

# Incremental encoders

Resolution 1...5000 pulses



## FNC 50S Series



### Features

- Industry 50 mm standard size, servo flange
- Robust mechanical and electrical construction
- Protection up to IP67
- Up to 5000 PPR max.
- <300 kHz frequency

### PPR Options :

1 to 128 - 25 - 50 - 100 - 200 - 250 - 300 - 360 - 400 - 500 - 512 - 600 - 720 - 800 - 900 - 1000 - 1024 - 1250 - 1440 - 2000 - 2048 - 2500 - 3000 - 3600 - 4000 - 5000

### Technical data - electrical ratings

Voltage supply	4.75VDC to 30VDC 4.75VDC to 5.5VDC
Protection:	Output short circuit protection. Reverse polarity protection ( except 5V version )
Consumption w/o load	≤60 mA (24 VDC)
Resolution (steps/turn)	1...5000
Reference signal	Zero pulse, width 90° 180°, 360° optional
Optoelectronic life time	100.000 (min)
Output frequency	>200 kHz
Output signals	90° shifted A and B, Z + inverted
Output circuit	Linedriver/RS422 Push-pull short-circuit proof NPN 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	≤60 N axial ≤80 N radial
Protection DIN EN 60529	IP54, IP65
Operating speed	≤10000 rpm
Starting torque	≤0.025 Nm (IP 67)
Materials	Housing: Aluminium Flange: Aluminium Shaft : Stainless steel
Shaft diameter:	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.	150 g

### Accessories

**Connectors and cables**  
CRM1204 M12 4 poles female connector or see page 160

**Mounting coupling**  
SK240606 plastic or see page 158

**Mounting accessories**  
YY RST Spring or see page 156-157

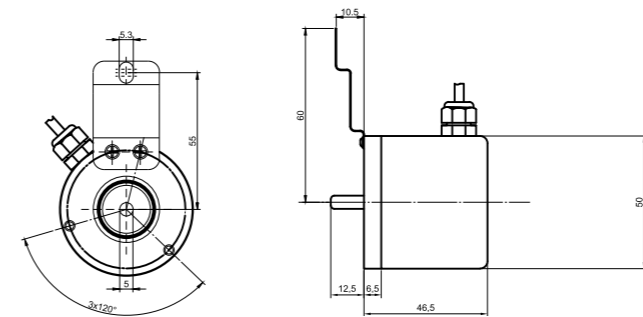
# Incremental encoders

Mechanical Dimensions  
Cable/Connector Wiring, Part Number

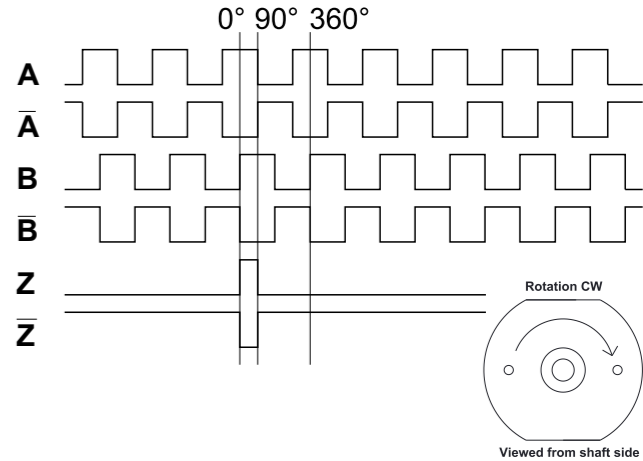
## FNC 50S Series



### Mechanical Dimensions



### Pulse Diagram



### Connector Wiring

Connector Type	+Vcc	GND	A	A'	B	B'	Z	Z'	Shield
CRM1204	1	2	3		4				o.r.
CRM1205	1	2	3		4		5		o.r.
CRM1208	1	2	3	6	4	7	5	8	o.r.
CRM1212	1	2	3	6	4	7	5	8	o.r.
CRM1607	1	2	3		4		5		o.r.
CRM1614	Customer Specific								o.r.
CRM2312R	2-12	10-11	5	6	8	1	3	4	o.r.
CRM2312L	2-12	10-11	5	6	8	1	3	4	o.r.

For further information please see page 112

### Cable Wiring

Function	Color	Renk	Explanation
+VB	Brown	Kahve	Supply Voltage
GND	White	Beyaz	Ground
A	Green	Yeşil	A Channel
A'	Red	Kırmızı	A Inverted Channel
B	Yellow	Sarı	B Channel
B'	Pink	Pembe	B Inverted Channel
Z	Gray	Gri	Z Channel
Z'	Blue	Mavi	Z Inverted Channel
Shield	Black	Siyah	Shield

### Encoder Part Number

**FNC 50 S 10 6 30V 1024 - R2**

**Housing:**  
50 : 50mm

**Flange Type:**  
S : Servo flange  
B : Clamping flange

**Shaft diameter : 4, 6, 8, 10**  
Other dimensions on request

**Output Channels**  
1: A  
2: AB  
3: ABZ  
4: AB+A' B'  
6: ABZ+A' B' Z'

**Electrical Connections:**  
**Cable**  
R2 : radial 2m, shield not connected (standart)  
A2 : axial 2m, shield not connected (standart)

**Connector:**  
CRM1204 CRM1607  
CRM1205 CRM1614  
CRM1208 CRM2312R  
CRM1212 CRM2312L

**PPR Options :**  
1 to 128 - 25 - 50 - 100 - 200 - 250 - 300 - 360 - 400 - 500 - 512 - 600 - 720 - 800 - 900 - 1000 - 1024 - 1250 - 2000 - 2048 - 2500 - 3000 - 3600 - 4000 - 5000

**Supply Voltage and output circuit :**  
5V : 5V in / out  
245V : 5-30V in 5V out  
30V : 5-30V in / out