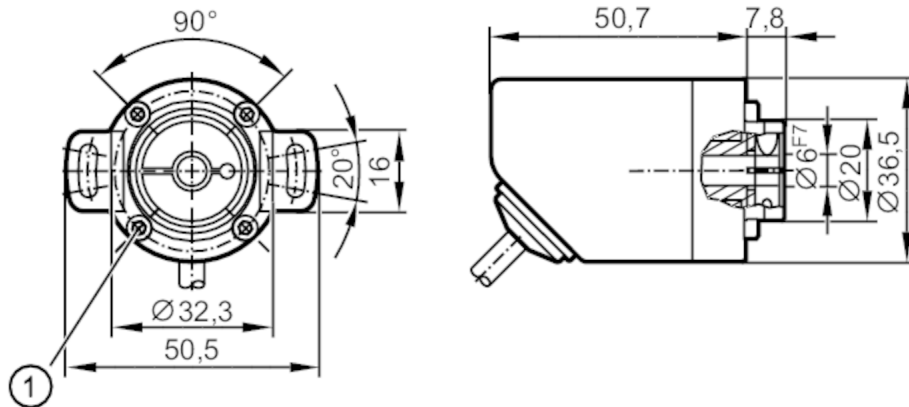


# RA3501



## Incremental encoder with hollow shaft

INCREMENTAL ENCODER BASIC LINE



1 M2.5 x 0.5 Depth 6 mm



Product characteristics	
Resolution	1...10000; (parameterisable; Factory setting: 1024) resolution
Communication interface	IO-Link
Shaft design	hollow shaft open to one side
Shaft diameter [mm]	6
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 and B [°]	90
Measuring/setting range	
Resolution	1...10000; (parameterisable; Factory setting: 1024) resolution
Accuracy / deviations	
Accuracy [°]	0.1
Software / programming	
Parameter setting options	Resolution; direction of rotation; HTL; TTL

# RA3501



## Incremental encoder with hollow shaft

INCREMENTAL ENCODER BASIC LINE

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...80
Note on ambient temperature	for flexibly laid cable: -25 °C
Storage temperature [°C]	-40...80
Max. relative air humidity [%]	95; (condensation not permissible)
Protection	IP 65; IP 66; (on the housing: IP 67; on the shaft: IP 64)
Tests / approvals	
Shock resistance	100 g
Vibration resistance	20 g
MTTF [years]	292
Mechanical data	
Weight [g]	318.5
Dimensions [mm]	Ø 36.5 / L = 58.5
Materials	flange: aluminium; housing: stainless steel (1.4521 / 444); cable plug: PA
Tightening torque [Nm]	< 0.7; (Mounting screw)
Max. revolution, mechanical [U/min]	12000
Max. starting torque [Nm]	1
Reference temperature torque [°C]	20
Shaft design	hollow shaft open to one side
Shaft diameter [mm]	6
Shaft material	stainless steel
Installation depth of shaft [mm]	18
Max. axial shaft misalignment [mm]	0,5
Electrical connection	
Cable: 2 m, Ø 4.9 mm; radial, can also be used axially; 5 x 0.14 mm <sup>2</sup>	
IO-Link	
brown	L+
white	not to be used
blue	L-
grey	not to be used
black	IO-Link
Screen	housing

# RA3501



## Incremental encoder with hollow shaft

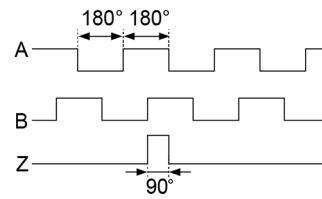
INCREMENTAL ENCODER BASIC LINE

### encoder

brown	UB
white	A
blue	GND
grey	B
black	Z/0-Pulse (90 deg)
Screen	housing

### Diagrams and graphs

Pulse diagram



direction of rotation clockwise (looking at the shaft)