AS-i 3.0 PROFINET-Gateways in Stainless Steel

Bihl + Wiedemann

PROFINET IO
- **offers IRT-technology**
- **1 integrated Switch**

Recognition of duplicate AS-i addresses

AS-i Earth Fault Detector integrated

AS-i Noise Detector integrated

Optional Control III, programming in C

AS-i Power24V-capability
- **The device can be operated directly on a 24 V (PELV) power supply**
- **with integrated data coupling coils and adjustable self-resetting fuses for safe use also of powerful 24 V power supplies**

(figure similar)

Figure	Type	Model	Fieldbus interface [1]	Number of AS-i networks, number of AS-i Master [2]	1 power supply, 1 gateway for 2 AS-i networks, inexpensive power supplies [3]	Diagnostic and configuration interface [4]	Recognition of duplicate AS-i addresses [5]	AS-i fault detector [6]	Program-ming in C [7]	Article no.
	PROFINET AS-i	Gateway	PROFINET	2 AS-i networks, 2 AS-i Masters	yes, max. 4 A/ AS-i network	Ethernet fieldbus + RS 232	yes	yes	optional	**BWU2238**
	PROFINET AS-i	Gateway	PROFINET	2 AS-i networks, 2 AS-i Masters	no, max. 8 A/ AS-i network, redundant supply	Ethernet fieldbus + RS 232	yes	yes	optional	**BWU2239**
	PROFINET AS-i	Gateway	PROFINET	1 AS-i network, 1 AS-i Master	no, max. 8 A/ AS-i network	Ethernet fieldbus + RS 232	yes	yes	optional	**BWU1912**

[1] **Fieldbus interface**
Communication interface between fieldbus and gateway: interfaces for standardized fieldbus systems in industrial automation.
PROFINET AS-i Gateway: interface for a PROFINET fieldbus

[2] **Number of AS-i networks, number of AS-i Master**
"Single Master": 1 AS-i network, 1 AS-i Master.
"Double Master": 2 AS-i networks, 2 AS-i Masters.

[3] **1 power supply, 1 gateway for 2 AS-i networks, inexpensive power supplies**
"yes, max. 4 A/AS-i network": Cost-effective power for 2 AS-i 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.
"no, max. 8 A/AS-i network, redundant supply": 1 power supply per AS-i network. Gateway is powered in normal operation from one of the two AS-i power supplies. Should one AS-i power supply fail, switching to the other AS-i power supply allows all the diagnostics functions to be maintained and the unaffected AS-i network continues to operate.
"no, max. 8 A/AS-i network": 1 power supply per AS-i network.

[4] **Diagnostic and configuration interface**
"Ethernet fieldbus": Access to AS-i Master and Safety Monitor with Bihl+Wiedemann software by using the Ethernet fieldbus interface.
"Ethernet fieldbus + RS 232": Access to AS-i master and safety monitor with Bihl+Wiedemann proprietary software by using the Ethernet fieldbus interface or by using an adapter cable via RS 232 interface.

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

[5] **Recognition of duplicate AS-i addresses**
Detects whether the same address has been assigned to two AS-i slaves. Frequent error when using a handheld addressing device.

[6] **AS-i fault detector**
Checks the AS-i line for interference effects such as noise, external voltages, ...

[7] **Programming in C**
Using a C-program offers the possibility to run mini-PLC functions with a gateway.

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Article no.	BWU1912	BWU2238	BWU2239
Interface			
PROFINET interface	2 x RJ-45, integrated 2-Port-Switch, IRT capability [1]		
Conformance Class	Class B integrated switch complies with Class C (IRT capability)		
Baud rates	10/100 MBaud		
Function	PROFINET IO Device Media Redundancy Protocol (MRP) Shared Device		
Card slot	Chip card for storage of configuration data		
AS-i			
AS-i specification	3.0		
Cycle time	150 µs * (number of slaves + 2)		
Operating voltage	30 V_{DC} (20 ... 31,6 V) (PELV voltage)		
Display			
LCD	menu, AS-i indication of slave addresses, error messages in plain text		
LED power (green)	power ON		
LED ser.active (green/red)	green: PROFINET communication active red: PROFINET communication not active		
LED config error (red)	configuration error		
LED U AS-i (green)	AS-i voltage o.k.		
LED AS-i active (green)	AS-i normal operation active		
LED prg enable (green)	automatic address programming enabled		
LED prj mode (yellow)	in configuration mode		
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.		
Environment			
Applied standards	EN 60529 EN 61000-6-2 EN 61000-6-4		
Operating altitude	max. 2000 m		
Operating temperature	0 °C … +55 °C		
Storage temperature	-25 °C … +85 °C		
Housing	Stainless Steel, for DIN rail mounting		
Protection category	IP20		
Tolerable loading referring to impacts and vibrations	according to EN 61131-2		
Voltage of insulation	≥500 V		
Weight	500 g		
Dimensions (W / H / D in mm)	85 / 120 / 83		

[1] IRT-technology and integrated Switch for BWU1912 from ID no.12824 (see lateral label).

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Artikel Nr.	GSDML file integrated	Preprocessing	AS-i Power24V	Safety Monitor integrated
BWU1912	yes	Control III	no	optional
BWU2238	yes	Control III	yes	optional
BWU2239	yes	Control III	no	optional

Article no.	Operating current		
	Master power supply, ca. 200 mA out of AS-i circuit	Master power supply, max. 200 mA out of AS-i circuit 1 (ca. 70 mA ... 200 mA), max. 200 mA out of AS-i circuit 2 (ca. 70 mA ... 200 mA); in sum max. 270 mA	Version „1 gateway, 1 power supply for 2 AS-i networks", approx. 250 mA (PELV voltage)
BWU1912	•	–	–
BWU2238	–	–	•
BWU2239	–	•	–

Article no.	BWU1912	BWU2238	BWU2239
Redundant power supply out of AS-i: all fundamental functions of the device remain available even in case of power failure in one of the two AS-i networks	–	–	•
Current measurement of the AS-i circuits	–	•	–
Self-resetting adjustable fuses	–	•	–
AS-i earth fault monitor distinguishes between AS-i cable and sensor cable	–	•	–
In version 1 gateway, 1 power supply for 2 AS-i circuits: only 1 Gateway + 1 AS-i power supply for 2 AS-i networks	–	•	–

Accessories:
- Software for diagnostics, service and approval measurements (art. no. BW2902)
- PROFINET Master Simulator (art. no. BW3035, BW3057)
- Control III, Programming in C (art. no. BW2582)
- Power supplies, e.g.: AS-i power supply, 4 A (art. no. BW1649), AS-i power supply, 8 A (art. no. BW1997)
  (further power supply units can be found at *www.bihl-wiedemann.de/en/products/accessories/power-supplies*)

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