

ASi-5 Self-configuring I/O Module in cable duct housing, IP54, M12

ASi-5 digital I/O module in cable duct housing with self-configuring connections

Sensors and actuators can be connected in any combination, 2 signals per M12 connection possible



(figure similar)

Optional assignment of a fixed configuration of inputs and outputs possible via software


Up to 16 digital inputs, depending on configuration

Up to 16 digital outputs, depending on configuration

ASi-5 – Great data bandwidth, short cycle times

Compatible with ASi modules of all ASi generations



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.
	up to 16, depending on configuration	up to 16 x electronic, depending on configuration	Y/mixed	out of AUX	out of AUX	ASi profile cable	1 ASi-5 address	1 A	BWU4977

(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 address (max. 62 ASi nodes with extended address allocation per ASi circuit), 2 AB addresses (max. 31 ASi-3 modules with 2 AB addresses), single address (max. 31 single nodes with standard address allocation per ASi circuit) ASi-5 address (max. 62 ASi-5 nodes per ASi circuit), mixed use allowed (upon request, ASi modules are available with specific ASi profiles).

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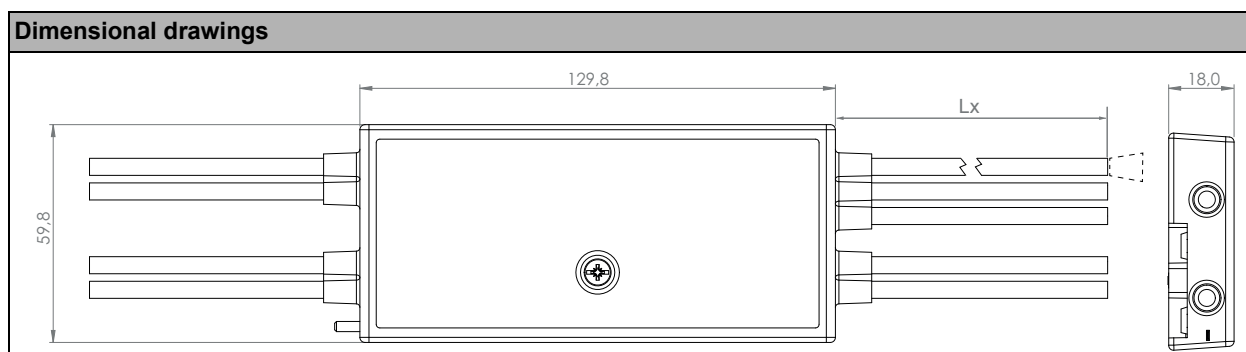
Article No.	BWU4977
General data	
Device type	input / output
Connection	
ASi/AUX connection	profile cable and piercing technology
Periphery connection	M12, Y or mixed wiring, freely selectable for each M12 connection
Length of connector cable	L1 ... L4, L6 ... L9: 1,0 L5 (ADDR): 0,04
ASi	
Address	1 ASi-5 address
As of ASi specification	ASi-5
Operating voltage	30 V (18 ... 31.6 V)
Max. current consumption	70 mA
Max. current consumption without sensor/ actuator supply	70 mA
AUX	
Operating voltage	24 V (18 ... 30 V)
Max. current consumption	6 A
Input	
Number	up to 16, depending on configuration
Power supply	out of AUX
Sensor supply	short-circuit and overload protected according to EN 61131-2
Power supply of attached sensors	0.3 A per sensor supply/pin 1, $\Sigma(I_n)$ 1.5 A
Switching threshold	U < 5 V (low) U > 15 V (high)
Output	
Number	up to 16 x electronic, depending on configuration
Power supply	out of AUX
Output	short-circuit and overload protected according to EN 61131-2
Max. output current	max. 1000 mA per output, $\Sigma(O1 \dots O4)$ 1000 mA + $\Sigma(O5 \dots O8)$ 1000 mA + $\Sigma(O9 \dots O12)$ 1000 mA + $\Sigma(O13 \dots O16)$ 1000 mA $\Sigma(O1 \dots O16)$ 4000 mA
Display	
LED ASi (green)	on: ASi voltage on flashing: ASi voltage on, but peripheral fault ⁽¹⁾ or address 0 off: no ASi voltage
LED FLT/FAULT (red)	on: ASi address 0 or ASi node offline flashing: peripheral fault ⁽¹⁾ off: ASi node online
LED AUX (green)	on: 24 V _{DC} AUX off: no 24 V _{DC} AUX
LEDs I/O1 ... I/On (yellow)	state of inputs I1 ... I16 or outputs O1 ... O16, depending on configuration off: the corresponding input or output is turned off yellow: the corresponding input or output is turned on red flashing: output short circuit ⁽¹⁾ at the corresponding output (display has priority over "overload sensor supply") red (both LEDs): overload sensor supply ⁽¹⁾ on (at least) one input of the M12 connection (if there is a simultaneous "output short circuit", the indicator "red flashing" on the corresponding LED has priority)

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Article No.	BWU4977
Environment	
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 ⁽²⁾
Operating altitude	max. 2000 m
Ambient temperature	-30 °C ... +70 °C
Storage temperature	-25 °C ... +85 °C
Housing	plastic, screw mounting, adapted for cable duct (≥19 mm installation depth)
Pollution degree	2
Protection category	IP54
Tolerable loading referring to humidity	according to EN 61131-2
Max. tolerable shock load	according to EN 61131-2
Max. tolerable vibration stress	according to EN 61131-2
Insulation voltage	≥ 500 V
Weight	477 g
Dimensions (W / H / D) in mm	130 / 60 / 18

(1) See table "Peripheral fault indication"

(2) The module is suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors can be assumed for the connection of the two ASi and AUX potentials.



Article no.	Peripheral fault indication		
	Overload sensor supply	Output short circuited	AUX voltage missing
BWU4977	•	•	•

Programming: ASi bit assignment

Article no.	Byte	Bit							
		D7	D6	D5	D4	D3	D2	D1	D0
		input							
BWU4977	0	I8	I7	I6	I5	I4	I3	I2	I1
	1	I16	I15	I14	I13	I12	I11	I10	I9

Article no.	Byte	Bit							
		D7	D6	D5	D4	D3	D2	D1	D0
		output							
BWU4977	0	O8	O7	O6	O5	O4	O3	O2	O1
	1	O16	O15	O14	O13	O12	O11	O10	O9

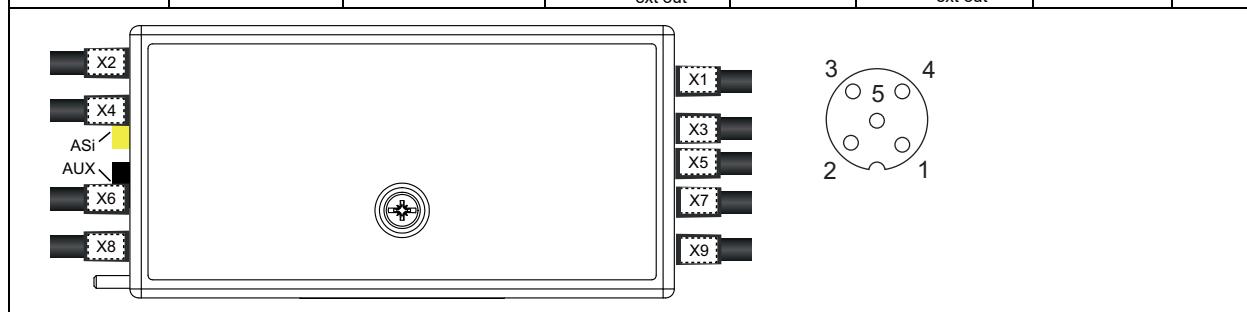
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Pin assignment

Signal name	Explanation
I/Ox	either digital input x or digital output x
24 V _{ext out}	power supply, out of external voltage, positive pole (AUX)
0 V _{ext out}	power supply, out of external voltage, negative pole (AUX)
ASi +, ASi -	connection to ASi bus
n.c. (not connected)	not connected

Connections

Article no.	M12 conn.	Marking	Pin1	Pin2	Pin3	Pin4	Pin5	
BWU4977	X1	I/O9, I/O10	24 V _{ext out}	I/O10	0 V _{ext out}	I/O9	n.c.	
	X2	I/O1, I/O2	24 V _{ext out}	I/O2	0 V _{ext out}	I/O1	n.c.	
	X3	I/O11, I/O12	24 V _{ext out}	I/O12	0 V _{ext out}	I/O11	n.c.	
	X4	I/O3, I/O4	24 V _{ext out}	I/O4	0 V _{ext out}	I/O3	n.c.	
	X5	ADDR	connection for ASi-5 addressing plug					
	X6	I/O5, I/O6	24 V _{ext out}	I/O6	0 V _{ext out}	I/O5	n.c.	
	X7	I/O13, I/O14	24 V _{ext out}	I/O14	0 V _{ext out}	I/O13	n.c.	
	X8	I/O7, I/O8	24 V _{ext out}	I/O8	0 V _{ext out}	I/O7	n.c.	
	X9	I/O15, I/O16	24 V _{ext out}	I/O16	0 V _{ext out}	I/O15	n.c.	



Accessories:

- ASi Substructure Module in IP67 for cable duct ASi motor modules (art. no. BW4749)
- Magnetic holders for substructure Modules (art. no. BW4779)
- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)