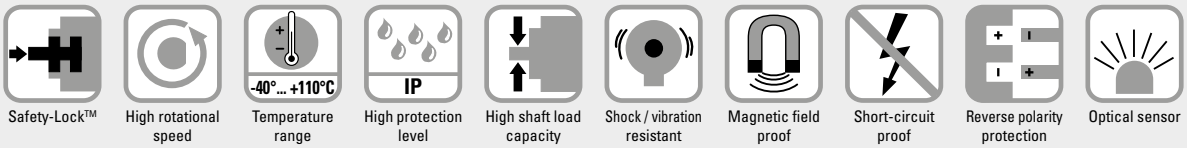
Standard optical, programmable | **Sendix K58-PR (shaft / hollow shaft)** | **Push-pull / RS422**

Highest performance and flexibility.

The new Sendix K58 Performance-Line encoder is particularly impressive due to the possibility of programming different parameters such as resolution, counting direction or zero pulse. The settings can be made before or after installation and enable a fast, direct response to changing or new requirements without having to replace the encoder with a new one.

Other optimized features include a higher temperature range and a resolution of up to 36,000 pulses per revolution.



Safety-Lock™ | High rotational speed | Temperature range | High protection level | High shaft load capacity | Shock / vibration resistant | Magnetic field proof | Short-circuit proof | Reverse polarity protection | Optical sensor

Features and benefits

- **Encoders can be customized quickly and easily at any time**
  Individually configurable parameters:
  - Pulse numbers up to 36,000 ppr
  - HTL or TTL output
  - Counting direction
  - Zero pulse settings (length, position, links)

- **High accuracy and reliability**
  State-of-the-art sensor technology with resolutions up to 36,000 ppr.

- **Prepared for the toughest operating conditions and a wide range of external influences**
  - Temperature range from -40 °C up to +110 °C
  - Protection class up to a maximum of IP67
  - Optimized EMC shielding concept
  - Advanced Safety Lock technology

- **Seamless integration into modern, digital networks**
  Prepared for use with digital type plate and digital twin for monitoring and maintaining machines and for a wide range of documentation tasks.
  Optimizing processes and increasing efficiency.

Standard optical, programmable | **Sendix K58-PR (shaft / hollow shaft)** | **Push-pull / RS422**

Order code Shaft version

K58I	.	0	PR	XX	.	XXXXX	.	2	XX	XX	XX	.	XX	X	X	X	.	XXXX	.	XX
Type				ⓐ		ⓑ		ⓒ	ⓓ	ⓔ	ⓕ		ⓖ	ⓗ	ⓘ	ⓚ		ⓛ		ⓜ

ⓐ *Interface*
PP = push-pull
RS = RS422

ⓑ *Pulse rate (1 ... 36000 ppr)*
XXXXX = 00001 ... 36000

ⓒ *Supply voltage*
2 = 5 ... 30 V DC

ⓓ *Version*
S1 = Shaft, with flat
S3 = Shaft, with flat and with feather key shaft slot (only in combination with shaft ø 11 mm ⓕ = 11)

ⓔ *Flange*
C5 = clamping flange
S5 = synchro flange
Q5 = square flange, □ 63.5 mm [2.5“]
E5 = Euro flange
V5 = servo flange

ⓕ *Shaft (ø x L), with flat*
06 = ø 6 x 10 mm [0.24 x 0.39“]
08 = ø 8 x 15 mm [0.32 x 0.59“]
10 = ø 10 x 20 mm [0.39 x 0.79“]
12 = ø 12 x 20 mm [0.47 x 0.79“]
1A = ø 1/4 x 5/8“ (6.35 x 15.875 mm)
1B = ø 1/4 x 7/8“ (6.35 x 22.225 mm)
2A = ø 3/8 x 5/8“ (9.525 x 15.875 mm)
2B = ø 3/8 x 7/8“ (9.525 x 22.225 mm)
11 = ø 11 x 33 mm [0.43 x 1.30“], with feather key shaft slot (only in combination with version ⓓ = S3)

ⓖ *Type of protection*
65 = IP65
6A = IP66/IP67

ⓗ *Position connection*
A = axial
R = radial

ⓘ *Type of connection*
2 = cable, TPE (only open-ended)
C = connector on the housing

ⓚ *Cable / connector type*
1 = cable, open ended
2 = M12 connector, 8-pin (only as connector on the housing)
3 = M12 connector, 5-pin (only as connector on the housing)
4 = M23 connector, 12-pin (only as connector on the housing)

ⓛ *Cable length (in dm)*
0010 = 1 m [3.28‘]
0020 = 2 m [6.56‘]
0030 = 3 m [9.84‘]
0050 = 5 m [13.12‘]
0100 = 10 m [32.80‘]

ⓜ *Optional: special formats for output signals*
XX = see page 8

Optional on request
- Surface protection salt spray tested
- Other cable lengths

Stock types:
K58I.OPRPP.01024.2S1C510.65RC2

Standard optical, programmable | **Sendix K58-PR (shaft / hollow shaft)** | **Push-pull / RS422**

Order code Hollow shaft

K58I	.	0	PR	XX	.	XXXXX	.	2	XX	XX	XX	.	XX	R	X	X	.	XXXX	.	XX
Type				ⓐ		ⓑ		ⓒ	ⓓ	ⓔ	ⓕ		ⓖ	ⓗ	ⓘ	ⓚ		ⓛ		ⓜ

ⓐ *Interface*
PP = push-pull
RS = RS422

ⓑ *Pulse rate (1 ... 36000 ppr)*
XXXXX = 00001 ... 36000

ⓒ *Supply voltage*
2 = 5 ... 30 V DC

ⓓ *Version*
H1 = through hollow shaft, clamping on flange side
H2 = through hollow shaft, clamping on flange side with pre-assembled isolation insert (only for hollow shafts < ø 14 mm)
C1 = through hollow shaft, clamping on the cover side
C2 = through hollow shaft, clamping on the cover side with pre-assembled isolation insert (only for hollow shafts < ø 14 mm)

ⓔ *Mounting type*
15 = spring element, long R 35.5 ... 37,9 mm [1.40 ... 1.49“]
25 = stator coupling ø 63 mm [2.48“]
35 = stator coupling ø 65 mm [2.56“]
45 = torque stop R 40 ... 75 mm [1.57 ... 2.95“]

ⓕ *Through hollow shaft*
06 = ø 6 mm [0.24“]
08 = ø 8 mm [0.32“]
10 = ø 10 mm [0.39“]
12 = ø 12 mm [0.47“]
14 = ø 14 mm [0.55“]
15 = ø 15 mm [0.59“]
1A = ø 1/4“ (6.35 mm)
2A = ø 3/8“ (9.525 mm)
3A = ø 1/2“ (12.7 mm)

ⓖ *Type of protection*
65 = IP65
6A = IP66/IP67

ⓗ *Position connection*
R = radial

ⓘ *Type of connection*
2 = cable, TPE (only open-ended)
C = connector on the housing

ⓚ *Cable / connector type*
1 = cable, open-ended
2 = M12 connector, 8-pin (only as connector on the housing)
3 = M12 connector, 5-pin (only as connector on the housing)
4 = M23 connector, 12-pin (only as connector on the housing)

ⓛ *Cable length (in dm)*
0010 = 1 m [3.28‘]
0020 = 2 m [6.56‘]
0030 = 3 m [9.84‘]
0050 = 5 m [13.12‘]
0100 = 10 m [32.80‘]

ⓜ *Optional: special formats for output signals*
XX = see page 8

Optional on request
- Surface protection salt spray tested
- Other cable lengths

Stock types:
K58I.OPRPP.01024.2H12515.65RC2

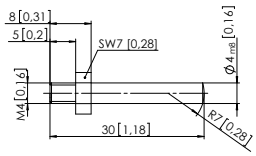
Standard optical, programmable	Sendix K58-PR (shaft / hollow shaft)	Push-pull / RS422

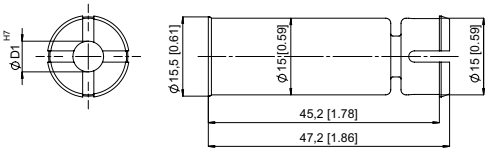
Mounting accessory for shaft encoders

		Order no.
Coupling	bellows coupling ø 19 mm [0.75“] for shaft 6 mm [0.24“]	**8.0000.1102.0606**
	bellows coupling ø 19 mm [0.75“] for shaft 10 mm [0.39“]	**8.0000.1102.1010**

Mounting accessory for hollow shaft encoders

Dimensions in mm [inch]

		Order no.
Torque pin, ø 4 mm for flange with spring element (mounting type ⓔ = 15 and 75)	with fixing thread 	**8.0010.4700.0000**

Isolation / adapter inserts for hollow shaft encoders with ø 15 mm ⓕ = 15 	**Thermal and electrical isolation of the encoders (Temperature range -40 °C ... +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.  Also available pre-assembled as version ⓓ = H2 or C2	D1	Isolation insert
		6 mm	**8.0010.4021.0000**
		8 mm	**8.0010.4020.0000**
		10 mm	**8.0010.4023.0000**
		12 mm	**8.0010.4025.0000**
		1/4“ (6.35 mm)	**8.0010.4022.0000**
		3/8“ (9.525 mm)	**8.0010.4024.0000**
		1/2“ (12.7 mm)	**8.0010.4026.0000**

Cables and connectors

		Order no.
Preassembled cables	M23 female connector with coupling nut, 12-pin,cw single ended 2 m TPE Kabel	**8.0000.6E01.0002**
	M12 female connector with coupling nut, 5-pin, A coded, straight single ended 2 m [6.56‘] PVC cable (only suitable up to max. +85°C)	**05.00.6081.2211.002M**
	M12 female connector with coupling nut,8-pin,A coded, straight single ended 2 m [6.56‘] PVC cable (only suitable up to max. +85°C)	**05.00.6041.8211.002M**
Connectors	M12 female connector with coupling nut, 5-pin, A coded, straight (plastic)	**05.B-8151-0/9**
	M12 female connector with coupling nut,8-pin,A coded, straight (metal)	**05.CMB 8181-0**
	M23 female connector with coupling nut, 12-pin,cw	**8.0000.5012.0000**

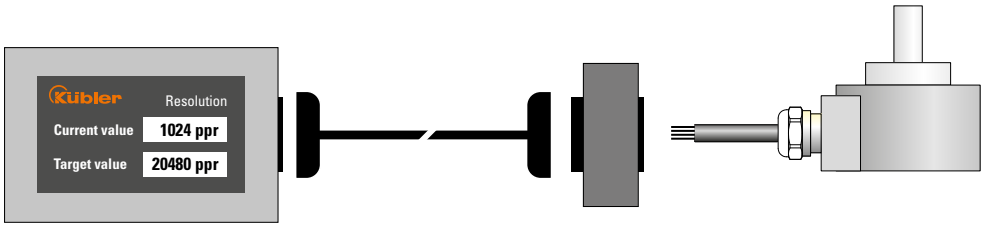
Further Kübler accessories can be found at: kuebler.com/accessories
Further Kübler cables and connectors can be found at: kuebler.com/connection-technology

Standard optical, programmable | **Sendix K58-PR (shaft / hollow shaft)** | **Push-pull / RS422**

Programming unit

		Order no.
Programming unit with touch display EP1000 	Programming device for PC-independent use, even in the field Dimensions 136 x 84 x 38 mm Connection Sub-D female connector Scope of delivery Programming unit, plug-in power supply unit	**8.0010.9000.1000** [1]

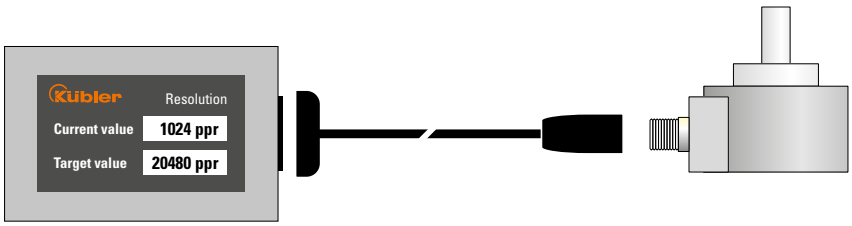
Accessories for programming - for encoders with cable connection



Programming unit with touch display | Cable with 2 x Sub-D connector | connection adapter | Encoder

		Order no.
Connection cable	For connecting programming unit with the connection adapter Sub-D male connector, 15-pin Sub-D female connector, 15-pin 2 m [6.56'] PVC cable	**05.00.60J1.L7L8.002M**
Connection adapter	For connecting the encoder Sub-D male connector, 15-pin Spring terminal, 3-pin	**8.0010.9000.0100**

Accessories for programming - for encoders with connector



Programming unit with touch display | Cable with Sub-D connector + M12/M23 connector | Encoder

		Order no.
Connection cable	**For encoders with M12 connector, 8-pin** Sub-D male connector, 15-pin M12 female connector with coupling nut, 8-pin, A coded, straight 2 m [6.56'] PVC cable	**8.0000.6000.0002.0112** [1]
	For encoders with M12 connector, 5-pin Sub-D male connector, 15-pin M12 female connector with coupling nut, 5-pin, A coded, straight 2 m [6.56'] PVC cable	**8.0000.6000.0002.0113**
	For encoders with M23 connector, 12-pin Sub-D male connector, 15-pin M23 female connector with coupling nut, 12-pin, straight 2 m [6.56'] PVC cable	**8.0000.6000.0002.0114**

1) Stock types

Standard optical, programmable | **Sendix K58-PR (shaft / hollow shaft)** | **Push-pull / RS422**

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	approx. 4.0 ... 4.3 x 10^{-6} kgm^2 (depending on shaft version)
	hollow shaft	approx. 4.3 ... 5.8 x 10^{-6} kgm^2 (depending on hollow shaft version)
Starting torque at 20 °C [68 °F]		
	IP65	< 0.01 Nm with IP65
	IP66/IP67	< 0.02 Nm with IP66/IP67
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] ... +110 °C [-40 °F [1] ... +230 °F]
Material	shaft	stainless steel
Shock resistance acc. to EN 60068-2-27		3000 m/s^2, 6 ms
Vibration resistance acc. to EN 60068-2-6		
	5 ... 8.7 Hz	±0.35 mm
	8.7 ... 200 Hz	30 m/s^2
	200 ... 2000 Hz	300 m/s^2

Approvals

UL compliant in accordance with	File no. E224618
CE compliant in accordance with	
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU

Electrical characteristics

Output circuit		**RS422** (TTL compatible)	**Push-pull** (HTL/TTL universal)
Order code ⓐ		**RS**	**PP**
Supply voltage		5 ... 30 V DC	5 ... 30 V DC
Power consumption (no load)		typ. 40 mA / max. 90 mA	typ. 40 mA / max. 90 mA
Permissible load / channel		max. +/- 20 mA	max. +/- 20 mA
Pulse frequency		max. 300 kHz	max. 300 kHz [2]
Signal level	HIGH	min. 2.5 V	min. 2.5 V
	LOW	max. 0.5 V	max. 0.5 V
Rising edge time t_r		max. 200 ns	max. 200 ns
Falling edge time t_f		max. 200 ns	max. 200 ns
Short circuit proof outputs [3]		yes [4]	yes [4]
Reverse polarity protection of the supply voltage		yes	yes

1) With connector: -40 °C [-40 °F], cable fixed: -30 °C [-22 °F], cable moved: -20 °C [-4 °F].
2) Max. recommended cable length 30 m [98.43'].
3) If supply voltage correctly applied.
4) 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.

Standard optical, programmable | **Sendix K58-PR (shaft / hollow shaft)** | **Push-pull / RS422**

Terminal assignment

Interface	Cable / connector type	Cable (isolate unused cores individually before initial start-up)										
PP, RS	1	Signal:	0 V	+V	0 Vsens	+Vsens	A	$\overline{A}$	B	$\overline{B}$	0	$\overline{0}$	⏚
		Core color:	WH	BN	QY/PK	RD/BU	GN	YE	GY	PK	BU	RD	shield

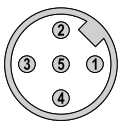
Interface	Cable / connector type	M12 connector, 5-pin						
PP, RS	3	Signal:	0 V	+V	A	B	0	⏚
		Pin:	1	2	3	4	5	PH

Interface	Cable / connector type	M12 connector, 8-pin								
PP, RS	2	Signal:	0 V	+V	A	$\overline{A}$	B	$\overline{B}$	0	$\overline{0}$	⏚
		Pin:	1	2	3	4	5	6	7	8	PH

Interface	Cable / connector type	M23 connector, 12-pin											
PP, RS	4	Signal:	0 V	+V	0 Vsens	+Vsens	A	$\overline{A}$	B	$\overline{B}$	0	$\overline{0}$	⏚
		Pin:	10	12	11	2	5	6	8	1	3	4	PH

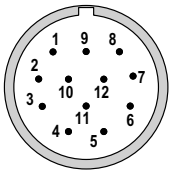
+V : Supply voltage encoder +V DC
0 V : Supply voltage encoder ground GND (0 V)
0 Vsens / +Vsens : Using the sensor outputs of the encoder, the voltage present can be measured and if necessary increased accordingly..
A, $\overline{A}$: Incremental output channel A
B, $\overline{B}$: Incremental output channel B
0, $\overline{0}$: Reference signal
PH ⏚ : Shield is connected to the connector housing

Top view of mating side, male contact base



M12 connector, 5-pin

M12 connector, 8-pin

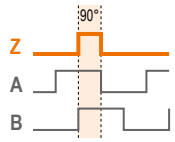
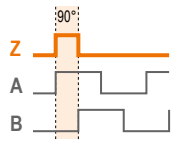
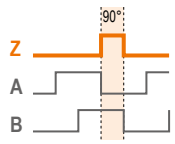
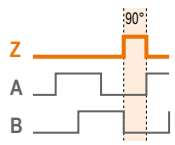
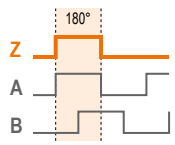
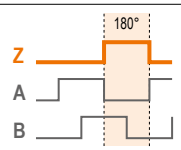
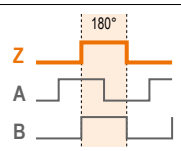
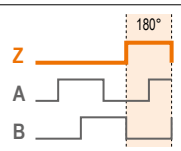
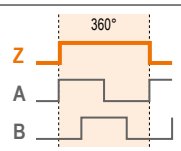
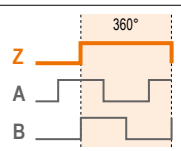


M23 connector, 12-pin

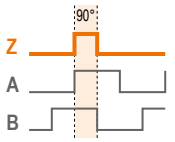
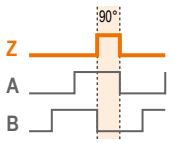
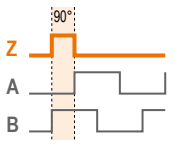
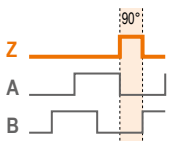
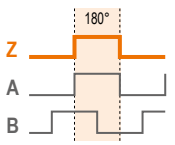
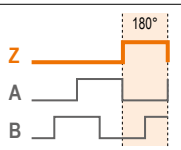
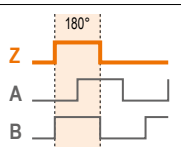
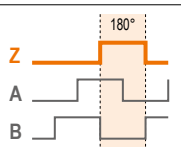
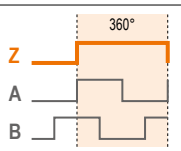
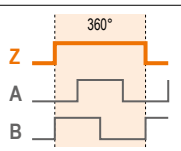
Standard optical, programmable | **Sendix K58-PR (shaft / hollow shaft)** | **Push-pull / RS422**

Special formats for output signals

A leading B
when the shaft is rotated clockwise with the flange side facing you.

Order code m		
Standard No specification in the order code	Z at A / B = 1 / 1 Z is 90° wide	
A1	Z at A / B = 1 / 0 Z is 90° wide	
A2	Z at A / B = 0 / 1 Z is 90° wide	
A3	Z at A / B = 0 / 0 Z is 90° wide	
A4	Z at A = 1 Z is 180° wide	
A5	Z at A = 0 Z is 180° wide	
A6	Z at B = 1 Z is 180° wide	
A7	Z at B = 0 Z is 180° wide	
A8	Z at A Z is 360° wide	
A9	Z at B Z is 360° wide	

B leading A
when the shaft is rotated clockwise with the flange side facing you.

Order code m		
B0	Z at A / B = 1 / 1 Z is 90° wide	
B1	Z at A / B = 1 / 0 Z is 90° wide	
B2	Z at A / B = 0 / 1 Z is 90° wide	
B3	Z at A / B = 0 / 0 Z is 90° wide	
B4	Z at A = 1 Z is 180° wide	
B5	Z at A = 0 Z is 180° wide	
B6	Z at B = 1 Z is 180° wide	
B7	Z at B = 0 Z is 180° wide	
B8	Z at A Z is 360° wide	
B9	Z at B Z is 360° wide	

Standard optical, programmable | **Sendix K58-PR (shaft / hollow shaft)** | **Push-pull / RS422**

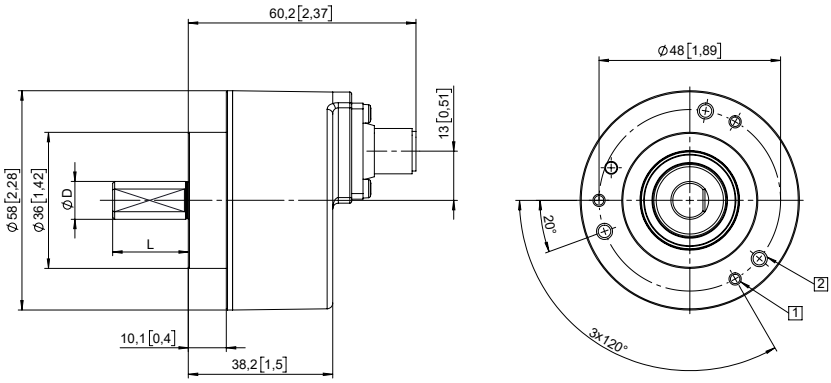
Dimensions shaft version

Dimensions in mm [inch]

Clamping flange, ø 58 [2.28] flange type ⓔ = C5

Connection, axial — position connection ⓗ = A
Connector on the housing — type of connection ⓘ = C
M12 connector, 5- or 8-pin — connector type ⓚ = 2 or 3

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

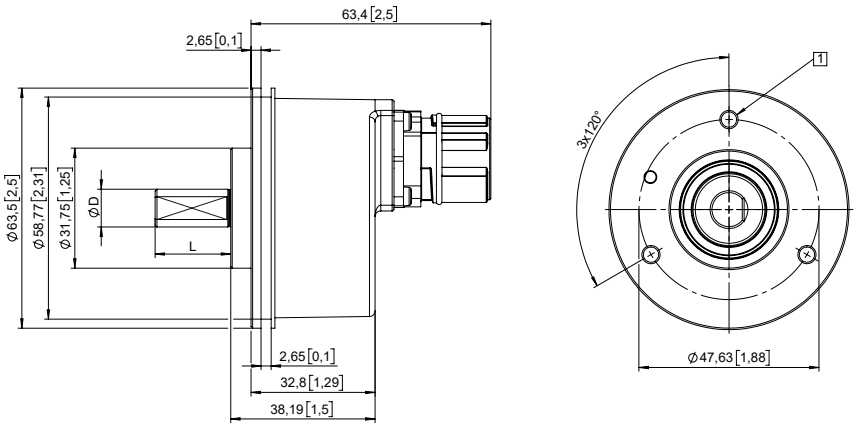


D	Fit	L
6 [0.24]	f7	10 [0.39]
8 [0.32]	f7	15 [0.59]
10 [0.39]	f7	20 [0.79]
12 [0.47]	f7	20 [0.79]
1/4"	f7	5/8"
3/8"	f7	5/8"
1/4"	f7	7/8"
3/8"	f7	7/8"

Servo flange, ø 58 [2.28] flange type ⓔ = V5

Connection, axial — position connection ⓗ = A
Connector on the housing — type of connection ⓘ = C
M23 connector, 12-pin — connector type ⓚ = 4

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



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

Standard optical, programmable | **Sendix K58-PR (shaft / hollow shaft)** | **Push-pull / RS422**

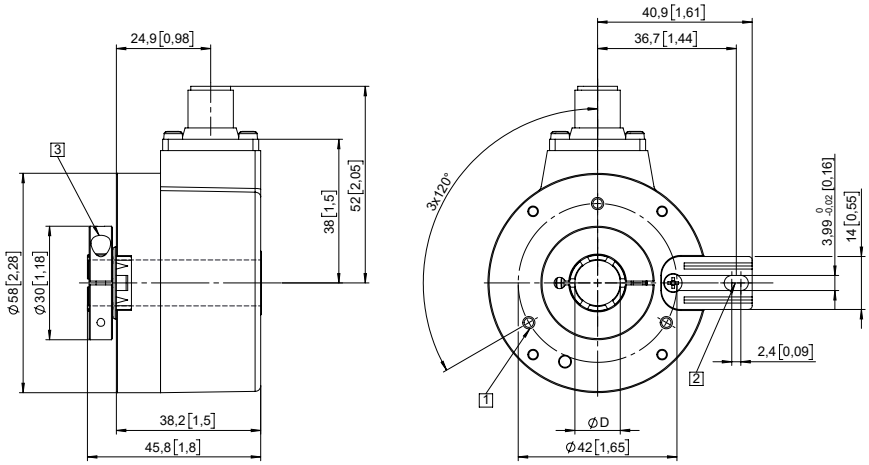
Dimensions hollow shaft version

Dimensions in mm [inch]

Spring element, long
R 35.5 ... 37,9 [1.40 ... 1.49]
Connection, radial
Connector on the housing
M12 connector, 5- or 8-pin

mounting type e = 15
position connection h = R
type of connection i = C
connector type k = 2 or 3

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

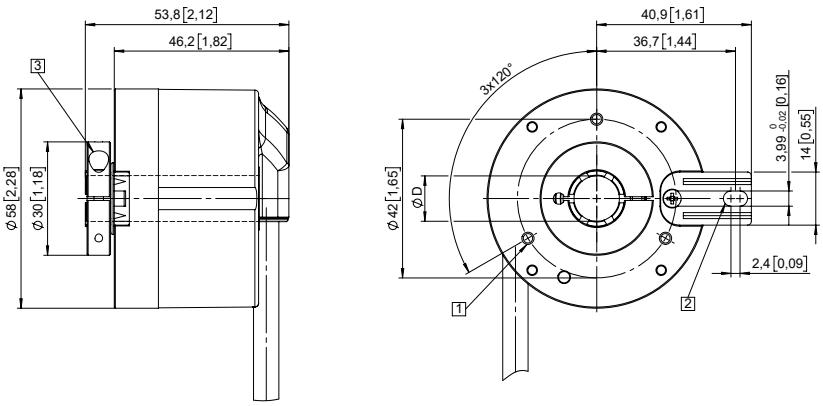


D	Fit
6 [0.24]	H7
8 [0.32]	H7
10 [0.39]	H7
12 [0.47]	H7
14 [0.55]	H7
15 [0.59]	H7
1/4“	H7
3/8“	H7
1/2“	H7
Recommended fit for shaft on customer side is g6.	

Spring element, long
R 35.5 ... 37,9 [1.40 ... 1.49]
Connection, tangential
Cable connection
Open-ended cable

mounting type e = 15
position connection h = T
type of connection i = 1
connector type k = 1

1 3 x M3, 6 [0.24] deep
2 Slot spring element, recommendation: torque pin DIN 7, ø 4 [0.16]
3 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
Recommended fit for shaft on customer side is g6.	

Standard optical, programmable | **Sendix K58-PR (shaft / hollow shaft)** | **Push-pull / RS422**

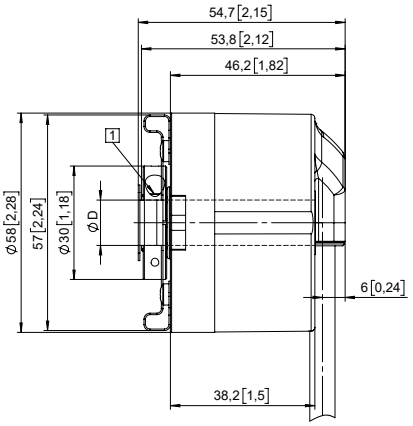
Dimensions hollow shaft version

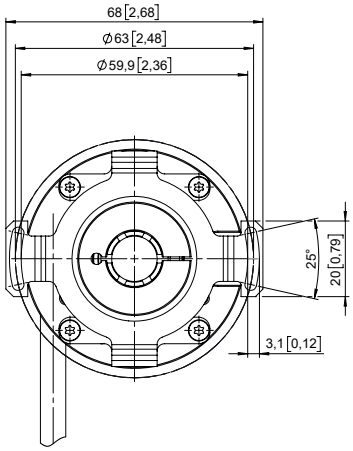
Dimensions in mm [inch]

Stator coupling ø 63 [2.48] mounting type ⓔ = 25

Connection, tangential — position connection ⓗ = T
Cable connection — type of connection ⓘ = 1
Open-ended cable — connector type ⓚ = 1

[1] Recommended torque for the clamping ring 0.6 Nm



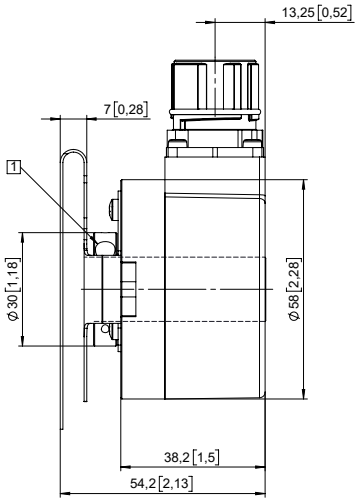


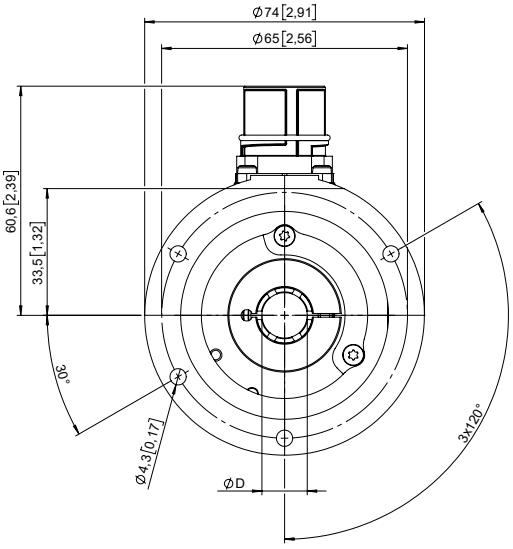
D	Fit
6 [0.24]	H7
8 [0.32]	H7
10 [0.39]	H7
12 [0.47]	H7
14 [0.55]	H7
15 [0.59]	H7
1/4“	H7
3/8“	H7
1/2“	H7
Recommended fit for shaft on customer side is g6.	

Stator coupling, ø 65 [2.56] mounting type ⓔ = 35

Connection, radial — position connection ⓗ = R
Connector on the housing — type of connection ⓘ = C
M23 connector, 12-pin — connector type ⓚ = 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
Recommended fit for shaft on customer side is g6.	