

Incremental encoders

Blind or through hollow shaft $\varnothing 12$ mm
4096...320000 pulses per revolution

BHF, BHG - HighRes



BHF with blind hollow shaft

Features

- High resolution programmable encoder
- Optical sensing method
- Max. 320000 pulses per revolution
- Programmable via BISS
- Small profile depth
- Blind or through hollow shaft $\varnothing 12$ mm

Technical data - electrical ratings

Voltage supply	5 VDC ± 10 % 10...30 VDC
Consumption typ.	60 mA (5 VDC, w/o load) 40 mA (24 VDC, w/o load)
Pulses per revolution	4096...320000
Reference signal	Zero pulse, programmable
Sensing method	Optical
Output frequency	≤ 1300 kHz
Output signals	A 90° B, N + inverted
Output stages	Antivalent Push-pull short-circuit proof
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3
Approval	UL approval / E217823

Technical data - mechanical design

Size (flange)	$\varnothing 58$ mm
Protection DIN EN 60529	IP 65, IP 42
Operating speed	≤ 3000 rpm (pulse disc 5000) ≤ 6000 rpm (pulse disc 2048)
Materials	Housing: aluminium Flange: aluminium
Operating temperature	-20...+85 °C
Relative humidity	95 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 10 g, 10-200 Hz DIN EN 60068-2-27 Shock 50 g, 11 ms
Connection	Connector M23, 12-pin Cable 2 m
Weight approx.	300 g

BHF

Shaft type	$\varnothing 12$ mm (blind hollow shaft)
Operating torque typ.	0.009 Nm (IP 42) 0.037 Nm (IP 65)

BHG

Shaft type	$\varnothing 12$ mm (through hollow shaft)
Operating torque typ.	0.0175 Nm (IP 42) 0.047 Nm (IP 65)

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Part number

Blind hollow shaft

BHF 1 **P** . - -

5 Connection
Cable 2 m, radial
A Connector M23, radial

Blind hollow shaft
12 ø12 mm, IP 42
B2 ø12 mm, IP 42, with clamping ring
E2 ø12 mm, IP 65, with clamping ring
L2 ø12 mm, IP 65

Pulse number - see table

Voltage supply / signals
05A 5 VDC / antivalent (TTL compatible)
24K 10...30 VDC / push-pull short-circuit proof

Output sequence
P Programmable

Through hollow shaft

BHG 1 **P** . - -

5 Connection
Cable 2 m, radial
A Connector M23, radial

Through hollow shaft
B2 ø12 mm, IP 42, with clamping ring
E2 ø12 mm, IP 65, with clamping ring

Pulse number - see table

Voltage supply / signals
05A 5 VDC / antivalent (TTL compatible)
24K 10...30 VDC / push-pull short-circuit proof

Output sequence
P Programmable

Pulse number

4096	16384	40000	131072
8192	20000	65536	160000
10000	32768	80000	320000

Pulse disc 2048:
2048, 4096, 8192, 16384, 32768, 65536, 131072

Pulse disc 5000:
10000, 20000, 40000, 80000, 160000, 320000
Other pulse numbers on request.

Trigger level

Outputs 05A Complementary Linedriver RS422

Output level High	>2,4 V (I = -20 mA)
Output level Low	<0,4 V (I = 20 mA)
Load High	<20 mA
Load Low	<20 mA

Outputs 24K Push-pull short-circuit protection

Output level High	>+Vs - 3,7 V (I = -30 mA)
Output level Low	<2,5 V (I = 30 mA)
Load High	<30 mA
Load Low	<30 mA

Accessories

Connectors and cables

10107687	Female connector M23, 12-pin, straight, without cable
10130367	Female connector M23, 12-pin, straight, 2 m cable
10118532	Female connector M23, 12-pin, straight, 5 m cable

Mounting accessories for BHF

10136635	Set of spring washers for encoders ø58 mm
10110616	Clamp set ø15 mm
10107540	Torque pin
10109520	Torque spring
10110574	Solid shaft reducer 12/6 mm
10112322	Solid shaft reducer 12/8 mm
10114472	Solid shaft reducer 12/10 mm

Mounting accessories for BHG

10136635	Set of spring washers for encoders ø58 mm
10110616	Clamp set ø15 mm
10107540	Torque pin
10109520	Torque spring

Programming accessories

10161910	Set of programming tools
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Terminal assignment

Cable

for connection reference -5

05A		24K	
Core colour	Signals	Core colour	Signals
brown	+Vs	brown	+Vs
green	CHA	green	CHA
red	CHA compl.	–	–
yellow	CHB	yellow	CHB
blue	CHB compl.	–	–
pink	CHN	pink	CHN
grey	CHN compl.	–	–
white	0 V	white	0 V
Cable data	8 x 0.14 mm ²	5 x 0.14 mm ²	
Screen	connected to flange		

Connector M23 male

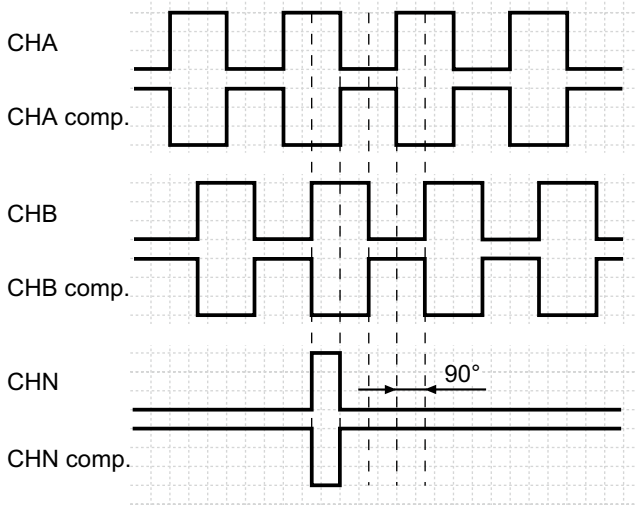
for connection reference -A

05A, 24K	
Connector	Signals
Pin 1	CHA compl.
Pin 2	+Vs
Pin 3	CHN
Pin 4	CHN compl.
Pin 5	CHB
Pin 6	CHB compl.
Pin 7	n.c.
Pin 8	CHA
Pin 9	Housing
Pin 10	0 V
Pin 11	0 V
Pin 12	+ Vs

Output signals

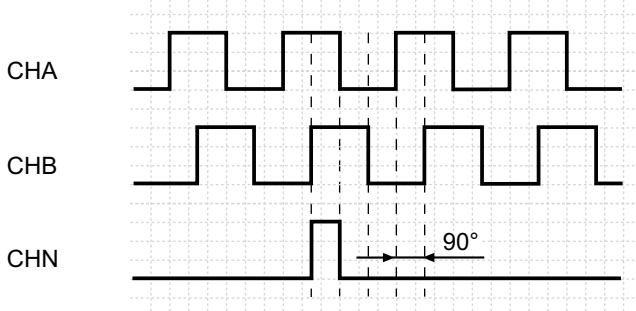
Counter clockwise rotating direction when looking at the flange.

05A

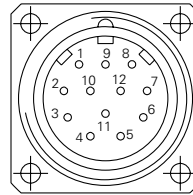


Counter clockwise rotating direction when looking at the flange.

24K



Push-pull version **24K** without CHx complementary signals



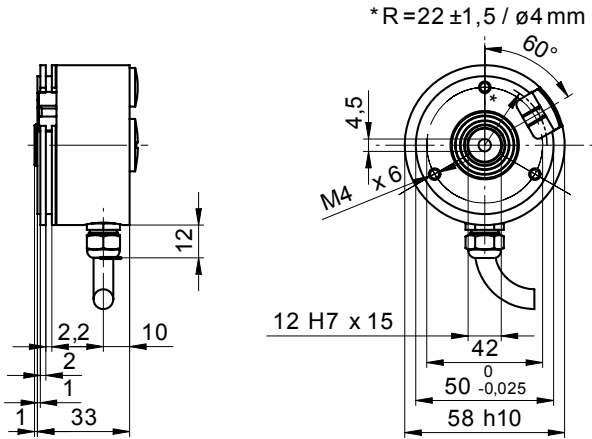
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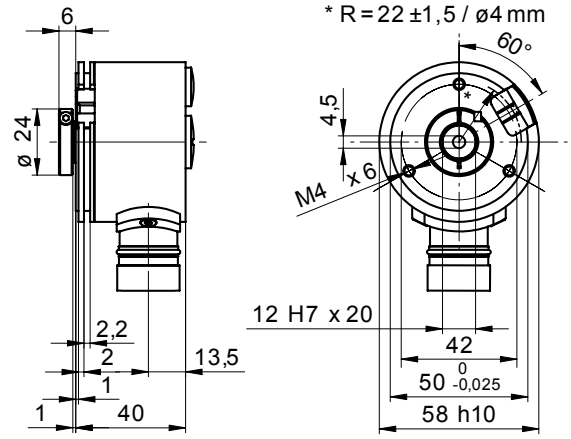
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Dimensions

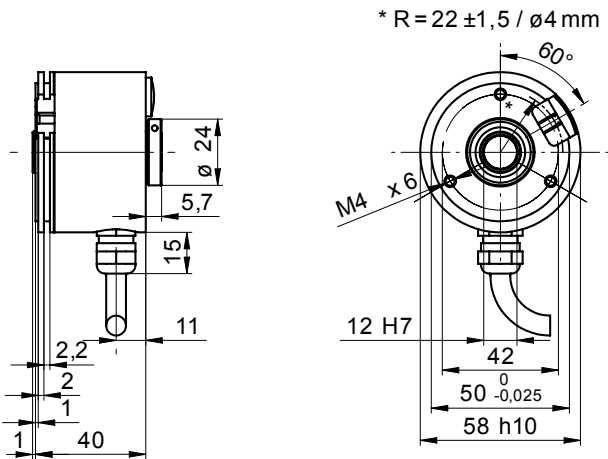
BHF HighRes cable radial



BHF HighRes connector output radial



BHG HighRes cable radial



BHG HighRes connector output radial

