

# Incremental encoders

## Mini series - blind or through hollow shaft

### 10...2048 pulses per revolution

## BHK



BHK with blind hollow shaft

### Features

- Mini encoder with blind or through hollow shaft
- Optical sensing
- Max. 2048 pulses per revolution
- Housing  $\varnothing 40$  mm
- Operation speed max. 12000 rpm
- Blind or through hollow shaft
- Versatile mounting accessories

### Technical data - electrical ratings

Voltage supply	5 VDC $\pm 10$ % 10...30 VDC
Consumption typ.	60 mA (5 VDC, w/o load) 30 mA (24 VDC, w/o load)
Pulses per revolution	10...2048
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	$\leq 100$ kHz
Output signals	A 90° B, N + inverted
Output stages	Linedriver/RS422 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)	$\varnothing 40$ mm
Shaft type	$\varnothing 6$ mm (through hollow shaft) $\varnothing 12$ mm (blind hollow shaft)
Protection DIN EN 60529	IP 42, IP 65
Operating speed	$\leq 12000$ rpm
Operating torque typ.	0.0021 Nm (IP 42) 0.0075 Nm (IP 64)
Materials	Housing: polyamide black 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 M9, 5-pin Connector M9, 8-pin Cable 1 m
Weight approx.	100 g



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#### Terminal assignment

##### Cable

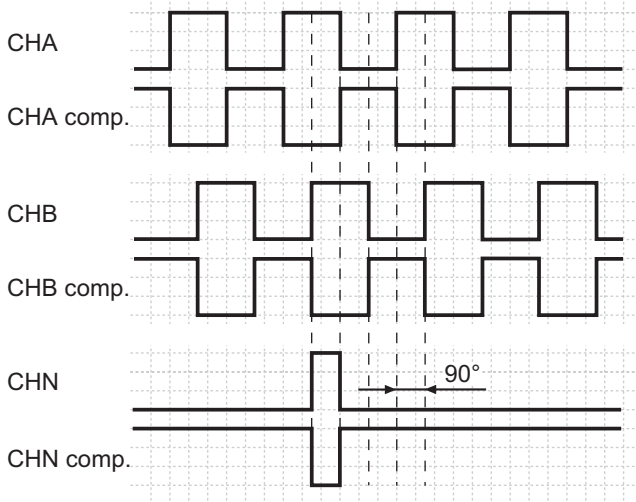
for connection reference -5

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

#### Output signals

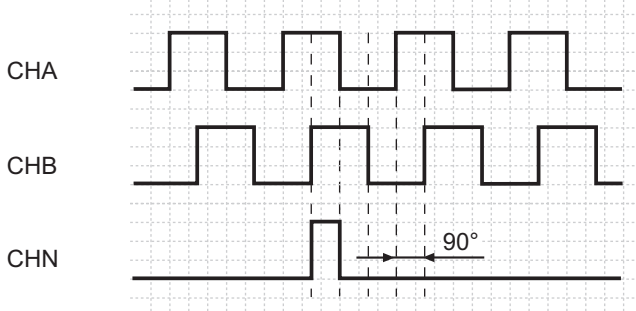
Counter clockwise rotating direction when looking at the flange.

##### 05A



Counter clockwise rotating direction when looking at the flange.

##### 24K



##### Connector M9 male

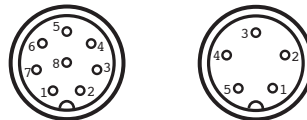
for connection reference -9

05A		
Connector	Core colour*	Signals
Pin 1	white	0 V
Pin 2	brown	+Vs
Pin 3	green	CHA
Pin 4	yellow	CHB
Pin 5	grey	CHN compl.
Pin 6	pink	CHN
Pin 7	blue	CHB compl.
Pin 8	red	CHA compl.

##### 24K

Connector	Core colour*	Signals
Pin 1	white	0 V
Pin 2	brown	+Vs
Pin 3	brack	CHA
Pin 4	blue	CHB
Pin 5	grey	CHN

\*these core colours are valid for the assembled mating connectors (see accessories)



# Incremental encoders

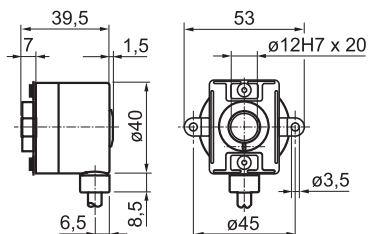
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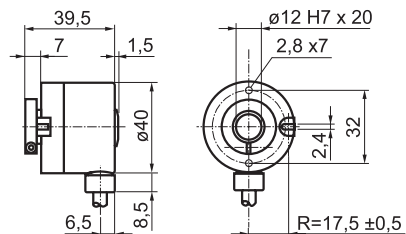
BHK

#### Dimensions

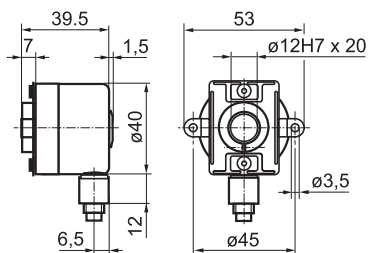
BHK clamping ring and spring washer



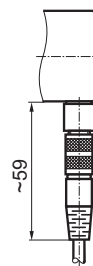
BHK clamping ring



BHK connector output radial



BHK connector dimensions



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