

# Incremental encoders

## Optical and Magnetic Programming Options



Programmable Resolution 1...100.000 pulses

## FNC 58E Series Programmable



### Features

- Industry 58 mm standart size,
- End hollow shaft version
- 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 65.536 ppr for magnetic version  
 1 to 100.000 ppr for optical version  
 up to 2.000.000 on request

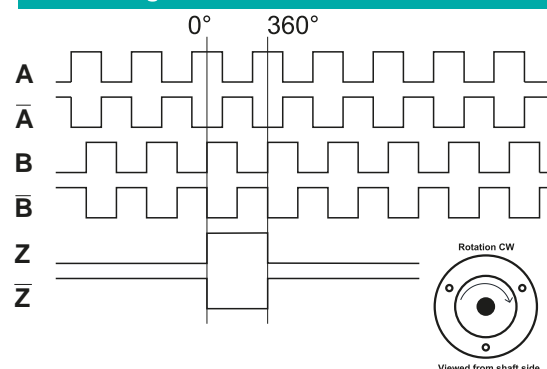
### Technical data - electrical ratings

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

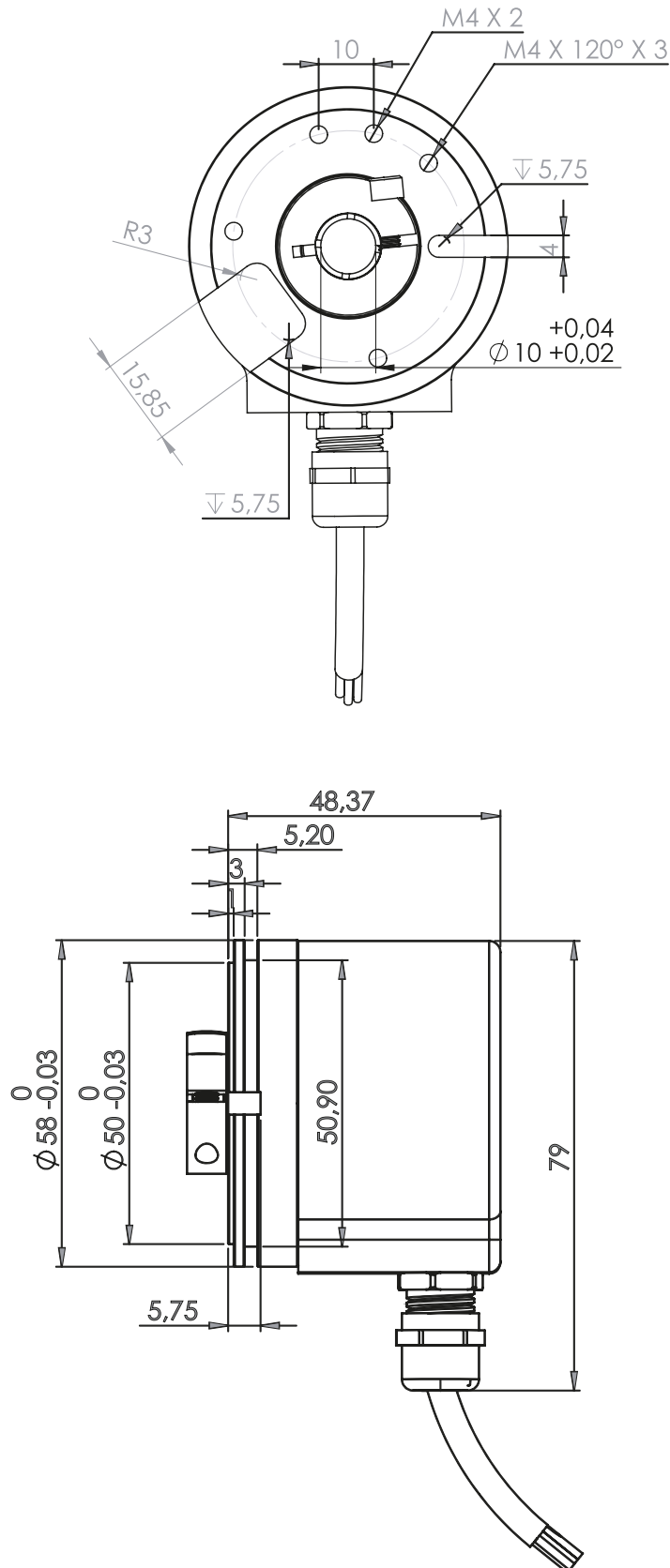
Dimensions (flange)	ø58 mm
Shaft loading	140 N axial 240 N radial
Protection DIN EN 60529	IP54, IP65
Operating speed	12000 rpm
Starting torque	0.025 Nm (IP 67)
Materials	Housing: Aluminum Flange: Aluminum Shaft : Stainless steel
Shaft diameter	6, 8, 10, 12 mm ( other diameters on request )
Bearings lifetime	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

### Pulse Diagram



## FNC 58E Series Programmable

### Mechanical Dimensions



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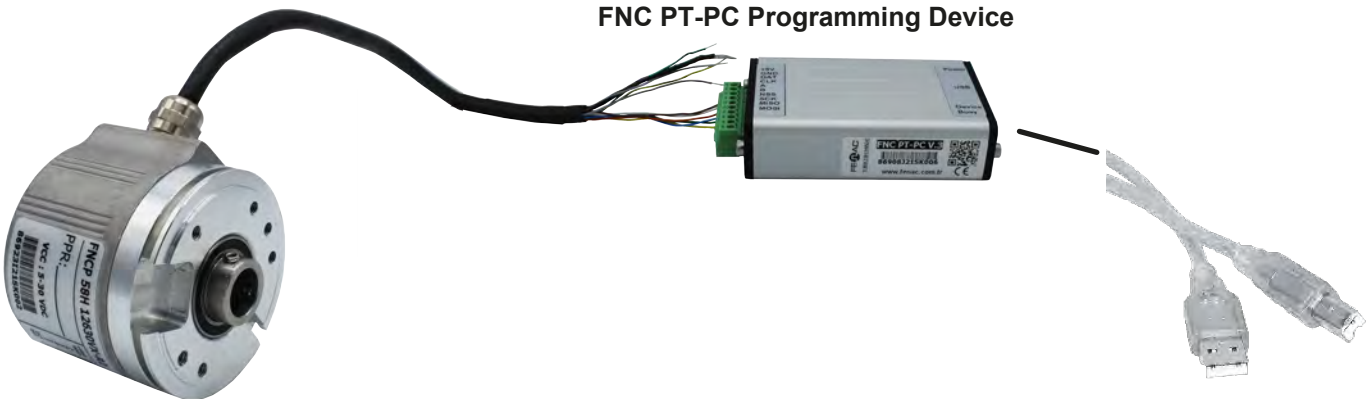
### FNC 58E Series Programmable

#### Cable Wiring

Function	Color	Renk	Farbe	Цвет	颜色	M2312 Connector
+VB	Brown	Kahve	Braun	Коричневый	棕色的	pin 2
GND	White	Beyaz	Wei	Белый	白色的	pin 10
A	Green	Yeil	Grn	Зеленый	绿	pin 5
A'	Green-Black	Yeil-Siyah	Grn-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 58EO 10630VX-R2

Programming Device - PC Cable

#### Encoder Part Number

**FNCP** **58** **E** **O** **10** **6** **30V** **X** - **R2**

<b>Housing:</b> 58 : 58mm	<b>Electrical Connections:</b> <b>Cable</b> R2 : radial 2m, shield not connected (standart) A2 : axial 2m, shield not connected (standart)
<b>Flange Type</b> E : End Hollow Shaft	<b>PPR Options :</b> 1 to 65.536 ppr for magnetic version 1 to 100.000 ppr for optical version up to 2.000.000 on request
<b>O</b> : Optical programmable <b>M</b> : Magnetic programmable	<b>Supply Voltage and output circuit :</b> 5V : 5V in / out 245V : 5-30V in 5V out 30V : 5-30V in / out
<b>Shaft diameter : 4, 6, 8, 10, 12</b> Other dimensions on request	
<b>Output Channels</b> 3 : ABZ      4 : AB+A' B'      6 : ABZ+A' B' Z'	

## FNC PT-PC Programming Device

### Magnetic Programming PC view

ENCODER PROGRAMMER UTILITY V1.6.14.06.2020

INCREMENTAL PARAMETERS	MAGNETIC PROGRAMMABLE ENCODER	ANGLE
Resolution: <input type="text" value="2048"/> Index Pulse Length: <input type="text" value="360°"/> Direction of Rotation: <input type="text" value="CW"/>		
<b>PULSE DIAGRAM</b> A B Z	<b>STATUS</b> PROGRAMMER <input checked="" type="checkbox"/> ENCODER <input checked="" type="checkbox"/> <b>TESTING</b>	<b>ENCODER</b> ENCODER PULSE: 1049 ENCODER ANGLE: 184,39
<b>OPERATION</b> <input type="button" value="READ"/> <input type="button" value="WRITE"/> <input type="button" value="STOP TEST"/>		
<b>CONFIG FILE</b> <input type="button" value="OPEN"/> <input type="button" value="SAVE"/>		

### Optical Programming PC view

ENCODER PROGRAMMER UTILITY V1.6.14.06.2020

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