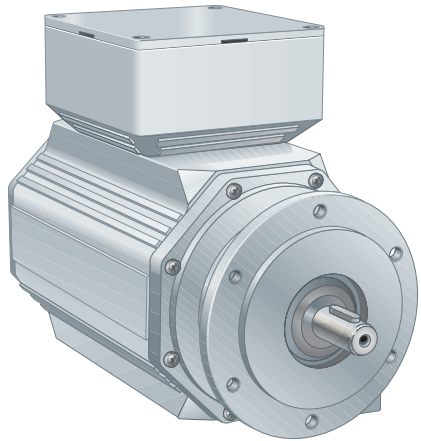
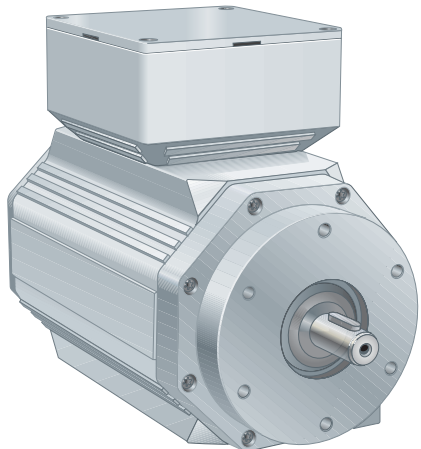


# 1608 — Extreme Shaft encoder, Absolute



**85, Euro-flange**



**91, Standard flange**

## Short description:

- >> Extreme resistance to mechanical loads, vibrations and shock
- >> Exceptional durability in tough environments of high temperatures and dust
- >> Available with SSI/EnDat output and with gateways for CANopen, DeviceNet™ and PROFIBUS
- >> 25 bit resolution
- >> Stainless steel options available on request

## Suitable applications:

- >> Specially designed for heavy industries such as steel, crane and oil

## General information

Encoder data	
Type	ESA 1608
Operating temperature	-20 °C .. +85 °C (+100 °C for EnDat)
Storage temperature	-40 °C .. +85 °C
Ingress protection class	IP-67 according to IEC 60529
At shaft inlet	IP-67 according to IEC 60529
Vibration (50 to 2000Hz)	< 200 m/s <sup>2</sup> according to IEC 60068-2-6
Shock (6ms)	< 2000 m/s <sup>2</sup> according to IEC 60068-2-27
Cover material	Aluminium
Cover surface treatment	Anodized
Weight	Approx. 6900 g
Accuracy and resolution	
Total resolution	25 bit
Singleturn resolution	13 bit (8192 absolute positions per revolution)
Multiturn resolution	12 bit (4096 absolute number of revolutions)
Accuracy	± 1 LSB

## Flange option

Flange type	85, Euro-flange	91, Standard flange
Outer diameter	ø115 mm	ø100 mm
Mounting holes	6 x M6	6 x M6
Flange material	Aluminium	Aluminium
Surface treatment	Anodized	Anodized

## Shaft option

Shaft type	Ø11 with key nut	Ø15 with key nut
Axial shaft load	1000 N	1000 N
Radial shaft load	260 N	680 N
Mech. permissible speed	4000 rpm	4000 rpm
Shaft material	Stainless steel	Stainless steel
Moment of inertia	0,32 x 10 <sup>-6</sup> kgm <sup>2</sup>	0,32 x 10 <sup>-6</sup> kgm <sup>2</sup>

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## Connection option

<b>Connection</b>
Terminal, M25 cable gland for ø13-16 mm cable

<b>Connecting direction</b>
Axial or Radial

Encoder type	EnDat	SSI
Function	Terminal	Terminal
+E Volt	1	1
0 Volt	2	2
Data	3	3
Data inverted	4	4
Clock	5	5
Clock inverted	6	6
Sensor +E Volt	7	7
Sensor 0 Volt	8	8
Code sequence	NA	9
Zero set	NA	10

NA=Not available

## Electrical option

Output interface	EnDat	SSI
Power supply	5 Vdc ± 5 %	10-30 Vdc
Polarity protected	No	Yes
Data output	RS-485	
Clock input	RS-485	
Frequency range	Max 2 MHz	100 kHz -1 MHz
Cable length	Max 100 m (10m@2MHz)	Max 100 m
Code type	Binary	Gray
Current consumption	Max 200 mA	

## Accessories

PROFIBUS Gateway	01300210
CANopen Gateway	01300230
DeviceNet™ Gateway	01300240
Base plate for mounting	680846-01
Shaft coupling 11-11 mm	46441P33P33
Shaft coupling 15-15 mm	46441P40P40

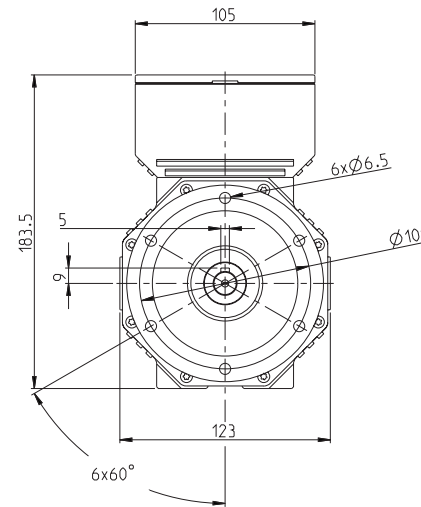
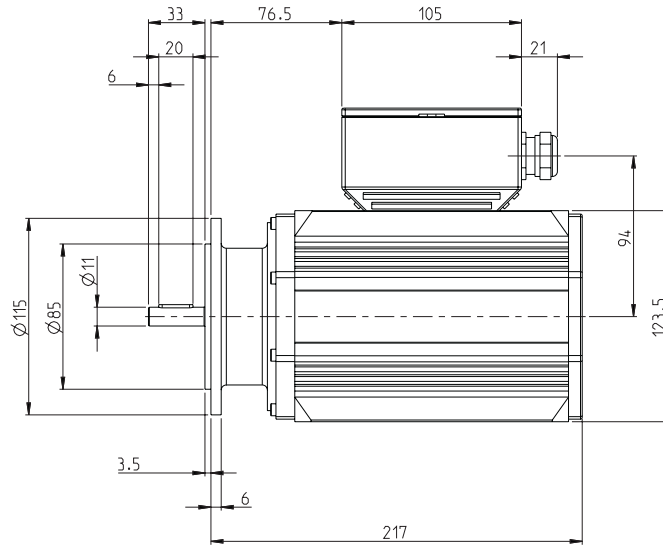
# 1608

## Extreme Shaft encoder, Absolute

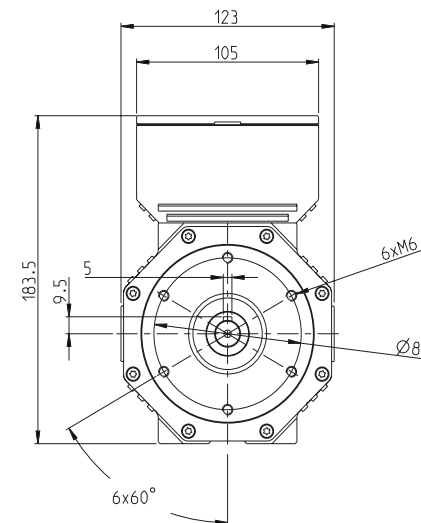
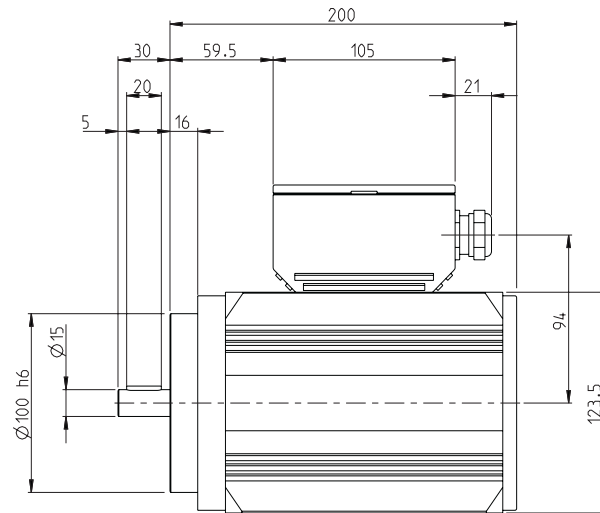


### Dimensions

#### 85, Euro-flange



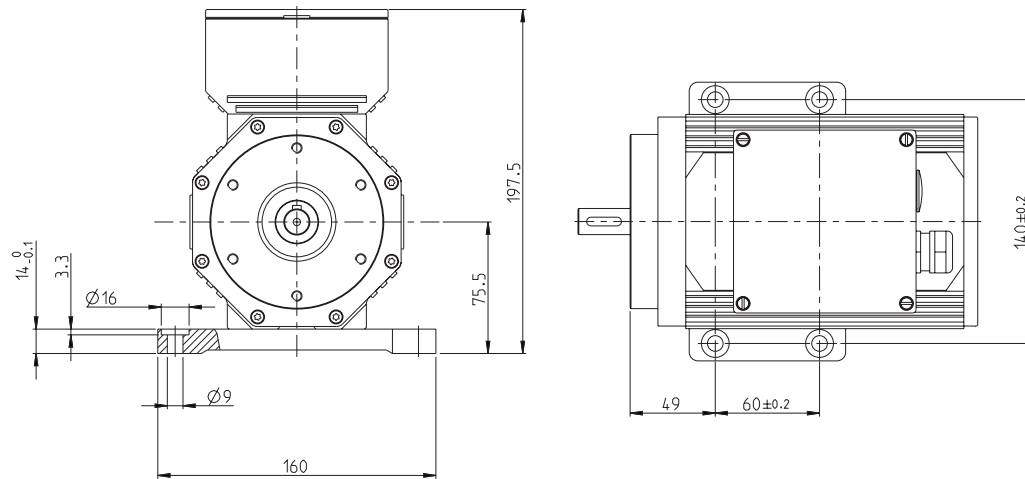
#### 91, Standard flange



# 1608 — Extreme Shaft encoder, Absolute



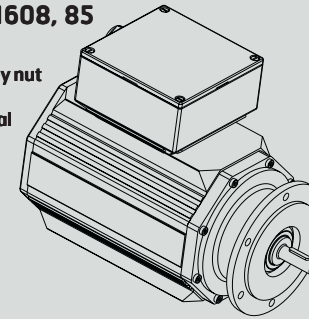
Mounted with base plate



## Various combinations

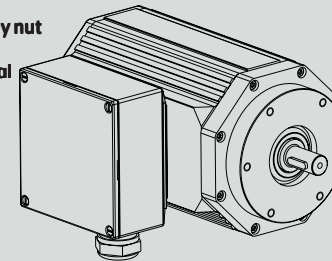
### ESA 1608, 85

11 mm  
with key nut  
axial  
terminal  
box



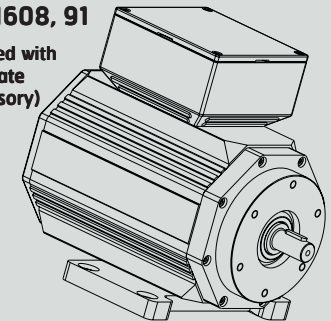
### ESA 1608, 91

15 mm  
with key nut  
radial  
terminal  
box



### ESA 1608, 91

Mounted with  
base plate  
(accessory)



## Ordering information Tick your choice

Type	ESA 1608		
Flange <sup>(1)</sup>	91, Standard flange	85, Euro-flange	
Shaft <sup>(1)</sup>	Ø15 mm with key nut	Ø11 mm with key nut	
Electronics	Supply	5 Vdc	10-30 Vdc
	Interface	EnDat	SSI
Connection	Terminal		
Connecting direction	Axial	Radial	
Resolution	25 bit		

<sup>(1)</sup> Possible combinations: Standard flange / Ø15 mm shaft or Euro-flange / Ø11 mm shaft

Ordering example: ESA 1608 85 Ø11 wk 5 Vdc SENB Terminal Axial 25 bit