

ASi-3 PROFINET Gateways with integrated Safety Monitor



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2 / 1 Master, PROFINET Slave

Up to 16 release circuits

- 4 safe output circuits on the Monitor
- 2 x relays + 2 x fast electronic safe outputs

Safe ASi outputs are supported

- up to 16 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 slaves on two ASi networks
- Coupling between the two networks superfluous



(Figure similar)

Applications up to category 4/PLe/SIL 3


Chip card for storage of configuration data

ASi Power24V capable¹

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



¹ BWU2237

Figure	Type	Inputs safety, expandable to	Outputs Safety, SIL 3, cat. 4	Safety outputs, independent according to SIL 3, expandable to	Safety communication	Number of ASi networks, number of ASi Master ¹	1 power supply, 1 gateway for 2 ASi networks, inexpensive power supplies ²	Diagnostic and configuration interface ³	Article No.
	Safety, PROFINET	max. 62 x 2 channels	4 release circuits; 2 x relay, 2 x fast electronic safe outputs	max. 16	-	2 ASi networks, 2 ASi Masters	yes, max. 4 A/ ASi network	Ethernet fieldbus + RS 232	BWU2237
	Safety, PROFINET	max. 62 x 2 channels	4 release circuits; 2 x relay, 2 x fast electronic safe outputs	max. 16	-	2 ASi networks, 2 ASi Masters	no, max. 8 A/ ASi network, redundant supply	Ethernet fieldbus + RS 232	BWU2330
	Safety, PROFINET	max. 62 x 2 channels	4 release circuits; 2 x relay, 2 x fast electronic safe outputs	max. 16	-	2 ASi networks, 1 ASi Master	no, max. 8 A/ ASi network, redundant supply	Ethernet fieldbus + RS 232	BWU2307

¹ **Number of ASi networks, number of ASi Master**

"Double Master": 2 ASi networks, 2 ASi Masters.

"Optional ASi Safety coupling circuit": 2 ASi networks, 1 ASi Master.

² **1 power supply, 1 gateway for 2 ASi networks, inexpensive power supplies**

"yes, max. 4 A/ASi network": Cost-effective power for 2 ASi networks with 1 power supply (optionally supply of multiple Single Gateways by 1 power supply).

"no, max. 8 A/ASi network, redundant supply": 1 power supply per ASi network. Gateway is powered in normal operation from one of the two ASi power supplies. Should one ASi power supply fail, switching to the other ASi power supply allows all the diagnostics functions to be maintained and the unaffected ASi network continues to operate.

³ **Diagnostic and configuration 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 (**GSDML file for the Gateway is built into the web server**).

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Article no.	BWU2237 / BWU2307 / BWU2330
Interfaces	
PROFINET interface	2 x RJ-45, 2-port-switch
Conformance Class	B
Baud rates	100 MBaud
ASi	
Cycle time	150 μ s * (number of slaves + 2)
Operating voltage	ASi voltage 30 V _{DC}
Display	
LCD	indication of slave addresses and error messages in plain text
LED power (green)	power on
LED PROFINET (green/red)	green: PROFINET communication active red: no PROFINET communication
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 (yellow)	auxiliary power
LEDs 1.Y1, 1.Y2, 2.Y1, 2.Y2 (EDM/Start) (yellow)	state of inputs: off: open on: closed
LEDs K1 ... K4 (yellow)	state of outputs: off: open on: closed
UL-specifications (UL508)	
External protection	An isolated source with a secondary open circuit voltage of ≤ 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 • BWU2237 • BWU2307 • BWU2330 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.
Applied standards	EN 61000-6-2:2005/AC:2005 EN 61000-6-4:2007/A1:2011 EN 62061:2005/A1:2013, SIL 3 EN 61508:2010, SIL 3 EN ISO 13849-1:2008/AC:2009, Performance-Level e
Ambient	
Ambient temperature	0 °C ... +55 °C
Storage temperature	-25 °C ... +85 °C
Operating altitude	max. 2000 m
Housing	stainless steel, for DIN-rail mounting
Protection category (EN 60529)	IP20
Tolerable loading referring to impacts and vibrations	according EN 61131-2
Voltage of insulation	≥ 500 V
Weight	800 g
Dimensions (W / H / D in mm)	109 / 120 / 96

ASi-3 PROFINET Gateways with integrated Safety Monitor

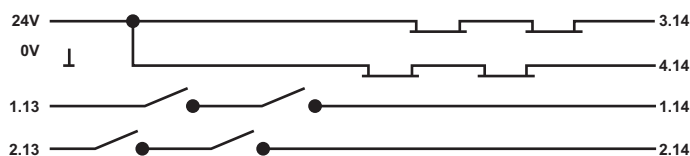
Article no.	BWU2237 / BWU2307 / BWU2330	
Safety Monitor		
Start delay	< 10 ms	
Max. turn-off time	< 40 ms	
Card slot	chip card for storage of configuration data	
Connection		
Connection	COMBICON	
Length of connector cable	I/O: max. 15 m	
Input		
Inputs digital, EDM	4	
Switching current	statical 4 mA at 24 V, dynamic 30 mA at 24 V (T=100 µs)	
Power supply	out of ASi	
Output		
Number of release circuits on the monitor	4	
Outputs	relay outputs (output circuits 1 and 2) max. contact load ¹ : 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	
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	

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	Version „1 gateway, 1 power supply, for 2 ASi networks“, approx. 300 mA (PELV voltage)
BWU2237	-	-	•
BWU2307	•	-	-
BWU2330	-	•	-

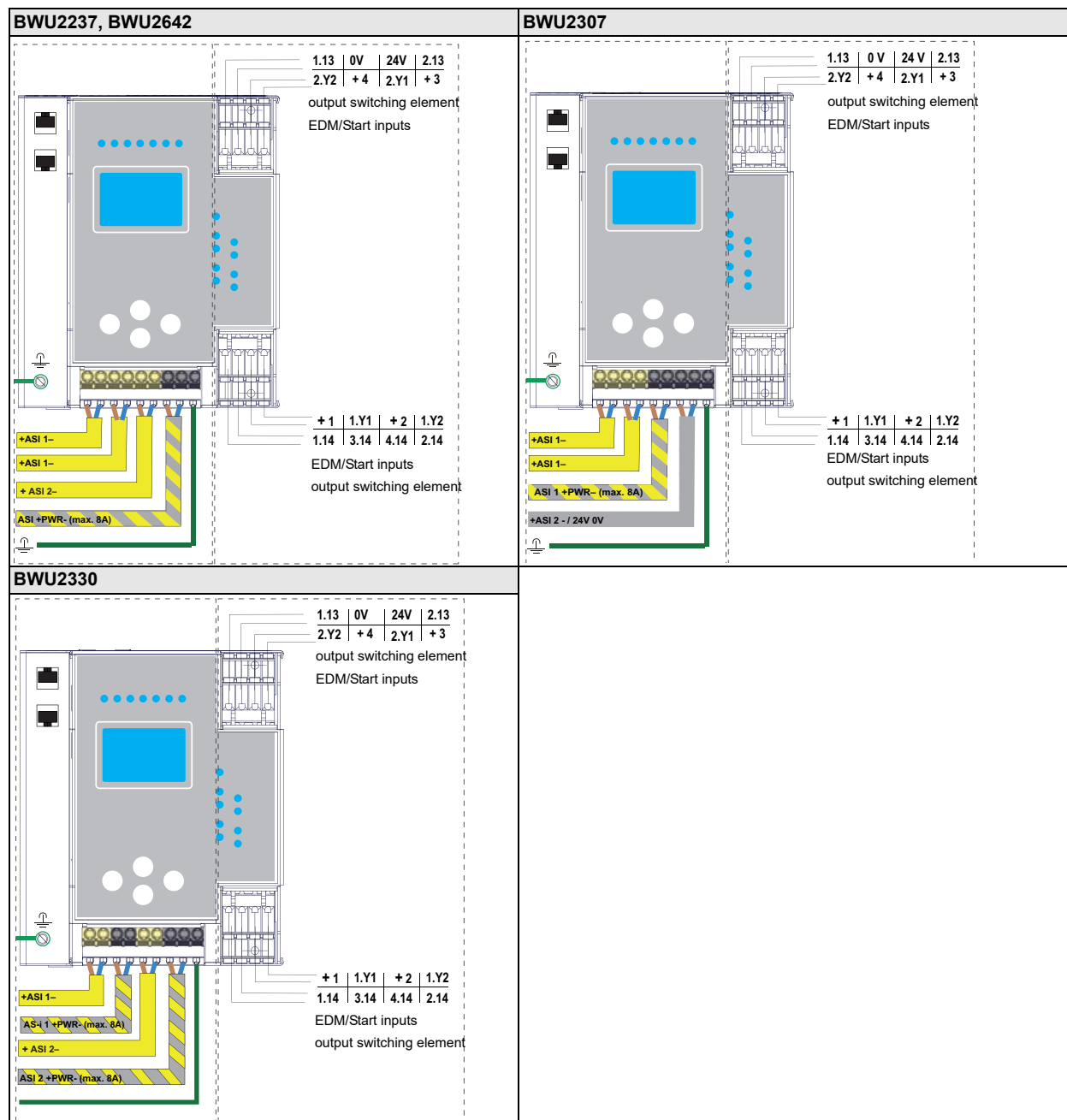
	BWU2330 / BWU2307	BWU2237
Redundant power supply out of ASi: all fundamental functions of the device remain available even in case of power failure in one of the two ASi networks	•	-
Current measurement of the ASi circuits	-	•
Self-resetting adjustable fuses	-	•
ASi earth fault monitor distinguishes between ASi cable and sensor cable	-	•
In version „1 gateway, 1 power supply for 2 ASi circuits“: only 1 gateway + 1 ASi power supply is needed for both 2 ASi circuits	-	•

Safety outputs block diagram BWU2237, BWU2307, BWU2330:



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Connections: Gateway + Safety Monitor:



Accessories:

- Safe contact expander, 1 or 2 independent channels (art. no. BWU2548 / BWU2539)
- PROFINET Master Simulator (art. no. BW3057)
- ASIMON 3 G2 and ASi Control Tools with serial cable for ASi Masters/Monitors in stainless steel (art. no. BW2071)
- ASi Power Supply 4 A (art. no. BW1649) / ASi Power Supply 8 A (art. no. BW1997)