



SERIE SMRS 10

SINGLETURN ABSOLUTE AND INCREMENTAL SOLID 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
- Solid shaft $\varnothing$ 6, 8 or 10 mm
- Operating temperature range up to 100°C
- Protection class IP67 according to DIN EN 60529
- Connection by cable (other cable length available) or industrial connector



Optical Encoder



Absolute and incremental encoder



Electronic output SIN/COS



Vibration and shock resistant



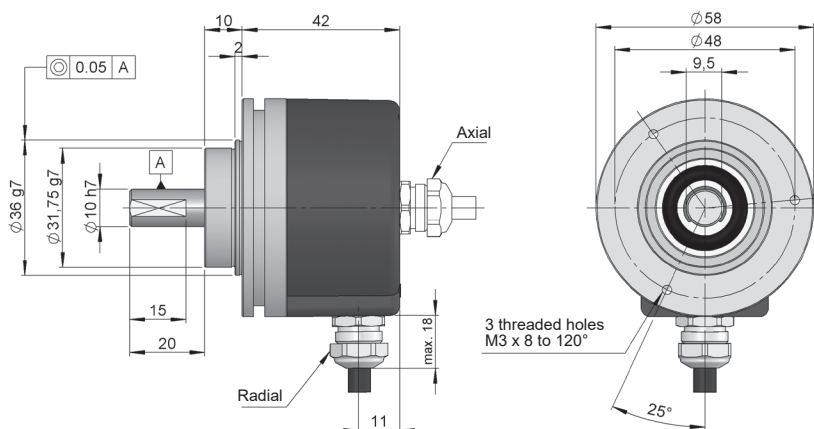
IP 67



Temperature range
+100°C



Express Delivery



Drawing shaft type 2, mechanical option type 1, connection type 11/12, cable 95.0008003

REFERENCE

Reference example: SMRS10-21121311S-17

Serie	Solid shaft	Mechanical option	Connection	Interface	IP	Power supply	Parameters config.	Absolute resolution	Special customer
SMRS10	☐	☐	☐	☐	☐	☐	☐	☐	☐
	1. $\varnothing$ 6 mm 2. $\varnothing$ 10 mm 3. $\varnothing$ 8 mm	1. Clamping 3. Synchro 5. Square flange (90.1005)	10. Helicoidal cable 11. Axial cable 12. Radial cable 21. 30 cm axial cable + connector D-Sub 15p 22. 30 cm radial cable + connector D-Sub 15p 31. Axial M23 12p 32. Radial M23 12p 41. Axial M12 8p 42. Radial M12 8p 71. Axial M23 17p 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 3. IP67 (*)	1. 4...30 VDC 2. 5 VDC	S. Direction R. Reset	09. 9 bits 10. 10 bits 12. 12 bits 13. 13 bits 14. 14 bits 15. 15 bits 17. 17 bits 19. 19 bits (**)	J00D. Halo-gen-free cable J00N. -40°C

Order your reference
Step file 3D

info@encoderhohner.com

service available in 24 h

(*) For helicoidal cable IP54. Connection type 10.

(**) 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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TECHNICAL SPECIFICATIONS

Materials	Housing: Aluminium Flange: Aluminium Shaft: Stainless Steel
Bearings	Ballraces
Bearings lifetime	1x10 ¹⁰ rev.
Maximum number of revolutions permitted mechanically	6000 rpm
Protection against dust and splashes according to DIN EN 60529	IP65/IP67 IP54 - Helicoidal connection
Rotor inertia moment	≤ 3x10 ⁻⁶ Kg·m ²
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 J00N
Vibration according to DIN EN 60068-2-6	100 m/s ² (10Hz...2000Hz)
Shock according to DIN EN 60068-2-27	1000 m/s ² (6ms)
Consumption	≤ 90 mA
Power supply	5 VDC ±10% / 10...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	9...19 bits 21 bits - Upon request	9...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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CONNECTION



	Cable (**) 3x2x0,14+2x0,34 95.0008003	Cable (**) 6x2x0,14 mm ² 95.0008072	Cable (**) 6x2x0,14mm ² 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 J00D.



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



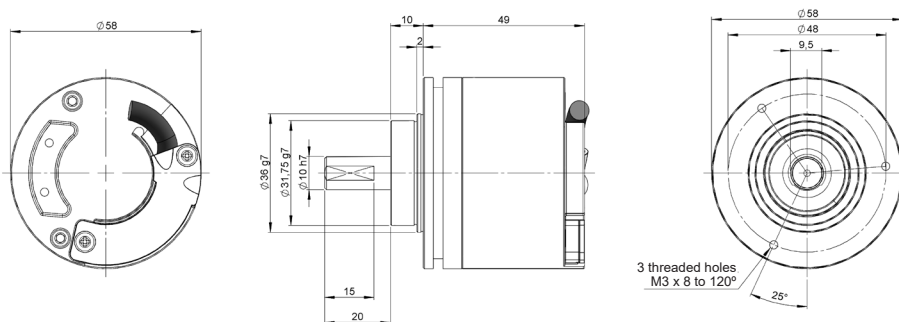
Cable length	< 10 m	< 25 m	< 60 m	< 100 m
Transmission speed	< 10 MHz	< 5 MHz	< 2 MHz	< 1 MHz

CONNECTION DIMENSIONS

Female connector not included

Connection 10

Helicoidal cable



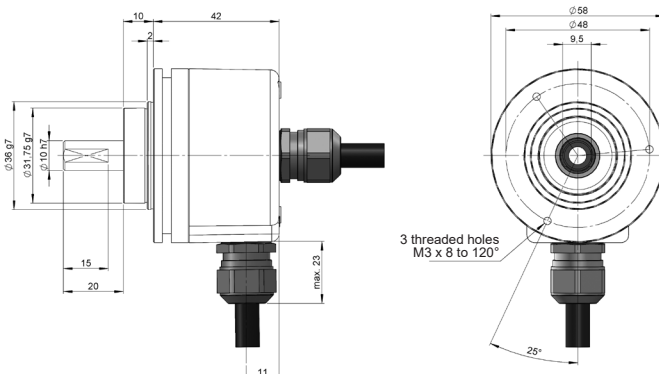
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BiSS-C / BiSS-C + SinCos

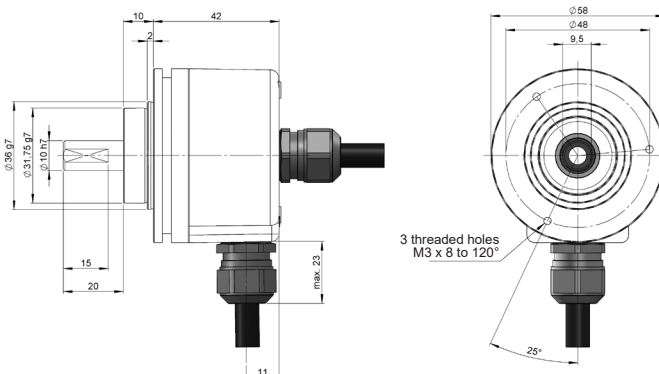
Connection 11

Axial cable
95.0008072
95.0008073



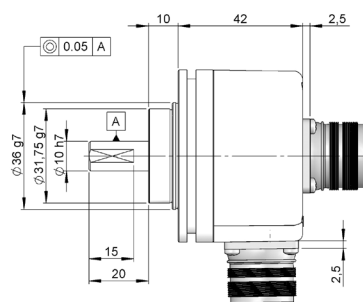
Connection 12

Radial cable
95.0008072
95.0008073



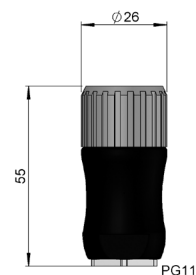
Connection 31

Axial
M23 12p
male panel
clockwise



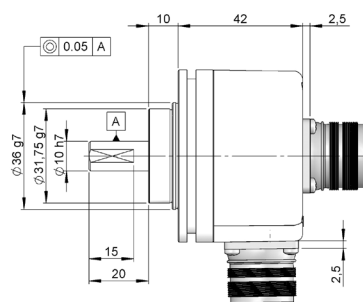
Female connector

95.0007131



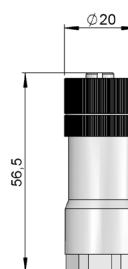
Connection 32

Radial
M23 12p
male panel
clockwise



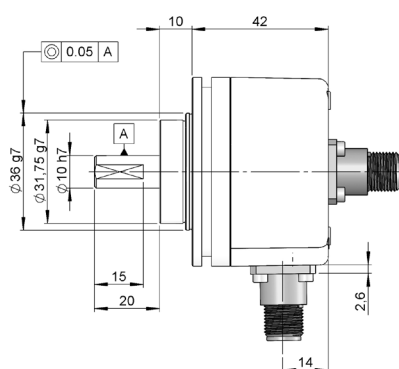
Female connector

95.0007152



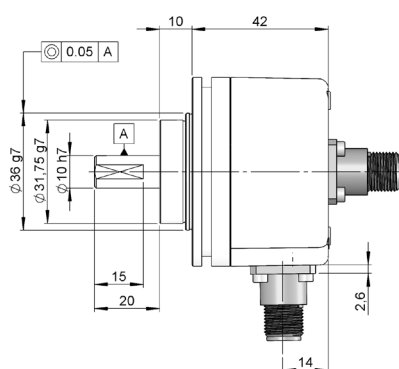
Connection 41

Axial
M12 8p
male panel
clockwise



Connection 42

Radial
M12 8p
male panel
clockwise



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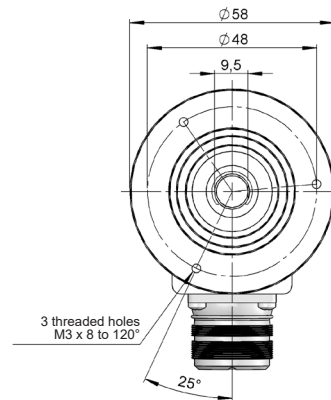
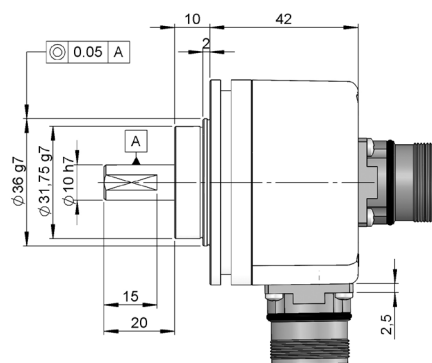
SSI / SSI + SinCos
BiSS-C / BiSS-C + SinCos

Connection 71

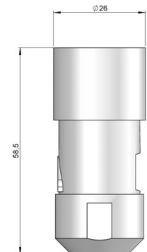
Axial
M23 17p
male panel
clockwise

Connection 72

Radial
M23 17p
male panel
clockwise



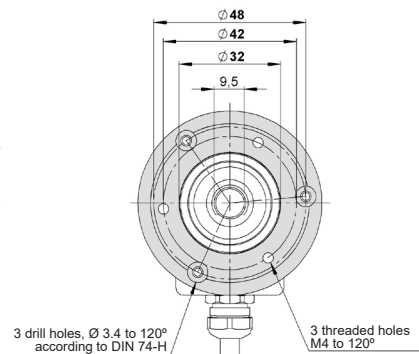
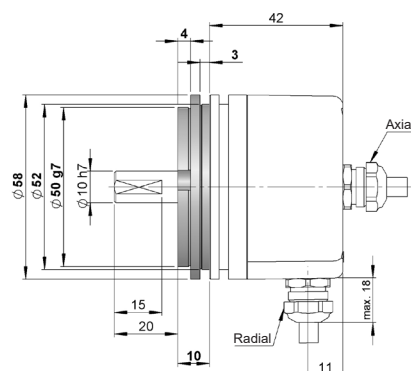
Female connector
95.0007196



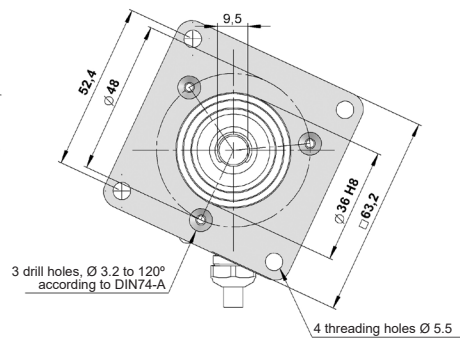
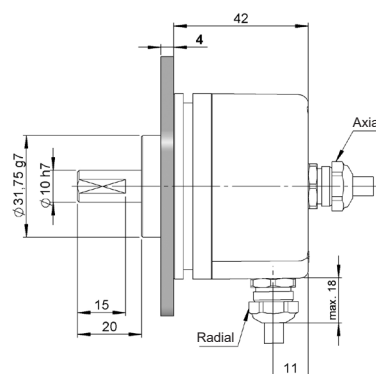
FLANGE DIMENSIONS

Flange mounting included

Flange 3 Synchro



Flange 5 Square flange (90.1005)



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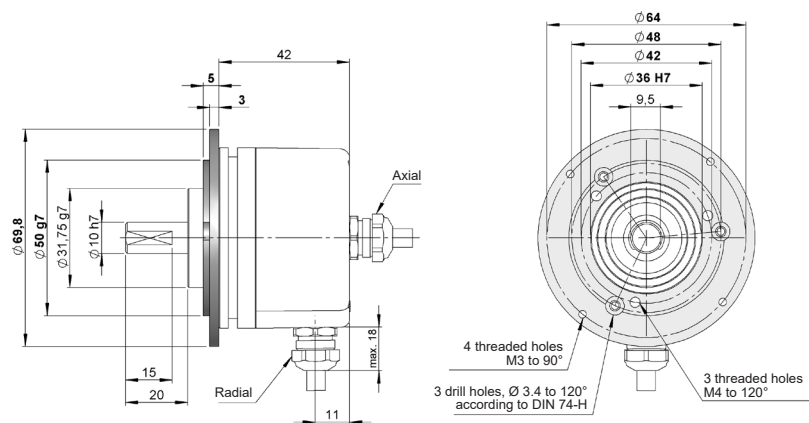
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BiSS-C / BiSS-C + SinCos

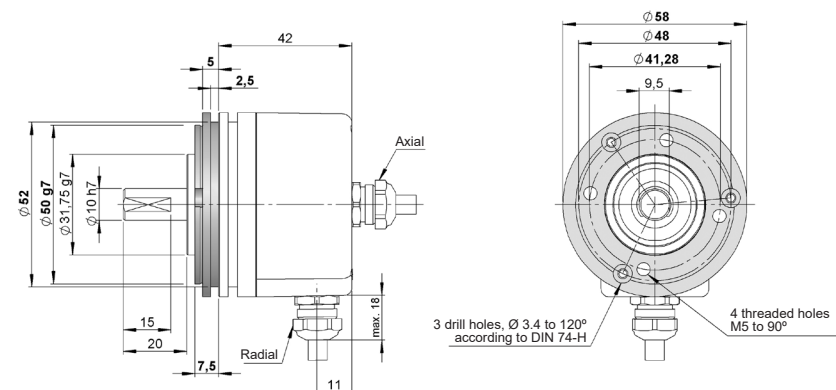
ACCESSORIES

not included

Flange
90.1002



Flange
90.1004



Flange
90.1006

