

Absolute encoders - Parallel



Shaft with synchro and clamping flange
Magnetic single turn 14 bit encoder

FNC APA 50S Series



Features

- Absolute encoder with parallel interface
- Magnetic sensing
- Resolution: up to 14 bit
- Synchro or clamping flange
- Optional Preset input
- Optional Direction input

Technical data - electrical ratings

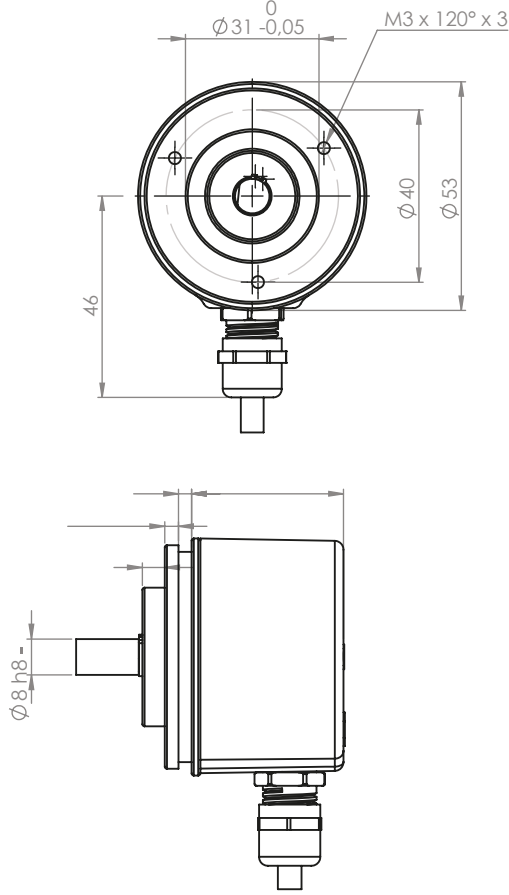
Voltage supply	5V to 30V DC
Protection:	Reverse & over voltage Output short circuit
Consumption w/o load	≤60 mA (outputs unloaded)
Interface	Parallel
Resolution (steps/turn)	up to 14 bit
Absolute accuracy	≤ ±0.35°
Sensing methode	Magnetic
Code	Gray or binary
Inputs	Direction (CW / CCW) Preset (Zero setting)
Direction of rotation	Output is incremented by CW (as viewed from the shaft side)
Initializing time	Typ. 60ms after power on
Max. response freq.	10 kHz
Output capacity	16mA (sink/source)
Output circuit	Push-Pull (opt. Open-Collector)
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Approval	CE

Technical data - mechanical design

Dimensions (flange)	ø50 mm
Shaft loading	≤ 20 N axial ≤ 30 N radial
Protection DIN EN 60529	IP 54 (optional IP65)
Operating speed	≤ 3000 rpm
Starting torque	≤ 0.001 Nm
Materials	Housing, Flange : Aluminium Shaft :Stainless steel
Shaft diameter:	6, 8, 10, 12, 14mm (other diameters on request)
Bearings lifetime:	2x10 ⁹ rev. at 100% of full rated shaft load (minimum)
Operating temperature	-20 to +85 °C
Weight approx.	180 g

Note: Custom (non-binary) resolutions can be implemented on request. eg. 360 or 1000.

Mechanical Dimensions



Cable Wiring / Connector

Function	Connector	Color	Renk
+VB	pin 1	Brown	Kahve
GND	pin 2	White	Beyaz
Bit 0	pin 3	Green	Yeşil
Bit 1	pin 4	Green-Black	Yeşil-Siyah
Bit 2	pin 5	Yellow	Sarı
Bit 3	pin 6	Yellow-Black	Sarı-siyah
Bit 4	pin 7	Blue	Mavi
Bit 5	pin 8	Blue-Black	Mavi-Siyah
Bit 6	pin 9	Orange	Turuncu
Bit 7	pin 10	Orange-Black	Turuncu-Siyah
Bit 8	pin 11	Red	Kırmızı
Bit 9	pin 12	Red-Black	Kırmızı-Siyah
Bit 10	pin 13	Pink	Pembe
Bit 11	pin 14	Pink-Black	Pembe-Siyah
PRESET	pin 15	Gray	Gri
DIRECTION	pin 16	Gray-Black	Gri-Siyah

NOTE : Preset and Direction inputs are optional
Connector is free hanging, inline type

Encoder Part Number

FNC A PA 50 S 8 S12 30V B F P - R2

Absolute

PA: Parallel

Housing:
50 : 50mm

Flange Type:
E : End hollow shaft

Shaft diameter : 8, 10, 12, 14mm
Other dimensions and custom geometry on request

S : Single Turn (up to 14 bit)

S360 : 360 puls	S8 : 8 bit	S11 : 11 bit
S720 : 720 puls	S9 : 9 bit	S12 : 12 bit
S3600 : 3600 puls	S10 : 10 bit	S13 : 13 bit
		S14 : 14 bit

Electrical Connections:

Cable
R2 : radial 2m, shield not connected (standart)
R5 : radial 5m, shield not connected (standart)
RCX : Custom cable assembly
Connector: Customer specific

P : Positive Logic
N : Negative Logic

F: Clockwise increase
R: Counterclockwise increase

B: Binary
G: Gray
D: Binary Coded Decimal
E: Gray Excess

Supply Voltage:
5V : 5V $\pm$ 5%
30V : 5V to -30V
30VOC : 5V to 30V supply voltage, NPN open collector output