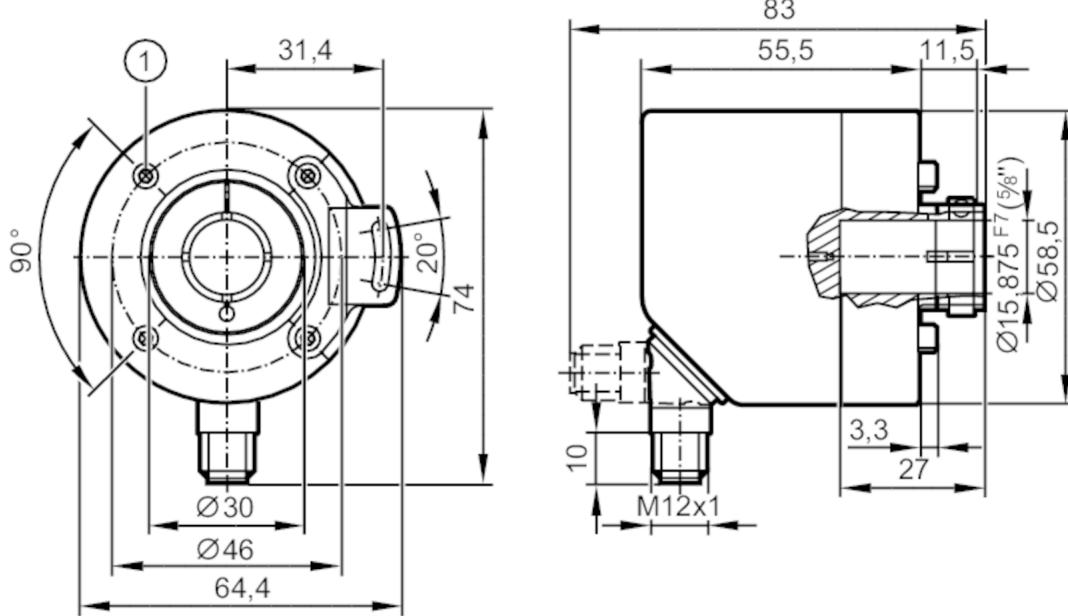


# RO3104



## Incremental encoder with hollow shaft

INCREMENTAL ENCODER BASIC LINE



1 M3 x 0.5 Depth 6 mm



### Product characteristics

Resolution	1...10000; (configurable; Factory setting: 1024) resolution
Communication interface	IO-Link
Shaft design	hollow shaft open to one side
Shaft diameter [mm]	15.875

### Application

Function principle	incremental
Detection system	magnetic

### Electrical data

Operating voltage [V]	4.75...30 DC
Current consumption [mA]	< 150
Protection class	III
Reverse polarity protection	yes
Power-on delay time [s]	0.5
Max. revolution electrical [U/min]	12000

### Outputs

Electrical design	HTL/TTL
Switching frequency [kHz]	1000
Factory setting	Output function: HTL (50 mA)
Short-circuit protection	yes
Phase difference A und B [°]	90

### Measuring/setting range

Resolution	1...10000; (configurable; Factory setting: 1024) resolution
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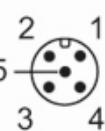
# RO3104



## Incremental encoder with hollow shaft

INCREMENTAL ENCODER BASIC LINE

Accuracy / deviations				
Accuracy	[°]	0.1		
Software / programming				
Parameter setting options	Resolution; Direction of rotation; HTL; TTL			
Interfaces				
Communication interface	IO-Link			
Transmission type	COM2 (38,4 kBaud)			
IO-Link revision	1.1			
SIO mode	yes			
Min. process cycle time	[ms]	2.3		
Operating conditions				
Ambient temperature	[°C]	-40...85		
Storage temperature	[°C]	-40...85		
Max. relative air humidity	[%]	95; (Condensation not permissible)		
Protection	IP 65; IP 66; (on the housing: IP 67; on the shaft: IP 65)			
Tests / approvals				
Shock resistance	100 g			
Vibration resistance	20 g			
MTTF	[years]	292		
Mechanical data				
Weight	[g]	409		
Dimensions	[mm]	Ø 58.5 / L = 69		
Material	flange: aluminum; housing: stainless steel (1.4521 / 444)			
Tightening torque	[Nm]	< 0.7; (Mounting screw)		
Max. revolution, mechanical [U/min]	12000			
Max. starting torque	[Nm]	2		
Reference temperature torque	[°C]	20		
Shaft design	hollow shaft open to one side			
Shaft diameter	[mm]	15.875		
Shaft material	stainless steel			
Installation depth/shaft	[mm]	27		
Max. axial shaft misalignment	[mm]	0,5		
Fixing flange	Ø 58.5 mm			
Electrical connection				
Connector: 1 x M12, radial, can also be used axially; coding: A; Moulded body: stainless steel (1.4401 / 316); Maximum cable length: 100 m; (IO-Link: max. 20 m)				



## Incremental encoder with hollow shaft

INCREMENTAL ENCODER BASIC LINE

### IO-Link

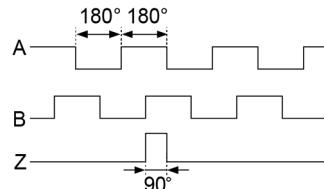
1	L+
2	not to be used
3	L-
4	IO-Link
5	not to be used
screen	plug

### encoder

1	UB
2	A
3	GND
4	Z/0-Pulse (90 deg)
5	B
screen	plug

### Diagrams and graphs

#### Pulse diagram



Direction of rotation clockwise (looking at the shaft)