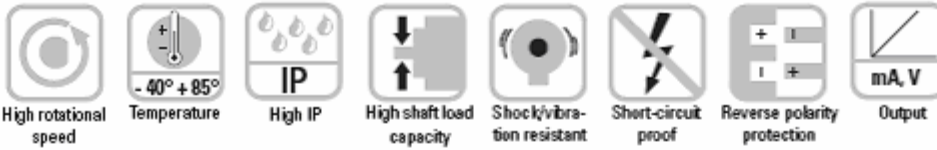


Compact ENA 361 M



Rugged

- Ensures long service life and reliability of the application, no wear
Non-contact measuring system
- Stays sealed even when subjected to harsh everyday use. Offers security against failures in the field
Solid die-cast housing with up to IP 69K protection
- Can be used for a wide temperature range without additional expense.
Wide temperature range (-40 °C ... +85 °C)
- Increased ability to withstand vibration and installation errors. Eliminates machine downtime and repairs.
High shock resistance (> 500g) and vibration resistance (>30g)
- Can be used in outdoor applications with large fluctuations in temperature.
Resistant against humidity and condensation.



Compact

- Can be used where space is tight
Overall diameter of only 36 mm
- Compact encoder, suitable for large shafts
Blind hollow shaft up to 10 mm, shaft up to 6,35 mm

Versatile

- Interface: 4 ... 20 mA, 0 ... 10 V
One size available for different applications
- Measuring range: 45°; 90°; 180°; 360°:
Suitable measuring range available for different applications
- Easy diagnosis in case of fault condition
Error indication via red LED (only current output)
- Can be fixed individually
Torque stop and stator coupling available

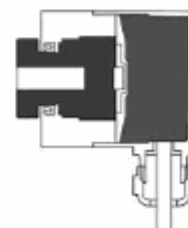
Mechanical characteristics:

Max. speed:	6000 min ⁻¹
Starting torque	< 0,06 Nm
Weight:	approx. 0,2 kg
Protection acc. to EN 60 529:	IP 67 (IP 69k on request)
Working temperature:	-40 °C ... +85 °C
Materials:	Shaft: stainless steel, Flange: aluminium, Housing: die cast zinc, Cable: PUR
Shock resistance acc. to DIN-IEC 68-2-27:	5000 m/s ² , 6 ms
Vibration resistance acc. to DIN-IEC 68-2-6:	300 m/s ² , 10 ... 2000 Hz
Permanent shock resistance acc. to DIN-IEC 68-2-29	1000 m/s ² , 2 ms
Vibration (broad-band random) to DIN-IEC 68-2-64	5 ... 2500 Hz, 100 m/s ² - rms

All-round protection

Safety-Lock plus™:

IP69k protection on the flange side, robust bearing assemblies with interlocking bearings, mechanically protected shaft seal



Fully encapsulated electronics, separate mechanical bearing assembly

Compact ENA 361 M

Electrical characteristics current interface 4 ... 20 mA:

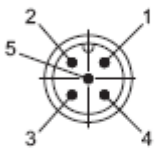
Sensor:	
Supply voltage:	18 ... 30 V DC
Current consumption (w/o output load):	typ 32 mA, max. 38 mA
Reverse polarity protection at power supply (Ub):	Yes
Measuring range:	45°, 90°, 180° or 360°
Resolution:	12 Bit
Linearity(25 °C)	< 1° (360 ° measurement range)
Repeat accuracy:	< 0.1° (360 ° measurement range)
Status LED:	Red: sensor break detection , Monitoring of power supply

4 ... 20 mA current loop

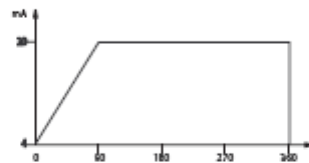
Output load:	max. 900 ohms at 24 V DC
Setting time:	< 1 ms ($R_{load} = 400 \text{ Ohm}$, 25 °C)
Short-circuit proof outputs: when the supply voltage is correctly applied, then output to output is short-circuit protected. But not output to 0 V or to +Ub	
Supply voltage and sensor output signal are not galvanically isolated.	

Terminal assignment:

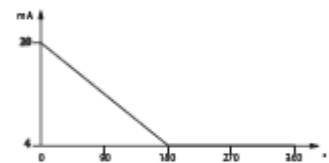
Sig.:	0V	+Ub	+I	-I
Col.:	WH	BN	GN	YE
M12/Pin:	3	2	4	5



Example (output signal profile):
for range 90° cw



for range 180° ccw



Electrical characteristics voltage interface 0 ... 10 V:

Sensor:	
Supply voltage:	18 ... 30 V DC
Current consumption (w/o output load):	typ 29 mA, max. 35 mA
Reverse polarity protection at power supply (Ub):	Yes
Measuring range:	45°, 90°, 180° or 360°
Resolution:	12 Bit
Linearity(25 °C)	< 1° (360 ° measurement range)
Repeat accuracy:	< 0.1° (360 ° measurement range)

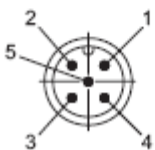
0 ... 10 V voltage output

Current output:	max. 10 mA
Setting time:	< 1 ms ($R_{last} \geq 1 \text{ KOhm}$, 25 °C)
Short-circuit proof outputs:	Yes ²⁾
Supply voltage and sensor output signal are not galvanically isolated.	

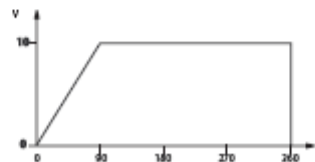
²⁾Short-circuit proof outputs: when the supply voltage is correctly applied, then output to output is short-circuit protected. But not output to 0 V or to +Ub

Terminal assignment:

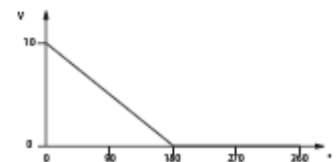
Sig.:	0V	+Ub	+Uo	-Uo
Col.:	WH	BN	GN	YE
M12/Pin:	3	2	4	5



Example (output signal profile):
for range 90° cw



for range 180° ccw



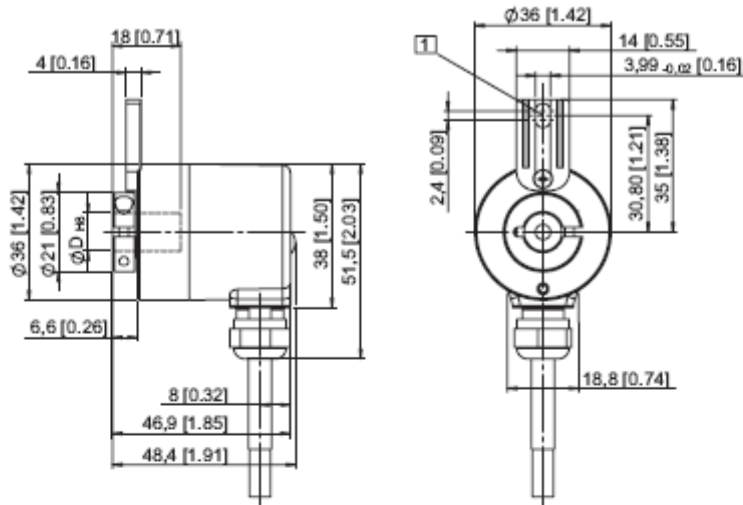
General characteristics:

Conforms to CE requirements acc. to EN 61000-6-1, EN 61000-6-4, EN 61000-6-3 and EN 61000-4-8 (behaviour under magnetic influence).

Compact ENA 361 M

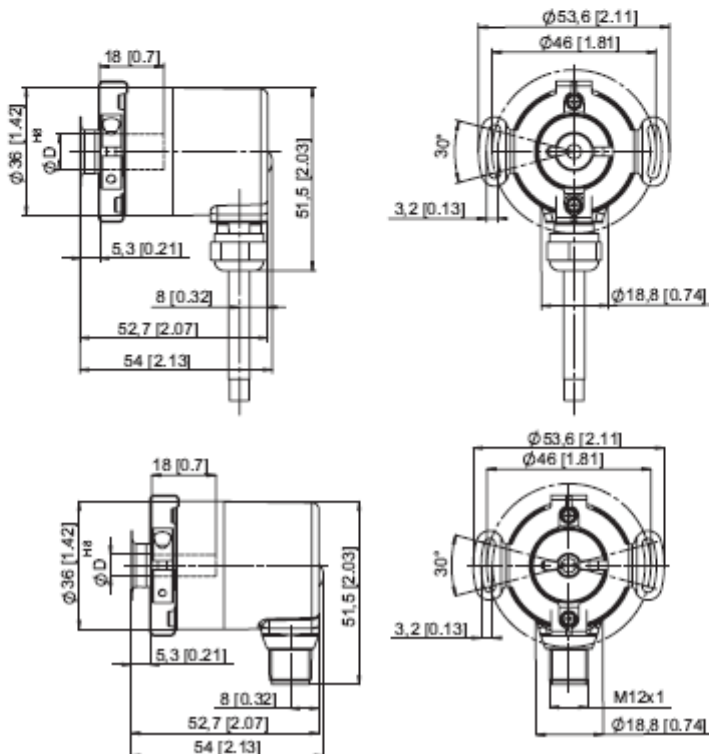
Dimensions

ø 36 mm, Flange with long torque stop



1 Torque stop slot,
Recommendation: cyl. pin. acc. DIN 7 04

ø 36 mm, Synchro flange



Compact ENA 361 M

Order code:

EN A 3 6 1 M . X X X X . X X X X

Type

Range

- 2 = Flange with long torque stop
- 5 = Flange with stator coupling

Hollow shaft

- 2 = ø 6 mm
- 3 = ø 6,35 (1/4")
- 4 = ø 8 mm
- 6 = ø 10 mm

Output circuit / Power supply

- 3 = 4 ... 20 mA/18 ... 30 V DC
- 4 = 0 ... 10 V DC/18 ... 30 V DC

Option 1

- 1 = IP 67 (IP 69k on request)

Option 2

- 1 = Count direction cw*
- 2 = Count direction ccw*

Output

- 3 = 4 ... 20 mA
- 4 = 0 ... 10 V

Measurement range

- 1 = 1 x 360°
- 2 = 1 x 180°
- 3 = 1 x 90°
- 4 = 1 x 45°

Type of connection

- 2 = Cable radial (1 m PUR)
- 4 = M12 connector radial

*cw = increasing code values when shaft turning clockwise (cw). Top view on shaft.