

## AS-i Safety Monitors in Stainless Steel for 2 AS-i networks

### 1 AS-i Safety Monitor for 2 AS-i networks

- Operation using a single Monitor configuration!  
Monitor processes safety slaves on two AS-i networks  
Coupling between the two networks superfluous



BWU2186



BWU2000



BWU2205

### Redundant power supply out of AS-i:

- all fundamental functions of the device remain available even in case of power failure in one of the two AS-i networks

### 16 release circuits

- 4 / 2 release circuits SIL 3, cat. 4 on the monitor  
2 x relays + 2 x fast electronic safe outputs resp.  
2 x relays

### Safe AS-i outputs are supported

- 16 independent AS-i outputs  
Multiple safe AS-i outputs possible via a single AS-i address

### Applications up to category 4/PLe/SIL 3

### Chip card for storage of configuration data



The AS-i Safety Monitor in stainless steel housing is a safety switching device with 16 independent release circuits. The configuration and commissioning is a simple drag and drop with the program editor ASIMON 3 G2. The configuration data can be stored on the chip card and read back.

With the help of the LCD display and buttons the safety monitor can be operated on the spot. The display is also used for the display of slave addresses and error messages.

The AS-i monitor supports safe outputs, so that sensor-controlled safety components and other safety components up to category 4 / SIL 3 can be connected.

In case an emergency stop should be required or if a fault occurs, the AS-i safety monitor in its protective mode can switch off the system within a response time of 40 ms at most.

|  |   |
|--|---|
| <b>Article no.</b>                                     | <b>BWU2000 / BWU2186 / BWU2205</b>  |
| <b>Safety Monitor, advanced Monitor, generation II</b> |   |
| Number release circuits                                | 16  |
| Start delay  | < 10 ms   |
| Max. turn-off time                                     | < 40 ms   |
| Card slot  | chip card for storage of configuration data   |
| <b>Input</b>   |   |
| Number   | 4 inputs to use as EDM or start inputs<br>switching current statical 4 mA at 24 V, dynamic 30 mA at 24 V (T=100 µs) |
| <b>Display</b>   |   |
| LCD  | indication of slave addresses and error messages in plain text  |
| LED power  | voltage ON  |
| LED ready  | LED on: start-up/restart-disable active<br>LED flashing: external test necessary                                    |

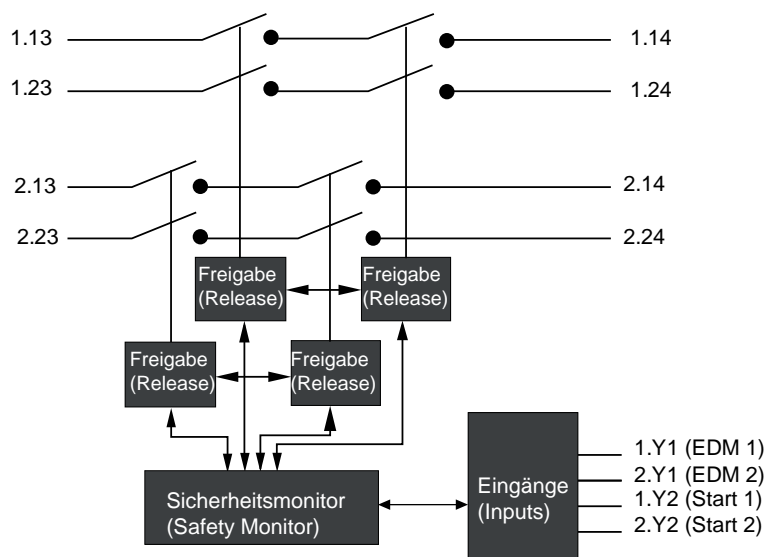
|   |  |
|---|--|
| <b>Article no.</b>                                    | <b>BWU2000 / BWU2186 / BWU2205</b>   |
| <b>Electrical data</b>                                |  |
| Operating current                                     | max. 200 mA out of AS-i circuit 2 (approx. 45 mA ... 200 mA)<br>in sum max. 245 mA   |
| Operating voltage                                     | 24 V DC (26,5 V ... 31,6 V out of AS-i)  |
| <b>UL-specifications (UL508)</b>                      |  |
| External protection                                   | an isolated source with a secondary open circuit voltage of $\leq 30$ V DC<br>with a 3 A maximum over current protection.<br>Over current protection is not required when a class 2 source is employed.  |
| In general  | UL mark does not provide UL certification for any functional safety rating or aspects of the above devices.  |
| cTUVus  | the devices <ul style="list-style-type: none"> <li>• BWU2000</li> <li>• BWU2186</li> <li>• BWU2205</li> </ul> from Bihl + Wiedemann GmbH were safety certified by TÜV Rheinland of North America, Inc. according to UL-standards and meet the safety requirements for the North American market. |
| Standards   | EN 61000-6-2<br>EN 61000-6-4<br>EN 62061:2005/A1:2013, SIL 3<br>EN 61508:2001, SIL 3<br>EN ISO 13849-1:2008, performance-level e   |
| <b>Environment</b>                                    |  |
| Housing   | stainless steel, for DIN rail mounting   |
| Ambient temperature                                   | 0 °C ... +55 °C  |
| Storage temperature                                   | -25 °C ... +85 °C  |
| Protection category IEC 60529                         | IP20   |
| Tolerable loading referring to impacts and vibrations | according to EN 61131-2  |
| Voltage of insulation                                 | > 500 V  |
| Dimensions (L / W / H in mm)                          | 85 / 120 / 96  |
| Weight  | 800 g  |

| <b>Article no.</b>                   | <b>BWU2000</b>  | <b>BWU2186</b>   | <b>BWU2205</b>  |
|--------------------------------------|---|--|-----------------|
| <b>Interfaces</b>                    |   |  |                 |
| Diagnostics interface                | RS 232  |  | Ethernet, RJ-45 |
| Baud rates                           | 19,2 kBaud, no parity, 1 start bit, 1 stop bit, 8 data bits   |  | –               |
| <b>Safety Monitor</b>                |   |  |                 |
| Number of release circuits in device | 4   | 2  |                 |
| <b>Output</b>                        |   |  |                 |
| Number                               | 2 output circuits, each with 1 relay output switching element (output circuits 1 and 2) max. contact load: 3 A AC-15 at 30 V, 3 A DC-13 at 30 V | 2 output circuits, each with 2 relay output switching element max. contact load: 3 A AC-15 at 30 V, 3 A DC-13 at 30 V  |                 |
|                                      | semiconductor outputs (output circuits 3 and 4) max. contact load: 0,5 A DC-13 at 30 V  | –  |                 |
| Test pulse                           | if output switched on:<br>min. interval between two test pulses is 250 ms (Safety Version 4.3); max. pulse duration 1,5 ms                      | –  |                 |
| <b>Display</b>                       |   |  |                 |
| LED U AS-i / fault                   | –   | LED green: no AS-i communication error and no RC in „red flashing“<br><br>LED red: communication error on AS-i network<br>LED „red flashing“: at least 1 FGK in state „red flashing“ |                 |
| 2 LEDs channel 1 / channel 2         | –   | state of contacts of the safety outputs (OSSD) are:<br>LED off: open<br>LED on: closed<br><br>LED flashing: delay time is running at stop category 1                                 |                 |

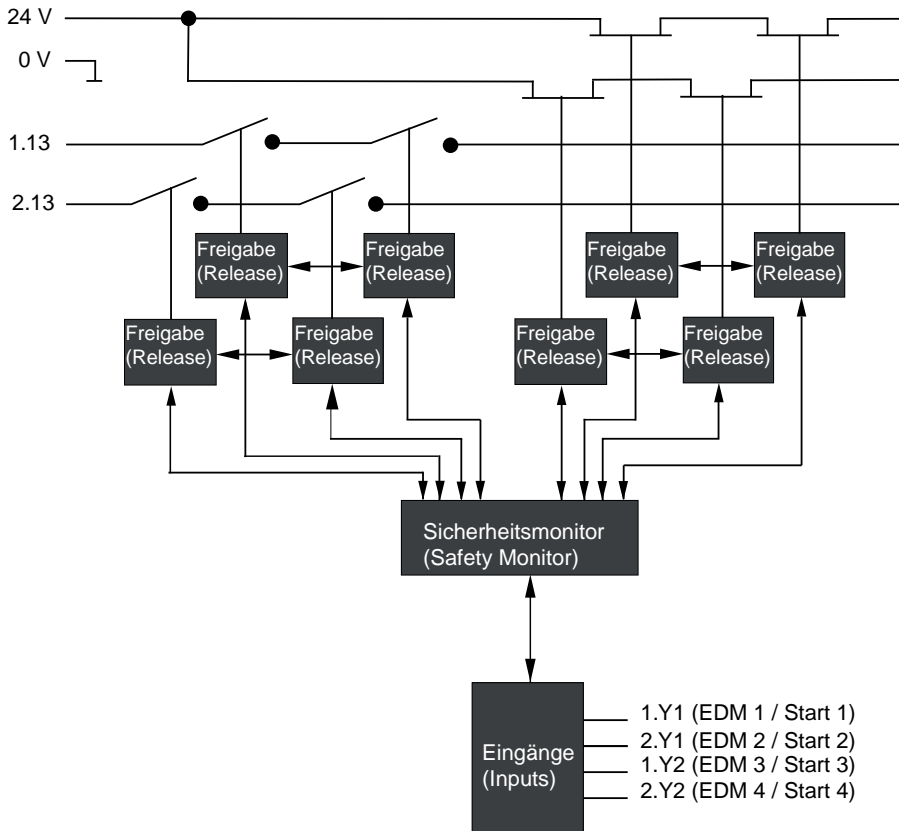
| Article no.             | BWU2000   | BWU2186 | BWU2205 |
|-------------------------|---|---------|---------|
| LED U AS-i 1 / U AS-i 2 | AS-i 1 / AS-i 2 sufficiently voltage supplied   |         | -       |
| LED fault               | LED red:<br>communication error on AS-i network<br>LED flashing:<br>at least 1 RC in state „red flashing“ |         | -       |
| LED AUX                 | auxiliary power   |         | -       |
| 4 x LED EDM/Start       | state of inputs:<br>LED off: open<br>LED on closed  |         | -       |
| 4 x LED output circuits | state of output circuits:<br>LED off: open<br>LED on: closed  |         | -       |

| Article No. | Diagnostics interface | AS-i Safety outputs are supported | Number of AS-i circuits Safety Monitor | Max. number of release circuits | Configuration blocks |
|-------------|-----------------------|-----------------------------------|--|---------------------------------|----------------------|
| BWU2000     | serial                | yes                               | 2                                      | 16                              | 256 devices          |
| BWU2186     | serial                | yes                               | 2                                      | 16                              | 256 devices          |
| BWU2205     | Ethernet              | yes                               | 2                                      | 16                              | 256 devices          |

### Safety Monitor block diagram BWU2186, BWU2205

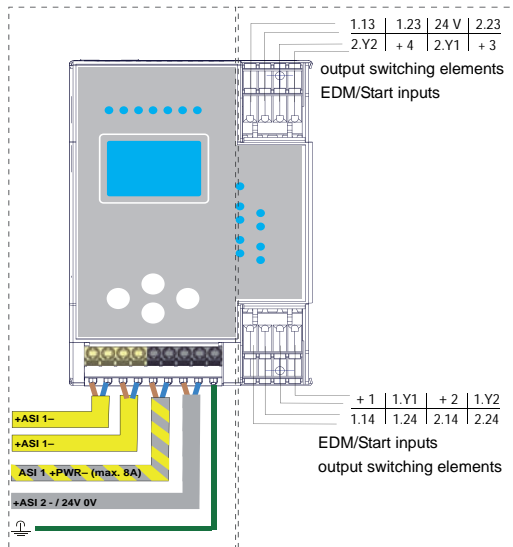


## Safety Monitor block diagram BWU2000

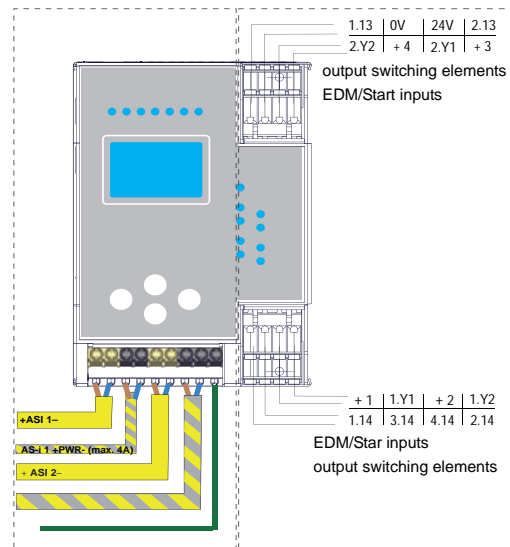


## Connections: Safety Monitor

### BWU2186, BWU2205



### BWU2000



## Accessories:

- Safe contact expander, 1 o 2 independent channels (art. no. BWU2548 / BWU2539)
- AS-i Power Supply 4 A (art. no. BW1649) / AS-i Power Supply 8 A (art. no. BW1997)

### BWU2186, BWU2000:

- ASIMON 3 G2 and AS-i Control Tools with serial cable for AS-i Master/Monitors in Stainless Steel (art. no. BW2071)

### BWU2205:

- Software ASIMON 3 G2 and AS-i Control Tools (art. no. BW2501)