

Absolute single-turn hollow shaft encoders

BFF/BFG

CANopen

features

- CANopen interface integrated
- 13 bit resolution
- programmable operating modes
- programmable preset values



BFF



BFG

general data

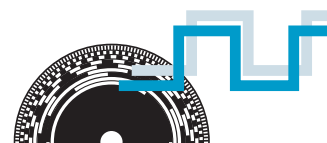
voltage supply	10 - 30 VDC with reverse polarity protection
max. supply current no load	typ. 70 mA (at 24 VDC)
output circuit	CANopen, standard ISO/DIS 11898
signal code	binary
max. measuring step	13 bit (1 step relates to 2' 38'')
max. error limit	±1/2 step
max. switching frequency	250 kHz
operating modes	asynchronous, asynchronous-cyclic, synchronous-cyclic, synchronous-cyclic, programmable
max. baud rate	1 Mbit/s
specification	CAN 2.0B passive
protocol/profile	CANopen/CIA DSP 406, DSP 301 V.4, DSP 305 (LSS)
direction of rotation	looking at the flange, position counts up as the shaft rotates clockwise (CW), programmable

mechanical data

max. revolutions	mech. 12'000 rpm (IP 42) mech. 6'000 rpm (IP 65) electr. 1'830 rpm
moment of inertia	BFF typ. $18,4 \times 10^{-7} \text{ kgm}^2$ BFG typ. $23,8 \times 10^{-7} \text{ kgm}^2$
torque BFF	typ. 0,9 cNm IP 42 typ. 3,7 cNm IP 65
BFG	typ. 1,75 cNm IP 42 typ. 4,7 cNm IP 65 (3'000 rpm / 20 °C)
product life	depending on ambient conditions (typ. 10^9 revolutions)
max. protection class	IP 65
material	housing: aluminum flange: aluminum
weight	approx. 300 g

ambient conditions

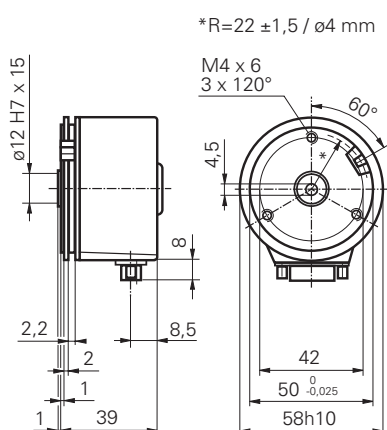
temperature range	-20...+85 °C
relative humidity	max. 95% non condensing
vibration	IEC 60068-2-6 ($\leq 100 \text{ m/s}^2$ / 10 - 200 Hz)
shock	IEC 60068-2-27 ($\leq 500 \text{ m/s}^2$ / 11 ms)
noise immunity	EN 61000-6-2
emitted interference	EN 61000-6-3



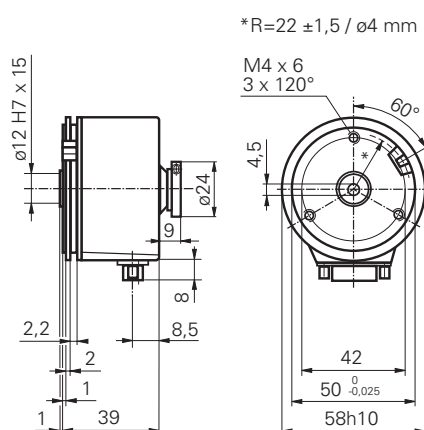
dimensions and connection dimensions

BFF

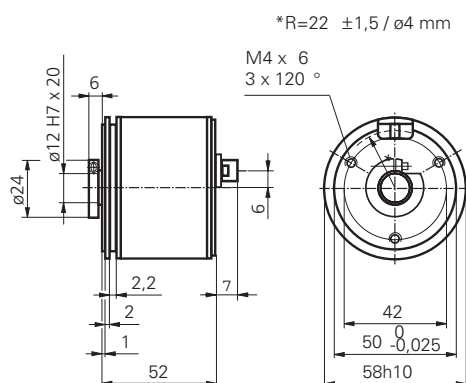
-F connector D-Sub axial



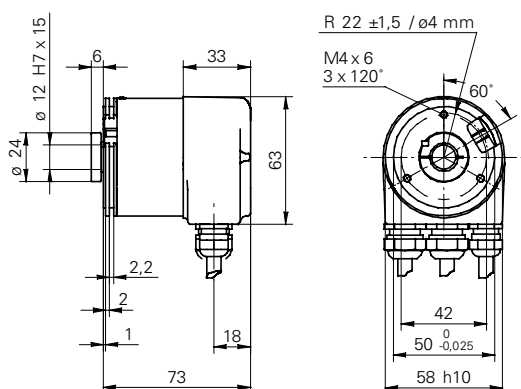
BFG



-G connector D-Sub axial



-D bus cover



Note

Mounting drawings see end of chapter.

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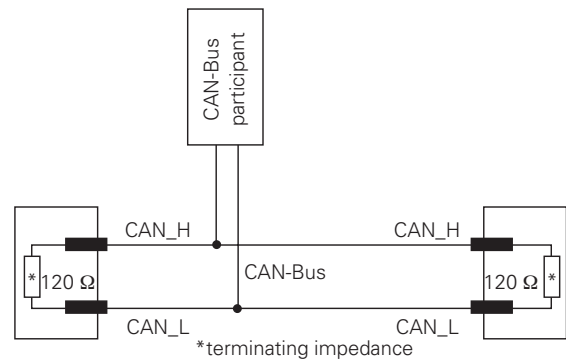
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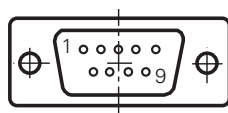
assignment connector D-Sub 9-pin male

pin	signals	description
1	n.c.	-
2	CAN_L	bus line (dominant LOW)
3	CAN_GND	0 VDC
4	n.c.	-
5	n.c.	-
6	GND	voltage supply
7	CAN_H	bus line (dominant HIGH)
8	n.c.	-
9	+Vs	voltage supply

wiring according to ISO/DIS 11898

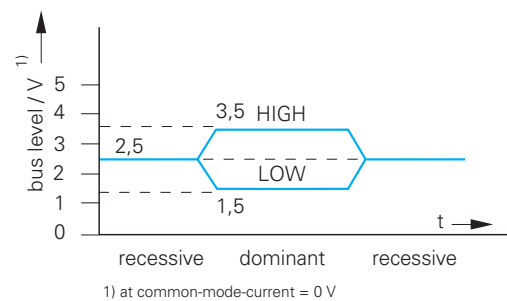


connector male

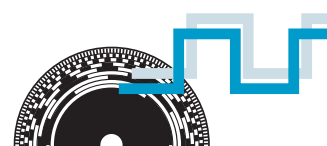


male

output level acc. to ISO/DIS 11898



CANopen



CAN bus protocol

CAN protocol: CANopen

Device asynsprofile: CiA DSP 406, DSP 301 V.4,
DSP 305 (LSS)

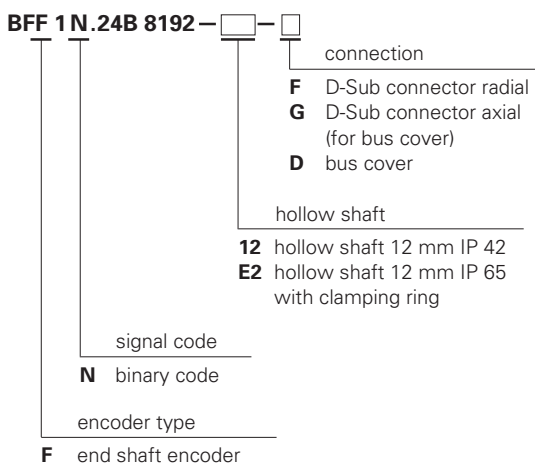
Supported operating modes:

- Polling (async), data transmission on request.
- Cyclic, data transmission periodic, asynchronous (async-cyclic) or synchronous (sync-cyclic) with sync message.
- Acyclic, data transmission if process values change, synchronous with sync message.
- LSS, layer setting service, simplified network configuration.

Note:

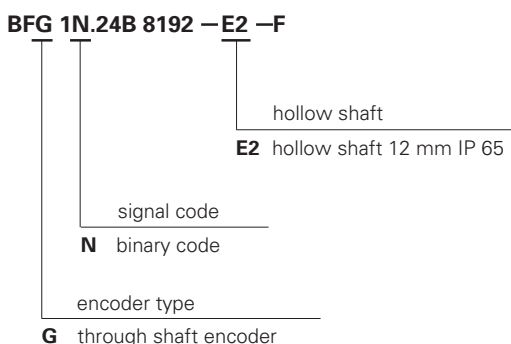
The cable screen end and the encoder housing must be connected to ground potential.

order designation BFF



Other versions on request

order designation BFG



Other versions on request.

accessories

clamp set	part nr. 110616
torque pin	part nr. 107540
torque spring ¹⁾	part nr. 109520
spring plate set	part nr. 136635
couplings and shaft adapters	see chapter accessories
CD-ROM with GSD-/EDS-/XML-files and manuals	part nr. 147362
clamping ring set	
12 mm hollow shaft	part nr. 142556

¹⁾ encoder is delivered with fixed rubber torque spring