

# ASi-3 Gateways, PROFIsafe via PROFIBUS or PROFINET



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### PROFIsafe and Safe Link in one device

- up to 450 devices

### 2 / 1 ASi-3 Masters, PROFINET / PROFIBUS device

- ASi Safety input nodes report via PROFIsafe
- ASi Safety output nodes switch via PROFIsafe

### Up to 64 release circuits

- up to 6 safe output circuits CAT4, SIL 3 on the Monitor safe relays or electronic safe outputs

### Safe ASi outputs are supported

- up to 32 independent ASi outputs  
Multiple safe ASi outputs possible via a single ASi address

### 1 Safety Monitor for 2 ASi networks

- Operation using a single Monitor configuration!  
Monitor processes safety nodes on two ASi networks  
Coupling between the two networks superfluous

### Safe speed and standstill monitoring

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

### Chip card for storage of configuration data



(Figure similar)



Figure	Field-bus Interface	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>(1)</sup>	Integrated decoupling, ASi current measurement in the gateway <sup>(2)</sup>	Diagnostic and configuration interface <sup>(3)</sup>	Article No.
	PRO-FIBUS	PROFIsafe (F-CPU)	–	4 release circuits; 2 x relay, 2 x electronic safe outputs	max. 62 x 2 channels	max. 16	2 ASi networks, 2 ASi-3 Masters	yes, max. 4A/ ASi network	Ethernet diagnostics	<b>BWU2615</b>
	PRO-FIBUS	PROFIsafe (F-CPU)	–	4 release circuits; 2 x relay, 2 x electronic safe outputs	max. 62 x 2 channels	max. 16	2 ASi networks, 1 ASi-3 Master	yes, max. 4A/ ASi network	Ethernet diagnostics	<b>BWU2598</b>
	PRO-FIBUS	PROFIsafe (F-CPU), no preprocessing in ASIMON	–	–	max. 31 x 2 channels	max. 16	1 ASi network, 1 ASi-3 Masters	yes, max. 4A/ ASi network	RS 232	<b>BWU2479</b>
	PRO-FIBUS	PROFIsafe (F-CPU)	–	4 release circuits; 2 x relay, 2 x electronic safe outputs	max. 62 x 2 channels	max. 16	2 ASi networks, 2 ASi-3 Masters	yes, max. 4A/ ASi network	RS 232 + Ethernet fieldbus	<b>BWU2647</b>

(1) **Number of ASi networks, number of ASi Master**  
**"Single Master"**: 1 ASi network, 1 ASi-3 Master.  
**"Double Master"**: 2 ASi networks, 2 ASi-3 Masters.  
**"Optional ASi Safety coupling circuit"**: 2 ASi networks, 1 ASi-3 Master.

(2) **Integrated decoupling, ASi current measurement in the gateway**  
**"yes, max. 4A/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.

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(3) **Diagnostic and configuration interface**

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

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

**"Ethernet fieldbus + RS 232"**: Access to ASi master and safety monitor via Bihl+Wiedemann proprietary software over Ethernet fieldbus interface or RS 232 interface and adapter cable.

**"RS 232"**: Access to ASi master and safety monitor via Bihl+Wiedemann proprietary software over RS 232 interface and adapter cable.

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

Article no.	BWU2479	BWU2598	BWU2615	BWU2647
<b>Fieldbus Interface</b>				
Type	<b>PROFIBUS</b> (RS 485)  acc. to IEC 61158 / IEC 61784-1		<b>PROFINET</b> (RJ-45)  • 2 x RJ-45, integrated 2-Port-Switch IRT capability • Conformance Class B • integrated switch complies with Conformance Class C (IRT capability)	
Baud rates	9,6 Kbaud ... 12000 Kbaud, automatic recognition		10/100 Mbaud	
Function	DP function: • imaging of the ASi nodes as I/O of the PROFIBUS • complete diagnosis and configuration via the DP Master		• PROFINET IO Device • Media Redundancy Protocol (MRP) • Shared Device	
Card slot	chip card (128 kB) for storage of configuration data			
<b>Diagnostic Interface</b>				
Type	RS232	Ethernet		Ethernet + RS232
<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>(1)</sup>	no	yes		
<b>AUX</b>				
Operating voltage	–	24 V <sub>DC</sub> (19,2 ... 28,8 V)		
Max current consumption	–	1 A		

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Article no.	BWU2479	BWU2598	BWU2615	BWU2647
<b>Display</b>				
LCD	indication of ASi addresses and error messages in plain text			
LED PROFINET (green / red)	–		green: PROFINET communication active red: no PROFINET communication	
LED PROFIBUS (green)	PROFIBUS communication active			–
LED power (green)	power on			
LED config error (red)	configuration error			
LED U ASi (green)	ASi voltage OK			
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: off: open on: close		state of inputs: off: open on: close
LEDs K1 ... K4 (green)	–	state of outputs: off: open on: close		state of outputs: off: open on: close
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 $\leq 30 V_{DC}$ 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.			
cTÜVus	the devices • BWU2479 • BWU2598 • BWU2615 • BWU2647 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.			
<b>Environment</b>				
Applied standards	EN 60529 EN 62026-2 EN 61000-6-2 EN 61000-6-4 EN 62061, SIL 3 EN 61508, SIL 3 EN ISO 13849-1, Performance-Level e EN ISO 13849-2			
Operating altitude	max. 2000 m			
Ambient temperature	0 °C ... +55 °C			
Storage temperature	-25 °C ... +85 °C			
Housing	stainless steel, for DIN rail mounting			
Protection category	IP20			
Maximum tolerable shock and vibration stress	according EN 61131-2			
Voltage of insulation	$\geq 500 V$			
Weight	800 g			
Dimensions (W / H / D in mm)	75 / 120 / 96	100 / 120 / 106	109 / 120 / 96	

<sup>(1)</sup> **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.

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Article no.	BWU2479	BWU2598 / BWU2615 / BWU2647
<b>Safety monitor</b>		
Start delay	–	< 10 s
Max. turn-off time		< 40 s
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
<b>Input</b>		
Inputs Safety		–
Inputs digital, EDM	–	4
Switching current	–	30 mA (T = 100 µs), continuously 4 mA at 24 V
Power supply	–	out of ASi
<b>Output</b>		
Number of release circuits on the monitor	–	4
Outputs	–	relay outputs (output circuits 1 and 2) max. contact load <sup>(1)</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
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 ms

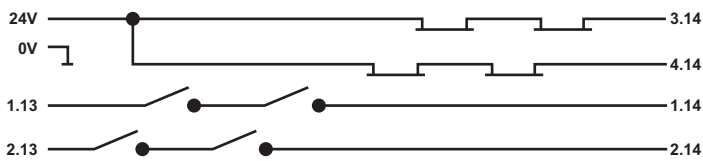
(1) Protection via external fuse, max. 4 A semi time-lag.

Article no.	Operating current		
	Master power supply, ca. 300 mA out of ASi circuits	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, approx. 300 mA (PELV voltage)
BWU2479	•	–	–
BWU2598	–	•	–
BWU2615	–	–	•
BWU2647	–	–	•

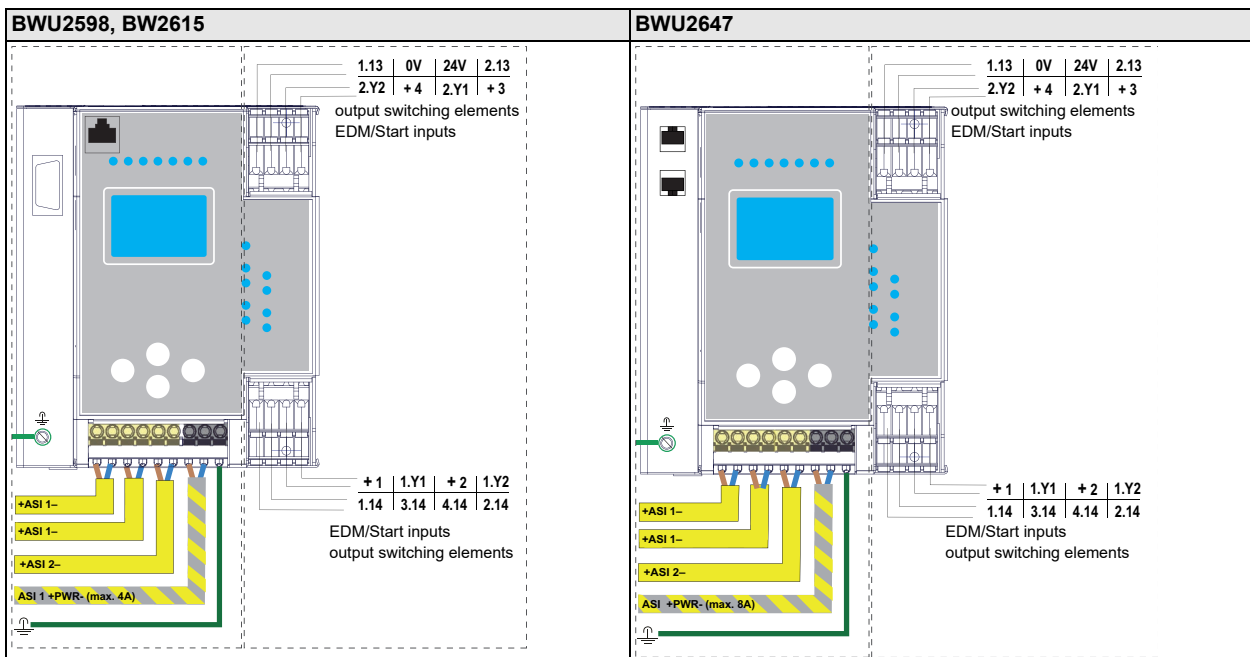
# ASi-3 Gateways, PROFIsafe via PROFIBUS or PROFINET

	BWU2479 / BWU2598	BWU2615 / BWU2647
Data decoupling integrated in the gateway	•	•
Redundant power supply out of ASi: all fundamental functions of the device remain available even in case of power failure in one of the two ASi networks	-	-
Current measurement of the ASi circuits	-	•
Self-resetting adjustable fuses	-	•
ASi earth fault monitor distinguishes between ASi cable and sensor cable	-	•
Cost-effective power for 2 ASi networks with 1 power supply	•	•

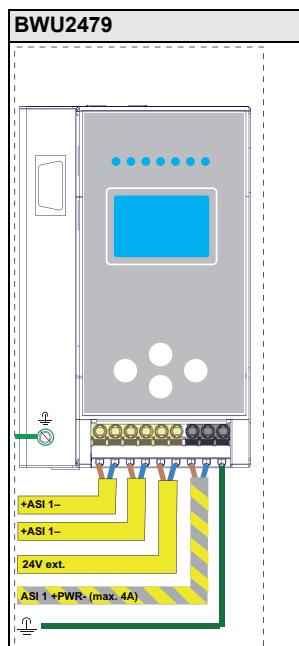
## Safety outputs block diagram BWU2598, BWU2615, BWU2647:



## Connections: Gateway + Safety Monitor:



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## 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))

## For devices with PROFIBUS interface:

- Serial PROFIBUS Master (art. no. BW1258)
- PROFIBUS-DP Master simulator (art. no. BW1257)

## For devices with PROFINET interface:

- PROFINET Master simulator Plus (art. no. BW3057)