

Incremental encoders

Optical and Magnetic Programming Options



Programmable Resolution 1...100.000 pulses

FNC 58H Series Programmable



Features

- Industry 58 mm standart size,
- 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 verison
 up to 2.000.000 on request

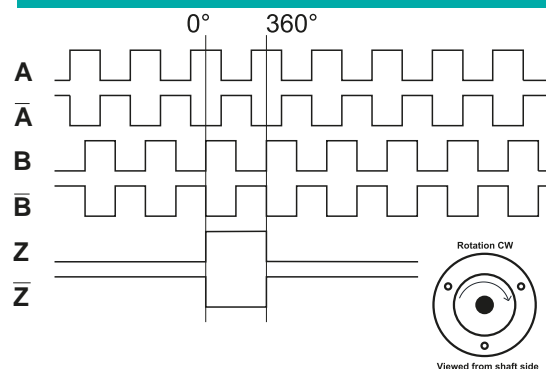
Technical data - electrical ratings

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

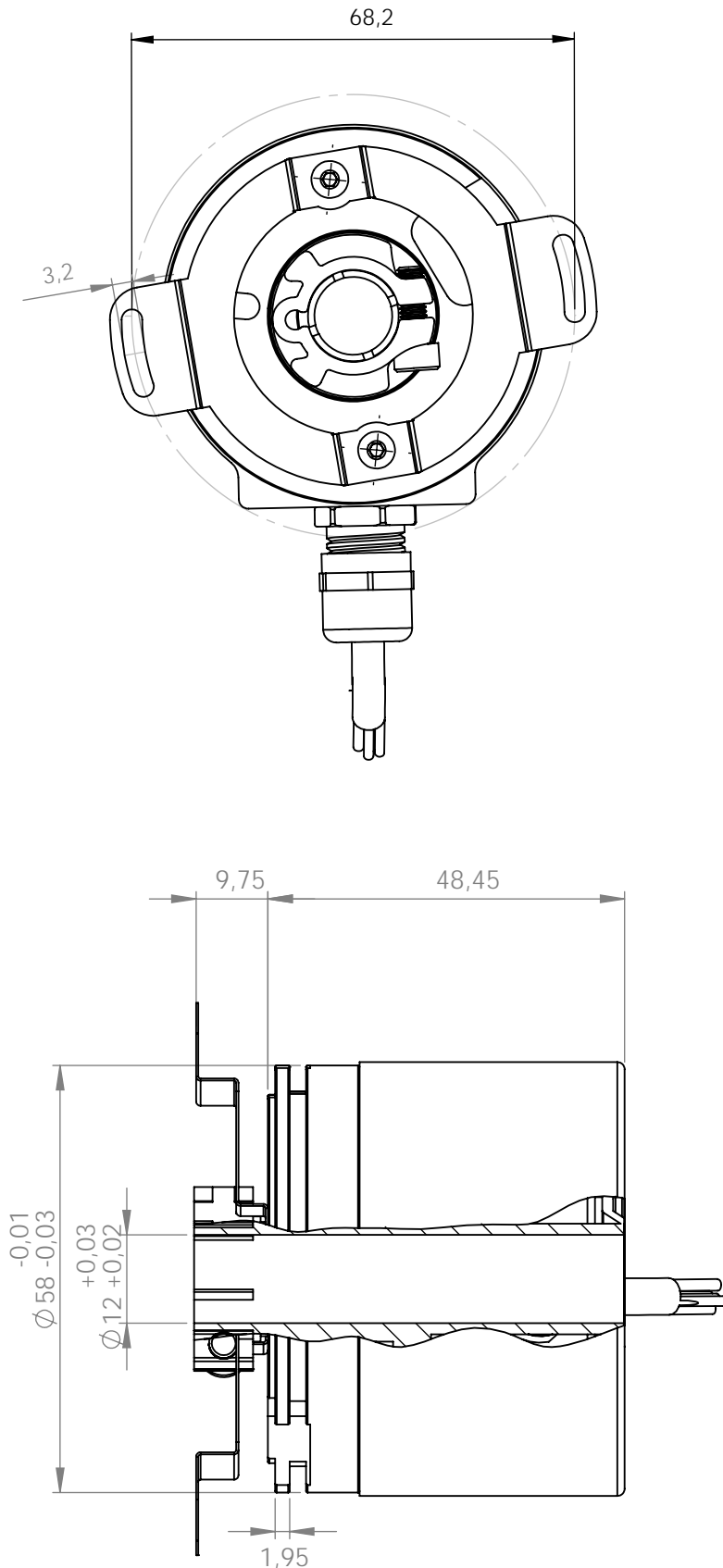
Dimensions (flange)	ø58 mm
Shaft loading	≤140 N axial ≤240 N radial
Protection DIN EN 60529	IP54, IP65
Operating speed	≤12000 rpm
Starting torque	≤0.025 Nm (IP65)
Materials	Housing: Aluminum Flange: Aluminum Shaft : Stainless steel
Shaft diameter	6, 8, 10, 12 mm (other diameters on request)
Bearings lifetime	2x10 ⁹ 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 58H Series Programmable

Mechanical Dimensions



Incremental encoders

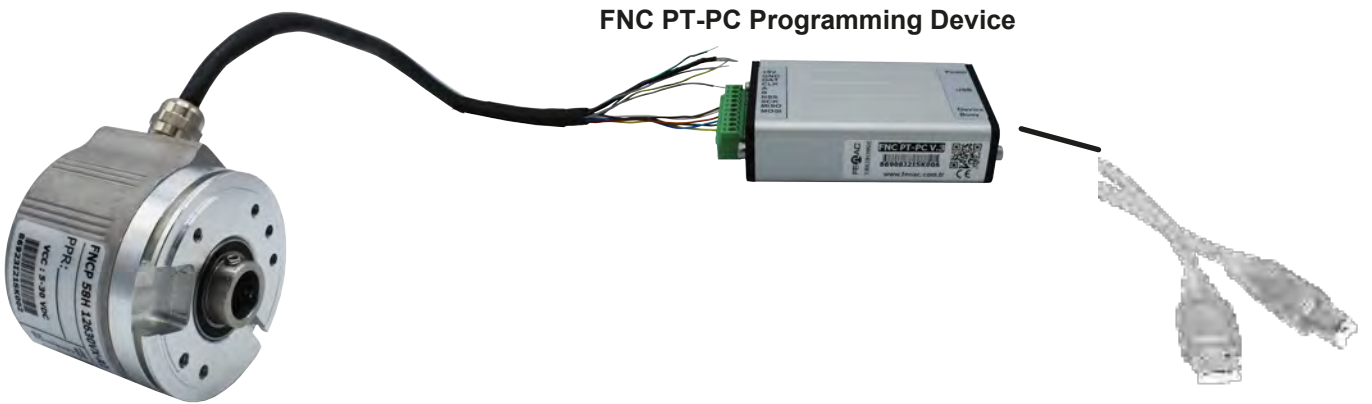
Optical and Magnetic Programming Options

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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



FNCP 58HO 10630VX-R2

Programming Device - PC Cable

Encoder Part Number

FNCP 58 H O 10 6 30V X - R2

Housing: 58 : 58mm	Electrical Connections: Cable R2 : radial 2m, shield not connected (standart) A2 : axial 2m, shield not connected (standart)
Flange Type H : Hollow Shaft	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
O : Optical programmable M : Magnetic programmable	Supply Voltage and output circuit : 5V : 5V in / out 245V : 5-30V in 5V out 30V : 5-30V in / out
Shaft diameter : 4, 6, 8, 10, 12 Other dimensions on request	
Output Channels 3 : ABZ 4 : AB+A' B' 6 : ABZ+A' B' Z'	

FNC PT-PC Programming Device

Magnetic Programming PC view

The screenshot shows the 'Magnetic Programmable Encoder' configuration window. It includes the following sections:

- INCREMENTAL PARAMETERS:** Resolution is set to 2048, Index Pulse Length is 360°, and Direction of Rotation is CW.
- PULSE DIAGRAM:** Shows waveforms for channels A, B, and Z.
- MAGNETIC PROGRAMMABLE ENCODER:** A diagram of a magnetic encoder disc with two Hall sensors.
- ANGLE:** A circular scale showing the current angle is 184.3 degrees.
- OPERATION:** Buttons for READ, WRITE, and STOP TEST.
- CONFIG FILE:** Buttons for OPEN and SAVE.
- STATUS:** PROGRAMMER and ENCODER status indicators are both green, with the text 'TESTING' displayed.
- ENCODER:** Encoder Pulse is 1049 and Encoder Angle is 184,39.

Optical Programming PC view

The screenshot shows the 'Optical Programmable Encoder' configuration window. It includes the following sections:

- INCREMENTAL PARAMETERS:** Resolution is set to 1000000, Z Gate is 360°(A), and Direction of Rotation is CW.
- PULSE DIAGRAM:** Shows waveforms for channels A, B, and Z over a 360° period.
- OPTICAL PROGRAMMABLE ENCODER:** A diagram of an optical encoder disc with a light source and light detector.
- ANGLE:** A circular scale showing the current angle is 359.9 degrees.
- OPERATION:** Buttons for READ, WRITE, and STOP TEST.
- CONFIG FILE:** Buttons for OPEN and SAVE.
- STATUS:** PROGRAMMER and ENCODER status indicators are both green, with the text 'TESTING' displayed.
- ENCODER:** Encoder Pulse is 999986 and Encoder Angle is 359,99.