

ASi Safety I/O Module

6 x 2 channels safe inputs for

- for floating contacts
- for antivalent switches
- for OSSDs
- test pulse width adjustable

2 release circuits (2 x electronic safe outputs)

- augmented reliability

2 EDM inputs

Optimal costs for safety inputs and outputs on ASi

Module width of 22.5 mm,
for optimal use of space in the service cabinet

optimized for service and commissioning as well as ASIMON360

coded clamps

Protection category IP20



(figure similar)



Figure	Type	Housing	Inputs Safety, SIL 3, cat. 4	Inputs digital, EDM ⁽¹⁾	Outputs Safety, SIL 3, cat. 4	Safety signal inputs	Input voltage (sensor supply) ⁽²⁾	Output voltage (actuator supply) ⁽³⁾	ASi address ⁽⁴⁾	Article no.
	IP20, 22.5 mm x 114 mm, 6 x COMBICON, Safety	6 x COMBICON	6 x 2 channels	2 EDM	2 release circuits; 2 x electronic safe outputs, augmented reliability	floating contacts, optoelectronic protective devices, complementary switch	out of AUX	out of AUX	depending on configuration, optimized for ASIMON360	BWU3877

(1) Inputs digital, EDM

An externally connected relay (contactor) can be connected via a feedback loop to the Safety Monitor for monitoring purposes.

(2) Input voltage (sensor supply): inputs are supplied by ASi or by AUX (auxiliary 24 V power). If supplied by ASi, inputs shall not be connected to earth or to external potential.

(3) Output voltage (actuator supply): outputs are supplied by ASi or by AUX (auxiliary 24 V power). If supplied by ASi, outputs shall not be connected to earth or to external potential

(4) ASi address: 1 AB Slave (max. 62 AB Slaves/ASi network), 2 AB Slaves (max. 31 modules with 2 AB Slaves), Single Slaves (max. 31 Single Slaves/ASi network), mixed use allowed.

For modules with two slaves the second slave is turned off as long as the first slave is addressed to address "0". Upon request, slaves are available with specific ASi Slave profiles.

Article no.	BWU3877
Connection	
ASi / AUX connection	push-in COMBICON with coded clamps
periphery connection	push-in COMBICON with coded clamps
Length of connector cable	unlimited ⁽¹⁾
ASi	
Profile	safety input slaves: S-0.B.F.0 diagnostic slaves: S-7.A.5.E configuration slave: S-7.A.F.5
Address	depending on configuration
Required Master profile	≥M3
As of ASi specification	2.1
Operating voltage	30 V _{DC} (18 ... 31,6 V)
Max. current consumption	200 mA
Max. continuous operating current	125 mA
AUX	
Voltage	24 V _{DC} (20 ... 30 V)
Max. current consumption	4 A
Input	
Number	6 x 2 channels safe inputs
Power supply	out of AUX
Safety signal	floating contacts, optoelectronic protective devices, complementary switch
Switching current	15 mA (T = 100 µs), continuously 4 mA at 24 V
Switching threshold	<5 V (low) >15 V (high)
OSSD test pulses	0 ... 50 Hz
OSSD test pulse width	0 ... 51 ms, adjustable
Clock outputs for floating contacts / antivalent switches	1 test pulse per clock output per second, pulse duration approx. 1 ms
Output	
Number	2 release circuits, 2 x electronic safe outputs
Max. contact load	0,7 A DC-13 at 24 V
Power supply	out of AUX
Test pulse	when output is switched on minimal distance between 2 test pulses: 250 ms, pulse length up to 1 ms
Display	
LED ASI (green)	ASi voltage on
LED FAULT (red)	on: no data exchange or address 0 flashing: peripheral fault
LED AUX (green)	on: 24 V _{DC} AUX off: no 24 V _{DC} AUX
LEDs S1 ... Sn (yellow)	state of inputs S1 ... S12
LED SO1 (yellow)	safe outputs 1 has switched
LED SO2 (yellow)	safe outputs 2 has switched
LEDs I1, I2 (yellow)	state of EDM inputs 1, 2

Article no.	BWU3877
Environment	
Applied standards	EN 60529 IEC 61508 SIL 3 EN 62061 SIL 3 EN ISO 13849-1 PLe Kat. 4
Operating altitude	max. 5000 m
Ambient temperature	0 °C ... +55 °C no condensation permitted
Storage temperature	-25 °C ... +85 °C
Housing	plastic, for DIN-rail mounting
Pollution Degree	2
Protection category	IP20
Tolerable loading referring to humidity	according EN 61131-2
Insulation voltage	≥ 500 V
Weight	160 g
Dimensions (W / H / D) in mm	22,5 / 99 / 114,5

(1) loop resistance ≤ 150 Ω

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

BWU3877	Clamps	Description
	S1, S2, S3, S4	safe input terminals 1-4
	S5, S6, S7, S8	safe input terminals 5-8
	S9, S10, S11, S12	safe input terminals 9-12
	1.14 _{ext.out}	semiconductor output 1
	0 V _{1 ext.out}	mass connection for semiconductor output 1
	2.14 _{ext.out}	semiconductor output 2
	0 V _{2 ext.out}	mass connection for semiconductor output 2
	I1, I2	EDM input 1, 2
	T1	clock 1 (S1, S3, S5, S7, S9, S11)
	T2	clock 2 (S2, S4, S6, S8, S10, S12)
	ASI+, ASI	connection to the ASI-Bus
	ADDR	address socket
	AUX+ _{ext.in}	power supply input
	AUX- _{ext.in}	

Diagnostics (device colors)

Value	Color	Description	State change	LED SO _n
0	green	output on		on
1	green flashing	–		–
2	yellow	restart inhibit	auxiliary signal 2	1 Hz
3	yellow flashing	–		–
4	red	output off		off
5	red flashing	waiting for "reset of error condition" or AUX missing	auxiliary signal 1 or connect AUX	8 Hz
6	gray	internal error, such as "fatal error"	only via "Power ON" on device	all LEDs flashing
7	green/yellow	output released, but not switched on	switching-on by setting of O0	off

Diagnostic slaves

Bit	input	output
Bit0	Diagnostic color	If P1=0 and O0=0, the output is switched off independent from release
Bit1		free
Bit2		free
Bit3	P2=1: response switch S3 P2=0: response of the release of the state	non existent

Assignment code half sequence - terminals

Code half sequence	Terminals
Bit0	input terminals: S2 / S4 / S6 / S8 / S10 / S12
Bit1	
Bit2	input terminals: S1 / S3 / S5 / S7 / S9 / S11
Bit3	

Bit	ASi Parameter
Bit P1	
P1=0	safe output SO _n switches at release and O0=1
P1=1	safe output SO _n switches only at release

Accessories:

- Safe contact expander, 1 or 2 independent channels (art. no. BWU2548 / BWU2539)