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

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(figure similar)

New standard ASi-5

Quadruple IO-Link master

4 x IO-Link port class B

Power supply of IO-Link ports out of ASi

Additional voltage supply out of galvanically isolated AUX

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	–	4	out of ASi	out of AUX	ASi profile cable	1 ASi-5 address	**BWU4400**

(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.		BWU4400
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)
Required master profile		M5
Since ASi specification		5
ASi process data width		16 byte (1)
Max. current consumption		265 mA
Max. current consumption without sensor / actuator supply		60 mA
AUX		
Voltage		24 V (18 … 30 V)
Max. current consumption		4 A
IO-Link		
Number		4 x ports class B
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 ASi (Pin1, Pin4) and out of AUX (Pin2)
Power supply of attached sensors (L+)	up to +25 °C	200 mA per port, ∑(L+, C/Q) 200 mA (2)
	at +40 °C	180 mA per port, ∑(L+, C/Q) 180 mA (2)
	at +55 °C	100 mA per port, ∑(L+, C/Q) 100 mA (2)
IO-Link / input/output current (C/Q)	up to +25 °C	150 mA per port, ∑(L+, C/Q) 200Am (2)
	at +40 °C	150 mA per port, ∑(L+, C/Q) 180 mA (2)
	at +55 °C	100 mA per port, ∑(L+, C/Q) 100 mA (2)
Max. actuator supply for port class B (P24)	up to +25 °C	4 A per port, ∑(P24) 4 A (2)
	at +40 °C	4 A per port, ∑(P24) 4 A (2)
	at +55 °C	4 A per port, ∑(P24) 4 A (2)
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/Qn (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

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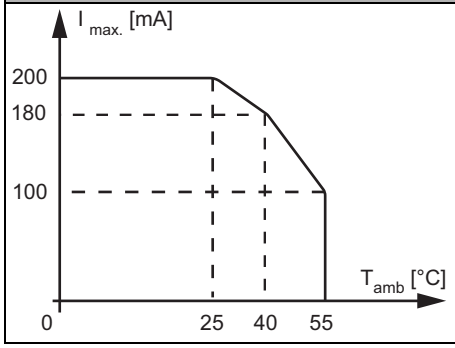
Article no.	BWU4400
Environment	
Applied standards	EN 61000-6-2 EN 61000-6-3 EN 61131-2 EN 60529
It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe	no (4)
Operating altitude	max. 2000 m
Operating temperature	-30 °C … +55 °C (2)
Storage temperature	-25 °C … +85 °C
Housing	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	200 g
Dimensions (W / H / D in mm)	45 / 80 / 38 (without substructure module)

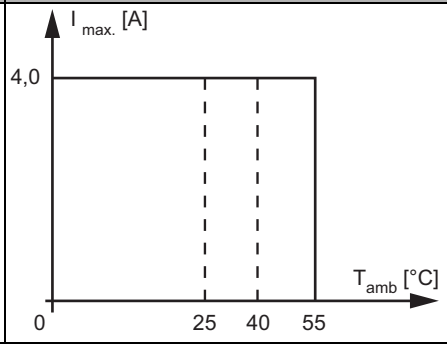
(1) The ASi-5 process data bandwidth depends on the ASi-5 profile. Further selectable profiles can be found in the hardware catalog of the Bihl+Wiedemann Suite or in the configuration manual.

(2)

BWU4400
Derating total current of sensor supply and IO-Link / input/output supply (L+, C/Q)



BWU4400
Derating actuator supply port class B (P24)



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

(4) The module is only suitable for use in paths with passively safety-switched AUX line if both the P24 and the N24 potential are safety-switched. Then a fault exclusion for the connection of the two potentials ASi and AUX can be assumed.

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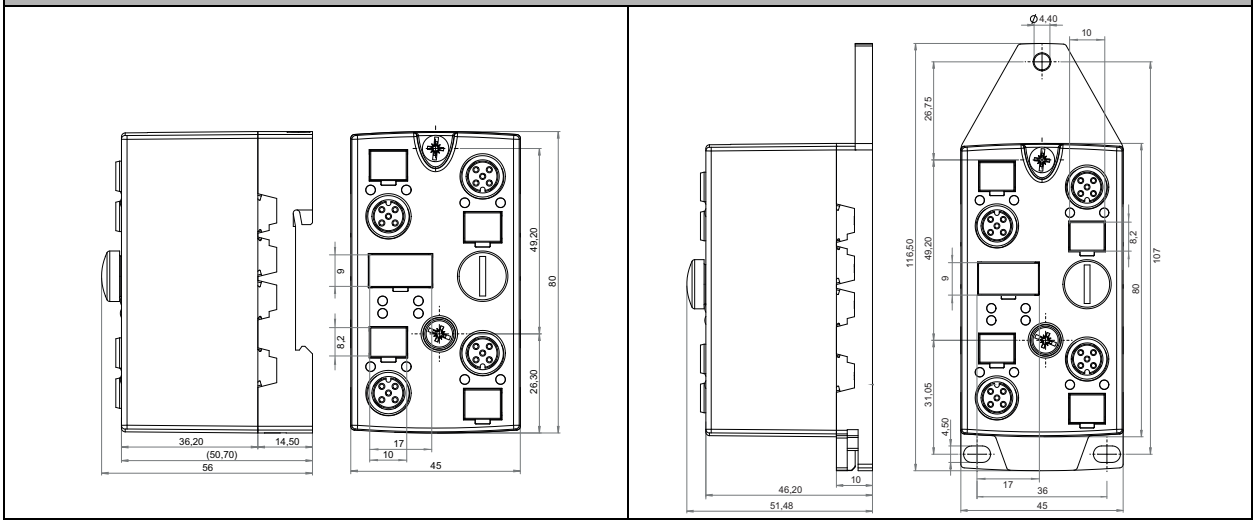
Dimensional drawing


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 event
BWU4400	•	•	•	•

Programming

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

Pin assignment

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

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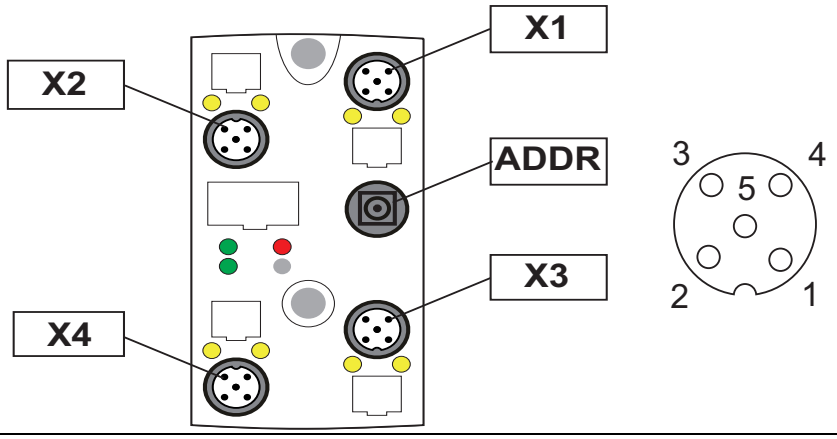
Connections								
Art. no.	**M12 connection**	**Marking**	**Function**	**Pin1**	**Pin2**	**Pin3**	**Pin4**	**Pin5**
BWU4400	**X1**	C/Q1	IO-Link port class B	$L+_{1\ out\ of\ ASi}$	$P24_{ext.out}$	$L-_{1\ out\ of\ ASi}$	$C/Q1_{out\ of\ ASi}$	$N24_{ext.out}$
	X2	C/Q2	IO-Link port class B	$L+_{2\ out\ of\ ASi}$	$P24_{ext.out}$	$L-_{2\ out\ of\ ASi}$	$C/Q2_{out\ of\ ASi}$	$N24_{ext.out}$
	X3	C/Q3	IO-Link port class B	$L+_{3\ out\ of\ ASi}$	$P24_{ext.out}$	$L-_{3\ out\ of\ ASi}$	$C/Q3_{out\ of\ ASi}$	$N24_{ext.out}$
	X4	C/Q4	IO-Link port class B	$L+_{4\ out\ of\ ASi}$	$P24_{ext.out}$	$L-_{4\ out\ of\ ASi}$	$C/Q4_{out\ of\ ASi}$	$N24_{ext.out}$
	ADDR (protection cap)	connection for ASi-5 addressing plug						



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)**