

Incremental hollow shaft encoder BHF/BHG high resolution

features

- high resolution encoder
- optical sensing principle
- resolution up to 320'000 ppr
- internal interpolation, programmable
- small mounting depth
- hollow and through shaft \varnothing 12 mm



BHF



BHG

general data

voltage supply	5 VDC \pm 10% (05A) 10 - 30 VDC (24K)
max. supply current no load	typ. 60 mA (at 5 VDC) (05A) typ. 40 mA (at 24 VDC) (24K)
max. measuring steps	1'280'000 steps at 320'000 ppr
pulse range	see order designation
pulse tolerance	\pm 10% (switching frequency 320 kHz) \pm 15% (switching frequency 540 kHz) \pm 27% (switching frequency 1000 kHz) \pm 44% (switching frequency 1300 kHz)
max. switching frequency	1,3 MHz (05A) 300 kHz (24K)
direction of rotation	looking at the flange and rotating in counter-clockwise direction, channel A leads channel B by 1/4 period (90°)

mechanical data

max. revolutions mechanical	6'000 rpm
elektrical	6'000 rpm (pulse disc 2048) 3'000 rpm (pulse disc 5000)
moment of inertia rotor	BHF/BHG with clamping ring typ. $18,5 \times 10^{-7}$ kgm ² BHF without clamping ring typ. $13,6 \times 10^{-7}$ kgm ²
torque BHF	typ. 0,9 cNm IP 42 typ. 3,7 cNm IP 65
BHG	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	aluminium
weight	approx. 300 g

ambient conditions

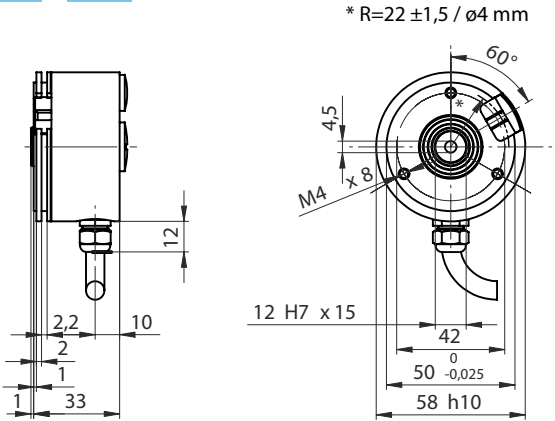
temperature range	-20...+85 °C
relative humidity	max. relative humidity 95% non condensing
vibration	IEC 60068-2-6 (\leq 100 m/s ² / 10 - 200 Hz)
shock	IEC 60068-2-27 (\leq 500 m/s ² / 11 ms)
noise immunity	EN 61000-6-2
emitted interference	EN 61000-6-3



dimensions

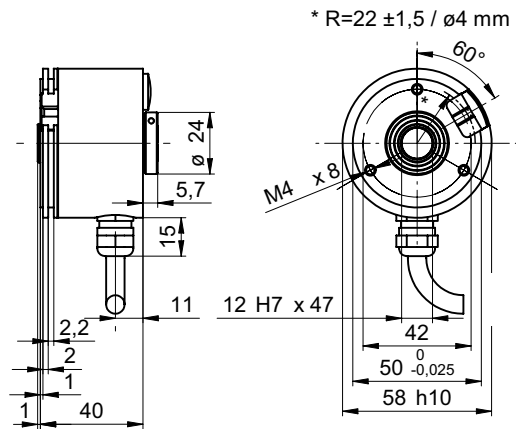
BHF

-12 -5

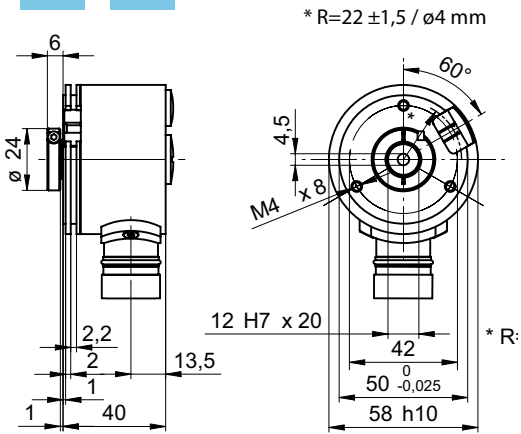


BHG

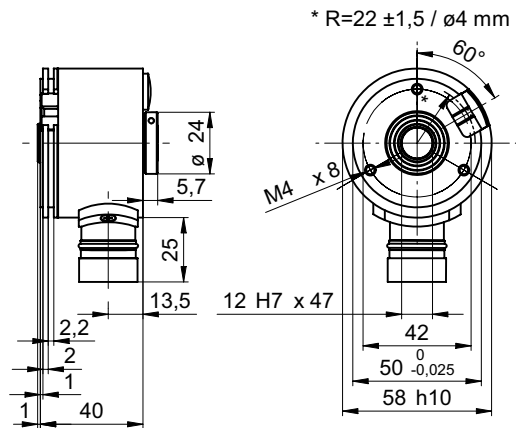
-B2 -5



-B2 -A



-B2 -A



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assignment cable

for connection reference **-5**

05A (5 VDC complementary)

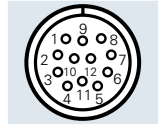
cable color	signal
brown	+Vs
green	CHA
red	CHA compl.
yellow	CHB
blue	CHB compl.
pink	CHN
grey	CHN compl.
white	0 V
screen	connected to connector housing
cable data	10 x 0,14 mm ² , max. ext. ø 6,1 mm

24K (10 - 30 VDC push-pull, short-circuit protection)

cable color	signal
brown	+Vs
green	CHA
red	n.c.
yellow	CHB
blue	n.c.
pink	CHN
grey	n.c.
white	0 V
screen	connected to connector housing
cable data	10 x 0,14 mm ² , max. ext. ø 6,1 mm

assignment connector M23 male

for connection reference **-A**



05A (5 VDC complementary)

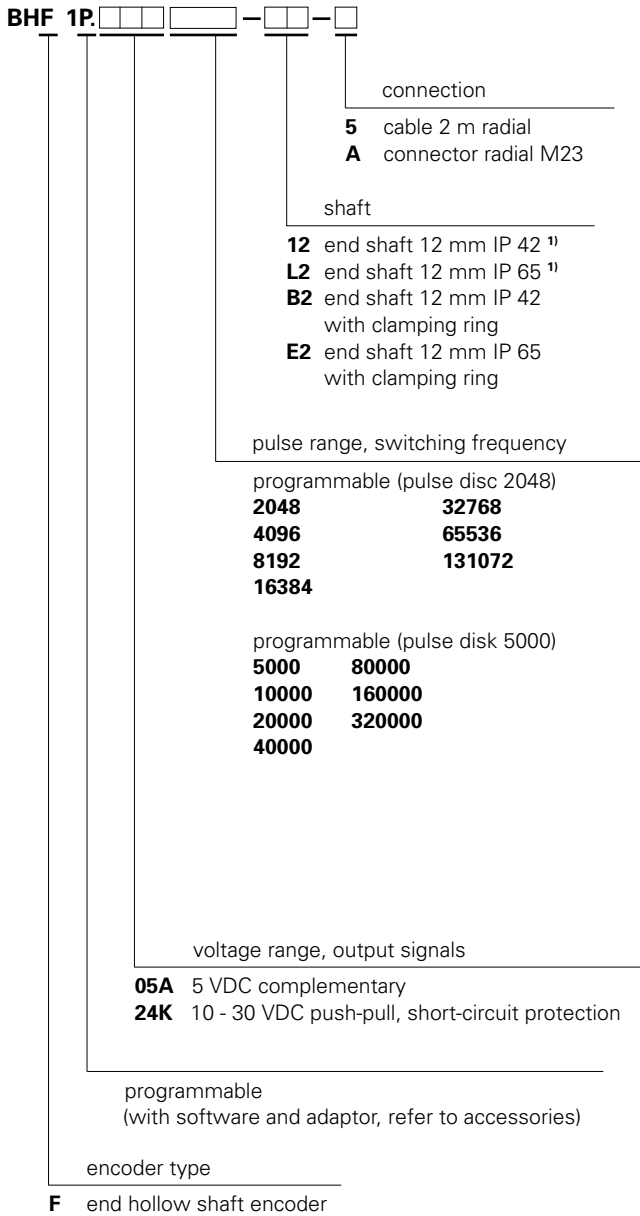
24K (10 - 30 VDC push-pull, short-circuit protection)

pin nr.	signals
1	CHA compl.
2	+Vs
3	CHN
4	CHN compl.
5	CHB
6	CHB compl.
7	n.c.
8	CHA
9	housing
10	0 V
11	0 V
12	+Vs

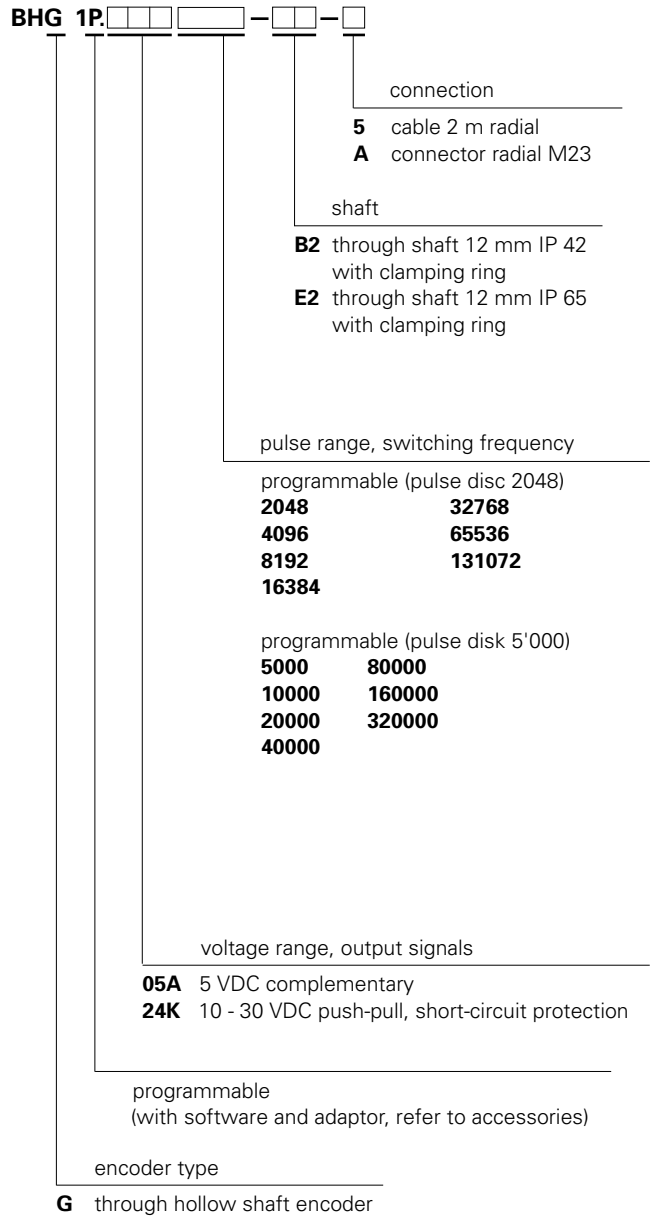
push-pull version **24K** without CHx complementary signals



order designation BHF



order designation BHG



¹⁾ shaft adapter must be ordered separately

Other versions on request.

accessories

programming set	part nr. 161910
(more information see accessories on page 5.17)	
connector M23 female reference -A	
for 05A and 24K	part nr. 107687
spring plate set	part nr. 136635
shaft adapters	see chapter accessories
clamping ring set	
12 mm hollow shaft	part nr. 142556