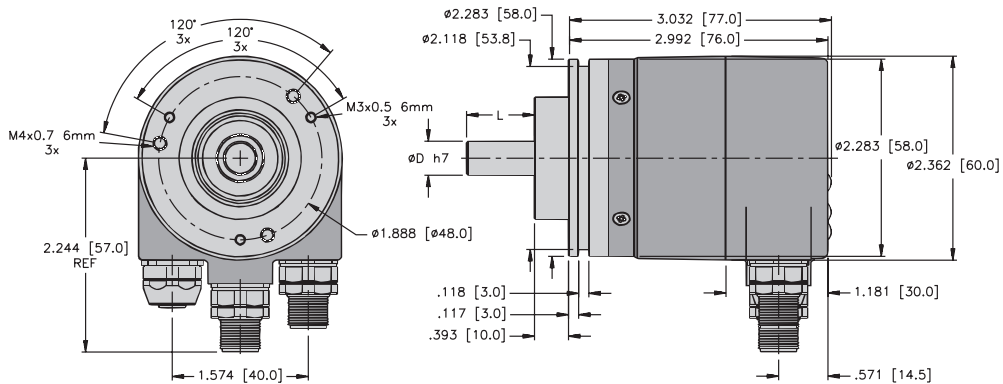


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Dimensions: 5868 shaft version

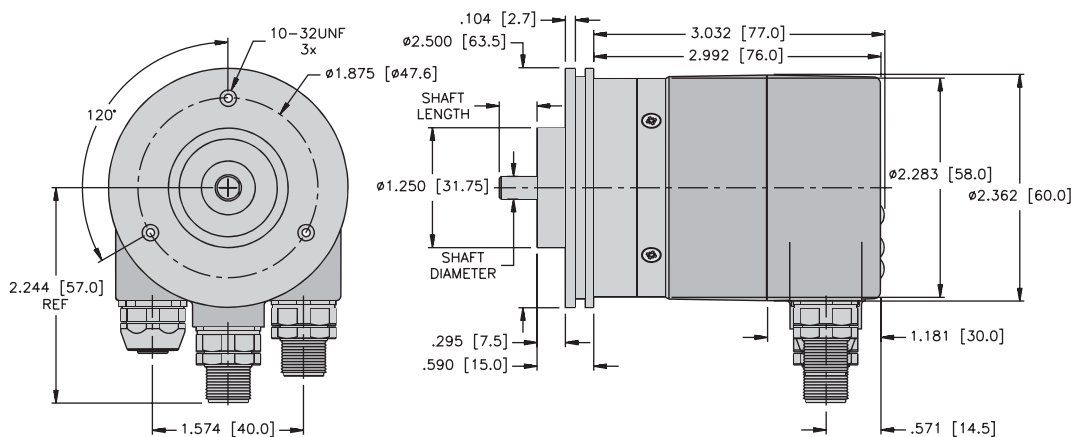
5868 flanges 1 & 3

M12 eurofast® connection 2



5868 flanges 6 & 8

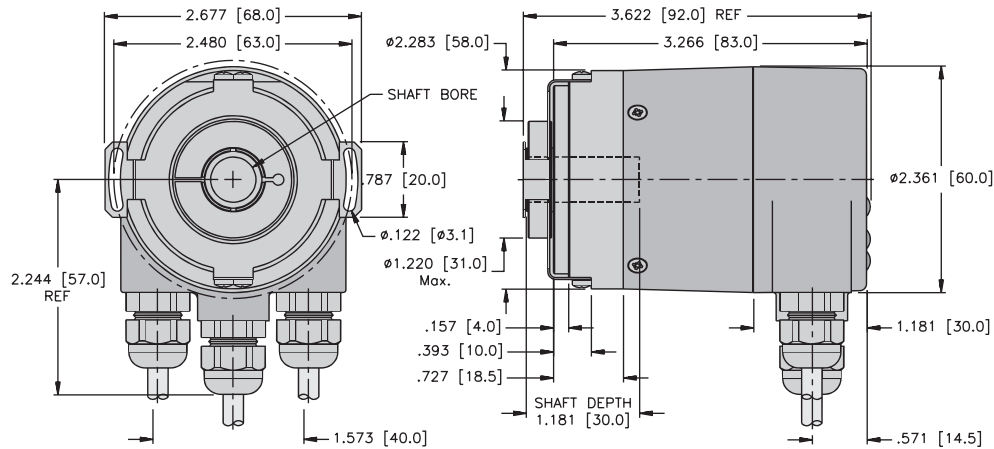
M12 eurofast connection 2



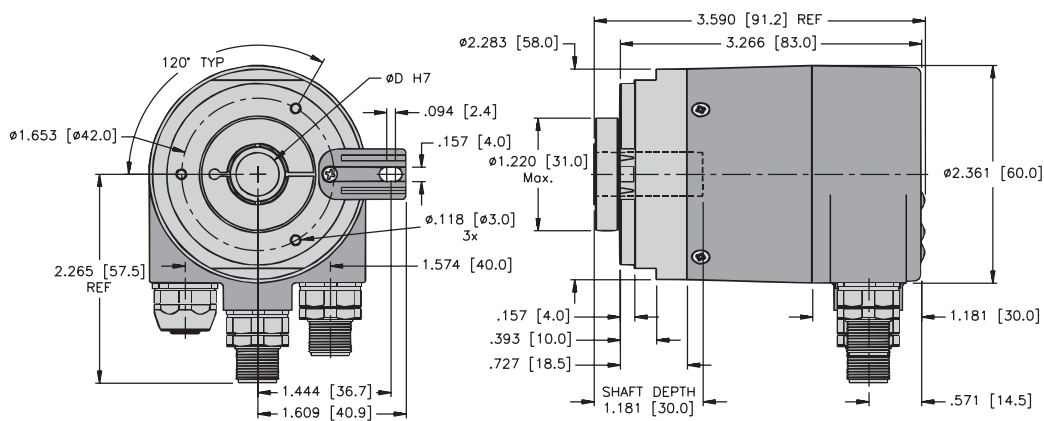
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Dimensions: 5888 blind hollow shaft version

5888 flanges 5 & 6
Cable connection 1



5888 flanges 1 & 2
M12 eurofast® connection 2



5888 flanges 3 & 4
M12 eurofast connection 2

