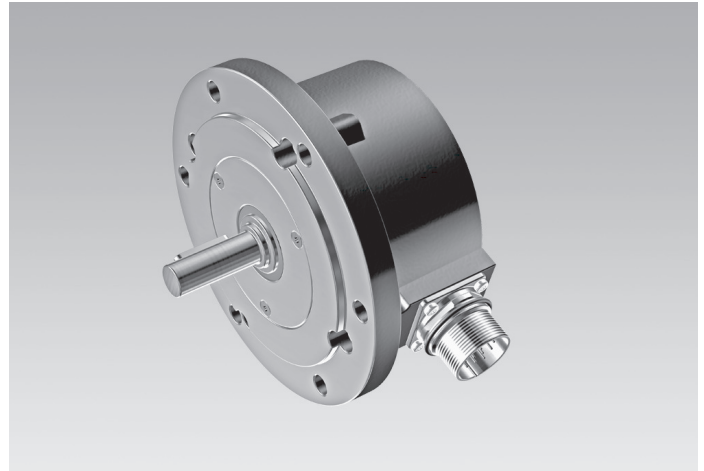


FOG 9

Solid shaft $\varnothing 10$ mm or $\varnothing 11$ mm with EURO flange B10
100...5000 pulses per revolution

Overview

- Solid shaft $\varnothing 10$ mm or $\varnothing 11$ mm
- Compact, robust die-cast housing
- Flange connector with metal mating connector
- EURO flange B10
- Output stage TTL with regulator UB 9...30 VDC
- Output stage HTL with power linedriver



Technical data

Technical data - electrical ratings

Voltage supply	9...30 VDC 5 VDC ± 5 %
Consumption w/o load	≤ 100 mA
Pulses per revolution	100 ... 5000
Phase shift	$90^\circ \pm 20^\circ$
Duty cycle	40...60 %
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	≤ 120 kHz ≤ 300 kHz (on request)
Output signals	K1, K2, K0 + inverted Error output (option EMS)
Output stages	HTL-P (power linedriver) TTL/RS422
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE UL

Technical data - mechanical design

Size (flange)	$\varnothing 115$ mm
Shaft type	$\varnothing 10$...11 mm solid shaft

Technical data - mechanical design

Admitted shaft load	≤ 200 N axial ≤ 300 N radial
Flange	EURO flange B10
Protection DIN EN 60529	IP 66
Operating speed	≤ 10000 rpm (mechanical)
Starting torque	≤ 6 Ncm
Rotor moment of inertia	160 gcm ²
Material	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	-30...+100 °C -25...+100 °C (>3072 pulses)
Resistance	IEC 60068-2-6 Vibration 10 g, 10...2000 Hz IEC 60068-2-27 Shock 100 g, 6 ms
Corrosion protection	IEC 60068-2-52 Salt mist for ambient conditions C4 according to ISO 12944-2
Explosion protection	II 3 G Ex nA IIC T4 Gc (gas) II 3 D Ex tc IIIB T135°C Dc (dust)
Connection	Flange connector M23, 12-pin Mating connector
Weight approx.	700 g

Optional

- Function control with EMS (Enhanced Monitoring System)
- Angle flange-connector

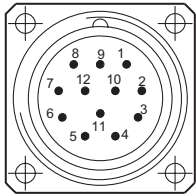
FOG 9

Solid shaft $\varnothing 10$ mm or $\varnothing 11$ mm with EURO flange B10

100...5000 pulses per revolution

Terminal assignment

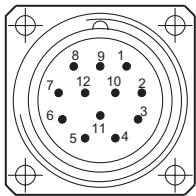
View A (see dimension)
Assignment flange connector



Flange connector M23,
male, 12-pin,
clockwise (CW)

Pin	Assignment
1	$\overline{K2}$
2	dnu
3	K0
4	$\overline{K0}$
5	K1
6	$\overline{K1}$
7	dnu
8	K2
9	dnu
10	0V (\perp)
11	dnu
12	+UB

Option EMS: View A (see dimension)
Assignment flange connector



Flange connector M23,
male, 12-pin,
clockwise (CW)

Pin	Assignment
1	$\overline{K2}$
2	dnu
3	K0
4	$\overline{K0}$
5	K1
6	$\overline{K1}$
7	\overline{Err}
8	K2
9	0V (\perp) @ \overline{Err}
10	0V (\perp)
11	dnu
12	+UB

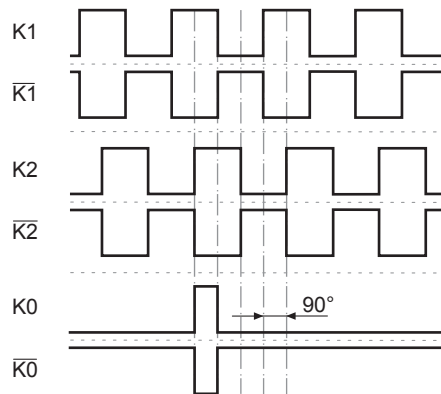
Terminal significance

+UB	Voltage supply
0V (\perp)	Ground
K1	Output signal channel 1
$\overline{K1}$	Output signal channel 1 inverted
K2	Output signal channel 2 (offset by 90° to channel 1)
$\overline{K2}$	Output signal channel 2 inverted
K0	Zero pulse (reference signal)
$\overline{K0}$	Zero pulse inverted
\overline{Err}	Error output (option EMS)
dnu	Do not use

Output signals

HTL/TTL

At positive rotating direction (see dimension)



Option EMS (Enhanced Monitoring System): Status LED / error output

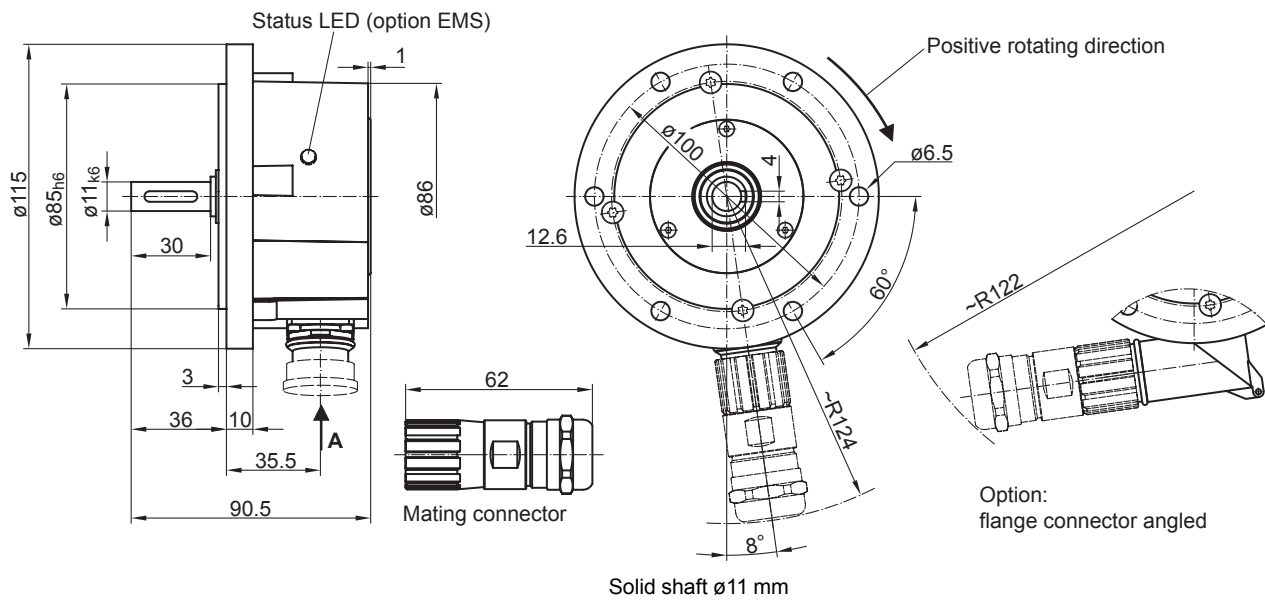
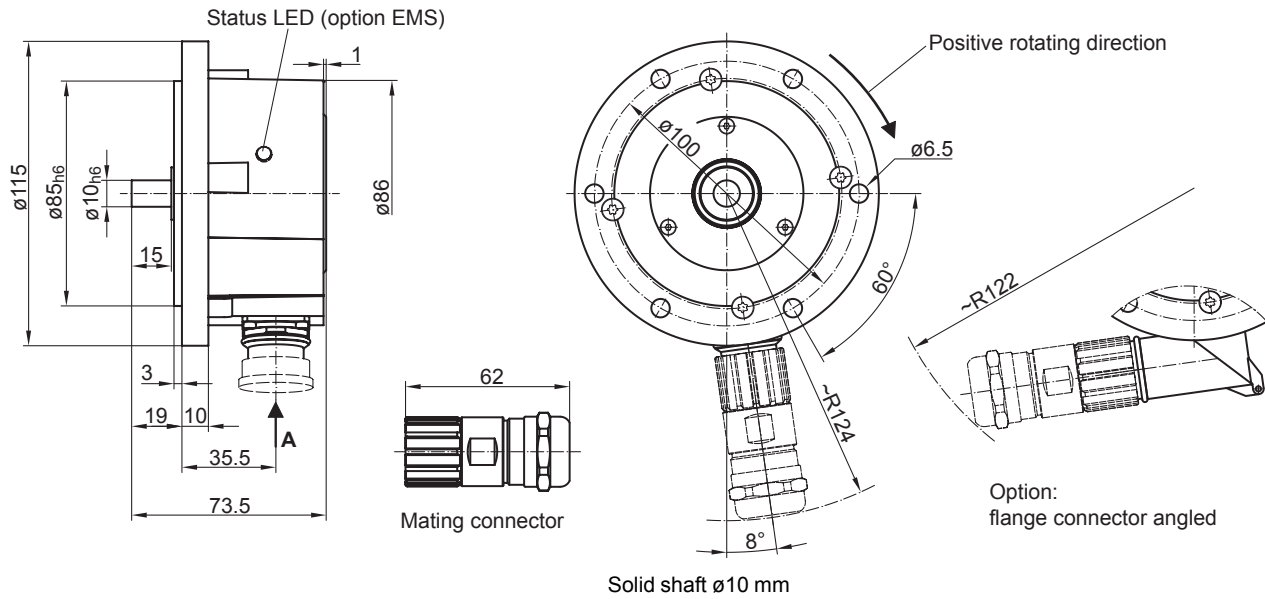
Flash light red*	Error of signal sequence, zero pulse or pulses (Error output = HIGH-LOW alternation)
Red	Overload output transistors (Error output = LOW)
Flash light green	Device o.k., rotating (Error output = HIGH)
Green	Device o.k., stopped (Error output = HIGH)
No light	No voltage supply connection or wrong connection (Error output = LOW)

* Only at rotating device

FOG 9

Solid shaft $\varnothing 10$ mm or $\varnothing 11$ mm with EURO flange B10
100...5000 pulses per revolution

Dimensions



FOG 9

Solid shaft \varnothing 10 mm or \varnothing 11 mm with EURO flange B10
 100...5000 pulses per revolution

Ordering reference

	FOG9	##	DN	####	###
Product					
Incremental encoder	FOG9				
EMS - Enhanced Monitoring System					
Without EMS					
With EMS		.2			
Output signals					
K1, K2, K0			DN		
Pulse number⁽¹⁾					
100					100
120					120
128					128
180					180
192					192
200					200
250					250
256					256
300					300
360					360
400					400
500					500
512					512
600					600
720					720
900					900
1000					1000
1024					1024
1200					1200
1250					1250
2048					2048
2500					2500
3072					3072
4096					4096
5000					5000
Voltage supply / output stage					
9...30 VDC / output stage HTL with inverted signals					I
5 VDC / output stage TTL with inverted signals					TTL
9...30 VDC / output stage TTL with inverted signals					R

(1) Other pulse numbers on request.

Accessories

Mounting accessories

Spring disk coupling K 35 (shaft \varnothing 6...12 mm)
Spring disk coupling K 50 (shaft \varnothing 11...16 mm)
Spring disk coupling K 60 (shaft \varnothing 11...22 mm)

Connectors and cables

Sensor cable for encoders HEK 8

Accessories

Diagnostic accessories

11075858	Analyzer for encoders HENQ 1100
11075880	Analyzer for encoders HENQ 1100 B