

2 x connectors for profile cable

Periphery connection via connecting wires



(Figure similar)

| Figure | Inputs Safety     | Safety signal inputs | Outputs digital | Input voltage (sensor supply) <sup>(1)</sup> | Output voltage (actuator supply) <sup>(2)</sup> | Connection                        | ASi address <sup>(3)</sup> | Special function | Art. no.       |
|--------|-------------------|----------------------|-----------------|--|---|-----------------------------------|----------------------------|------------------|----------------|
|        | 1 x<br>2 channels | floating contacts    | 4 x electronic  | out of ASi                                   | out of AUX                                      | 2 x round cable/ connecting wires | 1 single address           | –                | <b>BWU5151</b> |

(1) **Input voltage (sensor supply):** inputs are supplied by ASi or by AUX (auxiliary 24 V power). If supplied by ASi, inputs shall not be connected to earth or to external potential.

(2) **Output voltage (actuator supply):** outputs are supplied by ASi or by AUX (auxiliary 24 V power). If supplied by ASi, outputs shall not be connected to earth or to external potential

(3) **ASi address:** 1 AB address (max. 62 AB addresses/ASi network), 2 AB addresses (max. 31 modules with 2 AB addresses), Single addresses (max. 31 Single addresses/ASi network), mixed use allowed.

For modules with two nodes the second node is turned off as long as the first node is addressed to address "0".

Upon request, nodes are available with specific ASi address profiles.

|  |  |
|--|--|
| <b>Article No.</b>                                       | <b>BWU5151</b>   |
| <b>General data</b>                                      |  |
| Device type  | safe input   |
| <b>Connection</b>  |  |
| ASi/AUX connection                                       | profile cable and piercing   |
| Periphery connection                                     | 2 x round cable/connecting wires   |
| Round cable  | 1 m  |
|  | max. allowed tensile strain 10 N   |
| <b>ASi</b>   |  |
| Profile  | S-7.B.0, ID1=F   |
| Address  | 1 single address   |
| Required Master profile                                  | ≥M3  |
| As of ASi specification                                  | 2.1  |
| Operating voltage  | 30 V <sub>DC</sub> (21,6 ... 31.6 V) (SELV/PELV)   |
| Max. current consumption                                 | 100 mA   |
| Max. current consumption without sensor/ actuator supply | 40 mA  |
| <b>AUX</b>   |  |
| Operating voltage  | 24 V <sub>DC</sub> (20 ... 30 V) (SELV/PELV)   |
| Max. current consumption                                 | max. 1 A   |
| <b>Input</b>   |  |
| Number   | 1 x 2-channels safe input  |
| Safety signal  | floating contacts  |
| Switching current  | 35 mA (T = 40 μs), continuously 5 mA at 24 V   |
| Power supply   | out of ASi   |
| Sensor supply  | short-circuit and overload protected according to EN 61131-2   |
| Power supply of attached sensors                         | –  |
| Switching threshold                                      | 2 mA, R ≤ 150 Ω  |
| <b>Output</b>  |  |
| Number   | 4 x electronic   |
| Power supply   | out of AUX   |
| Output   | short-circuit and overload protected according to EN 61131-2   |
| Max. output current                                      | 1 A per output, ∑ (Out) 1 A  |
| <b>Display</b>   |  |
| LED ASi/FLT (red/green)                                  | green: ASi voltage on, ASi node online<br>green/red: ASi voltage on, but ASi node offline<br>green flashing/red: address 0<br>red/green flashing: peripheral fault <sup>(1)</sup><br>off: no ASi voltage |
| LEDs S1, S2 (yellow)                                     | state of inputs S1, S2   |
| LED O1 ... On (yellow)                                   | state of outputs O1 ... O4   |

|  |  |
|--|--|
| <b>Article No.</b>   | <b>BWU5151</b>   |
| <b>Environment</b>   |  |
| Applied standards  | EN ISO 13849-1 PLe cat4<br>EN ISO 13849-2<br>EN 62061 SIL3<br>EN 62026-2<br>EN 61000-6-2<br>EN 61000-6-4<br>EN 60529 |
| It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe | no <sup>(2)</sup>  |
| Operating altitude   | max. 2000 m  |
| Ambient temperature  | -30 °C ... +60 °C <sup>(3)</sup>   |
| Storage temperature  | -25 °C ... +85 °C  |
| Intended environment   | for indoor use only  |
| Housing  | plastic, for screw mounting,<br>suitable for cable ducts (installation depth ≥35 mm)                                 |
| Pollution Degree   | 2  |
| Protection category  | IP67 <sup>(4)</sup>  |
| Overvoltage category   | II   |
| Tolerable loading referring to humidity  | according to EN 61131-2  |
| Maximum tolerable shock and vibration stress                                     | ≤15g, T≤11 ms<br>10 ... 55 Hz, 0,5 mm amplitude  |
| Insulation voltage   | ≥500 V   |
| Weight   | 100 g  |
| Dimensions (W / H / D) in mm   | 60 / 45 / 35   |

(1) see table "Peripheral fault indication"

(2) The module is not suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors cannot be assumed for the connection of the two ASi and AUX potentials.  
If the module is supplied from an unswitched AUX cable, this has no influence on the safety consideration for the paths with passively safe-switched AUX cable. In an ASi circuit, paths supplied from a passively safe-switched AUX cable and paths supplied from unswitched AUX potential can be used together.

(3) Down to -25 °C with flexibly mounted cable, -30 °C only with fixed mounted cable.

(4) Protection category IP67 can only be achieved, if also the cable connector fulfills IP67.

| Article no. | Peripheral fault indication |                        |                     |
|-------------|-----------------------------|------------------------|---------------------|
|             | Overload sensor supply      | Output short circuited | AUX voltage missing |
| BWU5151     | -                           | •                      | •                   |

| Programming | ASi bit assignment |    |    |    |
|-------------|--------------------|----|----|----|
|             | D3                 | D2 | D1 | D0 |
|             | safe input         |    |    |    |
| BWU5151     | S2                 | S2 | S1 | S1 |
|             | output             |    |    |    |
| BWU5151     | O4                 | O3 | O2 | O1 |

| Programming | ASi bit assignment |          |   |                              |
|-------------|--------------------|----------|---|------------------------------|
|             | parameter bit      |          |   |                              |
|             | P3                 | P2       | P1  | P0                           |
| BWU5151     | not used           | not used | 0= off / 1= on<br>(peripheral fault if AUX voltage missing) | 0= off / 1= on<br>(Watchdog) |

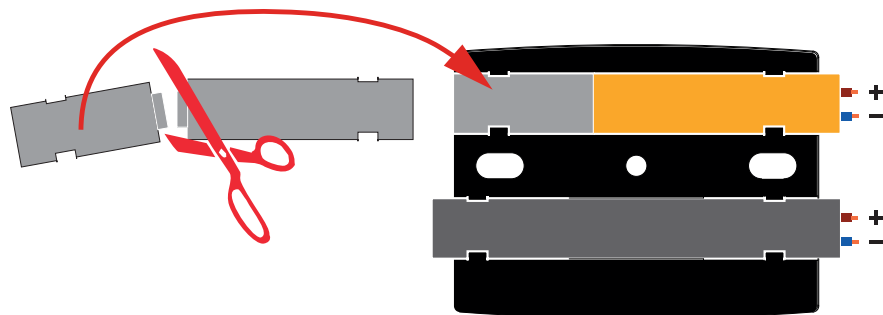
## Pin assignment

| Signal name               | Explanation   |
|---------------------------|---|
| Sx +, Sx -                | safe input x  |
| Ix                        | digital input x   |
| Ox                        | digital output x  |
| 24V <sub>ext out</sub>    | power supply, out of external voltage, positive pole (AUX, actuator supply) |
| 0V <sub>ext out</sub>     | power supply, out of external voltage, negative pole (AUX, actuator supply) |
| 24V <sub>out of ASi</sub> | power supply, out of ASi, positive pole (sensor supply)                     |
| 0V <sub>out of ASi</sub>  | power supply, out of ASi, negative pole (sensor supply)                     |
| ASi +, ASi -              | connection to ASi bus   |
| n.c. (not connected)      | not connected   |

## Connections: round cable/connecting wires

| Article no. | connec. | BN                    | WH  | BU  | BK  | GY |
|-------------|---------|-----------------------|-----|-----|-----|----|
| BWU5151     | X1      | S1+                   | S2+ | S1- | S2- | -  |
|             | X2      | 0V <sub>ext out</sub> | O1  | O2  | O3  | O4 |

## Line termination with sealing profile



## Accessories:

- Sealing profile IP67 (IDC plug), 60 mm (art. no. BW3282)
- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)
- Bihl+Wiedemann Safety Suite License - Safety Software for Configuration, Diagnostics and Commissioning (art. no. BW2916)