# Baumer BMMH 42S1N05C12/10600840

## Multi-Turn SSI Encoder



$395.00

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# Absolute encoders - SSI

## End shaft ø12 mm

## Magnetic single- or multiturn encoders 12 bit ST / 13 bit MT

### BMSH 42, BMMH 42 SSI - *MAGRES*



BMMH 42 SSI with end shaft

**Features**

- **Mini encoder single- or multiturn / SSI**
- **Magnetic sensing**
- **Resolution: singleturn 12 bit, multiturn 13 bit**
- **Housing ø42 mm**
- **High resistance to shock and vibrations**
- **Reset input**
- **End shaft ø12 mm**

| Technical data - electrical ratings | |
|---|---|
| Voltage supply | 5 VDC ±10 %<br>10...30 VDC |
| Consumption w/o load (typ.) | 100 mA (5 VDC)<br>50 mA (24 VDC) |
| Initializing time (typ.) | 170 ms after power on |
| Interface | SSI |
| Steps per turn | 4096 / 12 bit |
| Absolute accuracy | ±1 ° |
| Sensing method | Magnetic |
| Code | Gray or binary |
| Code sequence | CW: ascending values with clockwise sense of rotation (looking at flange) |
| Inputs | SSI clock<br>Reset input |
| Output circuit | SSI data: linedriver RS485 |
| Interference immunity | DIN EN 61000-6-2 |
| Emitted interference | DIN EN 61000-6-3 |
| Approval | UL approval / E217823 |
| **BMSH 42** | |
| Function | Singleturn |
| **BMMH 42** | |
| Function | Multiturn |
| Number of turns | 8192 / 13 bit |

| Technical data - mechanical design | |
|---|---|
| Dimensions (flange) | ø42 mm |
| Shaft | ø12 mm end shaft |
| Protection DIN EN 60529 | IP 65 |
| Operating speed | ≤12000 rpm (mechanical)<br>≤6000 rpm (electric) |
| Operating torque typ. | 0.0093 Nm |
| Materials | Housing: steel<br>Flange: aluminium |
| Operating temperature | -20...+85 °C |
| Relative humidity | 95 % |
| Resistance | DIN EN 60068-2-6<br>Vibration 30 g, 10-2000 Hz<br>DIN EN 60068-2-27<br>Shock 100 g, 6 ms |
| Connection | Connector M12, 8-pin<br>Cable |
| **BMSH 42** | |
| Weight approx. | 120 g |
| **BMMH 42** | |
| Weight approx. | 190 g |

Subject to modification in technic and design. Errors and omissions excepted.

## BMSH 42, BMMH 42 SSI - *MAGRES*

### Part number

#### Singleturn

**BMSH 42S1** | | | **12/00** | | |

Connection
- 5 Cable radial
- N Connector M12, 8-pin, radial

Shaft
- B2 End shaft ø12 mm, IP 42, with clamping ring
- P2 End shaft ø12 mm, IP 65, with clamping ring

Resolution
- 12/00 12 bit singleturn

Voltage supply / signals
- 05C 5 VDC / SSI
- 24C 10...30 VDC / SSI

Code
- G Gray code
- N Binary code

#### Multiturn

**BMMH 42S1** | | | **12/13** | | |

Connection
- 5 Cable radial
- N Connector M12, 8-pin, radial

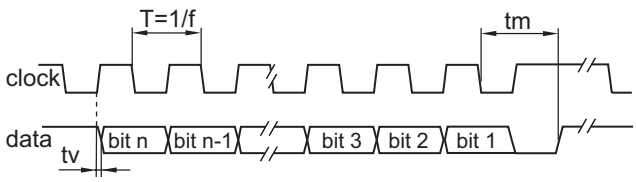
Shaft
- B2 End shaft ø12 mm, IP 42, with clamping ring
- P2 End shaft ø12 mm, IP 65, with clamping ring

Resolution
- 12/13 12/13 bit single-/multiturn

Voltage supply / signals
- 05C 5 VDC / SSI
- 24C 10...30 VDC / SSI

Code
- G Gray code
- N Binary code

### Data transfer




| | |
|---|---|
| Clock frequency f | 100...1000 kHz |
| Scan ratio of T | 40...60 % |
| Time lag tv | 200 ns |
| Monoflop time tm | 20 µs + T/2 |

### Accessories

**Connectors and cables**

| | |
|---|---|
| 10146775 | Female connector M12, 8-pin, straight |
| 10127844 | Female connector M12, 8-pin, straight, shielded, 2 m |
| 10129332 | Female connector M12, 8-pin, straight, shielded, 5 m cable |

**Mounting accessories**

| | |
|---|---|
| 10110616 | Clamp set |
| 10138610 | Set of spring coupling for BMSH, BMMH 42 |

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# Absolute encoders - SSI

## End shaft ø12 mm

## Magnetic single- or multiturn encoders 12 bit ST / 13 bit MT

### BMSH 42, BMMH 42 SSI - *MAGRES*

| Terminal significance | |
|---|---|
| +Vs | Encoder supply voltage. |
| 0 V | Encoder ground connection relating to +Vs. |
| Data+ | Positive, serial data output of differential linedriver. |
| Data- | Negative, serial data output of differential linedriver. |
| Clock+ | Positive SSI clock input.<br>Clock+ together with Clock- forms a current loop. A current of approx. 7 mA towards Clock+ input means logic 1 in positive logic. |
| Clock- | Negative SSI clock input.<br>Clock- together with Clock+ forms a current loop. A current of approx. 7 mA towards Clock- input means logic 0 in positive logic. |
| Zero | Input for setting a zero point anywhere within the encoder resolution. The zero setting operation is triggered by a Low impulse. Connect to +Vs after setting operation for maximum interference immunity. Impulse duration >2 ms. |
| Rot. direction | Ascending position values when looking at the flange and rotating the shaft clockwise. |

**Terminal assignment**

**Cable**
for connection reference **-5**

| Core colour | Signals | Description |
|---|---|---|
| brown | +Vs | Supply voltage |
| white | 0 V | Supply voltage |
| grey | Data+ | Data signal |
| pink | Data- | Data signal |
| green | Clock+ | Clock signal |
| yellow | Clock- | Clock signal |
| blue | Zero | Zero setting input |
| red | d.u. | do not use |
| Screen | connected to housing | |
| Cable data | 8 x 0,14 mm$^2$ | |

**Connector M12 male**
for connection reference **-N**

| Connector | Signals | Description |
|---|---|---|
| Pin 1 | 0 V | Supply voltage |
| Pin 2 | +Vs | Supply voltage |
| Pin 3 | Clock+ | Clock signal |
| Pin 4 | Clock- | Clock signal |
| Pin 5 | Data+ | Data signal |
| Pin 6 | Data- | Data signal |
| Pin 7 | Zero | Zero setting input |
| Pin 8 | d.u. | do not use |



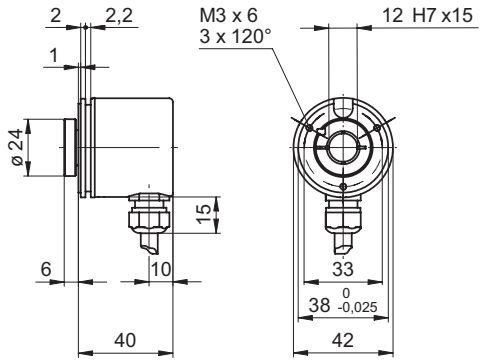

| Trigger level | |
|---|---|
| **Control inputs** | **Input circuit** |
| Input level Low | <0,4 V (>2 ms) |
| Input level High | +Vs or open |

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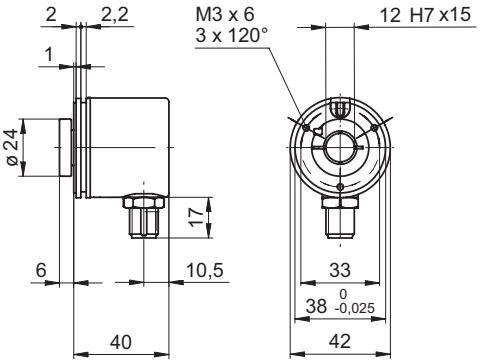
## BMSH 42, BMMH 42 SSI - *MAGRES*

### Dimensions

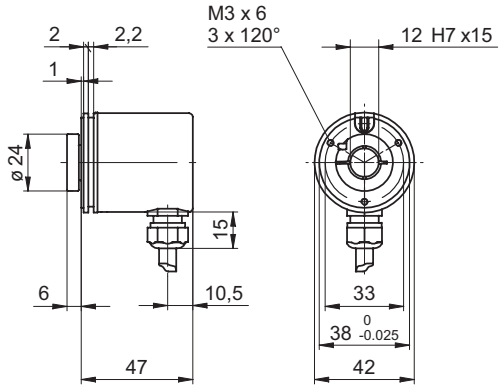
**BMSH/BMMH 42 SSI cable axial**



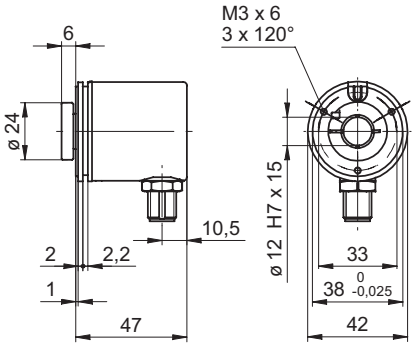

**BMSH/BMMH 42 SSI cable radial**




**BMSH/BMMH 42 SSI connector output axial**




**BMSH/BMMH 42 SSI connector output radial**




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