AS-i Safety 8I/1O Module, 16 / 8 safe inputs and 1 (2) electronic safe outputs, IP20

AS-i Safety 8I/1O Module

AS-i Safety Module with 16 / 8 safe inputs and 1 (2) electronic safe outputs

Optimal costs for safe in- and outputs on AS-i

Maximum number of safe inputs at 22.5 mm cabinet width,

optimized for service and commissioning

Protection category IP20

Figure	Type	Housing	Inputs Safety, SIL 3, cat. 4	Outputs Safety, SIL 3, cat. 4	Safety signal inputs	Input voltage (sensor supply.)[1]	Output voltage (actuator supply.)[2]	AS-i address[3]	Article no.
	IP20, 22,5 mm x 114 mm, 6 x COMBICON, Safety	6 x COMBICON	8 x 2 channels	1 release circuit; 1 x fast electronic safe output	floating contacts, optoelectronic protective devices	out of AUX	out of AUX	depending on configuration	**BWU2578**

1 I**nput voltage (sensor supply):** inputs are supplied by AS-i or by AUX (auxiliary 24 V power). If supplied by AS-i, inputs shall not be connected to earth or to external potential.

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

3 **AS-i address:** 1 AB Slave (max. 62 AB Slaves/AS-i network), 2 AB Slaves (max. 31 modules with 2 AB Slaves), Single Slaves (max. 31 Single Slaves/AS-i 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 AS-i Slave profiles.

Technical realization:

- If the safety input S3 is not needed, the protection feedback can optionally connected on S3. The transfer occurs as usual on the diagnostic slave of the safety AS-i outputs.
- No limitation of cable length at safety inputs (the maximum loop resistance is 150Ω).
- 16 / 8 safe inputs for floating contacts or optoelectronic protective devices.

Diagnosis and commissioning:

- LED displays according to other Safety Slaves or to the Monitor.
- Simple configuration via software ASIMON or selection of AS-i Slaves with the help of two rotary switches or addressing.
- Chip card for the simple exchange.
- Fixed Safety Code series for each AS-i address. Each module generates by same address programming same code series.

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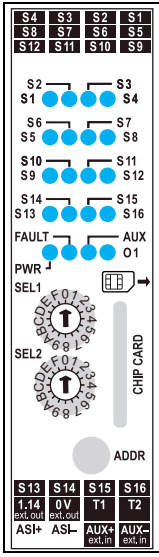
Article no.	BWU2578
Connection	COMBICON clamp
Length of connector cable	unlimited[1]
AS-i	
Profile	safety input slaves: S-0.B.F.0 diagnostic slaves: S-7.A.5.E configuration slave: S-7.A.F.5
Address	depending on configuration
Voltage	18 ... 31,6 V
Max. current consumption	200 mA
Max. continuous operating current	125 mA
AUX	
Voltage	20 ... 30 V (PELV)
Max. current consumption	1 A max.
Input	
Number	16 / 8 safe inputs for floating contacts or optoelectronic protective devices switching current 15 mA (T = 100µs), continuously 4 mA at 24 V
Supply voltage	out of AUX
OSSD test pulses	0 ... 50 Hz
OSSD test pulse width	0 ... 1 ms
Input level	10 mA, R < 150 Ω
Output	
Number	1 (2) output switching elements (semiconductor) max. contact load: 0,7 A DC-13 at 24 V
Supply voltage	out of AUX
Max. output current for OSSD supply	0,7 A
Test pulse	when output is switched on minimal distance between 2 test pulses: 250 ms, pulse length up to 1 ms
Display	
LEDs S1 ... Sn (yellow)	state of inputs S1 ... S16
LED PWR (green)	AS-i power
LED FAULT/FLT (red)	AS-i error LED
LED O1 (yellow)	output 1 has switched
LED AUX (red)	24 V DC AUX
Environment	
Applied standards	IEC 61508:2010 EN 62061:2005/A1:2013 EN ISO 13849-1:2008/AC:2009
Storage temperature	0 °C ... +55 °C
Operating temperature	-25 °C ... +85 °C
Housing	plastic, for DIN-rail mounting
Verschmutzungsgrad	2
Protection class (EN 60529)	IP20
Tolerable loading referring to humidity	according to EN 61131-2
Isolation 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
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: 0,2 ... 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

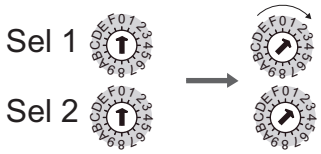


Clamps	Description
S1, S2, S3, S4	safety input terminal input 1-4
S5, S6, S7, S8	safety input terminal input 5-8
S9, S10, S11, S12	safety input terminal input 9-12
S13, S14, S15, S16	safety input terminal input 13-16
1.14$_{ext.out}$	semiconductor output 1
T1	pulse 1 (S1, S3, S5, S7, S9, S11, S13, S15)
T2	pulse 2 (S2, S4, S6, S8, S10, S12, S14, S16)
0 V$_{ext.out,}$	mass connection for semiconductor output
AS-i+, AS-i-	connection to the AS-i-Bus
ADDR	address socket
AUX+$_{ext.in}$ AUX-$_{ext.in}$	power supply input

Addressing

SEL1	SEL2	Description
0	**0**	RUN, without configuration slave
E	**E**	RUN, with configuration slave
1	**1**	addressing safety input 1, contacts
2	**2**	addressing safety input 2, contacts
3	**3**	addressing safety input 3, contacts
4	**4**	addressing safety input 4, contacts
5	**5**	addressing safety input 5, contacts
6	**6**	addressing safety input 6, contacts
7	**7**	addressing safety input 7, contacts
8	**8**	addressing safety input 8, contacts
9	**9**	addressing safety output 1
A	**A**	addressing safety output 1, diagnostic
D	**D**	reset to factory defaults

SEL1	SEL2	Description
5	**1**	addressing safety input 1, OSSD
6	**2**	addressing safety input 2, OSSD
7	**3**	addressing safety input 3, OSSD
8	**4**	addressing safety input 4, OSSD
9	**5**	addressing safety input 5, OSSD
A	**6**	addressing safety input 6, OSSD
B	**7**	addressing safety input 7, OSSD
C	**8**	addressing safety input 8, OSSD



Diagnostics (device colors)

Value	Color	Description	State change	LED O1
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 A0=0, the output is switched off independent from release
Bit1		free
Bit2		free
Bit3	P2=1: response S3 P2=0: response of the release of the state	non existent

Bit	AS-i Parameter
Bit P1	
P1=0	Safety output SO_n controlled by safety release and O0=1
P1=1	Safety output SO_n controlled by safety release only