

Rotary Measuring Technology

Absolute encoders, Singleturn



Standard Type 5852 (Shaft) / 5872 (Hollow shaft)



- Parallel interface
- Improved EMC characteristics
- Divisions: up to 2000 Gray-Excess or up to 16384 (14 bits) Gray, singleturn
- \varnothing 58 mm shaft version
- Shaft version: IP 65
Hollow shaft version: IP 66
- Count direction reversible
- Temperature and ageing compensation
- Short-circuit proof outputs

- Integrative Technology®
Patented new type of construction integrates all components; use of an opto-asic and 6-layer multilayer technology now on just a single PCB:
 - Improved EMC characteristics
 - Highest shock resistance on the market (≥ 2500 m/s², 6 ms acc. to DIN IEC 68-2-27)
- resolution up to 14 bits.

Mechanical characteristics:

Speed:	Shaft version: max. 12000 min ⁻¹ Hollow shaft version ¹⁾ : max. 6000 min ⁻¹
Rotor moment of inertia:	Shaft version: approx. 1.8×10^{-6} kgm ² Hollow shaft version: approx. 6×10^{-6} kgm ²
Starting torque:	Shaft version: < 0.01 Nm Hollow shaft version: < 0.05 Nm
Radial load capacity of shaft*:	80 N
Axial load capacity of shaft*:	40 N
Weight:	approx. 0.4 kg
Protection acc. to EN 60 529:	Shaft version: IP 65 Hollow shaft version: IP66
EX approval for hazardous areas:	optional zone 2 and 22
Working temperature:	-20° C ... +80 °C ²⁾³⁾
Shaft:	stainless steel
Shock resistance acc. to DIN-IEC 68-2-27	2500 m/s ² , 6 ms
Vibration resistance acc. to DIN-IEC 68-2-6:	100 m/s ² , 10 ... 2000 Hz

¹⁾ For continuous operating 1500 min⁻¹

²⁾ 70 °C for 14 bit version

³⁾ Non-condensing

Electrical characteristics:

Interface type:	Parallel	Parallel
Supply voltage (U _B):	5 V DC ($\pm 5\%$)	10 ... 30 VDC
Output driver:	CMOS-TTL	Push-pull
Current consumption type.:	40 mA	100 mA
(no load) max.:	75 mA	159 mA
Permissible load/channel:	max. +0.5/-2 mA	max. +/-10 mA
Refresh rate of the position data:	40.000/s	40.000/s
Signal level high:	min. 3.4 V	min. U _B - 2.8 V
Signal level low:	max. 0.3 V	max. 1.8 V
Rise time t _r (without cable):	max. 0.2 μ s	max. 1 μ s
Fall time t _f (without cable):	max. 0.2 μ s	max. 1 μ s
Short circuit proof outputs: ¹⁾	yes	yes
Reverse connection protection at UB:	no	yes
UL certified	File 224618	
Conforms to CE requirements acc. to EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3		
RoHS compliant acc. to EU guideline 2002/95/EG		

¹⁾ If supply voltage correctly applied U_B

Reverse count direction:

(Only with output type 3 and up to 13 bits Gray code available)

Normal operation:

Rising code values when shaft turning clockwise (cw). Falling code values when shaft turning counterclockwise (ccw)

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.

Standard Type 5852 (Shaft) / 5872 (Hollow shaft)

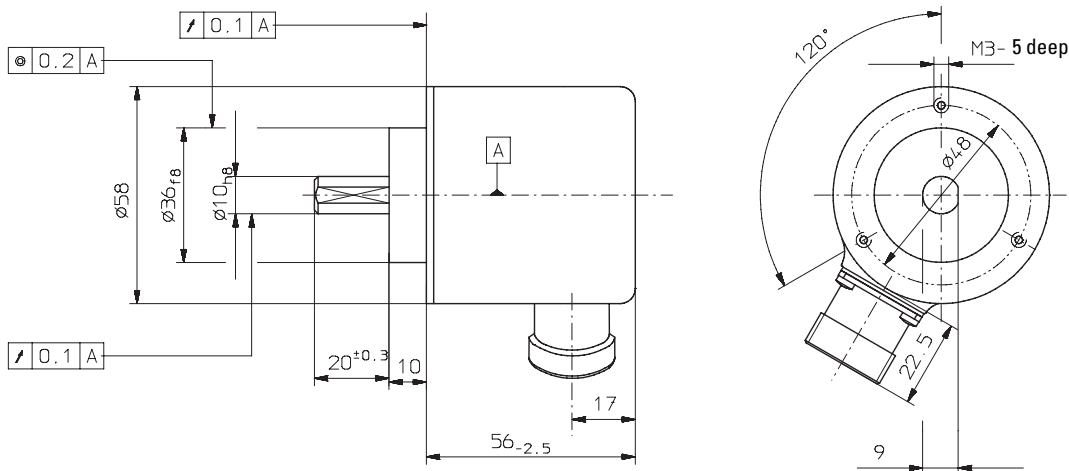
Terminal assignment

Sig.:	0V	+U _B	1	2	3	4	5	6	7	8	9	10	11	12	13	14/1		⊥
Col.:	WH	BN	GN	YE	GY	PK	BU	RD	BK	VT	GY	RD	WH	BN	WH	YE		
Pin:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	PH

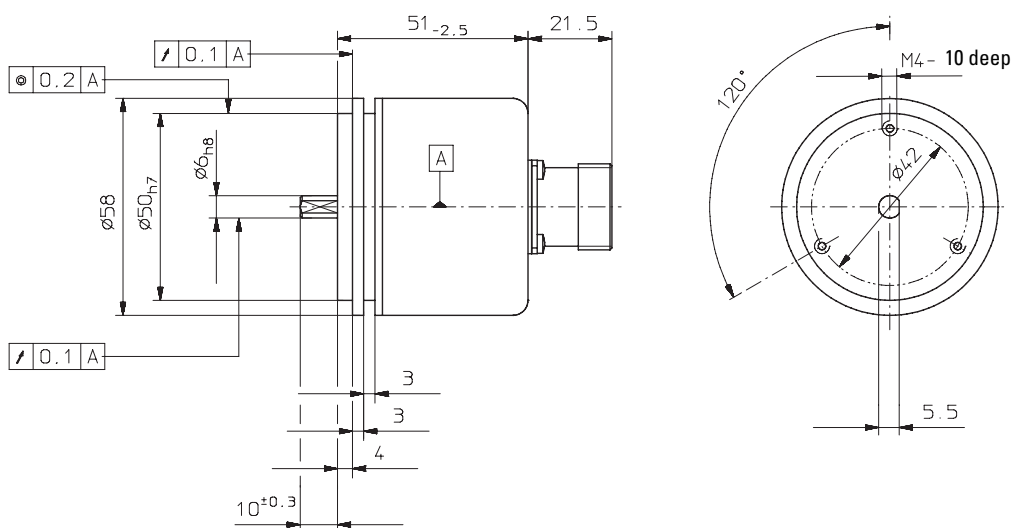
- Signal: 1 = MSB; 2 = MSB-1; 3 = MSB-2 etc.
- T: Only for output type 3 up to 13 bits. MSB to reverse the count direction
- PH: Plug housing
- Isolate unused outputs before initial start-up

Dimensions shaft version:

Clamping flange with shaft $\varnothing 10$



Synchronous flange with shaft $\varnothing 6$ mm



Mounting advice:

The flanges and shafts of the encoder and drive should not both be rigidly coupled together at the same time! We recommend the use of suitable couplings (see Accessories section).

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Standard Type 5852 (Shaft) / 5872 (Hollow shaft)

Order code shaft version:

8.5852.XXXX.XXXX

- Type
- Flange
 - 12 = Clamping flange with shaft \varnothing 10 x 20 mm
 - 21 = Synchronous flange with shaft \varnothing 6 x 10 mm**
- Interface and supply voltage
 - 1 = Parallel (CMOS-TTL) with 5 V supply voltage
 - 3 = Parallel with 10 ... 30 V supply voltage**

- Options
 - 1 = no options
 - Available options on request

- Division and code type
 - E03 = 360 Gray-Excess**
 - E01 = 1000 Gray-Excess
 - E14 = 1440 Gray-Excess
 - E20 = 2000 Gray-Excess
 - G10 = 1024 (10 bits) Gray**
 - G12 = 4096 (12 bits) Gray
 - G13 = 8192 (13 bits) Gray**
 - G14 = 16384 (14 bits) Gray
 - Others on request

- Type of connection
 - 1 = axial cable (1 m PVC-cable)
 - 2 = radial cable (1 m PVC-cable)
 - 3 = axial plug without mating connector
 - 5 = radial plug without mating connector**

Preferred types are indicated in **bold**

Absolute Encoders

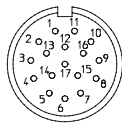
Accessories

Corresponding mating connector to Type of connection 3 or 5, 17 pin: Order-No. 8.0000.5042.0000 pin assignment ccw

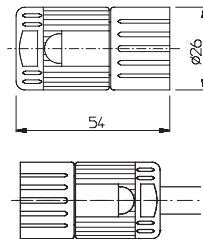
Corresponding mating connector with cable pre-assembled: Order-No. 8.0000.6741.XXXX (XXXX = length [m])

Set includes Connector type 8.0000.5042.0000 and cable type 8.0000.6700.XXXX (Cable PVC 18 x 0.14 mm²)

PIN allocation:



Dimensions:



Standard Type 5852 (Shaft) / 5872 (Hollow shaft)

Order code hollow shaft version:

8.5872.XXXX.XXXX

- Type
- Flange
 - 1 = Flange type 1 with through shaft
 - 3 = Flange type 3 with stator coupling**
- Hollow shaft
 - 6 = \varnothing 10 mm
 - 8 = \varnothing 12 mm**
- Interface and supply voltage
 - 1 = Parallel (CMOS-TTL) with 5 V supply voltage
 - 3 = Parallel with 10 ... 30 V supply voltage**

- Options
 - 1 = no options, available on request
- Division and code type
 - 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 on request
- Type of connection
 - 1 = radial cable (1 m PVC-cable)
 - 2 = radial plug without mating connector**

Preferred types are indicated in bold

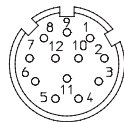
Accessories:

Cables and connectors, also pre-assembled, can be found in the chapter Connection Technology
 Mounting attachments and couplings can be found in the chapter Accessories

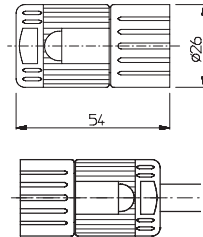
Accessories

Corresponding mating connector to Type of connection 2, 17 pin: Order-No. 8.0000.5042.0000 pin assignment ccw
 Corresponding mating connector with cable pre-assembled: Art.- No. 8.0000.6741.XXXX (XXXX = length [m])
 Set includes Connector typ 8.0000.5042.0000 and cable type 8.0000.6700.XXXX (Cable PVC 18 x 0.14 mm²)

PIN allocation:



Dimensions:



Mounting kit for hollow shaft encoder \varnothing 58 mm:

Various mounting variations can be supplied
 Delivery includes:

- 1 x cylindric pin with thread
Ord.-No. 8.0010.4700.0000
- 1 x mounting flanges
Ord.-No. T.035.009
- Screw M3x5
Ord.-No. N.630.305
- 1 x long torque support slot
Ord.-No. T.051.672

Complete set:
Ord.-No. 8.0010.4600.0000

Stator coupling two wings

– For high dynamic application
 Includes:

- 1x stator coupling two wings
- 2x 2 screws

Complete set:
 Order-No.: 8.0010.4D00.0000

Tether arm short
 Order-No.: 8.0010.4R00.0000