



Standard optical

Sendix 5000 / 5020 (shaft / hollow shaft)

Push-Pull / RS422 / Open collector



Due to their sturdy bearing construction in Safety-Lock™ Design, the Sendix 5000 and 5020 offer high resistance against vibration and installation errors.

The rugged housing, high protection level of up to IP67, as well as the wide temperature range of -40°C up to +85°C, make this product range the perfect encoder for all applications.





















High rotational

speed

Temperature range

High protection

High shaft load capacity

resistant

Reverse polarity protection

Robust performance

- · Increased resistance against vibrations and tolerance of installation errors, elimination of machine downtime and repairs thanks to sturdy bearing construction in "Safety-LockTM Design".
- Ensures highest safety against field breakdowns and is thus suitable also for outside use thanks to its resistant die-cast housing and protection up to IP67.
- · Undetachable clamping ring on hollow shaft encoders.
- Wide temperature range, -40°C ... +85°C.

NEW:

- · Higher shock resistance.
- · Higher vibration resistance.
- IP66 and IP67 protection level in one version.

Many variants

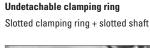
- Suitable connection variant for every specific case: cable connection, M12, M23, MIL and Sub-D connector.
- Reliable mounting in a wide variety of installation situations: comprehensive and proven fixing possibilities.
- · Compatible with all US and European standards.
- Max. 5000 pulses per revolution.

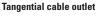
- Double number of standard pulse numbers.
- · Variants with connector fitted in the cable for error-free electrical connection to your control.
- Additional connector variants (M12 / 5-pin, Sub-D).
- · Additional standard cable lengths.

Technology in detail

Robust Safety-Lock™ bearing structure

Cables with fitted connector















Standard optical Sendix 5000 / 5020 (shaft / hollow shaft) Push-Pull / RS422 / Open collector

| Order code | 8.5000 | | XXXX | . P | XX | XX |
|---------------|--------|------------|------|-----|----|----|
| Shaft version | Туре | 000 | 0 | | 0 | 00 |

a Flange

5 = synchro flange, IP66/IP67 ø 50.8 mm [2"] 6 = synchro flange, IP65 ø 50.8 mm [2"] 7 = clamping flange, IP66/IP67 Ø 58 mm [2.28"] 8 = clamping flange, IP65 ø 58 mm [2.28"] A = synchro flange, IP66/IP67 ø 58 mm [2.28"] B = synchro flange, IP65 ø 58 mm [2.28"] C = square flange, IP66/IP67 □ 63.5 mm [2.5"] D = square flange, IP65 □ 63.5 mm [2.5"] G = Euro flange, IP66/IP67 ø 115 mm [4.53"] 1)

b Shaft (ø x L), with flat

- $1 = \emptyset 6 \times 10 \text{ mm} [0.24 \times 0.39"]$
- $2 = \emptyset 1/4 \times 5/8$ " (6.35 x 15.875 mm)
- $6 = \emptyset 8 \times 15 \text{ mm} [0.32 \times 0.59"]$
- 3 = Ø 10 x 20 mm [0.39 x 0.79"]
- $4 = \emptyset 3/8 \times 5/8" (9.5 \times 15.875 \text{ mm})$
- B = \emptyset 11 x 33 mm [0.43 x 1.30"], with feather key shaft slot $^{2)}$
- 5 = Ø 12 x 20 mm [0.47 x 0.79"]
- $7 = \emptyset 1/4 \times 7/8$ "
- $8 = \emptyset 3/8 \times 7/8$ "

Output circuit / power supply

- 4 = RS422 (with inverted signal) / 5 V DC
- 1 = RS422 (with inverted signal) / 5 ... 30 V DC
- 2 = Push-Pull (7272 compatible with inverted signal) / 5 ... 30 V DC
- $5\,$ = Push-Pull (with inverted signal) / 10 ... 30 V DC
- 3 = Open collector (with inverted signal) / 5 ... 30 V DC
- 8 = Push-Pull (7272 compatible with inverted signal), without capacitor / $5\dots 30$ V DC $^{3)}$

d Type of connection - cable

- 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 *)

Type of connection – connector

- P = axial M12 connector, 5-pin 4
- R = radial M12 connector, 5-pin 4)
- 3 = axial M12 connector, 8-pin
- 4 = radial M12 connector, 8-pin
- 7 = axial M23 connector, 12-pin
- 8 = radial M23 connector, 12-pin
- Y = radial MIL connector, 10-pin
- W = radial MIL connector, 7-pin 4)
- 9 = radial MIL connector, 6-pin 4)

Type of connection – connector with cable

L = radial cable with M12 connector, 8-pin, special length PVC *)

- M= radial cable with M23 connector, 12-pin, special length PVC *)
- N = radial cable with Sub-D connector, 9-pin, special length PVC *)
- *) Available special lengths (connection types A, B, L, M, N: 0.3, 0.5, 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20 m [0.98, 1.64, 3.28, 6.56, 9.84, 13.12, 16.40, 19,69, 26.25, 32.80, 39.37, 49.21, 65,62'] order code expansion .XXXX = length in dm ex.: 8.5000.814A.1024.0030 (for cable length 3 m)

Pulse rate

1, 2, 4, 5, 10, 12, 14, 20, 25, 28, 30, 32, 36, 50, 60, 64, 80, 100, 120, 125, 150, 180, 200, 240, 250, 256, 300, 342, 360, 375, 400, 500, 512, 600, 625, 720, 800, 900, 1000, 1024, 1200, 1250, 1500, 1800, 2000, 2048, 2500, 3000, 3600, 4000, 4096, 5000 (e.g. 100 pulses => 0100)

Special output signal formats

00 = standard output other = see page 8

Q Capacitor

- 0 = standard
- A = no bypass capacitor (vector motor) (only valide with output circuits 1, 3, 4, 5)

Special connector pin configuration

0 = standard wiring other = see page 6

Optional on request

- other pulse rates
- Ex 2/22 ⁵⁾
- surface protection salt spray

Salt spray tested as standard type (deliverable as from 1 unit)



8.5000.73X4.XXXX-C

- 1) Only in conjunction with shaft type B.
- Only in conjunction with flange type G.
- 3) Attention: no CE types!
- 4) Without inverted signal.
- 5) For the cable connection type, cable material PUR.



Standard optical

Sendix 5000 / 5020 (shaft / hollow shaft)

Push-Pull / RS422 / Open collector

a Flange

- 1 = with spring element, long, IP66/IP67
- 2 = with spring element, long, IP65
- 3 = with fastening arm, long, IP66/IP67
- 4 = with fastening arm, long, IP65
- 7 = with stator coupling, IP66/IP67 ø 65 mm [2.56"]
- 8 = with stator coupling, IP65 ø 65 mm [2.56"]
- C = with stator coupling, IP66/IP67 Ø 63 mm [2.48"]
- D = with stator coupling, IP65 Ø 63 mm [2.48"]
- 5 = with stator coupling, IP66/IP67 ø 57.2 mm [2.25"]

Hollow shaft

- 1 = Ø 6 mm [0.24"]
- $2 = \emptyset 1/4$ "
- 9 = Ø 8 mm [0.32"]
- $4 = \emptyset 3/8"$
- $3 = \emptyset 10 \text{ mm} [0.39"]$
- 5 = Ø 12 mm [0.47"]
- $6 = \emptyset 1/2"$
- $A = \emptyset 14 \text{ mm } [0.55"]$
- 8 = Ø 15 mm [0.59"]
- $7 = \emptyset 5/8$ "

• Output circuit / power supply

- 4 = RS422 (with inverted signal) / 5 V DC
- 1 = RS422 (with inverted signal) / 5 ... 30 V DC
- 2 = Push-Pull (7272 compatible with inverted signal) / 5 ... 30 V DC
- 5 = Push-Pull (with inverted signal) / 10 ... 30 V DC
- 3 = Open collector (with inverted signal) / 5 ... 30 V DC
- 8 = Push-Pull (7272 compatible with inverted signal), without capacitor / $5 \dots 30 \text{ V DC}^{\, 1)}$

d Type of connection – cable

- 1 = radial cable, 1 m [3.28'] PVC
- A = radial cable, special length PVC *)
- E = tangential cable, 1 m [3.28'] PVC
- F = tangential cable, special length PVC *)

Type of connection – connector

- R = radial M12 connector, 5-pin ²⁾
- 2 = radial M12 connector, 8-pin
- 4 = radial M23 connector, 12-pin
- 6 = radial MIL connector, 7-pin 2)
- 7 = radial MIL connector, 10-pin

Type of connection – connector with cable

- H = tangential cable, 0.3 m [0.98'] PVC, incl. M12 connector, 8-pin for central fastening
- L = tangential cable with M12 connector, 8-pin, special length PVC *)
- M = tangential cable with M23 connector, 12-pin, special length PVC *)
- N = tangential cable with Sub-D connector, 9-pin, special length PVC *)
- *) Available special lengths (connection types A, F, L, M, N): 0.3, 0.5, 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20 m [0.98, 1.64, 3.28, 6.56, 9.84, 13.12, 16.40, 19,69, 26.25, 32.80, 39.37, 49.21, 65,62'] order code expansion .XXXX = length in dm ex.: 8.5020.234A.1024.0030 (for cable length 3 m)

Pulse rate

1, 2, 4, 5, 10, 12, 14, 20, 25, 28, 30, 32, 36, 50, 60, 64, 80, 100, 120, 125, 150, 180, 200, 240, 250, 256, 300, 342, 360, 375, 400, 500, 512, 600, 625, 720, 800, 900, 1000, 1024, 1200, 1250, 1500, 1800, 2000, 2048, 2500, 3000, 3600, 4000, 4096, 5000 (e.g. 100 pulses => 0100)

Special output signal formats

00 = standard output other = see page 74

Q Capacitor

0 = standard

A = no bypass capacitor (vector motor) (only valide with output circuits 1, 3, 4, 5)

b Special connector pin configuration

0 = standard wiring other = see page 73

Optional on request

- other pulse rates
- Ex 2/22 (not for type of connection E, F, H, L, M, N) $^{3)}$
- surface protection salt spray

Salt spray tested as standard type (deliverable as from 1 unit)



8.5020.18X2.XXXX-C 8.5020.1AX2.XXXX-C

¹⁾ Attention: no CE types!

²⁾ Without inverted signal.

³⁾ For the cable connection type, cable material PUR.



| Standard | | |
|----------|---|------------------------------------|
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| Mounting accessory for shaft encoders | | Order no. |
|---|---|--|
| Coupling | bellows coupling ø 19 mm [0.75"] for shaft 6 mm [0.24"] bellows coupling ø 19 mm [0.75"] for shaft 10 mm [0.39"] | 8.0000.1102.0606 8.0000.1102.1010 |
| Mounting accessory for hollow shaft encoders | Dimensions in mm [inch] | Order no. |
| Cylindrical pin, long for flange with spring element (flange type 1 + 2) | with fixing thread 8[0,31] 5[0,2] 8W7 [0,28] 8 30[1,18] | 8.0010.4700.0000 |
| Isolation / adapter inserts for hollow shaft encoders Thermal and electrical isolation of the encoders (Temperature range -40 +115°C [-40°F +239°F]) Isolation inserts prevent currents from passing through the encoder bearings. These currents can occur when using inverter controlled three-phase or AC vector motors and considerably shorten the service life of the encoder bearings. In addition the encoder is thermally isolated as the plastic does not transfer the heat to the encoder. | order code 8.5020.X8XX.XXXX D1 6 mm [0.24"] 8 mm [0.32"] 10 mm [0.39"] 12 mm [0.47"] 1/4" 3/8" 1/2" | Isolation insert 8.0010.4021.0000 8.0010.4020.0000 8.0010.4023.0000 8.0010.4025.0000 8.0010.4022.0000 8.0010.4024.0000 8.0010.4026.0000 |

| Connection technology | | Order no. |
|-------------------------------------|--|----------------------|
| Cordset, pre-assembled | M12 female connector with coupling nut, 8-pin 2 m [6.56'] PVC cable | 05.00.6041.8211.002M |
| | M23 female connector with coupling nut, 12-pin 2 m [6.56'] PVC cable | 8.0000.6901.0002 |
| Connector, self-assembly (straight) | M12 female connector with coupling nut, 8-pin | 05.CMB 8181-0 |
| | M23 female connector with coupling nut, 12-pin | 8.0000.5012.0000 |
| | MIL female connector with coupling nut, 10-pin | 8.0000.5062.0000 |

Further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories. $Additional\ connectors\ can\ be\ found\ in\ the\ connection\ technology\ section\ or\ in\ the\ connection\ technology\ area\ of\ our\ website\ at:\ www.kuebler.com/connection_technology.$

Technical data

| Mechanical characteristics | |
|---|--|
| Maximum speed IP65 | 12000 min ⁻¹ 6000 min ⁻¹ (continuous) |
| IP66/IP67 | 6000 min ⁻¹ |
| | 3000 min ⁻¹ (continuous) |
| Mass moment of inertia shaft version hollow shaft version | approx. 1.8 x 10 ⁻⁶ kgm ² approx. 6 x 10 ⁻⁶ kgm ² |
| Starting torque IP65 | < 0.01 Nm |
| at 20°C [68°F] IP66/IP67 | < 0.05 Nm |
| Shaft load capacity radial | 100 N |
| axial | 50 N |
| Weight | approx. 0.4 kg [14.11 oz] |
| Protection acc. to EN 60529 | |
| without shaft seal | IP65 |
| with shaft seal | IP66/IP67 |
| Working temperature range | -40°C ¹⁾ +85°C [-40°F ¹⁾ +185°F] |
| Material shaft | stainless steel |
| Shock resistance acc. to EN 60068-2-27 | 3000 m/s ² , 6 ms ²⁾ |
| Vibration resistance acc. to EN 60068-2-6 | 300 m/s ² , 10 2000 Hz ³⁾ |

- 1) With connector: -40°C [-40°F], cable fixed: -30°C [-22°F], cable moved: -20°C [-4°F]. 2) For MIL connectors: 2500 m/ $\rm s^2$ 3) For MIL connectors: 100 m/ $\rm s^2$



Standard optical

Sendix 5000 / 5020 (shaft / hollow shaft)

Push-Pull / RS422 / Open collector

| Electrical characteristic | cs | | | | | | |
|---|-------------|--|---------------------------|------------------------------|--------------------------------|--|------------------------------|
| Output circuit | | RS422 (TTL compatible) | RS422 (TTL compatible) | Push-Pull | Push-Pull (7272 compatible) | Push-Pull (7272 compatible, without capacitor) | Open collector (7273) |
| l l | Order code | 1 | 4 | 5, 7 | 2 | 8 | 3 |
| Power supply | | 5 30 V DC | 5 V DC (±5 %) | 10 30 V DC | 5 30 V DC | 5 30 V DC | 5 30 V DC |
| Power consumption (no load |) | typ. 40 mA max. 90 mA | typ. 40 mA max. 90 mA | typ. 50 mA max. 100 mA | typ. 50 mA max. 100 mA | typ. 50 mA max. 100 mA | 100 mA |
| Permissible load / channel | | max. +/- 20 mA | max. +/- 20 mA | max. +/- 20 mA | max. +/- 20 mA | max. +/- 20 mA | +/- 20 mA sink at 30 V DC |
| Pulse frequency | | max. 300 kHz | max. 300 kHz | max. 300 kHz | max. 300 kHz ¹⁾ | max. 300 kHz | max. 300 kHz |
| Signal level | HIGH LOW | min. 2.5 V max. 0.5 V | min. 2.5 V max. 0.5 V | min +V - 1.0 V max. 0.5 V | min. +V - 2.0 V max. 0.5 V | min. +V - 2.0 V max. 0.5 V | |
| Rising edge time t _r | | max. 200 ns | max. 200 ns | max. 1 µs | max. 1 μs | max. 1 µs | |
| Falling edge time t _f | | max. 200 ns | max. 200 ns | max. 1 µs | max. 1 µs | max. 1 µs | |
| Short circuit proof outputs 2) | | yes 3) | yes 3) | yes | yes | yes 3) | yes |
| Reverse polarity protection of the power supply | | yes | no | yes | no | no | no |
| UL approval | | file 224618 | | | | | |
| CE compliant acc. to | | EMC guideline 201 RoHS guideline 20 | | | | | |

Terminal assignment – Standard wiring

| Output circuit | Type of c | connection | Cable (isolate u | ınused wi | res indivi | dually bef | ore initial | start-up) | | | | | | |
|------------------|--------------------|------------------------|------------------------|-----------|------------|------------|-------------|-----------|------------------|----|----------|------------------|----|------------------|
| 1, 2, 3, 4, 5, 8 | 5000: | 1, 2, A, B | Signal: | 0 V | +V | 0 Vsens | +Vsens | Α | Ā | В | B | 0 | ō | Ť |
| 1, 2, 3, 4, 5, 6 | 5020: | 1, A, E, F | Core colour: | WH | BN | GY PK | RD BU | GN | YE | GY | PK | BU | RD | shield |
| Output circuit | Type of c | connection | M12 connector, 5-pin | | | | | | | | | | | |
| 1 2 2 4 5 0 | 5000: | P, R | Signal: | 0 V | +V | Α | В | 0 | Ŧ | | | | | |
| 1, 2, 3, 4, 5, 8 | 5020: | R | Pin: | 1 | 2 | 3 | 4 | 5 | PH ¹⁾ | | | | | |
| Output circuit | Type of c | connection | M12 connector | , 8-pin | | | | | | | | |] | |
| 1, 2, 3, 4, 5, 8 | 5000: | 3, 4, L | Signal: | 0 V | +V | А | Ā | В | B | 0 | <u>0</u> | Ť | | |
| 1, 2, 3, 4, 5, 6 | 5020: | 2, H ²⁾ , L | Pin: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | PH ⁴⁾ | | |
| Output circuit | Type of connection | | M23 connector | , 12-pin | | | | | | | | | | |
| 1, 2, 3, 4, 5, 8 | 5000: | 7, 8, M | Signal: | 0 V | +V | 0 Vsens | +Vsens | А | Ā | В | B | 0 | ō | Ť |
| 1, 2, 3, 4, 5, 6 | 5020: | 4, M | Pin: | 10 | 12 | 11 | 2 | 5 | 6 | 8 | 1 | 3 | 4 | PH ⁴⁾ |
| Output circuit | Type of c | connection | MIL connector, 10-pin | | | | | | | | |] | | |
| 100450 | 5000: | Υ | Signal: | 0 V | +V | +Vsens | А | Ā | В | B | 0 | ō | Ť | 1 |
| 1, 2, 3, 4, 5, 8 | 5020: | 7 | Pin: | F | D | Е | Α | G | В | Н | С | I | J | |
| Output circuit | Type of c | connection | MIL connector | , 7-pin | | | | | | |] | | | |
| 12450 | 5000: | W | Signal: | 0 V | +V | +Vsens | А | В | 0 | Ť | | | | |
| 1, 3, 4, 5, 8 | 5020: | 6 | Pin: | F | D | E | Α | В | С | G | | | | |
| Output circuit | Type of c | connection | MIL connector | , 6-pin | | | | | | | | | | |
| 10150 | 5000: | 9 | Signal: | 0 V | +V | А | В | 0 | Ť | | | | | |
| 1, 3, 4, 5, 8 | | | Pin: | Α | В | Е | D | С | | | | | | |
| Output circuit | Type of c | connection | Sub-D connector, 9-pin | | | | | | |] | | | | |
| | 5000: | N | Signal: | 0 V | +V | А | Ā | В | B | 0 | 0 | Ť | | |
| 1, 2, 3, 4, 5, 8 | 5020: | N | Pin: | 9 | 5 | 1 | 6 | 2 | 7 | 3 | 8 | PH ⁴⁾ | | |
| | | | | | | | | | | • | | | | |

Max. recommended cable length 30 m [98.43'].
 If power supply correctly applied.
 Only one channel allowed to be shorted-out: at +V= 5 V DC, short-circuit to channel, 0 V, or +V is permitted. at +V= 5 ... 30 V DC, short-circuit to channel or 0 V is permitted.
 PH = shield is attached to connector housing.



| Standard | | |
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Terminal assignment - Special connector pin configuration

| Order code 📵 | Output circuit | Type of connection | M12 connector, 8 | M12 connector, 8-pin | | | | | | | | |
|--------------|------------------|------------------------------|------------------|----------------------|----|---|---|---|---|---|---|------------------|
| 7 | 1 2 2 4 5 0 | 5000: 3, 4, L | Signal: | 0 V | +V | Α | Ā | В | B | 0 | ō | Ť |
| / | 1, 2, 3, 4, 5, 8 | 5020: 2, H ²⁾ , L | Pin: | 7 | 2 | 1 | 3 | 4 | 5 | 6 | 8 | PH ¹⁾ |

| Order code 📵 | Output circuit | Type of connection | MIL connector, 6- | pin | | | | | |
|--------------|----------------|--------------------|-------------------|------|----|---|---|---|---|
| 1 | 1 2 4 0 | 5000: 9 | Signal: | 0 V | +V | Α | В | 0 | Ť |
| ı | 1, 3, 4, 8 | | Pin: | A, F | В | D | Е | С | |

| Order code 📵 | Output circuit | Type of connection | MIL connector, 7- | MIL connector, 7-pin | | | | | | |
|--------------|----------------|--------------------|-------------------|----------------------|----|---|---|---|---|---|
| 4 | 1, 3, 4, 8 | 5000: W | Signal: | 0 V | +V | Α | Ā | В | B | Ť |
| 4 | | 5020: 6 | Pin: | F | D | Α | С | В | Е | G |

| | Order code 📵 | Output circuit | Type o | f connection | MIL connector, 10 | -pin | | IIL connector, 10-pin | | | | | | | | |
|---|--------------|--------------------|--------|--------------|-------------------|------|----|-----------------------|---|---|---|---|---|---|--|--|
| ĺ | 6 122450 | 1 2 2 4 5 0 | 5000: | Υ | Signal: | 0 V | +V | Α | Ā | В | B | 0 | ō | Ť | | |
| | б | δ 1, 2, 3, 4, 5, δ | 5020: | 7 | Pin: | F | D | Α | Н | В | I | С | J | G | | |

| Order code 📵 | Output circuit | Type o | f connection | M12 connector, 5- | pin | | | | | |
|--------------|------------------|--------|--------------|-------------------|-----|----|---|---|---|-------|
| 0 | 1 2 2 4 5 0 | 5000: | P, R | Signal: | 0 V | +V | Α | В | 0 | Ť |
| 9 | 1, 2, 3, 4, 5, 8 | 5020: | R | Pin: | 3 | 1 | 4 | 2 | 5 | PH 1) |

+V: Encoder power supply +V DC

Encoder power supply ground GND (0 V) 0 V:

0 $\ensuremath{V_{\text{sens}}}\xspace / + \ensuremath{V_{\text{sens}}}\xspace$: Using the sensor outputs of the encoder, the voltage

present can be measured and if necessary increased

accordingly.

 $\mathsf{A}, \overline{\mathsf{A}}:$ Incremental output channel A B, <u>B</u>: Incremental output channel B

0, $\overline{0}$: Reference signal

PH ±: Plug connector housing (shield)

Top view of mating side, male contact base



M12 connector, 5-pin



M12 connector, 8-pin



M23 connector, 12-pin



MIL connector, 10-pin



MIL connector, 7-pin



MIL connector, 6-pin



Sub-D connector, 9-pin

PH = shield is attached to connector housing.
 With type of connection H shield is not attached to connector housing.



Standard optical

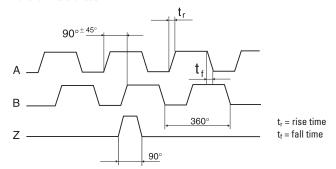
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Push-Pull / RS422 / Open collector

Special output signal formats

All Kübler encoders come standard with six channels where A leads B in the clockwise direction and the standard index is gated with A & B. The tolerance of the wave form affects the control and, in some cases, may affect the smoothness of system operation.

Wave form tolerances



| A leads B when the shaft is rotated in the clockwise direction viewing the shaft or collet end. This is the Kübler standard. This format applies to the pin key codes listed below. | | A |
|---|---|--------|
| Order code ① | | |
| | Z gated with A & B. This is the Kübler standard. Z is 90° wide. | z |
| 01 | Z gated with B. Z is 180° wide. | z z |
| 02 | Z gated with A. Z is 180° wide. | Z |
| 03 | Z ungated. Z is 330° to 360° wide. | z J |
| 08 | Z is 180° wide | z |
| 11 | Z is a minimum with of 270° (electrical degrees). | z |
| 13 | Z gated with \overline{B} . Z is 160° wide. | Z Z |

| direction view | It is rotated in the clockwise ving the shaft or collet end. oplies to the pin key codes | A A A B B B B |
|----------------|--|---------------|
| Order code 🛈 | | |
| 04 | Z gated with A & B. Z is 90° wide. | z |
| 05 | Z gated with B. Z is 180° wide. | z z |
| 06 | Z gated with A. Z is 180° wide. | Z |
| 07 | Z ungated. Z is 330° to 360° wide. | z J |
| 09 | Z gated with \overline{B} . Z is 160° wide. | Z |
| 10 | Z is a negative marker gated with B. Z is 180° wide. | z |
| 12 | Z has a minimum width of 270°. | Z |



Standard optical

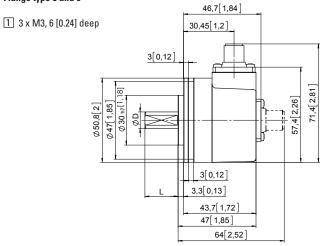
Sendix 5000 / 5020 (shaft / hollow shaft)

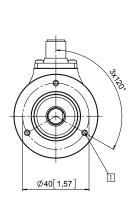
Push-pull / RS422 / Open collector

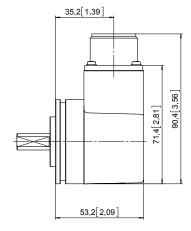
Dimensions shaft version

Dimensions in mm [inch]

Synchro flange, ø 50.8 [2] Flange type 5 and 6



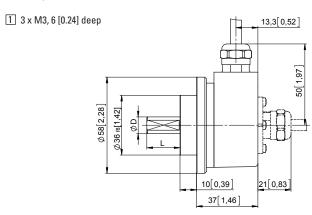


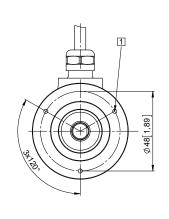


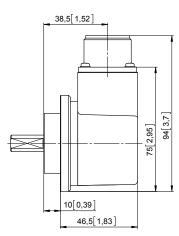
MIL-connector version

| D | Fit | L |
|-----------|-----|-----------|
| 6 [0.24] | h7 | 10 [0.39] |
| 8 [0.32] | h7 | 15 [0.59] |
| 10 [0.39] | f7 | 20 [0.79] |
| 12 [0.47] | h7 | 20 [0.79] |
| 1/4" | h7 | 5/8" |
| 3/8" | h7 | 5/8" |
| 1/4" | h8 | 7/8" |
| 3/8" | h8 | 7/8" |

Clamping flange, ø 58 [2.28] Flange type 7 and 8







MIL-connector version

| D | Fit | L |
|-----------|-----|-----------|
| 6 [0.24] | h7 | 10 [0.39] |
| 8 [0.32] | h7 | 15 [0.59] |
| 10 [0.39] | f7 | 20 [0.79] |
| 12 [0.47] | h7 | 20 [0.79] |
| 1/4" | h7 | 5/8" |
| 3/8" | h7 | 5/8" |
| 1/4" | h8 | 7/8" |
| 3/8" | h8 | 7/8" |

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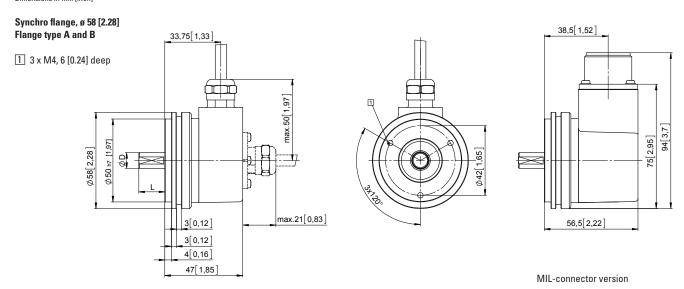
Standard optical

Sendix 5000 / 5020 (shaft / hollow shaft)

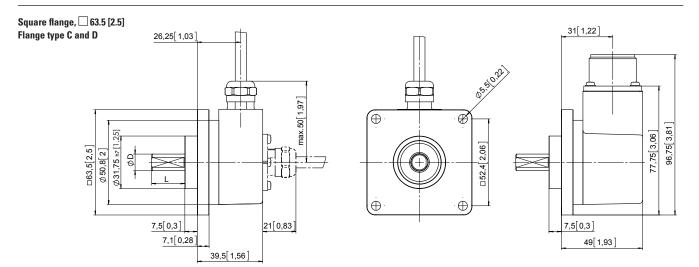
Push-pull / RS422 / Open collector

Dimensions shaft version

Dimensions in mm [inch]



| D | Fit | L |
|-----------|-----|-----------|
| 6 [0.24] | h7 | 10 [0.39] |
| 8 [0.32] | h7 | 15 [0.59] |
| 10 [0.39] | f7 | 20 [0.79] |
| 12 [0.47] | h7 | 20 [0.79] |
| 1/4" | h7 | 5/8" |
| 3/8" | h7 | 5/8" |
| 1/4" | h8 | 7/8" |
| 3/8" | h8 | 7/8" |



MIL-connector version

| D | Fit | L |
|-----------|-----|-----------|
| 6 [0.24] | h7 | 10 [0.39] |
| 8 [0.32] | h7 | 15 [0.59] |
| 10 [0.39] | f7 | 20 [0.79] |
| 12 [0.47] | h7 | 20 [0.79] |
| 1/4" | h7 | 5/8" |
| 3/8" | h7 | 5/8" |
| 1/4" | h8 | 7/8" |
| 3/8" | h8 | 7/8" |



Standard optical

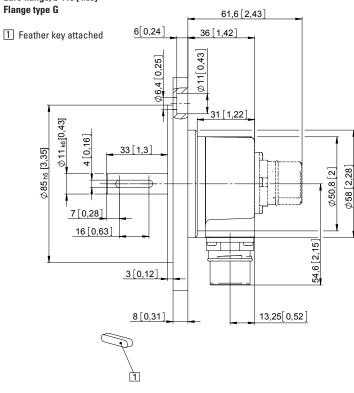
Sendix 5000 / 5020 (shaft / hollow shaft)

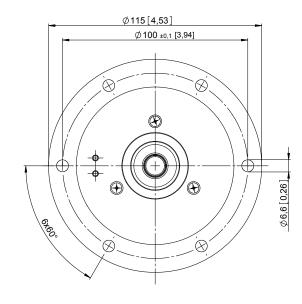
Push-pull / RS422 / Open collector

Dimensions shaft version

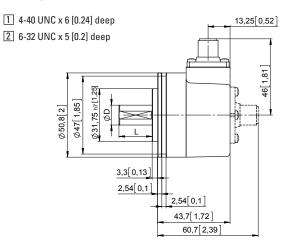
Dimensions in mm [inch]

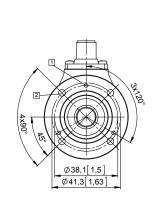
Euro flange, ø 115 [4.53]

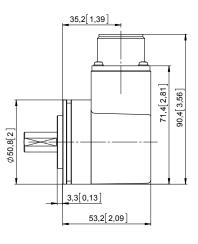




Servo flange, ø 50.8 [2] Flange type 1 and 2







MIL-connector version

| D | Fit | L |
|-----------|-----|-----------|
| 6 [0.24] | h7 | 10 [0.39] |
| 8 [0.32] | h7 | 15 [0.59] |
| 10 [0.39] | f7 | 20 [0.79] |
| 12 [0.47] | h7 | 20 [0.79] |
| 1/4" | h7 | 5/8" |
| 3/8" | h7 | 5/8" |
| 1/4" | h8 | 7/8" |
| 3/8" | h8 | 7/8" |



Standard optical

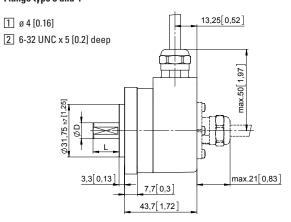
Sendix 5000 / 5020 (shaft / hollow shaft)

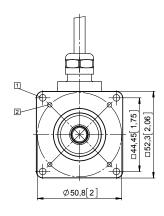
Push-pull / RS422 / Open collector

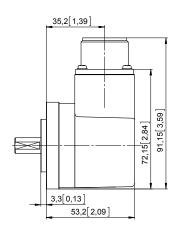
Dimensions shaft version

Dimensions in mm [inch]

Square flange, \square 52.3 [2.06] Flange type 3 and 4



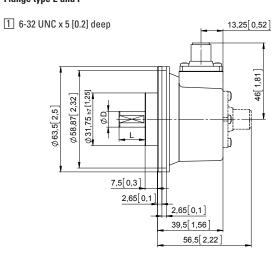


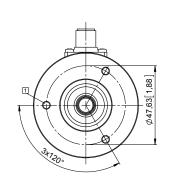


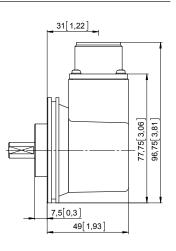
MIL-connector version

| Fit | L |
|-----|----------------------------------|
| h7 | 10 [0.39] |
| h7 | 15 [0.59] |
| f7 | 20 [0.79] |
| h7 | 20 [0.79] |
| h7 | 5/8" |
| h7 | 5/8" |
| h8 | 7/8" |
| h8 | 7/8" |
| | h7 h7 f7 h7 h7 h7 |

Servo flange, ø 63.5 [2.5] Flange type E and F







MIL-connector version

| D | Fit | L |
|-----------|-----|-----------|
| 6 [0.24] | h7 | 10 [0.39] |
| 8 [0.32] | h7 | 15 [0.59] |
| 10 [0.39] | f7 | 20 [0.79] |
| 12 [0.47] | h7 | 20 [0.79] |
| 1/4" | h7 | 5/8" |
| 3/8" | h7 | 5/8" |
| 1/4" | h8 | 7/8" |
| 3/8" | h8 | 7/8" |



Standard optical

Sendix 5000 / 5020 (shaft / hollow shaft)

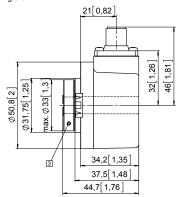
Push-pull / RS422 / Open collector

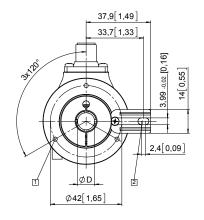
Dimensions hollow shaft version

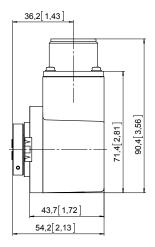
Dimensions in mm [inch]

Flange with spring element, long Flange type 1 and 2

- 1 3 x M3, 6 [0.24] deep
- 2 Slot spring element, recommendation: cylindrical pin DIN 7, ø 4 [0.16]
- 3 Recommended torque for the clamping ring 0.6 Nm







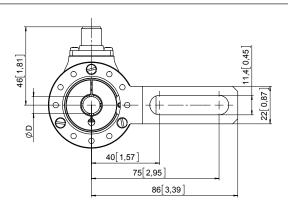
MIL-connector version

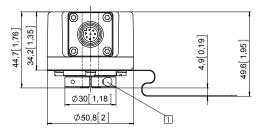
| D | Fit |
|-----------|-----|
| 6 [0.24] | H7 |
| 8 [0.32] | H7 |
| 10 [0.39] | H7 |
| 12 [0.47] | H7 |
| 14 [0.55] | H7 |
| 15 [0.59] | H7 |
| 1/4" | H7 |
| 3/8" | H7 |
| 1/2" | H7 |
| 5/8" | H7 |

Flange with torque stop, long Flange type 3 and 4

1 Recommended torque for the clamping ring 0.6 Nm

| D | Fit |
|-----------|-----|
| 6 [0.24] | H7 |
| 8 [0.32] | H7 |
| 10 [0.39] | H7 |
| 12 [0.47] | H7 |
| 14 [0.55] | H7 |
| 15 [0.59] | H7 |
| 1/4" | H7 |
| 3/8" | H7 |
| 1/2" | H7 |
| 5/8" | H7 |





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Standard optical

Sendix 5000 / 5020 (shaft / hollow shaft)

Push-pull / RS422 / Open collector

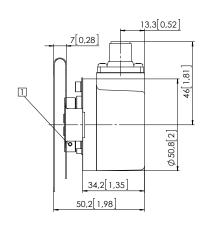
Dimensions hollow shaft version

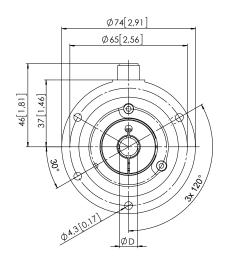
Dimensions in mm [inch]

Flange with stator coupling, ø 65 [2.56] Flange type 7 and 8

1 Recommended torque for the clamping ring 0.6 Nm

| D | Fit |
|-----------|-----|
| 6 [0.24] | H7 |
| 8 [0.32] | H7 |
| 10 [0.39] | H7 |
| 12 [0.47] | H7 |
| 14 [0.55] | H7 |
| 15 [0.59] | H7 |
| 1/4" | H7 |
| 3/8" | H7 |
| 1/2" | H7 |
| 5/8" | H7 |

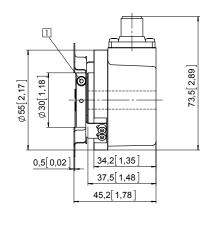


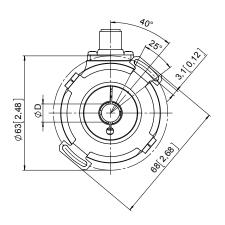


Flange with stator coupling, ø 63 [2.48] Flange type C and D

1 Recommended torque for the clamping ring 0.6 Nm

| D | Fit |
|-----------|-----|
| 6 [0.24] | H7 |
| 8 [0.32] | H7 |
| 10 [0.39] | H7 |
| 12 [0.47] | H7 |
| 14 [0.55] | H7 |
| 15 [0.59] | H7 |
| 1/4" | H7 |
| 3/8" | H7 |
| 1/2" | H7 |
| 5/8" | H7 |





Flange with stator coupling, ø 57.2 [2.25] Flange type 5 and 6 $\,$

1 Recommended torque for the clamping ring 0.6 Nm

| D | Fit |
|-----------|-----|
| 6 [0.24] | H7 |
| 8 [0.32] | H7 |
| 10 [0.39] | H7 |
| 12 [0.47] | H7 |
| 14 [0.55] | H7 |
| 15 [0.59] | H7 |
| 1/4" | H7 |
| 3/8" | H7 |
| 1/2" | H7 |
| 5/8" | H7 |

