

# ASi-3 EtherNet/IP + Modbus TCP-Gateways with integrated Safety Monitor

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### 2 ASi-3 Master, EtherNet/IP + Modbus TCP-Device <sup>(1)</sup>

- switch integrated

### Up to 62 release circuits

- up to 4 release circuits SIL 3, cat. 4 on the Monitor, relays or electronic safe outputs

### Safe ASi outputs are supported

- up to 62 independent ASi outputs  
Multiple safe ASi outputs possible via a single ASi address



(figure similar)

optionally with OPC UA server and integrated web server for simplified diagnostics

Significantly improved response times


Safe speed and standstill monitoring

Applications up to category 4/PLe/SIL 3

Chip card for storage of configuration data



<sup>(1)</sup> Modbus TCP from Ident.no.: 13076 (see lateral label).

Figure	Fieldbus Interface <sup>(1)</sup>	Safety communication	Inputs Safety, SIL 3, Cat. 4	Outputs Safety, SIL 3, cat. 4	Inputs Safety, expandable to	Safety outputs, independent according to SIL 3, expandable to	Number of ASi networks, number of ASi Master <sup>(2)</sup>	Integrated decoupling, ASi current measurement in the gateway <sup>(3)</sup>	Diagnostic and configuration interface <sup>(4)</sup>	Art. no.
	EtherNet/IP + Modbus TCP	Safe Link	3 x 2 channels	4 release circuits; 2 x relay, 2 x electronic safe outputs	max. 62 x 2 channels, max. 1922 in max. configuration	max. 32, max. 992 in max. configuration	2 ASi networks, 2 ASi-3 Masters	yes, max. 4 A/ASi network	Ethernet fieldbus, Ethernet diagnostic	<b>BWU2579</b>

<sup>(1)</sup> **Fieldbus interface**

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

**EtherNet/IP+ Modbus TCP ASi gateway:** interface for an EtherNet/IP+ ModbusTCP fieldbus

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

<sup>(2)</sup> **Number of ASi networks, number of ASi Master**

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

<sup>(3)</sup> **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.

<sup>(4)</sup> **Diagnostic and configuration interface**

**"Ethernet fieldbus + Ethernet diagnostic":** Access to ASi Master and Safety Monitor with Bihl+Wiedemann software by using the Ethernet diagnostic interface or Ethernet fieldbus 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>BWU2579</b>
<b>Fieldbus interface</b>	
Type	Ethernet + Modbus TCP acc. to IEEE 802.3 2 x RJ-45, integrated 2-Port-Switch,
Baud rate	10/100 MBaud
Variably configurable Assembly Objects	–
OPC UA interface	–
Function	Device Level Ring (DLR) (Ethernet/IP only)
Card slot	chip card (128 KB) for storage of configuration data
<b>Diagnostic interface</b>	
Type	Ethernet; RJ-45 acc. to IEEE 802.3
Baud rate	Full duplex (10/100 MBaud, both fieldbus ports must use the same data rate) <sup>(3)</sup>
Safety communication	Safe Link
Safe coupling <sup>(1)</sup>	–
<b>ASi</b>	
ASi specification	3.0
Cycle time	150 $\mu$ s * (number of ASi-3 nodes + 2)
Operating voltage	30 V <sub>DC</sub> (20 ... 31,6 V) (PELV voltage)
ASi Power24V capability <sup>(2)</sup>	yes
<b>AUX</b>	
Operating voltage	24 V <sub>DC</sub> (19,2 ... 28,8 V)
Max current consumption	1 A
<b>Display</b>	
LCD	indication of ASi addresses and error messages in plain text
LED power (green)	power on
LED net (green)	Ethernet network active
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)	auxiliary power
LEDs 1.Y1, 1.Y2, 2.Y1, 2.Y2 (EDM/Start) (yellow)	state of inputs: LED off: open LED on: closed
LEDs K1 ... K4 (green)	state of outputs: LED off: open LED on: closed
LEDs SI1 ... SI6 (yellow)	–
LEDs SO1 ... SO6 (yellow)	–
<b>UL-specifications (UL508)</b>	
External protection	An isolated source with a secondary open circuit voltage of $\leq 30$ VDC with a 3 A maximum over current protection. 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.
cTÜV <sub>us</sub>	the device BWU2579 from Bihl + Wiedemann GmbH is safety certified by TÜV Rheinland of North America, Inc. according to UL-standards and meet the safety requirements for the North American market.

# ASi-3 EtherNet/IP + Modbus TCP-Gateways with integrated Safety Monitor

<b>Article no.</b>	<b>BWU2579</b>
<b>Environment</b>	
Standards	EN 60529 EN 61000-6-2 EN 61000-6-4 EN 62061, SIL 3 EN 61508, SIL 3 EN ISO 13849-1, PL <sub>e</sub>
Operating altitude	max. 2000 m
Ambient temperature	0 °C ... +55 °C
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)	109 / 120 / 106

(1) Safe data exchange between safe protocols (e.g. CIP Safety, PROFIsafe etc.).

(2) **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.

- (3) from Ident.No. ≥20167 full duplex (10/100 Mbaud),  
from Ident.No. ≥16834 half duplex/full duplex (10/100 Mbaud)  
for Ident.No.<16834 half duplex (10 Mbaud)

<b>Article no.</b>	<b>BWU2579</b>
<b>Safety monitor</b>	
Start delay	< 10 ms
Max. turn-off time	< 40 ms
Antivalent switches for local inputs	–
Standstill monitors for local inputs	–
Speed monitors for local inputs	–
<b>Connection</b>	
Connection	COMBICON
Length of connector cable	I/O: max. 15 m <sup>(1)</sup>
<b>Input</b>	
Inputs Safety, SIL3, cat. 4	–
Inputs digital, EDM	4
Switching current	30 mA (T = 100 μs), continuously 4 mA at 24 V
Power supply	out of ASi
Sensor supply	short-circuit and overload protected according to EN 61131-2

# ASi-3 EtherNet/IP + Modbus TCP-Gateways with integrated Safety Monitor

<b>Article no.</b>	<b>BWU2579</b>
<b>Output</b>	
Number of release circuits on the monitor	4
Outputs	relay outputs (output circuits 1 and 2) max. contact load <sup>(2)</sup> : 3 A <sub>AC-15</sub> at 30 V, 3 A <sub>DC-13</sub> at 30 V
	semiconductor outputs (output circuits 3 and 4): max. contact load: 0,5 A <sub>DC-13</sub> at 30 V
Power supply (semiconductor outputs)	out of AUX
Output	short-circuit and overload protected according to EN 61131-2
Test pulse (semiconductor outputs)	if output is on: minimum interval between 2 test pulses: 250 ms (as from Safety Version 4.3); maximum pulse width 1,5 ms

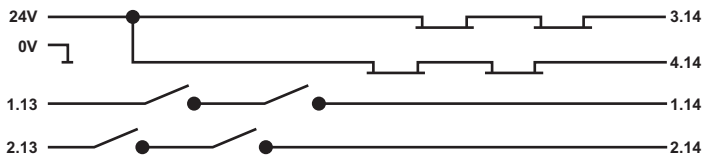
(1) Looping resistance ≤150 Ω

(2) Protection via external fuse, max. 4 A semi time-lag.

Article no.	Operating current		
	master power supply, approx 300 mA out of ASi network	master power supply, max. 300 mA out of ASi circuit 1 (approx. 70 mA ... 300 mA), max. 300 mA out of ASi circuit 2 (approx. 70 mA ... 300 mA); in sum max. 370 mA	Cost-effective power for 2 ASi networks with 1 power supply, ca. 350 mA (PELV voltage)
<b>BWU2579</b>	-	-	•

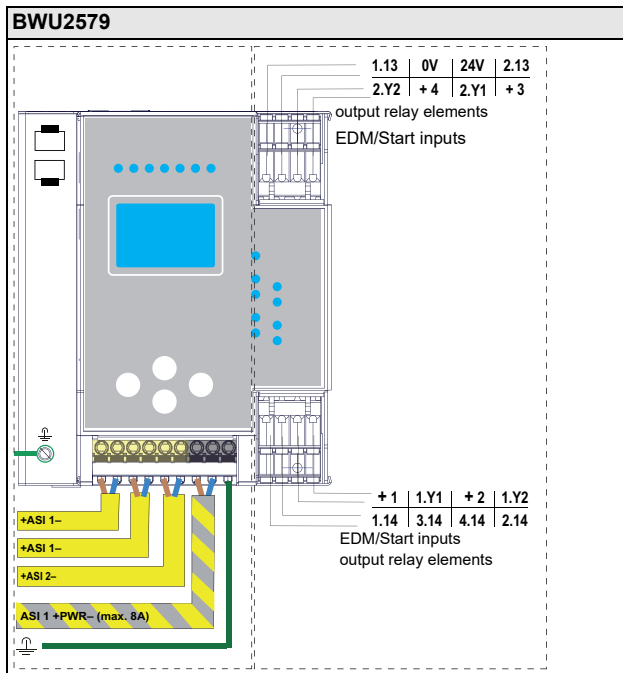
	<b>BWU2579</b>
<b>Data decoupling integrated in the gateway</b>	•
<b>Redundant power supply out of ASi:</b> all fundamental functions of the device remain available even in case of power failure in one of the two ASi networks	-
<b>Current measurement of the ASi circuits</b>	•
<b>Self-resetting adjustable 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>	•

## Safety outputs block diagram BWU2579:



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## Connections: Gateway + Safety Monitor:



## Accessories:

- Safe contact expander, 1 or 2 independent channels (art. no. BWU2548 / BWU2539)
- Chip card, memory capacity 128 KB (art. no. BW2222)
- Bihl+Wiedemann Suite - Safety Software for Configuration, Diagnostics and Commissioning (art. no. BW2916)
- Power supplies, e.g.: ASi power supply, 4 A (art. no. BW1649), ASi power supply, 8 A (art. no. BW1997)  
(further power supply units can be found at [www.bihl-wiedemann.de/en/products/accessories/power-supplies](http://www.bihl-wiedemann.de/en/products/accessories/power-supplies))