


# Digital Module ASi-3, IP67, M12



2 x 2 connectors for profile cable



(Figure similar)

Figure	Inputs digital	Outputs digital	M12 connection (1)	Input voltage (sensor supply) (2)	Output voltage (actuator supply) (3)	ASi connection (4)	ASi address (5)	Max. output current	Art. no.
	2	2 x electronic	single	out of ASi	out of ASi	ASi profile cable	1 AB address	200 mA per output	BWU4401

- (1) **M12 wiring:**  
**Single wiring:** 1 input or output per connection.  
**Y wiring:** 2 inputs or outputs per connection.  
**Mixed wiring:** 1 input and 1 output per connection.
- (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 addresses (max. 62 AB addresses/ASi network), 2 AB addresses (max. 31 modules with 2 AB addresses), Single addresses (max. 31 Single addresses/ASi network), mixed use allowed. For modules with two ASi nodes the 2nd ASi node is turned off as long as the 1st ASi node is addressed to address "0". Upon request, ASi nodes are available with specific ASi node profiles.

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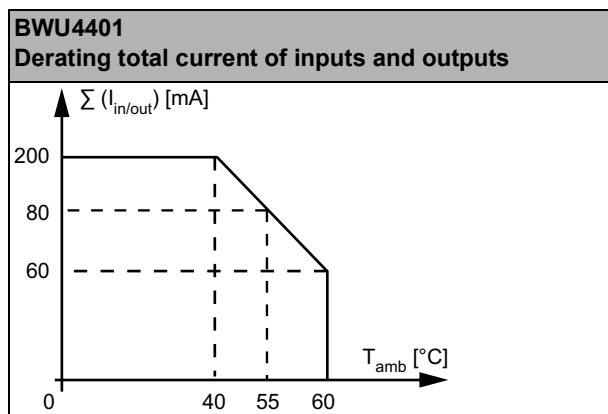
<b>Article No.</b>		<b>BWU4401</b>
<b>General data</b>		
Device type	input / output	
<b>Connection</b>		
ASi/AUX Connection	profile cable and piercing	
Periphery connection	M12, single wiring	
Length of connector cable	unlimited <sup>(1)</sup>	
<b>ASi</b>		
Profile	S-7.A.7 (ID1=7 fixed)	
Address	1 AB address	
Required Master profile	≥M4	
As of ASi specification	3.0	
Operating voltage	30 V (18 ... 31.6 V)	
Max. current consumption	245 mA	
Max. current consumption without sensor/ actuator supply	45 mA	
<b>Input</b>		
Number	2	
Power supply	out of ASi	
Sensor supply	short-circuit and overload protected according to EN 61131-2	
Power supply of attached sensors	up to +40 °C	200 mA, $\sum (In/Out) \leq 200 \text{ mA}^{(2)}$
	at +55 °C	80 mA, $\sum (In/Out) \leq 80 \text{ mA}^{(2)}$
	at +60 °C	60 mA, $\sum (In/Out) \leq 60 \text{ mA}^{(2)}$
Switching threshold	U < 5 V (low) U > 15 V (high)	
<b>Output</b>		
Number	2	
Power supply	out of ASi	
Output	short-circuit and overload protected according to EN 61131-2	
Max. output current	up to +40 °C	200 mA, $\sum (In/Out) \leq 200 \text{ mA}^{(2)}$
	at +55 °C	80 mA, $\sum (In/Out) \leq 80 \text{ mA}^{(2)}$
	at +60 °C	60 mA, $\sum (In/Out) \leq 60 \text{ mA}^{(2)}$
Max. output current	200 mA per output	
<b>Display</b>		
LED ASi (green)	on: ASi voltage on flashing: ASi voltage on, but peripheral fault <sup>(3)</sup> or address 0 off: no ASi voltage	
LED FLT/FAULT (red)	on: address 0 or offline flashing: peripheral fault <sup>(3)</sup> off: online	
LEDs I1, I2 (yellow)	state of inputs I1, I2	
LEDs O1, O2 (yellow)	yellow: state of outputs O1, O2	

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Article No.	BWU4401
<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>(4)</sup>
Operating altitude	max. 2000 m
Ambient temperature	-30 °C ... +55 °C (up to max. +70 °C) <sup>(5) (2)</sup>
Storage temperature	-25 °C ... +85 °C
Housing	plastic, for DIN rail mounting or for screw mounting <sup>(6)</sup>
Pollution degree	2
Protection category	IP67 <sup>(7)</sup>
Tolerable loading referring to humidity	according to EN 61131-2
Max. tolerable shock load	30g, 11 ms, acc. EN 61131-2
Max. tolerable vibration stress	5 ... 8 Hz 50 mm <sub>pp</sub> /8 ... 500 Hz 6g, acc. EN 61131-2
Insulation voltage	≥500 V
Weight	100 g
Dimensions (W / H / D) in mm	45 / 80 / 42

(1) Loop resistance ≤150 Ω

(2)



(3) See table "Peripheral fault indication"

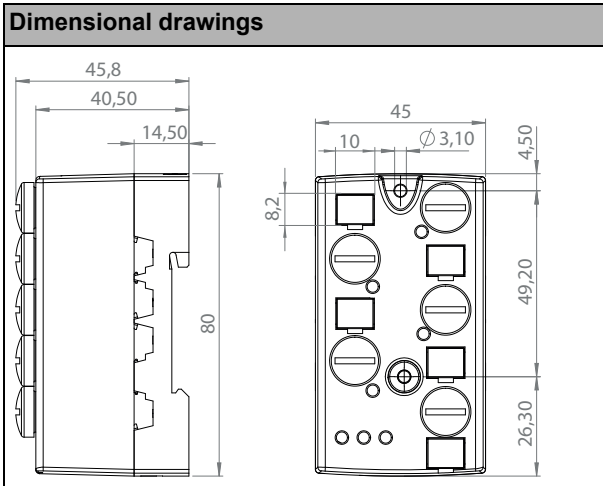
(4) The module is suitable for use in passively safe paths as it has no connection to an AUX potential.

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

(6) Depending on substructure module (see accessories). The substructure module is not included in the scope of delivery.

(7) Protection category IP67 can only be achieved if all open connections are sealed with suitable end caps fulfilling the same protection category.

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UL-specifications (UL508)	
<b>BWU4401</b>	
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
BWU4401	•	•	-

Programming	ASi bit assignment			
Bit	D3	D2	D1	D0
	input			
BWU4401	-	-	I2	I1
	output			
BWU4401	-	-	O2	O1

Programming	Parameter bits			
Bit	P3	P2	P1	P0
BWU4401	not used	0= on / 1= off (synchronous I/O mode)	0= on / 1= off (data input filter 128µs)	0= off / 1= on (Watchdog)

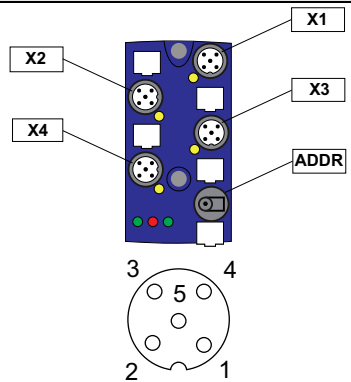
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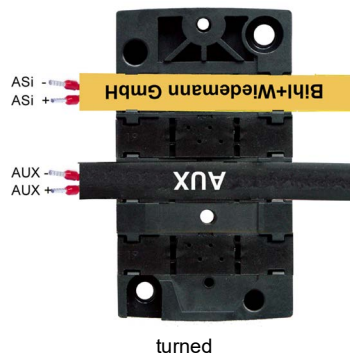
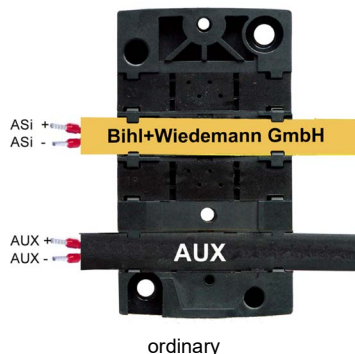
## Pin assignment

Signal name	Explanation
I <sub>x</sub>	digital input x
O <sub>x</sub>	digital output x
24V <sub>ext out</sub>	power supply, out of external voltage, positive pole (AUX, actuator supply)
0V <sub>ext out</sub>	power supply, out of external voltage, negative pole (AUX, actuator supply)
24V <sub>out of ASi</sub>	power supply, out of ASi, positive pole (sensor supply)
0V <sub>out of ASi</sub>	power supply, out of ASi, negative pole (sensor supply)
ASi +, ASi -	connection to ASi bus
n.c. (not connected)	not connected

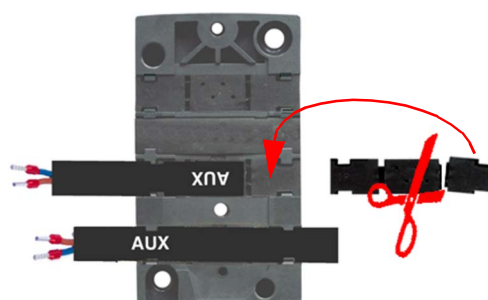
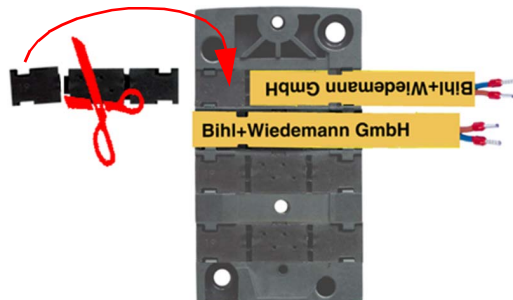
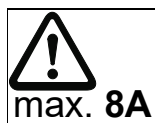
Connections							
Article no.	M12 connection	Marking	Pin1	Pin2	Pin3	Pin4	Pin5
BWU4401	X1	I1	24 V <sub>out of ASi</sub>	n.c.	0 V <sub>out of ASi</sub>	I1	n.c.
	X2	O1	24 V <sub>out of ASi</sub>	n.c.	0 V <sub>out of ASi</sub>	O1	n.c.
	X3	I2	24 V <sub>out of ASi</sub>	n.c.	0 V <sub>out of ASi</sub>	I2	n.c.
	X4	O2	24 V <sub>out of ASi</sub>	n.c.	0 V <sub>out of ASi</sub>	O2	n.c.
	ADDR (protection cap)	connection for ASi-3 addressing plug					



## Mounting according to cable direction



## Line termination with sealing profiles / as junction



## Digital Module ASi-3, IP67, M12



### Accessories:

- ASi substructure module for 4 channel module in 45 mm housing (art. no. BWU2349)
- ASi substructure module (CNOMO) for 4 channel module in 45 mm housing (art. no. BWU2350)
- Universal protection cap ASi-5/ASi-3 for M12 sockets, IP67 (art. no. BW4056)
- Sealing profile IP67 (IDC plug), 45 mm (art. no. BW3283)
- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)



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