

# Incremental hollow shaft encoders BHF/BHG

## features

- simple mounting
- end shaft mounting (BHF)
- through shaft mounting (BHG)
- various hollow shaft adapters
- small mounting depth



BHF



BHG

## general data

voltage supply	5 VDC $\pm 10\%$ ( <b>05A</b> ) 4,5 - 30 VDC ( <b>25W</b> ) 10 - 30 VDC ( <b>24K</b> )
max. supply current no load	typ. 80 mA (at 5 VDC) ( <b>05A</b> ) typ. 180 mA (at 4,5 VDC) ( <b>25W</b> ) typ. 60 mA (at 24 VDC) ( <b>24K</b> )
max. measuring steps	40'000 steps at 10'000 pulses ( <b>05A/24K</b> )
pulse range	see order designation
pulse tolerance	$\pm 10\%$
switching frequency fmax.	200 kHz ( <b>24K</b> ) 300 kHz ( <b>05A/25W</b> ) 750 kHz ( <b>05A</b> > 5000 pulses)

## mechanical data

max. revolutions	12'000 /min
rotor inertia	BHF/BHG with clamping ring typ. $18,5 \times 10^{-7}$ kgm <sup>2</sup> BHF without clamping ring typ. $13,6 \times 10^{-7}$ kgm <sup>2</sup>
torque	BHF typ. 0,93 cNm BHG typ. 3,7 cNm (3000 rev/min 20 °C)
product life	depending on ambient conditions (typ. 10 <sup>9</sup> revolutions)
max. protection class	shaft: IP 64 housing: IP 65
material	housing: aluminum BHF with connection ref. -5: steel flange: aluminum
weight	approx. 300 g

## ambient conditions

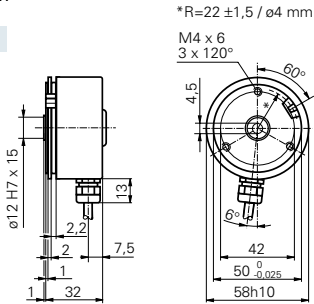
temperature range	-20...+85 °C
relative humidity	max. 95% non condensing
vibration	IEC 68 section 2-6 ( $\leq 100$ m/s <sup>2</sup> / 10-200 Hz)
shock	IEC 68 section 2-27 ( $\leq 500$ m/s <sup>2</sup> / 11 ms)
noise immunity	EN 50 082 - 2 EN 61000 - 4 - 2 to 4 severity grade 3
emitted interference	EN 50 081 - 2



**dimensions and connection dimensions**

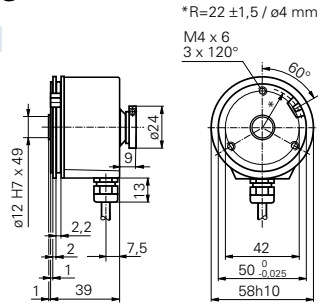
**BHF**

**-5**

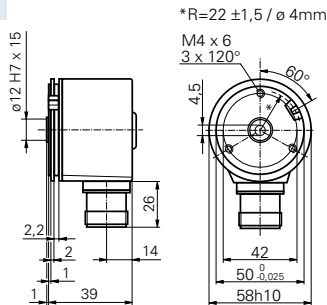


**BHG**

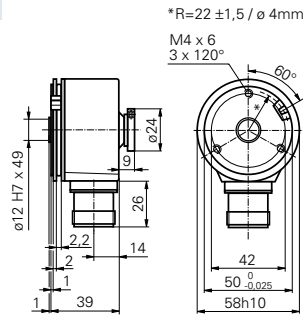
**-5**



**-A**



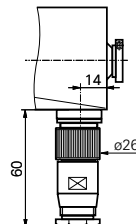
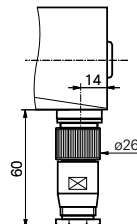
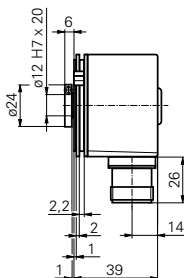
**-A**



**-E2** with clamping ring

**-A**

**-A**



**Incremental**

# Incremental hollow shaft encoders

## BHF/BHG

### assignment cable

for connection reference **-5**

**05A** (5 VDC complementary)

**25W** (4,5 - 30 VDC push-pull, complementary, short-circuit protection)

cable color	signals
brown	+Vs
green	CHA
red	CHA compl.
yellow	CHB
blue	CHB compl.
pink	CHN
grey	CHN compl.
white	0V
screen	connected to connector housing
cable data	8x 0,14 mm <sup>2</sup> , max. ext. ø 5,7 mm

**24K** (10 - 30 VDC complementary, short-circuit protection)

cable color	signals
brown	+Vs
green	CHA
yellow	CHB
pink	CHN
white	0V
screen	connected to connector housing
cable data	5x 0,14 mm <sup>2</sup> , max. ext. ø 5,2 mm

### assignment connector

for connection reference **-A**



**05A** (5 VDC complementary)

**24K** (10 - 30 VDC complementary, short-circuit protection)

**25W** (4,5 - 30 VDC push-pull, complementary, short-circuit protection)

pin number	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

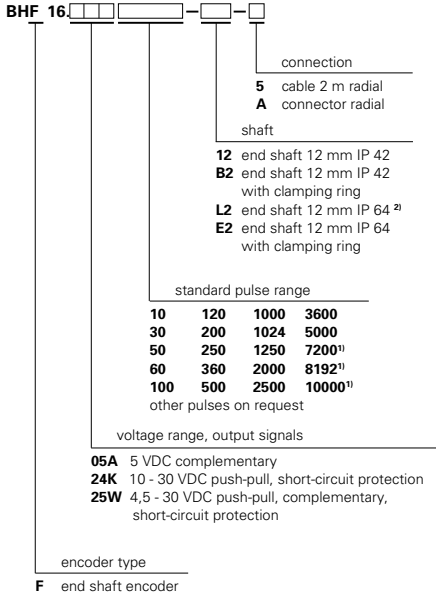
push-pull version **24K** without CHx complementary signals

# BHF BHG



Incremental

## order designation BHF

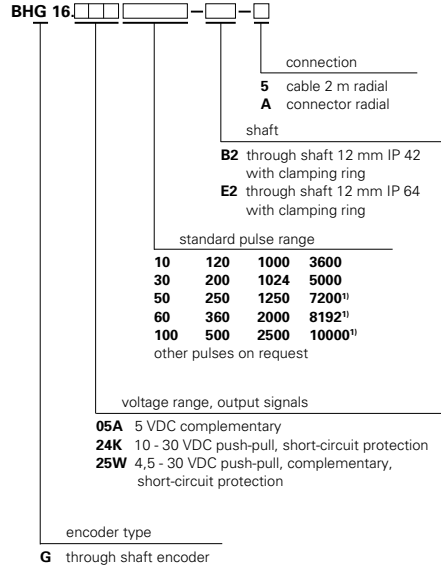


<sup>1)</sup> only for complementary **05A** + push-pull **24K**

<sup>2)</sup> shaft adapter must be ordered separately

\* other versions on request

## order designation BHG



<sup>1)</sup> only for complementary **05A** + push-pull **24K**

\* other versions on request

## accessories

### connector for connection reference **-A**

for complementary <b>05A</b>	part nr. 107687 straight, IP 64
for push-pull <b>24K</b>	part nr. 107687 straight, IP 64
for complementary <b>25W</b>	part nr. 107687 straight, IP 64 all 12-pin

clamp set	part nr. 110616
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torque pin	part nr. 107540
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torque spring	part nr. 109520
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shaft adapters	see page 4. 11 chapter accessories
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couplings	see page 4. 09 chapter accessories
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encoder is delivered with fixed rubber torque spring