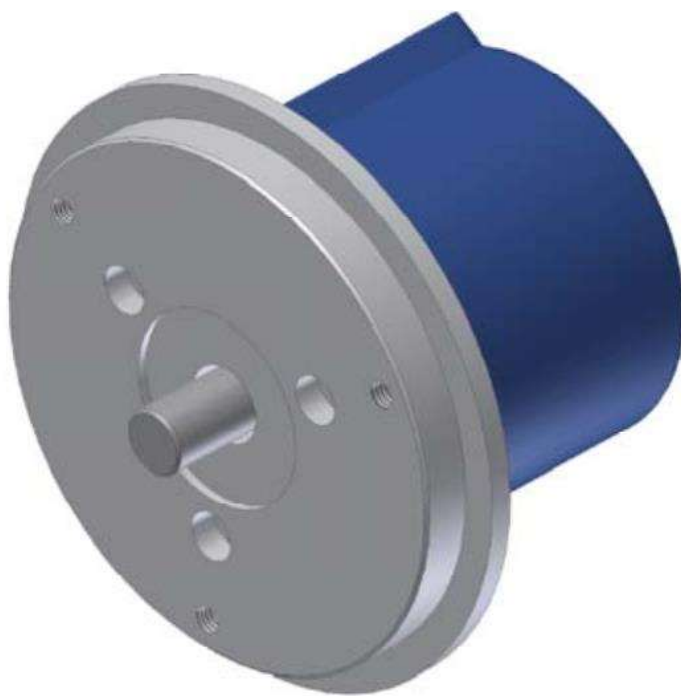




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OPTICAL
INCREMENTAL ENCODER

EN590



TECHNICAL DATASHEET

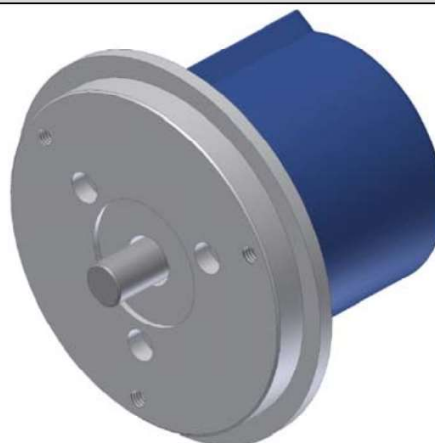


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OPTICAL ENCODER EN590

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 EN590	PP		LD	OC
Pulses per revolution	5 to 64000 ppr			
Max. rotating speed	momentary		12000 rpm	
	permanent		8000 rpm	
Max. load on shaft	100 N (radial) – 100 N (axial)			
Shaft (diameter A x length L) mm	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 5 V (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 the rel. table			
Electrical protection	inversion of power supply polarity and short circuits on output port			
Weight (according to model)	420 ÷ 480 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
EN590	HR	S	xxxxx	05V	D06	CE	PP	2	V2

HR = radial
HA = axial

No code =
standard
S = special

05V = 5V
0528 = 5÷28V

D08 = ø8 mm
9.52 = ø9.52 mm
D10 = ø10 mm

M.5 = 0.5m
M01 = 1m
CE = 7P Amph.
CF = 10P Amph.
CG = 12P Connei

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 EN590 HRS 01000 05V D06CE PP2 V2



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CABLE AND ELECTRICAL CONNECTIONS

Cable 8 cores $\varnothing = 6.5\text{mm}$, PVC external sheath

Wires section:

- for power supply: 0.5 mm^2
- for signals: 0.14 mm^2

Cable 5 cores $\varnothing = 5.4\text{ mm}$, PVC external sheath

Wires section:

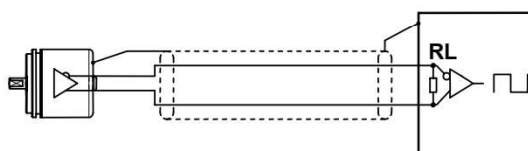
- for power supply: 0.22 mm^2
- for signals: 0.14 mm^2

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
$\perp$	Shield	$\perp$	Shield

SHIELDED CABLE

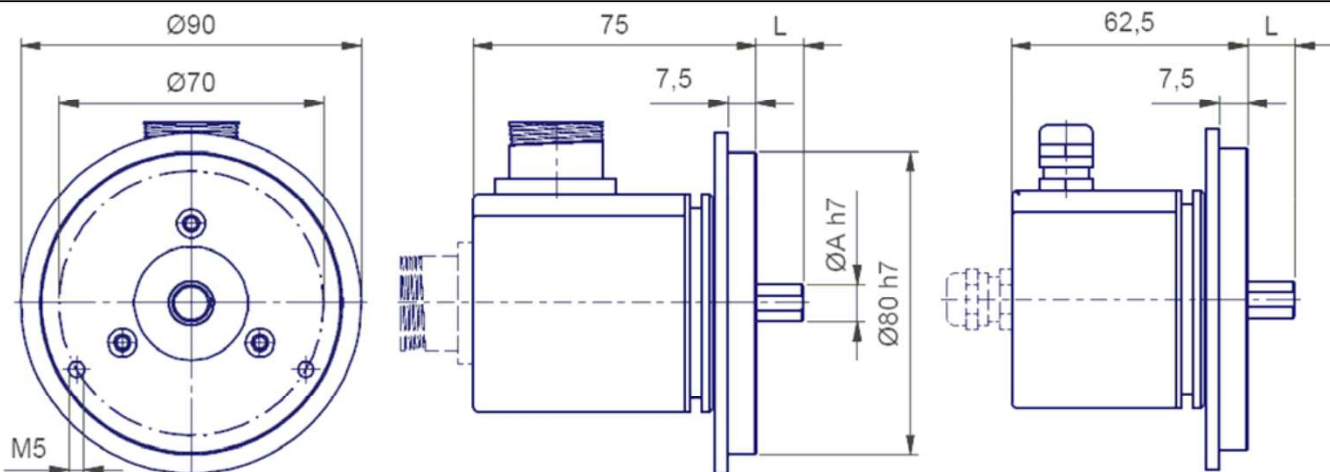


LINE DRIVER CONNECTION

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.

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

