ASi-5/ASi-3 PROFIsafe via PROFINET Gateway with integrated Safety Monitor

Bihl +Wiedemann

ASi-5 – Great data bandwidth, short cycle times

Compatible with all ASi generations

PROFIsafe and Safe Link in one device

1 ASi-5/ASi-3 Master, PROFINET device
- ASi Safety input nodes report via PROFIsafe
- ASi Safety output nodes switch via PROFIsafe

Safe ASi outputs are supported
- up to 64 independent ASi outputs
  Multiple safe ASi outputs possible via a single ASi address

OPC UA interface and REST API for IIoT applications

Integrated web server for simple diagnostics and maintenance

Selection of Mode of Safe Operation

Applications up to category 4/PLe/SIL 3

Chip card for storage of configuration data

(Figure similar)

Figure	Fieldbus Interface [1]	Safety communication	Inputs Safety, SIL 3, cat. 4	Outputs Safety, SIL 3, cat. 4	ASi-5/ASi-3	ASi Safety	Number of ASi networks, number of ASi Master [2]	Integrated decoupling, ASi current measurement in the gateway [3]	Diagnostic and configuration interface [4]	Article No.
	PROFINET, OPC UA	PROFIsafe (F-CPU) + Safe Link	–	–	ASi-5 + ASi-3 compatible	ASi-3 Safety compatible	1 ASi network, 1 ASi-5/ASi-3 master	yes, max. 4A/ ASi network	Ethernet fieldbus; Ethernet diagnostics	**BWU4018**

[1] **Fieldbus interface**
Communication interface between fieldbus and gateway: interfaces for standardized fieldbus systems in industrial automation.
OPC UA server: interface for the OPC UA communication.

[2] **Number of ASi networks, number of ASi Master**
"Single Master": 1 ASi network, 1 ASi-5/ASi-3 Master.

[3] **Integrated decoupling, ASi current measurement in the gateway**
"yes, max. 4A/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.

[4] **Diagnostic and configuration interface**
"Ethernet fieldbus + Ethernet diagnostic": Access to ASi master and safety monitor via Bihl+Wiedemann proprietary software over Ethernet diagnostics interface or Ethernet fieldbus interface.

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

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Article no.	BWU4018
Fieldbus interface	
Type	PROFINET; 2 x RJ-45,integrated 2-Port-Switch, IRT capability Conformance Class B, integrated switch complies with Conformance Class C (IRT capability)
Baud rates	10/100 MBaud
Safety communication	PROFIsafe via PROFINET + Safe Link
IT interface	OPC UA server, web server, REST API
Function	PROFINET IO Device Media Redundancy Protocol (MRP) Shared Device
Card slot	chip card (BW4055) for storage of configuration data
Diagnostic interface	
Type	Ethernet; RJ-45 according to IEEE 802.3
Baud rate	10/100 MBaud half-duplex or full-duplex
Safety communication	Safe Link
IT interface	OPC UA server + web server
ASi	
ASi specification	ASi-5 + ASi-3
Cycle time	**Cycle time ASi-5 (constant):** 1,27 ms for 384 bits input data + 384 bits output data
	Cycle time ASi-3 (variable): 150 µs * (number of ASi-3 nodes + 2)
ASi Safety	ASi-3 Safety compatible
Operating voltage	30 V_{DC} (20 ... 31,6 V) (PELV voltage)
Operating current	ca. 300 mA
Current per ASi circuit	4 A/ASi circuit
ASi Power24V capability [1]	yes
Length of ASi cable	with 24 V power supply: max. 50 m with 30 V power supply: max. 100 m with ASi-3 / max. 200 m with ASi-5
AUX	
Operating voltage	–
Max current consumption	–
Display	
LCD	indication of ASi addresses and error messages in plain text
LED PROFINET (green / red)	green: PROFINET communication active red: no PROFINET communication
LED power (green)	power on
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 node address programming enabled
LED prj mode (yellow)	configuration mode active
LED AUX (green)	-
UL-specifications (UL508)	
External protection	External protection: An isolated voltage source with a PELV/SELV voltage ≤30 V_{DC} must have internal or external current limiting.
In general	UL mark does not provide UL certification for any functional safety rating or aspects of the above devices.

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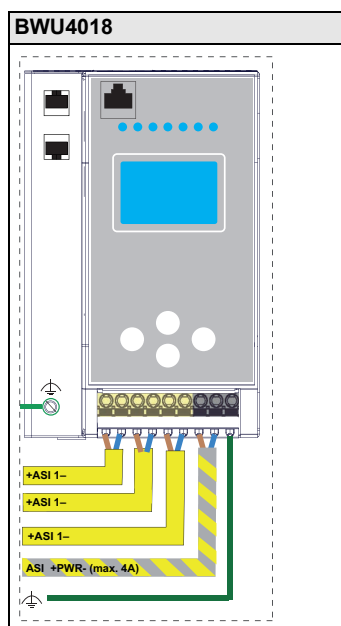
Article no.	BWU4018
Environment	
Applied standards	EN 62026-2 EN 60529 EN 61000-6-2 EN 61000-6-4 EN 62061, SIL 3 EN 61508, SIL 3 EN ISO 13849-1, Performance-Level e EN ISO 13849-2
Operating altitude	max. 2000 m
Ambient temperature	-25 °C … +55 °C (no condensation permitted)
Storage temperature	-25 °C … +85 °C
Housing	stainless steel, for DIN rail mounting
Pollution degree	2
Protection category	IP20
Tolerable loading reffering to humidity	according EN 61131-2
Maximum tolerable shock and vibration stress	according EN 61131-2
Voltage of insulation	≥ 500 V
Weight	800 g
Dimensions (W / H / D in mm)	85 / 120 / 106

[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.

	BWU4018
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**	●

Connections: Gateway + Safety Monitor:

BWU4018

+ASI 1−
+ASI 1−
+ASI 1−
ASI +PWR- (max. 4A)

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Accessories:

- **Chip card, memory capacity 512 kB (art. no. BW4055)**

- **Bihl+Wiedemann Safety Suite - Safety Software for Configuration, Diagnostics and Commissioning (art. no. BW2916)**

- **Spannungsversorgung, z.B.: 30 V Netzteil, 4 A, 1-phasig (Art.-Nr. BW4218), 30 V Netzteil, 8 A, 1-phasig (Art.-Nr. BW4219), 30 V Netzteil, 8 A, 3-phasig (Art.-Nr. BW4220), 30 V Netzteil, 16 A, 1-phasig (Art.-Nr. BW4221), 30 V Netzteil, 16 A, 3-phasig (Art-Nr. BW4222) (weitere Netzteile finden Sie unter _www.bihl-wiedemann.de/de/produkte/zubehoer/spannungsversorgungen_)**

- **PROFINET Master Simulator (art. no. BW4754, BW4755)**