

Absolute encoders - singleturn

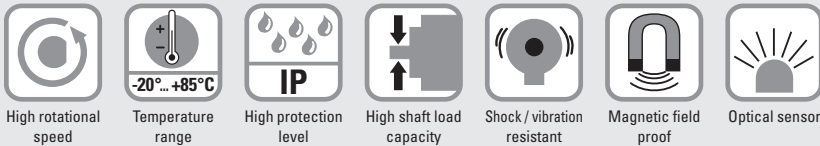
Standard optical

5852 / 5872 (shaft / hollow shaft)

Parallel, highspeed



The singleturn encoders 5852 and 5872 with parallel interface and optical technology achieve a very high refresh rate of the position data of 40 kHz with a resolution of max. 14 bits.



Adaptable

- Power supply 5 V DC or 10 ... 30 V DC.
- Cable or connector M23.

Fast

- Refresh rate of the position data 40 kHz.

Order code Shaft version

8.5852 . **XX** **XX** . **XXX** **1**

<p>a Flange, shaft 12 = clamping flange, ø 58 mm [2.28"] with shaft 10 x 20 mm [0.39 x 0.79"] 21 = synchro flange, ø 58 mm [2.28"] with shaft 6 x 10 mm [0.24 x 0.39"]</p>	<p>b Interface / power supply 1 = parallel (CMOS-TTL) / 5 V DC 3 = parallel / 10 ... 30 V DC</p> <p>c Type of connection 1 = axial cable, 1 m [3.28'] PVC 2 = radial cable, 1 m [3.28'] PVC 3 = axial M23 connector, 17-pin, without mating connector 5 = radial M23 connector, 17-pin, without mating connector</p>	<p>d Code type and division E03 = 360 gray-excess E01 = 1000 gray-excess E14 = 1440 gray-excess E20 = 2000 gray-excess G10 = 1024 (10 bit) gray G12 = 4096 (12 bit) gray G13 = 8192 (13 bit) gray G14 = 16384 (14 bit) gray</p>	<p><i>Optional on request</i> - other code types - other divisions</p>
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Order code Hollow shaft

8.5872 . **X** **X** **X** **X** . **XXX** **1**

<p>a Flange 1 = with spring element, short 3 = with stator coupling, ø 65 mm [2.56"]</p> <p>b Through hollow shaft 6 = ø 10 mm [0.39"] 8 = ø 12 mm [0.47"]</p>	<p>c Interface / power supply 1 = parallel (CMOS-TTL) / 5 V DC 3 = parallel / 10 ... 30 V DC</p> <p>d Type of connection 1 = radial cable, 1 m [3.28'] PVC 2 = radial M23 connector, 17-pin, without mating connector</p>	<p>e Code type and division E03 = 360 gray-excess E01 = 1000 gray-excess E14 = 1440 gray-excess E20 = 2000 gray-excess G10 = 1024 (10 bit) gray G12 = 4096 (12 bit) gray G13 = 8192 (13 bit) gray G14 = 16384 (14 bit) gray</p>	<p><i>Optional on request</i> - other code types - other divisions</p>
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Reverse count direction

(Only with output type 3 and up to 13 bit gray code available)

Normal operation:

Rising code values when shaft turning clockwise (cw). Falling code values when shaft turning counterclockwise (ccw), top view of shaft.

Reverse operation:

Output MSB inverted (pin 16) instead of output MSB (pin 3) connected. Falling code values when shaft turning clockwise (cw). Rising code values when shaft turning counterclockwise (ccw), top view of shaft.

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Mounting accessory for shaft encoders		Order no.
Coupling	bellows coupling \varnothing 19 mm [0.75"] for shaft 6 mm [0.24"]	8.0000.1102.0606
	bellows coupling \varnothing 19 mm [0.75"] for shaft 10 mm [0.39"]	8.0000.1102.1010
Mounting accessory for hollow shaft encoders		Order no.
Cylindrical pin, long for flange with spring element (flange type 1)	Dimensions in mm [inch]	
	with fixing thread	8.0010.4700.0000
Connection technology		Order no.
Cordset, pre-assembled	M23 female connector with coupling nut, 17-pin 2 m [6.56'] PVC cable	8.0000.6741.0002
Connector, self-assembly (straight)	M23 female connector with coupling nut, 17-pin	8.0000.5042.0000

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			Electrical characteristics (parallel interface)		
Maximum speed	shaft version	12000 min ⁻¹	Power supply (+V)	5 V DC ($\pm 5\%$)	10 ... 30 V DC
	hollow shaft version	6000 min ⁻¹ 1)	Output driver	CMOS-TTL	Push-pull
Mass moment of inertia	shaft version	approx. 1.8×10^{-6} kgm ²	Power consumption (no load)	typ. 40 mA	100 mA
	hollow shaft version	approx. 6×10^{-6} kgm ²		max. 75 mA	159 mA
Starting torque at 20°C [68°F]	shaft version	< 0.01 Nm	Permissible load / channel		
	hollow shaft version	< 0.05 Nm	max. +0.5 / -2.0 mA	max. +/- 10 mA	
Load capacity of shaft	radial	80 N	Refresh rate of the position data		
	axial	40 N	40000/s	40000/s	
Weight		approx. 0.4 kg [14.11 oz]	Signal level	HIGH	min. 3.4 V
Protection acc. to EN 60529	shaft version	IP65		LOW	max. 0.3 V
	hollow shaft version	IP66			max. 1.8 V
Working temperature range		-20°C ... +85°C 2)	Rising edge time t_r (without cable)		
		[-4°F ... +185°F] 2)	max. 0.2 μ s	max. 1 μ s	
Material	shaft / hollow shaft	stainless steel	Falling edge time t_f (without cable)		
			max. 0.2 μ s	max. 1 μ s	
Shock resistance acc. EN 60068-2-27		2500 m/s ² , 6 ms	Short circuit proof outputs 3)		
Vibration resistance acc. EN 60068-2-6		100 m/s ² , 10 ... 2000 Hz	yes	yes	
			no	yes	
			Reverse polarity protection of the power supply		
			UL approval		
			file 224618		
			CE compliant acc. to		
			EMC guideline 2014/30/EU		
			RoHS guideline 2011/65/EU		

1) For continuous operation max. 1500 min⁻¹.

2) 70°C [158°F] for 14 bit version.

3) If power supply +V correctly applied.

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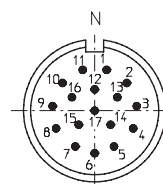
Terminal assignment

Interface	Type of connection	Cable (isolate unused wires individually before initial start-up)																	
1, 3	5852: 1, 2	Signal	0 V	+V	1	2	3	4	5	6	7	8	9	10	11	12	13	14 (V/R) ¹⁾	
	5872: 1	Cable color:	WH	BN	GN	YE	GY	PK	BU	RD	BK	VT	GY	RD	WH	BN	WH	YE	BN

Interface	Type of connection	M23 connector, 17-pin																			
1, 3	5852: 3, 5	Signal	0 V	+V	1	2	3	4	5	6	7	8	9	10	11	12	13	1 (V/R) ¹⁾			
	5872: 2	Pin:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	PH	

- +V: Encoder power supply +V DC
- 0 V: Encoder power supply ground GND (0 V)
- Signal: 1 = MSB; 2 = MSB-1; 3 = MSB-2 usw.
- VR: Up/down input. As long as this input is active, decreasing code values are transmitted when shaft turning
- PH \perp : Plug connector housing (shield)

Top view of mating side, male contact base



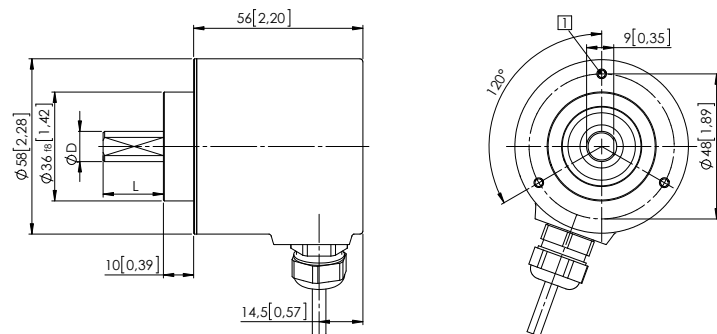
M23 connector, 17-pin (parallel)

Dimensions shaft version

Dimensions in mm [inch]

**Clamping flange, \varnothing 58 [2.28]
with shaft, \varnothing 10 [0.39]
Flange type 12**

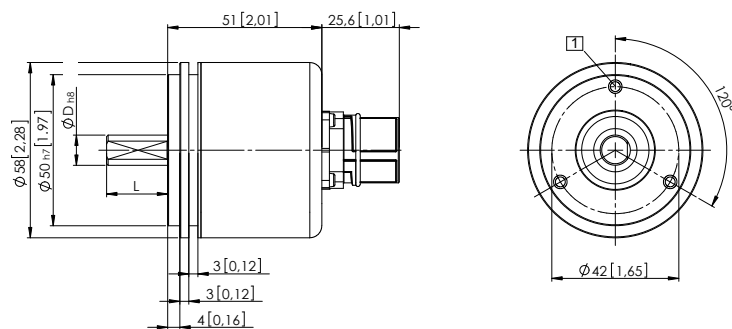
- 1) 3 x M3, 5 [0.20] deep



D	Fit	L
6 [0.24]	h8	10 [0.39]
10 [0.39]	f7	20 [0.79]

**Synchro flange, \varnothing 58 [2.28]
with shaft, \varnothing 6 [0.24]
Flange type 21**

- 1) 3 x M4, 10 [0.39] deep



D	Fit	L
6 [0.24]	h8	10 [0.39]
10 [0.39]	f7	20 [0.79]

1) V/R only with output circuit 3 up to max. 13 bit. MSB to change the count direction.

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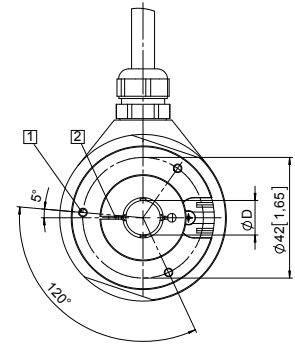
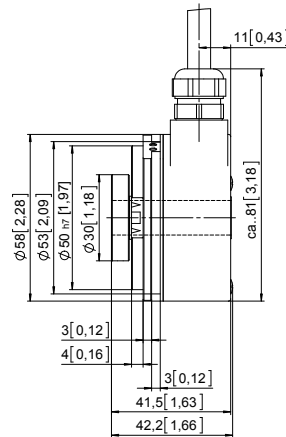
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Dimensions hollow shaft version

Dimensions in mm [inch]

Flange with spring element, short Flange type 1

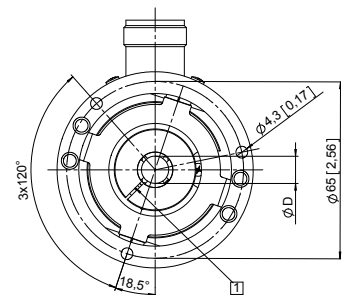
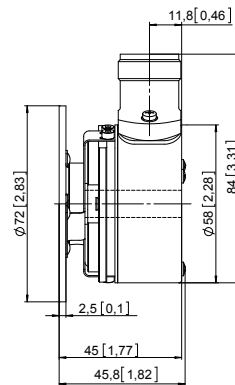
- 1 3 x M3, 5 [0.20] deep
- 2 Recommended torque for the clamping ring 0.6 Nm



D	Fit
10 [0.39]	H7
12 [0.47]	H7

Flange with stator coupling, ø 65 [2.56] Flange type 3

- 1 Recommended torque for the clamping ring 0.6 Nm



D	Fit
10 [0.39]	H7
12 [0.47]	H7

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