

# SERIE SMRS 19

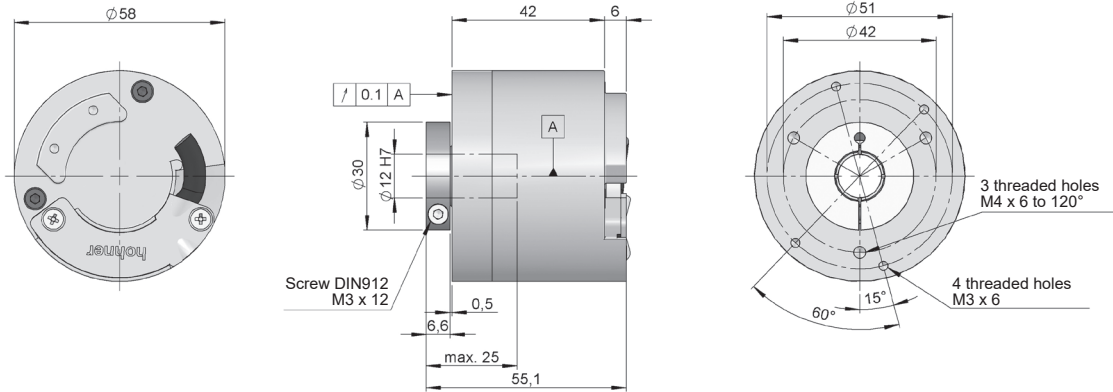
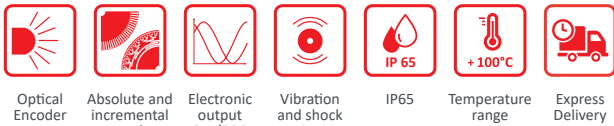
## SINGLETURN ABSOLUTE AND INCREMENTAL BLIND HOLLOW SHAFT ENCODER



**SSI** SSI  
SSI + SinCos

**BiSS** BiSS-C  
BiSS-C + SinCos

- Singleturn resolution up to 19 bits
- Incremental resolution 2048 SIN/COS
- External diameter 58 mm
- Blind hollow shaft  $\varnothing$  8, 10, 12, 14 or 15 mm
- Operating temperature range up to 100°C
- Protection class IP65 according to DIN EN 60529
- Connection by cable (other cable length available) or industrial connector



Drawing blind hollow shaft type 3, connection type 10, without flange

### REFERENCE

Reference example: SMRS19-31121311S-17

Serie	Blind-Hollow shaft	Anti-rotation system	Connection	Interface	IP	Power supply	Parameters config.	Absolute resolution	Special customer
SMRS19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3. $\varnothing$ 12 mm 4. $\varnothing$ 10 mm 5. $\varnothing$ 8 mm 6. $\varnothing$ 14 mm 7. $\varnothing$ 15 mm	1. None 2. Flexible flange (90.1018) 3. Flexible flange (90.1027) 4. Flexible flange (90.1075) (*)	10. Helicoidal cable 12. Radial cable 20. 30 cm helicoidal cable + connector 21. D-Sub 15p 22. 30 cm radial cable + connector 23. D-Sub 15p 32. Radial M23 12p 42. Radial M12 8p 72. Radial M23 17p	11. SSI Binary CW 12. SSI Binary CCW 13. SSI Gray CW 14. SSI Gray CCW 21. SSI + 2048 SIN/COS Binary CW 22. SSI + 2048 SIN/COS Binary CCW 23. SSI + 2048 SIN/COS Gray CW 24. SSI + 2048 SIN/COS Gray CCW 35. BiSS-C 45. BiSS-C + 2048 SIN/COS	1. IP65 (**)	1. 4..30 VDC 2. 5 VDC	S. Direction R. Reset	10. 10 bits 12. 12 bits 13. 13 bits 14. 14 bits 17. 17 bits 19. 19 bits (***)	KD. Halogen-free cable MB. -40°C

Order your reference  
Step file 3D

info@encoderhohner.com  
service available in 24 h

(\*) Anti-rotation system type 3 (Flexible flange 90.1027) and 4 (Flexible flange 90.1075) supplied assembled. Anti-rotation system type 2 (flexible flange 90.1018) supplied disassembled and includes the screws required for assembly.

(\*\*) For helicoidal cable IP54.

(\*\*\*) 21 bits - Upon request.

Other extension cable options available with specific connectors mounted at the end of the cable for different market drives, on request.



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SSI / SSI + SinCos  
BiSS-C / BiSS-C + SinCos

### TECHNICAL SPECIFICATIONS

Materials	Housing: Aluminium Flange: Aluminium Shaft: Stainless Steel
Bearings	Ballraces
Bearings lifetime	1x10 <sup>10</sup> rev.
Maximum number of revolutions permitted mechanically	6000 rpm
Protection against dust and splashes according to DIN EN 60529	IP65 - Standard IP54 - Helicoidal connection
Rotor inertia moment	≤ 3x10 <sup>-6</sup> Kg·m <sup>2</sup>
Starting torque at 20°C (68°F)	≤ 0,02 Nm
Maximum load permitted on axial shaft	40 N
Maximum load permitted on radial shaft	60 N
Weight aprox.	0,4 Kg
Operating temperature range	-10°C to +100°C - Standard -40°C to +100°C - Special Customer MB
Vibration according to DIN EN 60068-2-6	100 m/s <sup>2</sup> (10Hz...2000Hz)
Shock according to DIN EN 60068-2-27	1000 m/s <sup>2</sup> (6ms)
Consumption	≤ 90 mA
Power supply	5 VDC ±10% / 4...30 VDC
Linearity	± ½ LSB
Helicoidal connection	2 meters cable (other cable lengths available or connector mounted at the end of the cable, upon request)
Axial or radial connection	2 meters cable or industrial connector M23 or M12 (other cable lengths available on order) or 30 cm cable + connector D-Sub 15p Female connector not included

### SSI / BiSS INTERFACE

(\*)

Electronic output	RS485	RS485
Max. load capability / channel	±20 mA	±20 mA
Resolution	10...19 bits 21 bits - Upon request	10...19 bits 21 bits - Upon request
Code	Binary Gray	Binary
Clock frequency	50 kHz ... 2 MHz	50 kHz ... 10 MHz
Protocol	SSI	BiSS-C

(\*) BiSS protocol allows to configure CRC, Alarm messages, Warnings, Sense, Reset and Absolute resolution by BUS. Default configuration: Binary CW.

### INCREMENTAL OUTPUT

SIN/COS



Electronic output	Differential 1 Vpp
Signal offset	2,5 VDC
Resolution	2048 ppr
Cutoff frequency (-3 db)	>500 kHz

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SSI / SSI + SinCos  
BiSS-C / BiSS-C + SinCos

### CONNECTION



	Cable (**) 3x2x0,14+2x0,34 95.0008003	Cable (**) 6x2x0,14 mm <sup>2</sup> 95.0008072	Cable (**) 6x2x0,14mm <sup>2</sup> Halogen-free cable up to 90°C 95.0008073	Connector BiSS M23 12p CW	Connector SSI M23 12p CW	Connector BiSS / SSI M23 17p CW	Connector M12 8p CCW	Connector D-Sub 15p High density
GND	Black	White	White	1	1	10	1	13
VCC	Red	Brown	Brown	8	2	7	2	12
DATA+	Yellow	Pink	Pink	2	3	14	3	7
DATA-	Green	Grey	Grey	7	4	17	4	2
CLOCK+	Brown	Yellow	Yellow	3	5	8	5	6
CLOCK-	Blue	Green	Green	6	6	9	6	1
SLI+	-	-	-	-	-	1		
SLI-	-	-	-	-	-	4		
DIR or RESET	Grey	Red-Blue	Red-Blue	9	9	2	7	11
A+(cos)	-	Red	Red	10	10	15		8
B+(sin)	-	Black	Black	4	7	12		9
A-(cos)	-	Blue	Blue	12	12	16		3
B-(sin)	-	Violet	Violet	5	8	13		4
Shield (*)	Shield	Shield	Shield	11	11	11	8	Housing

(\*) Shield connected to the encoder housing. It is recommended to connect the end of the wire shield to the ground of the equipment where the encoder is connected.  $\perp$   
(\*\*) The recommended maximum cable length is 10 meters. The 95.0008003 cable for Interfaces types 11, 12, 13, 14 and 35 and the 95.0008072 cable for Interface types 21, 22, 23, 24 and 45. The 95.0008073 cable for special customer KD.



Cable length:	< 25 m	< 50 m	< 100 m	< 200 m	< 400 m
Transmission speed	< 1 MHz	< 400 kHz	< 300 kHz	< 200 kHz	< 100 kHz



Cable length	< 10 m	< 25 m	< 60 m	< 100 m
Transmission speed	< 10 MHz	< 5 MHz	< 2 MHz	< 1 MHz

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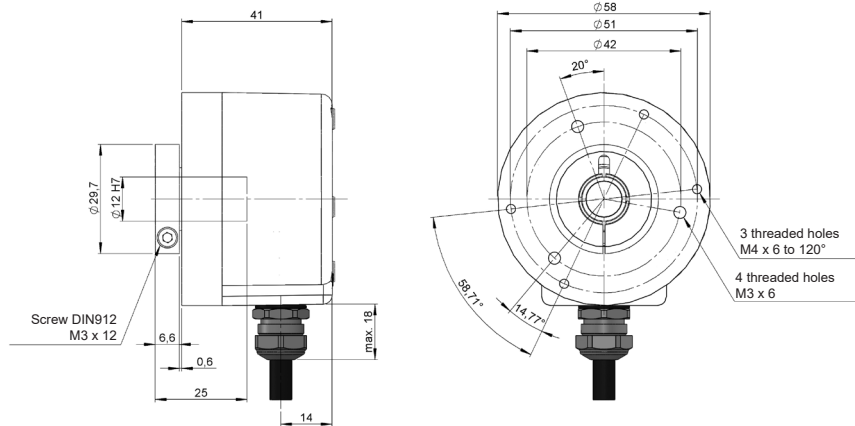
SSI / SSI + SinCos  
BiSS-C / BiSS-C + SinCos

### CONNECTION DIMENSIONS

Female connector not included

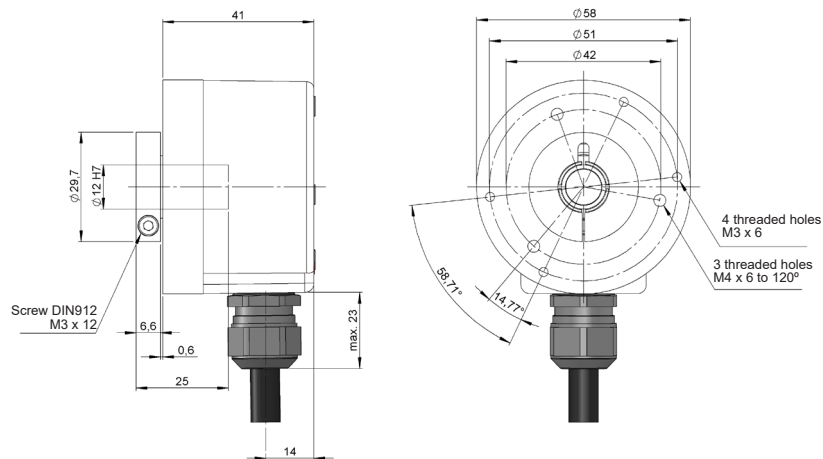
#### Connection 12

Radial cable  
95.0008003



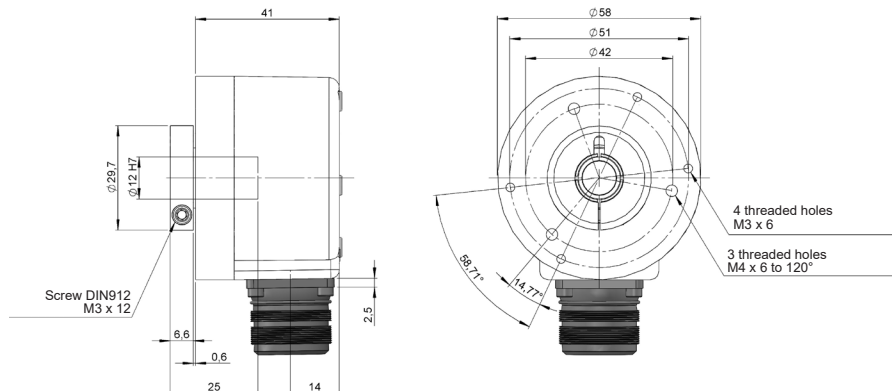
#### Connection 12

Radial cable  
95.0008072  
95.0008073

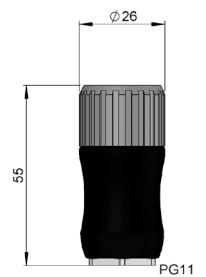


#### Connection 32

Radial  
M23 12p  
male panel



Female connector  
95.0007131



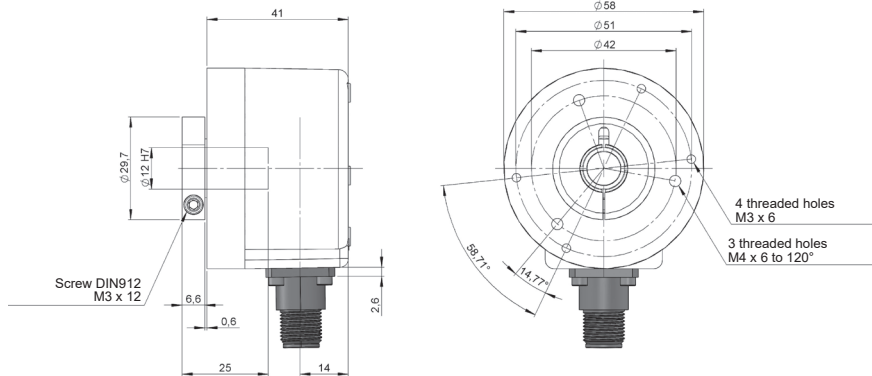
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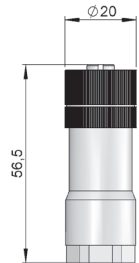
SSI / SSI + SinCos  
BiSS-C / BiSS-C + SinCos

### Connection 42

Radial  
M12 8p  
male panel

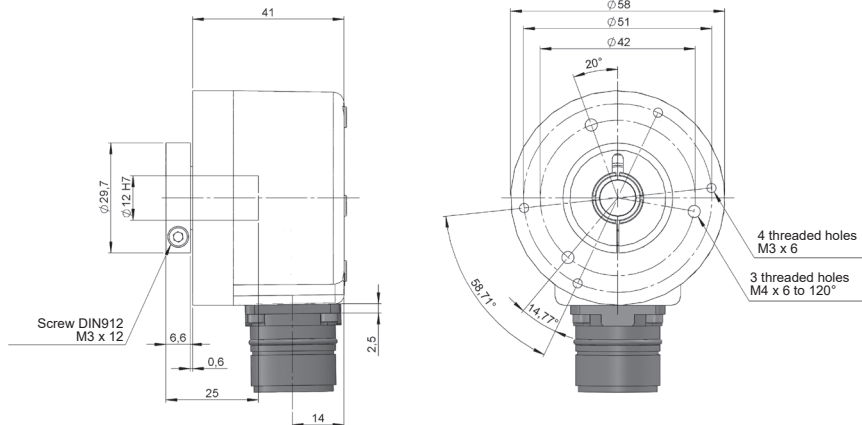


Female connector  
95.0007152

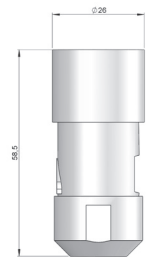


### Connection 72

Radial  
M23 17p  
male panel



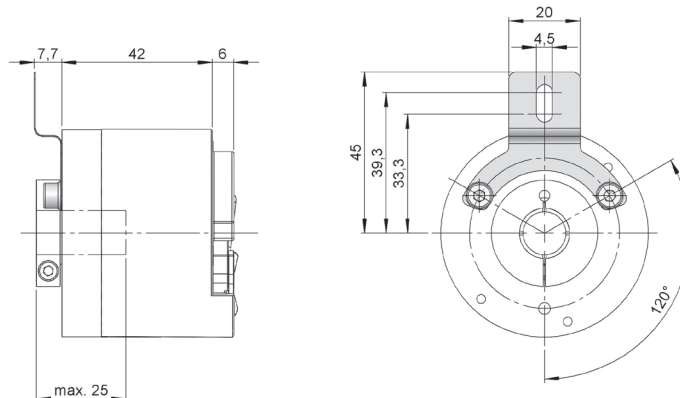
Female connector  
95.0007196



## ANTI-ROTATION SYSTEMS DIMENSIONS

### Anti-rotation system 2

Flexible flange 90.1018



90.1018



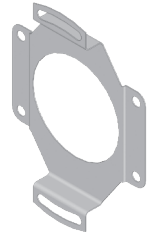
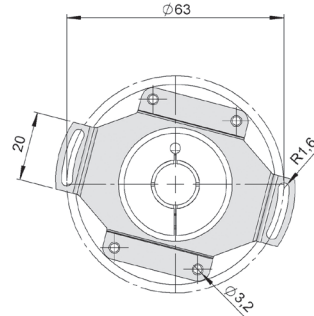
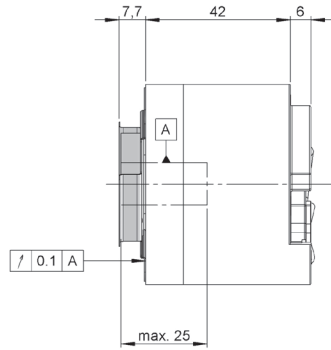
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BiSS-C / BiSS-C + SinCos

### Anti-rotation system 3

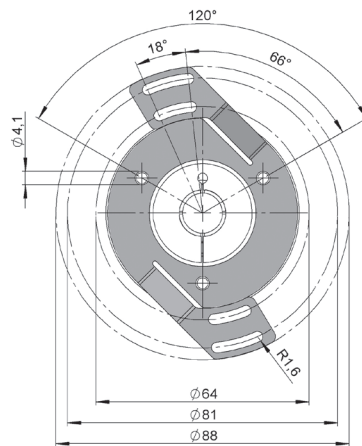
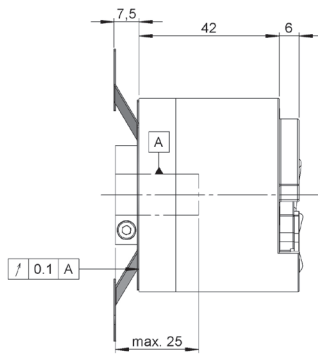
Flexible flange 90.1027



90.1027

### Anti-rotation system 4

Flexible flange 90.1075



90.1075