

# AS-i 3.0 EtherNet/IP + Modbus TCP Gateways with integrated Safety Monitor

## AS-i 3.0 EtherNet/IP + Modbus TCP-Gateways with integrated Safety Monitor

### 2 / 1 Master, EtherNet/IP + Modbus TCP Slave

- switch integrated

### 1 Safety Monitor for 2 AS-i networks

- Operation using a single Monitor configuration!  
Monitor processes safety slaves on two AS-i networks  
Coupling between the two networks superfluous

### 16 release circuits

- 4 / 2 CAT4, SIL 3 safe output circuits on the Monitor  
two sets of safe relays, two sets of fast electronic safe outputs

### Safe AS-i outputs are supported

- 16 independent AS-i outputs  
Multiple safe AS-i outputs possible via a single AS-i address

### Monitor configuration can be „arbitrarily“ large

- configuration blocks (previously 48)  
Identical reaction time due to artificial limitation to 256 configuration block

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

### Chip card for storage of configuration data



BWU2267

BWU2317



<b>Article no.</b>	<b>BWU2267 / BWU2273 / BWU2317</b>
<b>Interfaces</b>	
Ethernet interfaces	RJ-45: 10/100 MBaud EtherNet + Modbus TCP according to IEEE 802.3, switch integrated
Baudraten	10/100 MBaud
<b>AS-i cycle time</b>	
AS-i cycle time	150 µs · (number of slaves + 2)
Operating voltage	AS-i voltage 30V DC
<b>Safety monitor</b>	
Release circuits	16
Start delay	< 10 ms
Max. turn-off time	< 40 ms
Inputs: 4 x EDM/Start	EDM: inputs to monitor external devices Start: Start inputs switching current statical 4mA at 24V, dynamic 30mA at 24V (T=100 µs)
Outputs: 4 x output switching elements	relay outputs (output circuits 1 and 2) max. contact load: 3A AC-15 at 30V, 3A DC-13 at 30V semiconductor outputs (output circuits 3 and 4) max. contact load: 0,5A DC-13 at 30V
Card slot	chip card for storage of configuration data
<b>Display</b>	
LCD	indication of slave addresses and error messages in plaintext
LED power	power on
LED net	Ethernet network active
LED config error	configuration error
LED U AS-i	AS-i voltage o.k.
LED AS-i active	AS-i normal operation active
LED prg enable	automatic addresses programming enabled

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LED prj mode	configuration mode active
LED AUX	auxiliary power
4 x LED EDM/Start	state of inputs: LED off: open LED on: closed
4 x LED output circuit	state of outputs: LED off: open LED on: closed
<b>UL-specifications (UL508)</b>	
External protection	an isolated source with a secondary open circuit voltage of $\leq 30V_{DC}$ with a 3A 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.
cTUVus	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.
Standards	EN 61 000-6-2 EN 61 000-6-4 EN 62 061:2005, SIL 3 EN 61 508:2001, SIL 3 EN ISO 13 849-1:2008, performance-level e
<b>Environment</b>	
Housing	stainless steel
Ambient operating temperature	0°C ... +55°C
Storage temperature	-25°C ... +85°C
Protection category IEC 60 529	IP20
Maximum tolerable shock and vibration stress	according to EN 61 131-2
Voltage of insulation	$\geq 500V$
Dimensions (W / H / D in mm)	100 / 120 / 96
Weight	800 g

<b>Article No.</b>	<b>BWU2267</b>	<b>BWU2273</b>	<b>BWU2317</b>
Modbus TCP			
Modbus TCP from ident. no. ' (see lateral label)	13077	13078	13076

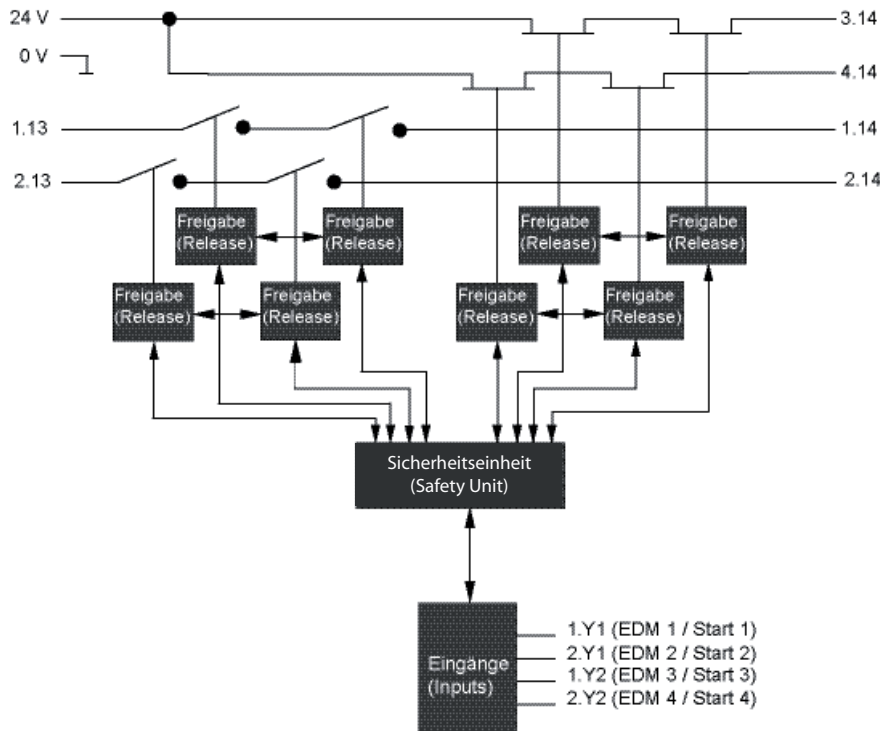
Article No.	Diagnostics interface	AS-i Safety outputs are supported	Number of AS-i circuits Safety Monitor	Max. number of release circuits	Number of release circuits in device	Configuration blocks	Number of AS-i masters
<b>BWU2267</b>	RS 232	yes	2	16	4 release circuits SIL 3, cat. 4 in device; 2 x relays, 2 x fast electronic safe outputs	256 Devices	2 AS-i Masters with integrated power supply decoupling
<b>BWU2273</b>	RS 232	yes	2	16	4 release circuits SIL 3, cat. 4 in device; 2 x relays, 2 x fast electronic safe outputs	256 Devices	1 AS-i Master
<b>BWU2317</b>	RS 232	yes	2	16	4 release circuits SIL 3, cat. 4 in device; 2 x relays, 2 x fast electronic safe outputs	256 Devices	2 AS-i Masters

# AS-i 3.0 EtherNet/IP + Modbus TCP Gateways with integrated Safety Monitor

Article No.	Operating current	
	master power supply, approx 300mA out of AS-i network	master power supply, max. 300mA out of AS-i circuit 1 (approx. 70mA ... 300mA), max. 300mA out of AS-i circuit 2 (approx. 70mA ... 300mA); in sum max. 370mA
BWU2267	•	–
BWU2273	–	•
BWU2317	–	•

Article No.	Full functional range of EtherNet/IP gateways (without AS-i Safety)		
	BWU2379	BWU2380	BWU2381
BWU2267	–	–	•
BWU2273	•	–	–
BWU2317	–	•	–

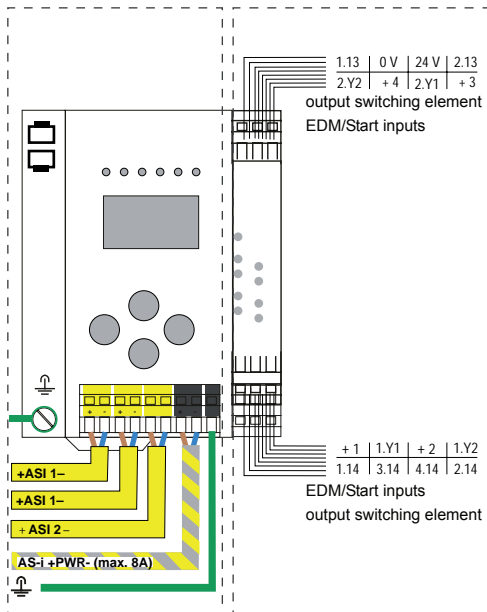
## Safety Monitor block diagrams



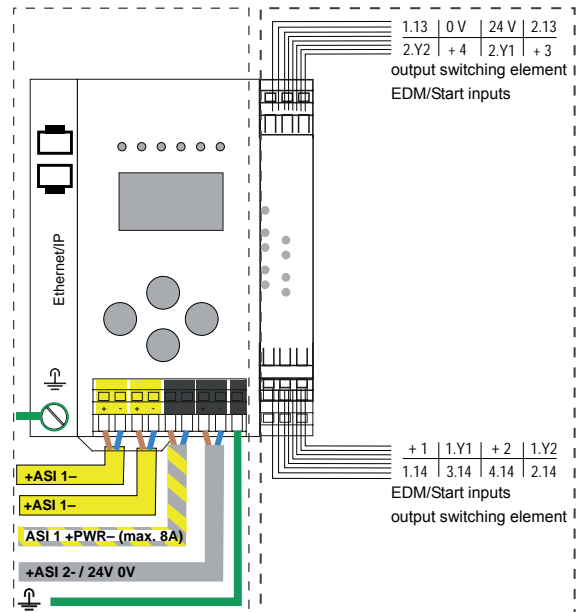
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## Connections: Gateway + Safety Monitor

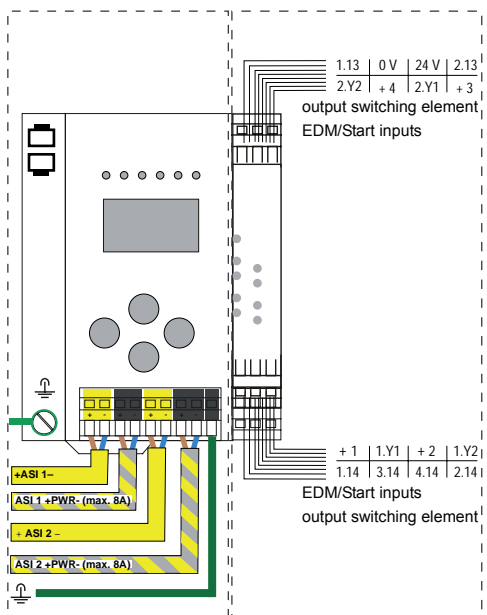
**BWU2267**



**BWU2273**



**BWU2317**



## Accessories:

- Safe contact expander, 2 independent channels (art. no. BWU2539)
- ASIMON 3 G2 and AS-i Control Tools with serial cable for AS-i Masters/Monitors in stainless steel (art. no. BW2071)
- AS-i Power Supply 4A (art. nr. BW1649) / AS-i Power Supply 8A (art. nr. BW1997)