



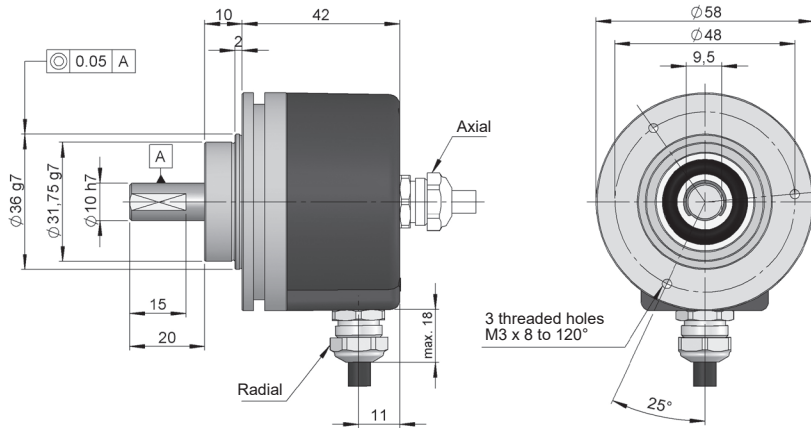
SERIE SMRS 10

SINGLETURN ABSOLUTE AND INCREMENTAL SOLID SHAFT ENCODER

SSI SSI
SSI + SinCos

BiSS INTERFACE 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 IP65 according to DIN EN 60529
- Connection by cable (other cable length available) or industrial connector



Drawing shaft type 2, connection type 11/12, cable 95.0008003, without flange

REFERENCE

Reference example: SMRS10-21121311S-17

| Serie | Solid shaft | Flange | Connection | Interface | IP | Power supply | Parameters config. | Absolute resolution | Special customer |
|------------------------|--------------------------|--|-----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| SMRS10 - | <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"/> |
| 1. \varnothing 6 mm | 1. None | 10. Helicoidal cable | 11. SSI Binary CW | 1. IP65 | 1. 4..30 VDC | S. Direction | 10. 10 bits | KD. Halogen-free cable | |
| 2. \varnothing 10 mm | 2. 90.1002 | 11. Axial cable | 12. SSI Binary CCW | (*) | 2. 5 VDC | R. Reset | 12. 12 bits | MB. -40°C | |
| 3. \varnothing 8 mm | 3. 90.1003 | 12. Radial cable | 13. SSI Gray CW | | | | 13. 13 bits | | |
| 4. 90.1004 | 4. 90.1004 | 21. 30 cm axial cable + connector D-Sub 15p | 14. SSI Gray CCW | | | | 14. 14 bits | | |
| 5. 90.1005 | 5. 90.1005 | 22. 30 cm radial cable + connector D-Sub 15p | 21. SSI + 2048 SIN/COS Binary CW | | | | 17. 17 bits | | |
| 6. 90.1006 | 6. 90.1006 | 31. Axial M23 12p | 22. SSI + 2048 SIN/COS Binary CCW | | | | 19. 19 bits (**) | | |
| | | 32. Radial M23 12p | 23. SSI + 2048 SIN/COS Gray CW | | | | | | |
| | | 41. Axial M12 8p | 24. SSI + 2048 SIN/COS Gray CCW | | | | | | |
| | | 42. Radial M12 8p | 35. BiSS-C | | | | | | |
| | | 71. Axial M23 17p | 45. BiSS-C + 2048 SIN/COS | | | | | | |
| | | 72. Radial M23 17p | | | | | | | |

Order your reference
Step file 3D

info@encoderhohner.com

service available in 24 h

(*) 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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BiSS-C / BiSS-C + SinCos

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 - Standard 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 MB |
| 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 | 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 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 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 |



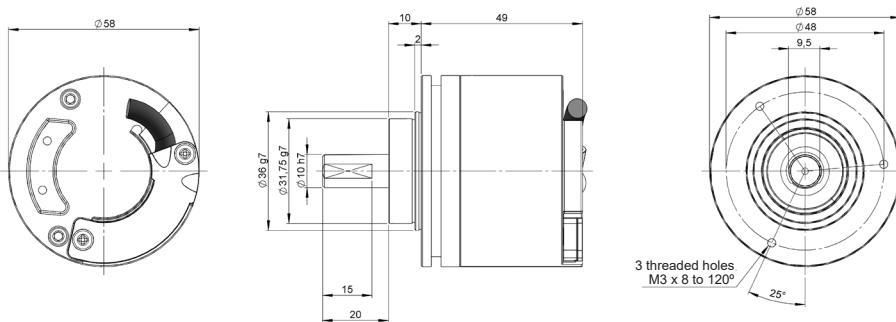
| Cable length | < 10 m | < 25 m | < 60 m | < 100 m |
|--------------------|----------|---------|---------|---------|
| Transmission speed | < 10 MHz | < 5 MHz | < 2 MHz | < 1 MHz |

CONNECTION DIMENSIONS

Female connector not included

Connection 10

Helicoidal cable



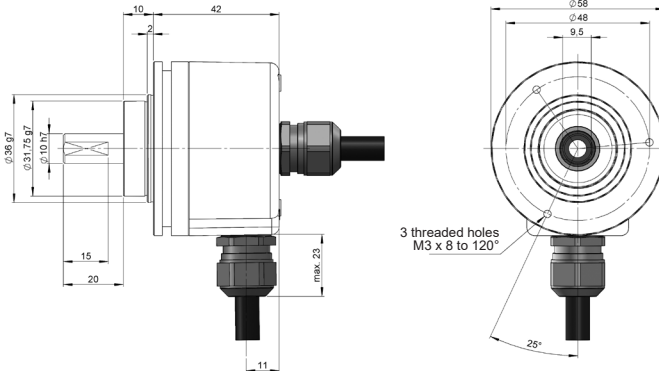
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BiSS-C / BiSS-C + SinCos

Connection 11

Axial cable
95.0008072
95.0008073

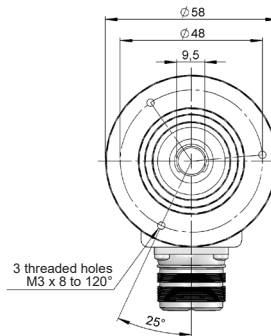
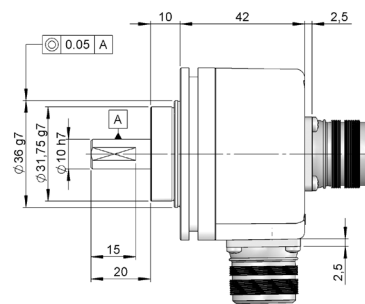


Connection 12

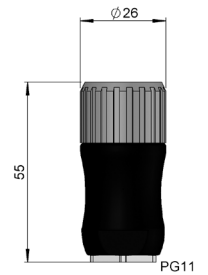
Radial cable
95.0008072
95.0008073

Connection 31

Axial
M23 12p
male panel
clockwise



Female connector
95.0007131

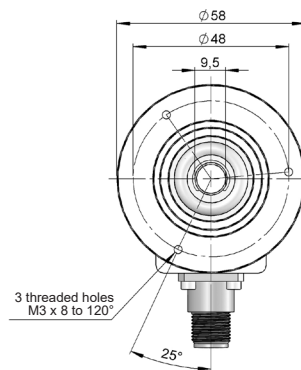
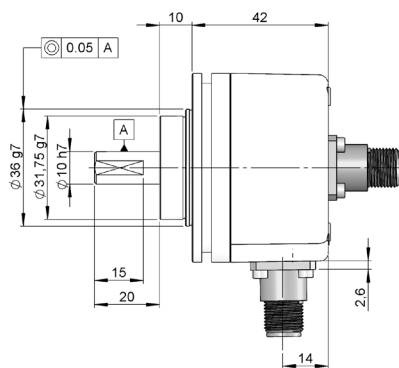


Connection 32

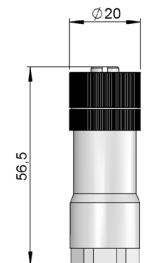
Radial
M23 12p
male panel
clockwise

Connection 41

Axial
M12 8p
male panel
clockwise



Female connector
95.0007152



Connection 42

Radial
M12 8p
male panel
clockwise

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SINGLETURN ABSOLUTE AND INCREMENTAL SOLID SHAFT ENCODER

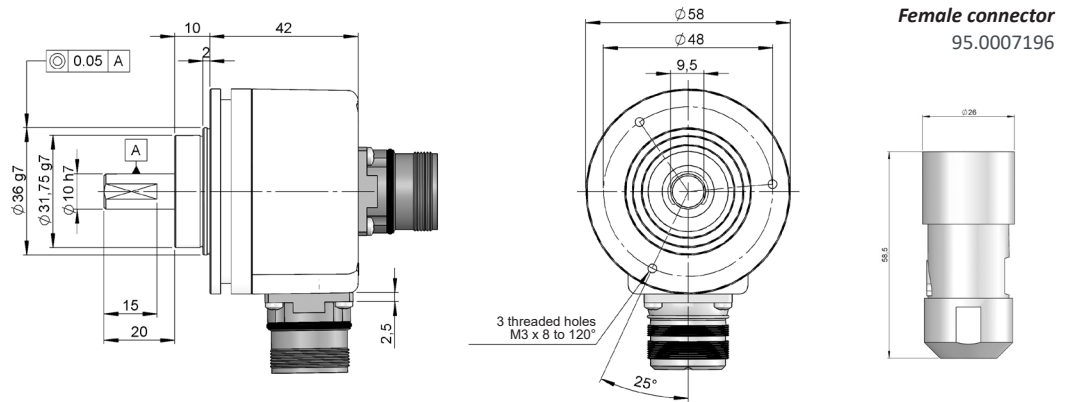
SSI / SSI + SinCos
BiSS-C / BiSS-C + SinCos

Connection 71

Axial
M23 17p
male panel
clockwise

Connection 72

Radial
M23 17p
male panel
clockwise

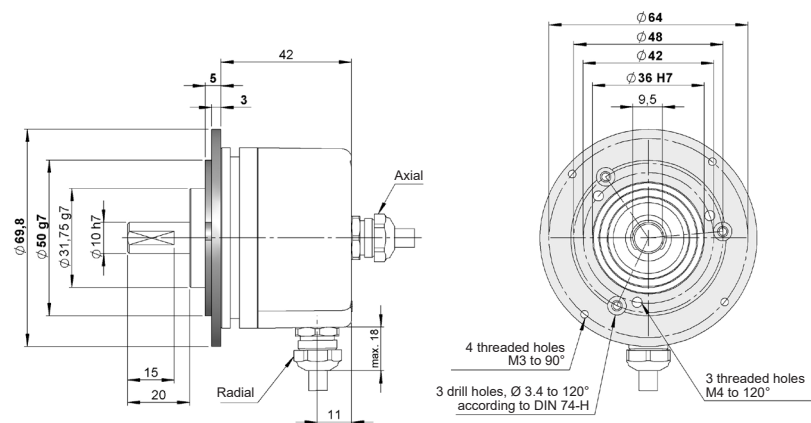


FLANGE DIMENSIONS

Flange mounting included

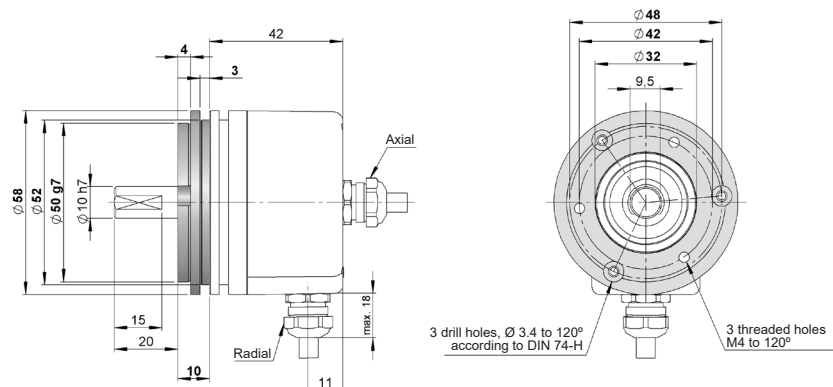
Flange 2

90.1002



Flange 3

90.1003

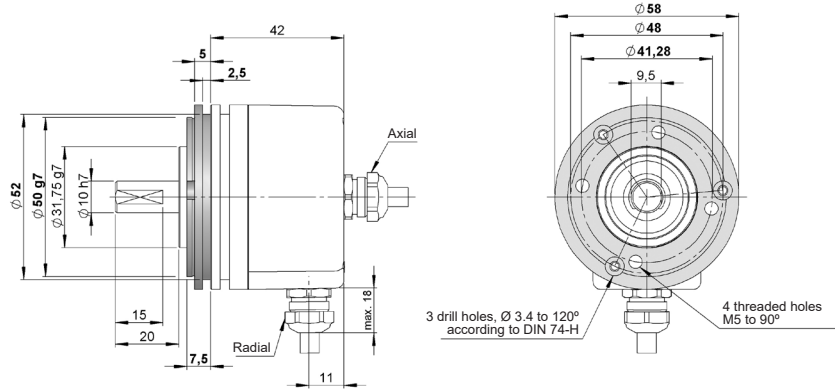


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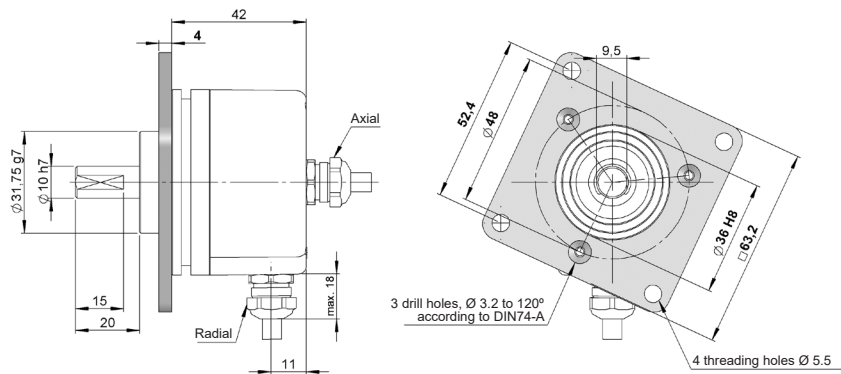
SINGLETURN ABSOLUTE AND INCREMENTAL SOLID SHAFT ENCODER

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

Flange 4
90.1004



Flange 5
90.1005



Flange 6
90.1006

