

Rotary Measuring Technology

Absolute singleturn encoder shaft version

MICRONOR
automation components

Standard Type ESA 58L



- Parallel interface
- Highest shock resistance on the market (>2500 m/s², 6 ms acc. to DIN IEC 68-2-27)
- Improved EMC characteristics
- Divisions: up to 2000 Gray-Excess or up to 16384 (14 bits) Gray, singleturn
- Ø 58 mm shaft version
- IP 65
- 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
- resolution up to 14 bits.
- available as explosion proof zone 2 and 22

Mechanical characteristics:

Speed:	max. 12000 min ⁻¹
Rotor moment of inertia:	approx. 1.8 x 10 ⁻⁶ kgm ²
Starting torque:	< 0.01 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:	IP 65
Working temperature:	-20° C ... +80 °C ¹⁾
Operating temperature:	-20° C ... +85 °C
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

* See page 21

¹⁾ 70 °C for 14 bit version

Divisions and code types available at short notice

360 Gray-Excess
1000 Gray-Excess
1440 Gray-Excess
2000 Gray-Excess
1024 (10 Bit) Gray
4096 (12 Bit) Gray
8192 (13 Bit) Gray
16384 (14 Bit) Gray

Other divisions and code types on request

Electrical characteristics:

Interface type:	Parallel	Parallel
Supply voltage (U _B):	5 V DC (± 5 %)	10 ... 30 VD C
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 µs	max. 1 µs
Fall time t _f (without cable):	max. 0.2 µs	max. 1 µs
Short circuit proof outputs: ¹⁾	yes	yes
Reverse connection protection at UB:	no	yes
Conforms to CE requirements acc. to EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3		

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.

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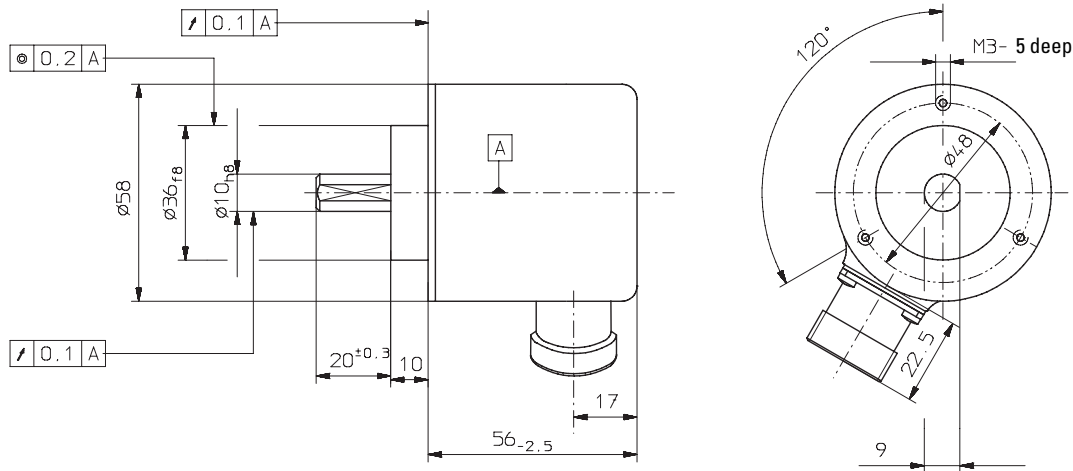
Terminal assignment

Sig.:	0V	+U _B	1	2	3	4	5	6	7	8	9	10	11	12	13	14/I			
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	

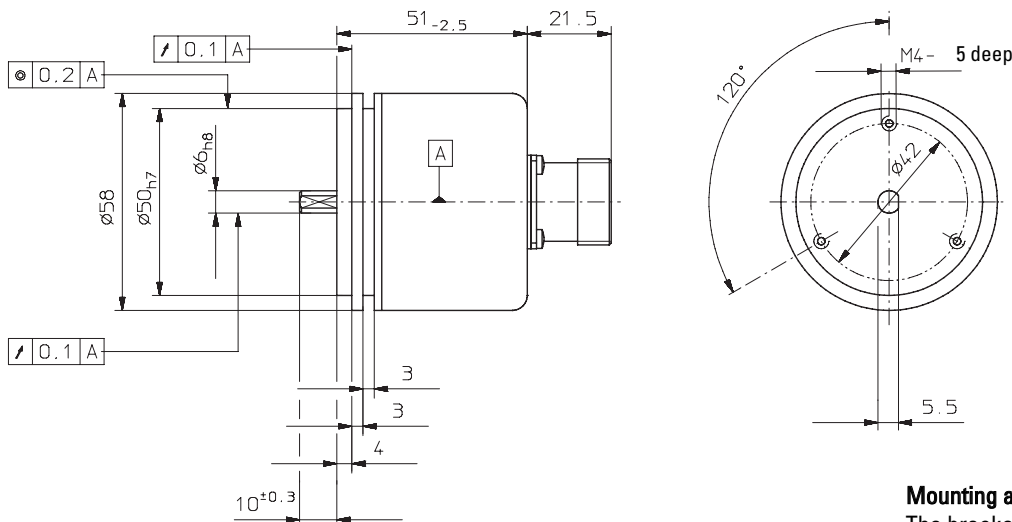
- Signal: 1 = MSB; 2 = MSB-1; 3 = MSB-2 etc.
- I: Only at output type 3 up to 13 bits. MSB to reverse the count direction
- PH: Plug housing
- Insulate unused outputs before initial start-up

Dimensions:

Clamping bracket with shaft $\varnothing 10$



Synchronous bracket with shaft $\varnothing 6$ mm



Mounting advice:

The brackets 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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Order code:

ESA 58L.XXXX.XXXX

Range

Bracket

- 12 = Clamping bracket with shaft \varnothing 10 x 20 mm
- 21 = Synchronous bracket 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

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***