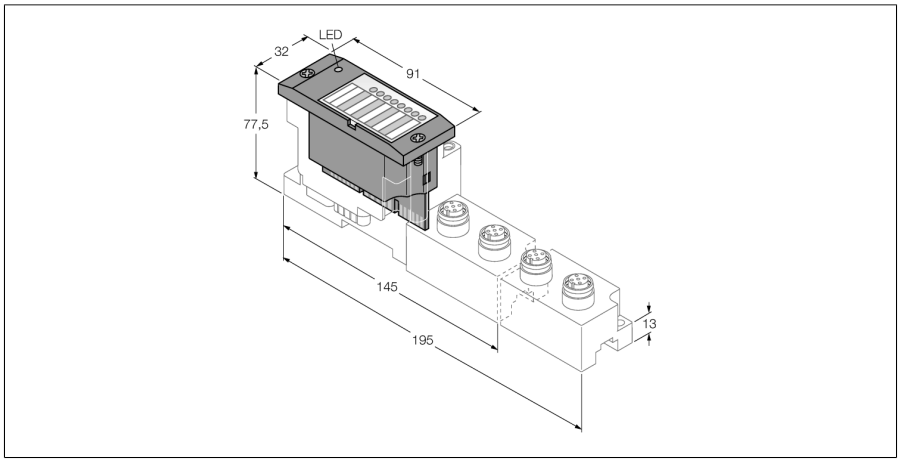
# BL67 electronic module
# 4 Digital Inputs, PNP, Channel Diagnostics
# BL67-4DI-PD




- Independent of the fieldbus and connection technology used
- Protection class IP67
- LEDs indicate status and diagnostic
- Electronics galvanically separated from the field level via optocouplers
- 4 digital inputs, 24 VDC
- PNP switching
- Channel diagnostics
- Wire-break monitoring
- Adjustable filter times
- Invertible inputs

| | |
|---|---|
| Type | BL67-4DI-PD |
| ID | 6827204 |

| | |
|---|---|
| Number of channels | 4 |
| Supply voltage | 24 VDC |
| Nominal voltage $V_i$ | 24 VDC |
| Nominal current from field supply | ≤ 100 mA |
| Nominal current from module bus | ≤ 30 mA |
| Max. sensor supply $I_{sens}$ | 100 mA per channel, electronic short-circuit limiting |
| Power dissipation, typical | ≤ 1.5 W |

| | |
|---|---|
| Input type | PNP |
| Type of input diagnostics | channel diagnostics |
| Low-level signal voltage | < 4.5 V |
| High level signal voltage | 7…30 V |
| Low level signal current | < 1.5 mA |
| High level signal current | 2.1…3.7 mA |
| Input delay | 0.25; 2.5 ms |
| Electrical isolation | electronics for the field level |
| Output connectivity | M8, M12, M23 |

| | |
|---|---|
| Number of diagnostic bits | 6 |
| Number of parameter bytes | 4 |

**Functional principle**

BL67 electronic modules are plugged on the purely passive base modules which in turn are connected to the field devices. The separation of connection level and electronics simplifies maintenance considerably. Flexibility is enhanced because the user can choose between base modules with different connection technologies.

The electronic modules are completely independent of the higher level fieldbus through the use of gateways.

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| | |
|---|---|
| Dimensions (W x L x H) | 32 x 91 x 59 mm |
| Approvals | CE |
| Ambient temperature | -40…+70 °C |
| Temperature derating | |
| < 0 °C Ambient temperature | Support for version VN 01-03 and higher, no limitation |
| Storage temperature | -40…+85 °C |
| Relative humidity | 5…95 % (internal), level RH-2, no condensation (when stored at 45 °C) |
| Vibration test | Acc. to EN 61131 |
| - up to 5 g (at 10 to 150 Hz) | for mounting on DIN rail no drilling according to EN 60715, with end bracket |
| - up to 20 g (at 10 up to 150 Hz) | for mounting on base plate or machinery Therefore every second module has to be mounted with two screws each. |
| Shock test | Acc. to IEC 60068-2-27 |
| Drop and topple | acc. to IEC 68-2-31 and free fall to IEC 68-2-32 |
| Electromagnetic compatibility | Acc. to EN 61131-2 |
| Protection class | IP67 |
| Tightening torque fixing screw | 0.9…1.2 Nm |

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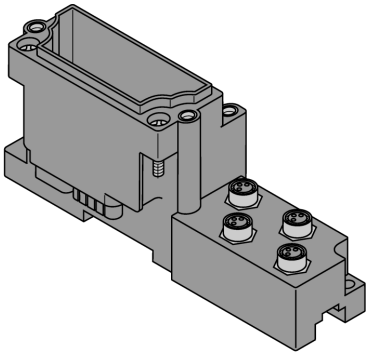
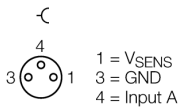
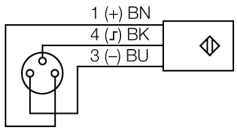
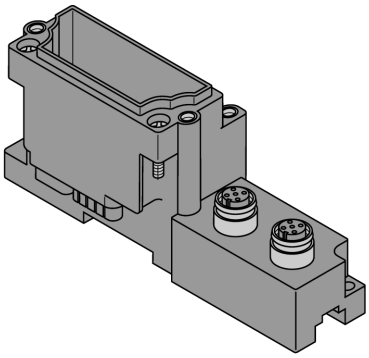
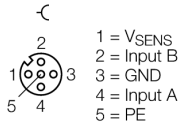
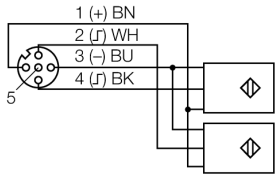
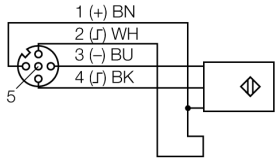
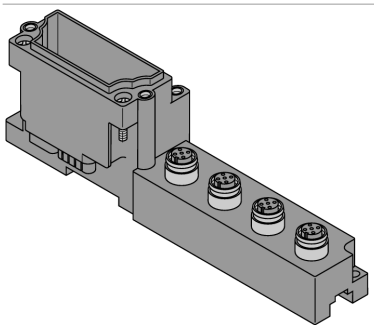
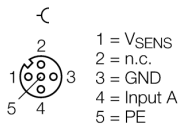
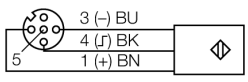
## Compatible base modules

| Dimension drawing | Type | Pin configuration |
|---|---|---|
|  | **BL67-B-4M8**<br>6827189<br>4 x M8, 3-pole, female<br><br>**Comments**<br>Matching connection cable (for example):<br>PKG3M-2-PSW3M/TXL<br>Ident-No. 6625668 | Pin Assignment<br>  <br><br><br>Wiring Diagram<br>  <br> |
|  | **BL67-B-2M12**<br>6827186<br>2 x M12, 5-pole, female, A-coded<br><br>**Comments**<br>If the wire-break monitoring has been activated,<br>on the sensor side a jumper between<br>pin 1 (24 V DC) and pin 2 (diagnostics input)<br>must be implemented for monitoring of wire-breaks.<br>Note<br>wire-break monitoring only in connection with<br>the base module BL67-B-2M12 possible!<br><br>**BL67-B-2M12-P**<br>6827194<br>2 x M12, 5-pole, female, A-coded, paired<br><br>**Comments**<br>If the wire-break monitoring has been activated,<br>on the sensor side a jumper between<br>pin 1 (24 V DC) and pin 2 (diagnostics input)<br>must be implemented for monitoring of wire-breaks.<br>Note<br>wire-break monitoring only in connection with<br>the base module BL67-B-2M12 possible! | Pin Assignment<br>  <br><br><br>Wiring Diagram<br>  <br><br><br>Wiring diagram for wire-break monitoring<br>  <br> |
|  | **BL67-B-4M12**<br>6827187<br>4 x M12, 5-pole, female, A-coded<br><br>**Comments**<br>Matching connection cable (for example):<br>RKC4.4T-2-RSC4.4T/TXL<br>Ident-No. 6625608 | Pin Assignment<br>  <br><br><br>Wiring Diagram<br>  <br> |

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**LED display**

| LED | Color | Status | Meaning |
|---|---|---|---|
| D | | OFF | No error message or diagnostics active. |
| | RED | ON | Failure of module bus communication. Check if more than 2 adjacent electronic modules are pulled. Relevant modules are located between gateway and this module. |
| | RED | FLASHING (0.5 Hz) | Upcoming module diagnostics |
| DI channels 0…3 | | OFF | Status input x = 0 (OFF), no active diagnostics |
| | GREEN | ON | Input status x = 1 (ON) |
| | RED | ON | Wire-break monitoring active (LED 0 and 1) |
| | RED | FLASHING (2 Hz) | Overload sensor supply |

**Note:**

The numbering of the LEDs corresponds to the numbering of the channels.

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**Data mapping**

| DATA | BYTE | Bit 7 | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
|---|---|---|---|---|---|---|---|---|---|
| **Input** | n | - | - | - | - | DI 3 | DI 2 | DI 1 | DI 0 |

n = Offset of input data; depending on extension of station and the corresponding fieldbus.
m = Offset of output data; depending on extension of station and the corresponding fieldbus.

With PROFIBUS, PROFINET and CANopen, the I/O data of this module is localized
within the process data of the whole station via the hardware configuration tool of the fieldbus master.
With DeviceNet™, EtherNet/IP™ and Modbus TCP a detailed mapping table can be created
with the TURCK configuration tool I/O-ASSISTANT.

**Pin assignment at corresponding base module:**

| DATA | BYTE | Bit 7 | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
|---|---|---|---|---|---|---|---|---|---|
| **BL67-B-4M8** | | | | | | | | | |
| **Input** | n | - | - | - | - | C3 P4 | C2 P4 | C1 P4 | C0 P4 |
| **BL67-B-2M12** | | | | | | | | | |
| **Input** | n | - | - | - | - | C1 P2 | C0 P2 | C1 P4 | C0 P4 |
| **BL67-B-2M12-P** | | | | | | | | | |
| **Input** | n | - | - | - | - | C1 P2 | C1 P4 | C0 P2 | C0 P4 |
| **BL67-B-4M12** | | | | | | | | | |
| **Input** | n | - | - | - | - | C3 P4 | C2 P4 | C1 P4 | C0 P4 |

C… = slot no., P… = pin no.

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