Analog Module ASi, IP20

(Figure similar)

Figure	Inputs analog	Outputs analog	Input voltage (sensor supply) (1)	Output voltage (actuator supply) (2)	ASi address (3)	Art. no.
	4 x thermocouple type K	–	out of ASi	–	1 single address	**BWU4268**

(1) I**nput 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 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 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.	BWU4268
General Data	
Device type	Input
Connection	
ASi/AUX connection	Push-in terminals
Periphery connection	Push-in terminals
ASi	
Profile	S-7.3
Address	1 single address
Required Master profile	≥M3
Since ASi specification	2.1
Operating voltage	30 V (18 …31,6 V)
Max. current consumption	< 100 mA
Input	
Number	4 (thermocouple type K)
Resolution	16 Bit (0,1 °C)
Range of value	-200 °C ... +1350 °C
Internal resistance	1 MΩ
Max. input voltage	–
Max. input current	–
Power supply	out of ASi
Power supply of attached sensors	50 mA
Output	
Resolution	–
Range of value	–
Resistance of the actuators	–
Max. output current	–
Power supply	–
Power supply of attached actuators	–
Environment	
Applied standards	EN 61000-6-2 EN 61000-6-4 EN 60529
It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe	yes (1)
Operating altitude	max. 2000 m
Operating temperature	0 °C … +70 °C
Storage temperature	-25 °C … +85 °C
Housing	plastic, for DIN rail mounting
Pollution degree	2
Protection category	IP20
Weight	145 g
Dimension (W / H / D in mm)	25 / 105 / 114

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

UL-specifications (UL508) BWU4268	
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.

Wiring rules

	Push-in terminals, 2 /3 /4 poles (pitch 5 mm)
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: 0.25 ... 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

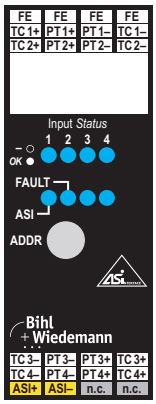
Programming

	Bit setting			
	input			
Bit	**P3**	**P2**	**P1**	**P0**
BWU4268	0: external cold-junction compensation 1: internal cold-junction compensation	A peripheral fault can be released through channel X (bit combination P1 and P2)		0: 60 H filter in A/D converter active 1: 50 H filter in A/D converter active

Combination of input bits P1 and P2					
BWU4268					
Peripheral fault can be released through channel					
P1	P2	1	2	3	4
0	0	yes	no	no	no
0	1	yes	yes	no	no
1	0	yes	yes	yes	no
1	1	yes	yes	yes	yes

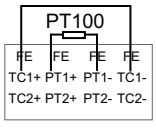
Programming notes				
Article no.	**ID Code**	**ID1 Code**	**ID2 Code**	**IO Code**
BWU4268	3_{hex}	ID1 = F (default)	E_{hex}	7_{hex}

Connections BWU4268



Terminal connections BWU4268

FE	Functional earth
TCx±	Thermo element +/– (inputs 1 - 4)
PTx±	PT100 +/– (External cold junction compensation)
ASi±	ASinterface +/–
n.c.	Not connected



The inputs ch. 2, ch. 3 and ch 4 are connected with a bridge and a resistor (in default state) to become a valid input value and to avoid peripheral faults.
This can also be obtained by setting the paramater P1 and P2.
The temperature is measured using cold junction temperature compensation. The analog sensors are galvanical separated to ASi. For internal compensation the peripheral fault can be caused by a broken wire of the thermocouple. For the external compensation (Pt100 in connectors 2 and 3) the peripheral fault can also be caused by a broken wire or a short circuit of the Pt100 element. A short circuit of the TC cannot be recognized as an error.
Note:
Precise cold junction compensation requires vertical mounting and natural air circulation. A clearance of at least 5 cm each side is required!

LEDs BWU4268	
ASI (green)	ASi voltage on terminals
FAULT (red)	ASi communication error, peripheral fault
Input Status (yellow)	State of channel I1, I2, I3, I4

Note

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)**