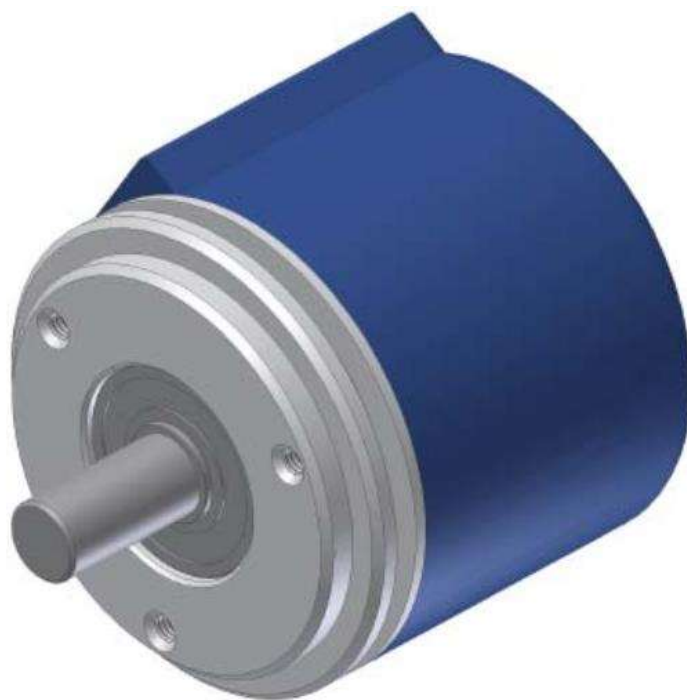




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OPTICAL
INCREMENTAL ENCODER

EN500



TECHNICAL DATASHEET



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OPTICAL ENCODER EN500

GENERAL FEATURES

- Optical rotary encoder.
- Bi-directional signals with zero pulse.
- Flange and body made of aluminium.
- Output by connector or cable (with sealing fairlead), radial or axial.



MECHANICAL AND ELECTRICAL FEATURES

MECHANICAL

- Flange and body made of aluminium.
- Shaft made of stainless steel.
- Ball bearings with special high-sealed screens.
- High protection even in harsh environmental conditions.

ELECTRICAL

- Protection against short-circuits.
- Protection against inversion of polarity.
- High stability of output signals.
- Reading device with an infra-red light emitter and receiving photodiodes.
- A and B output signals with phase displacement of 90° electrical.

Code EN500	PP	LD	OC
Pulses per revolution	5 to 64000 ppr		
Max. rotating speed	momentary permanent	12000 rpm 8000 rpm	
Max. load on shaft	100 N (radial) – 100 N (axial)		
Shaft (diameter A x length L) mm	ø6x10 -ø8x20 -ø9.52x20 -ø10x20 others on request		
Protection class	IP65 (standard) * IP67 (optional)		
Operating temperature	0 ÷ 70°C		
Storage temperature	-20 ÷ 80°C		
Humidity	20 ÷ 90% (not condensed)		
Power supply	5 V ± 5% 5 ÷ 28 V ± 5%		
Max. consumption at 5V (with no load)	25 mA		
Max. output current (each channel)	30 mA		
Max. frequency	300 kHz		
Output	Push-Pull	Line Driver	Open Collector
Standard length of cable	1 m		
Electrical connections	see rel. table		
Electrical protection	inversion of power supply polarity and short-circuits on output port		
Weight (according to model)	280 ÷ 340 g		

* It is Important to note that shaft rotates more freely in the version with protection class IP65.

ORDERING CODE

MODEL	CABLE/CONN. OUTPUT	ACCURACY	PPR	POWER SUPPLY	SHAFT Ø	CABLE / CONN.	OUTPUT	CONNECTION	OPTIONS
EN500	HR	S	xxxxx	05V	D06	CE	PP	2	V2

HR = radial
HA = axial

No code =
standard
S = special

05V = 5V
0528 = 5÷28V

D06 = ø6 mm
D08 = ø8 mm
9.62 = ø9.52 mm
D10 = ø10 mm

M.6 = 0.5m
M01 = 1m
CE = 7P Amphi.
CF = 10P Amphi.
CG = 12P Connel

LD = LINE DRIVER
PP = PUSH-PULL
ON = OC NPN
OP = OC PNP

C = cable
n = no. wiring

No code =
standard configuration
V2 =
protection class IP67

Example ↪ OPTICAL ENCODER EN500 HRS 01000 05V D06CE PP2 V2



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CABLE AND ELECTRICAL CONNECTIONS

Cable 8 cores $\varnothing = 6.5$ mm, PVC external sheath Wires section: - for power supply: 0.5 mm^2 - for signals: 0.14 mm^2 Cable 5 cores $\varnothing = 5.4$ mm, PVC external sheath Wires section: - for power supply: 0.22 mm^2 - for signals: 0.14 mm^2 NOTES: Do not exceed the minimum cable bending radius of 30 mm.	PP / OC		LD	
	SIGNAL	WIRE COLOUR	SIGNAL	WIRE COLOUR
	A	Green	A	Green
	B	White	B	White
	Z	Brown	Z	Brown
			$\bar{A}$	Orange
			$\bar{B}$	Light Blue
			$\bar{Z}$	Yellow
	V+	Red	V+	Red
	GND	Blue	GND	Blue
	$\downarrow$	Shield	$\downarrow$	Shield

SHIELDED CABLE

	LINE DRIVER CONNECTION	
	POWER SUPPLY	RL
	5 V	120 Ω
	12 V	330 Ω
	24 V	1000 Ω

In case of cable extension, the electrical connection between the body of connectors must be ensured.

DIMENSIONS AND RECOMMENDED FIXING

• Use an elastic coupling for shaft junction. • For fixing through brackets, drill on the mounting surface no. 3 holes M4 on a diameter of 68 mm.		

WHAT TO AVOID

• Any type of mechanical working (cut, drill, mill, etc.) • Any modification either on the body or on the shaft of the encoder • Any kind of bad usage • External hits or stresses	
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