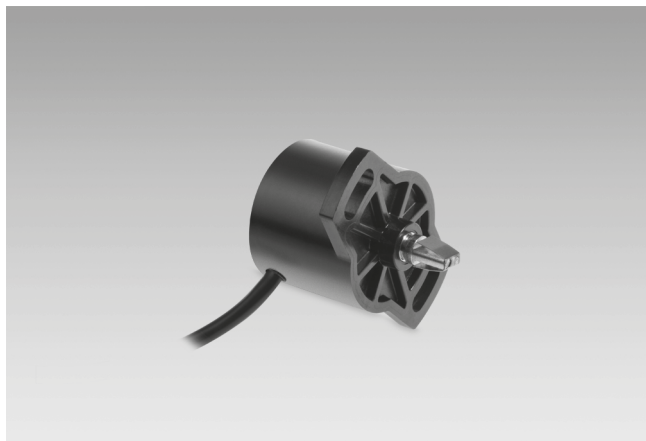


Absolute encoders - bus interfaces

Solid shaft

Magnetic singleturn encoders 14 bit, CANopen®

EAM280 - CANopen®



EAM280 - solid shaft CANopen®

Technical data - electrical ratings

Voltage supply	10...30 VDC
Reverse polarity protection	Yes
Short-circuit proof	Yes
Consumption typ.	14 mA (24 VDC, w/o load)
Initializing time	≤15 ms after power on
Interface	CANopen®
Update time	20 ms
Function	Singleturn
Profile conformity	CANopen® CiA communication profile DS 301, LSS profile DSP 305, device profile DS 406
Measuring range	0...360°
Steps per revolution	≤16384 / 14 bit
Linearity	±0.25 % FS
Absolute accuracy	±1 ° (+25 °C)
Sensing method	Magnetic
Code sequence	CW: ascending values with clockwise sense of rotation; looking at flange
Output stages	CAN-Bus, LV (3.3 V) compatible ISO 11898
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3

Features

- Encoder singleturn / CANopen®
- Contactless measuring method
- Robust magnetic sensing
- Simple mounting, long service life
- Designed for harsh environmental conditions
- Operating temperature -40...+85 °C
- Resolution 14 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)	ø48 mm, housing 28.6 mm
Shaft type	ø6 mm, solid shaft with flat Push-on coupling
Protection DIN EN 60529	IP 65, IP 67
Operating speed	≤3000 rpm
Starting torque	≤0.5 Nm (+25 °C)
Admitted shaft load	≤10 N axial ≤10 N radial
Materials	Housing: plastic (reinforced) Shaft: stainless steel
Operating temperature	-40...+85 °C
Service life	≥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
Temperature changes	EN60068-2-14, -40...+85 °C, 5 cycles
Weight approx.	30 g
Connection	Cable 0.3 m, radial Cable 0.3 m with connector M12

Absolute encoders - bus interfaces

Solid shaft

Magnetic singleturn encoders 14 bit, CANopen®

EAM280 - CANopen®

Part number

EAM280-SF

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Operating temperature
A -40...+85 °C

Resolution singleturn
14 14 bit

Voltage supply / signals
C5 10...30 VDC / CANopen® (DS406) redundant sensing
C6 10...30 VDC / CANopen® (DS406)

Connection
M Cable 0.3 m, radial
S Cable 0.3 m with connector M12, 5-pin

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 shaft types on request.

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

Absolute encoders - bus interfaces

Solid shaft

Magnetic singleturn encoders 14 bit, CANopen®

EAM280 - CANopen®

Data transfer

PDO Mapping

ID10 / PDO 1

LSB	MSB
Byte 0	1	2	3

Channel 1 (position angle) = 0 → 3600_{dec}

Angle increasing in size and value

PDO Mapping (redundant sensing)

ID10 / PDO 1

LSB	MSB
Byte 0	1	2	3

Channel 1 (position angle) = 0 → 3600_{dec}

Angle increasing in size and value

ID10 / PDO 2

LSB	MSB
Byte 0	1	2	3

Channel 2 (position angle) = (3600_{dec} → 0)

Angle increasing in size and decreasing in value

CANopen® features

Bus protocol	CANopen®
Device profile	CANopen® - CiA DS 406
Operating modes	- Event-Time - Synchronously triggered (Sync) - Timer-driven (Async)
Node Monitoring	Heartbeat (default: disabled)
Programmable parameters	Operating modes Rotating direction Scaling Zero position
Default	Baud rate 250 kbit/s Node ID 10 (0Ah) Timer-driven (Async) 100 ms

Terminal assignment

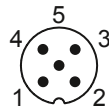
Cable

Core color	Signal	Description
White	0 V	Voltage supply
Brown	+Vs	Voltage supply
Green	CAN_H	Bus (dominant HIGH)
Yellow	CAN_L	Bus (dominant LOW)
Grey	CAN_GND	CAN ground

Cable data: 5 x 0,25 mm²

Cable with flange connector M12, male, 5-pin, A-coded

Pin	Signal	Description
1	CAN_GND	CAN ground
2	+Vs	Voltage supply
3	0 V	Voltage supply
4	CAN_H	Bus (dominant HIGH)
5	CAN_L	Bus (dominant LOW)



Terminals 0 V and GAN_GND are internally connected and identical in their functions.

Absolute encoders - bus interfaces

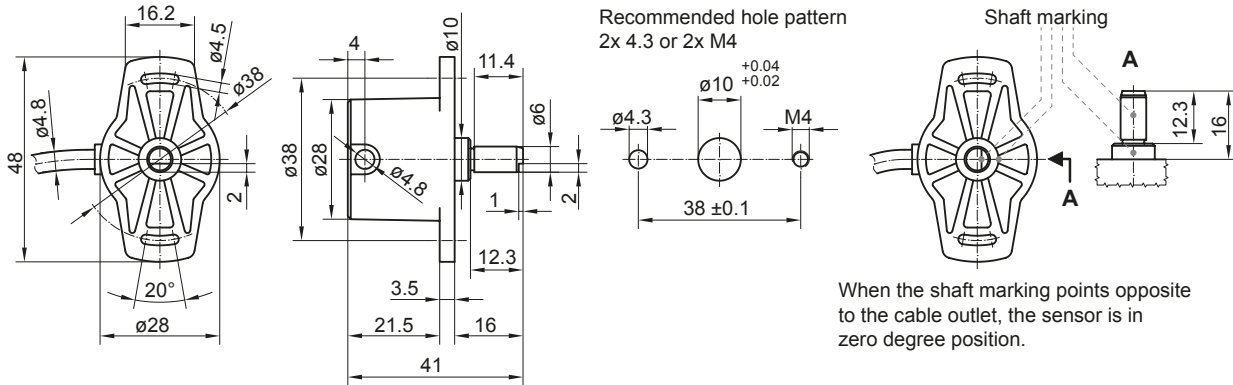
Solid shaft

Magnetic singleturn encoders 14 bit, CANopen®

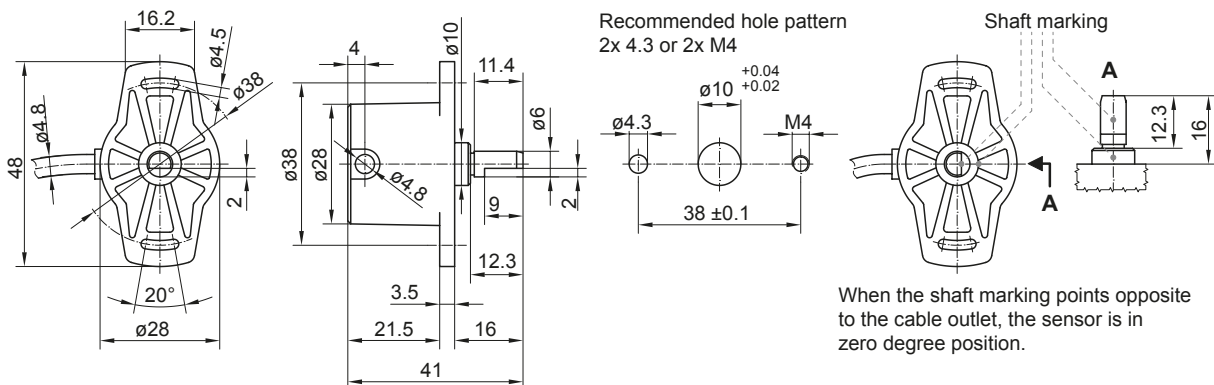
EAM280 - CANopen®

Dimensions

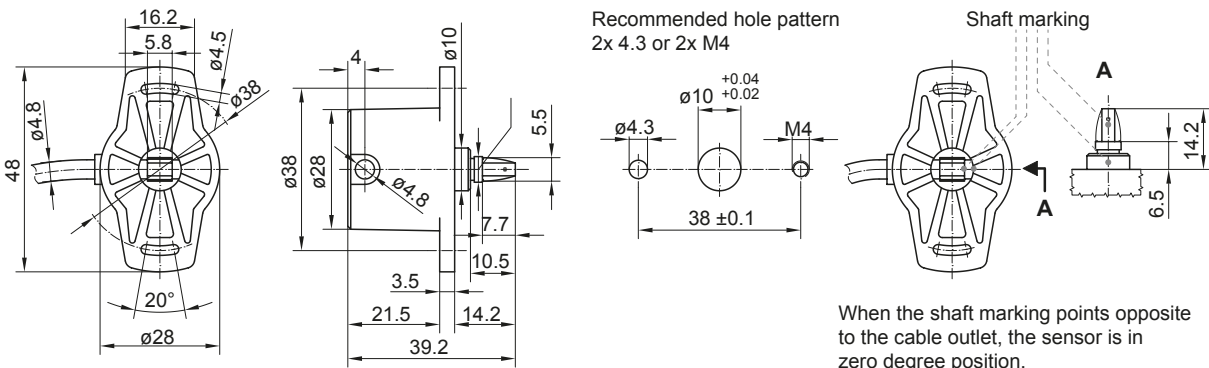
Shaft $\varnothing 6 \times 12.3$ mm with flat 1 mm



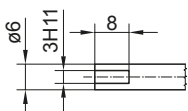
Shaft $\varnothing 6 \times 12.3$ mm with flat 9 mm



Shaft $\varnothing 6$ with push-on coupling



Recommended dimension of driving shaft
Parallel offset >0.05 mm



Absolute encoders - bus interfaces

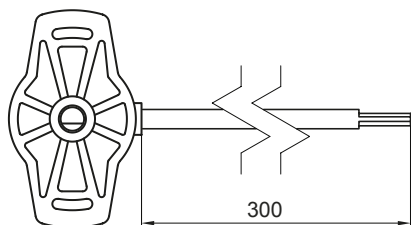
Solid shaft

Magnetic singleturn encoders 14 bit, CANopen®

EAM280 - CANopen®

Dimensions

Cable



Câble with connector M12

