

## ASi I/O Modules

### ASi Specification 3.0

Single address (up to 31 addresses) or  
AB address (up to 62 addresses)

Housing with external fastening tabs



(Figure similar)



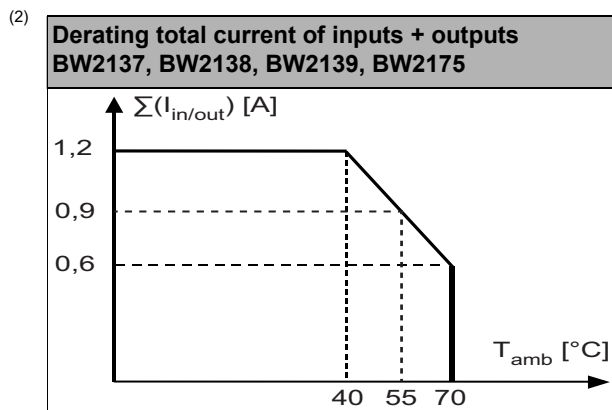
Figure	Type	Housing	Inputs digital	Outputs digital	Input voltage (sensor supply) <sup>(1)</sup>	Output voltage (actuator supply) <sup>(2)</sup>	ASi connection <sup>(3)</sup>	ASi address <sup>(4)</sup>	Article No.
	I/O modules	surface-mounted box	4	3 x electronic	out of AUX	out of AUX	cage clamp terminals	1 AB address	<b>BW2139</b>
	I/O modules	surface-mounted box	4	4 x electronic	out of AUX	out of AUX	cage clamp terminals	1 AB address	<b>BW2137</b>
	I/O modules	surface-mounted box	4	4 x electronic	out of AUX	out of AUX	cage clamp terminals	1 single address	<b>BW2175</b>
	heating/air conditioning (valves)	surface-mounted box	–	4 x electronic	–	out of AUX	cage clamp terminals	1 single address	<b>BW2138</b>

- (1) **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.
- (2) **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
- (3) **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).
- (4) **ASi address:** 1 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), 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.

Article no.	BW2139	BW2137	BW2175	BW2138
<b>General data</b>				
Device type	input / output			output
<b>Connection</b>				
ASi / AUX connection	cage clamp terminals			
Periphery connection	cage clamp terminals			
Length of connector cable	I/O: max. 15 m <sup>(1)</sup>			
<b>ASi</b>				
Profile	S-7.A.E ID1=7 (default)	S-7.A.7 ID1=7 (fixed)	S-7.F.E ID1=F (default)	S-8.F.E ID1=F (default)
Address	1 AB address		1 Single address	
Required Master profile	≥M3	≥M4	≥M0	
Since ASi specification	2.1	3.0	2.0	
Operating voltage	30 V (18 ... 31.6 V)			
Max. current consumption	70 mA			
Max. current consumption without sensor/ actuator supply	≤ 20 mA			
<b>AUX</b>				
Voltage	24 V (20 ... 30 V)			
Max. current consumption	1,2 A			

Article no.	BW2139	BW2137	BW2175	BW2138
<b>Input</b>				
Number	4			–
Power supply	out of AUX			
power supply of attached sensors	up to +40 °C	$\Sigma$ (inputs+outputs) 1,2 A <sup>(2)</sup>		–
	at +55 °C	$\Sigma$ (inputs+outputs) 0,9 A <sup>(2)</sup>		–
	at +70 °C	$\Sigma$ (inputs+outputs) 0,6 A <sup>(2)</sup>		–
Switching threshold	U<5 V (low) U>15 V (high)			–
<b>Output</b>				
Number	3 x electronic	4 x electronic		
Power supply	out of AUX			
Max. output current	up to +40 °C	0,5 A per output $\Sigma$ (inputs+outputs) 1,2 A <sup>(2)</sup>		
	at +55 °C	0,5 A per output $\Sigma$ (inputs+outputs) 0,9 A <sup>(2)</sup>		
	at +70 °C	0,5 A per outputs $\Sigma$ (inputs+outputs) 0,6 A <sup>(2)</sup>		
<b>Display</b>				
LED ASI (green)	an: ASi voltage on, flashing: ASi voltage on, but peripheral fault <sup>(3)</sup> or address 0 off: no ASi Voltage			
LED FLT/FAULT (red)	an: ASi address 0 or ASi participant offline flashing: peripheral fault <sup>(3)</sup> off: ASi participant online			
LED AUX (green)	an: 24 V <sub>DC</sub> AUX off: no 24 V <sub>DC</sub> AUX			
<b>Environment</b>				
Applied standards	EN 61000-6-2 EN 61000-6-4 EN 60529			
Operating altitude	2000 m			
Ambient temperature	-25 °C ... +70 °C <sup>(2)</sup>			
Storage temperature	-25 °C ... +85 °C			
Housing	plastic, for screw mounting			
Protection category	IP54			
Voltage of insulation	$\leq 15$ g, T $\leq 11$ ms 10 ... 55 Hz, 0,5 mm amplitude			
Allowable shock and vibration stress	$\geq 500$ V			
Weight	155 g			
Dimensions (W / H / D in mm)	93 / 93 / 55			

(1) Loop resistance  $\leq 150 \Omega$



(3) see table „peripheral fault indication“

Article no.	Peripheral fault indication	
	output short circuited	AUX voltage missing
BW2137	•	•
BW2138	•	•
BW2139	•	•
BW2175	•	•

Programming	Bit setting			
	D3	D2	D1	D0
	input			
BW2137 / BW2175	I4	I3	I2	I1
BW2139	–	I3	I2	I1
	output			
BW2137 / BW2138 / BW2139 / BW2175	O4	O3	O2	O1
	parameter bit			
	P3	P2	P1	P0
BW2137 / BW2138 / BW2139 / BW2175	not used	0 = on / 1 = off (synchronous I/O mode)	0 = on / 1 = off (data input filter 128 µs)	0 = off / 1 = on (watchdog)
<b>Programming instruction</b>				
address preset 0, changeable via bus master or programming devices				

Name	Explanation
Ix	digital input x
Ox	digital output x
24V <sub>ext.out</sub>	sensor supply
0V <sub>ext.out</sub>	GND for outputs (PNP)
24V <sub>ext.in</sub>	input for power supply, out of external voltage, positive pole
0V <sub>ext.in</sub>	input for power supply, out of external voltage, negative pole
ASi +, ASi -	connection to ASi bus

Connections				
BW2137, BW2175				
	<b>Terminal A</b>		<b>Terminal B</b>	
	1	24 V <sub>ext out</sub>	13	24 V <sub>ext in</sub>
	2	I1	14	24 V <sub>ext in</sub>
	3	24 V <sub>ext out</sub>	15	0 V <sub>ext in</sub>
	4	I2	16	0 V <sub>ext in</sub>
	5	0 V <sub>ext out</sub>	17	ASi +
	6	O1	18	ASi +
	7	0 V <sub>ext out</sub>	19	ASi -
	8	O2	20	ASi -
	9	0 V <sub>ext out</sub>	21	24 V <sub>ext out</sub>
	10	O3	22	I3
	11	0 V <sub>ext out</sub>	23	24 V <sub>ext out</sub>
12	O4	24	I4	
<b>Addressing socket</b>				
ADDR	connection for ASi addressing device			

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Double-deck terminal block, 2 x 4/5/6/7 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	0.8 ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.8 ... 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 ... 1.5 mm <sup>2</sup>
2 conductors with same cross section, stranded, with TWIN ferrules	–
AWG	28 ... 12
Stripped insulation length	6 mm

**Accessories:**

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