

# Incremental encoders

Resolution 1...65.536 pulses



## FNC 50HB & 50HT Series



### Features

- Industry 50 mm standart size, tapered shaft
- Robust Mechanical and Electrical Construction
- Protection up to IP67
- Up to 65.536 PPR max.
- <300 kHz frequency

### PPR Options :

1024 - 2048 - 4096 - 5000 - 8192 - 10.000 standard PPRs  
1 to 65.536 optional

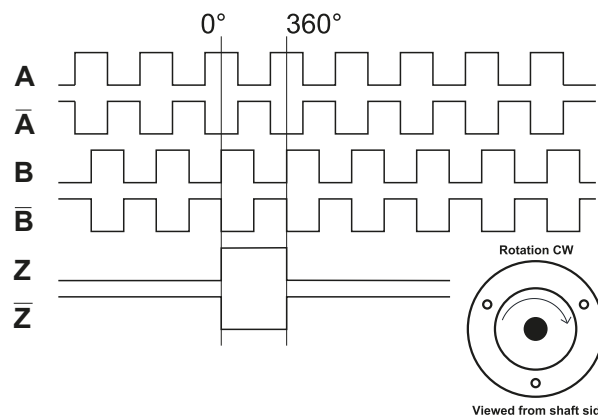
### Technical data - electrical ratings

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...65536
Reference signal	Zero pulse, width 90° 180°, 360° optional
Optoelectronic life time	100.000 (min)
Output frequency	<300 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	≤80 N axial ≤100 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:	1/10 conic shaft
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

### Pulse Diagram



### Accessories

**Connectors and cables**  
See page 206

**Mounting coupling**  
See page 204

**Mounting accessories**  
YY AKR Spring or see page 202-203

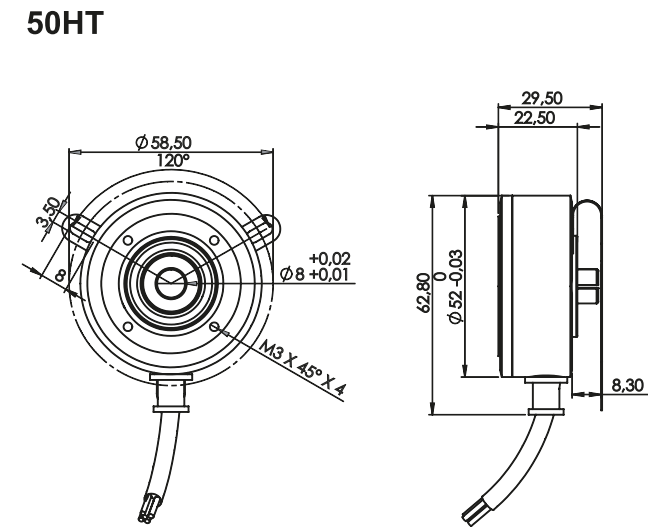
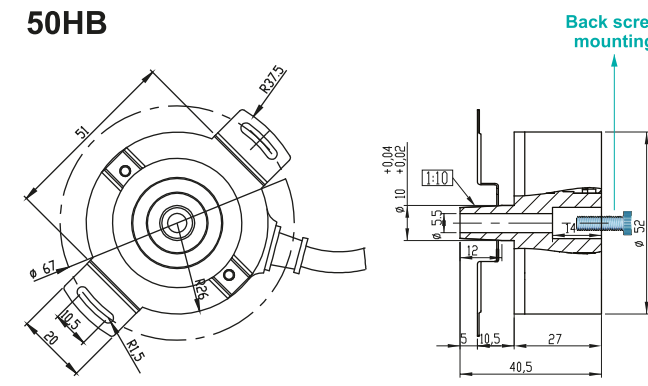
# Incremental encoders

Mechanical Dimensions  
Cable/Connector Wiring, Part Number

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### Mechanical Dimensions



### 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

### 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 206

### Encoder Part Number

**FNC 50 HB C 6 30V 8192 - R2**

**Housing:**  
50 : 50mm

**Flange Type:**  
HB : Conic shaft back screw mounting  
HT : Thin version of 50H

**Shaft diameter :** 1/10 conic shaft  
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)

**Connector:**  
R1204      R1212  
R1205      R1607  
R1208      R1614

**PPR Options :**  
1024 - 2048 - 4096 - 5000 - 8192 - 10.000 standard PPRs  
1 to 65.536 optional

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