Encoders without bearings - incremental

Sensor head with magnetic tape for shaft ø300...3183 mm

512...131072 pulses or 512...16384 sinewave cycles per turn

MIR 3000F - *HDmag flex*

Features

- **Bearingless incremental encoder with magnetic sensing**
- **Flexible design for wide shaft diameter range**
- **Square-wave signals HTL/TTL or sine signals**
- **Max. 131072 pulses per revolution**
- **Status indication via system OK output and LED**
- **Robust and wearless**
- **Fully encapsulated electronics IP 67**
- **Large mounting tolerances**

Technical data - electrical ratings

Voltage supply	4.75...30 VDC
Consumption w/o load	≤300 mA (24 VDC)
Sensing method	Magnetic
Output signals	A+, B+, R+, A-, B-, R-
Initializing time	≤1000 ms after power on
Status indicator	Color-LED, system OK output
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE

Technical data - electrical ratings (square-wave)

Pulses per revolution	512...131072
Phase shift	90° ±2°
Scan ratio	45...55 %
Reference signal	Zero pulse, width 90°
Output frequency	≤500 kHz (HTL) ≤2 MHz (TTL)
Output stages	HTL TTL/RS422

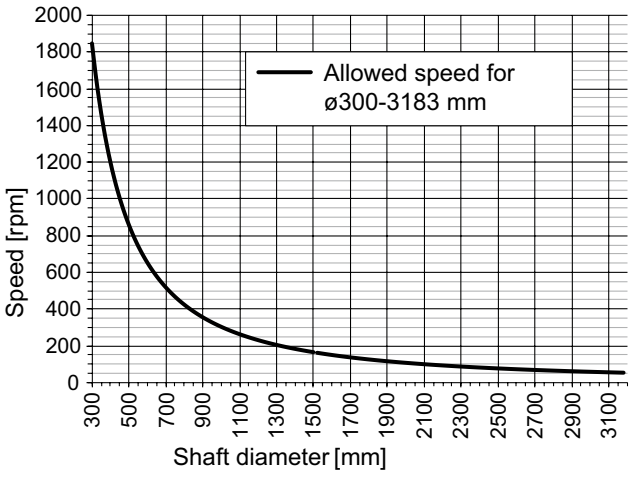
Technical data - electrical ratings (SinCos)

Sinewave cycles per turn	512...16384
Phase shift	90° ±2°
Reference signal	Zero pulse, width 360°
Output frequency	≤500 kHz
Output stages	SinCos 1 Vpp

Technical data - mechanical design

Dimensions (sensor head)	165 x 25 x 93 mm
Shaft type	ø300...3183 mm (through hollow shaft)
Axial tolerance	±5 mm (belt to head)
Radial tolerance	1...3 mm (belt to head)
Protection DIN EN 60529	IP 67
Operating temperature	-40...+85 °C
Operating speed	≤1850 rpm (ø300 mm) ≤150 rpm (ø1500 mm) see diagram below
Resistance	IEC 60068-2-6 Vibration 30 g, 10-2000 Hz IEC 60068-2-27 Shock 300 g, 6 ms
Connection	Flange connector M23, 12-pin
Weight approx.	730 g (head), 120 g (belt/m), 17 g (lock)

Speed dependent on the shaft diameter



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Part number

MIR3000F- | .... | . | M | | . | | . | A |

Operating temperature
A -40...+85 °C

Pulse number/sinewave cycles - see table

Voltage supply / output stages
Q 4,75...30 VDC, HTL (Vin = Vout), 6 channel
F 4,75...30 VDC, TTL/RS422, 6 channel
T 4,75...30 VDC, SinCos (1 Vpp), 6 channel

Connection
M Flange connector M23, tangential 12-pin, male, CCW

Shaft diameter (mm)
.... 0300...3183

Pulse number/sinewave cycles

512	1024	5000	16384
720	2048	8192	32768
1000	4096	10000	131072

Other pulse numbers/sinewave cycles on request.
Maximum sinewave cycles 16384 for SinCos output.

Accessories

Connectors and cables

HEK 8	Sensor cable for encoders
11068549	Mating connector M23, solder version, 12-pin, CW

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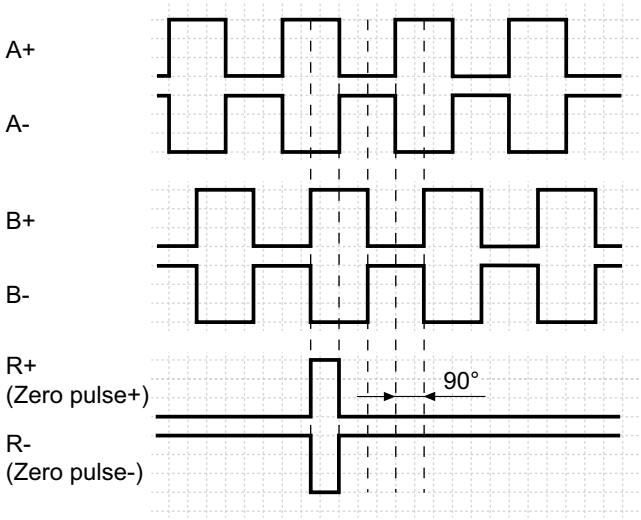
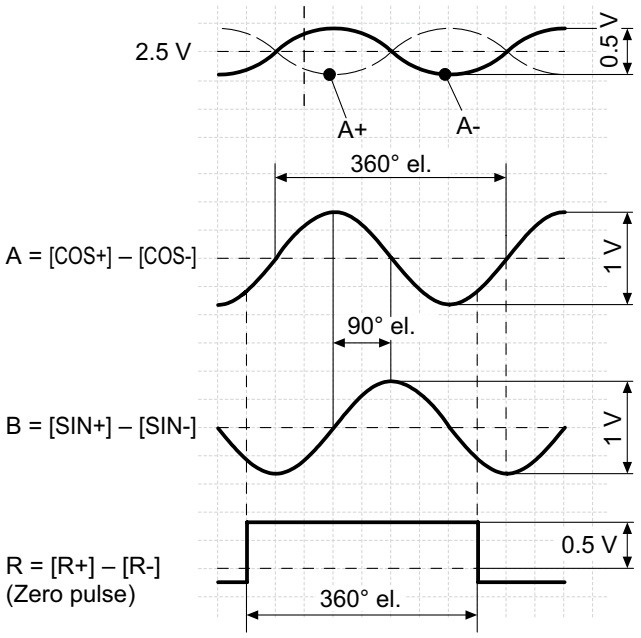
Output signals

Version with square-wave signals HTL oder TTL
at positive rotating direction



Version with sinewave signals
at positive rotating direction

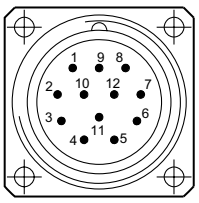


Terminal assignment

View A
Flange connector M23, 12-pin, male contacts, CCW

Pin	Assignment
1	B- / SIN-
2	System OK-
3	R+ (Zero pulse)
4	R- (Zero pulse inv.)
5	A+ / COS+
6	A- / COS-
7	Do not use
8	B+ / SIN+
9	Do not use
10	0 V
11	System OK+
12	+UB

No error if „System OK“ output = HIGH



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Dimensions