ASi-5 Digital I/O Modules in IP20, 22,5 mm

Cost efficient solution in IP20

New standard ASi-5

(Figure similar)

Figure	Type	Housing	Primary application (1)	Inputs digital	Outputs digital	Input voltage (sensor supply) (2)	Output voltage (actuator supply) (3)	ASi connection (4)	ASi address (5)	Article No.
	IP20, 22,5 mm x 114 mm, 6 x COMBICON, ASi-5	6 x COMBICON	control cabinet	16	–	out of AUX	–	clamps	1 ASi-5 address	**BWU3874**
	IP20, 22,5 mm x 114 mm, 6 x COMBICON, ASi-5	6 x COMBICON	control cabinet	8	–	out of AUX	–	clamps	1 ASi-5 address	**BWU3873**
	IP20, 22,5 mm x 114 mm, 6 x COMBICON, ASi-5	6 x COMBICON	control cabinet	8	8 x elektronic	out of AUX	out of AUX	clamps	1 ASi-5 address	**BWU3872**

(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 AB addresses/ASi network), 2 AB addresses (max. 31 modules with 2 AB addresses), Single addresses (max. 31 Single addresses/ASi network), ASi-5 address (max. 62 ASi-5 addresses/ASi network), mixed use allowed.
For modules with two ASi nodes the second ASi node is turned off as long as the first ASi node is addressed to address "0".
Upon request, ASi nodes are available with specific ASi address profiles.

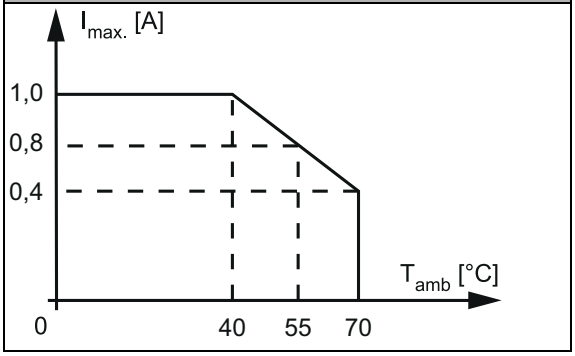
Article no.		BWU3874	BWU3873	BWU3872
General data				
Device type		input		input/output
Connection				
ASi / AUX connection		COMBICON plug		
Periphery connection		COMBICON plug		
Primary application		control cabinet		
Length of connector cable		I/O: unlimited (1)		
ASi				
Address		1 ASi-5 address		
Since ASi specification		ASi-5		
Operating voltage		30 V (18 … 31.6 V)		
Max. current consumption		60 mA		
Max. current consumption without sensor/ actuator supply		60 mA		
AUX				
Voltage		24 V (18 … 30 V)		
Max. current consumption		1 A		7 A
Input				
Number		16	8	
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 35°C	1,0 A (2)		1,0 A (6)
	at 40°C			0,9 A (6)
	at 55°C	0,8 A (2)		0,6 A (6)
	at 70°C	0,4 A (2)		0,2 A (6)
Switching threshold		U<5 V (low) U>15 V (high)		
Output				
Number		–		8 x electronic
Power supply		–		out of AUX
Actuator supply		–		short-circuit and overload protected according to EN 61131-2
Max. output current	up to 40°C	–		1 A per output, ∑ (Out) 6 A (7)
	at 55°C			
	at 70°C			1 A per output, ∑ (Out) 3 A (7)
Display				
LED ASI (green)		on: ASi voltage on, flashing: ASi voltage on, but peripheral fault (3) or address 0 off: no ASi Voltage		
LED FLT/FAULT (red)		an: ASi address 0 or ASi node offline flashing: peripheral fault (3) off: ASi node online		
LEDs I1 ... In (yellow)		state of inputs I1 ... I16	state of inputs I1 ... I8	
LEDs O1 ... On (yellow)		–		state of outputs O1 ... O8
LED AUX (green)		on: 24 V_{DC} AUX off: no 24 V_{DC} AUX		

Article no.	BWU3874	BWU3873	BWU3872
Environment			
Applied standards	EN 61000-6-2 EN 61000-6-3 EN 61131 EN 60529		
Can be used in passively safe paths up to SIL3/PLe	yes (4)		
Operating altitude	max. 2000 m		
Ambient temperature	-30 °C … +55 °C (up to max. +70 °C) (2) (5) (6) (7)		
	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)

BWU3873, BWU3874
Derating max. current for sensor supply via the device (I+)



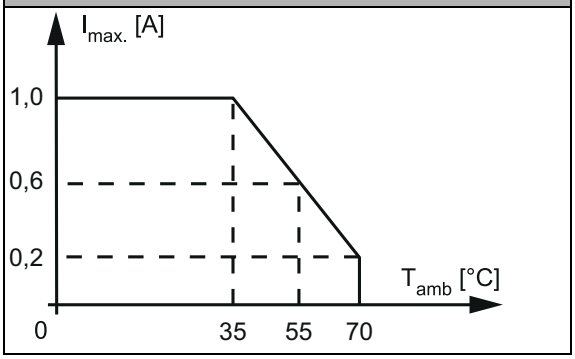
(3) see table „Peripheral fault indication“

(4) The module is suitable for use in passively safe paths because an exclusion of errors can be assumed for the connection of the two potentials, ASi and AUX.

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

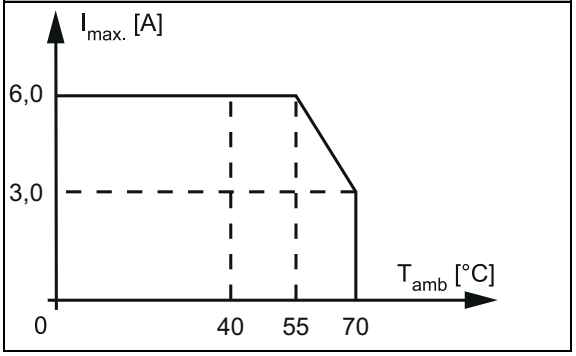
(6)

BWU3872
Derating max. current for sensor supply via the device (I+)



(7)

BWU3872
Derating total current of outputs



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

UL-specifications (UL508) **BWU3872, BWU3873, BWU3874**	
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.

Article no.	**Peripheral fault indication**		
	Overload sensor supply	**Output short circuited**	**AUX voltage missing**
BWU3872	•	–	•
BWU3873	•	–	•
BWU3873	•	–	•

Programming

Article no.	Byte	Bit							
		D7	D6	D5	D4	D3	D2	D1	D0
		input							
BWU3872, BWU3873, BWU3874	0	I8	I7	I6	I5	I4	I3	I2	I1
BWU3874	1	I16	I15	I14	I13	I12	I11	I10	I9

Article no.	Byte	Bit							
		D7	D6	D5	D4	D3	D2	D1	D0
		output							
BWU3872	0	O8	O7	O6	O5	O4	O3	O2	O1

Connections

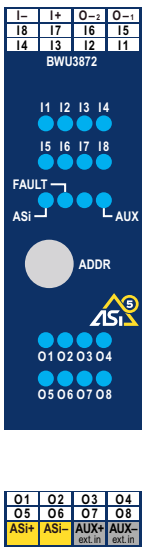
Name	Explanation
Ix	digital input x
Ox	digital output x
I+, I-, $I+_n$, $I-_n$	sensor supply
$O-_n$	GND for outputs (PNP)
$AUX+_{ext.in}$	power supply, out of external voltage, positive pole
$AUX-_{ext.in}$	power supply, out of external voltage, negative pole
ASi+, ASi-	connection to ASi bus
ADDR	connection for ASi addressing device
n.c. (not connected)	not connected

Connections

BWU3873

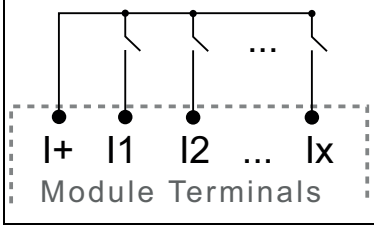
BWU3874

BWU3872

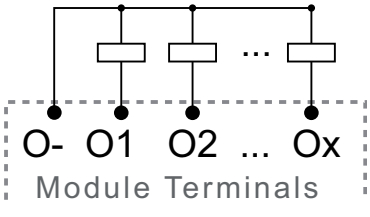


Power Supply PNP

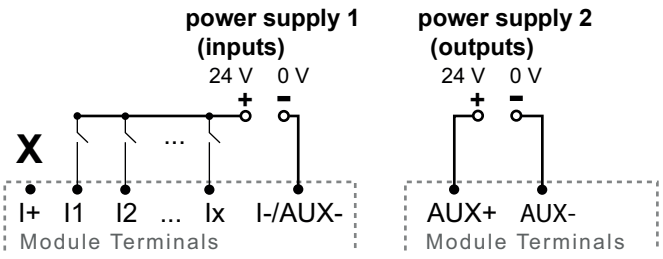
Inputs
BWU3872 / BWU3873 / BWU3874



Outputs
BWU3872



External power supply
BWU3872



With this option of the power supply, I+ must not be connected.

Accessories:

- **ASi-5/ASi-3 Address Programming Device (art. no. BW4708)**