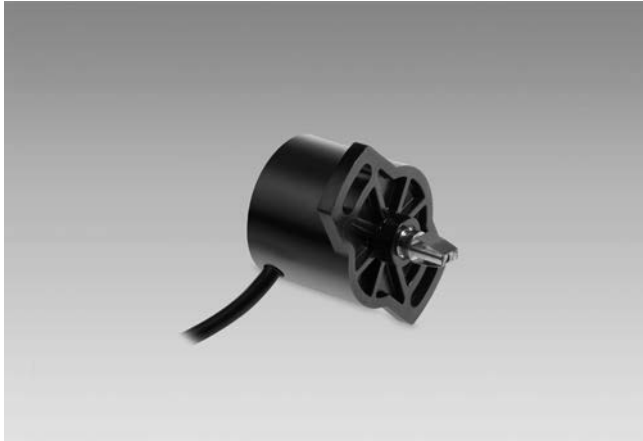


# Absolute encoders - analog

## Solid shaft

## Magnetic singleturn encoders

### EAM280 - solid shaft analog



EAM280 - solid shaft analog

#### Technical data - electrical ratings

Voltage supply	8...30 VDC 12...30 VDC 5 VDC $\pm$ 10 %
Reverse polarity protection	Yes (8...30 VDC / 12...30 VDC)
Short-circuit proof	Yes (8...30 VDC / 12...30 VDC)
Consumption typ.	22 mA (24 VDC, 12 mA lout, w/o load, current output) 10 mA (24 VDC, w/o load, voltage output) 8 mA (5 VDC, w/o load, voltage output)
Initializing time	$\leq$ 20 ms after power on
Interface	Analog 0...10 V / 0.5...4.5 V / 4...20 mA / Resolution: 12 bit
Function	Singleturn
Measuring range	30° ...360° See part number
Absolute accuracy	$\pm$ 1.8° (+25 °C)
Sensing method	Magnetic
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3

#### Features

- Encoder singleturn / Analog
- Contactless measuring method
- Robust magnetic sensing
- Simple mounting, long service life
- Designed for harsh environmental conditions
- Operating temperature -40...+85 °C
- Resolution: 12 bit
- Redundant version available
- Protection IP 65 or IP 67

#### Optional

- DEUTSCH or AMP connector on cable end on request

#### Technical data - mechanical design

Size (flange)	$\varnothing$ 48 mm, housing 28.6 mm
Shaft type	$\varnothing$ 6 mm, solid shaft with flat Push-on coupling
Protection DIN EN 60529	IP 65, IP 67
Operating speed	$\leq$ 120 rpm
Starting torque	$\leq$ 0.5 Nm (+25 °C)
Admitted shaft load	$\leq$ 10 N axial $\leq$ 10 N radial
Materials	Housing: plastic (reinforced) Shaft: stainless steel
Operating temperature	-40...+85 °C
Service life	$\geq$ 20 million revolutions
Relative humidity	95 %
Resistance	DIN EN 60068-2-6 Vibration 20 g, 10-2000 Hz DIN EN 60068-2-27 Shock 50 g, 11 ms
Weight approx.	30 g
Connection	Cable 0.3 m, radial

# Absolute encoders - analog

Solid shaft

Magnetic singleturn encoders

## EAM280 - solid shaft analog

### Part number

EAM280-SF  .  M  .  .  A

#### Operating temperature

A -40...+85 °C

#### Output characteristics

- 1 Increasing CW
- 2 Increasing CCW
- 3 Redundant, Ch1 increasing CW, Ch2 increasing CCW
- 4 Redundant, Ch1 increasing CCW, Ch2 increasing CW
- 5 Redundant, Ch1 increasing CW, Ch2 increasing CW
- 6 Redundant, Ch1 increasing CCW, Ch2 increasing CCW

#### Measuring range

A030 0°...30°  
A060 0°...60°  
A180 0°...180°  
A270 0°...270°  
A360 0°...360°

#### Voltage supply / signals

V6 12...30 VDC / Output 0...+10 VDC  
C0 12...30 VDC / Output 4...20 mA  
V3 8...30 VDC / Output 0.5...+4.5 VDC  
R4 8...30 VDC / Output 0.5...+4.5 VDC redundant  
V7 5 VDC ±10 % / Output 0.5...+4.5 VDC ratiometric  
R7 5 VDC ±10 % / Output 0.5...+4.5 VDC ratiometric redundant

#### Connection

M Cable 0.3 m, radial

#### Protection

5 IP 65  
7 IP 67

#### Solid shaft

1 ø6 x 12.3 mm, with flat 1 mm  
9 ø6 x 12.3 mm, with flat 9 mm  
P Push-on coupling

Other measuring ranges by steps of 10° on request.

Other cable lengths with assembled DEUTSCH or AMP connector on request.

Other shaft types on request.

# Absolute encoders - analog

## Solid shaft

## Magnetic singleturn encoders

### EAM280 - solid shaft analog

#### Terminal significance

+Vs	Encoder voltage supply
0 V	Encoder ground connection relating to +Vs
Iout	Current output, load: <500 Ω
Uout	Voltage output Load resistor: >3 kΩ between Uout / 0 V

#### Terminal assignment

##### Cable

Core color	Signal	Description
White	0 V	Ground
Brown	+Vs	Voltage supply
Green	Uout/Iout	Output

Cable data: 3 x 0.25 mm<sup>2</sup>

##### Cable / redundant version

Core color	Signal	Description
White	0 V1/2	Ground 1/2
Brown	+Vs1	Voltage supply 1
Green	Uout1	Output 1
Yellow	+Vs2	Voltage supply 2
Grey	Uout2	Output 2

Cable data: 5 x 0.25 mm<sup>2</sup>

# Absolute encoders - analog

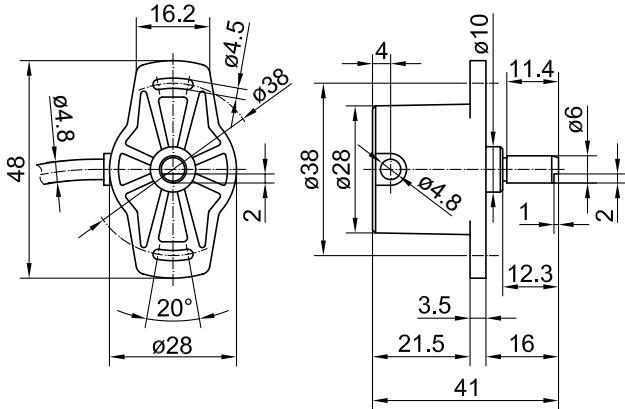
Solid shaft

Magnetic singleturn encoders

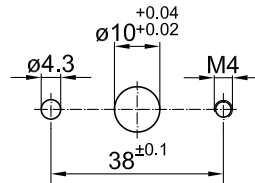
## EAM280 - solid shaft analog

### Dimensions

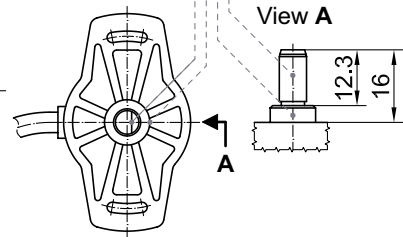
#### Shaft $\varnothing 6 \times 12.3$ mm with flat 1 mm



Recommended hole pattern  
2x 4.3 or 2x M4

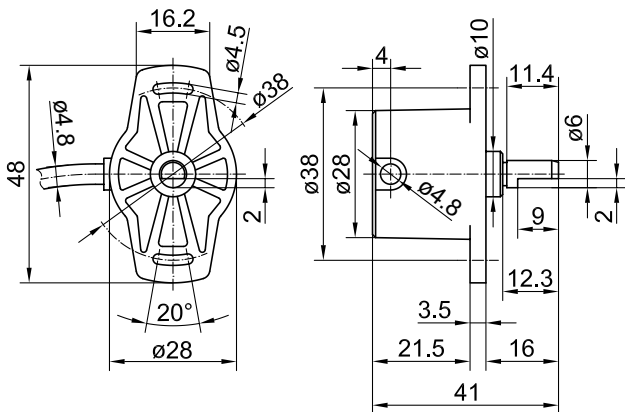


Shaft marking

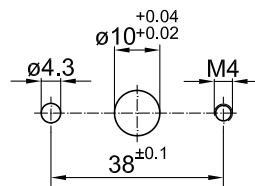


When the shaft marking points opposite to the cable outlet, the sensor is in zero degree position.

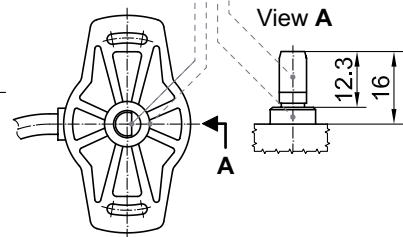
#### Shaft $\varnothing 6 \times 12.3$ mm with flat 9 mm



Recommended hole pattern  
2x 4.3 or 2x M4

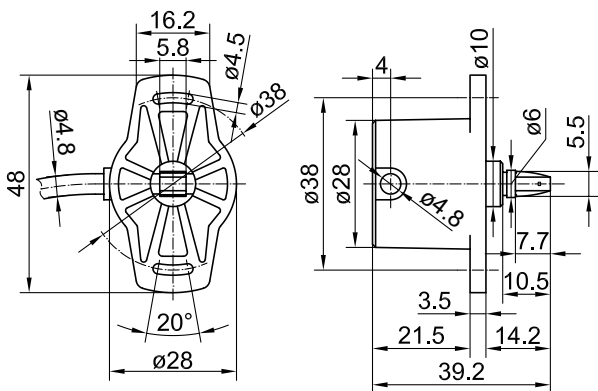


Shaft marking

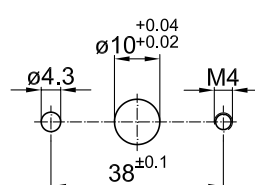


When the shaft marking points opposite to the cable outlet, the sensor is in zero degree position.

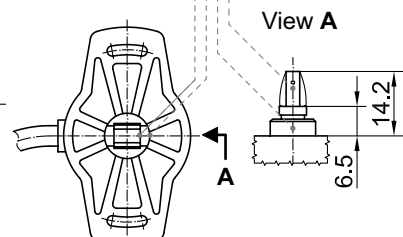
#### Shaft $\varnothing 6$ with push-on coupling



Recommended hole pattern  
2x 4.3 or 2x M4



Shaft marking



When the shaft marking points opposite to the cable outlet, the sensor is in zero degree position.

Recommended dimension of driving shaft  
Parallel offset  $> 0.05$  mm

