

# ASi-5/ASi-3 Safety over EtherCAT Gateway with integrated ASi-5/ASi-3 Safety Monitor



**ASi-5 – Great data bandwidth, short cycle times**

**Compatible with all ASi generations**

**Safety Monitor supports ASi-5 Safety and ASi-3 Safety**

**Safety over EtherCAT (configurable as node or master)**

**Safety over EtherCAT (FSoE) and Safe Link in one device**

**Safely monitoring safety drives with Safety over EtherCAT (FSoE)**

**2 ASi-5/ASi-3 Masters, EtherCAT-Device**

**OPC UA interface and REST API for IIoT applications**

**Integrated web server for simple diagnostics and maintenance**

**Safe speed and standstill monitoring**

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

**Chip card for storage of configuration and additional data**



(figure similar)



| Figure                                                                              | Inter-<br>face,<br>field-<br>bus <sup>(1)</sup> | Safety commu-<br>nication | Inputs<br>Safety <sup>(2)</sup> | Outputs<br>Safety, SIL 3,<br>cat. 4 | ASi-5/ASi-3                        | ASi Safety                                          | Number of<br>ASi networks,<br>number of<br>ASi Master <sup>(3)</sup> | Integrated de-<br>coupling, ASi<br>current mea-<br>surement in the<br>gateway <sup>(4)</sup> | Diagnostic<br>and<br>configuration<br>interface <sup>(5)</sup> | Art. no.       |
|-------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------|---------------------------------|-------------------------------------|------------------------------------|-----------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------|
|  | Ether-<br>CAT,<br>OPC UA                        | FSoE +<br>Safe Link       | —                               | —                                   | ASi-5 and<br>ASi-3 com-<br>patible | ASi-5 Safety<br>and ASi-3<br>Safety compati-<br>ble | 2 ASi networks,<br>2 ASi-5/ASi-3<br>Masters                          | yes, max.<br>4 A/ASi network                                                                 | Ethernet<br>diagnostic                                         | <b>BWU3979</b> |

**(1) Interface, fieldbus**

Communication interface between fieldbus and gateway: interfaces for standardized fieldbus systems in industrial automation.

**EtherCat ASi gateway:** interface for an EtherCat fieldbus

**OPC UA server:** interface for the OPC UA communication

**(2) Inputs Safety**

Safe inputs can be configured as 1-channel or 2-channel depending on the desired application or PL and SIL level. Suitable for applications up to category 4/PLe/SIL3.

**(3) Number of ASi networks, number of ASi Master**

**"Double Master":** 2 ASi networks, 2 ASi-5/ASi-3 Masters.

**(4) Integrated decoupling, ASi current measurement in the gateway**

**"yes, max. 4 A/ASi network":** Data decoupling integrated in the gateway. Cost-effective power for 2 ASi networks with 1 power supply (optionally supply of multiple Single Gateways by 1 power supply). Operation with short cable lengths with standard 24 V power supply possible.

**(5) Diagnostic and configuration interface**

**"Ethernet diagnostic":** Access to ASi master and safety monitor via Bihl+Wiedemann proprietary software over Ethernet diagnostics interface.

**The latest version of the device description file of the gateway is available in the "Downloads" section of the respective device.**

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|                                        |                                                                                                                                                                              |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Article no.</b>                     | <b>BWU3979</b>                                                                                                                                                               |
| <b>Fieldbus interface</b>              |                                                                                                                                                                              |
| Type                                   | EtherCAT;<br>RJ-45 acc. IEEE 802.3                                                                                                                                           |
| Transmission rate                      | 10/100 MBit/s                                                                                                                                                                |
| Safety communication                   | FSoE                                                                                                                                                                         |
| IT interface                           | –                                                                                                                                                                            |
| Card slot                              | chip card (BW4785) for storage of configuration and additional and additional data                                                                                           |
| <b>Diagnostic interface</b>            |                                                                                                                                                                              |
| Type                                   | Ethernet;<br>RJ-45 acc. IEEE 802.3                                                                                                                                           |
| Transmission rate                      | 10/100 MBit/s                                                                                                                                                                |
| Safety communication                   | Safe Link                                                                                                                                                                    |
| IT interface                           | OPC UA server, web server, REST API                                                                                                                                          |
| <b>Programming in C</b>                |                                                                                                                                                                              |
| Control III                            | optional                                                                                                                                                                     |
| <b>ASi</b>                             |                                                                                                                                                                              |
| ASi specification                      | ASi-5 + ASi-3                                                                                                                                                                |
| Cycle time                             | <b>Cycle time ASi-5 (constant):</b><br>1,27 ms for 384 bits input data + 384 bits output data<br><b>Cycle time ASi-3 (variable):</b><br>150 µs * (number of ASi-3 nodes + 2) |
| ASi Safety                             | ASi-5 Safety and ASi-3 Safety compatible                                                                                                                                     |
| Operating voltage                      | 30 V <sub>DC</sub> (20 ... 31,6 V) (PELV voltage)                                                                                                                            |
| Operating current                      | 300 mA                                                                                                                                                                       |
| ASi Power24V capability <sup>(1)</sup> | yes                                                                                                                                                                          |
| <b>AUX</b>                             |                                                                                                                                                                              |
| Operating voltage                      | –                                                                                                                                                                            |
| Max current consumption                | –                                                                                                                                                                            |
| <b>Display</b>                         |                                                                                                                                                                              |
| LCD                                    | menu, indication of ASi addresses and error messages in plain text                                                                                                           |
| LED power (green)                      | power on                                                                                                                                                                     |
| LED ect run (green)                    | EtherCAT communication activ                                                                                                                                                 |
| LED config error (red)                 | configuration error                                                                                                                                                          |
| LED U ASi (green)                      | ASi voltage o.k.                                                                                                                                                             |
| LED ASi active (green)                 | ASi normal operation active                                                                                                                                                  |
| LED prg enable (green)                 | automatic addresses programming enabled                                                                                                                                      |
| LED prj mode (yellow)                  | configuration mode active                                                                                                                                                    |
| LED AUX (green)                        | –                                                                                                                                                                            |
| LEDs SI1 ... SI6 (yellow)              | –                                                                                                                                                                            |
| LEDs SO1 ... SO6 (yellow)              | –                                                                                                                                                                            |
| <b>UL-specifications (UL508)</b>       |                                                                                                                                                                              |
| In general                             | UL mark does not provide UL certification for any functional safety rating or aspects of the above devices.                                                                  |

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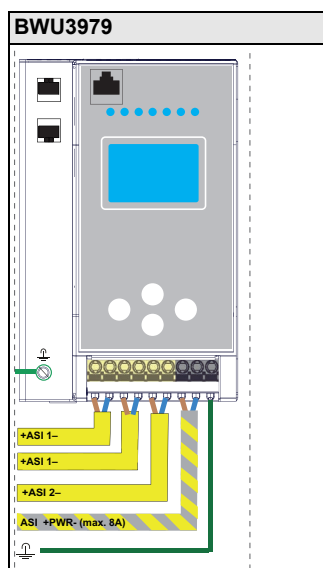
| Article no.                                  | BWU3979                                                                                                                                               |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environment</b>                           |                                                                                                                                                       |
| Standards                                    | EN 62026-2<br>EN 60529<br>EN 61000-6-2<br>EN 61000-6-4<br>EN 62061, SIL 3<br>EN 61508, SIL 3<br>EN ISO 13849-1, Performance-Level e<br>EN ISO 13849-2 |
| Operating altitude                           | 2000 m                                                                                                                                                |
| Ambient temperature                          | -25 °C ... +55 °C (no condensation permitted)                                                                                                         |
| Storage temperature                          | -25 °C ... +85 °C                                                                                                                                     |
| Housing                                      | stainless steel, for DIN rail mounting                                                                                                                |
| Pollution Degree                             | 2                                                                                                                                                     |
| Protection category                          | IP20                                                                                                                                                  |
| Tolerable loading referring to humidity      | according to EN 61131-2                                                                                                                               |
| Maximum tolerable shock and vibration stress | according to EN 61131-2                                                                                                                               |
| Voltage of insulation                        | ≥500 V                                                                                                                                                |
| Weight                                       | 800 g                                                                                                                                                 |
| Dimensions (W / H / D in mm)                 | 85 / 120 / 106                                                                                                                                        |

## (1) ASi Power24V

The device can be operated directly on a 24 V (PELV) power supply. The gateway has been optimized with integrated data coupling coils and adjustable self-resetting fuses for safe use of powerful 24 V power supplies.

|                                                                                 | BWU3979 |
|---------------------------------------------------------------------------------|---------|
| <b>Data decoupling integrated in the gateway</b>                                | •       |
| <b>Current measurement of the ASi circuits</b>                                  | •       |
| <b>Self-resetting adjustable fuses</b>                                          | •       |
| <b>ASi earth fault monitor distinguishes between ASi cable and sensor cable</b> | •       |
| <b>Cost-effective power for 2 ASi networks with 1 power supply</b>              | •       |

## Connections



## ASi-5/ASi-3 Safety over EtherCAT Gateway with integrated ASi-5/ASi-3 Safety Monitor



### Accessories:

- Safe contact expander, 1 or 2 independent channels (art. no. BWU2548 / BWU2539)
- Chip card for storage of configuration and additional data (art. no. BW4785)
- Bihl+Wiedemann Safety Suite - Safety Software for Configuration, Diagnostics and Commissioning (art. no. BW2916)
- Power supplies, e.g.: 30 V power supply, 4 A, 1 phase (art. no. BW4218), 30 V power supply, 8 A, 1 phase (art. no. BW4219), 30 V power supply, 8 A, 3 phases (art. no. BW4220), 30 V Power Supply, 16 A, 1 phase (art. no. BW4221), 30 V Power Supply, 16 A, 3 phases (art. no. BW4222) (for further power supply units visit [www.bihl-wiedemann.de/en/products/accessories/power-supplies](http://www.bihl-wiedemann.de/en/products/accessories/power-supplies))