

Incremental encoders

| | | |
|---|--|---------------|
| Standard sine wave output, highly interpolable, optical | Sendix 5814 / 5834 (shaft / hollow shaft) | SinCos |
|---|--|---------------|



The incremental encoders Sendix 5814 and 5834 with SinCos interface are particularly suited for applications in the field of drive technology.

Thanks to their high signal quality, they are optimally suited for further interpolation.



| | | | | | | | | | | |
|--------------|-----------------------|-------------------|-----------------------|--------------------------|-----------------------------|----------------------|-----------------------------|--------|----------------|---|
| | | | | | | | | | | |
| Safety-Lock™ | High rotational speed | Temperature range | High protection level | High shaft load capacity | Shock / vibration resistant | Magnetic field proof | Reverse polarity protection | SinCos | Optical sensor | Surface protection salt spray-tested optional |

Powerful

- With incremental SinCos tracks.
- Very high signal quality.
- Suited for motor feedback applications.

Flexible

- Shaft and hollow shaft versions.
- Cable and connector variants.
- Various mounting options available.

| | | |
|---|--|--|
| Order code Shaft version | 8.5814 Type | . 1 2 XX . XXXX a b c d e |
| a Flange 1 = clamping flange, ø 58 mm [2.28"] | b Shaft (ø x L) 2 = 10 x 20 mm [0.39 x 0.79"], with flat | c Output circuit / supply voltage 1 = SinCos / 5 V DC 2 = SinCos / 10 ... 30 V DC |
| d Type of connection 1 = axial cable, 1 m [3.28'] PVC A = axial cable, special length PVC *) 2 = radial cable, 1 m [3.28'] PVC B = radial cable, special length PVC *) 5 = axial M12 connector, 8-pin 6 = radial M12 connector, 8-pin *) Available special lengths (connection types A, B): 2, 3, 5, 8, 10, 15 m [6.56, 9.84, 16.40, 26.25, 32.80, 49.21'] order code expansion .XXXX = length in dm ex.: 8.5814.122A.2048.0030 (for cable length 3 m) | e Pulse rate 1024, 2048 <i>Optional on request</i> - Ex 2/22 ¹⁾ - surface protection salt spray tested | |

| | | |
|---|--|--|
| Order code Hollow shaft | 8.5834 Type | . XXXX . XXXX a b c d e |
| a Flange 1 = with spring element, long 5 = with stator coupling, ø 63 mm [2.48"] | b Through hollow shaft 3 = ø 10 mm [0.39"] 4 = ø 12 mm [0.47"] 5 = ø 14 mm [0.55"] 6 = ø 15 mm [0.59"] 8 = ø 3/8" 9 = ø 1/2" <i>Tapered shaft</i> K = ø 10 mm [0.39"] | c Output circuit / supply voltage 1 = SinCos / 5 V DC 2 = SinCos / 10 ... 30 V DC |
| d Type of connection 2 = radial cable, 1 m [3.28'] PVC B = radial cable, special length PVC *) E = tangential cable, 1 m [3.28'] PVC F = tangential cable, special length PVC *) 6 = radial M12 connector, 8-pin *) Available special lengths (connection types B, F): 2, 3, 5, 8, 10, 15 m [6.56, 9.84, 16.40, 26.25, 32.80, 49.21'] order code expansion .XXXX = length in dm ex.: 8.5834.142B.2048.0030 (for cable length 3 m) | e Pulse rate 1024, 2048 <i>Optional on request</i> - Ex 2/22 (not for type of connection E, F) ¹⁾ - surface protection salt spray tested | |

1) For the cable connection type, cable material PUR.

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| Cables and connectors | | Order no. |
| Preassembled cables | M12 female connector with coupling nut, 8-pin, A coded, straight single ended 2 m [6.56'] PVC cable | 05.00.6041.8211.002M |
| Connectors | M12 female connector with coupling nut, 8-pin, A coded, straight (metal) | 05.CMB 8181-0 |

Further Kübler accessories can be found at: kuebler.com/accessories
 Further Kübler cables and connectors can be found at: kuebler.com/connection-technology

Technical data

| Mechanical characteristics | |
|--|---|
| Maximum speed | 12000 min ⁻¹ , 5000 min ⁻¹ (continuous) |
| Starting torque – at 20 °C [68 °F] | < 0.01 Nm |
| Mass moment of inertia | shaft 4.0 x 10 ⁻⁶ kgm ² |
| | hollow shaft 7.0 x 10 ⁻⁶ kgm ² |
| Load capacity of shaft | radial 80 N |
| | axial 40 N |
| Weight | approx. 0.45 kg [15.85 oz] |
| Protection acc. to EN 60529 | IP65 |
| Working temperature range | -40 °C ... +90 °C [-40 °F ... +194 °F] ¹⁾ |
| Materials | shaft / hollow shaft stainless steel |
| | flange aluminum |
| | housing zinc die-cast |
| | cable PVC (PUR for Ex 2/22) |
| Shock resistance acc. to EN 60068-2-27 | 2500 m/s ² , 6 ms |
| Vibration resistance acc. to EN 60068-2-6 | 100 m/s ² , 55 ... 2000 Hz |

| SinCos interface | |
|----------------------------|---------------------------|
| Max. frequency -3dB | 400 kHz |
| Signal level | 1 V _{pp} (±10 %) |
| Short circuit proof | yes ²⁾ |
| Pulse rate | 1024 / 2048 ppr |

| Approvals | |
|--|-----------------------------------|
| UL compliant in accordance with | File no. E224618 |
| CE compliant in accordance with | |
| EMC Directive | 2014/30/EU |
| RoHS Directive | 2011/65/EU |
| ATEX Directive | 2014/34/EU (for Ex 2/22 variants) |

| Electrical characteristics | |
|--|---------------------------------|
| Supply voltage | 5 V DC (±5 %) or 10 ... 30 V DC |
| Current consumption (no load) | 5 V DC max. 70 mA |
| | 10 ... 30 V DC max. 45 mA |
| Reverse polarity protection of the supply voltage | yes |

Terminal assignment

| Output circuit | Type of connection | Cable (isolate unused cores individually before initial start-up) | | | | | | | |
|----------------|--------------------|---|-----|----|----|-----------|----|-----------|---------|
| 1, 2 | 1, 2, A, B, E, F | Signal: | 0 V | +V | A | \bar{A} | B | \bar{B} | \perp |
| | | Core color: | WH | BN | GN | YE | GY | PK | shield |

| Output circuit | Type of connection | M12 connector, 8-pin | | | | | | | |
|----------------|--------------------|----------------------|-----|----|---|-----------|---|-----------|------------------|
| 1, 2 | 5, 6 | Signal: | 0 V | +V | A | \bar{A} | B | \bar{B} | \perp |
| | | Pin: | 1 | 2 | 3 | 4 | 5 | 6 | PH ³⁾ |

- +V: Supply voltage encoder +V DC
- 0 V: Supply voltage encoder ground GND (0 V)
- A, \bar{A} : Cosine signal
- B, \bar{B} : Sine signal
- PH \perp : Plug connector housing (shield)

Top view of mating side, male contact base



M12 connector, 8-pin

1) Cable version: -30 °C ... +90 °C [-22 °F ... +194 °F] fixed installation.
 2) Short circuit to 0V or to output, one channel at a time, supply voltage correctly applied.
 3) PH = shield is attached to connector housing.

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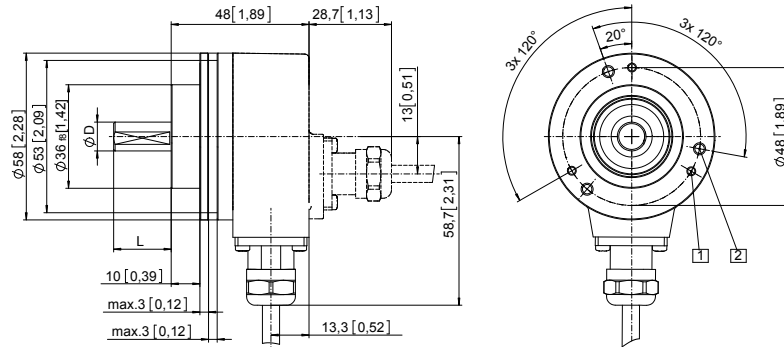
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Dimensions shaft version

Dimensions in mm [inch]

Clamping flange, ø 58 [2.28]
Flange type 1 with shaft type 2
 (drawing with cable)

- 1 3 x M3, 6 [0.24] deep
- 2 3 x M4, 8 [0.32] deep



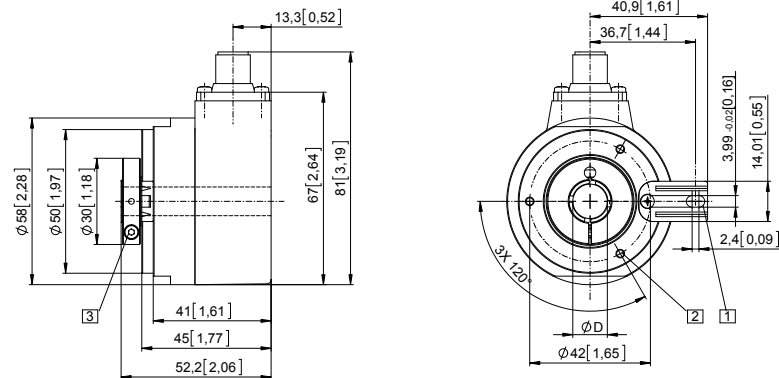
| D | Fit | L |
|-----------|-----|-----------|
| 10 [0.39] | f7 | 20 [0.79] |

Dimensions hollow shaft version

Dimensions in mm [inch]

Flange with spring element, long
Flange type 1
 (drawing with M12 connector)

- 1 Slot spring element, recommendation: torque pin DIN 7, ø 4 [0.16]
- 2 3 x M3, 5.5 [0.22] deep
- 3 Recommended torque for the clamping ring 0.6 Nm



| D | Fit |
|-----------|-----|
| 10 [0.39] | H7 |
| 12 [0.47] | H7 |
| 14 [0.55] | H7 |
| 15 [0.59] | H7 |
| 3/8" | H7 |
| 1/2" | H7 |

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Dimensions hollow shaft version

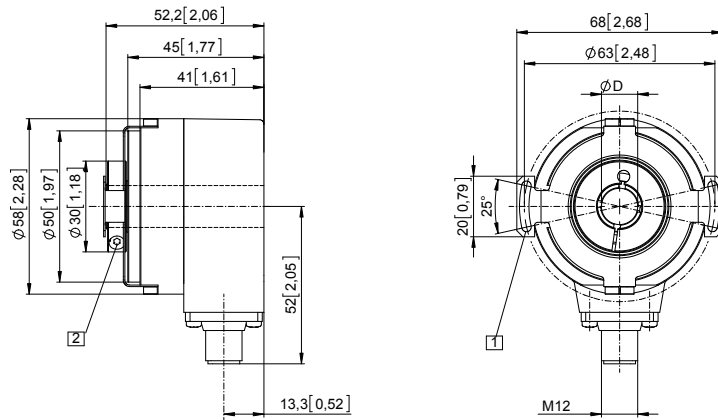
Dimensions in mm [inch]

Flange with stator coupling, \varnothing 63 [2.48] and hollow shaft

Flange type 5

(drawing with M12 connector)

- 1 For (4x) M3 screw
- 2 Recommended torque for the clamping ring 0.6 Nm



| D | Fit |
|-----------|-----|
| 10 [0.39] | H7 |
| 12 [0.47] | H7 |
| 14 [0.55] | H7 |
| 15 [0.59] | H7 |
| 3/8" | H7 |
| 1/2" | H7 |

Flange with stator coupling, \varnothing 63 [2.48] and tapered shaft

Flange type 5

(drawing with tangential cable outlet)

- 1 For (4x) M3 screw
- 2 Recommended torque for central screw M5 (SW 4) 3.0 ^{+0.5} Nm (tapered shaft)

