

ASi-5 Module with integrated IO-Link Master with 4 IO-Link Ports, IP67, M12

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New standard ASi-5

Quadruple IO-Link master

4 x IO-Link port class A or

2 x IO-Link port class A and

2 x IO-Link port class B in one housing

Power supply of IO-Link ports out of AUX



(figure similar)

Figure	Number of IO-Link ports	IO-Link port class A ⁽¹⁾	IO-Link port class B ⁽²⁾	Sensor supply (IO-Link supply and input/output voltage) ⁽³⁾	Actuator supply (for ports class B) ⁽⁴⁾	ASi connection ⁽⁵⁾	ASi address ⁽⁶⁾	Art. no.
	4	2	2	out of AUX	out of AUX	ASi profile cable	1 ASi-5 address	BWU4067
	4	4	—	out of AUX	—	ASi profile cable	1 ASi-5 address	BWU3819

(1) **Port class A (M12):** Pin 4 configurable (IO-Link/DI/DO), additional digital input at pin 2. Compatible with 3 pol IO-Link devices (M8).

(2) **Port class B (M12):** Pin 4 configurable (IO-Link/DI/DO), additional power supply (galvanically isolated) for IO-Link devices at pins 2 and 5. Compatible with 3 pol IO-Link devices (M8).

(3) **Sensor supply (IO-Link supply and input/output supply)**

IO-Link and additional inputs/outputs are supplied by ASi or by AUX (auxiliary 24 V power). If supplied by ASi, inputs can neither be connected to earth nor to external potential.

(4) **Actuator supply (for ports class B)**

Connection via M12: For ports class B the supply of actuators is provided by an additional (galvanically isolated) power supply by AUX (auxiliary 24 V power).

Connection via clamps: If connected IO-Link nodes with port class B need a higher current consumption, additionally they can be supplied directly via the power supply.

(5) **ASi connection**

The connection to ASi as well to AUX (auxiliary 24 V power) is made via yellow or black ASi profile cable with piercing technology or via M12 socket (in IP20 via clamps).

(6) **ASi address**

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), 1 ASi-5 address (max. 62 ASi-5 addresses/ASi network), mixed use allowed.

For modules with 2 nodes, the 2nd node is switched off as long as the 1st node is addressed "0".

Upon request, nodes are available with specific ASi address profiles.

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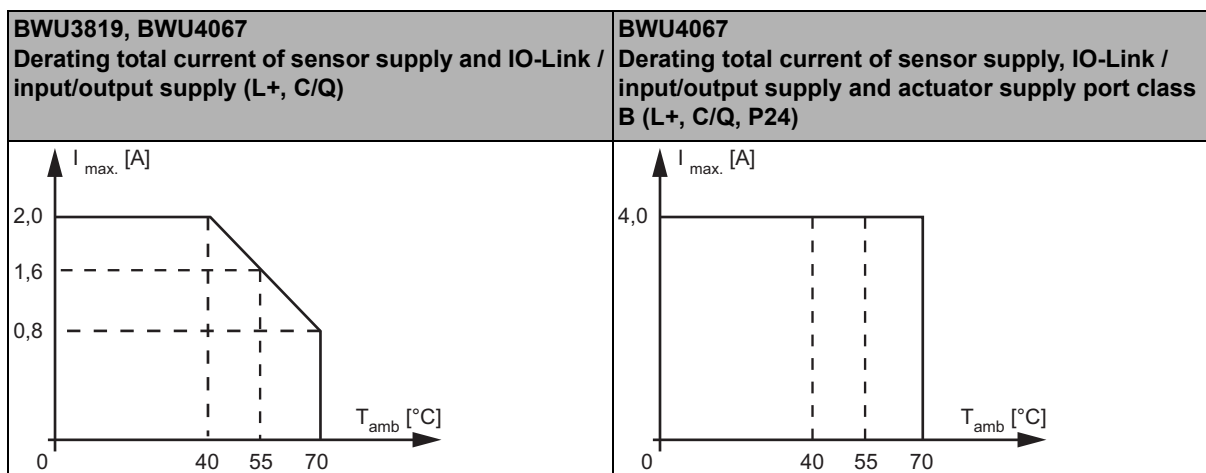
Article no.		BWU4067	BWU3819
Connection			
ASi/AUX connection		profile cable and piercing technology	
Periphery connection		M12	
Length of connector cable		I/O: max. 20 m	
ASi			
Address		1 ASi-5 address	
Operating voltage		30 V (18 ... 31.6 V)	
Required master profile		M5	
Since ASi specification		5	
ASi process data width		16 byte ⁽¹⁾	
Max. current consumption		35 mA	
Max. current consumption without sensor / actuator supply		35 mA	
AUX			
Voltage		24 V (18 ... 30 V)	
Max. current consumption		4 A	2 A
IO-Link			
Number		2 x ports class A + 2 x ports class B	4 x ports class A
		4 x C/Q (IO-Link communication or configurable as digital input or digital output) + 2 x digital inputs	4 x C/Q (IO-Link communication or configurable as digital input or digital output) + 4 x digital inputs
IO-Link data rate		COM1 / COM2 / COM3	
IO-Link data width		per port: up to 32 byte process data + 1 byte PQI	
IO-Link revision		1.1	
Switching threshold		U<5 V (low) U>15 V (high)	
Power supply		out of AUX	
Power supply of attached sensors (L+)	up to +40 °C	500 mA per port, $\sum(L+, C/Q) 2 A, \sum(L+, C/Q, P24) 4 A^{(2)}$	500 mA per port, $\sum(L+, C/Q) 2 A^{(2)}$
	at +55 °C	400 mA per port, $\sum(L+, C/Q) 1,6 A, \sum(L+, C/Q, P24) 4 A^{(2)}$	400 mA per port, $\sum(L+, C/Q) 1,6 A^{(2)}$
	at +70 °C	200 mA per port, $\sum(L+, C/Q) 0,8 A, \sum(L+, C/Q, P24) 4 A^{(2)}$	200 mA per port, $\sum(L+, C/Q) 0,8 A^{(2)}$
IO-Link / input/output current (C/Q)	up to +40 °C	500 mA per port, $\sum(L+, C/Q) 2 A, \sum(L+, C/Q, P24) 4 A^{(2)}$	500 mA per port, $\sum(L+, C/Q) 2 A^{(2)}$
	at +55 °C	400 mA per port, $\sum(L+, C/Q) 1,6 A, \sum(L+, C/Q, P24) 4 A^{(2)}$	400 mA per port, $\sum(L+, C/Q) 1,6 A^{(2)}$
	at +70 °C	200 mA per port, $\sum(L+, C/Q) 0,8 A, \sum(L+, C/Q, P24) 4 A^{(2)}$	200 mA per port, $\sum(L+, C/Q) 0,8 A^{(2)}$
Max. actuator supply for port class B (P24)	up to +40 °C	4 A per port, $\sum(L+, C/Q, P24) 4 A^{(2)}$	—
	at +55 °C	4 A per port, $\sum(L+, C/Q, P24) 4 A^{(2)}$	
	at +70 °C	4 A per port, $\sum(L+, C/Q, P24) 4 A^{(2)}$	
Max. current per port	up to +40 °C	max. 1 A per port class A, $\sum(\text{class A}) 2 A$, max. 4 A per port class B, $\sum(\text{class B}) 4 A$, $\sum(\text{class A, class B}) 4 A$	max. 1 A per port class A, $\sum(\text{class A}) 2 A$
	at +55 °C	max. 0,8 A per port class A, $\sum(\text{class A}) 1,6 A$, max. 4 A per port class B, $\sum(\text{class B}) 4 A$ $\sum(\text{class A, class B}) 4 A$	max. 0,8 A per port class A, $\sum(\text{class A}) 1,6 A$
	at +70 °C	max. 0,4 A per port class A, $\sum(\text{class A}) 0,8 A$, max. 4 A per port class B, $\sum(\text{class B}) 4 A$ $\sum(\text{class A, class B}) 4 A$	max. 0,4 A per port class A, $\sum(\text{class A}) 0,8 A$

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Article no.	BWU4067	BWU3819
Display		
LED ASI (green)	on: ASi voltage on flashing: ASi voltage on, but peripheral fault ⁽³⁾ or address 0 off: no ASi voltage	
LED FLT/FAULT (red)	on: ASi address 0 or node offline flashing: peripheral fault ⁽³⁾ off: node online	
LED AUX (red/green)	green: AUX voltage OK red: AUX voltage < 18 V	
LEDs C/Q1 ... C/Qx (red/green)	state of IO-Link ports 1 ... 4: green: IO-Link communication OK yellow: switching signal at input or output at pin4 red: IO-Link communication error or short-circuit	
LEDs I1 ... Ix (yellow)	state of inputs I1, I2	state of inputs I1 ... I4
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 ⁽⁴⁾	yes ⁽⁶⁾
Operating altitude	max. 2000 m	
Operating temperature	-30 °C ... +55 °C (up to max. +70 °C) ⁽²⁾ ⁽⁵⁾	
Storage temperature	-30 °C ... +85 °C	
Housing	plastic, for screw mounting	
Pollution degree	2	
Protection category	IP67	
Max. tolerable shock load	30g, 11 ms, acc. EN 61131-2	
Max. tolerable vibration stress	5 ... 8 Hz 50 mm _{pp} /8 ... 500 Hz 6g, acc. EN 61131-2	
Insulation voltage	≥500 V	
Weight	200 g	
Dimensions (W / H / D in mm)	45 / 80 / 38 (without substructure)	

⁽¹⁾ The ASi-5 process data bandwidth depends on the ASi-5 profile. Further selectable profiles can be found in the hardware catalog of the Bihl+Wiedemann Suite or in the configuration manual.

⁽²⁾



⁽³⁾ See table "Peripheral fault indication"

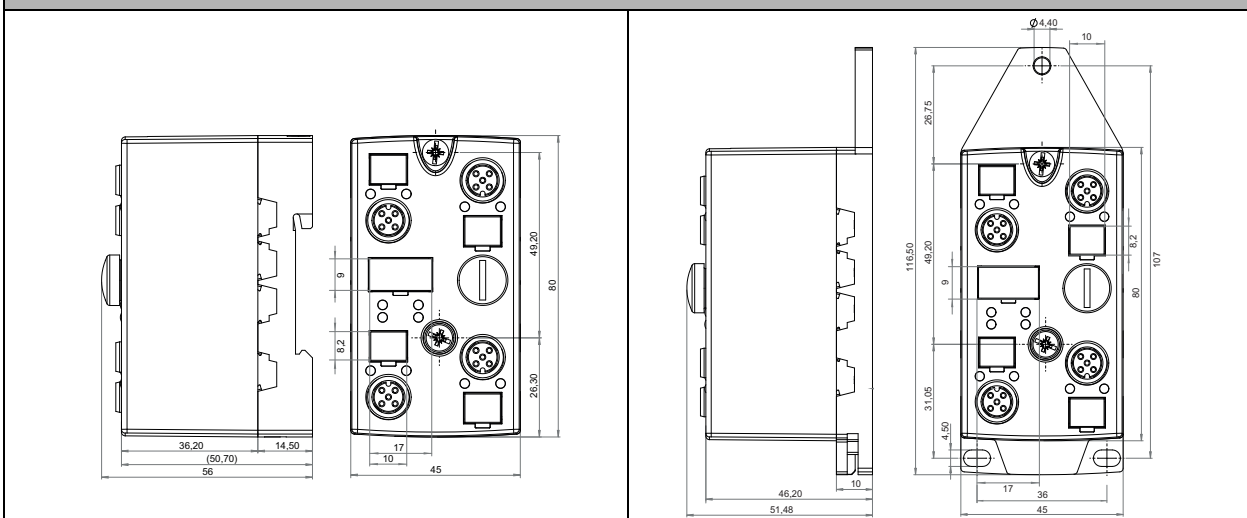
⁽⁴⁾ The module is suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors can be assumed for the connection of the two ASi and AUX potentials.

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

⁽⁶⁾ BWU4067 from ID no. 17959, but not 17970 and 18185 (complete from 18186); 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.

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Dimensional drawing



UL-specifications (UL508)

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	IO-Link error/event
BWU3819	•	•	•	•
BWU4067	•	•	•	•

Programming

- ASi-5 bit assignment: default 2 byte per port, configurable via ASi-5.

Pin assignment

Signal name	Explanation
P24 _{ext.out}	actuator supply, out of external voltage, positive pole
N24 _{ext.out}	actuator supply, out of external voltage, negative pole
Ix	digital input x
L ⁺ _{ext.out}	IO-Link sensor supply out of external voltage, positive pole
L ⁻ _{ext.out}	IO-Link sensor supply, out of external voltage, negative pole
C/Qx _{ext.out}	connection x, optionally for IO-Link communication, input or output

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Connections								
Art. no.	M12 connection	Marking	Function	Pin1	Pin2	Pin3	Pin4	Pin5
BWU3819	X1	C/Q1 / I1	IO-Link port class A	L+1 ext.out	I1	L-1 ext.out	C/Q1 _{ext.out}	n.c.
	X2	C/Q2 / I2	IO-Link port class A	L+2 ext.out	I2	L-2 ext.out	C/Q2 _{ext.out}	n.c.
	X3	C/Q3 / I3	IO-Link port class A	L+3 ext.out	I3	L-3 ext.out	C/Q3 _{ext.out}	n.c.
	X4	C/Q4 / I4	IO-Link port class A	L+4 ext.out	I4	L-4 ext.out	C/Q4 _{ext.out}	n.c.
	ADDR (protection cap)	connection for ASi-5 addressing device						
BWU4067	X1	C/Q1 / I1	IO-Link port class A	L+1 ext.out	I1	L-1 ext.out	C/Q1 _{ext.out}	n.c.
	X2	C/Q2 / I2	IO-Link port class A	L+2 ext.out	I2	L-2 ext.out	C/Q2 _{ext.out}	n.c.
	X3	C/Q3	IO-Link port class B	L+3 ext.out	P24 _{ext.out}	L-3 ext.out	C/Q3 _{ext.out}	N24 _{ext.out}
	X4	C/Q4	IO-Link port class B	L+4 ext.out	P24 _{ext.out}	L-4 ext.out	C/Q4 _{ext.out}	N24 _{ext.out}
	ADDR (protection cap)	connection for ASi-5 addressing device						

Accessories:

- ASi substructure module for 4 channel module in 45 mm housing (art. no. BWU2349)
- ASi substructure (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. Nr. BW3283)
- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)