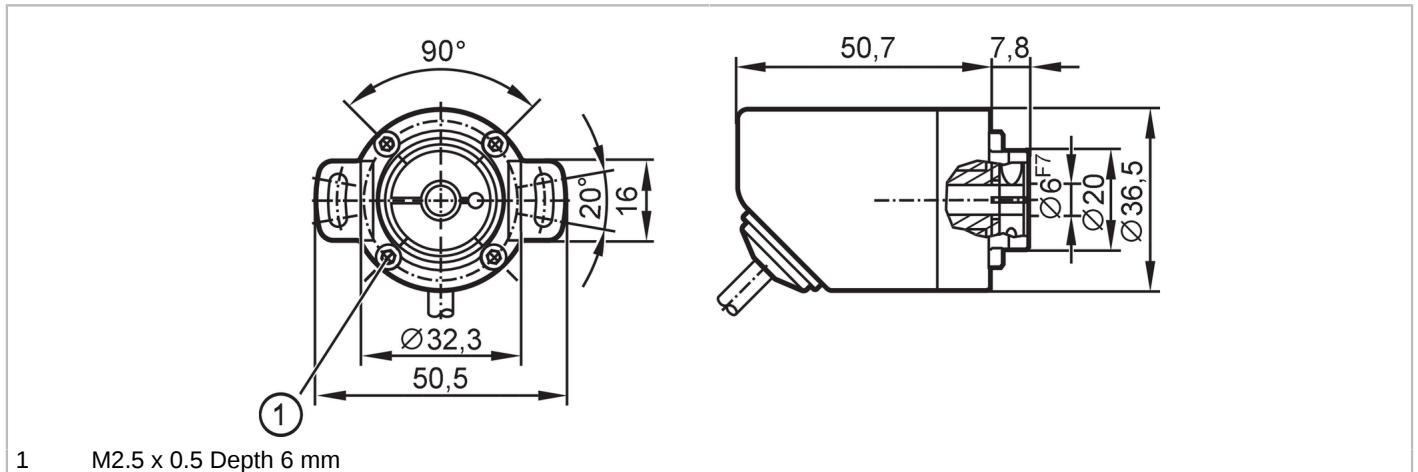


RA3501



Incremental encoder with hollow shaft

INCREMENTAL ENCODER BASIC LINE



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]	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 und B [°]	90
Measuring/setting range	
Resolution	1...10000; (configurable; Factory setting: 1024) resolution
Accuracy / deviations	
Accuracy [°]	0.1
Software / programming	
Parameter setting options	Resolution; Direction of rotation; HTL; TTL
Interfaces	
Communication interface	IO-Link

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Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1	
Profiles	Smart Sensor - SSP 0	Generic Profiled Sensor
	Function	Device identification
	Function	Process data variable
	Function	Device diagnosis
SIO mode	yes	
Min. process cycle time [ms]	2.3	
Supported DeviceIDs	Type of operation	DeviceID
	default	499

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	
Housing	tubular	
Dimensions [mm]	Ø 36.5 / L = 58.5	
Material	flange: aluminum; 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]	0.01	
Reference temperature torque [°C]	20	
Shaft design	hollow shaft open to one side	
Shaft diameter [mm]	6	
Shaft material	stainless steel	
Installation depth/shaft [mm]	18	
Max. axial shaft misalignment [mm]	0,5	
Fixing flange	Ø 36.5 mm	

Remarks		
Pack quantity	1 pcs.	

RA3501



Incremental encoder with hollow shaft

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Electrical connection

Cable: 2 m, \varnothing 4.9 mm; radial, can also be used axially; 5 x 0.14 mm²

IO-Link

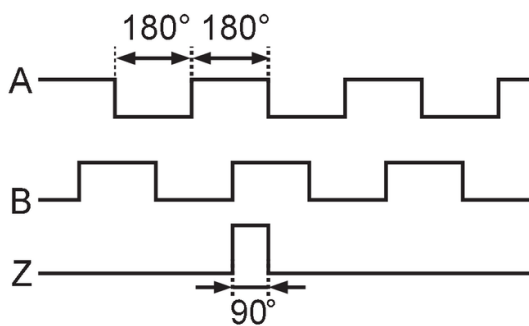
brown	L+
white	not to be used
blue	L-
grey	not to be used
black	IO-Link
screen	housing

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)