Sine wave outputs, optical | 5804 / 5824 (Shaft / Hollow shaft) | SinCos

The incremental encoders type 5804 / 5824 offer a SinCos interface.

They are ideal for use in drive engineering.

High rotational speed | Temperature | High IP value | High shaft load capacity | Shock / vibration resistant | Magnetic field proof | Short-circuit proof | Optical sensor

High performance

- High resolution up to 5000 PPR
- Maximum speed up to 12000 RPM
- High IP protection up to max. IP66

Adaptable

- Shaft or hollow shaft version
- With cable or connector

Order code Shaft version

8.5804 . X X X X . XXXX
Type — a b c d — e

a *Flange*
1 = clamping flange ø 58 mm
2 = synchro flange ø 58 mm

b *Shaft (ø x L), with flat*
1 = ø 6 x 10 mm
2 = ø 10 x 20 mm

c *Output circuit / Power supply*
1 = SinCos, 1 Vss (inverted signal) / 5 V DC
2 = SinCos, 1 Vss (inverted signal) / 10 ... 30 V DC

d *Type of connection*
1 = axial cable (1 m TPE cable)
2 = radial cable (1 m TPE cable)
3 = M23 connector, 12-pin, axial, without mating connector
5 = M23 connector, 12-pin, radial, without mating connector

e *Pulse rate*
25, 50, 60, 100, 125, 200, 250, 256, 300, 360, 500, 512, 600, 720, 800, 1000, 1024, 1200, 1250, 1500, 2000, 2048, 2500, 3000, 3600, 4000, 4096, 5000
(e.g. 100 pulses => 0100)
Other pulse rates on request

Order code Hollow shaft

8.5824 . X X X X . XXXX
Type — a b c d — e

a *Flange*
1 = with through shaft
2 = with blind hollow shaft [1)]
3 = with through shaft and stator coupling
4 = with blind hollow shaft [1)] and stator coupling

b *Hollow shaft*
1 = ø 6 mm without seal
2 = ø 6 mm with seal
3 = ø 8 mm without seal
4 = ø 8 mm with seal
5 = ø 10 mm without seal
6 = ø 10 mm with seal
7 = ø 12 mm without seal
8 = ø 12 mm with seal

c *Output circuit / Power supply*
1 = SinCos, 1 Vss (inverted signal) / 5 V DC
2 = SinCos, 1 Vss (inverted signal) / 10 ... 30 V DC

d *Type of connection*
1 = radial cable (1 m TPE cable)
2 = M23 connector, 12-pin, radial, without mating connector

e *Pulse rate*
25, 50, 60, 100, 125, 200, 250, 256, 300, 360, 500, 512, 600, 720, 800, 1000, 1024, 1200, 1250, 1500, 2000, 2048, 2500, 3000, 3600, 4000, 4096, 5000
(e.g. 100 pulses => 0100)
Other pulse rates on request

1) Insertion depth ≤ 30 mm

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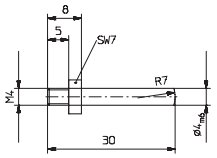
Mounting accessory for shaft encoders

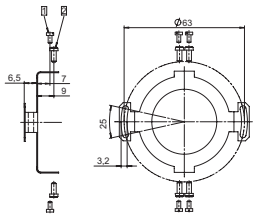
Coupling	Bellows coupling ø 19 mm for shaft 6 mm	**8.0000.1101.0606**
	Bellows coupling ø 19 mm for shaft 10 mm	**8.0000.1101.1010**

Mounting accessory for hollow shaft encoders

Cylindrical pin, long for torque stops	With fixing thread	**8.0010.4700.0000**



Stator coupling		**8.0010.4D00.0000**



Connection Technology

Connector, self-assembly	M23	**8.0000.5012.0000**
Cordset, pre-assembled with 2 m PVC cable	M23	**8.0000.6901.0002**

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.

Mechanical characteristics

Speed	shaft	max. 12000 min^{-1}
	hollow shaft without shaft seal	max. 12000 min^{-1}
	hollow shaft with shaft seal [1]	max. 6000 min^{-1}
Rotor moment of inertia	shaft	approx. 1.8 x 10^{-6} kgm^2
	hollow shaft	approx. 6.0 x 10^{-6} kgm^2
Starting torque	without seal	< 0.01 Nm
	with seal	< 0.05 Nm
Load capacity of shaft	radial	80 N
	axial	40 N
Weight		approx. 0.4 kg
Protection acc. to EN 60 529	shaft	IP65
	hollow shaft without seal	IP40
	hollow shaft with seal	IP66
Working temperature range	without seal	-20°C ... +85°C [2]
	with seal	-20°C ... +80°C [2]
Materials	shaft	stainless steel H7
Shock resistance acc. EN 60068-2-27		1000 m/s^2, 6 ms
Vibration resistance acc. EN 60068-2-6		100 m/s^2, 10 ... 2000 Hz

Electrical characteristics

Output circuit	SinCos, U = 1 Vss	SinCos, U = 1 Vss
Power supply	5 V (±5 %)	10 ... 30 V DC
Power consumption with inverted signal (no load)	typ. 65 mA / max. 110 mA	typ. 65 mA / max. 110 mA
-3 dB frequency	≤ 180 kHz	≤ 180 kHz
Signal level		
channels A/B	1 Vss (±20%)	1 Vss (±20%)
channel 0	0.1 ... 1.2 V	0.1 ... 1.2 V
Short circuit proof outputs [3]	yes	yes
Reverse connection of the supply voltage	no	yes

CE compliant acc. to EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3

1) For continuous operation max. 3000 min^{-1}, ventilated
2) 70°C for cable version
3) If supply voltage correctly applied.

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Terminal assignment

Signal		0 V	0 V Sensor [2]	+UB	+U_B Sensor [2]	A	$\overline{A}$	B	$\overline{B}$	0	$\overline{0}$	shield
12-pin connector	Pin	10	11	12	2	5	6	8	1	3	4	PH [1]
Cable colour		WH 0.5 mm²	WH	BN 0.5 mm²	BN	GN	YE	GY	PK	BU	RD	

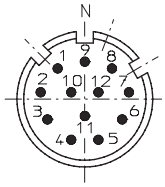
1) PH = Shield is attached to connector housing
2) The sensor cables are connected to the supply voltage internally. If long feeder cables are involved they can be used to adjust or control the voltage at the encoder.

If the circuits are not being used, then they should be individually isolated and not connected.

Using RS 422 outputs and long cable distances, a wave impedance has to be applied at each cable end.

Isolate unused outputs before initial start-up.

Top view of mating side, male contact base

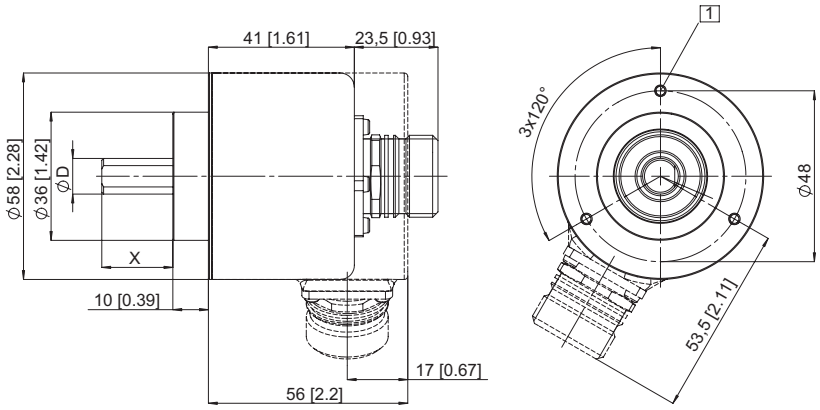


12-pin connector

Dimensions shaft version

Clamping flange, ø 58 mm
Flange type 1

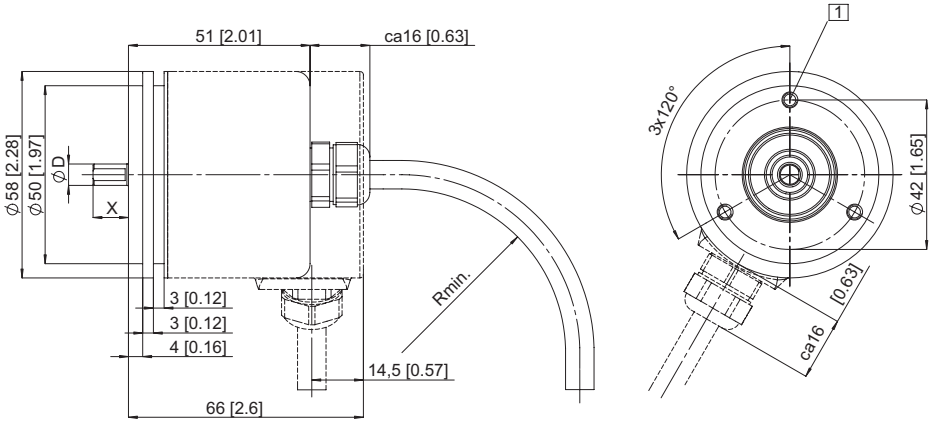
1 3 x M3, 5 [0.2] deep



Clamping flange, ø 58 mm
Flange type 2

1 3 x M3, 5 [0.2] deep

$R_{min.}$:
- securely installed: 55 mm
- flexibly installed: 70 mm



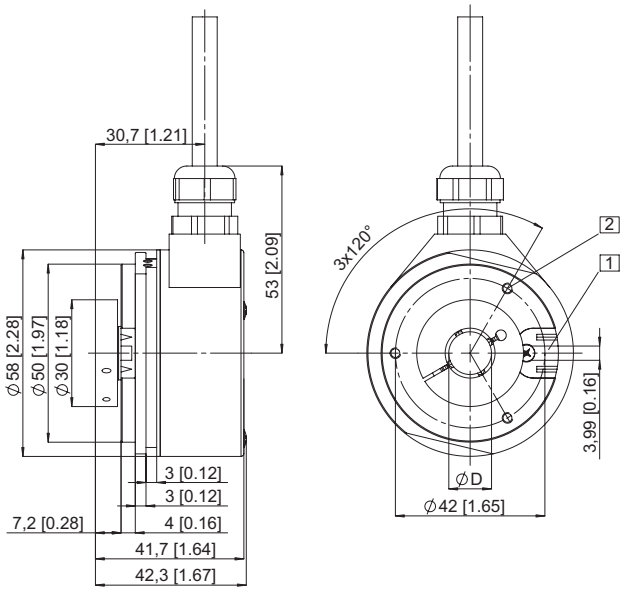
Sine wave outputs, optical | **5804 / 5824 (Shaft / Hollow shaft)** | **SinCos**

Dimensions hollow shaft version

Flange type 1 and 2

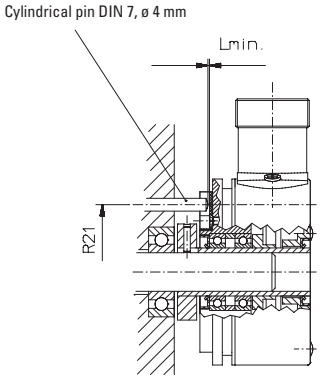
1 Torque stop slot,
Recommendation: Cylindrical pin DIN7, ø 4 mm

2 M3, 5 [0.2] deep

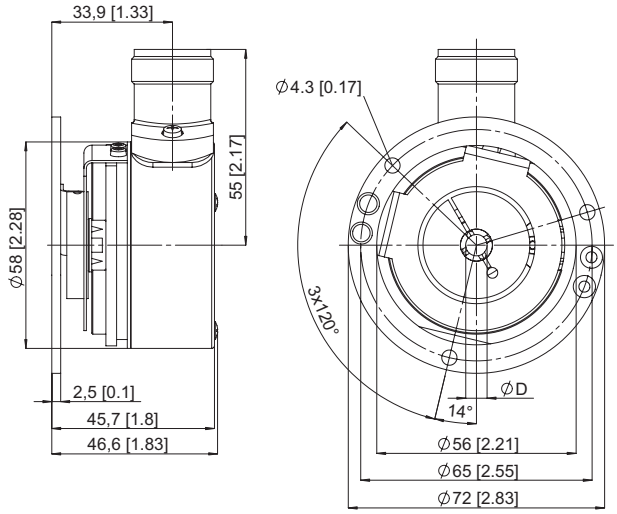


Mounting advice:

1) The flanges and shafts of the encoder and drive should not both be rigidly coupled together at the same time.
2) When mounting a hollow shaft encoder, we recommend using a torque stop pin that fits into the torque stop slot or a stator coupling.
3) When mounting the encoder ensure the dimension $L_{min.}$ is greater than the axial maximum play of the drive. Otherwise there is a danger that the device could mechanically seize up.



Flange type 3 and 4



Note:
Minimum insertion depth 1.5 x $D_{hollow\ shaft}$