

Incremental encoders

Resolution 1...1024 pulses



FNC 16S Series, 16 mm Housing, Micro Encoders



Features

- Industry 16 mm special size, servo flange
- Robust mechanical and electrical construction
- Protection up to IP67
- Up to 1024 PPR max.
- <300 kHz frequency

PPR Options :

1 to 1024 All PPR, 2048, 4096

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	≤30 mA (24 VDC)
Resolution (steps/turn)	1...1024
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)	ø16 mm
Shaft loading	≤20 N axial ≤30 N radial
Protection DIN EN 60529	IP54, IP65
Operating speed	≤10000 rpm
Starting torque	≤0.01 Nm (IP 67)
Materials	Housing: Aluminium Flange: Aluminium Shaft : Stainless steel
Shaft Diameter:	up to 4 mm
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.	130 g

Accessories

Connectors and cables
CRM1204 M12 4 poles female connector or see page 206

Mounting coupling
SK240606 plastic or see page 204

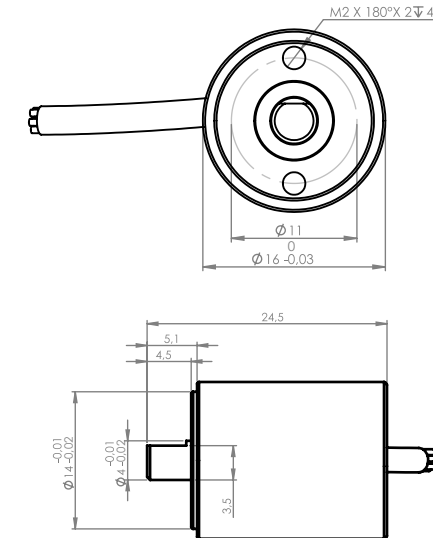
Mounting accessories
YY RST Spring or see page 202-203

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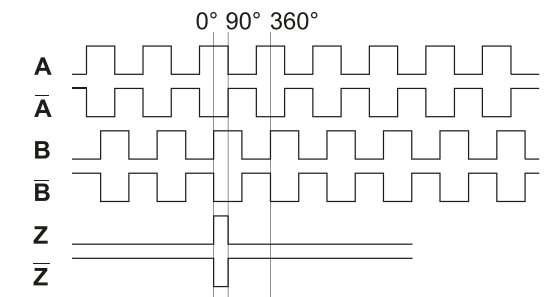
Mechanical Dimensions
Cable/Connector Wiring, Part Number

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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.

For further information please see page 206

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 16 S M 4 6 30V 1024 - R2

Housing:
16 : 16mm

Flange Type:
S : Clamping Flange

O : Optical
M : Magnetic

Shaft diameter : up to 4 mm

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:
R1204 R1212
R1205 R1607
R1208 R1614

PPR Options :
1 to 24 - 64 - 128 - 256 - 512 - 1024 ppr

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