

# ASi-3 PROFIBUS Gateways with integrated Safety Monitor

## ASi-3 Gateways with integrated Safety Monitor

2 / 1 ASi-3 Master(s), PROFIBUS node

1 ASi 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

Up to 32 release circuits

- up to 6 CAT4, SIL 3 safe output circuits 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

Safe speed and standstill monitoring



Applications up to category 4/PLe/SIL 3

Chip card for storage of configuration data



(Figure similar)



Figure	Fieldbus Interface <sup>(1)</sup>	Safety communication	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>	Article no.
	Safety, PROFIBUS	Safe Link	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 diagnostic	<b>BWU2602</b>
	Safety, PROFIBUS	-	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. 4 A/ ASi network	Ethernet diagnostic	<b>BWU2202</b>
	Safety, PROFIBUS	-	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. 4 A/ ASi network	Ethernet diagnostic	<b>BWU2204</b>
	Safety, PROFIBUS	-	2 release circuits; 2 x 2 relay	max. 62 x 2 channels	max. 16	2 ASi networks, 1 ASi-3 master	yes, max. 4 A/ ASi network	Ethernet diagnostic	<b>BWU2206</b>

(1) **Fieldbus interface:**

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

(2) **Number of ASi networks, number of ASi Master: Safety devices:**

"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.

(3) **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.

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(4) **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.

Article no.	BWU2206	BWU2202 / BWU2204	BWU2602
<b>Fieldbus Interface</b>			
Type	PROFIBUS according to IEC 61158 / IEC 61784-1		
Baud rates	9,6 Kbaud up to 12 000 Kbaud, automatic recognition		
DP functions	imaging of the ASi nodes as I/O data of the PROFIBUS complete diagnosis and configuration via the PROFIBUS DP		
Card slot	chip card for storage of configuration data		
<b>Diagnostic Interface</b>			
Type	Ethernet; RJ-45 according to IEEE 802.3		
<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)		
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	
<b>Display</b>			
LCD	menu, indication of ASi addresses and error messages in plain text		
LED power (green)	power ON		
LED PROFIBUS (green)	PROFIBUS communication 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: off: open on: closed	
LEDs K1 ... K4 (green)	–	state of outputs: off: open on: closed	
LEDs SI1 ... SI6 (yellow)		–	
LEDs SO1 ... SO6 (yellow)		–	

# ASi-3 PROFIBUS Gateways with integrated Safety Monitor

Article no.	BWU2206	BWU2202 / BWU2204	BWU2602
<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.		
cTÜV <sub>us</sub>	the devices <ul style="list-style-type: none"> <li>• BWU2202</li> <li>• BWU2204</li> <li>• BWU2206</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.		
<b>Environment</b>			
Applied 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		
Pollution degree	2		
Housing	stainless steel, for DIN rail mounting		
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	$\geq 500 V$		
Weight	800 g		
Dimensions (W / H / D in mm)	100 / 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.

Article no.	BWU2206	BWU2202 / BWU2204 / BWU2602
<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	
<b>Input</b>		
Inputs Safety, SIL3, Kat. 4	-	
Inputs digital, EDM	4	
Switching current	30 mA (T = 100 $\mu$ s), continuously 4 mA at 24 V	
Power supply	out of ASi	

# ASi-3 PROFIBUS Gateways with integrated Safety Monitor

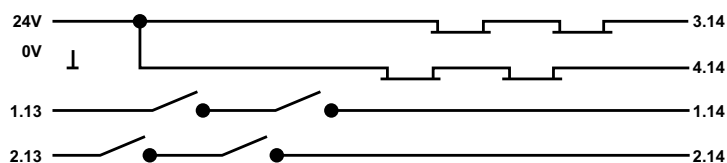
Article no.	BWU2206	BWU2202 / BWU2204 / BWU2602
<b>Output</b>		
Number of release circuits on the monitor	2	4
Outputs	relay outputs (output circuits 1 and 2), each 2 current paths max. contact load <sup>(1)</sup> : 3 A <sub>AC-15</sub> at 30 V, 3 A <sub>DC-13</sub> at 30 V	relay outputs (output circuits 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 1,5 ms

<sup>(1)</sup> 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, approx. 300 mA (PELV voltage)
BWU2202	–	–	•
BWU2204	–	•	–
BWU2206	–	•	–
BWU2602	–	–	•

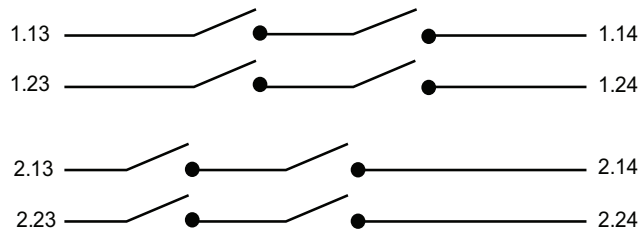
	BWU2202 / BWU2204 / BWU2206	BWU2602
Data decoupling integrated in the gateway	•	•
Redundant power supply out of ASi: all fundamental functions of the device remain available even in case of power failure in one of the two ASi networks	–	–
Current measurement of the ASi circuits	–	•
Self-resetting adjustable 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 BWU2202, BWU2204, BWU2602

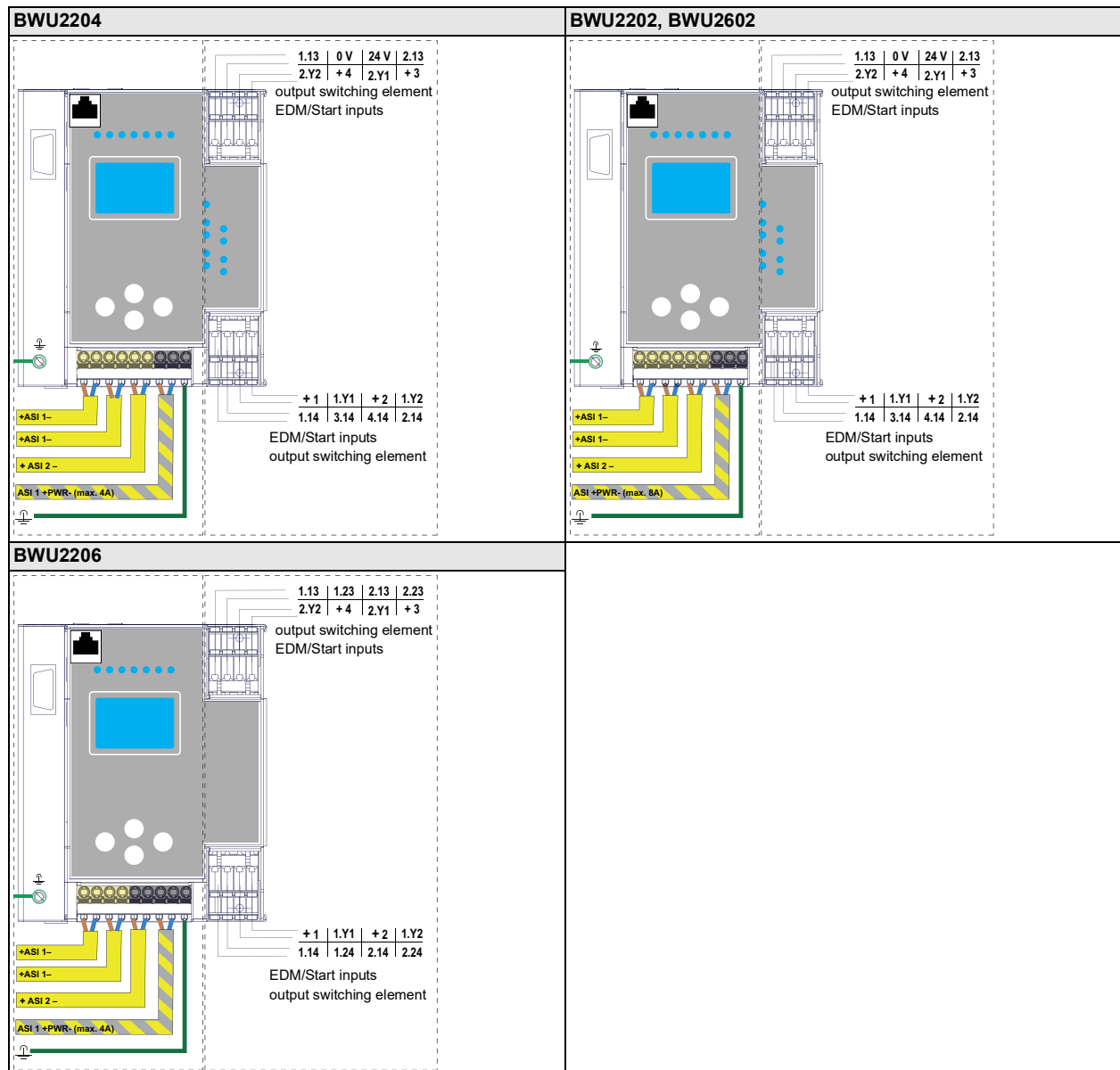


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## Safety outputs block diagram BWU2206



## Connections: Gateway + Safety Monitor



## Accessories:

- Safe contact expander, 1 or 2 independent channels (art. no. BWU2548 / BWU2539)
- PROFIBUS DP Master Simulator (art. no. BW1257)
- 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))