ASi-5 Module with integrated IO-Link Master with 8 IO-Link Ports, IP67

ASi-5 module with integrated IO-Link master with 8 ports, IP67, M12

(figure similar)

New standard ASi-5

8 port IO-Link master

8 x IO-Link port class A in one housing

Up to 16 inputs/outputs depending on configuration

Power supply of IO-Link ports out of AUX

Figure	Type	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.
	IP67 8 x M12, ASi-5	8	8	–	out of AUX	–	ASi profile cable	1 ASi-5 address	**BWU4386**

(1) **Port class A (M12)**: Pin 4 configurable (IO-Link/DI/DO), additional digital I/O 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 modules 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 ASi-3 nodes, the 2nd ASi-3 node is switched off as long as the 1st ASi-3 node is addressed "0".
Upon request, ASi nodes are available with specific ASi profiles.

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Article no.		BWU4386
Connection		
ASi/AUX connection		profile cable and piercing
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)
As of ASi specification		ASi-5
ASi process data width		32 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		8 A
IO-Link		
Number		8 x ports class A
		8 x C/Q (IO-Link communication or configurable as digital input or digital output) + 8 x digital inputs/outputs
IO-Link data rate		COM1 / COM2 / COM3
IO-Link data width		up to 32 byte process data + 1 byte PQI per IO-Link port
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 (Pin1 = L+)	up to +40 °C	500 mA per Pin1/port class A, ∑(L+, I/O, C/Q) 8 A (2)
	at +55 °C	350 mA per Pin1/port class A, ∑(L+, I/O, C/Q) 7 A (2)
	at +70 °C	250 mA per Pin1/port class A, ∑(L+, I/O, C/Q) 5 A (2)
Configurable input/output (Pin2 = I/O)	up to +40 °C	500 mA per Pin 2/port class A, ∑(I/O) 4 A, ∑(L+, I/O, C/Q) 8 A (2)
	at +55 °C	350 mA per Pin 2/port class A, ∑(I/O) 2,8 A, ∑(L+, I/O, C/Q) 7 A (2)
	at +70 °C	250 mA per Pin 2/port class A, ∑(I/O) 2 A, ∑(L+, I/O, C/Q) 5 A (2)
Max. actuator supply for port class B (Pin2 = P24)	up to +40 °C	–
	at +55 °C	
	at +70 °C	
IO-Link / input/output current (Pin4 = C/Q)	up to +40 °C	500 mA per Pin4/port class A, ∑(L+, I/O, C/Q) 8 A (2)
	at +55 °C	350 mA per Pin4/port class A, ∑(L+, I/O, C/Q) 7 A (2)
	at +70 °C	250 mA per Pin4/port class A, ∑(L+, I/O, C/Q) 5 A (2)
Max. current per port	up to +40 °C	max. 1,50 A per port class A, ∑(class A) 8 A
	at +55 °C	max. 1,05 A per port class A, ∑(class A) 7 A
	at +70 °C	max. 0,75 A per port class A, ∑(class A) 5 A

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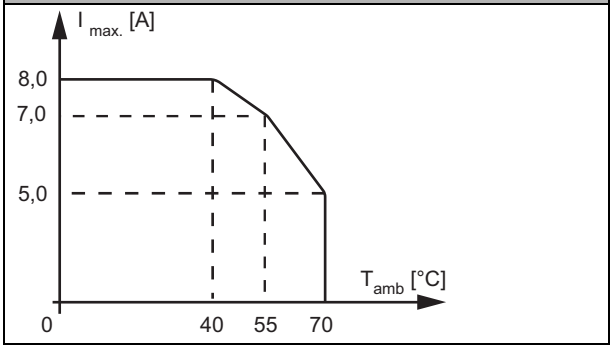
Article no.	BWU4386
Display	
LED ASI (green)	on: ASi voltage on flashing: ASi voltage on, but peripheral fault (3) or address 0 off: no ASi voltage
LED FLT/FAULT (red)	on: ASi address 0 or ASi node offline flashing: peripheral fault (3) off: ASi node online
LED AUX (red/green)	green: AUX voltage OK red: AUX voltage < 18 V
LEDs C/Q1 ... C/Qx (red/green)	state of IO-Link ports 1 ... 8: green: IO-Link communication OK yellow: switching signal at input or output at Pin4 red: IO-Link communication error or short-circuit
LEDs I/O1 ... I/Ox (yellow/red)	state of inputs I1 ... I8 **or** outputs O1 ... O8, depending on configuration off: the corresponding input or output is turned off yellow: the corresponding input or output is turned on red: output short-circuit (3) at the corresponding output
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)
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	30*g*, 11 ms, acc. EN 61131-2
Max. tolerable vibration stress	5 ... 8 Hz 50 mm_{pp}/8 ... 500 Hz 6*g*, acc. EN 61131-2
Insulation voltage	≥500 V
Weight	220 g
Dimensions (W / H / D in mm)	60 / 152 / 46

(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)

BWU4386
Derating total current of sensor supply and IO-Link / input/output supply (L+, C/Q)



(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

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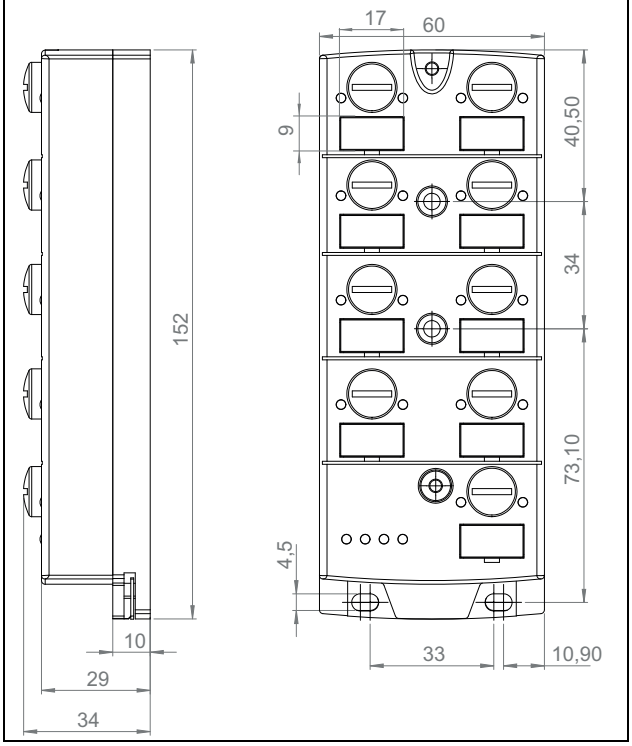
Dimensional drawing



UL-specifications (UL508)	
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.

Article no.	Peripheral fault indication			
	Overload sensor supply	Output short circuited	AUX voltage missing	IO-Link error/event
BWU4386	•	•	•	•

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
I/Ox	either digital input x **or** digital output 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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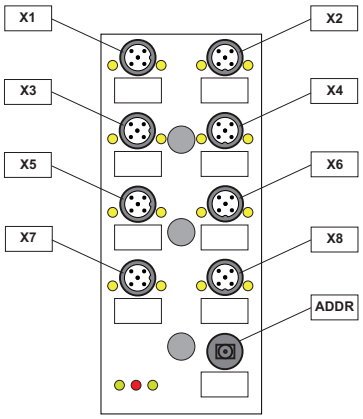
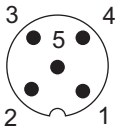
Bihl + Wiedemann

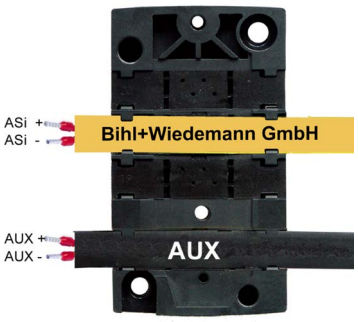
Connections								
Art. no.	**M12 connection**	**Marking**	**Function**	**Pin1**	**Pin2**	**Pin3**	**Pin4**	**Pin5**
BWU4386	**X1**	I/O1, C/Q1	IO-Link port class A	$L+_{1\ ext.out}$	I/O1	$L-_{1\ ext.out}$	$C/Q1_{ext.out}$	n.c.
	X2	I/O2, C/Q2	IO-Link port class A	$L+_{2\ ext.out}$	I/O2	$L-_{2\ ext.out}$	$C/Q2_{ext.out}$	n.c.
	X3	I/O3, C/Q3	IO-Link port class A	$L+_{3\ ext.out}$	I/O3	$L-_{3\ ext.out}$	$C/Q3_{ext.out}$	n.c.
	X4	I/O4, C/Q4	IO-Link port class A	$L+_{4\ ext.out}$	I/O4	$L-_{4\ ext.out}$	$C/Q4_{ext.out}$	n.c.
	X5	I/O5, C/Q5	IO-Link port class A	$L+_{5\ ext.out}$	I/O5	$L-_{5\ ext.out}$	$C/Q5_{ext.out}$	n.c.
	X6	I/O6, C/Q6	IO-Link port class A	$L+_{6\ ext.out}$	I/O6	$L-_{6\ ext.out}$	$C/Q6_{ext.out}$	n.c.
	X7	I/O7, C/Q7	IO-Link port class A	$L+_{7\ ext.out}$	I/O7	$L-_{7\ ext.out}$	$C/Q7_{ext.out}$	n.c.
	X8	I/O8, C/Q8	IO-Link port class A	$L+_{8\ ext.out}$	I/O8	$L-_{8\ ext.out}$	$C/Q8_{ext.out}$	n.c.
	ADDR (protection cap)	connection for ASi-5 addressing plug						



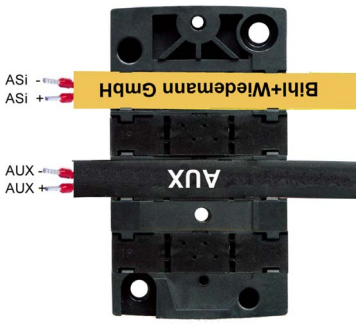


Mounting according to cable direction

IP67



ordinary



turned

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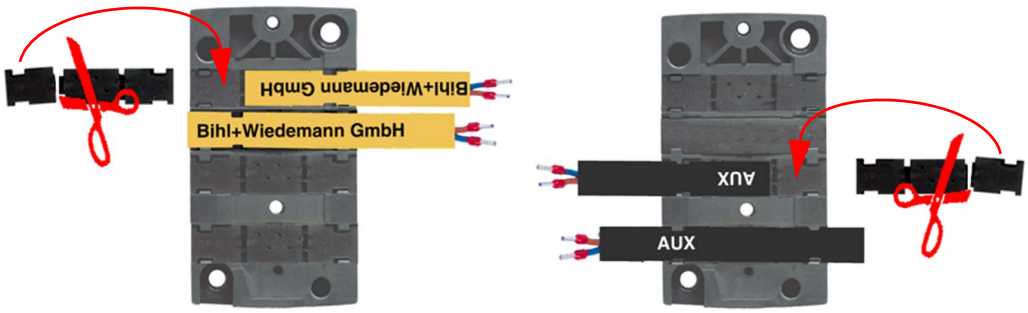
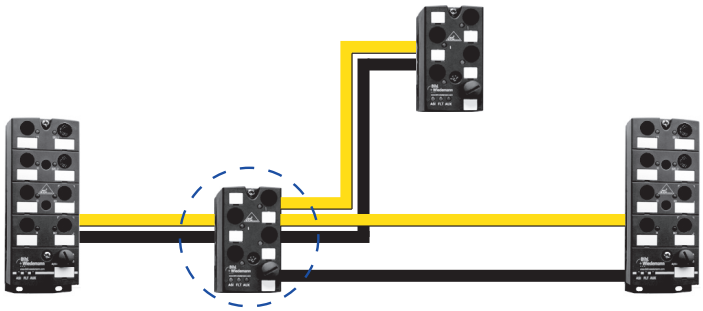
Line termination with sealing profiles / as junction



Use as profile cable branch



Accessories:

- **ASi substructure module (CNOMO) for 8 channel module in 60 mm housing, screw mounting (art. no. BW2351)**
- **ASi substructure module (CNOMO) for 8 channel module in 60 mm housing, DIN rail mounting (art. no. BW3516)**
- **Universal protection cap ASi-5/ASi-3 for M12 sockets, IP67 (art. no. BW4056)**
- **Sealing profile IP67 (IDC plug), 60 mm (art. no. BW3282)**
- **ASi-5/ASi-3 Address Programming Device (art. no. BW4925)**