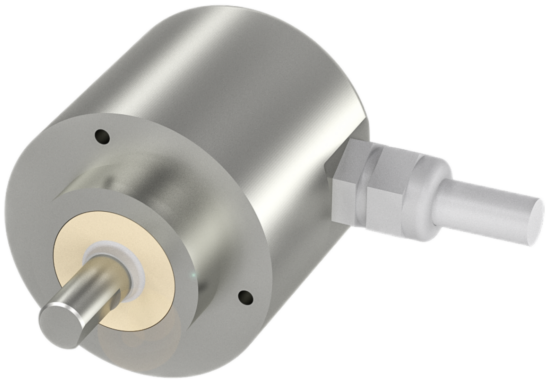
Encoders
BDG – FXX58-PC Series – RS485



BDG abbcc-ddee-fghhi-jjkk-llmm-nnoo

BDG
Encoders

a Principle
F = absolute

bb Version
BC = V4A (1.4404 or 1.4571) mag. shielded radial (58)

cc Flange size
58 = 58 mm

dd Shaft form, flange
PC = Shaft with flat, trim ring (IP67/IP69K)

ee Shaft diameter
10 = 10 mm

f Interface category
D = Absolute digital, unidirectional

g Interface
P = RS485

hh Interface details
GA = RS485, v1

i Supply voltage
2 = 4.75...32 VDC
5 = 5 VDC

jj Resolution single turn
1 - 16 = 1 - 16 bits

kk Resolution multi turn
0 - 31 = 0 - 31 bits

ll Shielded cable
AE = PVC gray, 2x0.34 + 10x0.14 mm²

mm Cable length
20 = 2 m
50 = 5 m
A0 = 10 m

nn connector
00 = no connector

oo Wire assignments (connector / cable)
J1 = CAN/SAE J1939 for M12 connector and shielded cable

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Basic features

Approval/Conformity	CE cULus WEEE Ecolab UKCA
Measuring principle	absolute measuring system

Electrical connection

Connection	Cable

Electrical data

Mean life expectancy	1x 10'9 revs. at 100 % rated shaft load 1x 10'10 revs. at 40 % rated shaft load 1x 10'11 revs. at 20 % rated shaft load
Multi turn technology	Wiegand wire
Operating voltage Ub	4,75 ... 32 VDC
Single turn accuracy	± 0.0878° (≤ 12 bits)
Single turn repeat accuracy	± 0.0878° (≤ 12 bits)
Single turn technology	Hall sensor
Speed max.	3600 U/min
Switch-on delay max.	1.5 s

Environmental conditions

Ambient temperature	-42…80 °C
IP rating	IP67 IP69K Salt mist test DIN EN 60068-2-11 passed after 672 hours.
Storage temperature	-20…80°C

Functional safety

Diagnostic coverage	0 %
MTTF (40 °C)	1000 a
Mission Time	20 a

Interface

Interface	RS485

Material

Housing material	Stainless steel (1.4404)
Material flange	1.4404 stainless steel

Mechanical data

Bearings type	2x precision ball bearings
Flange type	Clamping flange
Housing diameter	58 mm
Shaft diameter	10 mm
Shaft length	18 mm
Shaft load axial max.	100 N
Shaft load radial max.	100 N
Starting torque typ.	ca. 1 Ncm bei Raumtemperatur

Remarks

Interface details RS485:

Configuration inputs
Positive counting direction:
(view on shaft)
DIR = GND: cw
DIR = +Ub: ccw
Zeroing: Preset = +Ub for 2 s
Baud rate: Default: 9600 bit/s
Polling cycle: Standard: 20 ms (tolerance: +/- 2 ms)
Telegram size: 6 byte singleturn, 8 byte multiturn
Telegram structure: 2 byte preamble, 2 /4 byte
User data, 2 byte CRC
Byte structure: Start bit (0) and stop bit (1), the bytes are big-endian and LSB first, no parity bits are available

CRC definition: Code:
- CRC-CCITT 16 bit (X^16+X^12+X^5+1)
- Start value 0x1021,
- start/stop bits not included
- Preamble (0xABCD) included in calculation
- Bytewise oriented: per CRCRefresh 1 byte is used

Error behavior of the protocol:
If the encoder recognizes that it is not possible to send a correct value (e.g. magnet loss), then the transmitted telegram is set to the maximum value in its user data. Baud rate and polling cycle remain constant.

LED behavior:
At startup / bootup: - red light (<2.3 s)
Error: - constant red glow (>2,3 s)
Normal operating condition: - constant green glow
No supply applied: - no glow
For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

Wiring diagramm

R1 (RS485/SSI)

SSI, RS485	R1	
Signal	Pin	Color
OG	1	WH
+UB	2	BN
CLK+	3	GN
CLK-	4	YE
DATA+	5	GY
DATA-	6	PK
PRESET	7	BU
DIR	8	RD
Shield	housing	housing

Product View

Cable outlet radial