

AS-i 3.0 PROFIBUS Gateways with integrated Safety Monitor

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2 / 1 Master, PROFIBUS Slave

1 AS-i 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 up to 32 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 resp.,
two sets of safe relays

Safe AS-i outputs are supported

- 16 up to 32 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



BWU2202 / BWU2204 /
BWU2206 / BWU2602



BWU2001 / BWU2002 /
BWU2003 / BWU2004 /
BWU2187 / BWU2188



Article no.	BWU2001 / BWU2002 / BWU2003 / BWU2004 / BWU2187 / BWU2188 / BWU2202 / BWU2204 / BWU2206 / BWU2602
Interface	
PROFIBUS interface	IE 61 158 / IEC 61 784-1
Baud rates	9,6 Kbaud up to 12 000 Kbaud, automatic recognition
DP functions	imaging of the AS-i slaves as I/O data of the PROFIBUS complete diagnosis and configuration via the PROFIBUS DP
AS-i	
AS-i cycle time	150 µs · (number of slaves + 2)
Operating voltage	AS-i voltage 30V DC
Safety monitor	
Inputs	EDM inputs of external monitoring circuits or start inputs selectable, a total of 4 switching current statical 4mA at 24V, dynamic 30mA at 24V (T=100 µs)
Release circuits	16
Start delay	< 10 ms
Max. turn-off time	< 40 ms
Card slot	chip card for storage of configuration data
Display	
LCD	menu, indication of slave addresses and error messages in plaintext
LED power	power ON
LED PROFIBUS	PROFIBUS master recognized
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
LED prj mode	configuration mode active

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UL-specifications (UL508)	
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.
cTÜV _{us}	the devices <ul style="list-style-type: none"> • BWU2001 • BWU2002 • BWU2003 • BWU2004 • BWU2187 • BWU2188 • BWU2202 • BWU2204 • BWU2206 • BWU2602 <p>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.</p>
Standards	EN 61 000-6-2 EN 61 000-6-4 EN 62 061:2005, SIL 3 EN 61 508:2001:2001, SIL 3 EN ISO 13 849-1:2008, performance-level e
Environment	
Operating temperature	0°C ... +55°C
Storage temperature	-25°C ... +85°C
Housing	stainless steel
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)	120 / 100 / 96
Weight	800 g

Article No.	BWU2001 / BWU2002 / BWU2003 / BWU2004 / BWU2202 / BWU2204 / BWU2602	BWU2187 / BWU2188 / BWU2206
Safety monitor		
Number of release circuits in device	4	2
Outputs	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	relay outputs (output circuits 1 and 2), each 2 current paths max. contact load: 3A AC-15 at 30V, 3A DC-13 at 30V
Display		
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	–

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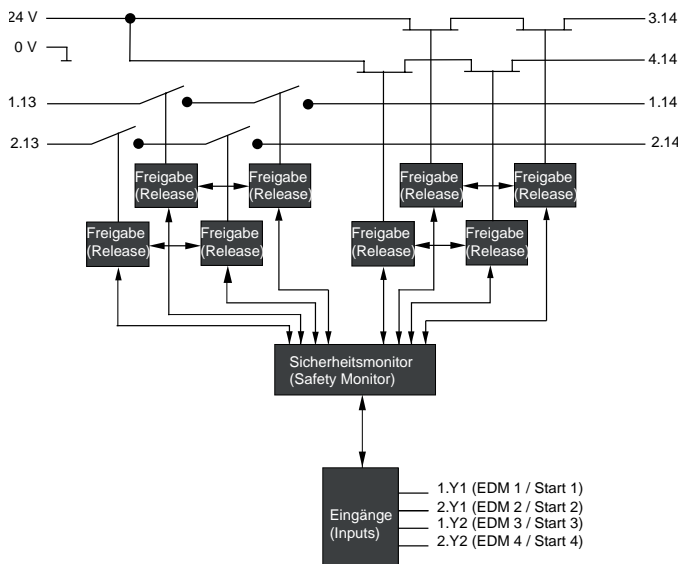
Article No.	Diagnostics interface	AS-i Safety outputs are supported	Number of AS-i circuits Safety Monitor	Max. number of release circuits	Number of release circuits in device	Configuration blocks	Number of AS-i masters
BWU2001	serial	yes	2	16	4 release circuits SIL 3, cat. 4 in device; 2 x relays, 2 x fast electronic safe outputs	256 Devices	2 AS-i Master
BWU2002	serial	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 Master with integrated power supply decoupling
BWU2003	serial	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
BWU2004	serial	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 with integrated power supply decoupling
BWU2187	serial	yes	2	16	2 release circuits SIL 3, cat. 4 in device; 2 x relays	256 Devices	1 AS-i Master
BWU2188	serial	yes	2	16	2 release circuits SIL 3, cat. 4 in device; 2 x relays	256 Devices	1 AS-i Master with integrated power supply decoupling
BWU2202	Ethernet	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 Master with integrated power supply decoupling
BWU2204	Ethernet	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 with integrated power supply decoupling
BWU2206	Ethernet	yes	2	16	2 release circuits SIL 3, cat. 4 in device; 2 x relays	256 Devices	1 AS-i Master with integrated power supply decoupling
BWU2602	Ethernet safe cross communication	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 Master with integrated power supply decoupling

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	Version „1 gateway, 1 power supply, for 2 AS-i networks“, approx. 300mA (PELV voltage)
BWU2001	–	●	–
BWU2002	–	–	●
BWU2003	●	–	–
BWU2004	–	●	–
BWU2187	●	–	–
BWU2188	–	●	–
BWU2202	–	–	●
BWU2204	–	●	–
BWU2206	–	●	–
BWU2602	–	–	●

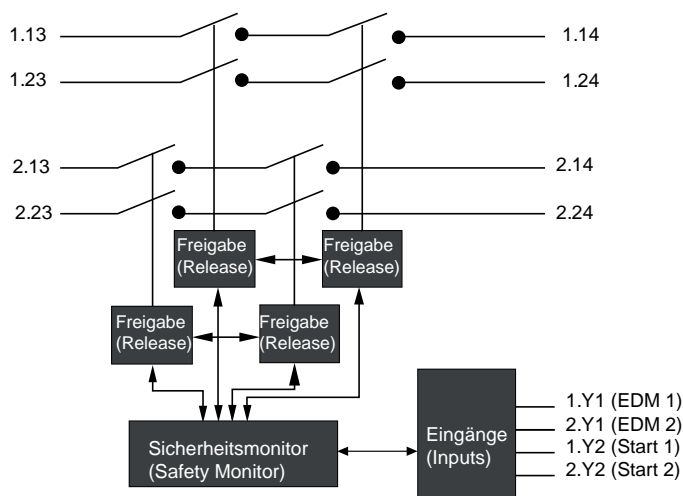
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Article no.	Full functional range of PROFIBUS gateways (without AS-i Safety)				
	BWU1567	BWU1568	BWU1569	BWU1777	BWU1891
BWU2001	–	•	–	–	–
BWU2002	–	–	•	•	–
BWU2003	•	–	–	–	–
BWU2004	–	–	–	–	•
BWU2187	•	–	–	–	–
BWU2188	–	–	–	–	•
BWU2202	–	–	•	•	–
BWU2204	–	–	–	–	•
BWU2206	–	–	–	–	•
BWU2602	–	–	•	•	–

Safety Monitor block diagram BWU2001, BWU2002, BWU2003, BWU2004, BWU2202, BWU2204, BWU2602



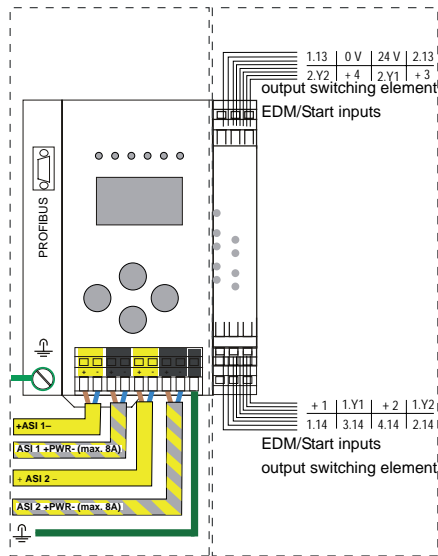
Safety Monitor block diagram BWU2187, BWU2188, BWU2206



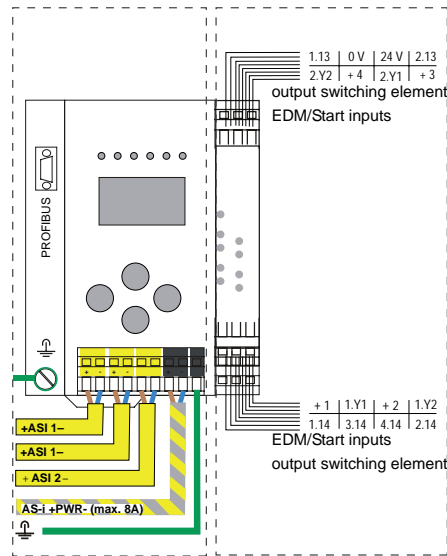
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Connections: Gateway + Safety Monitor

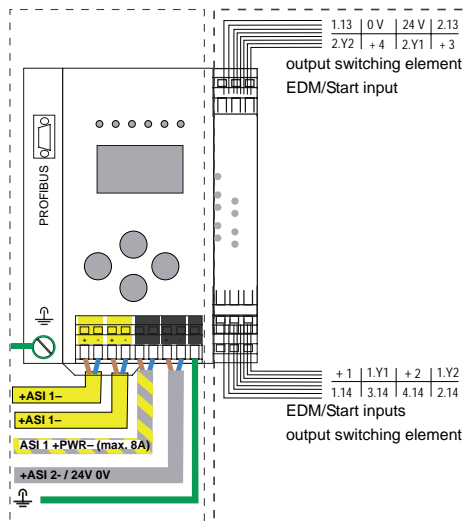
BWU2001



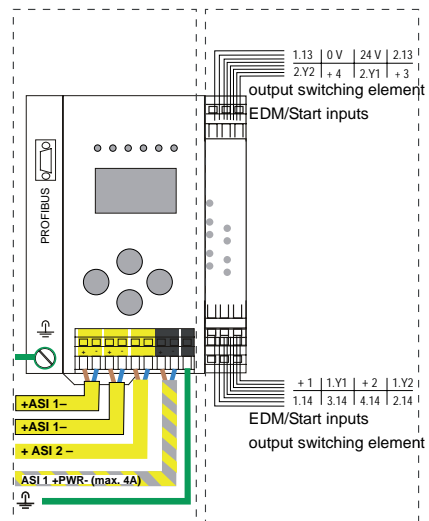
BWU2002, BWU2202, BWU2602



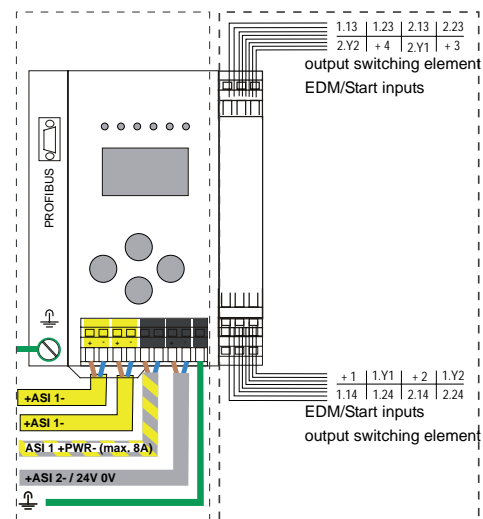
BWU2003



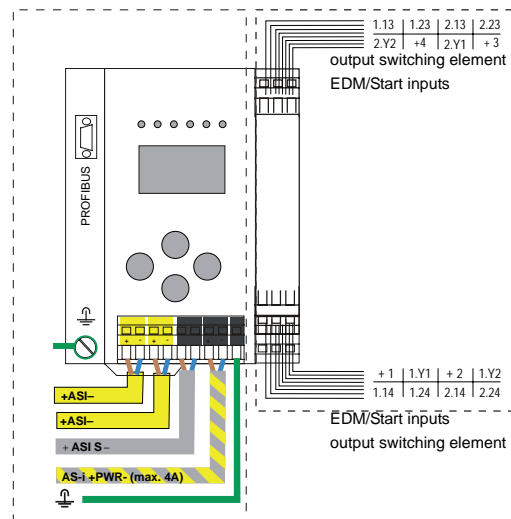
BWU2004, BWU2204



BWU2187



BWU2188, BWU2206



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THE AS-INTERFACE MASTERS

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)
- PROFIBUS DP Master Simulator (art. no. BW1257)
- AS-i Power Supply 4A (art. nr. BW1649) / AS-i Power Supply 8A (art. nr. BW1997)

For devices with Ethernet diagnostics interface:

- Software ASIMON 3 G2 and AS-i Control Tools (art. no. BW2501)