



# Incremental Optical Encoder with shaft



## Main features

PRECILEC optical incremental encoders are designed for accurately measuring speed and position of rotating shafts in industrial environment: machine tools, packing machines, motor drives...

They use a differential optical and ratio metric principle to minimize temperature and photodiode aging effects.

Their universal complementary push-pull output interface and their large supply voltage range make them very easy to connect to most of electronic control units with high noise immunity.

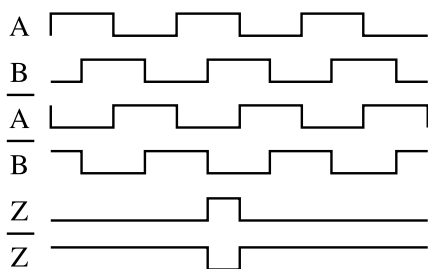
● Shaft type	6mm, 1/4 inch stainless steel shaft
● Housing diameter	40mm
● Fixation	Clamping, synchro, square flange
● Body	Aluminium
● Pulses per turn	Standard 1024, 2048. Others on request, max 2500
● Output signals	A and B with gated Z
● Termination	Radial cable
● Operating temperature range (encoder body)	- 25° C / + 85° C

## Electrical characteristics

● Supply voltage	4,5 to 30V DC with reverse polarity protection
● No load supply current	100mA under 4.5V – 25mA under 24V
● Output signals	Universal complementary push pull, short circuit protected (7272) RS422 compatible with 5V supply voltage
● Max output frequency	300 kHz
● Max load current per channel	20mA
● EMC	According to EN 61000-6-2 and EN 61000-6-4

● Output waveforms:

A leads B for clockwise rotation from front size



	Connections
A	white
$\bar{A}$	yellow
B	blue
$\bar{B}$	orange
Z	green
$\bar{Z}$	brown
Vcc:	red
OV:	black
Ground case	Drain

Cable: 8 AWG24 (0.22mm<sup>2</sup>) wires globally shielded, UL approved

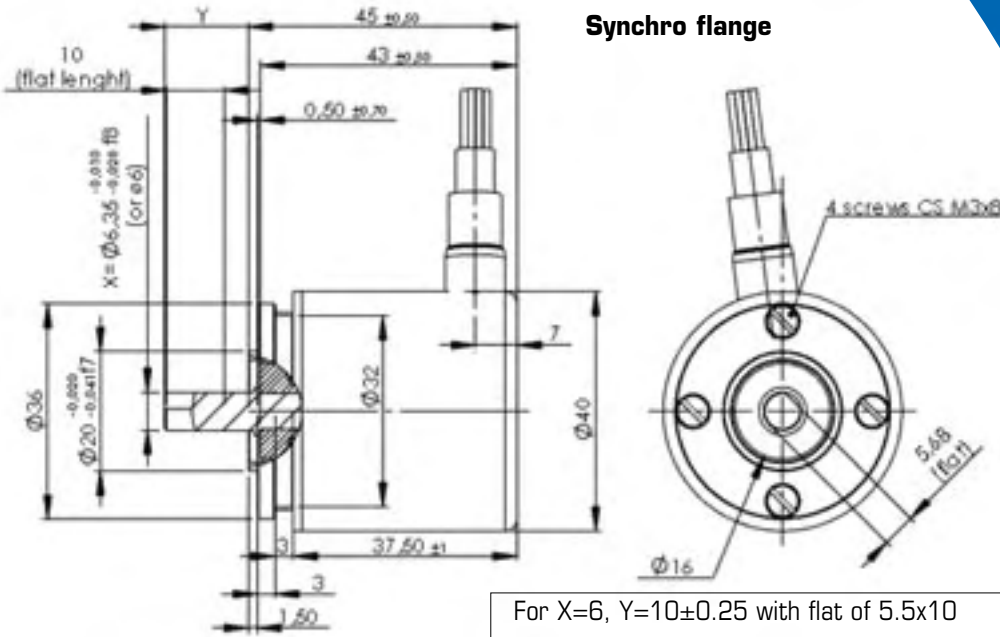
## Mechanical characteristics

● Max speed	10000rpm
● Starting torque	≤ 0.2N.cm
● Max shaft load	Axial: 10N, Radial: 20N
● Inertia	6.9gr.cm <sup>2</sup>
● Weight	100gr
● Protection	IP64 at shaft end, IP 65 at housing (IEC 60529)
● Max shock	100g, 6ms (IEC 68-2-27)
● Max vibrations	10g, 10-2000Hz (IEC 68-2-6)
● Theoretical bearings life (x 10 <sup>9</sup> revolutions)	25% max load    50% max load    100% max load 2000                    350                    60



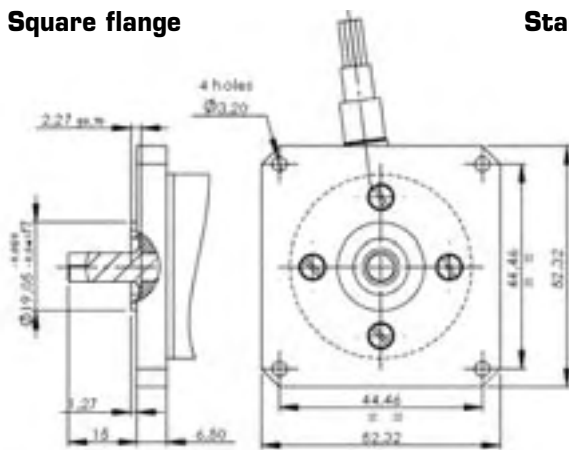
Outline drawings

Synchro flange

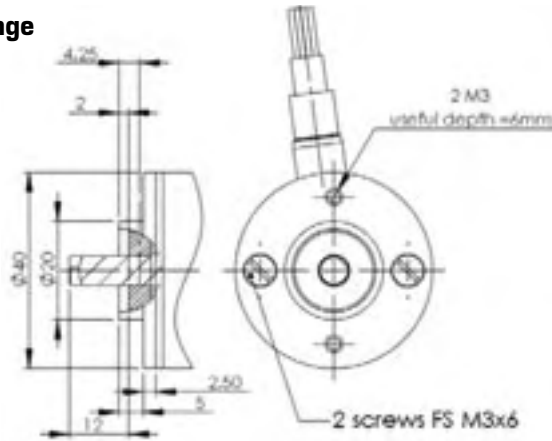


For X=6, Y=10±0.25 with flat of 5.5x10  
 For X=6.35, Y=14±0.25 with flat of 5.68x10

Square flange



Standard flange



Ordering codes

RCI 40A - FSx - xxxx - x

**FSx:**  
**Shaft and flange**

**FS1:** 6mm shaft, standard clamping flange

**FS2:** 6mm shaft, synchro flange

**FS3:** 1/4 inch shaft, synchro flange

**FS4:** 1/4 inch shaft, square flange

**xxxx:**  
**Pulses per turn**

**1024**

**2048**

Other resolutions on request, from 0001 to 2500

**x:**  
**Termination**

**1:** cable, one meter standard length. Other lengths on request, from 0.5 to 10 meters. Beyond 10 meters a cable with twisted pairs must be used.

Other shafts on request

Rev B, 23/02/06 - We reserve the right to modify technical characteristics in the interest of technological advance.



PRECILEC

ERMEC, S.L. BARCELONA  
 C/ Francesc Teixidó, 22  
 PE-08918 Badalona  
 (Spain)

Tel.: (+34) 902 450 160  
 Fax: (+34) 902 433 088  
[info@ermec.com](mailto:info@ermec.com)  
[www.ermec.com](http://www.ermec.com)

ERMEC, S.L. MADRID  
 C/ Sagasta, 8, 1ª planta  
 E-28004 Madrid  
 (Spain)

PORTUGAL  
[portugal@ermec.com](mailto:portugal@ermec.com)  
 BILBAO  
[bilbao@ermec.com](mailto:bilbao@ermec.com)



Distribución de componentes eléctricos y electrónicos

[www.precilec.com](http://www.precilec.com)