

# Incremental hollow shaft encoder BHK

## features

- miniaturized hollow shaft encoder with extended pulse range
- radial cable connection or connector
- through shaft mounting  $\varnothing$  6 mm or end shaft mounting  $\varnothing$  12 mm



## general data

voltage supply	5 VDC $\pm$ 10% <b>(05A)</b> 10 - 30 VDC <b>(24K)</b>
max. supply current no load	typ. 60 mA (at 5 VDC) typ. 30 mA (at 24 VDC)
max. measuring steps	8'192 steps
pulse range	see order designation
pulse tolerance	$\pm$ 15%
max. switching frequency	50 kHz ( $\leq$ 500 ppr) 100 kHz ( $>$ 500 ppr)

## mechanical data

max. revolutions	12'000 rpm
moment of inertia	typ. $3,0 \times 10^{-7}$ kgm <sup>2</sup>
torque	typ. 0,21 cNm IP 42 typ. 0,75 cNm IP 64 (3'000 rpm / 20 °C)
product life	depending on ambient conditions (typ. 10 <sup>9</sup> revolutions)
max. protection class	hollow shaft: max. IP 64 housing: IP 42 to max. IP 65 with end cap
material	housing: polyamid flange: aluminum
weight	approx. 100 g

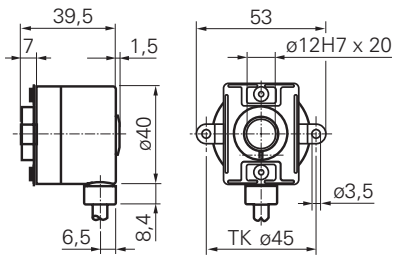
## ambient conditions

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

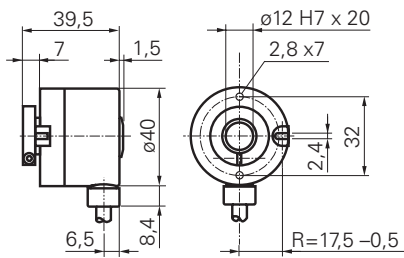


**dimensions and connection dimensions**

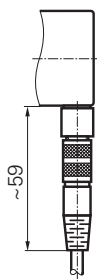
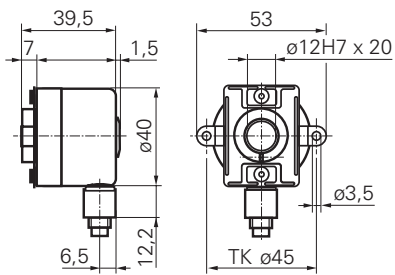
**-5** with shaft reference **-I2**



**-5** with shaft reference **-B2**

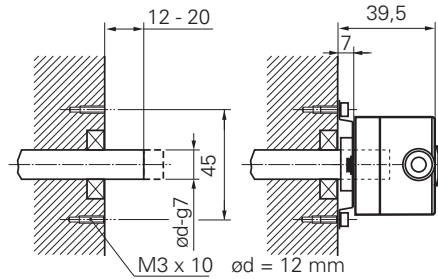


**-9**

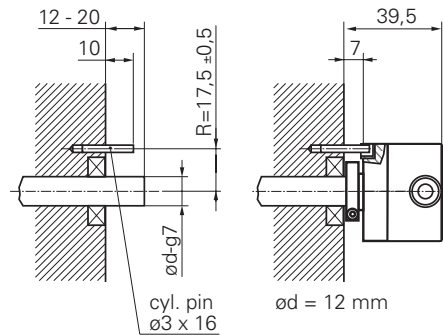


**mounting**

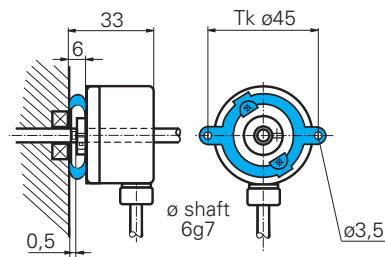
**-I2** end shaft 12 mm with clamping ring and spring plate



**-B2** end shaft 12 mm with clamping ring no spring plate

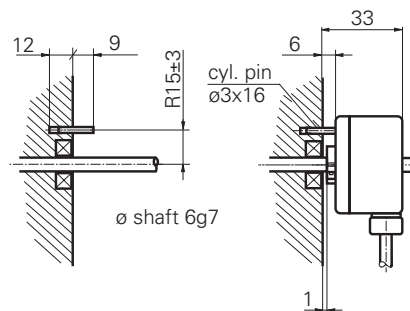


**-M6** through shaft 6 mm with clamping ring and spring plate



**-B6** through shaft 6 mm with clamping ring no spring plate

**-E6** through shaft 6 mm with clamping ring



# Incremental hollow shaft encoder BHK

## assignment cable

for connection reference **-5**

**05A** (5 VDC complementary)

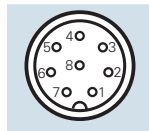
cable color	signals
brown	+Vs
green	CHA
red	CHA compl.
yellow	CHB
blue	CHB compl.
pink	CHN
grey	CHN compl.
white	0V
screen	connected to flange
cable data	8x0,14 mm <sup>2</sup> , max. ext. ø 5,7 mm

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

cable color	signals
brown	+Vs
green	CHA
yellow	CHB
pink	CHN
white	GND
screen	connected to flange
cable data	5x0,14 mm <sup>2</sup> , max. ext. ø 5,4 mm

## assignment connector M9 male

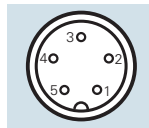
for connection reference **-9**



**05A** (5 VDC complementary)

pin number	cable color*	signals
1	white	0V
2	brown	+Vs
3	green	CHA
4	yellow	CHB
5	grey	CHN compl.
6	pink	CHN
7	blue	CHB compl.
8	red	CHA compl.

for connection reference **-9**



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

pin number	cable color*	signals
1	white	0V
2	brown	+Vs
3	black	CHA
4	blue	CHB
5	grey	CHN

### \*Note

These cable colors are valid for the pre-assembled cable socket (see accessories).



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**order designation**

BHK 16.    -  -

connection

- 5** cable 2 m radial
- 9** connector radial M9

shaft

- B6** through shaft 6 mm  
IP 42 with clamping ring
- E6** through shaft 6 mm  
IP 64 with clamping ring
- M6** through shaft 6 mm  
IP 64 with clamping ring  
and spring plate
- B2** end shaft 12 mm IP 42  
with clamping ring
- I2** end shaft 12 mm IP 42  
with clamping ring  
and spring plate

standard pulse range

<b>10</b>	<b>100</b>	<b>500</b>
<b>20</b>	<b>120</b>	<b>1000</b>
<b>30</b>	<b>200</b>	<b>1024</b>
<b>50</b>	<b>250</b>	<b>2000</b>
<b>60</b>	<b>360</b>	<b>2048</b>

other pulses on request

voltage range, output signals

- 05A** 5 VDC complementary
- 24K** 10 - 30 VDC push-pull, short-circuit protection

Other versions on request.

**accessories**

cable with connector M9 female (pre-assembled) ref. <b>-9</b> for complementary <b>05A</b>	2 m	part nr. 123168 (ES62FB2)
	5 m	part nr. 123169 (ES62FB5)
for push-pull <b>24K</b>	2 m	part nr. 123166 (ES62CB2)
	5 m	part nr. 123167 (ES62CB5)

connector M9 female reference <b>-9</b> for complementary <b>05A</b>	part nr. 132983
for push-pull <b>24K</b>	part nr. 123144
spring plate set (round)	part nr. 158423
spring plate set (square)	part nr. 158424
clamping ring set 12 mm hollow shaft	part nr. 142556
clamping ring set 6 mm hollow shaft	part nr. 142561