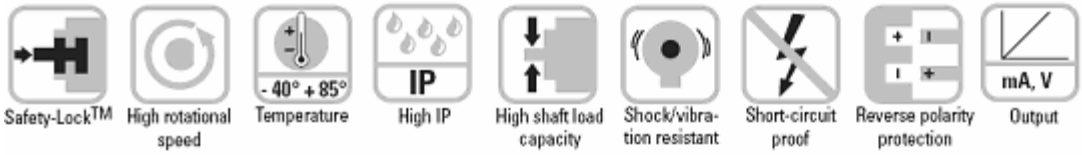
Kompakt ESA 361 M



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 can be used on large diameter shafts
  Fixing holes on D26 mm

Versatile

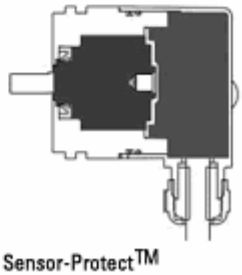
- Interface: 4 ... 20 mA, 0 ... 10 V
  One size available for different applications
- Measuring range: 45°; 90°; 180°; 360°:
  Suitable measuring range available for different applications
- Easy diagnosis in case of fault condition
  Error indication via red LED (only current output)

Mechanical characteristics:

Max. speed:	6000 min^{-1}
Starting torque	< 0,06 Nm
Radial load capacity of shaft:	40 N
Axial load capacity of shaft:	20 N
Weight:	approx. 0,2 kg
Protection acc. to EN 60 529:	IP 67 (IP 69k on request)
Working temperature range:	–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 thanks to Safety- and Sensor-Protect™ technology

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



Sensor-Protect™
Fully encapsulated electronics, separate mechanical bearing assembly

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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

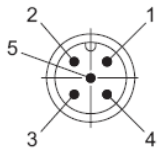
4 ... 20 mA current loop	
Output load:	max. 900 ohms at 24 V DC
Setting time:	< 1 ms (R_{load} = 400 Ohm, 25 °C)

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.

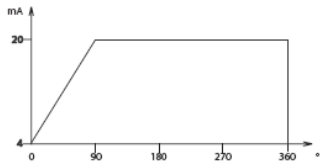
Terminal assignment:

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

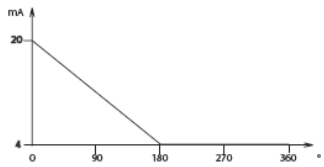


Example (output signal profile):

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)

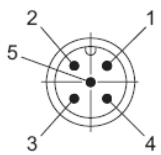
0 ... 10 V voltage output	
Current output:	max. 10 mA
Setting time:	< 1 ms ($R_{last} \geq$ 1 KOhm, 25 °C)
Short-circuit proof outputs:	Yes [2]

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

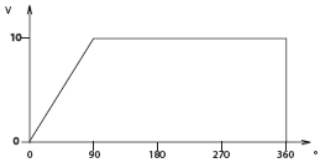
Terminal assignment:

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

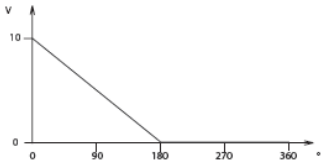


Example (output signal profile):

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).

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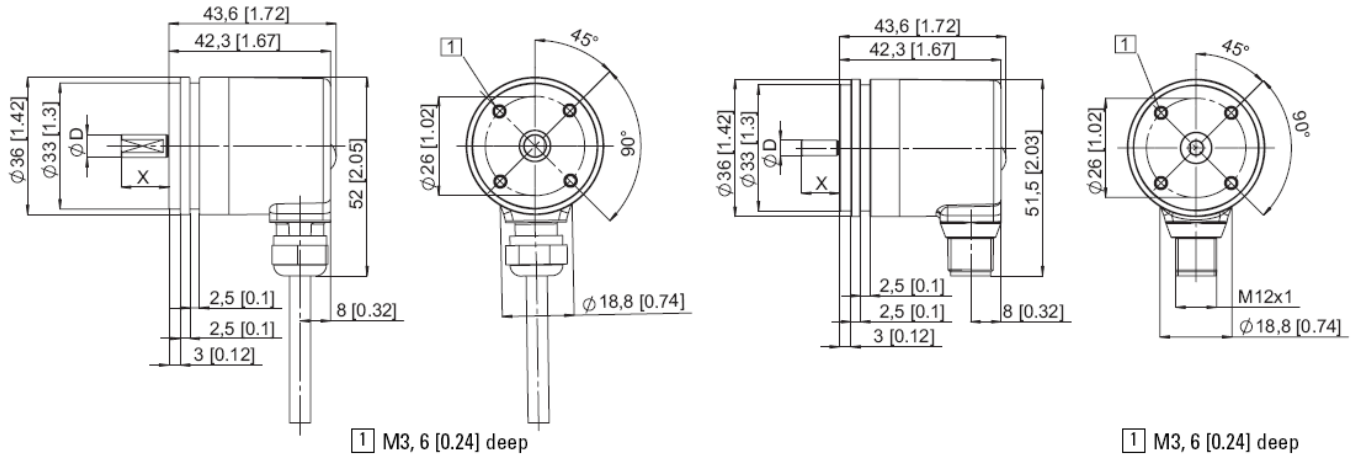
Dimensions:
ø 36 mm, Synchro flange



Order code:

E S A 3 6 1 M . X X X X . X X X X

Type

Flange
2 = Synchro flange

Shaft (ø x L)
3 = ø 6 x 12,5 mm
5 = ø 6,35 x 12,5 mm
6 = ø 8 x 12,5 mm

Output circuit / Power supply
2 = SSI/5 ... 30 V DC
3 = 4 ... 20 mA/18 ... 30 V DC
4 = 0 ... 10 V DC/20 ... 30 V DC

Option 1
1 = IP67 (IP69K 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.