

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

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2 / 1 ASi Master, EtherNet/IP + Modbus TCP device ⁽¹⁾

- switch integrated

up to 16 release circuits

- 4 release circuits SIL 3, cat. 4 on the Monitor
- 2 x relay + 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



(figure similar)

Applications up to category 4/PLe/SIL 3

Chip card for storage of configuration data

ASi Power24V capable

- 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) Modbus TCP from Ident.no.: 13076 (see lateral label).

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⁾	Integrated decoupling, ASi current measurement in the gateway ⁽²⁾	Diagnostic and configuration interface ⁽³⁾	Art. no.
	Safety, EtherNet/IP + Modbus TCP	max. 62 x 2 channels	4 release circuits; 2 x relay, 2 x fast electronic safe outputs	max. 16	–	2 ASi networks, 2 ASi-3 Masters	yes, max. 4 A/ASi network	Ethernet fieldbus + RS 232	BWU2267
	Safety, EtherNet/IP + Modbus TCP	max. 62 x 2 channels	4 release circuits; 2 x relay, 2 x fast electronic safe outputs	max. 16	–	2 ASi networks, 2 ASi-3 Masters	no, max. 8 A/ASi network, redundant supply	Ethernet fieldbus + RS 232	BWU2317
	Safety, EtherNet/IP + Modbus TCP	max. 62 x 2 channels	4 release circuits; 2 x relay, 2 x fast electronic safe outputs	max. 16	–	2 ASi networks, 1 ASi-3 Masters	no, max. 8 A/ASi network, redundant supply	Ethernet fieldbus + RS 232	BWU2273

(1) **Number of ASi networks, number of ASi 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. 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.

"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 with Bihl+Wiedemann software by using the Ethernet fieldbus interface or by using an adapter cable via RS 232 interface.

(EDS file for the Gateway is built into the web server)

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Article no.	BWU2267 / BWU2273 / BWU2317
Fieldbus Interface	
Type	RJ-45: EtherNet + Modbus TCP according to IEEE 802.3, switch integrated
Baud rates	10/100 MBaud
Diagnostic Interface	
Type	Ethernet + RS232
Baud rates	Full duplex (10/100 MBaud, both fieldbus ports must use the same data rate) ⁽¹⁾
ASi	
Cycle time	150 μ s * (number of ASi-3 nodes + 2)
Operating voltage	ASi voltage 30 V DC
Display	
LCD	indication of ASi addresses and error messages in plain text
LED power	power on
LED net	Ethernet network active
LED config error	configuration error
LED U ASi	ASi voltage o.k.
LED ASi active	ASi normal operation active
LED prg enable	automatic addresses programming enabled
LED prj mode	configuration mode active
LED AUX	auxiliary power
LEDs 1.Y1, 1.Y2, 2.Y1, 2.Y2 (EDM/Start)	state of inputs: LED off:open LED on:closed
LEDs K1 ... K4	state of outputs: LED off: open LED 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 • BWU2267 • BWU2273 • BWU2317 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.
Environment	
Standards	EN 60529 EN 61000-6-2 EN 61000-6-4 EN 62061, SIL 3 EN 61508, SIL 3 EN ISO 13849-1, PL _e
Operating altitude	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 to EN 61131-2
Voltage of insulation	≥ 500 V
Weight	800 g
Dimensions (W / H / D in mm)	109 / 120 96

⁽¹⁾ BWU2267 from Ident.No. ≥ 20220 full duplex (10/100 MBaud), BWU2273 from Ident.No. ≥ 20228 full duplex (10/100 MBaud), BWU2317 from Ident.No. ≥ 20215 full duplex (10/100 MBaud)

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Article no.	BWU2267 / BWU2273 / BWU2317
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 ⁽¹⁾
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 ⁽²⁾ : 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) loop resistance ≤ 150 Ω

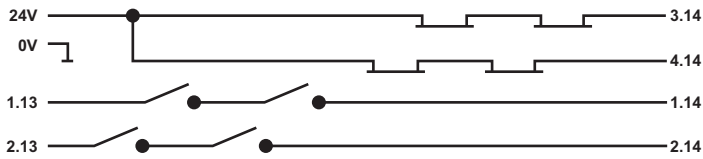
(2) Protection via external fuse, max. 4 A semi time-lag.

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	Version „1 Gateway, 1 power supply for 2 ASi circuits“, ca. 350 mA (PELV voltage)
BWU2267	-	-	•
BWU2273	•	-	-
BWU2317	-	•	-

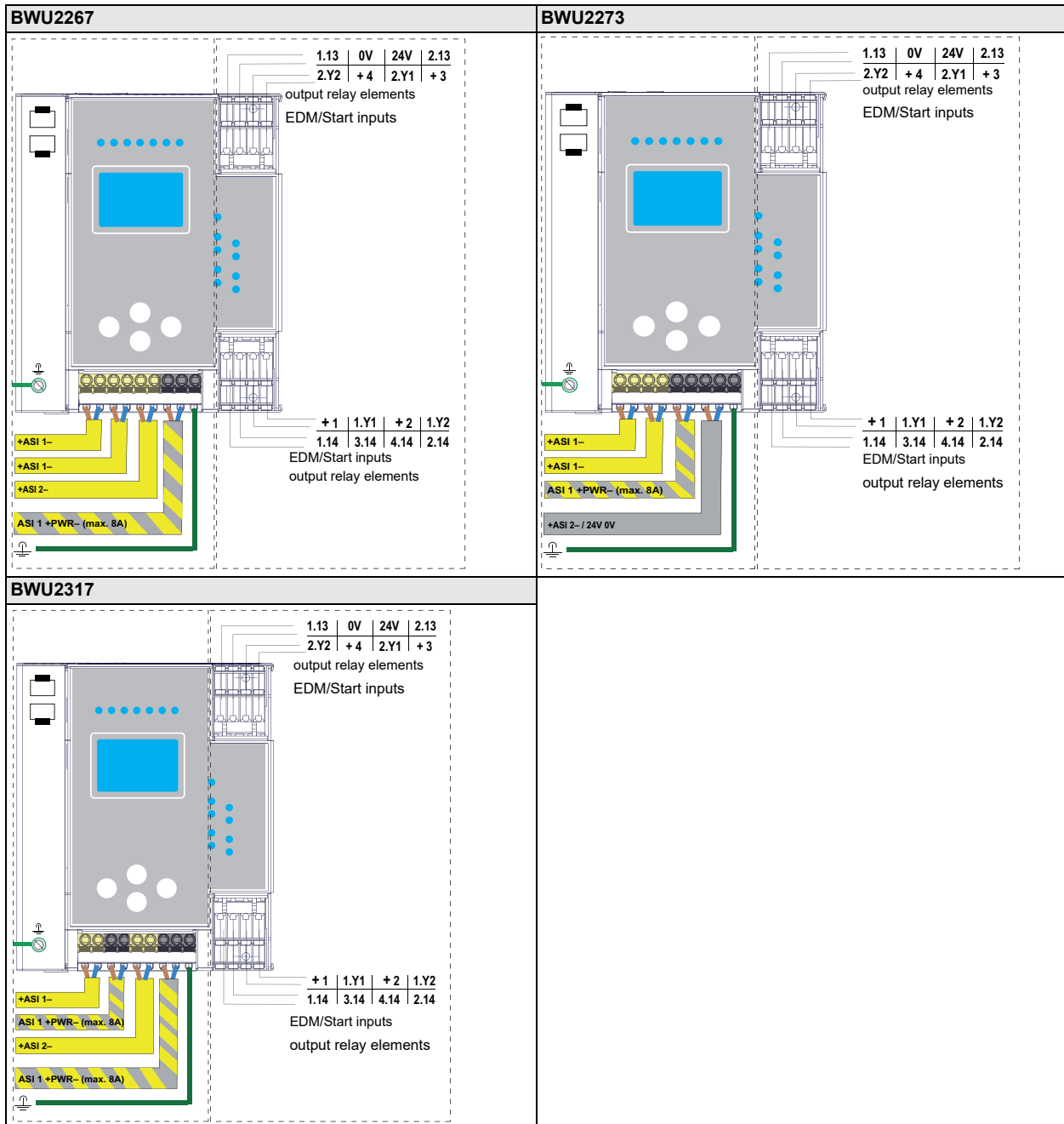
	BWU2273 / BWU2317	BWU2267
Redundant power supply out of ASi: all fundamental functions of the device remain available even in case of power failure in one of the two ASi networks	•	-
Current measurement of the ASi circuits	-	•
Self-resetting adjustable fuses	-	•
ASi earth fault monitor distinguishes 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	-	•

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Safety outputs block diagram BWU2267, BWU2273, BWU2317:



Connections: Gateway + Safety Monitor:



Accessories:

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