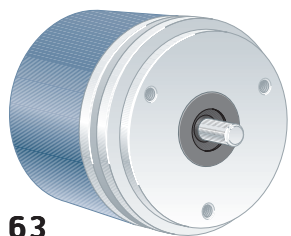
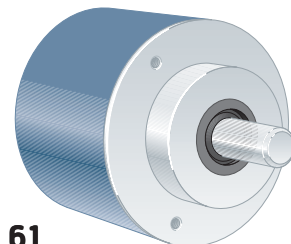


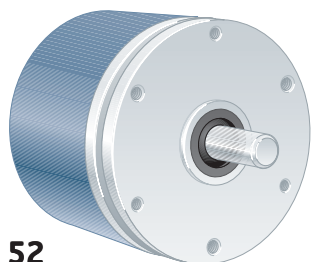
51



63



61



52

Short description:

- >> 6 short-circuit protected outputs
- >> IP 67 at housing, IP 66 at shaft inlet
- >> 5 Vdc or 9...30 Vdc
- >> Robust housing for harsh environment
- >> Shock and vibration protected

Suitable applications:

- >> Standard to demanding industrial applications
- >> High temperature applications

General information

| Encoder data | | |
|--------------------------|--|------------------|
| Type | RSI 504 | |
| Operating temperature | -20°C .. +100°C | |
| Storage temperature | -20°C .. +80°C | |
| Ingress protection class | IP-67 according to IEC 60529 | |
| At shaft inlet | IP-66 according to IEC 60529 | |
| Vibration (55 to 2000Hz) | < 300 m/s ² according to IEC 60068-2-6 ⁽¹⁾ | |
| Shock (6ms) | < 2000 m/s ² according to IEC 60068-2-27 | |
| Cover material | Aluminium | |
| Cover surface treatment | Coated and cromated or anodized | |
| Weight | Approx. 300g | |
| Accuracy and resolution | | |
| Line count | 1..5000 ppr | 5001..10 000 ppr |
| Dividing error | ± 50 °el | ± 90 °el |
| Channel separation | 90 ± 25 °el | 90 ± 45 °el |
| Measuring steps | 4 x Line count | |

⁽¹⁾ <150m/s² on encoders with connector

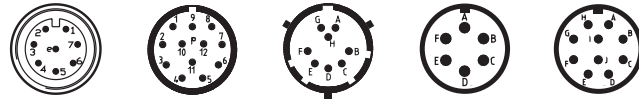
Flange option

| Flange type | 51, LL58 | 63, Synchro | 61, Clamping | 52, LL68 |
|-------------------|-----------------|-------------|--------------|-----------------|
| Outer diameter | ø58 mm | ø58 mm | ø58 mm | ø68 mm |
| Mounting holes | 3 x M3 & 3 x M4 | 3 x M4 | 3 x M3 | 3 x M3 & 3 x M4 |
| Flange material | Aluminium | Aluminium | Aluminium | Aluminium |
| Surface treatment | Anodized | Anodized | Anodized | Anodized |

Shaft option

| Shaft type | Ø6 round | Ø6 with face | Ø10 round | Ø10 with face |
|-------------------------|---|---|---|---|
| Axial shaft load | 50 N | 50 N | 50 N | 50 N |
| Radial shaft load | 60 N | 60 N | 60 N | 60 N |
| Mech. permissible speed | 6000 rpm (12 000) | 6000 rpm (12 000) | 6000 rpm (12 000) | 6000 rpm (12 000) |
| Shaft material | Stainless steel | Stainless steel | Stainless steel | Stainless steel |
| Moment of inertia | 1,9 x 10 ⁻⁶ kgm ² | 1,9 x 10 ⁻⁶ kgm ² | 2,0 x 10 ⁻⁶ kgm ² | 2,0 x 10 ⁻⁶ kgm ² |

⁽¹⁾ <150m/s² on encoders with connectors



Connection option

| Connector type | Cable | 8 pin M12 | 12 pin EML | 8 pin PT | 6 pin MS | 10 pin MS |
|--|---------------|------------|------------|------------|------------|------------|
| Function | Colour | PIN | PIN | PIN | PIN | PIN |
| S00 | Yellow | 4 | 5 | D | D | D |
| S00 inverted | Black | 5 | 6 | C | C | C |
| S90 | Green | 3 | 8 | A | A | A |
| S90 inverted | White | 1 | 1 | B | B | B |
| Sref | Brown | 2 | 3 | G | NA | G |
| Sref inverted | Violet | 6 | 4 | H | NA | H |
| +E Volt | Red | 8 | 12 | E | E | E |
| 0 Volt | Blue | 7 | 10 | F | F | F |
| STATUS | Grey | NA | 7 | NA | NA | I |
| Case | Shield | Chassis | Chassis | Chassis | Chassis | Chassis |
| Connecting direction (available on flange option -51, -63, -61) | | | | | | |
| Axial | Yes | Yes | Yes | Yes | Yes | Yes |
| Radial | Yes | Yes | Yes | Yes | No | Yes |
| Connecting direction (available on flange option -52) | | | | | | |
| Axial | No | No | No | Yes | No | Yes |
| Radial | Yes | No | No | No | No | No |

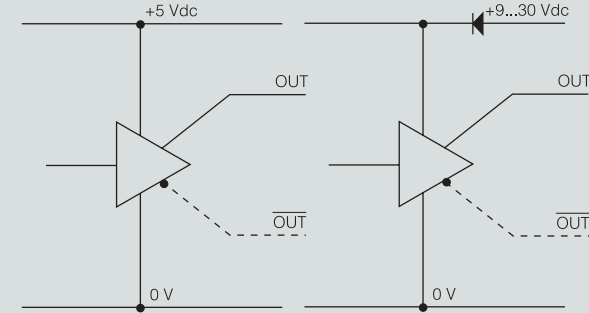
NA=Not Available

Electrical option

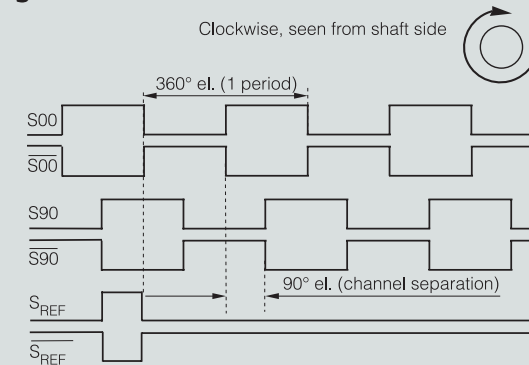
| | | | |
|--------------------------------|------------------------|-----------------|----------------------|
| Power supply | 5 V ±10% | 9-30 V | |
| Polarity protected | No | Yes | |
| Output signals | TTL¹ | HTL | RS-422 |
| Short circuit protected | Yes | Yes | Yes |
| Current consumption | 45 mA | 50 mA at 24Vdc | 25 mA at 24Vdc |
| Max consumption | 75 mA | 75 mA | 40 mA |
| Output load (max) | ±20 mA | ±40 mA | ±20 mA |
| Output frequency (max) | 300 kHz | 300 kHz | 300 kHz |
| U _{high} at 10mA load | > 3.0 V | > +EV - 2.0 V | > 3.0 V |
| U _{low} at 10mA load | < 0.4 V | < 1.15 V | < 0.4 V |
| Cable length (max) | 50 m | 200 m @ 50 kHz | 1 km (TIA/EIA-422-B) |
| STATUS output | Yes | Yes | Yes |
| High level | Encoder OK | Encoder OK | Encoder OK |
| Low level | Warning/Failure | Warning/Failure | Warning/Failure |

¹TTL output comply to the RS-422 standard when differential transmission is used NA=Not Available

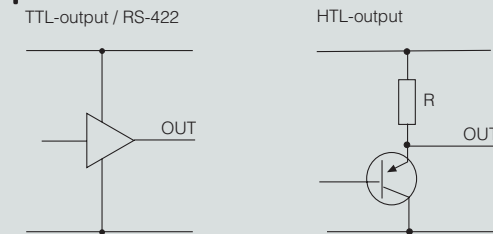
Output circuit



Output signals

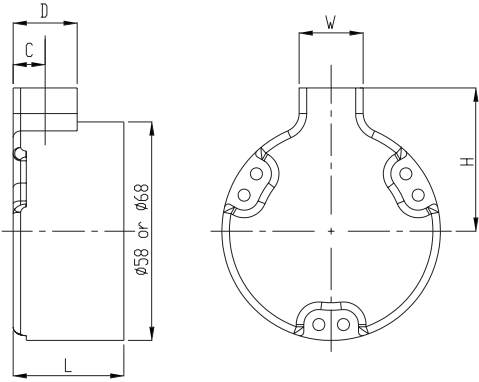


Status outputs





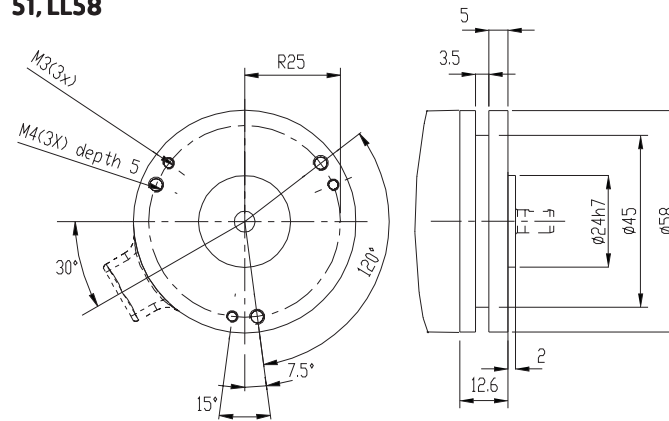
Dimensions



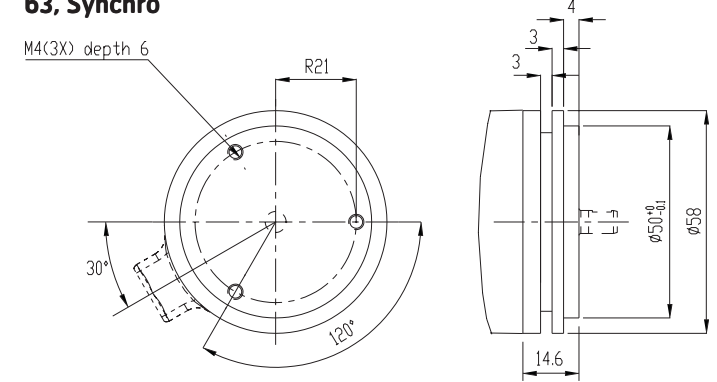
| Connector | Orientation | L | H | W | D | C |
|-----------|-------------------------|------|----|----|----|------|
| Cable | Radial $\varnothing 58$ | 29.4 | 34 | 17 | 17 | 8.5 |
| | Radial $\varnothing 68$ | 44.7 | 34 | 0 | 0 | 14 |
| | Axial | 38.9 | - | - | - | - |
| EML | Radial | 29.4 | 32 | 27 | 27 | 13.5 |
| | Axial | 38.9 | - | - | - | - |
| PT 8p | Radial | 29.4 | 41 | 27 | 27 | 13.5 |
| | Axial $\varnothing 58$ | 38.9 | - | - | - | - |
| | Axial $\varnothing 68$ | 44.7 | - | - | - | - |
| MS 6p | Radial | - | - | - | - | - |
| | Axial | 38.9 | - | - | - | - |
| MS 10p | Radial | - | - | - | - | - |
| | Axial $\varnothing 58$ | 43.9 | - | - | - | - |
| | Axial $\varnothing 68$ | 44.7 | - | - | - | - |
| M12 8p | Radial | 29.4 | 38 | 27 | 27 | 9.5 |
| | Axial | 38.9 | - | - | - | - |

Flanges

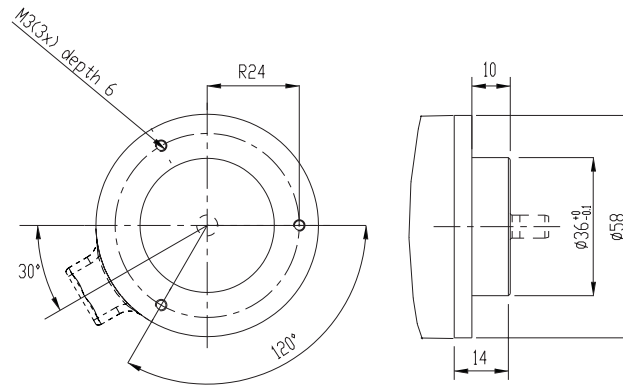
51, LL58



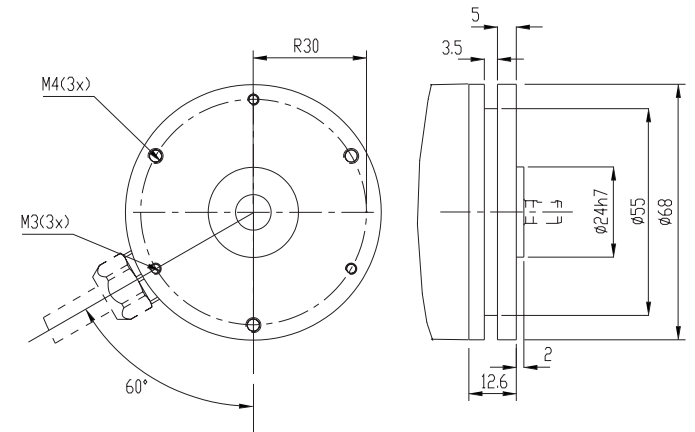
63, Synchro



61, Clamping

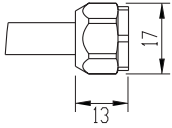


52, LL68

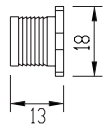


Connectors

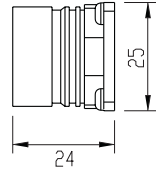
Cable
5x2x0,25 shielded



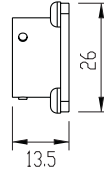
8pin M12



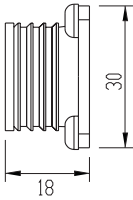
12pin EML



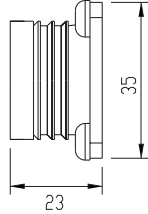
8pin PT



6pin MS

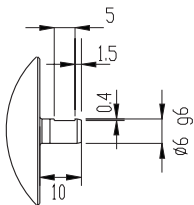


10pin MS

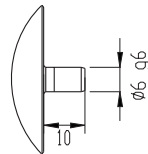


Shafts

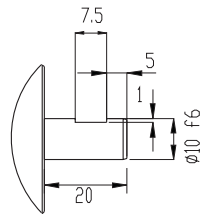
6 mm with face



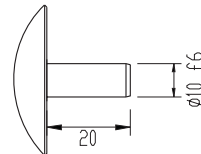
6 mm round



10 mm with face



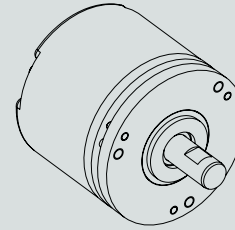
10 mm round



Various combinations/examples

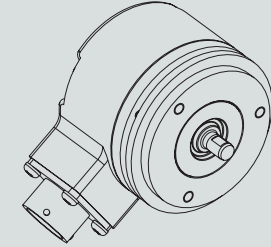
RSI 504 51

10 mm with face, axial cable



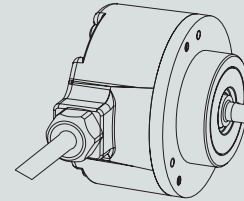
RSI 504 63

6 mm with face, radial PT



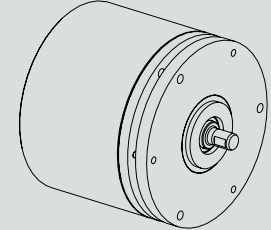
RSI 504 61

6 mm round, radial cable



RSI 504 52

6 mm with face, radial cable



Ordering information Tick your choice

| Type | RSI 504 | | | | | |
|----------------------------|----------------------------|---|---|---------------------------|--------------------|---------------------------|
| Flange | 51, LL58 | 63, Synchro | 61, Clamping | 52, LL68 | | |
| Shaft | Ø6 round | Ø6 with face | Ø10 round | Ø10 with face | | |
| Electronics ⁽¹⁾ | Supply | 5Vdc | 9-30Vdc | | | |
| | Output | TTL | HTL | RS-422 | | |
| Connection | Cable | 8 pin M12 | 12 pin EML | 8 pin PT | 6 pin MS | 10 pin MS |
| Connecting direction | Axial ² /Radial | Axial ² /Radial ² | Axial ² /Radial ² | Axial/Radial ² | Axial ² | Axial/Radial ² |
| Line count | 1..5000 | 5001..10 000 | | | | |

⁽¹⁾ Possible combinations: 5Vdc/TTL, 9-30Vdc/HTL or 9-30Vdc/RS-422

⁽²⁾ Not available on flange option -52, LL68

Please, specify line count and cable length when ordering

Ordering example: RSI 504 63 Ø6ro 5Vdc 1024ppr TTL 8 pin PT Axial