

ASi-3 PROFINET-Gateways with integrated Safety Monitor

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2 ASi Master, 1 PROFINET device

Up to 32 release circuits

- up to 6 safe output circuits on the Monitor safe relays or electronic safe outputs
- up to 32 independent ASi outputs
Multiple safe ASi outputs possible via a single ASi address



BWU2633



BWU2634, BWU3275

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

Safe Link via PROFINET fieldbus interface

Applications up to category 4/PLe/SIL 3

Chip card for storage of configuration data



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⁾	Power-Boost ⁽⁴⁾	Article No.
	Safety, PROFINET	max. 62 x 2 channels, max. 1922 in max. configuration	6 release circuits; 6 x electronic safe outputs	max. 32, max. 992 in max. configuration	Safe Link	2 ASi networks, 2 ASi Masters	yes, max. 4 A/ ASi network	Ethernet fieldbus + RS 232	yes	BWU3274
	Safety, PROFINET	max. 62 x 2 channels, max. 1922 in max. configuration	6 release circuits; 6 x electronic safe outputs	max. 32, max. 992 in max. configuration	Safe Link	2 ASi networks, 2 ASi Masters	yes, max. 4 A/ ASi network	Ethernet fieldbus + RS 232	no	BWU2634
	Safety, PROFINET	max. 62 x 2 channels, max. 1922 in max. configuration	—	max. 32, max. 992 in max. configuration	Safe Link	2 ASi networks, 2 ASi Masters	yes, max. 4 A/ ASi network	Ethernet fieldbus + RS 232	no	BWU2633

(1) **Number of ASi networks, number of ASi Master**
"Double Master": 2 ASi networks, 2 ASi Masters.

(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).

(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.

The latest version of the device description file of the gateway is available in the "Downloads" section of the respective device.

(4) Ruggedized power supply for stable supply of load-dependent currents on ASi.

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Article no.	BWU2634 / BWU3274	BWU2633
Interfaces		
PROFINET interface	2 x RJ-45, integrated 2-Port-Switch, IRT capability	
Conformance Class	B	
Baud rates	10/100 Mbaud	
Function	PROFINET IO Device Media Redundancy Protocol (MRP) Shared Device	
Diagnostic and configuration interface	PROFINET fieldbus interface + RS232	
Card slot	Chip card for storage of configuration data	
AUX		
Operating voltage	24 V _{DC} (19,2 ... 28,8 V)	—
Max current consumption	7,2 A	—
ASi		
ASi specification	3.0	
Cycle time	150 µs * (number of slaves + 2)	
Operating voltage	30 V _{DC} (20 ... 31,6 V) (PELV voltage)	
ASi Power24V capability ⁽¹⁾	yes	
Display		
LCD	indication of slave addresses and error messages in plain text	
LED power (green)	power on	
LED PROFINET (green)	green: PROFINET communication active red: PROFINET communication not active	
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 (green)	auxiliary power	—
LEDs SI1 ... SIn (green)	state of inputs: off: open on: closed	—
LEDs SO1 ... SOn (green)	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.	
Applied standards	EN60529 EN 61 000-6-2 EN 61 000-6-4 EN 62 061:2005, SIL 3 EN 61 508:2010, SIL 3 EN ISO 13 849-1:2008, Performance-Level e	
Ambient		
Ambient temperature	0 °C ... +55 °C	
Storage temperature	-25 °C ... +85 °C	
Operating altitude	max. 5000 m	
Housing	stainless steel, for DIN-rail mounting	
Protection category	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	86 / 120 / 96

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(1) ASi Power24V

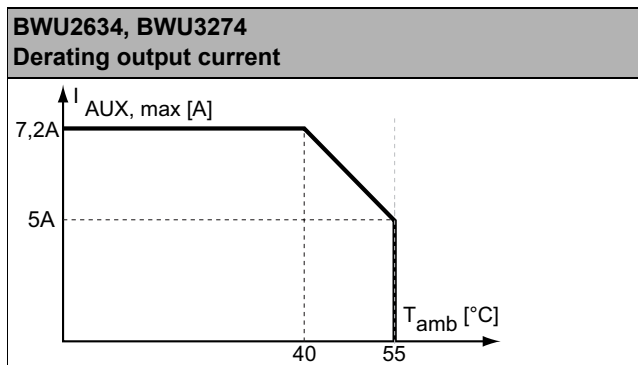
The device can be operated directly on a 24 V (PELV) power supply. The gateway has been optimized with integrated data coupling coils and adjustable self-resetting fuses for safe use of powerful 24 V power supplies.

Article no.	BWU2634 / BWU3274	BWU2633
Safety Monitor		
Start delay	< 10 ms	
Max. turn-off time	< 40 ms	
Connection		
Connection	COMBICON	
Length of connector cable	unlimited ⁽¹⁾	—
Input		
Inputs Safety, SIL3, cat. 4	3 x 2 channels ⁽²⁾	—
Inputs digital, EDM	up to 6 standard inputs ⁽²⁾	—
Switching current	statical 4 mA at 24 V, dynamic 15 mA at 24 V (T = 100 µs)	—
Power supply	out of AUX	
Output		
Number of release circuits in device	6	—
Outputs	semiconductor output max. contact load: 1,2 A _{DC-13} at 30 V, Σ = 7,2 A in sum ⁽³⁾	—
Power supply (semiconductor outputs)	out of AUX	
Test pulse (semiconductor outputs)	if output is on: minimum interval between 2 test pulses: 250 ms; maximum pulse width 1 ms	—

(1) loop resistance ≤ 150 Ω

(2) see "Variations of terminal connection BWU2634, BWU3274"

(3)

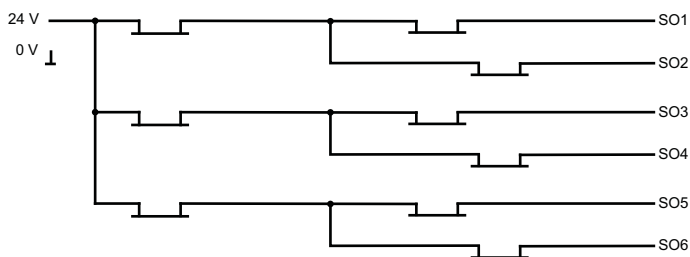


Article No.	Operating current		
	master power supply, approx 300mA out of ASi network	master power supply, max. 300mA out of ASi circuit 1 (approx. 70mA ... 300mA), max. 300mA out of ASi circuit 2 (approx. 70mA ... 300mA); in sum max. 370mA	Version „1 Gateway, 1 Power supply, for 2 ASi Networks“, approx. 300mA (PELV voltage)
BWU2633	—	—	•
BWU2634	—	—	•
BWU3274	—	—	•

ASi-3 PROFINET-Gateways with integrated Safety Monitor

	BWU2634 / BWU2633 / BWU3274
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 Networks“: only 1 Gateway + 1 ASi power supply for 2 ASi networks required	•

Block diagram of semiconductor outputs BWU2634, BWU3274



Variations of terminal connection BWU2634, BWU3274

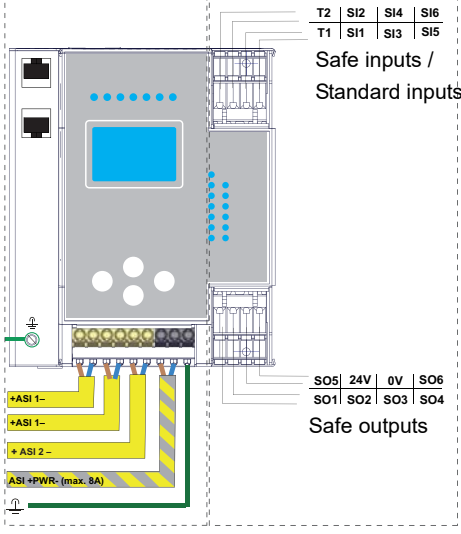
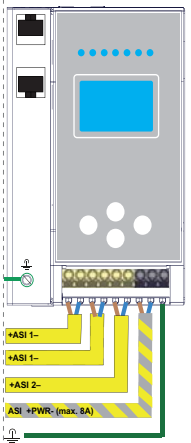
Terminal	Safe output	Safe input for mechanical contacts in combination with T1, T2 ⁽¹⁾	Safe antivalent input ⁽¹⁾	Safe electronic input ⁽¹⁾	Standard input ⁽¹⁾
S1,2	–	•	•	•	•
S3,4	–	•	•	•	•
S5,6	–	•	•	•	•
SO1,2 ⁽²⁾	•	•	•	–	•
SO3,4 ⁽²⁾	•	•	•	–	•
SO5,6 ⁽²⁾	•	•	•	–	•

⁽¹⁾ Inputs may only be supplied by the same 24 V source as the device itself.

⁽²⁾ If outputs are configured as inputs, the input current has to be limited by an external element at ≤ 100 mA

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Connections: Gateway + Safety Monitor

BWU2634, BWU3274	Terminals	Description
 <p>Safe inputs / Standard inputs</p> <p>Safe outputs</p> <p>+ASI 1- +ASI 1- +ASI 2- +ASI +PWR- (max. 8A)</p>	SI1, SI3, SI5	safe input terminals (T1)
	SI2, SI4, SI6	safe input terminals (T2)
	T1	clock output 1
	T2	clock output 2
	SO1 ... SO6	safe semiconductor outputs1 ... 6
	24V, 0V	power supply for local I/Os
	+ASI 1-, +ASI 2-	connection of ASi networks
	ASI +PWR-	power supply for Gateway and ASi networks
	 <p>+ASI 1- +ASI 1- +ASI 2- +ASI +PWR- (max. 8A)</p>	

Accessories:

- Safe contact expander, 1 or 2 independent channels (art. no. BWU2548 / BWU2539)
- PROFINET Master Simulator (art. no. BW3057)
- Bihl+Wiedemann Suite - Safety Software for Configuration, Diagnostics and Programming (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)