

# Incremental encoders

Blind or through hollow shaft  $\varnothing 12$  mm  
10...5000 pulses per revolution

## BHF, BHG



BHF with blind hollow shaft

### Features

- Encoder with blind or through hollow shaft  $\varnothing 12$  mm
- Optical sensing
- Max. 5000 pulses per revolution
- Small profile depth
- Versatile mounting accessories

### Technical data - electrical ratings

Voltage supply	5 VDC $\pm 10$ % 10...30 VDC 4.5...30 VDC
Consumption typ.	80 mA (5 VDC, w/o load) 180 mA (4.5 VDC, w/o load) 60 mA (24 VDC, w/o load)
Pulses per revolution	10...5000
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	$\leq 750$ kHz
Output signals	A 90° B, N + inverted
Output stages	Antivalent Push-pull short-circuit proof Push-pull antiv. 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 42, IP 65
Operating speed	$\leq 12000$ rpm (IP 42) $\leq 6000$ rpm (IP 65)
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)
Materials	Housing: aluminium Housing: steel (connection -5) Flange: aluminium

### BHG

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



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### Terminal assignment

#### Cable

for connection reference -5

#### 05A, 25W

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 <sup>2</sup>	5 x 0.14 mm <sup>2</sup>	
Screen	connected to flange		

#### Connector M23 male

for connection reference -A

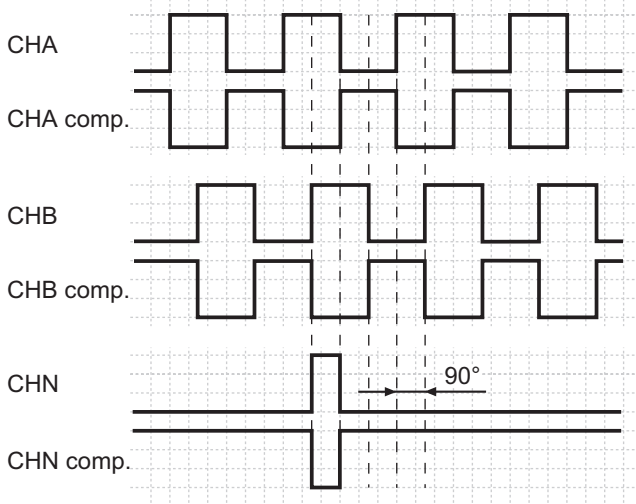
#### 05A, 24K, 25W

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

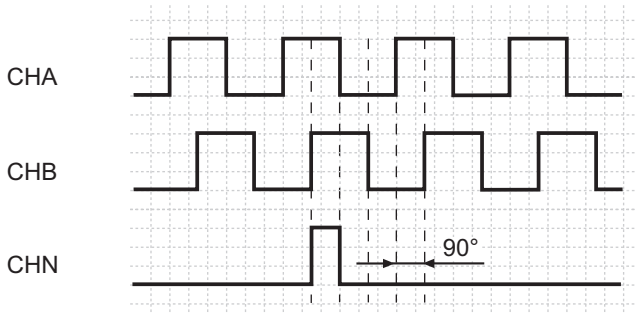
Counter clockwise rotating direction when looking at the flange.

#### 05A, 25W

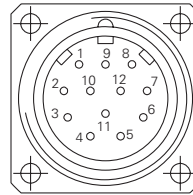


Counter clockwise rotating direction when looking at the flange.

#### 24K



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



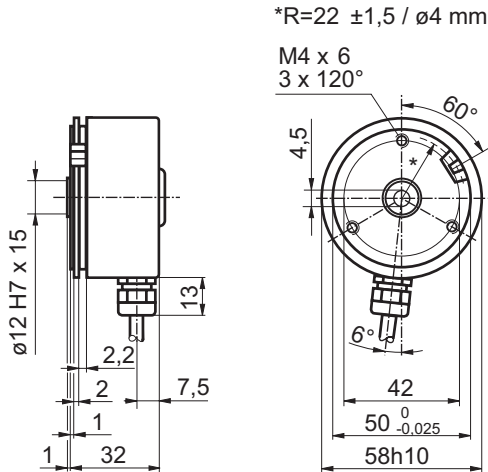
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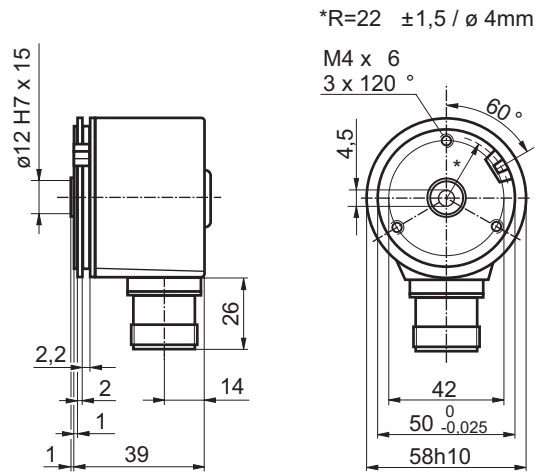
BHF, BHG

## Dimensions

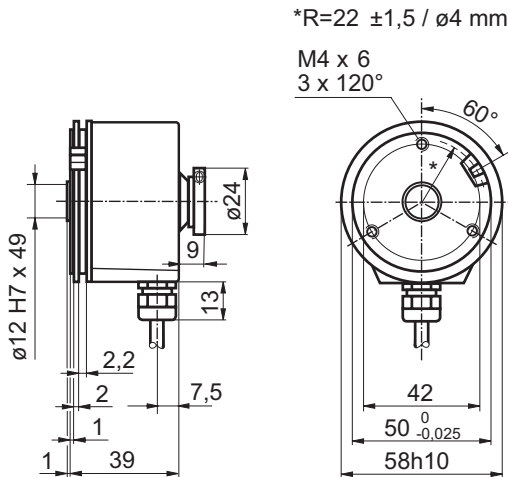
### BHF cable radial



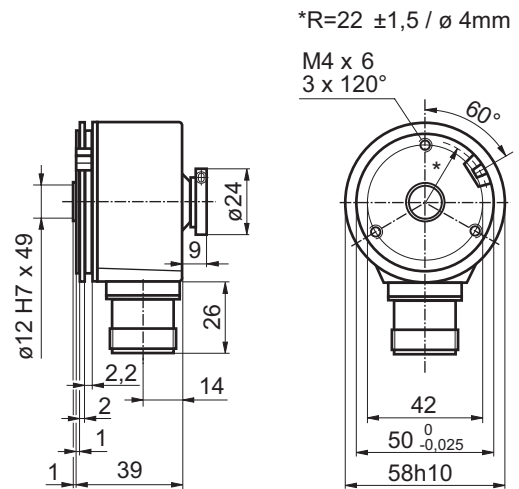
### BHF connector output radial



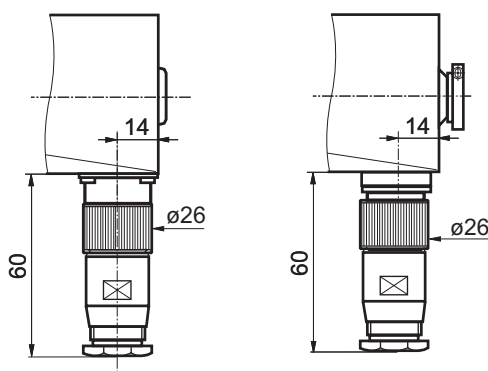
### BHG cable radial



### BHG connector output radial



### BHF/BHG connector dimensions



### BHF/BHG clamping ring

