

# Incremental encoders

Mini series - blind hollow shaft max.  $\varnothing$ 12 mm

2...1024 pulses per revolution

## BRIH 40 - EcoMag



BRIH 40 with blind hollow shaft

### Features

- Mini encoder with blind hollow shaft max.  $\varnothing$ 12 mm
- Magnetic sensing
- Max. 1024 pulses per revolution
- Housing  $\varnothing$ 40 mm
- High resistance to shock and vibrations
- Wide pulse number range

### Technical data - electrical ratings

Voltage supply	5 VDC $\pm$ 10 % 20...28 VDC
Consumption typ.	25 mA (5 VDC, w/o load) 30 mA (24 VDC, w/o load)
Pulses per revolution	2...1024
Reference signal	Zero pulse, width 90°
Sensing method	Magnetic
Output frequency	$\leq$ 320 kHz
Output signals	A 90° B, N + inverted
Output stages	Antivalent 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 (blind hollow shaft) $\varnothing$ 12 mm (blind hollow shaft)
Protection DIN EN 60529	IP 64
Operating speed	$\leq$ 6000 rpm
Operating torque typ.	0.0075 Nm
Materials	Housing: polyamide black Flange: aluminium
Operating temperature	-20...+85 °C (only 5 VDC) -20...+65 °C
Relative humidity	95 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 30 g, 10-2000 Hz DIN EN 60068-2-27 Shock 100 g, 6 ms
Connection	Connector M9, 5-pin Connector M9, 8-pin Cable 1 m
Weight approx.	120 g

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#### Part number

BRIH 40D

#### Connection

- 5 Cable 1 m, radial
- 9 Connector radial

#### Blind hollow shaft

- E6  $\varnothing$ 6 mm, IP 64, with adjusting ring
- E2  $\varnothing$ 12 mm, IP 64, with adjusting ring

#### Pulse number - see table

#### Voltage supply / signals

- 05A 5 VDC / antivalent (TTL compatible)
- 17K 20...28 VDC / push-pull short-circuit proof

#### Operating temperature

- 1 -20...+85 °C / only 5 VDC (05A)
- 3 -20...+65 °C

#### Accessories

##### Connectors and cables

10132983	Female connector M9, 8-pin, straight
11094664	Female connector M9, 8-pin, straight, 2 m cable
11094665	Female connector M9, 8-pin, straight, 5 m cable
11094660	Female connector M9, 5-pin, straight, 2 m cable
11094662	Female connector M9, 5-pin, straight, 5 m cable

##### Mounting accessories

10158423	Set of spring washers (round) for hollow shaft encoder ( $<\varnothing$ 8 mm)
10158424	Set of spring washers (square) for hollow shaft encoder ( $\geq\varnothing$ 8 mm)

#### Pulse number

2	32	100	256	1000
4	40	128	400	1024
8	50	160	500	
16	64	200	512	
20	80	250	800	

Other pulse numbers on request.

#### Trigger level

Outputs 05A	Complementary Linedriver RS422
Output level High	$>2,4$ V (I = -20 mA)
Output level Low	$<0,4$ V (I = 20 mA)
Load High	$<20$ mA
Load Low	$<20$ mA
Outputs 17K	Push-pull short-circuit protection
Output level High	$>+V_s -3,7$ V (I = -30 mA)
Output level Low	$<2,5$ V (I = 30 mA)
Load High	$<30$ mA
Load Low	$<30$ mA

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### Terminal assignment

#### Cable

for connection reference -5

#### 05A

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 M9 male

for connection reference -9

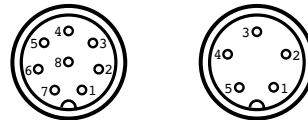
#### 05A

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.

#### 17K

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

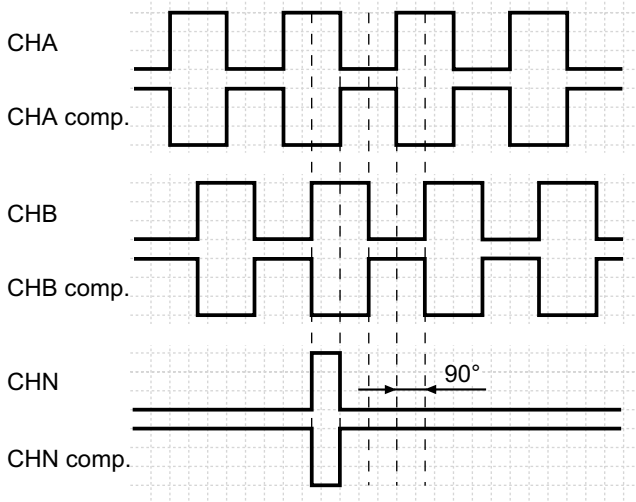
\*these core colours are valid for the assembled mating connectors (see accessories)



### Output signals

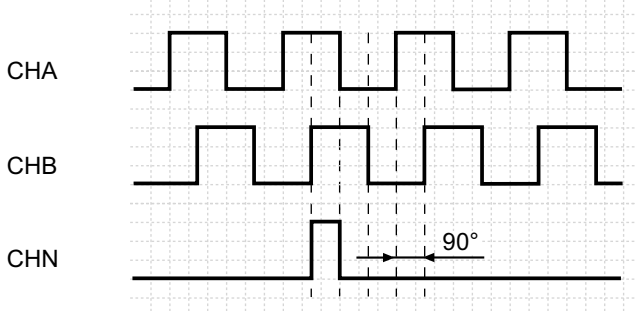
Counter clockwise rotating direction when looking at the flange.

#### 05A



Counter clockwise rotating direction when looking at the flange.

#### 17K



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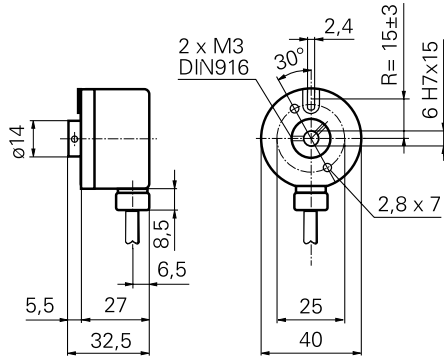
## Mini series - blind hollow shaft max. $\varnothing 12$ mm

### 2...1024 pulses per revolution

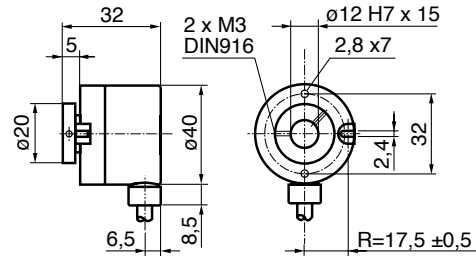
**BRIH 40 - EcoMag**

#### Dimensions

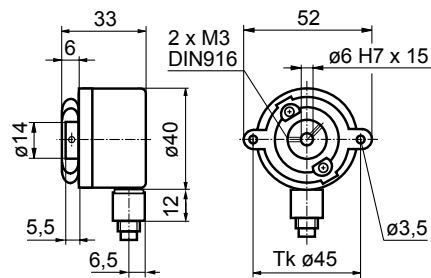
**BRIH 40 blind hollow shaft  $\varnothing 6$  mm, cable radial**



**BRIH 40 blind hollow shaft  $\varnothing 12$  mm, cable radial**



**BRIH 40 blind hollow shaft  $\varnothing 6$  mm, connector**



**BRIH 40 blind hollow shaft  $\varnothing 12$  mm, connector**

