

# Incremental encoders

Optical Programming Options



Programmable Resolution 1...100.000 pulses

## FNCP 40B Series Programmable



### Features

- Industry 40 mm standart size,
- Clamping flange
- Robust mechanical and electrical construction
- Protection up to IP67
- Up to 100.000 PPR max.
- ≤ 2 MHz frequency
- Programming vi FNC PT - PC Programming tool
- FNC PT - PS easy programming software

### PPR Options :

1 to 100.000 ppr for optical verison  
up to 2.000.000 on request

### Technical data - electrical ratings

Voltage supply	4.75VDC to 30VDC 4.75VDC to 5.5VDC
Protection	Output short circuit protection. Reverse polarity protection Over voltage protection ( except 5V version )
Consumption w/o load	≤ 60 mA (5 VDC) ≤ 35 mA (12 VDC) ≤ 26 mA (24 VDC) ≤ 27 mA (30 VDC)
Reference signal	Programmable length, 90° 180°, 270°, 360°
Output frequency	≤ 2 MHz
Output signals	90° shifted A and B, Z + all channels can be set indepently inverted
Output circuit	Linedriver/RS422 Push-pull short-circuit proof
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Approval	CE

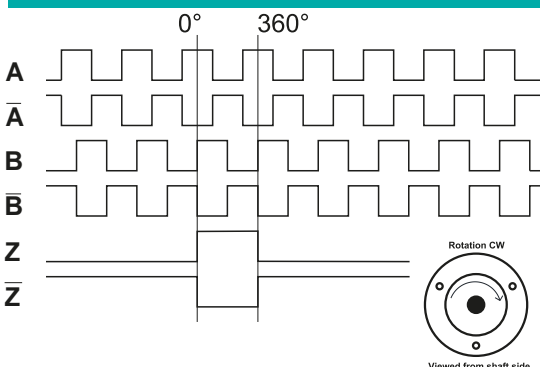
### Technical data - mechanical design

Dimensions (flange)	ø40 mm
Shaft loading	≤ 140 N axial ≤ 240 N radial
Protection DIN EN 60529	IP54, IP65
Operating speed	≤ 12000 rpm
Starting torque	≤ 0.025 Nm (IP67)
Materials	Housing: Aluminum Flange: Aluminum Shaft : Stainless steel
Shaft diameter	4, 6, 8, 10 mm ( other diameters on request )
Bearings lifetime	2x10 <sup>9</sup> rev. at 100% of full rated shaft load (minimum)
Operating temperature	-20...+85 °C
Storage temperature	-30 °C up to +90 °C
Weight approx	250 g

### Cable Wiring

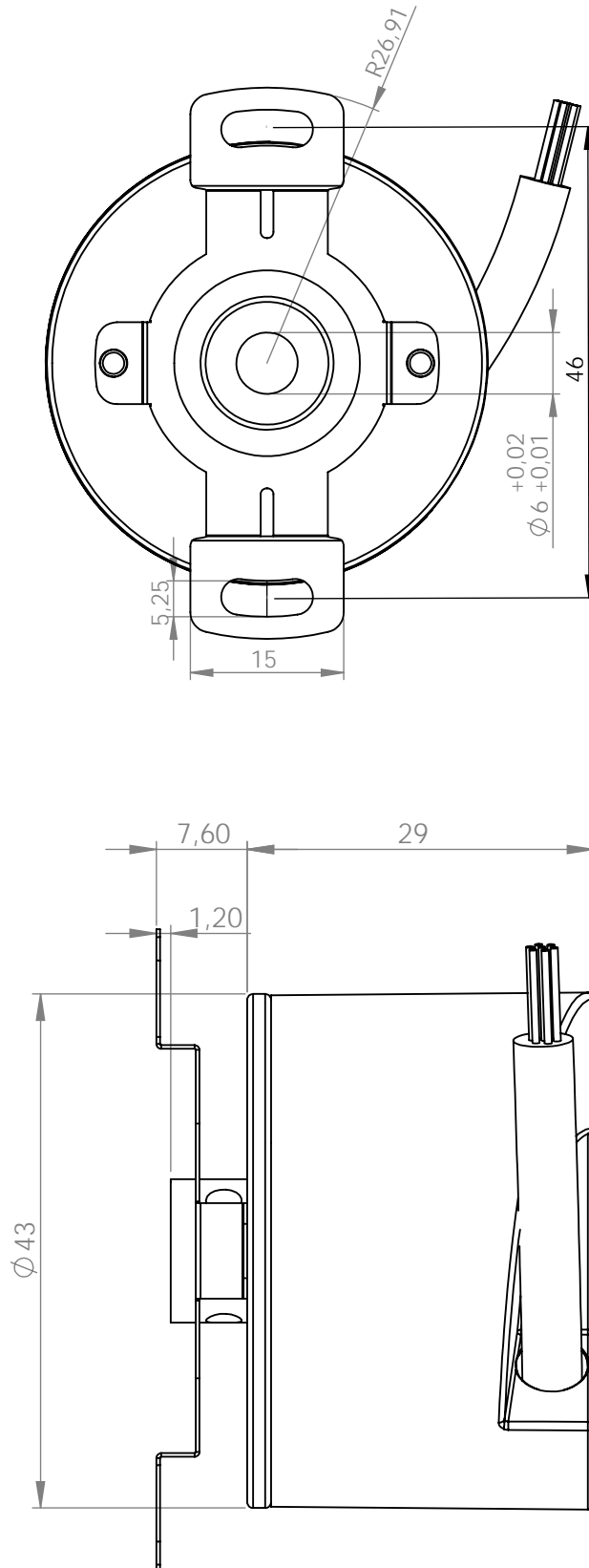
Function	Color	Renk	Explanation
+VB	Brown-Green	Kahve-Yeşil	Vcc
GND	White-Green	Beyaz-Yeşil	GND
A	Green	Yeşil	A
A'	Green-Black	Yeşil-Siyah	A Inverse
B	Yellow	Sarı	B
B'	Yellow-Black	Sarı- Siyah	B Inverse
Z	Gray	Gri	Z
Z'	Gray-Black	Gri-Siyah	Z Inverse
C	Blue	Mavi	Clock
D	Orange	Turuncu	Data
Shield	Black	Siyah	Shield

### Pulse Diagram



## FNCP 40B Series Programmable

### Mechanical Dimensions



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### Cable Wiring

Function	Color	Renk	Farbe	Цвет	颜色	M2312 Connector
+VB	Brown	Kahve	Braun	Коричневый	棕色的	pin 2
GND	White	Beyaz	Weiß	Белый	白色的	pin 10
A	Green	Yeşil	Grün	Зеленый	绿	pin 5
A'	Green-Black	Yeşil-Siyah	Grün-Schwarz	Зелено-черный	绿-蓝色的	pin 6
B	Yellow	Sarı	Gelb	Желтый	黄色的	pin 8
B'	Yellow-Black	Sarı-Siyah	Gelb-Schwarz	Желто-черный	黄色的-蓝色的	pin 1
Z	Gray	Gri	Grau	Серый	灰色的	pin 3
Z'	Gray-Black	Gri-Siyah	Grau-Schwarz	Серо-черный	灰色的-蓝色的	pin 4
NSS	Blue-Black	Mavi-Siyah	Blau-Schwarz	Сине-черный	蓝色的-蓝色的	pin 7
SCK	Blue	Mavi	Blau	Синий	蓝色的	pin 9
MISO	Orange	Turuncu	Orange	Оранжевый	橙	pin 11
MOSI	Orange-Black	Turuncu-Siyah	Orange	Оранжево-черный	橙-蓝色的	pin 12
CLK	Blue	Mavi	Blau	Синий	蓝色的	pin 7
DAT	Orange	Turuncu	Orange	Оранжевый	橙	pin 9

Programming Wires  
Optical  
Magnetic

### FNC PT-PC Programming Device



FNCP 40BO 8630VX-R2

Programming Device - PC Cable

### Encoder Part Number

**FNCP 40 B O 8 6 30V X - R2**

<b>Housing:</b> 40 : 40 mm	<b>Electrical Connections:</b> <b>Cable</b> <b>R2</b> : radial 2m, shield not connected (standart) <b>A2</b> : axial 2m, shield not connected (standart)
<b>Flange Type</b> B : Clamping flange	<b>PPR Options :</b> 1 to 100.000 ppr for optical version up to 2.000.000 on request
<b>O</b> : Optical programmable	<b>Supply Voltage and output circuit :</b> <b>5V</b> : 5V in / out <b>245V</b> : 5-30V in 5V out <b>30V</b> : 5-30V in / out
<b>Shaft diameter : 4, 6, 8, 10</b> Other dimensions on request	
<b>Output Channels</b> <b>3</b> : ABZ <b>4</b> : AB+A' B' <b>6</b> : ABZ+A' B' Z'	

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## FNC PT-PC Programming Device

### Optical Programming PC view

ENCODER PROGRAMMER UTILITY V1.6.14.06.2020

INCREMENTAL PARAMETERS	OPTICAL PROGRAMMABLE ENCODER	ANGLE
Resolution: 1000000 Z Gate: 360°(A) Direction of Rotation: CW		
<b>PULSE DIAGRAM</b> 	<b>STATUS</b> PROGRAMMER: ENCODER:	<b>ENCODER</b> ENCODER PULSE: 999986 ENCODER ANGLE: 359,99
<b>OPERATION</b> READ    WRITE    STOP TEST	<b>TESTING</b>	
<b>CONFIG FILE</b> OPEN    SAVE		