

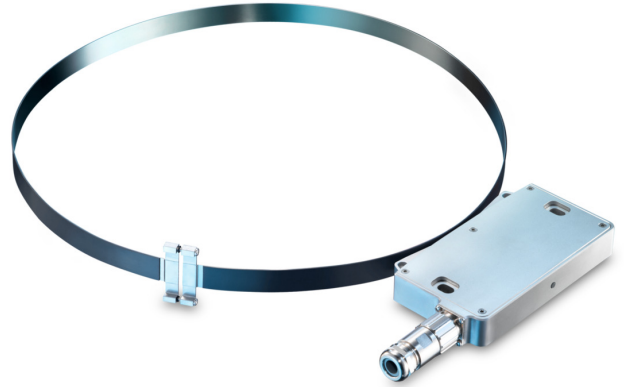
MIR 3000F

Sensor head with magnetic tape for shaft $\varnothing 300 \dots 3183$ mm

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

Overview

- Encoder without bearings - incremental 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
- Magnetic rotor included in delivery



Technical data

Technical data - electrical ratings

Voltage supply	4.75...30 VDC
Consumption w/o load	≤ 300 mA (24 VDC)
Initializing time	≤ 1000 ms after power on
Output signals	A+, B+, R+, A-, B-, R-
Sensing method	Magnetic
Status indicator	Color-LED, system OK output
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE UL approval / E217823

Technical data - electrical ratings (square-wave)

Pulses per revolution	512 ... 131072
Phase shift	$90^\circ \pm 2^\circ$
Duty cycle	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 revolution	512 ... 16384
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Technical data - electrical ratings (SinCos)

Phase shift	$90^\circ \pm 2^\circ$
Reference signal	Zero pulse, width 360°
Output frequency	≤ 500 kHz
Output stages	SinCos 1 Vpp

Technical data - mechanical design

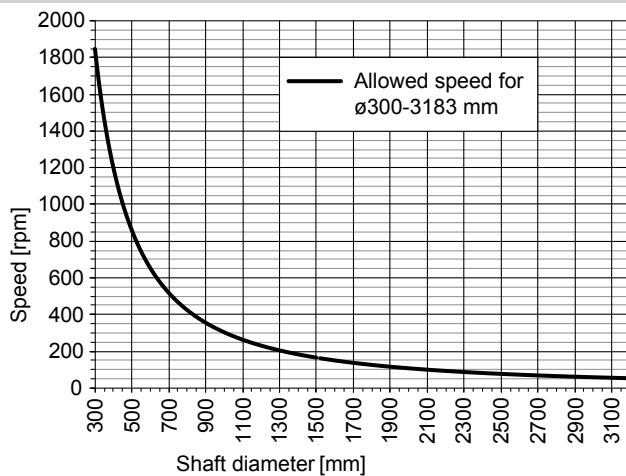
Dimensions (sensor head)	165 x 25 x 93 mm
Shaft type	$\varnothing 300 \dots 3183$ mm (through hollow shaft)
Axial tolerance	± 5 mm (belt to head)
Radial tolerance	1...3 mm (belt to head)
Protection EN 60529	IP 67
Operating speed	≤ 1850 rpm ($\varnothing 300$ mm) ≤ 150 rpm ($\varnothing 1500$ mm)
Material	Housing sensing head: aluminium alloy Magnetic belt: stainless steel (1.4310)
Operating temperature	$-40 \dots +85^\circ \text{C}$
Resistance	IEC 60068-2-6 Vibration 30 g, 10-2000 Hz IEC 60068-2-27 Shock 300 g, 6 ms
Weight approx.	730 g (head) 120 g (belt/m), 17 g (lock)
Connection	Flange connector M23, 12-pin

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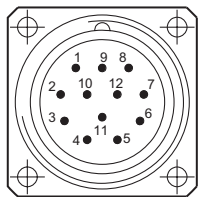
Speed dependent on the shaft diameter



Terminal assignment

View A (see dimension)

Assignment flange connector



Flange connector M23,
male, 12-pin,
counter-clockwise (CCW)

Pin	Assigment
1	B−
2	System OK−
3	R+
4	R−
5	A+
6	A−
7	dnu
8	B+
9	dnu
10	0V (⊥)
11	System OK+
12	+UB

No error if „System OK“ output = HIGH

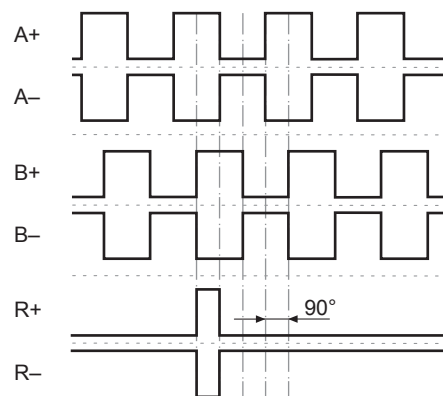
Terminal significance

+UB	Voltage supply
0V (⊥)	Ground
A+	Output signal channel 1
A–	Output signal channel 1 inverted
B+	Output signal channel 2 (offset by 90° to channel 1)
B–	Output signal channel 2 inverted
R+	Zero pulse (reference signal)
R–	Zero pulse inverted
System OK+	Error output
System OK–	Error output inverted
dnu	Do not use

Output signals

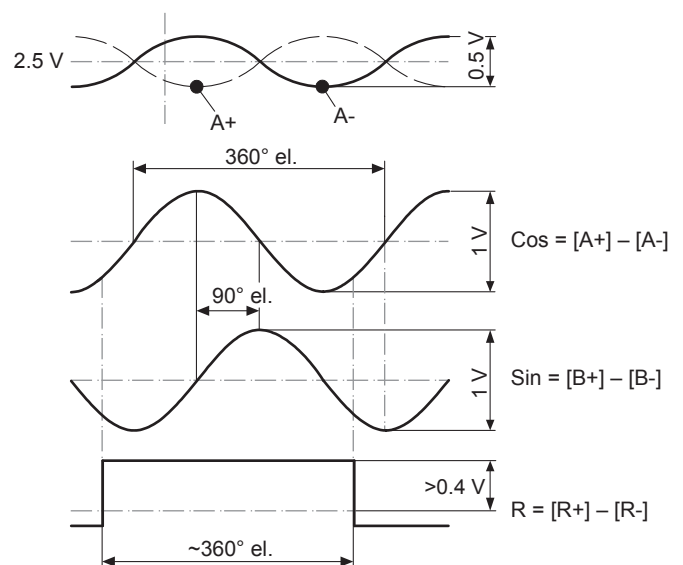
HTL/TTL

At positive rotating direction (see *dimension*)



SinCos

At positive rotating direction (see *dimension*)

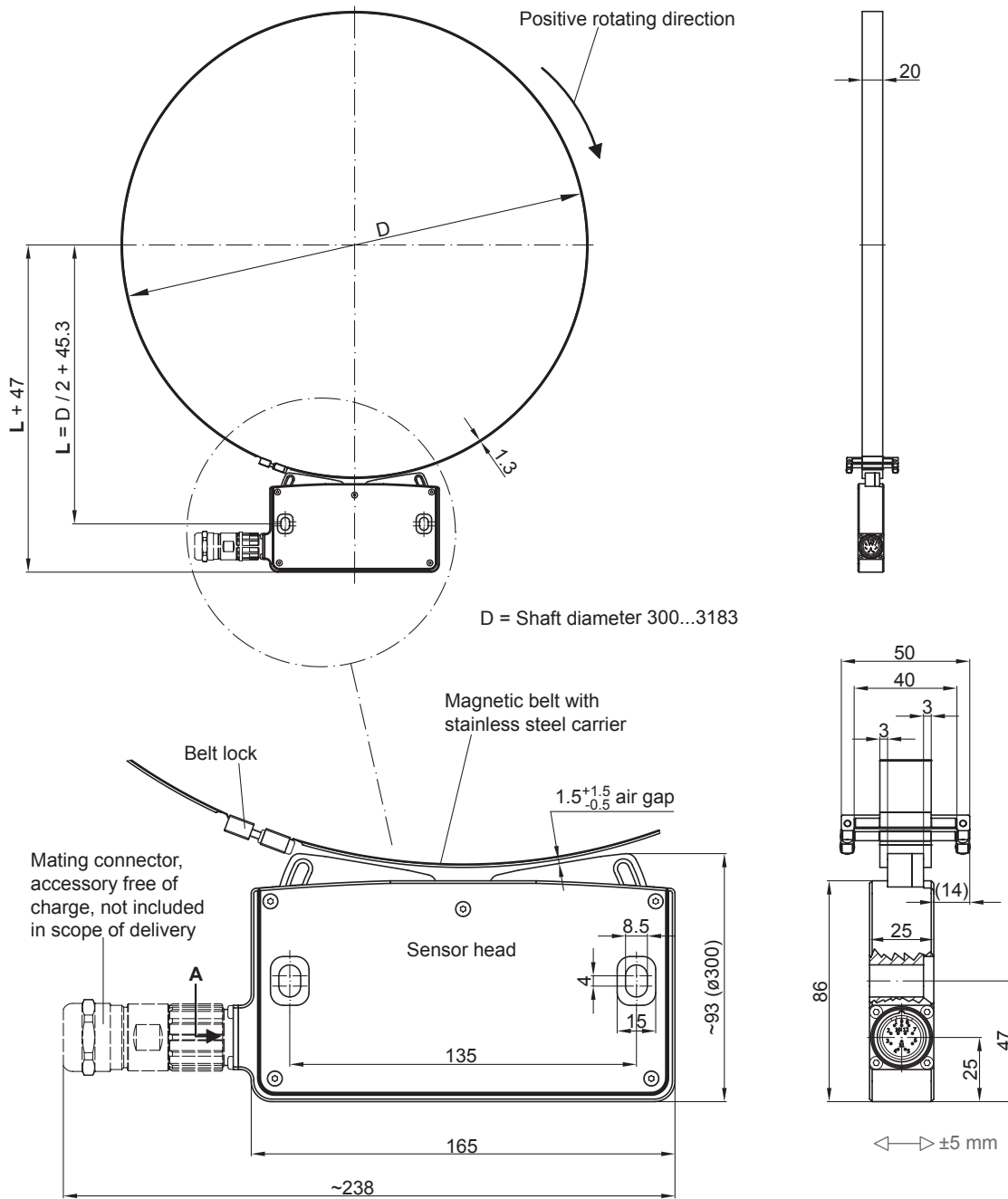


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Dimensions



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

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

Ordering reference

		MIR3000F	-	####	.	M	##	.	#####	.	A
Product											
Encoder without bearings - incremental		MIR3000F									
Through hollow shaft (Ø mm)											
300 - 3185				300 - 3185							
Connection											
Flange socket M23, 12-pin, pin contacts, CCW						M					
Supply voltage / output											
4,75...30 VDC, TTL/HTL push-pull (Vin=Vout)								Q			
4,75-30 VDC, TTL (RS422)								F			
4,75-30 VDC, SinCos 1 Vpp								T			
Pulses per revolution ⁽¹⁾											
512										512	
720										720	
1000										1000	
1024										1024	
2048										2048	
4096										4096	
5000										5000	
8192										8192	
10000										10000	
16384										16384	
32768 ⁽²⁾										32768	
131072 ⁽²⁾										131072	
Operating temperature											
-40...+85 °C											

(1) Other pulse numbers/sinewave cycles on request.

(2) No SinCos output possible