

# ASi-5 Self-configuring I/O Modules, IP20, 22,5 mm

## ASi-5 digital I/O module with self-configuring connections

Sensors and actuators can be connected in any combination

Optional assignment of a fixed configuration of inputs and outputs possible via software

Up to 16 digital inputs, depending on configuration

Up to 16 digital outputs, depending on configuration

Cost efficient solution in IP20


ASi-5 – Great data bandwidth, short cycle times

Compatible with ASi modules of all ASi generations



(figure similar)



Figure	Type	Primary application <sup>(1)</sup>	Inputs digital	Outputs digital	Input voltage (sensor supply) <sup>(2)</sup>	Output voltage (actuator supply) <sup>(3)</sup>	ASi connection <sup>(4)</sup>	ASi address <sup>(5)</sup>	Article No.
	IP20, 22,5 mm x 114 mm, 6 x 4 contacts, ASi-5	control cabinet	up to 16, depending on configuration	up to 16 x electronic, depending on configuration	out of AUX	out of AUX	Push-in terminals	1 ASi-5 address	<b>BWU3884</b>

**(1) Primary Application**

**Control cabinet:** Cost-optimized modules whereby the supply voltage for the sensors and actuators is connected via additional patch terminals. Optimal application in the main control cabinet.

**Decentralized control cabinet:** Ideal for use in decentralized control cabinets. 3-wire sensors or actuators can be connected directly to terminals in the module without additional patch terminals or the module has an extremely flat design.

**(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 connection:** the connection to ASi as well to AUX (auxiliary 24 V power) is made via yellow resp. black ASi profile cable with piercing technology or via M12 socket (in IP20 via clamps).

**(5) ASi address:** AB address (max. 62 ASi nodes with extended address allocation per ASi circuit), 2 AB addresses (max. 31 ASi-3 modules with 2 AB addresses), single address (max. 31 single nodes with standard address allocation per ASi circuit) ASi-5 address (max. 62 ASi-5 nodes per ASi circuit), mixed use allowed (upon request, ASi modules are available with specific ASi profiles).

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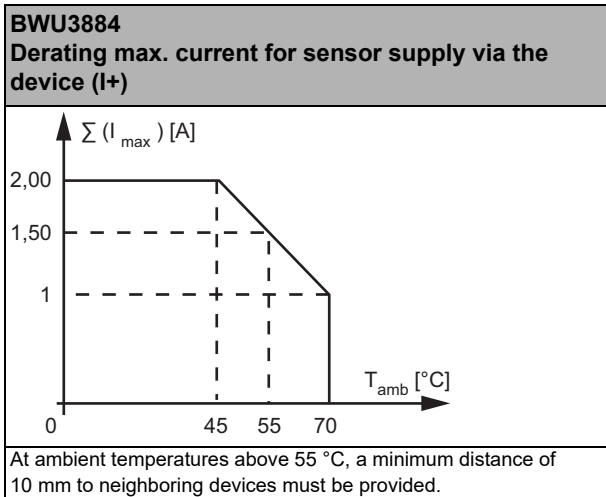
<b>Article No.</b>		<b>BWU3884</b>
<b>General data</b>		
Device type		input / output
<b>Connection</b>		
ASi / AUX connection		Push-in terminals
Periphery connection		Push-in terminals
Primary application		control cabinet
Length of connector cable		I/O: unlimited <sup>(1)</sup>
<b>ASi</b>		
Address		1 ASi-5 address
Since ASi specification		ASi-5
ASi process data width		2 byte
Operating voltage		30 V (18 ... 31.6 V)
Max. current consumption		70 mA
Max. current consumption without sensor/ actuator supply		70 mA
<b>AUX</b>		
Voltage		24 V (18 ... 30 V)
Max. current consumption		4.8 A
<b>Input</b>		
Number		up to 16, depending on configuration
Power supply		out of AUX
Sensor supply		short-circuit and overload protected according to EN 61131-2
max. current for sensor supply via the device (I+)	up to +45 °C	$\sum(\text{In}) 2 \text{ A}^{(2)}$
	at +55 °C	$\sum(\text{In}) 1,5 \text{ A}^{(2)}$
	at +70 °C	$\sum(\text{In}) 1 \text{ A}^{(2)}$
Switching threshold		U < 5 V (low) U > 15 V (high)
<b>Output</b>		
Number		up to 16 x electronic, depending on configuration
Power supply		out of AUX
Output		short-circuit and overload protected according to EN 61131-2
Max. output current	up to +45 °C	0,35 A per output, $\sum(\text{Out}) 2,8 \text{ A}^{(3)}$
	at +55 °C	0,25 A per output, $\sum(\text{Out}) 2 \text{ A}^{(3)}$
	at +70 °C	0,1 A per output, $\sum(\text{Out}) 0,8 \text{ A}^{(3)}$
<b>Display</b>		
LED ASi (green)		on: ASi voltage on flashing: ASi voltage on, but peripheral fault <sup>(4)</sup> or address 0 off: no ASi voltage
LED FLT/FAULT (red)		on: ASi address 0 or ASi node offline flashing: peripheral fault <sup>(4)</sup> off: ASi node online
LED AUX (green)		on: 24 V <sub>DC</sub> AUX off: no 24 V <sub>DC</sub> AUX
LEDs I/O1 ... I/On (yellow)		state of inputs I1 ... I16 <b>or</b> outputs O1 ... O16, depending on configuration off: the corresponding input or output is turned off yellow: the corresponding input or output is turned on red flashing: output short circuit <sup>(4)</sup> at the corresponding output (display has priority over "overload sensor supply") red: overload sensor supply <sup>(4)</sup> (if there is a simultaneous "output short circuit", the indicator "red flashing" on the corresponding LED has priority)

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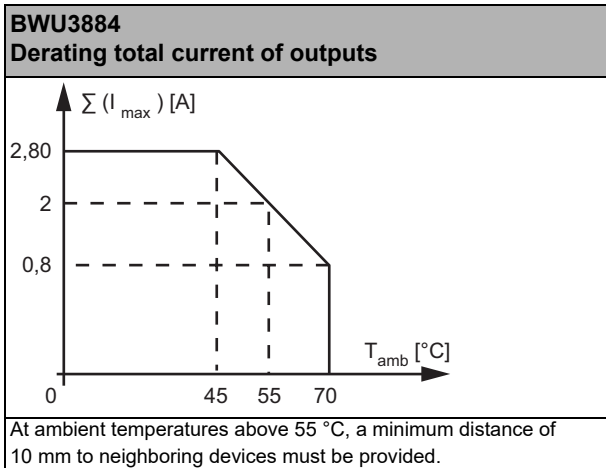
<b>Article No.</b>	<b>BWU3884</b>
<b>Environment</b>	
Applied standards	EN 61000-6-2 EN 61000-6-3 EN 61131-2 EN 60529
It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe	yes <sup>(5)</sup>
Operating altitude	max. 2000 m
Ambient temperature	-30 °C ... +55 °C (up to max. +70 °C) <sup>(2)</sup> <sup>(3)</sup> <sup>(6)</sup> 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 to EN 61131-2
Voltage of insulation	≥500 V
Weight	120 g
Dimensions (W / H / D in mm)	22,5 / 99 / 114

(1) Loop resistance ≤150 Ω

(2)



(3)



(4) See table "Peripheral fault indication"

(5) BWU3884 from Ident. No. 18860; the module is suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors can be assumed for the connection of the two ASi and AUX potentials.

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(6) Maximum ambient operating temperature +55 °C according UL certificate for the use in the USA and Canada

## Wiring rules

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

UL-specifications (UL508) BWU3884	
External protection	An isolated source with a secondary open circuit voltage of $\leq 30 V_{DC}$ 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.

Article no.	Peripheral fault indication		
	Overload sensor supply	Output short circuited	AUX voltage missing
BWU3884	•	•	•

## Programming: ASi bit assignment

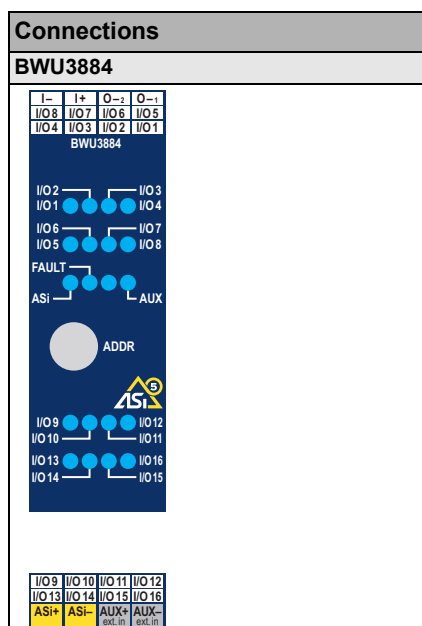
Article no.	Byte	Bit							
		D7	D6	D5	D4	D3	D2	D1	D0
		input							
BWU3884	0	I8	I7	I6	I5	I4	I3	I2	I1
BWU3884	1	I16	I15	I14	I13	I12	I11	I10	I9

Article no.	Byte	Bit							
		D7	D6	D5	D4	D3	D2	D1	D0
		output							
BWU3884	0	O8	O7	O6	O5	O4	O3	O2	O1
BWU3884	1	O16	O15	O14	O13	O12	O11	O10	O9

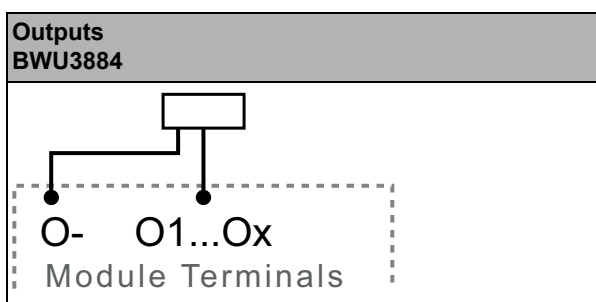
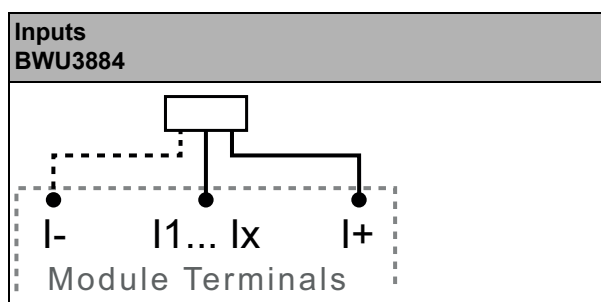
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## Connections

Name	Explanation
I <sub>x</sub>	digital input x
O <sub>x</sub>	digital output x
I <sub>+</sub> , I <sub>-</sub> , I <sub>+n</sub> , I <sub>-n</sub>	sensor supply
O <sub>-n</sub>	GND for outputs (PNP)
AUX <sub>+</sub> ext.in	power supply, out of external voltage, positive pole
AUX <sub>-</sub> ext.in	power supply, out of external voltage, negative pole
ASi <sub>+</sub> , ASi <sub>-</sub>	connection to ASi bus
ADDR	connection for ASi addressing device
n.c. (not connected)	not connected



## Power Supply PNP via the module



	<b>Note</b>
	The inputs need to be supplied out of AUX+!

 <b>IP54</b>	<b>Note</b>
	To achieve passive safety, the device must be installed in a switching cabinet with protection class IP54.

## Accessories:

- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)