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.

High rotational speed | Temperature range (-20°...+85°C) | High protection level (IP) | High shaft load capacity | Shock / vibration resistant | Magnetic field proof | Optical sensor

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 X X . XXX 1
Type — a b c — d

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"]

c *Interface / Power supply*
1 = Parallel (CMOS-TTL) / 5 V DC
3 = Parallel / 10 ... 30 V DC

d *Type of connection*
1 = axial cable, 1 m [3.28'] PVC
2 = radial cable, 1 m [3.28'] PVC
3 = M23 connector, axial, 17-pin, without mating connector
5 = M23 connector, radial, 17-pin, without mating connector

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
(Other divisions and code types on request)

Order code Hollow shaft

8.5872 . X X X X . XXX 1
Type — a b c d — e

a *Flange*
1 = with spring element short
3 = with stator coupling, ø 65 mm [2.56"]

b *Hollow shaft*
6 = ø 10 mm [0.39"]
8 = ø 12 mm [0.47"]

c *Interface / Power supply*
1 = Parallel (CMOS-TTL) / 5 V DC
3 = Parallel / 10 ... 30 V DC

d *Type of connection*
1 = radial cable, 1 m [3.28'] PVC
2 = M23 connector, radial, 17-pin, without mating connector

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
(Other divisions and code types on request)

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.

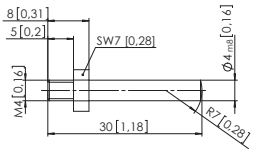
Absolute Encoders - Singleturn

Standard Optical | **5852 / 5872 (Shaft / Hollow shaft)** | **Parallel, Highspeed**

Mounting accessory for shaft encoders

		Order No.
Coupling	Bellows coupling ø 19 mm [0.75"] for shaft 6 mm [0.24"]	**8.0000.1101.0606**
	Bellows coupling ø 19 mm [0.75"] for shaft 10 mm [0.39"]	**8.0000.1101.1010**

Mounting accessory for hollow shaft encoders

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

Connection technology

Connector, self-assembly (straight)	M23 female connector with coupling nut, 17-pin	**8.0000.5042.0000**
Cordset, pre-assembled	M23 female connector with coupling nut, 2 m [6.56'] PVC cable	**8.0000.6741.0002**

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

Technical data

Mechanical characteristics

Speed	shaft version	max. 12000 min^{-1}
	hollow shaft version	max. 6000 min^{-1} 1)
Moment of inertia	shaft version	approx. 1.8 x 10^{-6} kgm^2
	hollow shaft version	approx. 6 x 10^{-6} kgm^2
Starting torque at 20°C [68°F]	shaft version	< 0.01 Nm
	hollow shaft version	< 0.05 Nm
Load capacity of shaft	radial	80 N
	axial	40 N
Weight		approx. 0.4 kg [14.11 oz]
Protection acc. to EN 60529	shaft version	IP65
	hollow shaft version	IP66
Working temperature range		-20°C ... +85°C 2) [-4°F ... +185°F] 2)
Material	shaft / hollow shaft	stainless steel
Shock resistance acc. EN 60068-2-27		2500 m/s^2, 6 ms
Vibration resistance acc. EN 60068-2-6		100 m/s^2, 10...2000 Hz

Electrical characteristics (parallel interface)

Power supply (+V)		5 V DC (± 5 %)	10 ... 30 V DC
Output driver		CMOS-TTL	Push-Pull
Power consumption (no load)	typ.	40 mA	100 mA
	max.	75 mA	159 mA
Permissible load / channel		max. +0.5 / -2.0 mA	max. +/-10 mA
Refresh rate of the position data		40.000/s	40.000/s
Signal level	HIGH	min. 3.4 V	min. +V - 2.8 V
	LOW	max. 0.3 V	max. 1.8 V
Rising edge time t_r (without cable)		max. 0.2 µs	max. 1µs
Falling edge time t_f (without cable)		max. 0.2 µs	max. 1µs
Short circuit proof outputs 3)		yes	yes
Reverse polarity protection of the power supply		no	yes
UL approval		File 224618	
CE compliant acc. to		EMC guideline 2004/108/EC	
RoHS compliant acc. to		guideline 2002/95/EC	

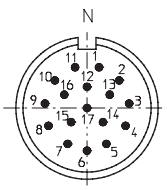
Terminal assignment

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) 4)	
	5872:	1	Cable colour:	WH	BN	GN	YE	GY	PK	BU	RD	BK	VT	GY PK	RD BU	WH GN	BN GN	WH YE	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) 4)		⏚
	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 ⏚: Plug connector housing (Shield)

Top view of mating side, male contact base



M23 connector, 17-pin (parallel)

1) For continous operation max. 1500 min^{-1}
2) 70°C [158°F] for 14 bit version
3) If power supply +V correctly applied.
4) V/R only with output circuit 3 up to max. 13 bit. MSB to change the count direction.

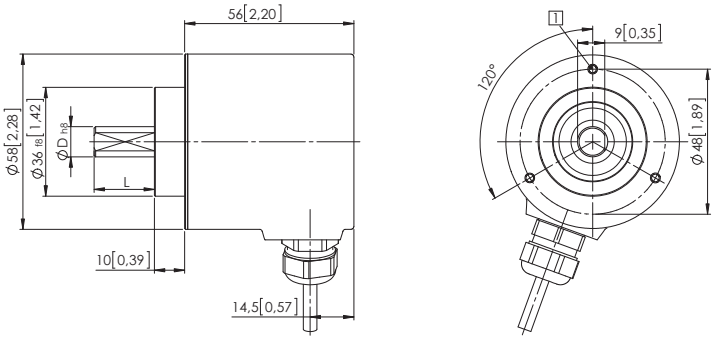
Standard Optical | **5852 / 5872 (Shaft / Hollow shaft)** | **Parallel, Highspeed**

Dimensions shaft version

Dimensions in mm [inch]

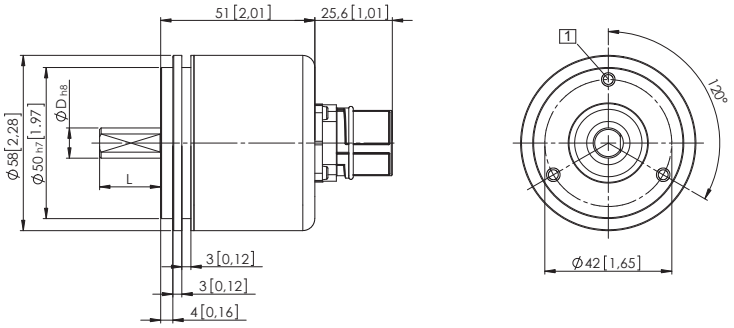
Clamping flange, ø 58 [2.28]
with shaft, ø 10 [0.39]
Flange type 12

1 3 x M3, 5 [0.20] deep



Synchro flange, ø 58 [2.28]
with shaft, ø 6 [0.24]
Flange type 21

1 3 x M3, 5 [0.20] deep



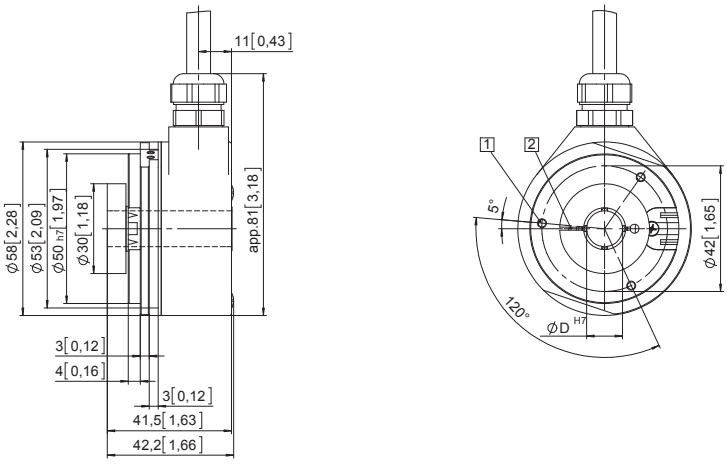
D	L	Fit
6 [0.24]	10 [0.39]	h8
10 [0.39]	20 [0.79]	h8

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



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

1 Recommended torque for the clamping ring 0.6 Nm