

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

**ASi-5 – Great data bandwidth, short cycle times**

**Compatible with all ASi generations**

**PROFIsafe and Safe Link in one device**

**2 ASi-5/ASi-3 Master, PROFINET device**

- ASi Safety input nodes report via PROFIsafe
- ASi Safety output nodes switch via PROFIsafe

**Up to 64 release circuits**

- up to 6 safe output circuits CAT4, SIL 3 on the Monitor safe relays or electronic safe outputs

**Safe ASi outputs are supported**

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

**OPC UA server and integrated web server for simplified diagnostics**

**Safe speed and standstill monitoring**


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

**Chip card for storage of configuration data**



(Figure similar)



Figure	Type	Inputs Safety, SIL 3, cat. 4	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 <sup>(1)</sup>	1 power supply, 1 gateway for 2 ASi networks, inexpensive power supplies <sup>(2)</sup>	Diagnostic and configuration interface <sup>(3)</sup>	Article No.
	PROFIsafe, PROFINET, ASi-5 / ASi-3	3 x 2 channels	max. 62 x 2 channels, 1922 in max. configuration	6 release circuits; 6 x electronic safe outputs	max. 64, 1984 in max. configuration	PROFIsafe (F-CPU) + ASIMON program + Safe Link	2 ASi networks, 2 ASi-5/ASi-3 masters	yes, max. 4A/ASi network	Ethernet fieldbus; Ethernet diagnostics	<b>BWU3674</b>

<sup>(1)</sup> **Number of ASi networks, number of ASi Master**

"Single Master": 1 ASi network, 1 ASi Master.

"Double Master": 2 ASi networks, 2 ASi Masters.

"Optional ASi Safety coupling circuit": 2 ASi networks, 1 ASi Master.

<sup>(2)</sup> **1 power supply, 1 gateway for 2 ASi networks, inexpensive power supplies**

"yes, max. 4A/ASi network": Cost-effective power for 2 ASi networks with 1 power supply.

<sup>(3)</sup> **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.

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

<b>Article no.</b>	<b>BWU3674</b>
<b>Interface</b>	
Type	PROFINET Conformance Class B. integrated switch complies with Conformance Class C (IRT capability) 2 x RJ-45,integrated 2-Port-Switch IRT capability
Baud rates	10/100 MBaud
Safety communication	PROFIsafe via PROFINET + Safe Link
OPC UA interface	OPC UA server + web server
Function	PROFINET IO Device Media Redundancy Protocol (MRP) Shared Device
Card slot	chip card (512 kB) for storage of configuration data
<b>Ethernet interface</b>	
Type	Ethernet; RJ-45 according IEEE 802.3
Baud rate	10/100 MBaud half-duplex or full-duplex
Safety communication	Safe Link
OPC UA interface	OPC UA server + web server
<b>ASi</b>	
ASi specification	ASi-3 + ASi-5
Cycle time	<b>Cycle time ASi-3 (variable):</b> 150 $\mu$ s * (number of ASi-3 nodes + 2) <b>Cycle time ASi-5 (constant):</b> 1,27 ms for 384 bits input data + 384 bits output data
Operating voltage	30 V <sub>DC</sub> (20 ... 31,6 V) (PELV voltage)
Operating current	300 mA
ASi Power24V capability <sup>(1)</sup>	yes
<b>AUX</b>	
Operating voltage	24 V <sub>DC</sub> (19,2 ...28,8 V)
Max current consumption	7,2 A
<b>Display</b>	
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 address programming enabled
LED prj mode (yellow)	configuration mode active
LED AUX (green)	ASi power on and auxiliary power on
LEDs SI1 ... SI6 (yellow)	state of inputs: off: open on: close
LEDs SO1 ... SO6 (yellow)	state of outputs: off: open on: close
<b>UL-specifications (UL508)</b>	
External protection	An isolated source with a secondary open circuit voltage of $\leq 30$ V <sub>DC</sub> 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.

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

<b>Article no.</b>	<b>BWU3674</b>
<b>Environment</b>	
Applied standards	EN 62026-2 EN 60529 EN 61000-6-2 EN 61000-6-4 EN 61131-2 EN 61326-3-1 EN 50581 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
Maximum tolerable shock and vibration stress	according EN 61131-2
Tolerable loading referring to humidity	according EN 61131-2
Voltage of insulation	≥ 500 V
Weight	800 g
Dimensions (W / H / D in mm)	109 / 120 / 106

**(1) ASi Power24V**

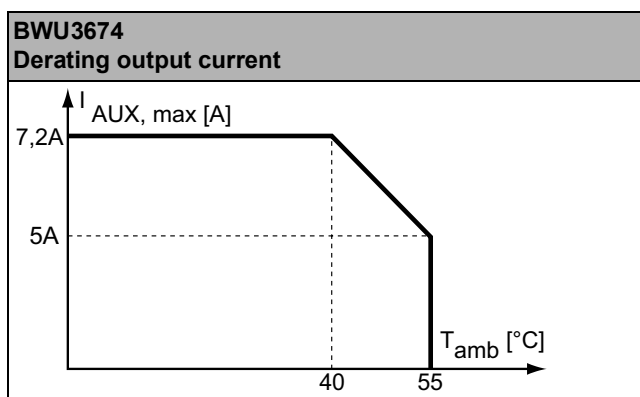
The device can be operated directly on a 24 V (PELV) power supply. The gateway has been optimized with integrated data coupling coils and adjustable self-resetting fuses for safe use of powerful 24 V power supplies.

<b>Article no.</b>	<b>BWU3674</b>
<b>Safety monitor</b>	
Start delay	< 10 s
Max. turn-off time	< 40 s
Antivalent switches for local inputs	yes
Standstill monitors for local inputs	6 axes up to 50 Hz <sup>(1)</sup>
Speed monitors for local inputs	3 to 6 axes up to 400 Hz <sup>(2)</sup>
Selection of Mode of Safe Operation	yes
<b>Connection</b>	
Connection	COMBICON
Length of connector cable	unlimited <sup>(3)</sup>
<b>Input</b>	
Inputs Safety	3 x 2 channels <sup>(4)</sup>
Inputs digital, EDM	up to 6 standard inputs <sup>(4)</sup>
Switching current	15 mA (T = 100 µs), continuously 4 mA at 24 V
Power supply	out of AUX

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

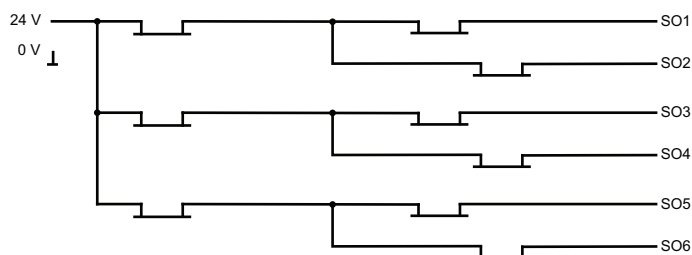
<b>Article no.</b>	<b>BWU3674</b>
<b>Output</b>	
Number of release circuits on the monitor	6
Outputs	semiconductor output max. contact load: 1,2 A <sub>DC-13</sub> at 30 V, $\Sigma = 7,2$ A in sum <sup>(5)</sup>
Power supply (semiconductor outputs)	out of AUX
Test pulse (semiconductor outputs)	if output is on: minimum interval between 2 test pulses: 250 ms; maximum pulse width 1 ms

- (1) connection at all SI or SO terminals possible.  
 (2) connection only at terminals SO1 ... SO6 configured as standard inputs (see "Variations of terminal configuration for BWU3674")  
 (3) loop resistance  $\leq 150 \Omega$   
 (4) see "Variations of terminal configuration for BWU3674"  
 (5)



	<b>BWU3674</b>
<b>Redundant power supply out of ASi:</b> all fundamental functions of the device remain available even in case of power failure in one of the two ASi networks	-
<b>Current measurement of the ASi circuits</b>	•
<b>Self-resetting adjustable fuses</b>	•
<b>ASi earth fault monitor distinguishes between ASi cable and sensor cable</b>	•
<b>In version „1 gateway, 1 power supply for 2 ASi circuits“:</b> only 1 gateway + 1 ASi power supply is needed for both 2 ASi circuits	•

## Safety outputs block diagram BWU3674



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

## Variations of terminal configuration for BWU3674

Terminal	Safe output	Safe input for mechanical contacts in combination with T1, T2 <sup>(1)</sup>	Safe antivalent input <sup>(1)</sup>	Safe electronic input <sup>(1)</sup>	Standard input <sup>(1)</sup>
SI1,2	–	•	•	•	•
SI3,4	–	•	•	•	•
SI5,6	–	•	•	•	•
SO1,2 <sup>(2)</sup>	•	•	•	–	•
SO3,4 <sup>(2)</sup>	•	•	•	–	•
SO5,6 <sup>(2)</sup>	•	•	•	–	•

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

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

## Connections: Gateway + Safety Monitor:

BWU3674	Connection	Description
<p>The diagram shows the terminal block layout for the BWU3674. It is divided into two main sections: 'Safe inputs / Standard inputs' and 'Safe outputs'.  <b>Safe inputs / Standard inputs:</b> A 24-pin terminal block with two rows. The top row is labeled T2, SI2, SI4, SI6. The bottom row is labeled T1, SI1, SI3, SI5.  <b>Safe outputs:</b> A 12-pin terminal block with two rows. The top row is labeled SO5, 24V, 0V, SO6. The bottom row is labeled SO1, SO2, SO3, SO4.  <b>Other connections:</b> On the left side, there are connections for +ASI 1-, +ASI 1-, +ASI 2-, and ASI +PWR-(max. 8A). Ground symbols are shown at the bottom left and right.</p>	SI1, SI3, SI5	Safe input terminal (T1)
	SI2, SI4, SI6	Safe input terminal (T2)
	T1	Clock output 1
	T2	Clock output 2
	SO1 ... SO6	Safe semiconductor outputs 1 ... 6
	24V, 0V	Power supply for local I/Os
	+ASI 1-, +ASI 2-	Connection of ASi circuits
	ASI +PWR-	Power supply for Gateway and ASi networks

## Accessories:

- Safe contact expander, 1 or 2 independent channels (art. no. BWU2548 / BWU2539)
- Chip card, memory capacity 512 kB (art. no. BW4055)
- Bihl+Wiedemann Safety Suite - Safety Software for Configuration, Diagnostics and Commissioning (art. no. BW2916)
- Power supplies, e.g.: 30 V power supply, 4 A, 1 phase (art. no. BW4218), 30 V power supply, 8 A, 1 phase (art. no. BW4219), 30 V power supply, 8 A, 3 phases (art. no. BW4220), 30 V Power Supply, 16 A, 1 phase (art. no. BW4221), 30 V Power Supply, 16 A, 3 phases (art. no. BW4222) (for further power supply units visit [www.bihl-wiedemann.de/en/products/accessories/power-supplies](http://www.bihl-wiedemann.de/en/products/accessories/power-supplies))
- PROFINET-Mastersimulatoren Lizenzen (Art. Nr. BW4754, BW4755)