

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 in one housing


Power supply of IO-Link ports out of AUX

ASi via M12



(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	4	—	out of AUX	—	ASi via M12	1 ASi-5 address	BWU3899

- (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.		BWU3899
Connection		
ASi/AUX connection		M12 ⁽¹⁾
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
Process data width		2 - 32 Bytes
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
IO-Link		
Number		4 ports Class A 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 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, $\Sigma(L+, C/Q)$ 2 A ⁽²⁾
	at +55 °C	400 mA per port, $\Sigma(L+, C/Q)$ 1,6 A ⁽²⁾
	at +70 °C	200 mA per port, $\Sigma(L+, C/Q)$ 0,8 A ⁽²⁾
IO-Link / input/output current (C/Q)	up to +40 °C	500 mA per port, $\Sigma(L+, C/Q)$ 2 A ⁽²⁾
	at +55 °C	400 mA per port, $\Sigma(L+, C/Q)$ 1,6 A ⁽²⁾
	at +70 °C	200 mA per port, $\Sigma(L+, C/Q)$ 0,8 A ⁽²⁾
Max. actuator supply for port class B (P24)	up to +40 °C	—
	at +55 °C	
	at +70 °C	
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 ... I4

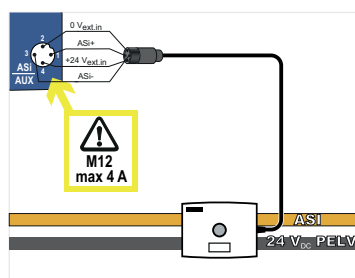
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Article no.	BWU3899
Environment	
Applied standards	EN 61000-6-2 EN 61000-6-3 EN 61131-2 EN 60529
It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe	no ⁽⁴⁾
Operating altitude	max. 2000 m
Operating temperature	-30 °C ... +55 °C (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 / 53 (without substructure)

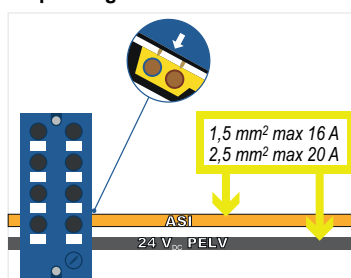
(1) Line protection:

If the module is supplied via a M12 connection with A or B coding, it may only be used with a current load of max. 4 A per pin in acc. with IEC 61076-2-101 and IEC 61076-2-109. A fused tap is recommended. There is no such limitation for modules supplied via piercing contacts.

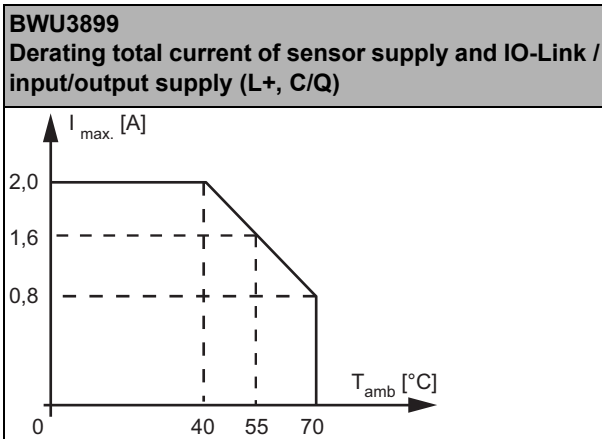
Connection to ASi and AUX via M12



via piercing contacts



(2)



(3) See table "Peripheral fault indication"

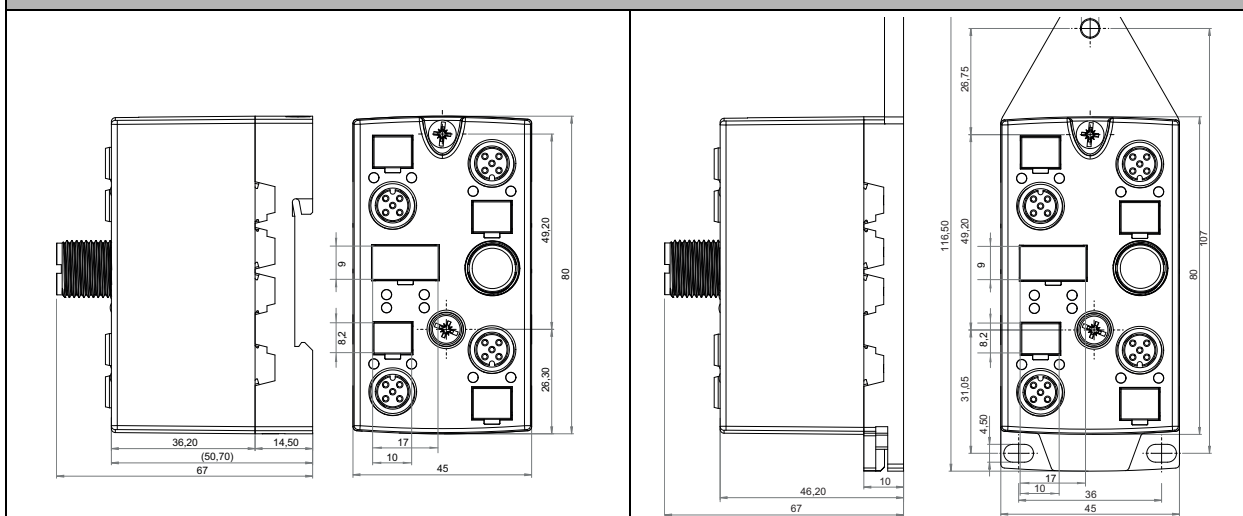
(4) The module is not suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors cannot be assumed for the connection of the two ASi and AUX potentials.

If the module is supplied from an unswitched AUX cable, this has no influence on the safety consideration for the paths with passively safe-switched AUX cable. In an ASi circuit, paths supplied from a passively safe-switched AUX cable and paths supplied from unswitched AUX potential can be used together.

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

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Dimensional drawing



Article no.	Peripheral fault indication			
	Overload sensor supply	Output short circuited	AUX voltage missing	IO-Link error/event
BWU3899	•	•	•	•

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
ASi +, ASi -	connection to ASi bus
24V _{ext.in}	input power supply, out of external voltage, positive pole (AUX)
0V _{ext.in}	input power supply, out of external voltage, negative pole (AUX)

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Connections								
Art. no.	M12 connection	Marking	Function	Pin1	Pin2	Pin3	Pin4	Pin5
BWU3899	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.
	ASI/AUX	ASI/AUX	power supply	ASI+	0 V _{ext in}	ASI-	24 V _{ext in}	—

Accessories:

- Universal protection cap ASi-5/ASi-3 for M12 sockets, IP67 (art. no. BW4056)
- Passive Distributor ASi/AUX to 1 x M12 cable socket, straight, 5 poles, depth 19 mm, IP67 (article no. BW3911)
- Passive Distributor ASi/AUX to 1 x M12 cable socket, angled, 5 poles, depth 19 mm, IP67 (art. no. BW3408)
- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)
- It is recommended to use pre-assembled cables to connect the power source with the module.