AS-i / IO-Link Module,
IO-Link Master with 4 IO-Link Ports

AS-i/IO-Link Module,
IO-Link Master with 4 IO-Link ports

(Figure similar)

fourfold IO-Link Master

2 single slaves in one housing

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

Figure	Type	Inputs digital	Outputs digital	M12 wiring (1)	Input voltage (sensor supply) (2)	Output voltage (actuator supply) (3)	AS-i connection (4)	AS-i 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	AS-i profile cable	2 single slaves	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 AS-i	out of AS-i	AS-i profile cable	2 single slaves	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 AS-i	output voltage out of AS-i; actuator supply out of AUX	AS-i profile cable	2 single slaves	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, pins2 and 5 are used to provide the additional power supply.

(2) **Input voltage (sensor supply)**
Inputs are supplied by AS-i or by AUX (auxiliary 24 V power). If supplied by AS-i, inputs can neither be connected to earth nor to external potential.

(3) **Output voltage (actuator supply)**
The supply of the outputs is made by AS-i or by AUX (auxiliary 24 V power). By supply out of AS-i there is no connection to earth or external potential allowed.

(4) **AS-i connection**
The connection to AS-i as well to AUX (auxiliary 24 V power) is made via yellow or black AS-i profile cable with piercing technology or via M12 socket (in IP20 via clamps).

(5) **AS-i address**
AB slave (max. 62 AB slaves/AS-i network), 2 AB slaves (max. 31 modules with 2 AB slaves), single slaves (max. 31 single slaves/AS-i network), mixed use allowed (upon request, slaves are available with specific AS-slave profiles).

(6) Only on request.

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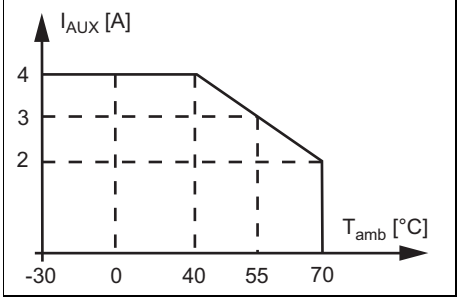
Article no.		BWU2853	BWU3020
Connection			
AS-i/AUX connection		profile cable and piercing	
Periphery connection		M12	
Length of connector cable		I/O: max. 20 m	
IO-Link			
Number		4 ports Class A	4 ports Class B
Data rate		COM1 / COM2 / COM3	
IO-Link revision		1.1	
AS-i			
Profile		slave 1: S-7.5.5 (ID1=F default) slave 2: S-7.5.5 (ID1=E default)	
Address		2 single slaves	
Operating voltage		30 V (18 … 31.6 V)	
Required master profile		≥M4	
Since AS-i 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 AS-i
Supply of attached sensors	up to +25 °C	500 mA per port, ∑(sensors + outputs) max. 1000 mA (2)	∑(sensors + outputs) max. 120 mA (5)
	at +40 °C	500 mA per port, ∑(sensors + outputs) max. 833 mA (2)	
	at +55 °C	500 mA per port, ∑(sensors + outputs) max. 666 mA (2)	∑(sensors + outputs) max. 100 mA (5)
	at +70 °C	500 mA per port, ∑(sensors + outputs) max. 500 mA (2)	∑(sensors + outputs) max. 80 mA (5)
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 AS-i; actuator supply out of AUX
Max. output current	up to +25 °C	500 mA per port, ∑(sensors + outputs) max. 1000 mA (2)	∑(sensors + outputs) max. 120 mA (5)
	at +40 °C	500 mA per port, ∑(sensors + outputs) max. 833 mA (2)	
	at +55 °C	500 mA per port, ∑(sensors + outputs) max. 666 mA (2)	∑(sensors + outputs) max. 100 mA (5)
	at +70 °C	500 mA per port, ∑(sensors + outputs) max. 500 mA (2)	∑(sensors + outputs) max. 80 mA (5)

Article no.	BWU2853	BWU3020
Display		
LED ASI (green)	on: AS-i voltage on flashing: AS-i voltage on, but peripheral fault (3) or address 0 off: no AS-i 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 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	
Operating altitude	max. 2000 m	
Operating temperature	-30 °C … +55 °C (up to max. +70 °C) (1) (2) (4) (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	200 g	
Dimensions (W / H / D in mm)	60 / 151 / 31	

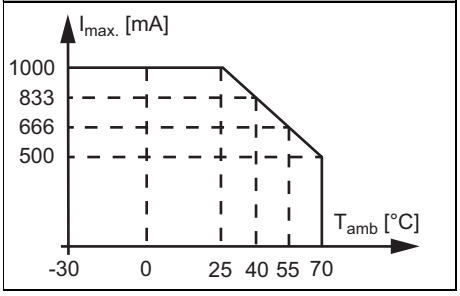
(1)

BWU3020
Derating total current out of AUX



(2)

BWU2853
Derating total current per port

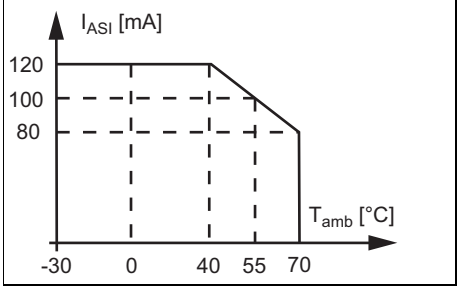


(3) **See table "Peripheral fault indication"**

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

(5)

BWU3020
Derating total current out of AS-i



Article no.	Peripheral fault indication		
	Overload sensor supply	Output short circuited	AUX voltage missing
BWU2853	•	•	•
BWU3020	•	•	–

Programming	AS-i bit assignment			
Bit	D0	D1	D2	D3
	Input			
BWU2853 / BWU3020	Slave 1: P1-I (1)	Slave 1: P2-I (1)	–	–
	Slave 2: P3-I (1)	Slave 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
$L+_{AS\text{-}i\ out}$	power supply, out of AS-i, positive pole (IO-Link, sensor supply)
0 $V_{AS\text{-}i\ out}$	power supply, out of AS-i, negative pole (IO-Link, sensor supply)
I/O/Com	connection optionally for input, output or IO-Link communication

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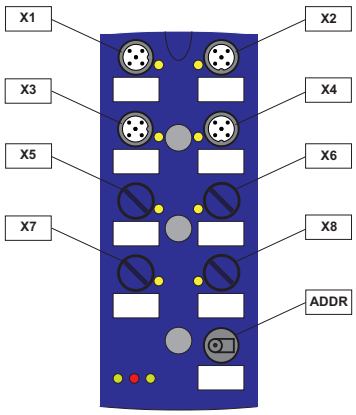
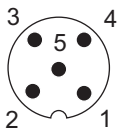
Connections									
Art. no.	**M12 connection**	**Marking**	**AS-i assignment**	**Function**	**Pin1**	**Pin2**	**Pin3**	**Pin4**	**Pin5**
BWU2853	**X1**	P1	slave 1	IO-Link port P1	24 $V_{ext\ out}$	I1	0 $V_{ext\ out}$	I/O/Com1	n.c.
	X2	P2		IO-Link port P2	24 $V_{ext\ out}$	I2	0 $V_{ext\ out}$	I/O/Com2	n.c.
	X3	P3	slave 2	IO-Link port P3	24 $V_{ext\ out}$	I3	0 $V_{ext\ out}$	I/O/Com3	n.c.
	X4	P4		IO-Link port P4	24 $V_{ext\ out}$	I4	0 $V_{ext\ out}$	I/O/Com4	n.c.
	ADDR (dummy plug)	connection for AS-i addressing device							
BWU3020	**X1**	P1	Slave 1	IO-Link port P1	$L+_{AS\text{-}i\ out}$	24 $V_{ext\ out}$	0 $V_{AS\text{-}i\ out}$	I/O/Com1	0 $V_{ext\ out}$
	X2	P2		IO-Link port P2	$L+_{AS\text{-}i\ out}$	24 $V_{ext\ out}$	0 $V_{AS\text{-}i\ out}$	I/O/Com2	0 $V_{ext\ out}$
	X3	P3	Slave 2	IO-Link port P3	$L+_{AS\text{-}i\ out}$	24 $V_{ext\ out}$	0 $V_{AS\text{-}i\ out}$	I/O/Com3	0 $V_{ext\ out}$
	X4	P4		IO-Link port P4	$L+_{AS\text{-}i\ out}$	24 $V_{ext\ out}$	0 $V_{AS\text{-}i\ out}$	I/O/Com4	0 $V_{ext\ out}$
	ADDR (dummy plug)	connection for AS-i addressing device							





Accessories:

- **AS-i substructure module (CNOMO) for 8 channel module in 60 mm housing (art. no. BW2351)**
- **Protection caps for unused M12 sockets (art. no. BW2368)**