

EAM280 - Analog

Solid shaft

Magnetic singleturn encoders

Overview

- 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



Technical data

Technical data - electrical ratings

Voltage supply	8...30 VDC 12...30 VDC 5 VDC ±10 %
Reverse polarity protection	Yes (8...30 VDC / 12...30 VDC)
Short-circuit proof	Yes (14 VDC or ground)
Consumption typ.	22 mA (24 VDC, 12 mA I _{out} , 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	≤ 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	±1.8 ° (+25 °C)
Sensing method	Magnetic
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3

Technical data - mechanical design

Size (flange)	ø48 mm, housing 28.6 mm
---------------	-------------------------

Technical data - mechanical design

Shaft type	ø6 mm, solid shaft with flat Push-on coupling
Protection EN 60529	IP 65 IP 67
Operating speed	≤120 rpm
Starting torque	≤0.5 Nm (+25 °C, variations may occur at other temperatures)
Admitted shaft load	≤10 N axial ≤10 N radial
Material	Housing: plastic (reinforced) Shaft: stainless steel
Operating temperature	-40...+85 °C
Service life	≥20 million revolutions (depends on the type of shaft load)
Relative humidity	95 %
Resistance	EN 60068-2-6 Vibration 20 g, 10-2000 Hz EN 60068-2-27 Shock 50 g, 11 ms
Weight approx.	30 g
Connection	Cable 0.3 m, radial

Optional

- DEUTSCH or AMP connector on cable end on request

EAM280 - Analog

Solid shaft

Magnetic singleturn encoders

Terminal assignment

Cable

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

Cable data: 3 x 0.25 mm²

Cable / redundant version

Core color	Signal	Description
White	0 V1/2	Ground 1/2
Brown	+Vs1	Voltage supply 1
Green	Uout/lout1	Output 1
Yellow	+Vs2	Voltage supply 2
Grey	Uout/lout2	Output 2

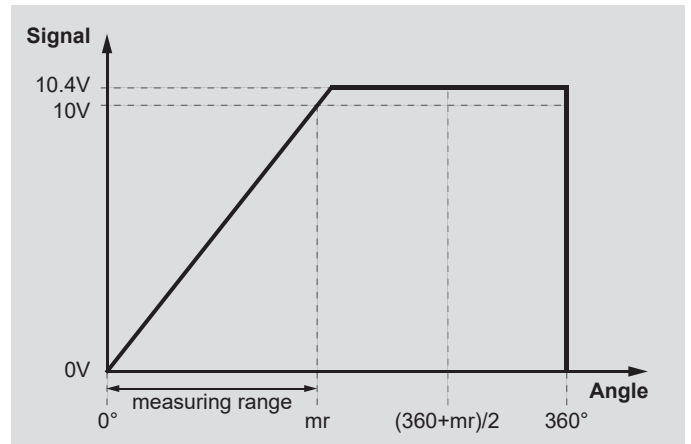
Cable data: 5 x 0.25 mm²

Terminal significance

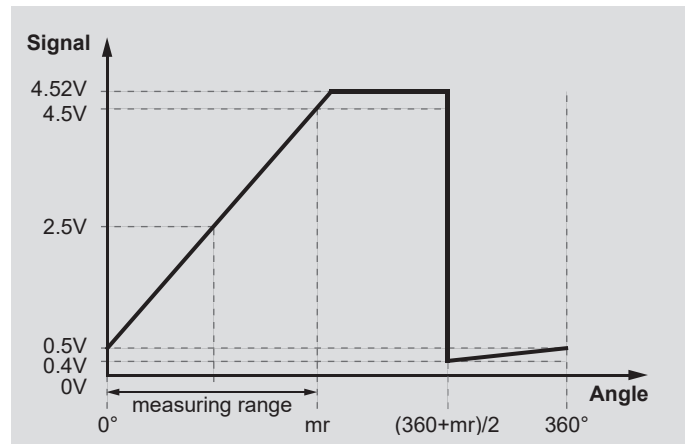
+Vs	Encoder voltage supply
0 V	Encoder ground connection relating to +Vs
lout	Current output, load: <500 Ω
Uout	Voltage output Load resistor: >3 kΩ between Uout / 0 V

Output signals

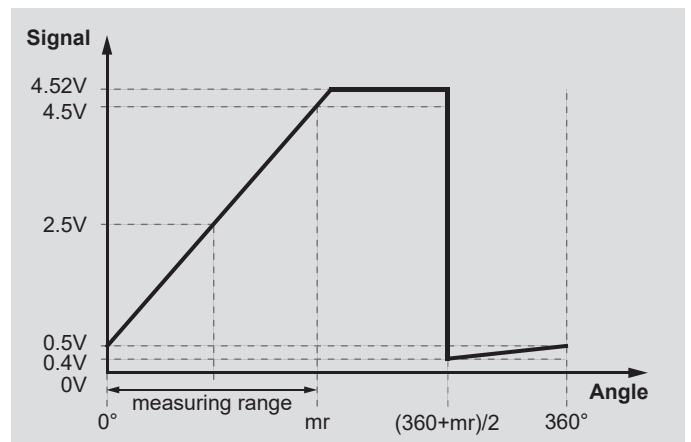
Analog output 0...10 V



Analog output 0.5...4.5 V

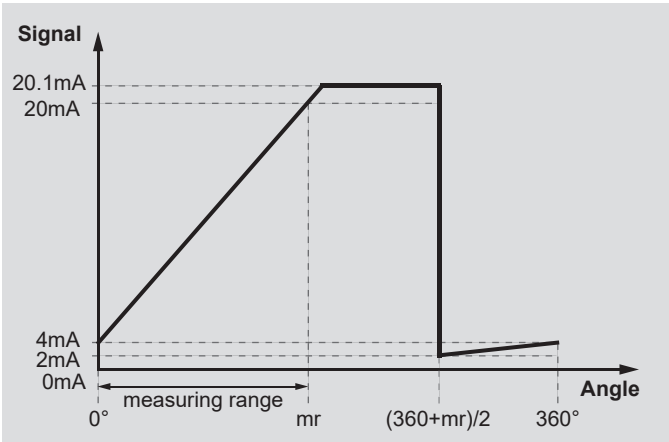


Analog output 0.5...4.5 V ratiometric

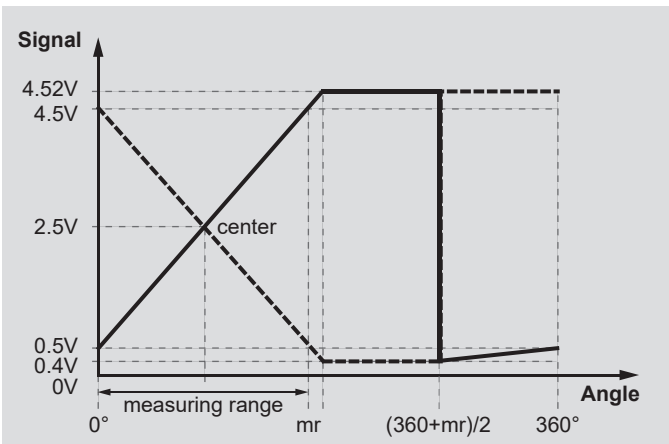


Output signals

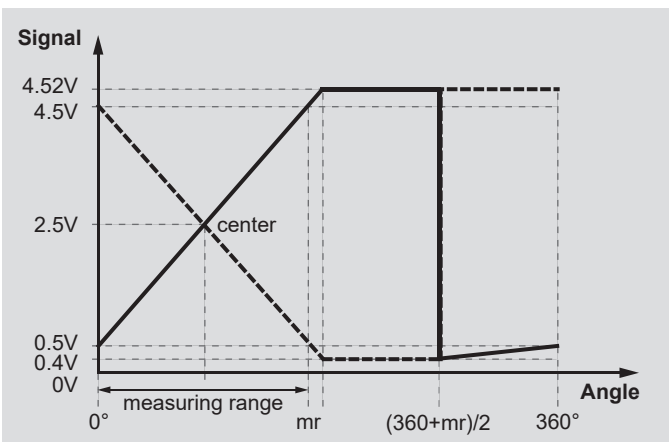
Analog output 4...20 mA



Analog output 0.5...4.5 V redundant



Analog output 0.5...4.5 V ratiometric redundant

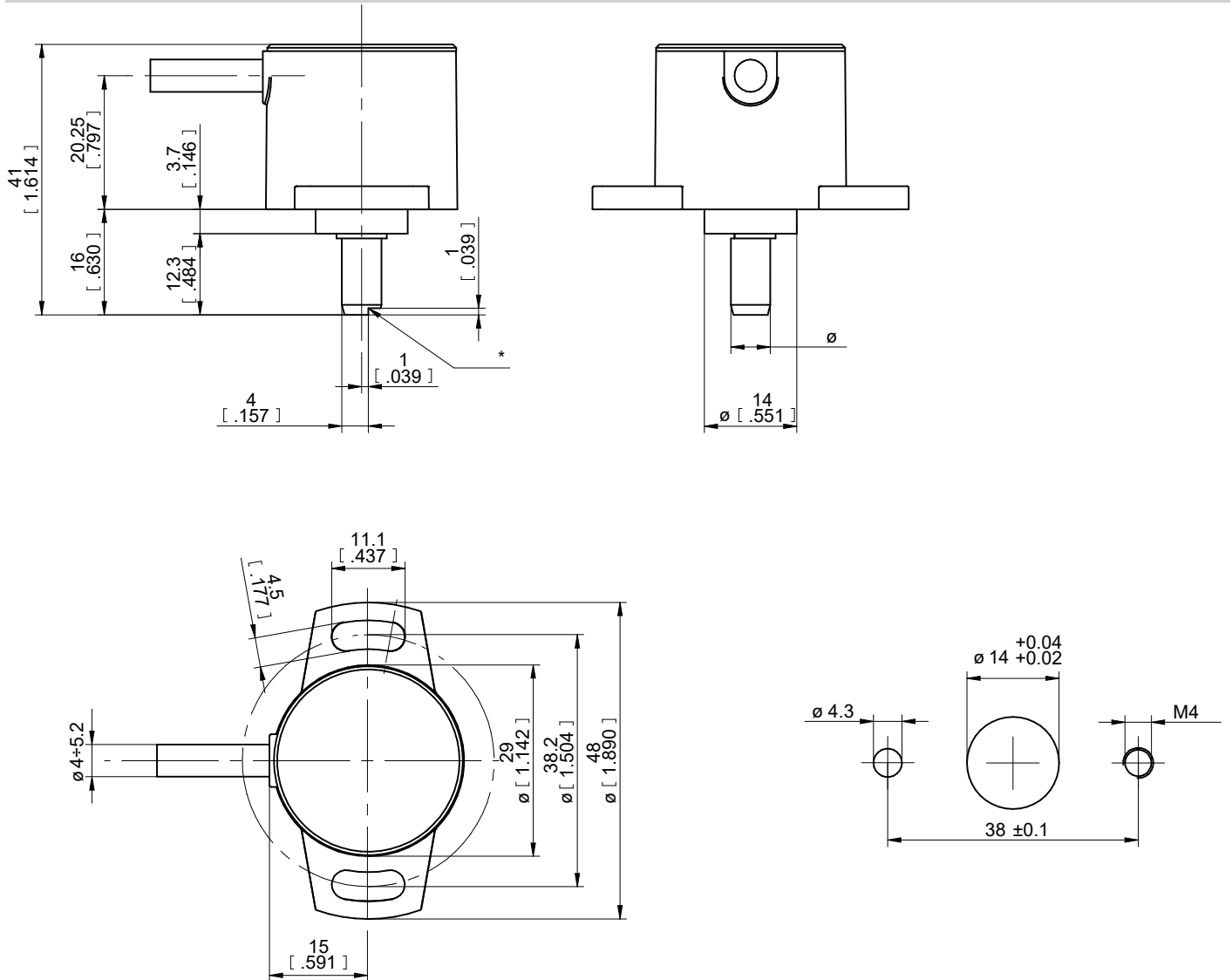


EAM280 - Analog

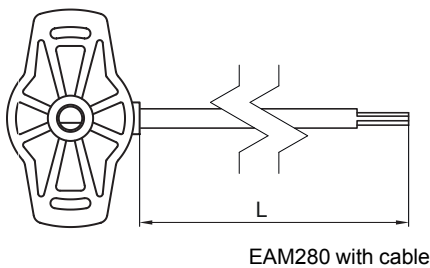
Solid shaft

Magnetic singleturn encoders

Dimensions



* When the shaft marking points opposite to the cable outlet, the sensor is in zero degree position
EAM280 - shaft $\varnothing 6 \times 12.3$ with flat 1 mm

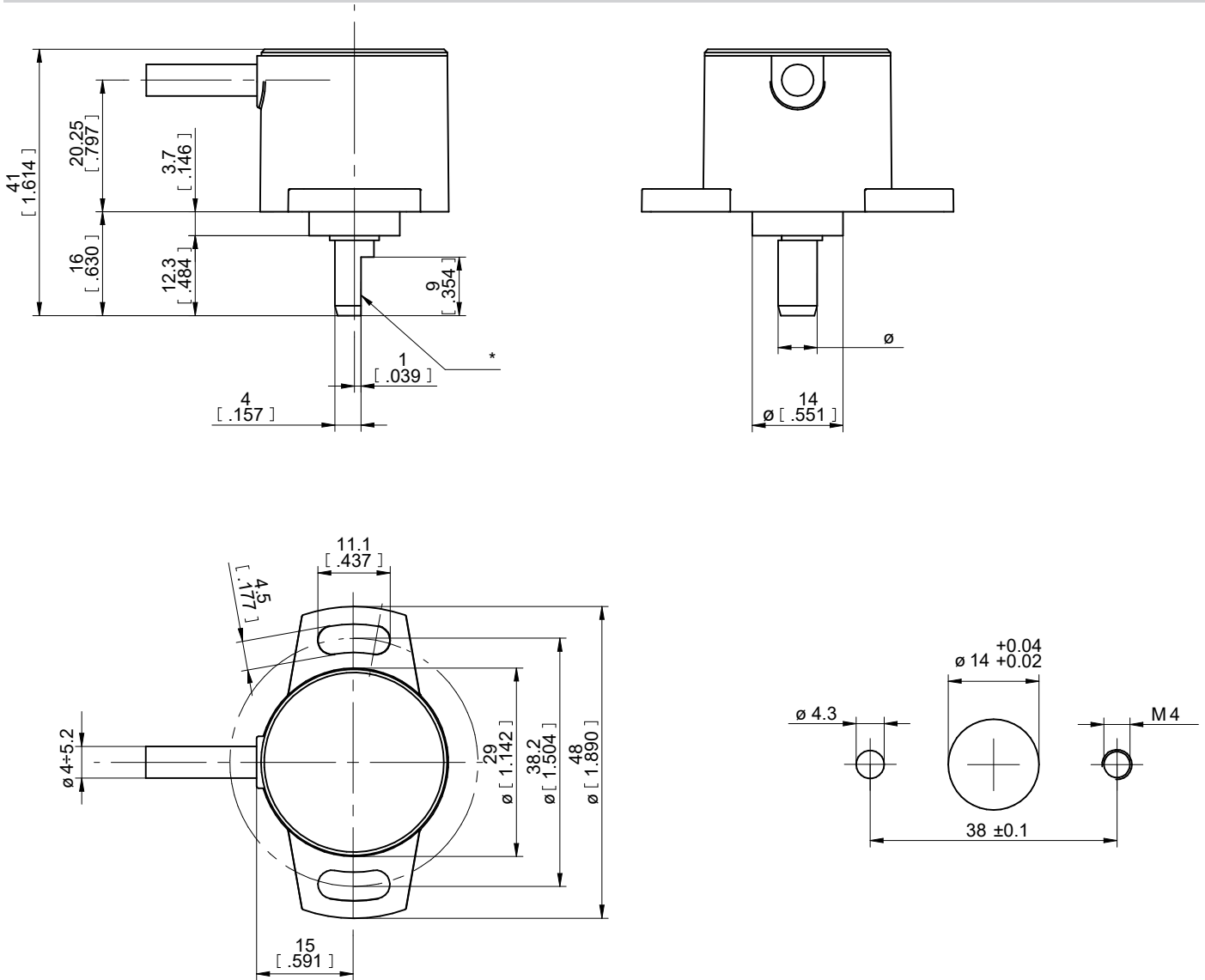


EAM280 - Analog

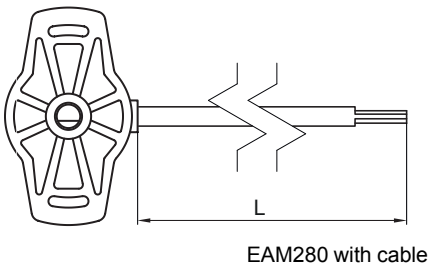
Solid shaft

Magnetic singleturn encoders

Dimensions



* When the shaft marking points opposite to the cable outlet, the sensor is in zero degree position
EAM280 - shaft ø6 x 12.3 with flat 9 mm



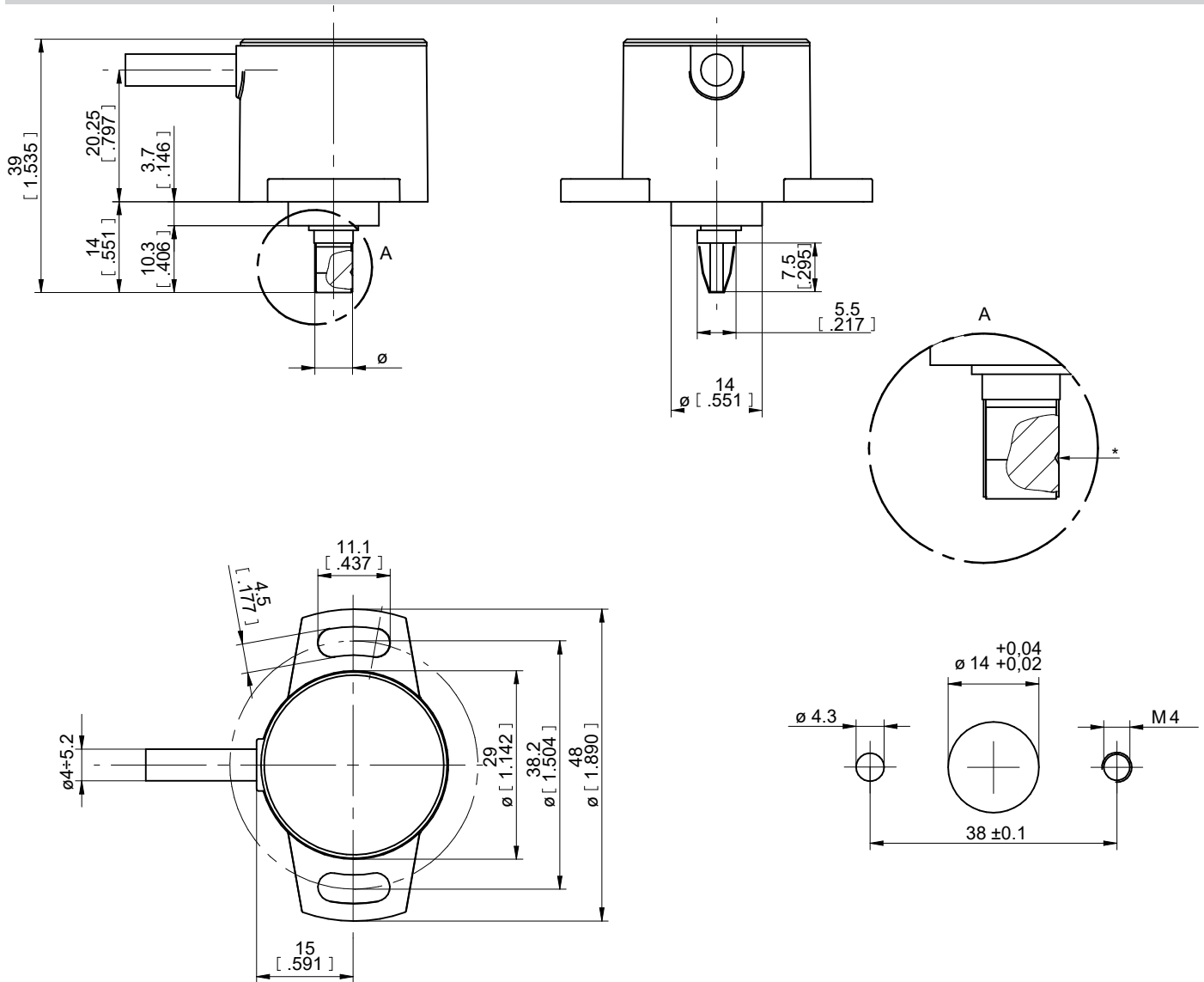
EAM280 with cable

EAM280 - Analog

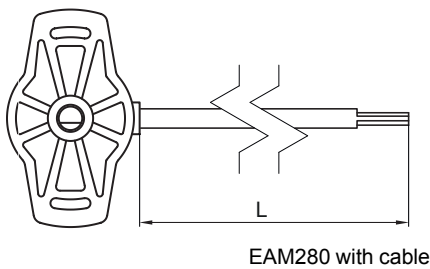
Solid shaft

Magnetic singleturn encoders

Dimensions



* When the shaft marking points opposite to the cable outlet, the sensor is in zero degree position
EAM280 - shaft $\varnothing 6 \times 12.3$ with with push-on coupling



EAM280 - Analog

Solid shaft

Magnetic singleturn encoders

Ordering reference

	EAM280	-	S	F	##	.	#	M	##	.	####	#	.	A
Product	EAM280													
Shaft type	Solid shaft			S										
Flange (shaft)	Flat mounting flange, ø48 mm			F										
Shaft	Push-on coupling							P						
	ø6 x 12.3 mm, with flat 1 mm							1						
	ø6 x 12.3 mm, with flat 9 mm							9						
Protection class	IP 65											5		
	IP 67											7		
Connection	Cable radial, 0.3 m												M	
Voltage supply / interface	12...30 VDC, current output 4...20 mA													C0
	8...30 VDC, voltage output 0.5...4.5 V redundant													R4
	5 VDC ±10%, voltage output 0.5...4.5 V ratiometric, redundant													R7
	8...30 VDC, voltage output 0.5...+4.5 V													V3
	12...30 VDC, voltage output 0...10 V													V6
	5 VDC ±10%, voltage output 0.5...4.5 V ratiometric													V7
Measuring range	0...30°													A030
	0...60°													A060
	0...180°													A180
	0...270°													A270
	0...360°													A360
Output characteristics	One-channel, rising CW													1
	One-channel, rising CCW													2
	Redundant, CH1 rising CW, CH2 rising CCW													3
	Redundant, CH1 rising CCW, CH2 rising CW													4
	Redundant, CH1 rising CW, CH2 rising CW													5
	Redundant, CH1 rising CCW, CH2 rising CCW													6
Operating temperature	-40...+85 °C													