

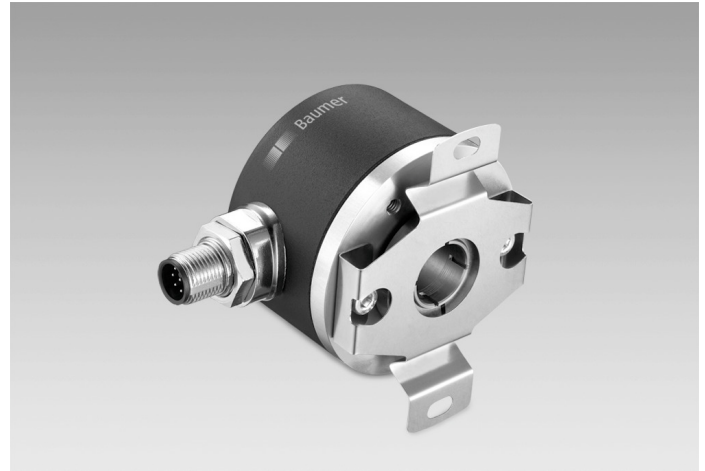
# EAM580R-B - CANopen®/SAE J1939

Blind hollow shaft

Magnetic single- or multiturn encoders 14 bit ST / 18 bit MT

## Overview

- Encoder single- or multiturn / CANopen®/SAE J1939
- E1 compliant design
- High protection IP 67
- High resistance to shock and vibrations
- Protection against corrosion CX (C5-M)
- Wire cross section 0.5 mm<sup>2</sup>
- Electronic gear function
- Applicable up to PLd (ISO 13849)



## Technical data

### Technical data - electrical ratings

Voltage supply	10...30 VDC
Consumption typ.	20 mA (24 VDC, w/o load)
Initializing time	≤ 170 ms after power on
Interface	CANopen® SAE J1939
Function	Multiturn Singleturn
Profile conformity	CANopen® CiA communication profile DS 301, LSS profile DSP 305, device profile DS 406
Steps per revolution	≤16384 / 14 bit
Number of revolutions	≤262144 / 18 bit
Absolute accuracy	±0,15 ° (+20 ±15 °C) ±0,25 ° (-40...+85 °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	EN 61000-6-2 ISO 11452-2:2004* / -5:2002* ISO 7637-2:2004* ISO 10605:2008 + Amd 1:2014 (CD ±8 kV / AD ±15 kV) * Severity level according to ECE R10 (Rev. 4)
Emitted interference	EN 61000-6-4 CISPR 25:2008 (30...1000 MHz) ISO 7637-2:2004* * Severity level according to ECE R10 (Rev. 4)

### Technical data - electrical ratings

MTTF <sub>d</sub> (ISO 13849)	High (>100 years) Use in safety functions exclusively based on Application Note and MTTF <sub>d</sub> reliability prediction (request separately).
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### Technical data - mechanical design

Size (flange)	ø58 mm
Shaft type	ø10...15 mm (blind hollow shaft)
Protection EN 60529	IP 67 (with shaft seal)
Operating speed	≤6000 rpm
Starting torque	≤2,5 Ncm (+20 °C, IP 67)
Moment of inertia	46,75 gcm <sup>2</sup>
Material	Housing: steel, powder-coated Flange: aluminium Hollow shaft: stainless steel
Corrosion protection	IEC 60068-2-52 Salt mist for ambient conditions CX (C5-M) according to ISO 12944-2
Operating temperature	-40...+85 °C (see general information)
Relative humidity	95 %
Resistance	EN 60068-2-6 Vibration 30 g, 10...2000 Hz EN 60068-2-27 Shock 500 g, 1 ms
Weight approx.	250 g
Connection	Flange connector M12, 5-pin Cable 2 m

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## General information

Self-heating interrelated to speed, protection, attachment method and ambient conditions as well electronics and supply voltage must be considered for precise thermal dimensioning. Self-heating is supposed to approximate 12 K (IP 67 protection) per 1000 rpm. Operating the encoder close to the maximum limits requires measuring the real prevailing temperature at the encoder flange.

## Terminal assignment

### Cable

for connection reference -L

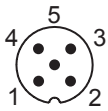
Core colour	Signals
white	0 V
brown	+Vs
green	CAN_H
yellow	CAN_L
grey	CAN_GND

Cable data: 5 x 0.5 mm<sup>2</sup>

### Flange connector M12, 5-pin

for connection reference -N

Pin	Signals
1	CAN_GND
2	+Vs
3	0 V
4	CAN_H
5	CAN_L



## CANopen® features

Operating modes	Timer-driven (Event-Time) Synchronously triggered (Sync)
Node Monitoring	Heartbeat Node guarding
Programmable parameters	Operating modes Total resolution Scaling Electronic gear function
Diagnosis	Multiturn sensing Position error Temperature exceeding Speed exceeding
Default	50 kbit/s, Node ID 1 (DS406) 250 kbit/s, Node ID 4 (DS417)

## SAE J1939 features

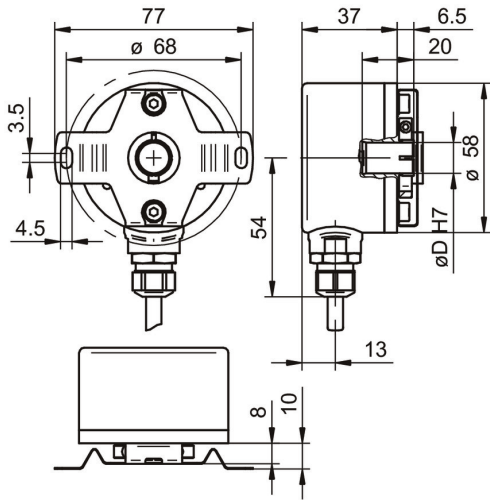
Programmable parameters	Total resolution Scaling
Diagnosis	Multiturn sensing Position error Temperature exceeding Speed exceeding
Default	250 kbit/s ECU address 172

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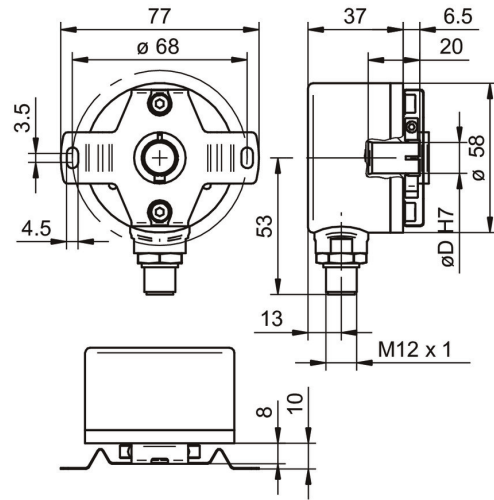
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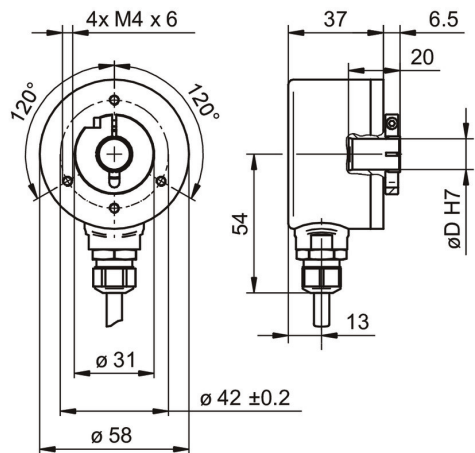
## Dimensions



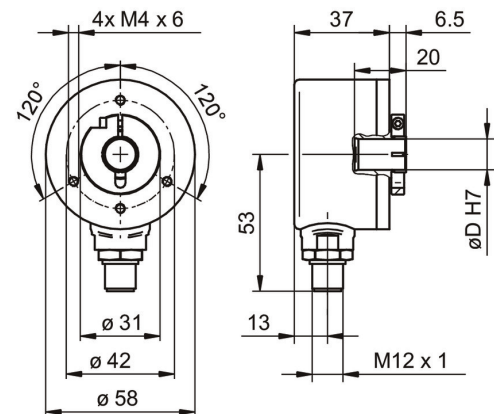
With cable and stator coupling



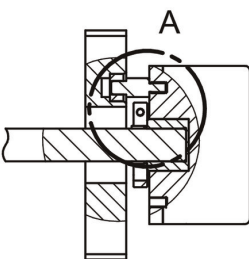
With flange connector M12 and stator coupling



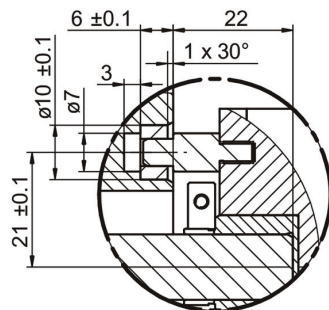
With cable w/o stator coupling



With flange connector M12 w/o stator coupling



### Detail A



Torque pin

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## Ordering reference

	EAM580R	-	B	#	##	.	7	#	##	14	##	#	A
<b>Product</b>	EAM580R												
<b>Shaft type</b>	Blind hollow shaft		B										
<b>Flange (Hollow shaft)</b>	Without stator coupling			N									
	With stator coupling 68 mm			A									
	Pin torque support 5 mm, axial			E									
<b>Blind hollow shaft</b>	ø10 mm, clamping ring, A-side				A								
	ø12 mm, clamping ring, A-side				C								
	ø14 mm, clamping ring, A-side				E								
	ø15 mm, clamping ring, A-side				F								
<b>Protection class</b>	IP 67						7						
<b>Connection</b>	Cable radial, 2 m							L					
	Flange socket radial, M12, 5-pin, male contacts, A-coded							N					
<b>Voltage supply / interface</b>	10...30 VDC, CANopen (DS 406)								C6				
	10...30 VDC, SAE J1939								C9				
<b>Resolution Singleturn</b>	14 Bit									14			
<b>Resolution Multiturn</b>	no option											00	
	18 Bit											18	
<b>Resolution supplement</b>	No option												0
	4096 ppr TTL (RS422), 4 channels												H
	2048 ppr TTL (RS422), 4 channels												8
	1024 ppr TTL (RS422), 4 channels												5
<b>Operating temperature</b>	-40...+85 °C												A

## Accessories

### Connectors and cables

11046264	Female connector M12, 5-pin, straight, shielded, 2 m cable
11046266	Female connector M12, 5-pin, straight, shielded, 5 m cable