

# Incremental encoders

Blind or through hollow shaft  $\varnothing 12$  mm  
64...2048 pulses per revolution

## BRIH, BRID - EcoMag



BRIH with blind hollow shaft

### Features

- Encoder with blind or through hollow shaft  $\varnothing 12$  mm
- Magnetic sensing
- Max. 2048 pulses per revolution
- High resistance to shock and vibrations
- Wide pulse number range
- High limit frequency

### Technical data - electrical ratings

|                       |   |
|-----------------------|---|
| Voltage supply        | 5 VDC $\pm 10$ %<br>10...30 VDC                     |
| Consumption typ.      | 30 mA (5 VDC, w/o load)<br>15 mA (24 VDC, w/o load) |
| Pulses per revolution | 64...2048   |
| Reference signal      | Zero pulse, width 90°                               |
| Sensing method        | Magnetic  |
| Output frequency      | $\leq 320$ kHz                                      |
| Output signals        | A 90° B, N + inverted                               |
| Output stages         | Antivalent<br>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)           | $\varnothing 58$ mm  |
| Protection DIN EN 60529 | IP 42, IP 65   |
| Operating speed         | $\leq 12000$ rpm (IP 42)<br>$\leq 6000$ rpm (IP 65)                                      |
| Materials               | Housing: aluminium<br>Flange: aluminium  |
| Operating temperature   | -20...+85 °C   |
| Relative humidity       | 95 % non-condensing  |
| Resistance              | DIN EN 60068-2-6<br>Vibration 30 g, 10-2000 Hz<br>DIN EN 60068-2-27<br>Shock 500 g, 6 ms |
| Connection              | Connector M12, 5-pin<br>Connector M12, 8-pin<br>Connector M23, 12-pin<br>Cable 2 m       |
| Weight approx.          | 150 g  |

### BRIH

|                       |  |
|-----------------------|--|
| Shaft type            | $\varnothing 12$ mm (blind hollow shaft) |
| Operating torque typ. | 0.009 Nm (IP 42)<br>0.037 Nm (IP 65)     |

### BRID

|                       |  |
|-----------------------|--|
| Shaft type            | $\varnothing 12$ mm (through hollow shaft) |
| Operating torque typ. | 0.0175 Nm (IP 42)<br>0.047 Nm (IP 65)      |

# Incremental encoders

## Blind or through hollow shaft ø12 mm

### 64...2048 pulses per revolution

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#### Part number

##### Blind hollow shaft

BRIH 58S16

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

Connection  
 5 Cable 2 m, radial  
 N Connector M12, radial  
 A Connector M23, radial

Blind hollow shaft  
 B2 ø12 mm, IP 42, with clamping ring  
 P2 ø12 mm, IP 65, with clamping ring

Pulse number - see table

Voltage supply / signals

05A 5 VDC / antivalent (TTL compatible)

24K 10...30 VDC / push-pull short-circuit proof

##### Through hollow shaft

BRID 58S16

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

Connection  
 5 Cable 2 m, radial  
 N Connector M12, radial  
 A Connector M23, radial

Through hollow shaft  
 B2 ø12 mm, IP 42, with clamping ring  
 P2 ø12 mm, IP 65, with clamping ring

Pulse number - see table

Voltage supply / signals

05A 5 VDC / antivalent (TTL compatible)

24K 10...30 VDC / push-pull short-circuit proof

#### Pulse number

|     |      |      |      |
|-----|------|------|------|
| 64  | 512  | 1024 | 2000 |
| 360 | 1000 | 1800 | 2048 |

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 24K

##### Push-pull short-circuit protection

Output level High >+Vs - 3,7 V (I = -30 mA)

Output level Low <2,5 V (I = 30 mA)

Load High <30 mA

Load Low <30 mA

#### Accessories

##### Connectors and cables

10107687 Female connector M23, 12-pin, straight, without cable

10130367 Female connector M23, 12-pin, straight, 2 m cable

10118532 Female connector M23, 12-pin, straight, 5 m cable

10146775 Female connector M12, 8-pin, straight, without cable

10153968 Female connector M12, 5-pin, straight, without cable

11046264 Female connector M12, 5-pin, straight, 2 m cable

11046266 Female connector M12, 5-pin, straight, 5 m cable

##### Mounting accessories

10154742 Set of spring washers BRIH, BRID

10107540 Torque pin

10109520 Torque spring

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## Blind or through hollow shaft $\varnothing 12$ mm

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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 comp.                | –                        | –       |
| yellow      | CHB                      | yellow                   | CHB     |
| blue        | CHB comp.                | –                        | –       |
| pink        | CHN                      | pink                     | CHN     |
| grey        | CHN comp.                | –                        | –       |
| 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 housing     |                          |         |

##### Connector M23, 12-pin

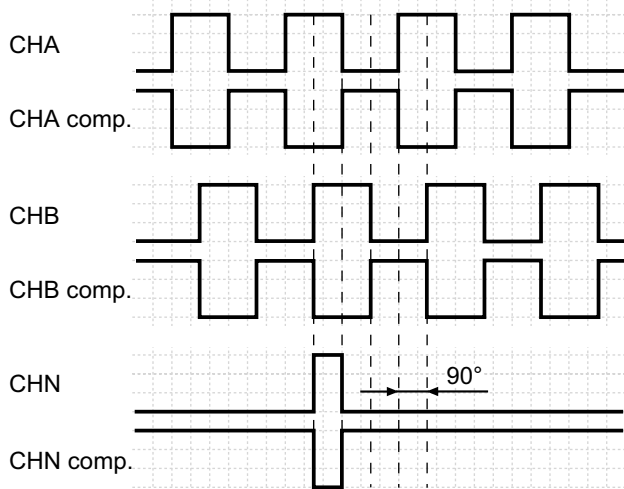
for connection reference -A

| 05A, 24K    |           |
|-------------|-----------|
| Connector   | Signals   |
| Pin 1       | CHA comp. |
| Pin 2       | +Vs       |
| Pin 3       | CHN       |
| Pin 4       | CHN comp. |
| Pin 5       | CHB       |
| Pin 6       | CHB comp. |
| Pin 7       | n.c.      |
| Pin 8       | CHA       |
| Pin 9       | Housing   |
| Pin 10      | 0 V       |
| Pin 11 - 12 | n.c.      |

#### Output signals

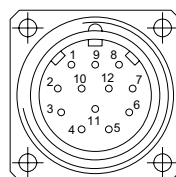
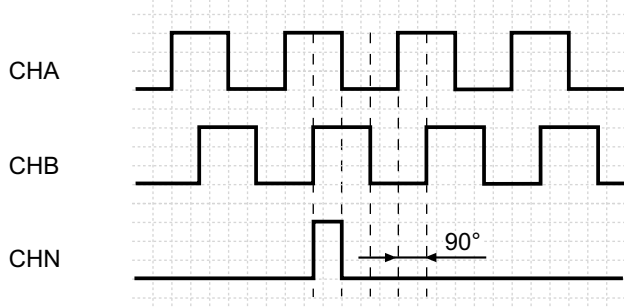
Counter clockwise rotating direction when looking at the flange.

##### 05A



Counter clockwise rotating direction when looking at the flange.

##### 24K



##### Connector M12, 8-pin / 5-pin

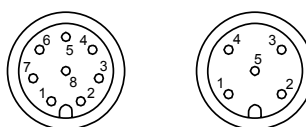
for connection reference -N

| 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 comp. |
| Pin 6     | pink         | CHN       |
| Pin 7     | blue         | CHB comp. |
| Pin 8     | red          | CHA comp. |

##### 24K

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

\*valid for the assembled mating connectors (see access.)



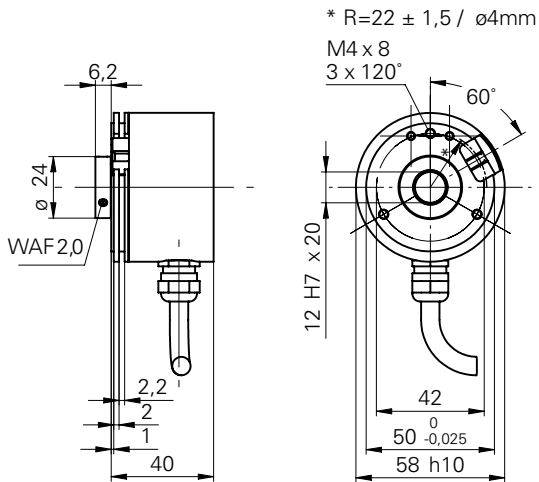
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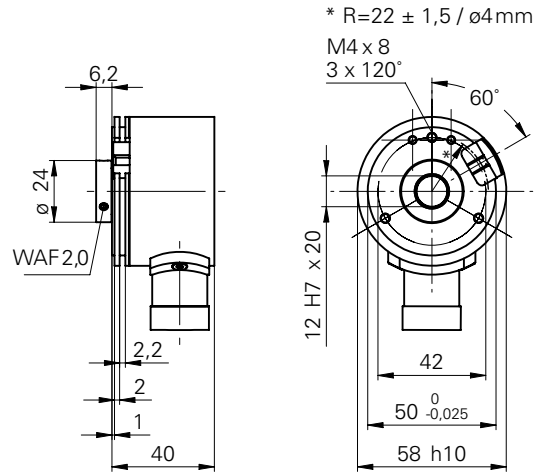
**BRIH, BRID - EcoMag**

## Dimensions

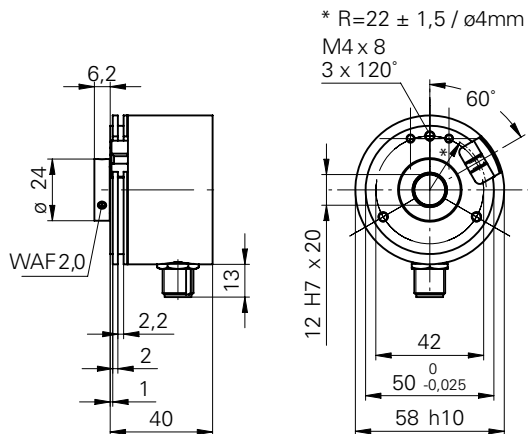
### BRIH cable radial



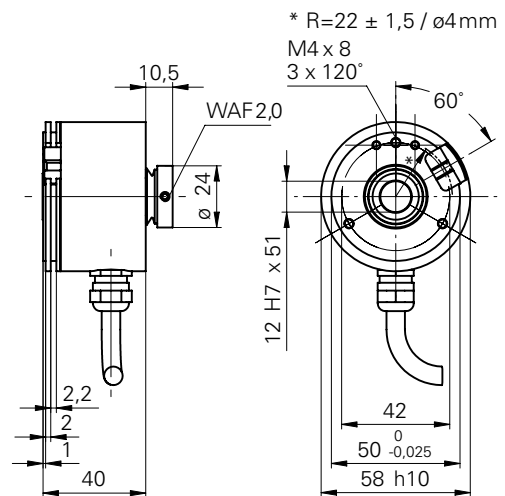
### BRIH connector output M23 radial



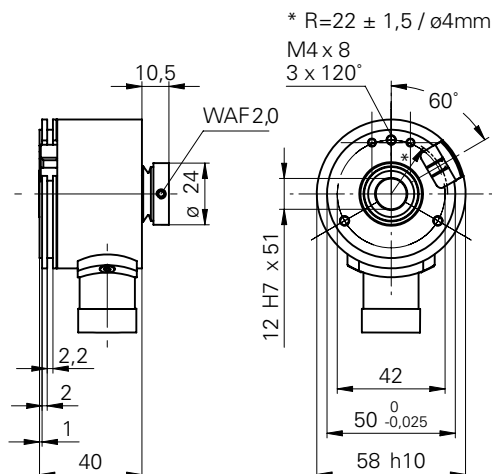
### BRIH connector output M12 radial



### BRID cable radial



### BRID connector output M23 radial



### BRID connector output M12 radial

