Analog Modules AS-i, IP67, M12

2 x 2 connectors for profile cable

compact housing, IP67

(Figure similar)

Figure	Type	Inputs analog	Outputs analog	M12 connection	Input voltage (sensor supply) (1)	Output voltage (actuator supply) (2)	AS-i connection (3)	AS-i address (4)	Art. no.
	IP67, 4 x M12	2 x 4 ... 20 mA	–	Signal at pin 2 / pin 4	out of AS-i	–	AS-i profile cable	1 AB slave	**BWU3100**
	IP67, 4 x M12	2 x Pt100	–	Signal at pin 1 / pin 3	out of AS-i	–	AS-i profile cable	1 AB slave	**BWU3104**
	IP67, 4 x M12	–	2 x 0 ... 20 mA	Signal at pin 1 / pin 3	–	out of AUX	AS-i profile cable	1 single slave	**BWU3105**
	IP67, 4 x M12	–	2 x 0 ... 20 mA	Signal at pin 2 / pin 4	–	out of AUX	AS-i profile cable	1 single slave	**BWU3106**

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

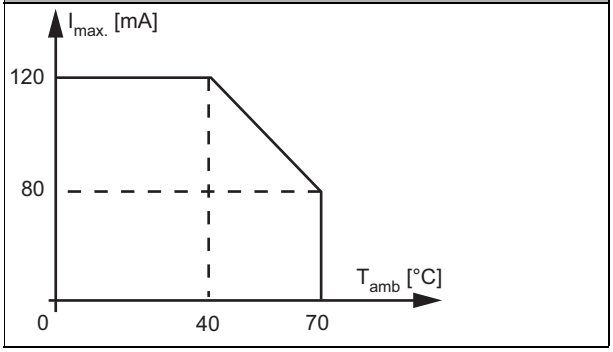
(4) **AS-i address:** AB slave (max. 62 AB slaves/AS-i network), 2 AB slaves (max. 31 modules with 2 AB slaves), single slaves (max. 31 single slaves/AS-i network), mixed use allowed (upon request, slaves are available with specific AS- slave profiles).

Article No.	BWU3100	BWU3104
General data		
Device type	input	
Connection		
AS-i/AUX connection	profile cable and piercing	
Periphery connection	M12, signal at pin 2 / pin 4	M12, signal at pin 1 / pin 3
AS-i		
Profile	S-7.A.9	
Address	1 AB slave	
Required Master profile	≥ M4	
As of AS-i specification	3.0	
Operating voltage	30 V_{DC} (18 ... 31,6 V)	
Max. current consumption	165 mA	< 80 mA
Max. current consumption without sensor / actuator supply	45 mA	< 80 mA
AUX		
Operating voltage	–	
Max. current consumption	–	
Input		
Number	2	
Resolution	normal: 14 bit, fast: 12 bit	14 Bit
Range of value	4000 ... 20000 dec. / 0 ... 27648 dec. (1)	-2000 ... +8500 dec. / -12000 ... 13000 dec
Internal resistance	ca. 80 Ω	–
Max. input voltage	–	
Max. input current	26 mA (internally limited)	–
Power supply	out of AS-i	
Power supply of attached sensors	max. 120 mA (2)	–
Display		
LED PWR (green)	on: AS-i voltage on flashing: AS-i voltage on, but peripheral fault (3) or address 0 off: no AS-i voltage	
LED FLT/FLAUT (red)	on: no data exchange, slave address 0 or slave offline flashing: peripheral fault (3) off: no AS-i voltage	
LED AUX (green)	–	
LED I1, I2 (yellow)	state of channel I1, I2 on: analog signal within range of values flashing: analog signal outside range of values out: channel is switched off	state of channel I1, I2 on: analog signal within range of values flashing: analog signal outside range of values out: no Pt100 sensor connected
Environment		
Applied standards	EN 61000-6-2 EN 61000-6-4	
Operating altitude	max. 2000 m	
Ambient temperature	-30 °C … +70 °C	
Storage temperature	-30 °C … +85 °C	
Housing	plastic, for DIN rail mounting	
Protection category (EN 60529)	IP67	
Maximum tolerable shock and vibration stress	≤15g, T≥11 ms 10 ... 55 Hz, 0,5 mm amplitude	
Insulation voltage	≥ 500 V	
Weight	100 g	
Dimensions (W / H / D) in mm	45 / 80 / 42	

(1) Siemens scale

(2)

Derating power supply of attached sensors



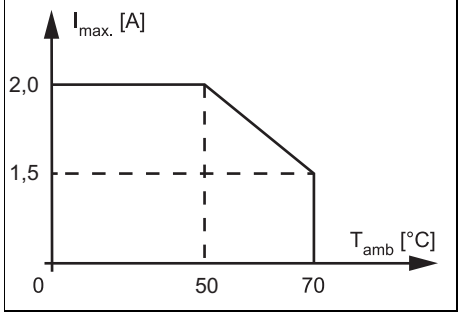
(3) **See table "Peripheral fault indication"**

Article No.	BWU3105	BWU3106
General data		
Device type	output	
Connection		
AS-i/AUX connection	profile cable and piercing	
Periphery connection	M12, signal at pin 1 / pin 3	M12, signal at pin 2 / pin 4
AS-i		
Profile	S-7.3.6	
Address	1 single slave	
Required Master profile	≥ M3	
As of AS-i specification	2.1	
Operating voltage	30 V_{DC} (18 ... 31,6 V)	
Max. current consumption	< 100 mA	
AUX		
Operating voltage	24 V_{DC} (18 ... 30 V)	
Max. current consumption	4 A	
Output		
Number	2	
Resolution	16 Bit (1 µA)	
Range of value	0 ... 20000 dec.	
Actuator resistance	max. 600 Ω	
Max. output voltage	–	
Max. output current	23 mA	
Power supply	out of AUX	
Power supply of attached actuators	max. 2 A per output (1)	
Display		
LED PWR (green)	on: AS-i voltage on flashing: AS-i voltage on, but peripheral fault (2) or address 0 off: no AS-i voltage	
LED FLT/FLAUT (red)	on: no data exchange, slave address 0 or slave offline flashing: peripheral fault (2) off: no AS-i voltage	
LED AUX (green)	on: 24 V_{DC} AUX off: no 24 V_{DC} AUX	
LED O1, O2 (yellow)	state of channel O1, O2 on: analog signal within range of values flashing: analog signal outside range of values	

Article No.	BWU3105	BWU3106
Environment		
Applied standards	EN 61000-6-2 EN 61000-6-4	
Operating altitude	max. 2000 m	
Ambient temperature	-30 °C … +70 °C	
Storage temperature	-30 °C … +85 °C	
Housing	plastic, for DIN rail mounting	
Protection category (EN 60529)	IP67	
Maximum tolerable shock and vibration stress	≤15g, T≥11 ms 10 ... 55 Hz, 0,5 mm amplitude	
Insulation voltage	≥ 500 V	
Weight	100 g	
Dimensions (W / H / D) in mm	45 / 80 / 42	

(1)

Derating actuator supply



(2) **See table "Peripheral fault indication"**

Article No.	Peripheral fault indication	
	analog signal outside range of values	at least 1 configured channel not connected
BWU3100	•	•
BWU3104	• (1)	•
BWU3105	•	•
BWU3106	•	•

(1) no Pt100 sensor connected

Programming

Bit setting	BWU3100	BWU3104	BWU3105	BWU3106
	input		output	
P0:				
1: peripheral fault is indicated 0: peripheral fault is not indicated	●	●	–	–
1: Watch dog on 0: Watch dog off	–	–	●	●
P1:				
1: 4000 ... 20000 dec. 0: 0 ... 27648 dec. (1)	●	–	–	–
1: 2 wire mode 0: 4 wire mode	–	●	–	–
not used	–	–	●	●
P2:				
1: 0V and Sig- internally bridged 0: 0V and Sig- not bridged	●	–	–	–
1: -200 °C ... +850 °C 0: -120 °C ... +130 °C	–	●	–	–
1: peripheral fault is indicated 0: peripheral fault is not indicated	–	–	●	●
P3:				
not used	● (2)	● (2)	●	●

(1) Siemens scale

(2) Channel 2 on/off parameterized via ID1.

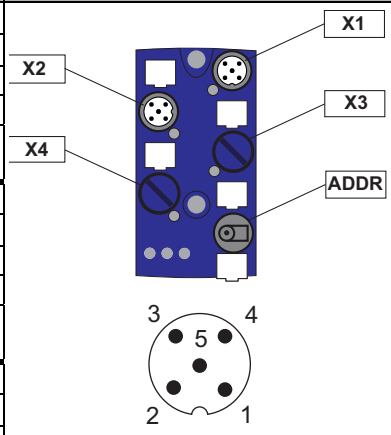
ID1 code	BWU3100 / BWU3104
0; 2; 3	**channel 1, 14 bit**
1	**channel 1, 12 bit**
4; 5; 7 (default)	**channel 1 and 2, 14 bit**
6	**channel 1 and 2, 12 bit**

Pin assignment

Signal name	Explanation
Ix	analog input x
Ox	analog output x
24 $V_{ext.out}$	power supply, out of external voltage, positive pole (AUX, actuator supply)
0 $V_{ext.out}$	power supply, out of external voltage, negative pole (AUX, actuator supply)
24 $V_{out\ of\ AS\text{-}i}$	power supply, out of AS-i, positive pole (sensor supply)
0 $V_{out\ of\ AS\text{-}i}$	power supply, out of AS-i, negative pole (sensor supply)

Connections

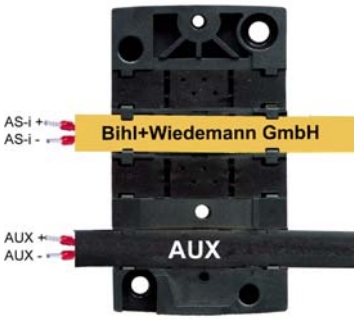
Article No.	M12 connection	Mark	Pin1	Pin2	Pin3	Pin4	Pin5
BWU3100	X1	I1	24$V_{out\ of\ AS\text{-}i}$	Sig+	0$V_{out\ of\ AS\text{-}i}$ (1)	Sig- (1)	Shield
	X2	I2	24$V_{out\ of\ AS\text{-}i}$	Sig+	0$V_{out\ of\ AS\text{-}i}$ (1)	Sig- (1)	Shield
	X3	not used					
	X4	not used					
	ADDR (dummy plug)	connection for AS-i addressing device					
BWU3104	X1	I1	CH+	CHS+	CH-	CHS-	Shield
	X2	I2	CH+	CHS+	CH-	CHS-	Shield
	X3	not used					
	X4	not used					
	ADDR (dummy plug)	connection for AS-i addressing device					
BWU3105	X1	O1	Sig+	24$V_{ext.out}$	Sig- (1)	0$V_{ext.out}$ (1)	Shield
	X2	O2	Sig+	24$V_{ext.out}$	Sig- (1)	0$V_{ext.out}$ (1)	Shield
	X3	not used					
	X4	not used					
	ADDR (dummy plug)	connection for AS-i addressing device					
BWU3106	X1	O1	24$V_{ext.out}$	Sig+	0$V_{ext.out}$ (1)	Sig- (1)	Shield
	X2	O2	24$V_{ext.out}$	Sig+	0$V_{ext.out}$ (1)	Sig- (1)	Shield
	X3	not used					
	X4	not used					
	ADDR (dummy plug)	connection for AS-i addressing device					



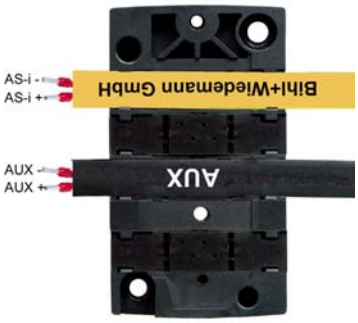
(1) Pin 3 bridged internally with Pin 4.

Mounting according to cable direction

IP67



ordinary

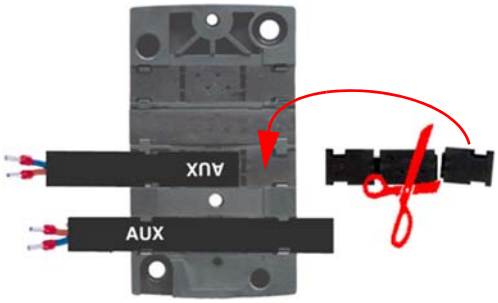


turned

Line termination with sealing profiles / as junction

IP54

max. 8A



Accessories:

- **AS-i substructure module for 4 channel module in 45 mm housing (art. no. BW2349)**
- **AS-i substructure module (CNOMO) for 4 channel module in 45 mm housing (art. no. BW2350)**
- **Protection caps for unused M12 sockets (art. no. BW2368)**