

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

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fourfold IO-Link Master


2 single addresses in one housing

Power supply of IO-Link ports out of AUX (or ASi)



(Figure similar)



Figure	Type	Inputs digital	Outputs digital	M12 wiring ⁽¹⁾	Input voltage (sensor supply) ⁽²⁾	Output voltage (actuator supply) ⁽³⁾	ASi connection ⁽⁴⁾	ASi address ⁽⁵⁾	Max. output current	Art. no.
	IP67 8 x M12	4 x IO-Link port + 4 x electronic	4 x IO-Link port	IO-Link port class A	out of AUX	out of AUX	ASi profile cable	2 single addresses	500 mA	BWU2853
	IP67 8 x M12	4 x IO-Link port + 4 x electronic	4 x IO-Link port	IO-Link port class A	out of ASi	out of ASi	ASi profile cable	2 single addresses	120 mA	BWU2945 ⁽⁶⁾
	IP67 8 x M12	4 x IO-Link port	4 x IO-Link port	IO-Link port Class B	out of ASi	output voltage out of ASi; actuator supply out of AUX	ASi profile cable	2 single addresses	120 mA	BWU3020

(1) M12 wiring

Port Class A: In this type Pin2 is assigned with an additional digital input.

Port Class B: This type provides an additional power supply 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 the additional power supply.

(2) Input voltage (sensor supply)

Inputs 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) Output voltage (actuator supply)

The supply of the outputs is made by ASi or by AUX (auxiliary 24 V power). By supply out of ASi there is no connection to earth or external potential allowed.

(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 addresses (max. 62 AB addresses/ASi network), 2 AB addresses (max. 31 modules with 2 AB addresses), Single addresses (max. 31 Single addresses/ASi network), mixed use allowed. Upon request, ASi-3 nodes are available with specific ASi node profiles. For modules with two ASi-3 nodes the 2nd ASi-3 node is turned off as long as the 1st ASi-3 node is addressed to address "0".

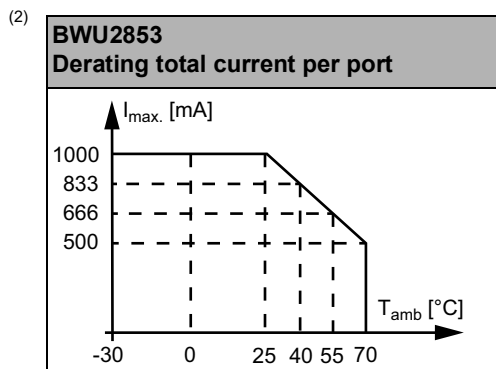
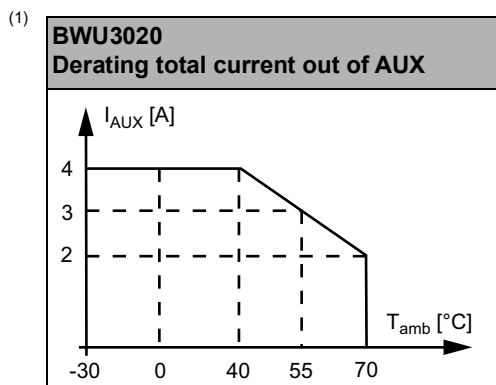
(6) Only on request.

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Article no.	BWU2853		BWU3020	
Connection				
ASi/AUX connection	profile cable and piercing			
Periphery connection	M12			
Length of connector cable	I/O: max. 20 m			
IO-Link				
Number	4 ports Class A		4 ports Class B	
Data rate	COM1 / COM2 / COM3			
IO-Link revision	1.1			
ASi				
Profile	Node 1: S-7.5.5 (ID1=F default) Node 2: S-7.5.5 (ID1=E default)			
Address	2 single addresses			
Operating voltage	30 V (18 ... 31.6 V)			
Required master profile	≥M4			
Since ASi specification	3.0			
Max. current consumption	50 mA			200 mA
Max. current consumption without sensor / actuator supply	50 mA			80 mA
AUX				
Voltage	24 V (18 ... 30 V)			
Max. current consumption	4 A ⁽¹⁾			
Input				
Number	4 (via IO-Link port) + 4 x electronic		4 (via IO-Link port)	
Power supply	out of AUX		out of ASi	
Supply of attached sensors	up to +25 °C	500 mA per port, $\Sigma(\text{sensors} + \text{outputs})$ max. 1000 mA ⁽²⁾	$\Sigma(\text{sensors} + \text{outputs})$ max. 120 mA ⁽⁶⁾	
	at +40 °C	500 mA per port, $\Sigma(\text{sensors} + \text{outputs})$ max. 833 mA ⁽²⁾		
	at +55 °C	500 mA per port, $\Sigma(\text{sensors} + \text{outputs})$ max. 666 mA ⁽²⁾	$\Sigma(\text{sensors} + \text{outputs})$ max. 100 mA ⁽⁶⁾	
	at +70 °C	500 mA per port, $\Sigma(\text{sensors} + \text{outputs})$ max. 500 mA ⁽²⁾	$\Sigma(\text{sensors} + \text{outputs})$ max. 80 mA ⁽⁶⁾	
Switching threshold	U<5 V (low) U>15 V (high)			
Output				
Number	4 (via IO-Link port)			
Power supply	out of AUX		output voltage out of ASi; actuator supply out of AUX	
Max. output current	up to +25 °C	500 mA per port, $\Sigma(\text{sensors} + \text{outputs})$ max. 1000 mA ⁽²⁾	$\Sigma(\text{sensors} + \text{outputs})$ max. 120 mA ⁽⁶⁾	
	at +40 °C	500 mA per port, $\Sigma(\text{sensors} + \text{outputs})$ max. 833 mA ⁽²⁾		
	at +55 °C	500 mA per port, $\Sigma(\text{sensors} + \text{outputs})$ max. 666 mA ⁽²⁾	$\Sigma(\text{sensors} + \text{outputs})$ max. 100 mA ⁽⁶⁾	
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Article no.	BWU2853	BWU3020
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: address 0 or offline flashing: peripheral fault ⁽³⁾ off: online	
LED AUX (red/green)	green: AUX voltage OK red: AUX voltage < 18 V	
LEDs P1 ... Pn (red/green)	state of IO-Link port P1 ... P4 green: IO-Link communication OK yellow: switching signal at input or output red: IO-Link communication error	
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) ⁽¹⁾ ⁽²⁾ ⁽⁵⁾ ⁽⁶⁾	
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)	60 / 151 / 31	



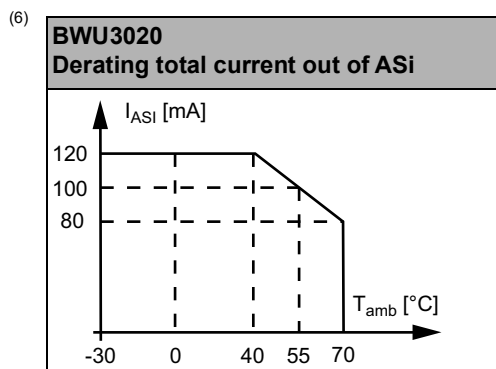
(3) See table "Peripheral fault indication"

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(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



Article no.	Peripheral fault indication			
	Overload sensor supply	Output short circuited	AUX voltage missing	IO-Link error/event
BWU2853	•	•	•	•
BWU3020	•	•	–	•

Programming	ASi bit assignment			
	D0	D1	D2	D3
	Input			
BWU2853 / BWU3020	Node 1: P1-I ⁽¹⁾	Node 1: P2-I ⁽¹⁾	–	–
	Node 2: P3-I ⁽¹⁾	Node 2: P4-I ⁽¹⁾		
	Output			
BWU2853 / BWU3020	–	–	adjustable ⁽¹⁾	adjustable ⁽¹⁾
	Parameter bit			
	P0	P1	P2	P3
BWU2853 / BWU3020	0 = data mapping adjustable	0 = IO-Link parameter backup active	0 = manual setting of port configuration	–
	1 = default data mapping activated	1 = no IO-Link parameter backup	1 = plug and comm mode active ⁽²⁾	–

(1) Via process data mapping and IO-Link gateway configuration adjustable.

(2) Plug and Communication mode is not usable **with** digital outputs (actuator without IO-Link). Digital inputs are frozen during IO-Link wakeup sequence.

Pin assignment

Signal name	Explanation
24 V _{ext out}	power supply, out of external voltage, positive pole (AUX, actuator supply)
0 V _{ext out}	power supply, out of external voltage, negative pole (AUX, actuator supply)
I	digital input
L+(24 V _{ASi out})	power supply, out of ASi, positive pole (IO-Link, sensor supply)
L-(0 V _{ASi out})	power supply, out of ASi, negative pole (IO-Link, sensor supply)
I/O/Com	connection optionally for input, output or IO-Link communication

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Connections									
Art. no.	M12 connection	Marking	ASi assignment	Function	Pin1	Pin2	Pin3	Pin4	Pin5
BWU2853	X1	P1	Node 1	IO-Link port P1	L+(24 V _{ext out})	I1	L-(0 V _{ext out})	I/O/Com1	n.c.
	X2	P2		IO-Link port P2	L+(24 V _{ext out})	I2	L-(0 V _{ext out})	I/O/Com2	n.c.
	X3	P3	Node 2	IO-Link port P3	L+(24 V _{ext out})	I3	L-(0 V _{ext out})	I/O/Com3	n.c.
	X4	P4		IO-Link port P4	L+(24 V _{ext out})	I4	L-(0 V _{ext out})	I/O/Com4	n.c.
	ADDR (protection cap)	connection for ASi-3 addressing device							
BWU3020	X1	P1	Node 1	IO-Link port P1	L+(24 V _{ASi out})	24 V _{ext out}	L-(0 V _{ASi out})	I/O/Com1	0 V _{ext out}
	X2	P2		IO-Link port P2	L+(24 V _{ASi out})	24 V _{ext out}	L-(0 V _{ASi out})	I/O/Com2	0 V _{ext out}
	X3	P3	Node 2	IO-Link port P3	L+(24 V _{ASi out})	24 V _{ext out}	L-(0 V _{ASi out})	I/O/Com3	0 V _{ext out}
	X4	P4		IO-Link port P4	L+(24 V _{ASi out})	24 V _{ext out}	L-(0 V _{ASi out})	I/O/Com4	0 V _{ext out}
	ADDR (protection cap)	connection for ASi-3 addressing device							

The diagram shows a blue ASi module with eight M12 connectors labeled X1 through X8 and an ADDR connector. X1 and X2 are at the top, X3 and X4 in the middle, and X5, X6, X7, and X8 at the bottom. The ADDR connector is located at the bottom right. To the right of the module is a circular 5-pin M12 connector with pins numbered 1 to 5. Pin 1 is at the bottom, pin 2 at the bottom-left, pin 3 at the top-left, pin 4 at the top-right, and pin 5 in the center.

Accessories:

- ASi substructure module (CNOMO) for 8 channel module in 60 mm housing (art. no. BW2351)
- Universal protection cap ASi-5/ASi-3 for M12 sockets, IP67 (art. no. BW4056)
- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)