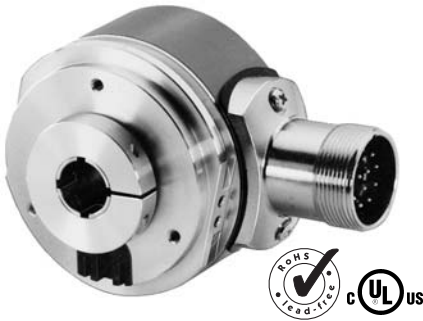


Rotary Measuring Technology

Absolute singleturn encoder hollow shaft version

Standard Type ENA 58L



- Parallel interface
- Highest shock resistance on the market (>2500 m/s², 6 ms acc. to DIN IEC 68-2-27)
- Improved EMC characteristics
- Very easy mounting. The encoder is mounted directly on the drive shaft without couplings. This saves up to 30 % cost and 60 % clearance compared to shaft versions
- Divisions: up to 2000 Gray-Excess or up to 16384 (14 bits) Gray, singleturn
- 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
- resolution of up to 14 bits
- available as explosion proof zone 2 and 22

Mechanical characteristics:

Speed with sealing ¹⁾ :	max. 6000 min ⁻¹
Rotor moment of inertia:	approx. 6 x 10 ⁻⁶ kgm ²
Starting torque with sealing:	< 0.05 Nm
Weight:	approx. 0.4 kg
Protection acc. to EN 60 529 with sealing:	IP 66
Working temperature with sealing:	-20 °C ... +80 °C ²⁾³⁾
Operating temperature with sealing:	-20 °C ... +85 °C ²⁾
Shaft:	stainless steel H7
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 operation max. 1500 min⁻¹

²⁾ Non-condensing

³⁾ 70 °C at 14 Bits 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 V DC
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 mA/-2,0 mA	max. +/-10 mA
Word change frequency	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.1μs
Fall time t _f (without cable):	max. 0.2 μs	max. 1μs
Short circuit proof outputs: ¹⁾ :	yes	yes
Reverse connection protection at U _B :	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.

Rotary Measuring Technology

Absolute singleturn encoder hollow shaft version

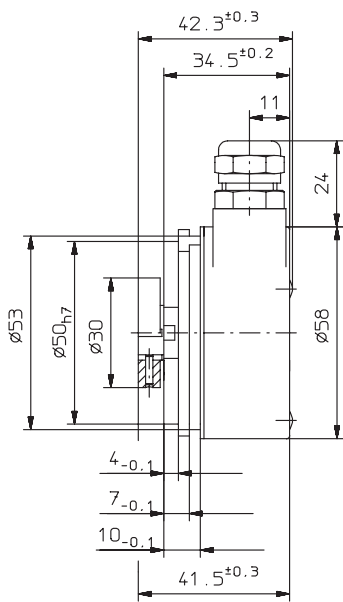
Standard Type ENA 58L

Terminal assignment

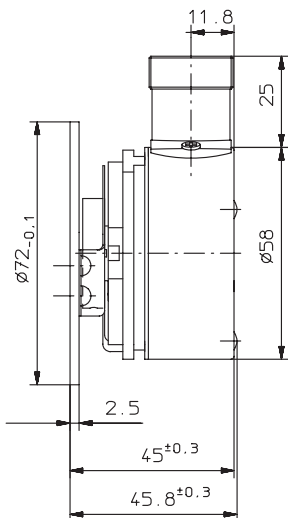
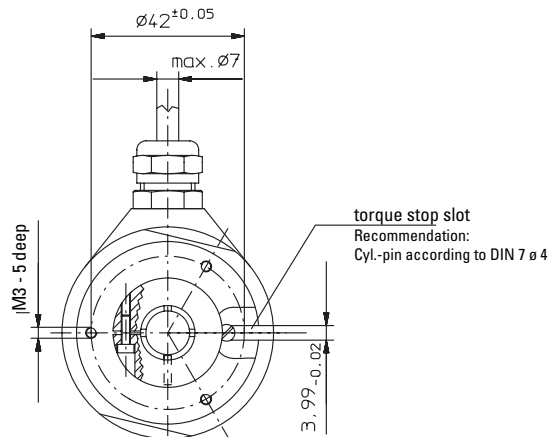
Sig.:	0V	+U _B	1	2	3	4	5	6	7	8	9	10	11	12	13	14/I		⏏
Col.:	WH	BN	GN	YE	GY	PK	BU	RD	BK	VT	GY	RD	WH	BN	WH	YE		
Pin:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	PH

- 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

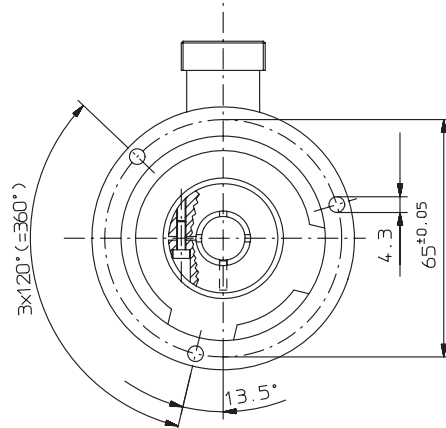
Dimensions



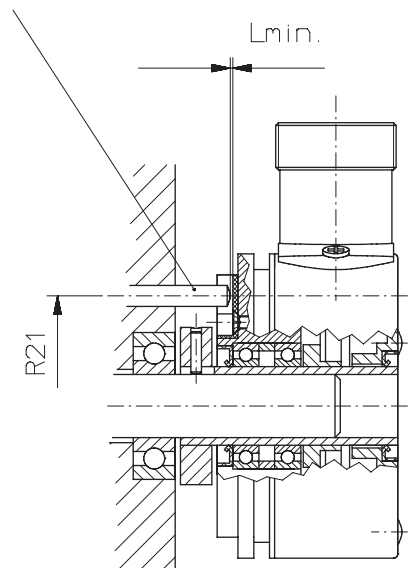
Bracket type 1



Bracket type 3 with stator coupling



Cyl. pin acc. to DIN 7 04



Mounting advice:

- 1) The brackets and shafts of the encoder and drive should not both be rigidly coupled together at the same time.
- 2) Mounting a hollow shaft encoder, we recommend using a torque stop pin or a stator coupling.
- 3) When mounting the encoder ensure that the dimension Lmin. is larger than the maximum axial play of the drive. Otherwise there is a danger that the device could mechanically seize up.

Rotary Measuring Technology

Absolute singleturn encoder hollow shaft version

Standard Type ENA 58L

Order code:

ENA 58L.XXXX.XXXX

Range

Bracket
 1 = Bracket type 1 with trough shaft
3 = Bracket type 3 with stator coupling

Hollow shaft
 6 = ø 10 mm
8 = ø 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

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

Preferred types are indicated in bold