

Incremental encoders

Blind or through hollow shaft $\varnothing 12$ mm
4096...320000 pulses per revolution

BHF, BHG - HighRes



BHF with blind hollow shaft

Features

- High resolution programmable encoder
- Optical sensing method
- Max. 320000 pulses per revolution
- Programmable via BISS
- Small profile depth
- Blind or through hollow shaft $\varnothing 12$ mm

Technical data - electrical ratings

| | |
|-----------------------|---|
| Voltage supply | 5 VDC ± 10 % 10...30 VDC |
| Consumption typ. | 60 mA (5 VDC, w/o load) 40 mA (24 VDC, w/o load) |
| Pulses per revolution | 4096...320000 |
| Reference signal | Zero pulse, programmable |
| Sensing method | Optical |
| Output frequency | ≤ 1300 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) | $\varnothing 58$ mm |
| Protection DIN EN 60529 | IP 65, IP 42 |
| Operating speed | ≤ 3000 rpm (pulse disc 5000) ≤ 6000 rpm (pulse disc 2048) |
| Materials | Housing: aluminium 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 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) |

BHG

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

Incremental encoders

Blind or through hollow shaft ø12 mm

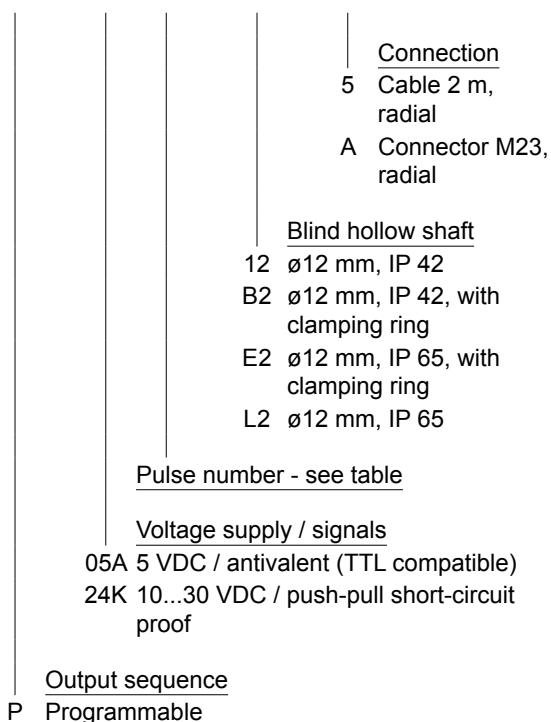
4096...320000 pulses per revolution

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Part number

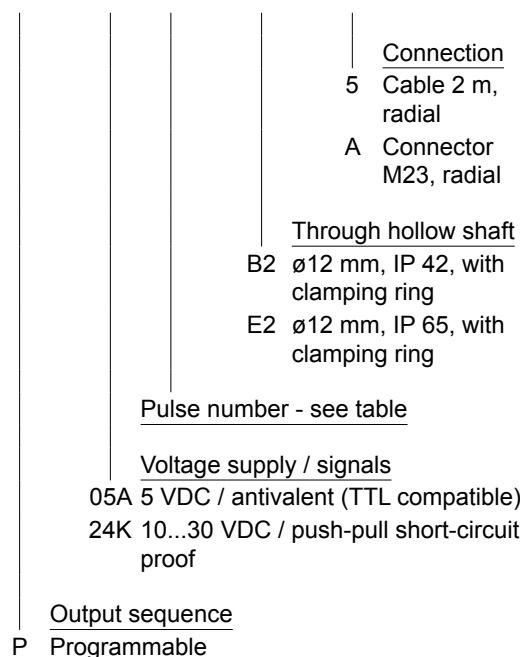
Blind hollow shaft

BHF 1 P . - -



Through hollow shaft

BHG 1 P . - -



Pulse number

| | | | |
|-------|-------|-------|--------|
| 4096 | 16384 | 40000 | 131072 |
| 8192 | 20000 | 65536 | 160000 |
| 10000 | 32768 | 80000 | 320000 |

Pulse disc 2048:
2048, 4096, 8192, 16384, 32768, 65536, 131072
Pulse disc 5000:
10000, 20000, 40000, 80000, 160000, 320000
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 |

Mounting accessories for BHF

| | |
|----------|---|
| 10136635 | Set of spring washers for encoders ø58 mm |
| 10110616 | Clamp set ø15 mm |
| 10107540 | Torque pin |
| 10109520 | Torque spring |
| 10110574 | Solid shaft reducer 12/6 mm |
| 10112322 | Solid shaft reducer 12/8 mm |
| 10114472 | Solid shaft reducer 12/10 mm |

Mounting accessories for BHG

| | |
|----------|---|
| 10136635 | Set of spring washers for encoders ø58 mm |
| 10110616 | Clamp set ø15 mm |
| 10107540 | Torque pin |
| 10109520 | Torque spring |

Programming accessories

| | |
|----------|--------------------------|
| 10161910 | Set of programming tools |
|----------|--------------------------|

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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 ² | 5 x 0.14 mm ² | |
| Screen | connected to flange | | |

Connector M23 male

for connection reference -A

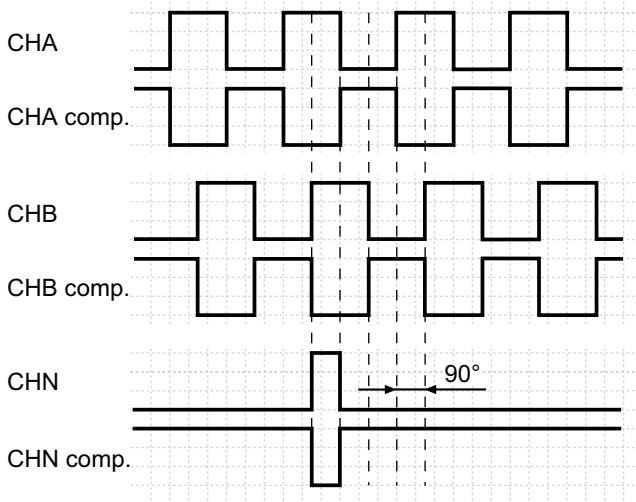
05A, 24K

| 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

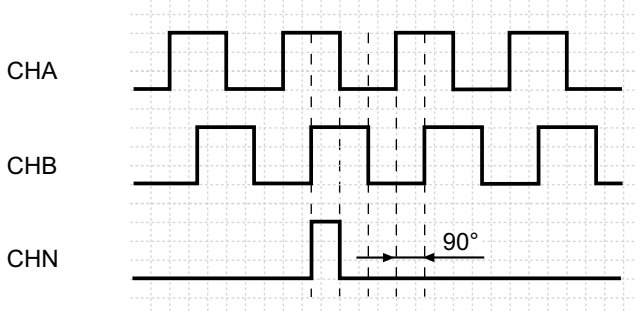
Counter clockwise rotating direction when looking at the flange.

05A

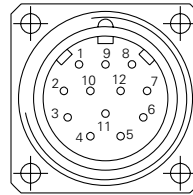


Counter clockwise rotating direction when looking at the flange.

24K



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



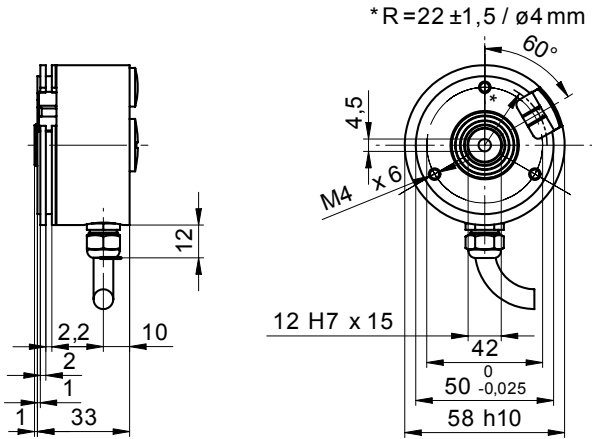
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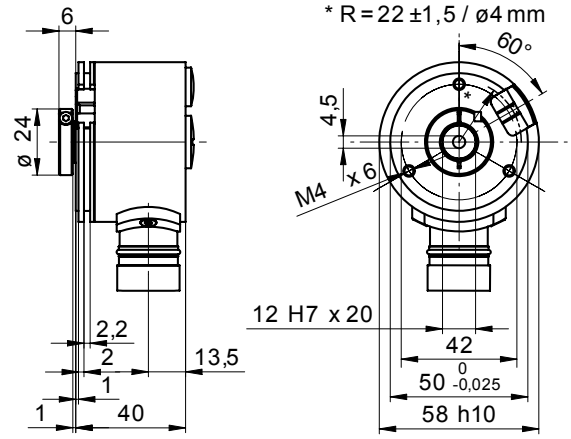
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Dimensions

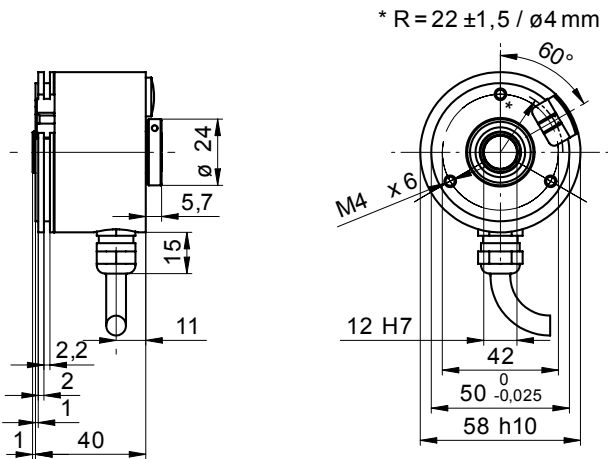
BHF HighRes cable radial



BHF HighRes connector output radial



BHG HighRes cable radial



BHG HighRes connector output radial

