

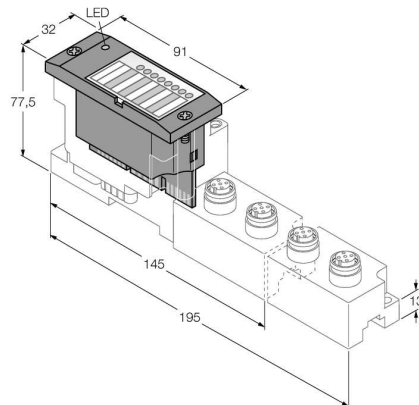
# BL67 electronic modules

## 4 digital inputs, PNP

### BL67-4DI-P

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- Independent of the type of 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
- From version VN 01-03 and higher, the module supports accelerated start-up for applications with Fast Start-Up (FSU) and QuickConnect (QC).

#### 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.

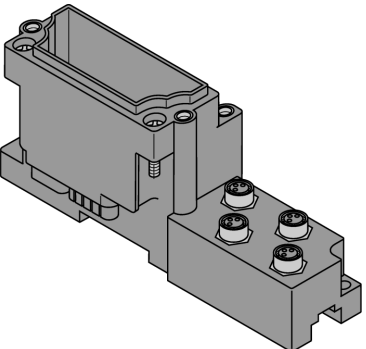
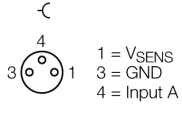
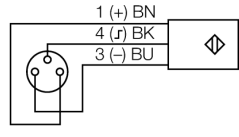
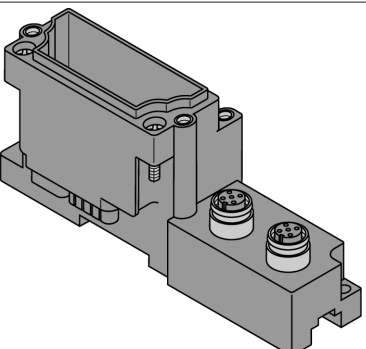
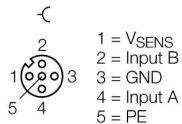
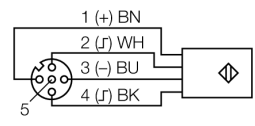
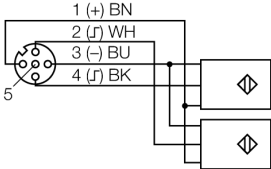
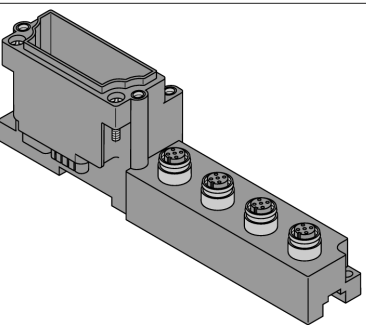
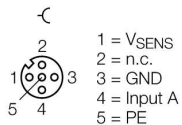
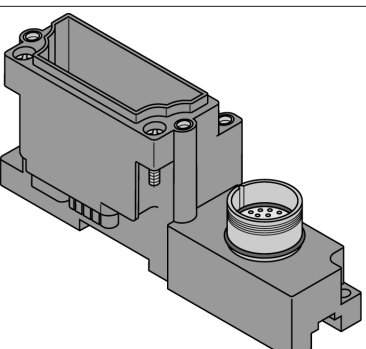
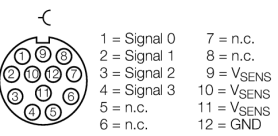
|                                 |                                                                                                               |
|---------------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Type</b>                     | BL67-4DI-P                                                                                                    |
| Ident.-No.                      | 6827171                                                                                                       |
| <b>Number of channels</b>       | 4                                                                                                             |
| Supply voltage                  | 24 VDC                                                                                                        |
| Nominal voltage $V_N$           | 24 VDC                                                                                                        |
| Rated current from field supply | $\leq 40$ mA                                                                                                  |
| Rated current from module bus   | $\leq 30$ mA                                                                                                  |
| max. sensor supply $I_{sens}$   | 4 A Electronically limited current supply via gateway or power feed                                           |
| Power loss, typical             | $\leq 0.25$ W                                                                                                 |
| <b>Input type</b>               | pnnp                                                                                                          |
| Type of input diagnostics       | group 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 ms                                                                                                       |
| Electrical isolation            | electronics for the field level                                                                               |
| Connection technology           | M8, M12, M23                                                                                                  |
| <b>Dimensions (W x L x H)</b>   | 32x91x59mm                                                                                                    |
| Approvals                       | CE, cULus                                                                                                     |
| Operating temperature           | -40...+70 °C                                                                                                  |
| Temperature derating            |                                                                                                               |
| $< 0$ °C Ambient temperature    | switching on threshold drop, $1\text{mA} < I_e < 2.5\text{mA}$                                                |
| Storage temperature             | -40 ... +85 °C                                                                                                |
| Relative humidity               | 5 to 95% (internal), Level RH-2, no condensation (at 45 °C storage)                                           |
| Vibration test                  | acc. to EN 61131                                                                                              |
| Extended vibration resistance   |                                                                                                               |
| - 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 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 68-2-27                                                                                           |
| Drop and topple                 | acc. to IEC 68-2-31 and free fall to IEC 68-2-32                                                              |
| Electro-magnetic compatibility  | acc. to EN 61131-2                                                                                            |
| Protection class                | IP67                                                                                                          |
| Tightening torque fixing screw  | 0.9...1.2 Nm                                                                                                  |

**BL67 electronic modules**  
**4 digital inputs, PNP**  
**BL67-4DI-P**

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**Compatible base modules**

| Dimension drawing                                                                   | Type                                                                                                                                                                                                                                                                                                                                                                       | Pin configuration                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <b>BL67-B-4M8</b><br>6827189<br>4 x M8, 3-pole, female<br><br><b>Comments</b><br>Matching connection cable (for example):<br>SKP32-SSP3/S90<br>Ident-No. 8008685                                                                                                                                                                                                           | <b>Pin assignment</b><br><br><br><b>Wiring diagram</b><br>                                                                                                                         |
|   | <b>BL67-B-2M12</b><br>6827186<br>2 x M12, 5-pole, female, A-coded<br><br><b>Comments</b><br>Matching connection cable (for example):<br>WAK4-2-WAS4/S90<br>Ident-No. 8006739<br><br><b>BL67-B-2M12-P</b><br>6827194<br>2 x M12, 5-pole, female, A-coded, paired<br><br><b>Comments</b><br>Matching connection cable (for example):<br>WAK4-2-WAS4/S90<br>Ident-No. 8006739 | <b>Pin assignment</b><br><br><br><b>Wiring diagram</b><br><br><br><b>Wiring diagram</b><br> |
|  | <b>BL67-B-4M12</b><br>6827187<br>4 x M12, 5-pole, female, A-coded<br><br><b>Comments</b><br>Matching connection cable (for example):<br>WAK4-2-WAS4/S90<br>Ident-No. 8006739                                                                                                                                                                                               | <b>Pin assignment</b><br><br><br><b>Wiring diagram</b><br>                                                                                                                     |
|  | <b>BL67-B-1M23</b><br>6827213<br>1 x M23, 12-pole, female<br><br><b>Comments</b><br>field-wireable connector (for example):<br>FW-M23ST12Q-G-LT-ME-XX-10<br>Ident-No. 6604070                                                                                                                                                                                              | <b>Pin assignment</b><br>                                                                                                                                                                                                                                           |

**BL67 electronic modules**  
**4 digital inputs, PNP**  
**BL67-4DI-P**

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**LED display**

| LED         | color | status            | description                                                                                                                                                |
|-------------|-------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D           |       | OFF               | Error report or diagnostics active.                                                                                                                        |
|             | RED   | ON                | Failure of MODBUS 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 |       | OFF               | Input status x = 0 (OFF)                                                                                                                                   |
| 0...3       | GREEN | ON                | Input status x = 1 (ON)                                                                                                                                    |

**Note:**

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

# BL67 electronic modules

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### BL67-4DI-P

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

|                         |   |   |   |   |   |       |       |       |       |
|-------------------------|---|---|---|---|---|-------|-------|-------|-------|
| <b>BL67-B-4M8</b>       |   |   |   |   |   |       |       |       |       |
| Input                   | n | - | - | - | - | C3 P4 | C2 P4 | C1 P4 | C0 P4 |
| <b>BL67-B-2M12</b>      |   |   |   |   |   |       |       |       |       |
| Input                   | n | - | - | - | - | C1 P2 | C0 P2 | C1 P4 | C0 P4 |
| <b>BL67-B-2M12-P</b>    |   |   |   |   |   |       |       |       |       |
| Input                   | n | - | - | - | - | C1 P2 | C1 P4 | C0 P2 | C0 P4 |
| <b>BL67-B-4M12</b>      |   |   |   |   |   |       |       |       |       |
| Input                   | n | - | - | - | - | C3 P4 | C2 P4 | C1 P4 | C0 P4 |
| <b>BL67-B-1M23(-VI)</b> |   |   |   |   |   |       |       |       |       |
| Input                   | n | - | - | - | - | C0 P4 | C0 P3 | C0 P2 | C0 P1 |

C... = slot no., P... = pin no.