

Industrial types



Synchro flange



Clamping flange

- Universal industry standard encoder
- Up to 40,000 steps with 10,000 pulses
- High signal accuracy
- Protection class up to IP 67
- Operating temperature up to 100 °C (RI 58-T)
- Flexible due to many flange and configuration variants
- Suitable for high shock ratings
- Application e.g.: Machine tools, CNC axes, packing machines, motors/drives, injection moulding machines, sawing machines, textile machines
- For EX version, see RX 70-I

NUMBER OF PULSES

RI 58-O

1 / 2 / 3 / 4 / 5 / 10 / 15 / 20 / 25 / 29 / 30 / 35 / 40 / 50 / 60 / 64 / 70 / 72 / 80 / 100 / 117 / 120 / 125 / 127 / 128 / 136 / 144 / 150 / 180 / 200 / 226 / 230 / 250 / 256 / 280 / 300 / 314 / 350 / 356 / 360 / 375 / 400 / 460 / 480 / 500 / 512 / 600 / 625 / 635 / 720 / 750 / 889 / 900 / 942 / 1,000 / 1,024 / 1,125 / 1,200 / 1,250 / 1,270 / 1,500 / 1,600 / 1,800 / 1,885 / 1,979 / 2,000 / 2,048 / 2,400 / 2,500 / 3,000 / 3,400 / 3,480 / 3,600 / 3,750 / 3,925 / 3,958 / 3,968 / 4,000 / 4,096 / 4,445 / 4,800 / 5,000 / 5,400 / 6,000 / 6,875 / 7,200 / 7,680 / 7,854 / 8,000 / 8,192 / 9,000 / 10,000

other numbers of pulses available on request.

RI 58-T

(high temperature): as above, but only for the range from 4 ... 2,500 pulses
other numbers of pulses available on request.

TECHNICAL DATA
mechanical

| | |
|--------------------------------|---|
| Shaft diameter | 6 mm/6.35 mm/7 mm/12 mm/10 mm/9.52 mm |
| Absolute max. shaft load | Ø 12 mm 180/140 N (39/30 lbs) |
| radial / axial | Ø 7...10 mm 160/107 N (35/24 lbs) |
| | Ø 6 mm/6.35 mm 110/60 N (24/13 lbs) |
| Absolute maximum speed | 10,000 RPM |
| Torque | ≤ 0.5 Ncm (IP 65), ≤ 1 Ncm (IP 67) |
| Moment of inertia | synchro flange 14 gcm ² approx. clamping flange 20 gcm ² approx. |
| Protection class (EN 60529) | Housing IP 65, bearings IP 64 Housing IP 67, bearings IP 67 |
| Operating temperature | RI 58-O: -10 ... +70 °C; RI 58-T: -25 ... +100 °C |
| Storage temperature | RI 58-O: -25 ... +85 °C; RI 58-T: -25 ... +100 °C |
| Vibration proof (IEC 68-2-6) | 100 m/s ² (10 ... 2000 Hz) |
| Shock resistance (IEC 68-2-27) | 1,000 m/s ² (6 ms) |
| Type of connection | 1.5 m cable ¹⁾ or connector, axial or radial |
| Housing | aluminium Ø 58 mm |
| Flange | S = synchro flange, K = clamping flange, G, Q = square flange, M = synchro clamping flange |
| Weight | 360 g approx. |
| Bearing life | 1 x 10 ¹⁰ revolutions (typ.) at 35 % of full rated shaft load 1 x 10 ⁹ revolutions (typ.) at 75 % of full rated shaft load 1 x 10 ⁸ revolutions (typ.) at 100 % of full rated shaft load For example 30,000 h at 6,000 RPM with a 13 lb radial load (10 mm or 9.52 mm shaft) |

¹⁾ Other cable lengths on request

Industrial types

TECHNICAL DATA electrical

| | | | |
|--|--|--|--|
| General design | as per DIN VDE 0160, protection class III, contamination level 2, overvoltage class II | | |
| Supply voltage (SELV) | with RS 422 + Sense (T): | 5 VDC ± 10 % | |
| | with RS 422 + Alarm (R): | 5 VDC ± 10 % oder 10 ... 30 VDC ¹⁾ | |
| | with push-pull (K, I): | 10 ... 30VDC ¹⁾ | |
| Power consumption | 40 mA (5VDC), 60 mA (10VDC), 30 mA (24 VDC) | | |
| Standard-Output versions ²⁾ | RS 422 (R): | A, B, N, \bar{A} , \bar{B} , \bar{N} , \bar{Alarm} | |
| | RS 422 (T): | A, B, N, \bar{A} , \bar{B} , \bar{N} , Sense | |
| | push-pull (K): | A, B, N, \bar{Alarm} | |
| | push-pull complementary (I): | A, B, N, \bar{A} , \bar{B} , \bar{N} , \bar{Alarm} | |

¹⁾ Pole protection with supply voltage 10...30 VDC

²⁾ Output description and technical data see section „output“.

CONNECTION DIAGRAM CABLE PVC

| cable PVC (A, B) | Output (R, T) | push-pull (K) | push-pull complementary (I) |
|----------------------|---------------------------------------|----------------------|-----------------------------|
| red | 5/10...30 VDC= | 10...30 VDC= | 10...30 VDC= |
| yellow/red | Sense V _{cc} | | Sense V _{cc} |
| white | Channel A | Channel A | Channel A |
| white/brown | Channel \bar{A} | | Channel \bar{A} |
| green | Channel B | Channel B | Channel B |
| green/brown | Channel \bar{B} | | Channel \bar{B} |
| yellow | Channel N | Channel N | Channel N |
| yellow/brown | Channel \bar{N} | | Channel \bar{N} |
| black | GND | GND | GND |
| yellow/black | $\bar{Alarm/Sense}$ GND ¹⁾ | \bar{Alarm} | \bar{Alarm} |
| Screen ²⁾ | Screen ²⁾ | Screen ²⁾ | Screen ²⁾ |

¹⁾ depending on ordering code

²⁾ connected to housing

CONNECTION DIAGRAM CABLE TPE

| cable TPE (E, F) | Output (R, T) | push-pull (K) | push-pull complementary (I) |
|------------------------------|---------------------------------------|----------------------|-----------------------------|
| brown/green | 5/10...30 VDC= | 10...30 VDC= | 10...30 VDC= |
| blue | Sense V _{cc} | | Sense V _{cc} |
| brown | Channel A | Channel A | Channel A |
| green | Channel \bar{A} | | Channel \bar{A} |
| grey | Channel B | Channel B | Channel B |
| pink | Channel \bar{B} | | Channel \bar{B} |
| red | Channel N | Channel N | Channel N |
| black | Channel \bar{N} | | Channel \bar{N} |
| white/green | GND | GND | GND |
| violet (white) ¹⁾ | $\bar{Alarm/Sense}$ GND ²⁾ | \bar{Alarm} | \bar{Alarm} |
| Screen ³⁾ | Screen ³⁾ | Screen ³⁾ | Screen ³⁾ |

¹⁾ white for RS 422 + Sense (T)

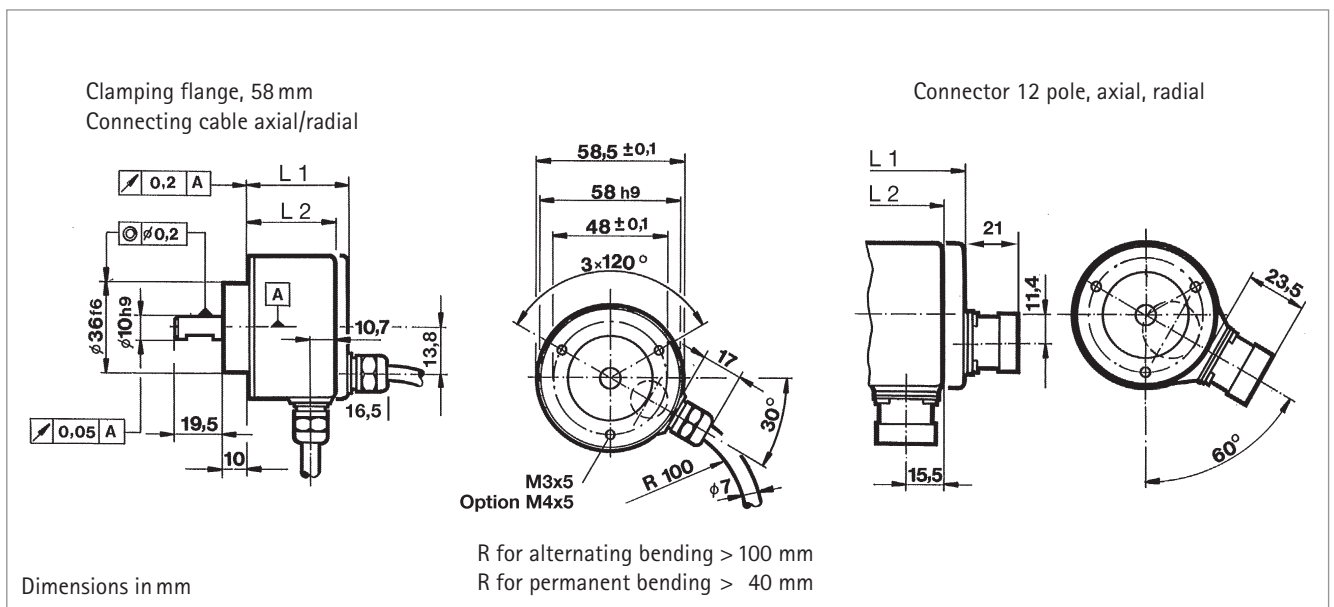
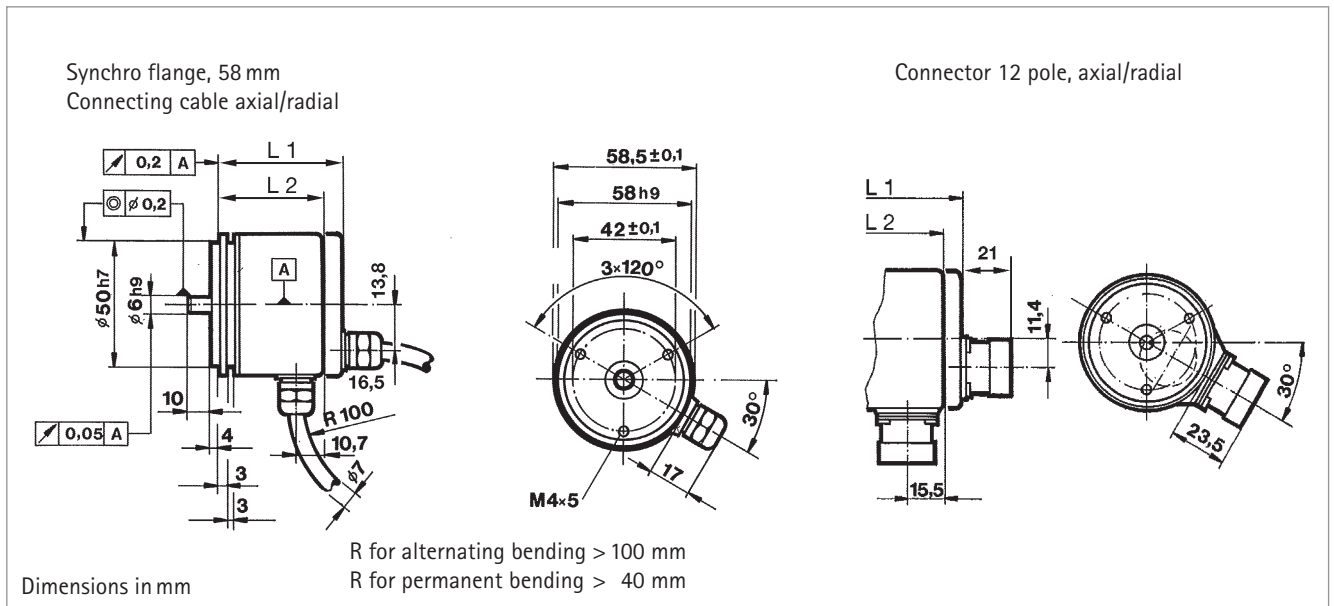
²⁾ depending on ordering code

³⁾ connected to housing

Incremental Shaft Encoders Type RI 58

Industrial types

DIMENSIONED DRAWINGS



DIMENSIONS

| Type | Connection | Output ¹⁾ | axial L ₁ | radial L ₂ |
|------------------------|------------|--|----------------------|-----------------------|
| Synchro flange, 58 mm | cable | R (with U _b = 5 V), T, K, I | 51.5 | 41.5 |
| | | R (with U _b = 10...30 V) | 56 | 56 |
| | connector | R (with U _b = 5 V), T, K, I | 57.5 | 51.5 |
| | | R (with U _b = 10...30 V) | 57.5 | 56 |
| Clamping flange, 58 mm | cable | R (with U _b = 5 V), T, K, I | 45.5 | 35.5 |
| | | R (with U _b = 10...30 V) | 50 | 50 |
| | connector | R (with U _b = 5 V), T, K, I | 51.5 | 45.5 |
| | | R (with U _b = 10...30 V) | 51.5 | 50 |

¹⁾ R = RS 422 + Alarm, T = RS 422 + Sense, K = push-pull, I = push-pull complementary