

Incremental encoders

Shaft $\varnothing 10$ mm or $\varnothing 11$ mm with EURO flange B10

Resolution 1...2500 pulses

FOG 9



FOG 9

Technical data - electrical ratings

Voltage supply	5 VDC ± 5 % 9...26 VDC 9...30 VDC
Consumption w/o load	≤ 100 mA
Resolution (steps/turn)	1...2500
Phase shift	$90^\circ \pm 20^\circ$
Scan ratio	40...60 %
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	≤ 120 kHz
Output signals	K1, K2, K0 + inverted
Output circuit	TTL (RS422) HTL (power linedriver)
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Approval	UL approval / E256710

Features

- Encoder with shaft $\varnothing 10$ mm or $\varnothing 11$ mm
- Optical sensing
- Compact, robust die-cast housing
- Flange socket with metal mating connector
- EURO flange B10
- Logic level TTL with regulator UB 9...26 VDC
- Logic level HTL with power linedriver

Optional

- Flange socket right angel
- Protected cable outlet (corrugated tube)

Technical data - mechanical design

Dimensions (flange)	$\varnothing 86$ mm
Shaft	$\varnothing 10$ mm $\varnothing 11$ mm
Shaft loading	≤ 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
Materials	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	$-30...+100$ °C
Resistance	IEC 60068-2-6 Vibration 10 g, 10-2000 Hz IEC 60068-2-27 Shock 100 g, 6 ms
Explosion protection	II3G Ex nA IIC T4 Gc (gas) II3D Ex tc IIIB T135°C Dc (dust)
Connection	Connector M23, 12-pin Mating connector
Weight approx.	700 g

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Part number

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				Voltage supply / signals
			-	9...30 VDC / output circuit HTL
			I	9...30 VDC / output circuit HTL with inverted signals
				TTL 5 VDC / output circuit TTL with inverted signals
			R	9...26 VDC / output circuit TTL with inverted signals (for output signals DN)
See part number (pulses)				
Output signals				
D K1, K2				
DN K1, K2, K0				

Accessories

Connectors and cables

HEK 8 Sensor cable for encoders

Mounting accessories

K 35 Spring disk coupling for shaft \varnothing 6...12 mm

K 50 Spring disk coupling for shaft \varnothing 11...16 mm

K 60 Spring disk coupling for shaft \varnothing 11...22 mm

Diagnostic accessories

HENQ 1100 Analyzer for encoders

Part number (pulses)

1	12	72	360	1042
2	15	80	400	1200
3	25	100	500	1250
4	30	120	512	2048
5	40	180	600	2500
6	50	192	720	
8	60	200	900	
10	62	250	1000	
11	64	300	1024	

Other pulse numbers upon request.

Incremental encoders

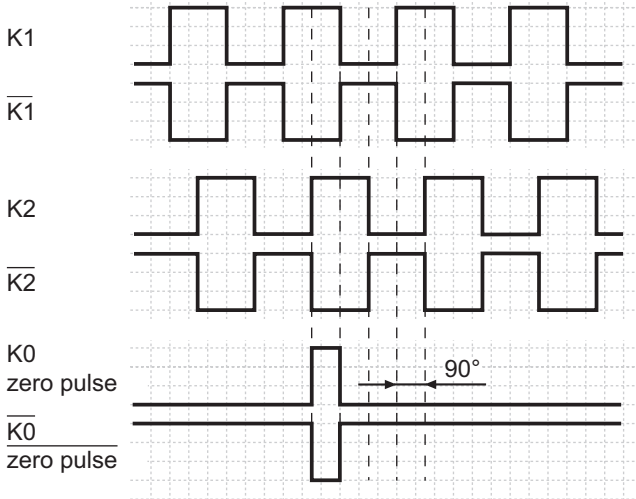
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Output signals

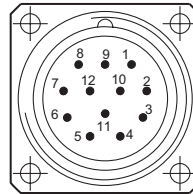
at positive rotating direction



Terminal assignment

View A - Flange socket, male contacts, clockwise

Male	Assignment
Pin 1	$\overline{K2}$ (K2 inv.)
Pin 2	do not use
Pin 3	K0 (zero pulse)
Pin 4	$\overline{K0}$ (zero pulse inv.)
Pin 5	K1
Pin 6	$\overline{K1}$ (K1 inv.)
Pin 7	do not use
Pin 8	K2
Pin 9	do not use
Pin 10	GND
Pin 11	do not use
Pin 12	+UB



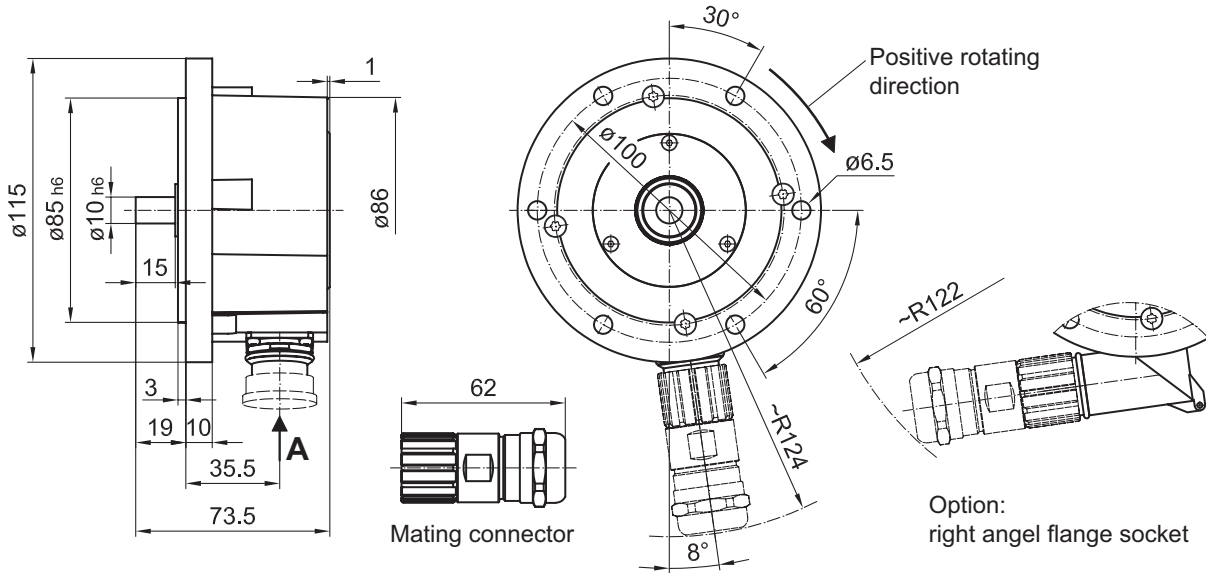
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Dimensions

FOG 9 - shaft $\varnothing 10$ mm



FOG 9 - shaft $\varnothing 11$ mm

