

Safety Basic Monitors

2 x electronic safe outputs

Up to 4 x 2 channels safe inputs

- optionally the safe inputs will be used as well as standard inputs and signal outputs

Safe ASi outputs are supported

- max. 32 independent ASi outputs
- multiple safe ASi outputs possible via a single address

Chip card for storage of configuration data

Protection category IP20



(Figure similar)



Figure	Model	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	Fieldbus interface	1 power supply, 1 gateway for 2 ASi networks, inexpensive power supplies	Diagnostic and configuration interface ⁽¹⁾	Article no.
	Safety Basic Monitor with extended features	3 x 2 channels input 3 optional for speed monitor up to 4 kHz	max. 31 x 2 channels, max. 1891 in max. configuration	2 release circuits; 2 x electronic safe output	max. 32, max. 991 in max. configuration	Safe Link	ASi monitors	yes, max. 0,5 A/ASi network, max. 8 A with ASi power supply	Ethernet diagnostic ⁽²⁾	BWU2852
	Safety Basic Monitor with extended features	4 x 2 channels inputs 3+4 optional for speed monitor up to 4 kHz	max. 31 x 2 channels	2 release circuits; 2 x electronic safe output	max. 16	—	ASi monitors	yes, max. 0,5 A/ASi network, max. 8 A with ASi power supply	USB	BWU2700

⁽¹⁾ **Diagnostic and configuration interface**

"USB": Access to ASi Master and Safety Monitor with Bihl+Wiedemann proprietary software by using the USB interface.

"Ethernet diagnostic": Access to ASi Master and Safety Monitor with Bihl+Wiedemann software by using the Ethernet diagnostic interface.

⁽²⁾ Modbus TCP diagnostic capability from **Ident.no.: 15775** (see lateral label). No Modbus TCP fieldbus is supported. For a full-fledged Modbus TCP fieldbus interface use one of our Modbus TCP gateways in stainless steel or Modbus TCP gateways with integrated safety monitor.

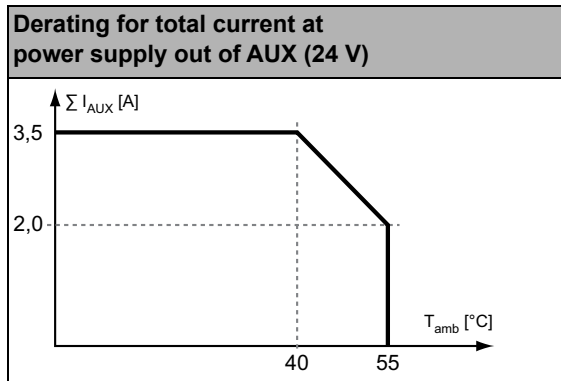
EtherNet/IP diagnostic capability from **Ident.no.: 20829** (see lateral label). No EtherNet/IP fieldbus is supported. For a full-fledged EtherNet/IP fieldbus interface use one of our EtherNet/IP gateways in stainless steel or EtherNet/IP gateways with integrated safety monitor.

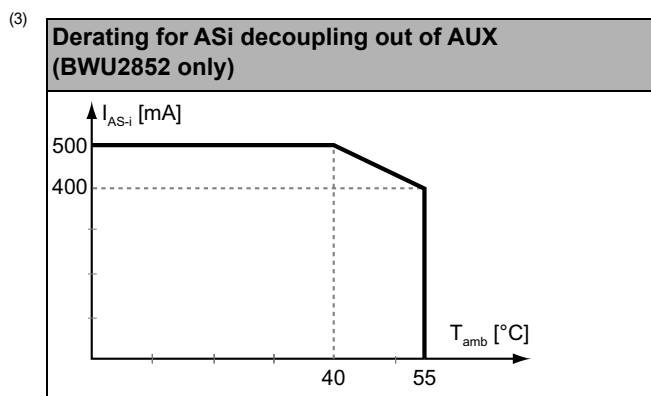
Article no.	BWU2700		BWU2852	
Connection				
ASi/AUX connection	push-in terminals			
Periphery connection	push-in terminals			
Length of connector cable	unlimited ⁽¹⁾			
Safety Monitor				
Respond delay	< 40 ms			
ASi Master				
ASi Master	integrated			
Diagnostic interface				
Type	USB		RJ-45 acc. to IEEE 802.3, EtherNet/IP diagnostic ⁽⁵⁾ , Modbus TCP diagnostic ⁽⁶⁾	
Transmission rate	–		10/100 MBit/s	
Safety communication	–		Safe Link	
Card slot	chip card (32 kB) for storage of configuration data			
ASi				
Voltage	30 V (18 ... 31,6 V)			
Max. current consumption	200 mA ⁽²⁾			
Max. current with internal decoupling out of AUX	500 mA ^{(2), (3)}			
AUX				
Voltage	24 V (20 ... 30 V) (PELV)			
Max. current consumption	max. 4 A			
Input				
Number	4 x 2-channel safe inputs SIL3, cat. 4 or 8 standard inputs and signaling outputs		3 x 2-channel safe inputs SIL3, cat. 4 or 6 standard inputs and signaling outputs	
Switching current	15 mA (T = 100 µs), continuously 4 mA at 24 V			
Safety signal	floating contacts or OSSDs			
Supply voltage	out of AUX			
Sensor supply	short-circuit and overload protected according to EN 61131			
Network connection between the safe input terminals	max. resistance 150 Ω			
Switching threshold	U<5 V (low) U>15 V (high)			
Output				
Number	2 (4) output switching elements; semiconductor outputs (output circuits 1 and 2) max. contact load: 700 mA _{DC-13} at 24 V ⁽²⁾			
Supply voltage	out of AUX			
Actuator supply	short-circuit and overload protected according to EN 61131			
Max. output current signal outputs	10 mA per output			
Max. output current for OSSD supply	1,4 A (S71) ⁽²⁾		–	
Test pulse	if output is on: minimum interval between 2 test pulses: 250 ms (from safety version 4.3); maximum pulse width 1 ms			
Speed monitor function				
Safe monitoring	speed			
Signal	sensors/initiators (24V)			
Number of monitored axes	up to 4 independent axes		up to 2 independent axes	

Article no.	BWU2700		BWU2852	
Display				
LED S1 ... Sn (yellow)	state of safe input S1 ... S8		state of safe input S1 ... S6	
LED SM (green/yellow/red)	state of Safety Monitor			
LED ASi M (green/yellow/red)	state of ASi master			
LED O1 (green/yellow/red)	output 1 has switched			
LED O2 (green/yellow/red)	output 2 has switched			
LED NET (green)	–		Modbus communication active	
1 button	Service			
UL-specifications (UL508)				
External protection	An isolated source with a secondary open circuit voltage of ≤30 V _{DC} has to be protected with a 3 A maximum over current. 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.			
Ambient				
Applied standards	EN 60529 EN 61508, SIL 3 EN 62061, SIL 3 EN 61131 EN 61000-6-2 EN 61000-6-4 EN ISO 13849-1, Performance-Level e			
Operation altitude	max. 2000 m			
Ambient temperature	0 °C ... +55 °C		-30 °C ... +55 °C ⁽⁷⁾	
	no condensation permitted			
Storage temperature	-25 °C ... +85 °C		-25 °C ... +85 °C	
Housing	plastic, for DIN rail mounting			
Protection class	IP20			
Tolerable loading referring to humidity	according to EN 61131-2			
Voltage of insulation	≥ 500 V			
Weight	160 g			
Dimensions (W / H / D in mm)	22,5 / 99 / 114			
Mounting position	vertical (mounting rail horizontal, ASi clamps pointing downwards) ⁽⁴⁾			
Mounting	Can be combined with Bihl+Wiedemann devices of the same design and neighboring devices with max. 3 W heat radiation. For higher heat radiation, a minimum distance of one module width (22.5 mm) must be provided.			
	There is no fixed limit for the connecting cable between the speed monitor and the encoder. However, it is recommended to keep the connecting cable between the speed monitor and the encoder as short as possible in order to avoid possible interference, e.g. EMC.			

(1) Loop resistance $\leq 150 \Omega$

(2)



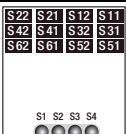
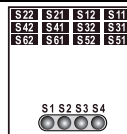
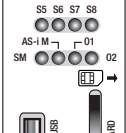
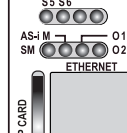
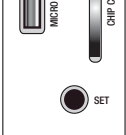
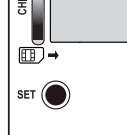


- (4) Make sure there is adequate ventilation. The supply air temperature at the bottom of the housing may not exceed values specified under ambient temperature.
- (5) EtherNet/IP for diagnostics from Ident. No. >20829.
- (6) Modbus/TCP for diagnostics from Ident. No. >15775.
- (7) temperature range up to -30°C from Ident. No. ≥16254.

Article no.	BWU2700	BWU2852
ASi Safety Monitor		
Safety Monitor	Safety Basis Monitor, with extended features	
Optimized to ASi Monitor operations	no	
Release circuits	16	32
Antivalent switches for local inputs	yes	
Standstill monitors of local inputs	4 x 50 Hz	3 x 50 Hz
Standstill/speed monitors of local inputs	2-4 axes, up to 4 kHz	1-2 axes, up to 4 kHz
Electrical data		
Power supply decoupling unit	integrated	

Wiring rules

	Push-in terminals, 2 /3 /4 poles (pitch 5 mm)
General	
Nominal cross section	2.5 mm ²
Conductor cross section	
Conductor cross section solid	0.2 ... 2.5 mm ²
Conductor cross section flexible	0.2 ... 2.5 mm ²
Conductor cross section flexible, with ferrule	without plastic sleeve: 0.25 ... 2.5 mm ²
	with plastic sleeve: 0.25 ... 2.5 mm ²
2 conductors with same cross section, stranded, with TWIN ferrules	without plastic sleeve: 0.5 ... 1.5 mm ²
AWG	24 ... 14
Stripped insulation length	10 mm

BWU2700	BWU2852	Terminals	Description
		S22, S21, S12, S11	safety input terminal input 1
		S42, S41, S32, S31	safety input terminal input 2
		S62, S61, S52, S51	safety input terminal input 3
		S71, S72, S81, S82	safety input terminal input 4 (except BWU2852)
		1.14 _{ext.out}	semiconductor output 1
		2.14 _{ext.out}	semiconductor output 2
		0 V _{ext.out}	ground for semiconductor output
		ASi +, ASi -	connection to the ASi Bus
		AUX + _{ext.in} , AUX - _{ext.in}	power supply input
			
			

Accessories:

- Safety Software for Configuration, Diagnosis and Programming (art. no. BW2916)
- Chip card, memory capacity 32 kB (art. no. BW2079)
- Safe Contact Expander 1 or 2 independent channels (art. no. BWU2548 / BWU2539)
- Safe Contact Expander 10 A or 20 A (art. no. BW3016 / BW3281)
- ASi Safety 4I/2O Module, 4 x 2 channels safety inputs and 2 fast electronic safety outputs in IP20 (art. no. BWU2314) as supplementary module
- ASi Speed Monitor (art. no. BWU2427 / BWU2849) as supplementary module
- USB cable for Safety Basic Monitor (art. no. BW2530)