

Absolute encoders - singleturn

Standard optical	5852 / 5872 (shaft / hollow shaft)	Parallel, highspeed
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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.



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High rotational speed	Temperature range	High protection level	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 Type	. XX XX . XXX 1	a b c d
a <i>Flange, shaft</i> 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"]	b <i>Interface / power supply</i> 1 = parallel (CMOS-TTL) / 5 V DC 3 = parallel / 10 ... 30 V DC	c <i>Type of connection</i> 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	d <i>Code type and division</i> 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
			<i>Optional on request</i> - other code types - other divisions

Order code Hollow shaft	8.5872 Type	. X X X X . XXX 1	a b c d e
a <i>Flange</i> 1 = with spring element, short 3 = with stator coupling, ø 65 mm [2.56"]	b <i>Hollow shaft</i> 6 = ø 10 mm [0.39"] 8 = ø 12 mm [0.47"]	c <i>Interface / power supply</i> 1 = parallel (CMOS-TTL) / 5 V DC 3 = parallel / 10 ... 30 V DC	d <i>Type of connection</i> 1 = radial cable, 1 m [3.28'] PVC 2 = radial M23 connector, 17-pin, without mating connector
			e <i>Code type and division</i> 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
			<i>Optional on request</i> - other code types - other divisions

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.

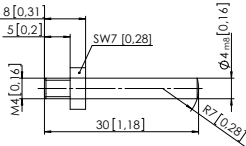
Reverse operation:

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 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		Order no.
Cylindrical pin, long for torque stops	with fixing thread 	8.0010.4700.0000

Connection technology		Order no.
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		
Maximum speed	shaft version	12000 min ⁻¹
	hollow shaft version	6000 min ⁻¹ 1)
Mass 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
	max.	75 mA
Permissible load / channel	max. +0.5 / -2.0 mA	max. +/- 10 mA
Refresh rate of the position data	40000/s	40000/s
Signal level	HIGH	min. 3.4 V
	LOW	max. 0.3 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 2014/30/EU RoHS guideline 2011/65/EU	

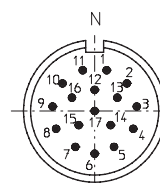
Terminal assignment

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 RD WH BN WH YE

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 continuous 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.

