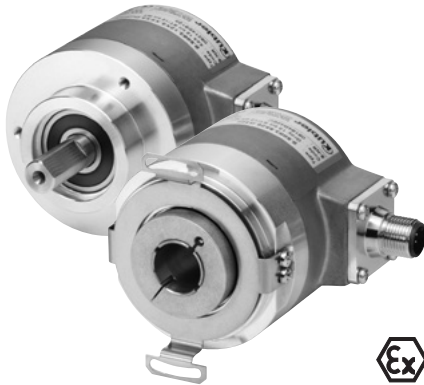


Absolute encoders – multiturn

**Standard
electronic multiturn, optical**

Sendix F5868 / F5888 (shaft / hollow shaft)

Modbus



The Sendix F58 multiturn with patented Intelligent Scan Technology™ is a particularly high resolution optical multiturn encoder without gears and with 100 percent magnetic insensitivity.

32 bits total resolution, through hollow shaft up to 15 mm and Modbus RTU interface.



16 bit MT
Multiturn resolution



Safety-Lock™



High rotational speed



-40... +80°C
Temperature range



High protection level



High shaft load capacity



Shock / vibration resistant



Magnetic field proof



Reverse polarity protection



Surface protection salt spray tested optional

Reliable and insensitive

- Sturdy bearing construction in Safety-Lock™ design for resistance against vibration and installation errors.
- Ideal for use outdoors thanks to IP67 protection and wide temperature range from -40°C up to +80°C.
- Patented Intelligent Scan Technology™ with all singleturn and multiturn functions on one single OptoASIC - offering the highest reliability, a high resolution up to 32 bits and 100 % magnetic field insensitivity.

Current Modbus performance

- Modbus register for configuration of the node address and baud rate.
- Scaling function.
- 32 bits total resolution (16 bit MT + 16 bit ST).
- Preset function.
- Diagnostic functions.
- Limit switch function.

Order code

8.F5868 . XX6E . 61 1 2

Shaft version

Type

a

b

c

d

e

a Flange

- 1 = clamping flange, IP65 ø 58 mm [2.28"]
- 3 = clamping flange, IP67 ø 58 mm [2.28"]
- 2 = synchro flange, IP65 ø 58 mm [2.28"]
- 4 = synchro flange, IP67 ø 58 mm [2.28"]

b Shaft (ø x L), with flat

- 1 = 6 x 10 mm [0.24 x 0.39"]
- 2 = 10 x 20 mm [0.39 x 0.79"]
- 3 = 1/4" x 7/8"
- 4 = 3/8" x 7/8"

d Type of connection

- E = 1 x M12 connector radial, 5-pin

e Fieldbus profile ¹⁾

- 61 = Modbus RTU V1_1b3

c Interface / power supply

- 6 = Modbus RTU, 10 ... 30 V DC

Optional on request

- Ex 2/22
- Surface protection salt spray tested

Order code

8.F5888 . XX6E . 61 1 2

Hollow shaft

Type

a

b

c

d

e

a Flange

- 1 = with spring element long, IP65
- 2 = with spring element long, IP67
- 3 = with stator coupling, IP65 ø 65 mm [2.56"]
- 4 = with stator coupling, IP67 ø 65 mm [2.56"]
- 5 = with stator coupling, IP65 ø 63 mm [2.48"]
- 6 = with stator coupling, IP67 ø 63 mm [2.48"]

b Hollow shaft

- 3 = ø 10 mm [0.39"]
- 4 = ø 12 mm [0.47"]
- 5 = ø 14 mm [0.55"]
- 6 = ø 15 mm [0.59"]

d Type of connection

- E = 1 x M12 connector radial, 5-pin

e Fieldbus profile ¹⁾

- 61 = Modbus RTU V1_1b3

c Interface / power supply

- 6 = Modbus RTU, 10 ... 30 V DC

Optional on request

- Ex 2/22
- Surface protection salt spray tested

1) Parameters can also be factory pre-set.

Absolute encoders – multiturn

Standard electronic multiturn, optical	Sendix F5868 / F5888 (shaft / hollow shaft)	Modbus
Mounting accessory for shaft encoders		Order No.
Coupling	bellows coupling ø 19 mm [0.75"] for shaft 6 mm [0.24"]	8.0000.1102.0606
	bellows coupling ø 19 mm [0.75"] for shaft 10 mm [0.39"]	8.0000.1102.1010
Mounting accessory for hollow shaft encoders		Order No.
Cylindrical pin, long for torque stops	with fixing thread	8.0010.4700.0000
Connection technology		Order No.
Connector, self-assembly (straight)	coupling M12 for bus in	8.0000.5116.0000
Cordset, pre-assembled	M12, for Bbus in, 2 m [6.56'] PVC cable	05.00.6091.A211.002M

Further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories.
Additional connectors can be found in the connection technology section or in the connection technology area of our website at: www.kuebler.com/connection_technology.

Technical data

Mechanical characteristics		
Max. speed shaft version		
IP65 up to 70°C	12 000 min ⁻¹ , 10 000 min ⁻¹ (continuous)	
IP65 up to T _{max}	8 000 min ⁻¹ , 5 000 min ⁻¹ (continuous)	
IP67 up to 70°C	11 000 min ⁻¹ , 9 000 min ⁻¹ (continuous)	
IP67 up to T _{max}	8 000 min ⁻¹ , 5 000 min ⁻¹ (continuous)	
Max. speed hollow shaft version		
IP65 up to 70°C	9 000 min ⁻¹ , 6 000 min ⁻¹ (continuous)	
IP65 up to T _{max}	6 000 min ⁻¹ , 3 000 min ⁻¹ (continuous)	
IP67 up to 70°C	8 000 min ⁻¹ , 4 000 min ⁻¹ (continuous)	
IP67 up to T _{max}	4 000 min ⁻¹ , 2 000 min ⁻¹ (continuous)	
Starting torque at 20°C [68°F]		
IP65	< 0.01 Nm	
IP67	< 0.05 Nm	
Mass moment of inertia		
shaft version	3.0 x 10 ⁻⁶ kgm ²	
hollow shaft version	6.0 x 10 ⁻⁶ kgm ²	
Load capacity of shaft		
radial	80 N	
axial	40 N	
Weight		
	approx. 0.45 kg [15.87 oz]	
Protection acc. to EN 60529		
housing side	IP67	
shaft side	IP65, opt. IP67	
EX approval for hazardous areas		
	optional zone 2 and 22	
Working temperature range		
	-40°C ... +80°C [-40°F ... +176°F]	
Material		
shaft/hollow shaft	stainless steel	
flange	aluminium	
housing	zinc die-cast housing	
Shock resistance acc. EN 60068-2-27		
	2500 m/s ² , 6 ms	
Vibration resistance acc. EN 60068-2-6		
	100 m/s ² , 55 ... 2000 Hz	

Electrical characteristics	
Power supply	10 ... 30 V DC
Power consumption (no load)	max. 80 mA
Reverse polarity protection of the power supply (+V)	yes
UL approval	file 224618
CE compliant acc. to	EMC guideline 2004/108/EC RoHS guideline 2011/65/EU

Diagnostic LED (two-colour, red/green)	
LED ON or blinking	red error display green status display combination red / green error code

Interface characteristics Modbus	
Singleturn resolution	1 ... 65536 (16 bit), scaleable
Default value Singleturn	65536 (16 bit)
Multiturn resolution	max. 65536 (16 bit) scalable only via the total resolution
Total resolution	1 ... 4.294.967.296 (32 bit), scaleable
Code	binary
Interface	Modbus V1.02
Protocol	Modbus RTU V1_1b3
Baud rate	9600 ... 115200 kbit/s (software configurable)
Node address	1 ... 63 (software configurable)
Termination	software configurable

Absolute encoders – multiturn

Standard electronic multiturn, optical	Sendix F5868 / F5888 (shaft / hollow shaft)	Modbus
---	--	---------------

Read holding register

Register	Data name
40257	Baud rate Number Data Parity Stopbits
40261	Comm Update
40262	Node Address
40263	Node Update
40264	Presetvalue
40266	Preset Update
40267	Count Direct
40268	Count Update
40269	Termination
40270	Term Update

Write holding register

Register	Data name
40275	Lower Limit
40276	Upper Limit
40277	Compare Activ
40278	MUR (MSB)
40279	MUR (LSB)
40280	TMR (MSB)
40281	TMR (LSB)
40282	Scaling Function
40283	Delay Prescaler

Modbus communication profile V 1.02

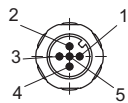
- Node address, baud rate and bus termination programmable.

Modbus APPLICATION protocol V1_1b3

The following parameters can be programmed:

- 2 working areas with 2 upper and lower limits and the corresponding output states.
- Extended failure management for position sensing.
- User interface with visual display of bus and failure status.
- "Watchdog controlled" device.
- Extended diagnostic modes.

Terminal assignment

Interface	Type of connection	1 x M12 connector					
		Signal:	0 V power supply	+V power supply	D0	D1	
6	E Bus in	Pin:	3	2	5	4	1

Absolute encoders – multiturn

Standard electronic multiturn, optical	Sendix F5868 / F5888 (shaft / hollow shaft)	Modbus
---	--	---------------

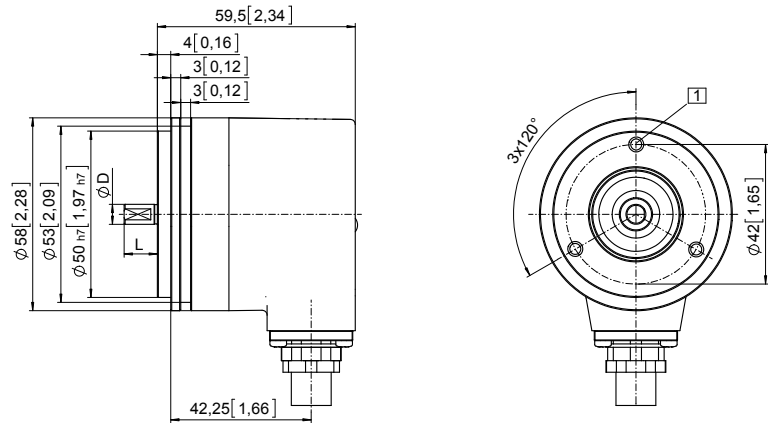
Dimensions shaft version

Dimensions in mm [inch]

Synchro flange, ø 58 [2.28] Flange type 2 and 4

- 1 M4, 6 [0.24] deep

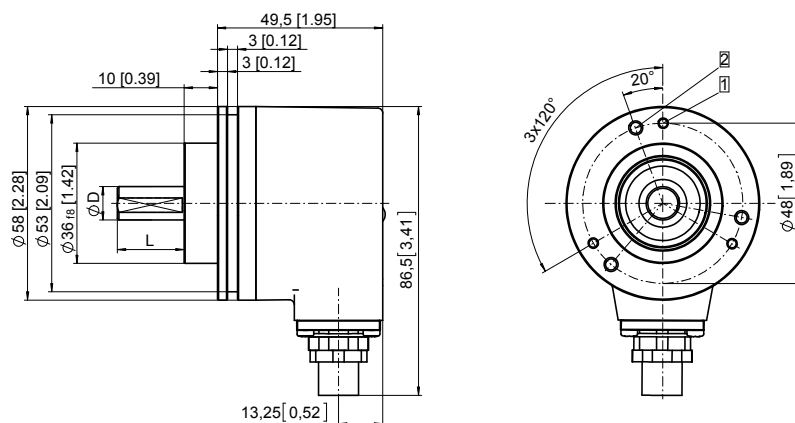
D	L	Fit
6 [0.24]	10 [0.39]	h7
10 [0.39]	20 [0.79]	f7
1/4"	7/8"	h7
3/8"	7/8"	h7



Clamping flange, ø 58 [2.28] Flange type 1 and 3

- 1 3 x M3, 6 [0.24] deep
- 2 3 x M4, 8 [0.32] deep

D	L	Fit
6 [0.24]	10 [0.39]	h7
10 [0.39]	20 [0.79]	f7
1/4"	7/8"	h7
3/8"	7/8"	h7



Absolute encoders
multiturn

Absolute encoders – multiturn

Standard
electronic multiturn, optical

Sendix F5868 / F5888 (shaft / hollow shaft)

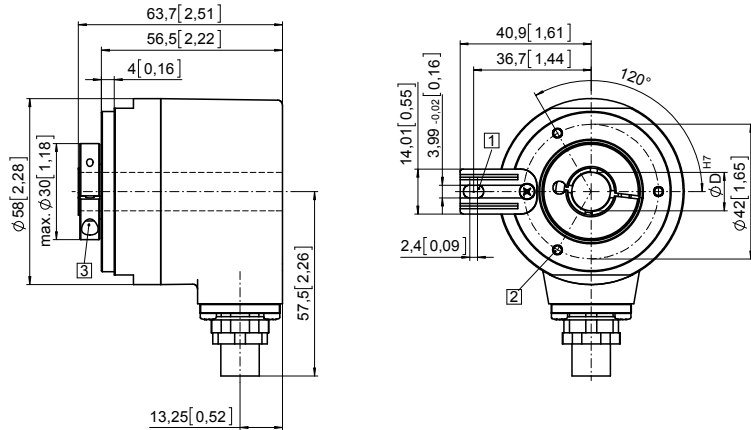
Modbus

Dimensions hollow shaft version

Dimensions in mm [inch]

Flange with spring element long Flange type 1 and 2

- 1 M3, 6 [0.24] deep
- 2 Torque stop slot, recommendation: cylindrical pin DIN 7, $\varnothing 4$ [0.16]
- 3 Recommended torque for the clamping ring 0.6 Nm



Flange with stator coupling, $\varnothing 63$ [2.48] Flange type 5 and 6

- 1 Recommended torque for the clamping ring 0.6 Nm

