

ASi-5 Slave/IO-Link Master with 4 IO-Link Ports, IP67, M12

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New standard ASi-5

Quadruple IO-Link master

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

ASi via M12



(figure similar)



Figure	Type	Configurable I/O's ⁽¹⁾	Sensor supply (IO-Link supply and input/output voltage) ⁽²⁾	Actuator supply (for ports class B) ⁽³⁾	ASi connection ⁽⁴⁾	ASi address ⁽⁵⁾	Art. no.
	IP67 4 x M12, ASi-5	2 x IO-Link ports class A + 2 x IO-Link ports class B	out of AUX	out of AUX	ASi via M12	1 ASi-5 slave	BWU3897

(1) **Configurable I/O's**

Port class A: In this type, Pin 2 is assigned with an additional digital input.

Port class B: This type provides additional supply voltage and is suitable for the connection of devices that have an increased power demand. In this case, pins 2 and 5 are used to provide additional (galvanically isolated) supply voltage.

Configurability: The C/Q connections may be used for IO-Link configuration or as digital input/output signal.

(2) **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.

(3) **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 slaves with port class B need a higher current consumption, additionally they can be supplied directly via the power supply.

(4) **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).

(5) **ASi address**

AB slave (max. 62 AB slaves/ASi network), 2 AB slaves (max. 31 modules with 2 AB slaves), single slaves (max. 31 single slaves/ASi network), 1 ASi-5 slave (max. 62 ASi-5 slaves/ASi network), mixed use allowed.

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

Upon request, slaves are available with specific ASi slave profiles.

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Article no.		BWU3897
Connection		
ASi/AUX connection	M12 ⁽¹⁾	
Periphery connection	M12	
Length of connector cable	I/O: max. 20 m	
ASi		
Address	1 ASi-5 Slave	
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	
Configurable I/O's		
Number	2 ports Class A + 2 ports Class B	
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, $\sum(L+, C/Q) 2 A$, $\sum(L+, C/Q, P24) 4 A$ ⁽²⁾
	at +55 °C	400 mA per port, $\sum(L+, C/Q) 1,6 A$, $\sum(L+, C/Q, P24) 4 A$ ⁽²⁾
	at +70 °C	200 mA per port, $\sum(L+, C/Q) 0,8 A$, $\sum(L+, C/Q, P24) 4 A$ ⁽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⁾
	at +55 °C	400 mA per port, $\sum(L+, C/Q) 1,6 A$, $\sum(L+, C/Q, P24) 4 A$ ⁽²⁾
	at +70 °C	200 mA per port, $\sum(L+, C/Q) 0,8 A$, $\sum(L+, C/Q, P24) 4 A$ ⁽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⁾
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: slave address 0 or slave offline flashing: peripheral fault ⁽³⁾ off: slave 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	
LEDs I1 ... In (yellow)	state of inputs I1, I2	

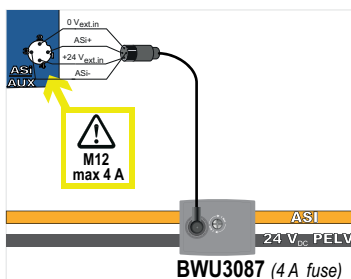
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Article no.	BWU3897
Environment	
Applied standards	EN 61000-6-2 EN 61000-6-3 EN 61131-2 EN 60529
Passive safety (up to PLe/SIL 3)	no ⁽⁴⁾
Operating altitude	max. 2000 m
Operating temperature	-30 °C ... +55 °C (up to max. +70 °C) ^{(2) (5)}
Storage temperature	-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)

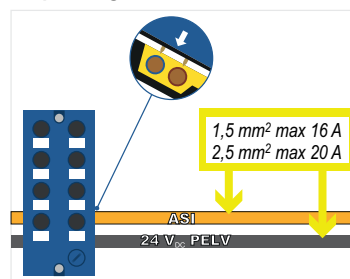
(1) Line protection:

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)

<p>BWU3897 Derating total current of sensor supply and IO-Link / input/output supply (L+, C/Q)</p>	<p>BWU3897 Derating total current of sensor supply, IO-Link / input/output supply and actuator supply port class B (L+, C/Q, P24)</p>
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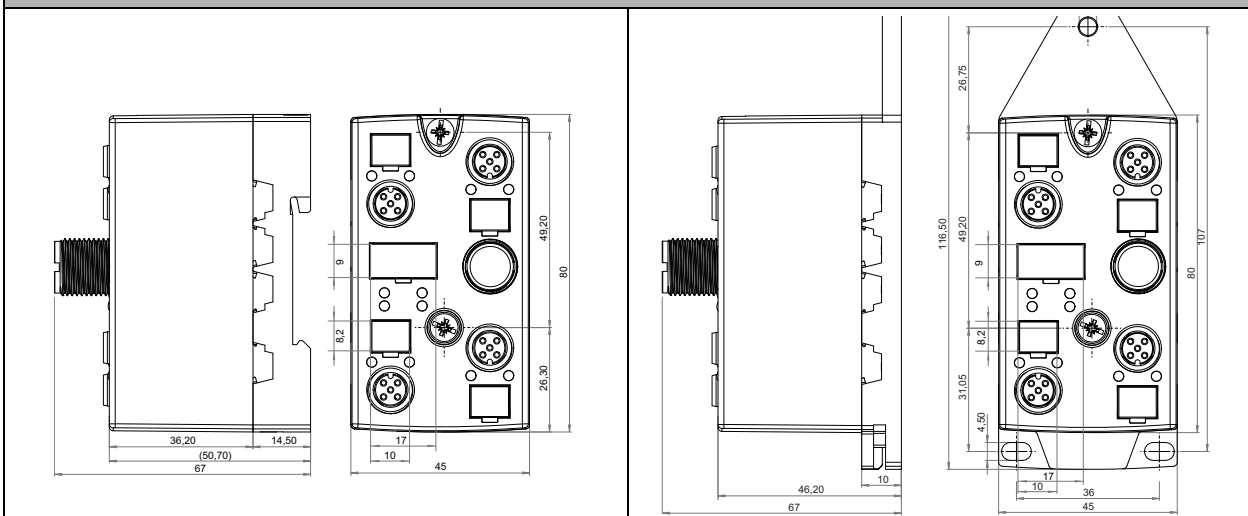
(3) See table "Peripheral fault indication"

(4) Exclusion of errors for the connection of the two ASi and AUX potentials cannot be assumed in the module. It is not possible to achieve passive safety for the application with this module.

(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
BWU3897	•	•	•	•

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.

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
Ix	digital input x
L+	IO-Link sensor supply out of external voltage, positive pole
L-	IO-Link sensor supply, out of external voltage, negative pole
C/Qx	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
BWU3897	X1	C/Q1 / I1	IO-Link port class A	L+ ₁	I1	L- ₁	C/Q1	n.c.
	X2	C/Q2 / I2	IO-Link port class A	L+ ₂	I2	L- ₂	C/Q2	n.c.
	X3	C/Q3	IO-Link port class B	L+ ₃	P24	L- ₃	C/Q3	N24
	X4	C/Q4	IO-Link port class B	L+ ₄	P24	L- ₄	C/Q4	N24
	ASi/AUX	ASi/AUX	power supply	ASi+	0 V _{ext in}	ASi-	24 V _{ext in}	-

The diagram shows a blue PCB with five M12 ports labeled X1, X2, X3, X4, and ASi/AUX. X1, X2, X3, and X4 are IO-Link ports. The ASi/AUX port is a power supply port. A circular pinout diagram for the ASi/AUX port shows 5 pins numbered 1 to 5.

Accessories:

- Protection caps for unused M12 sockets (art. no. BW2368)
- Passive Distributor ASi/AUX to 2 x M12 socket, internal protection via changeable 4 A slow-blow fuses (art. no. BWU3087)
- It is recommended to use pre-assembled cables to connect the power source with the module.