

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

fourfold IO-Link Master


2 single slaves in one housing

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



(Figure similar)



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, pins 2 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.

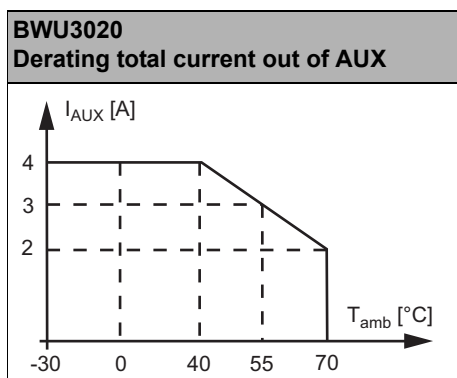
AS-i / IO-Link Module, IO-Link Master with 4 IO-Link Ports

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, $\Sigma(\text{sensors} + \text{outputs})$ max. 1000 mA ⁽²⁾	$\Sigma(\text{sensors} + \text{outputs})$ max. 120 mA ⁽⁵⁾	
	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⁾		
	at +70 °C	500 mA per port, $\Sigma(\text{sensors} + \text{outputs})$ max. 500 mA ⁽²⁾		
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, $\Sigma(\text{sensors} + \text{outputs})$ max. 1000 mA ⁽²⁾	$\Sigma(\text{sensors} + \text{outputs})$ max. 120 mA ⁽⁵⁾	
	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⁾		
	at +70 °C	500 mA per port, $\Sigma(\text{sensors} + \text{outputs})$ max. 500 mA ⁽²⁾		

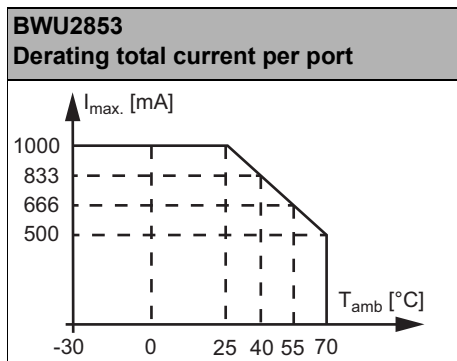
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Article no.	BWU2853	BWU3020
Display		
LED ASI (green)	on: AS-i voltage on flashing: AS-i voltage on, but peripheral fault ⁽³⁾ or address 0 off: no AS-i voltage	
LED FLT/FAULT (red)	on: slave address 0 or slave offline flashing: peripheral fault ⁽³⁾ 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	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	

(1)



(2)

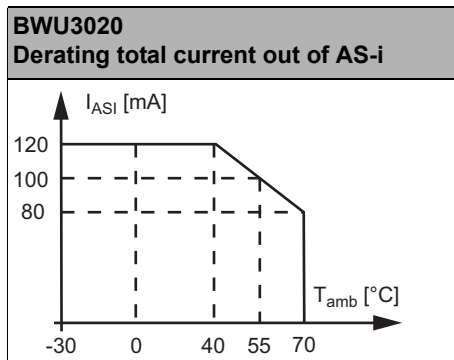


(3) See table "Peripheral fault indication"

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

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(5)



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

Programming	AS-i bit assignment			
	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⁾	-

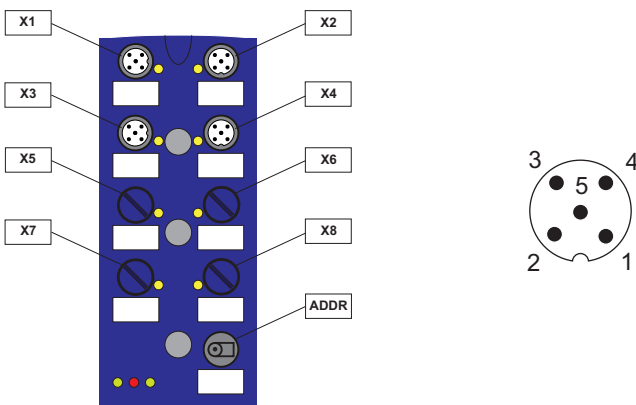
(1) Via process data mapping and IO-Link gateway configuration adjustable.

(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+(24 V _{AS-i out})	power supply, out of AS-i, positive pole (IO-Link, sensor supply)
L-(0 V _{AS-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	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	slave 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 (dummy plug)	connection for AS-i addressing device							
BWU3020	X1	P1	Slave 1	IO-Link port P1	L+(24 V _{AS-i out})	24 V _{ext out}	L-(0 V _{AS-i out})	I/O/Com1	0 V _{ext out}
	X2	P2		IO-Link port P2	L+(24 V _{AS-i out})	24 V _{ext out}	L-(0 V _{AS-i out})	I/O/Com2	0 V _{ext out}
	X3	P3	Slave 2	IO-Link port P3	L+(24 V _{AS-i out})	24 V _{ext out}	L-(0 V _{AS-i out})	I/O/Com3	0 V _{ext out}
	X4	P4		IO-Link port P4	L+(24 V _{AS-i out})	24 V _{ext out}	L-(0 V _{AS-i out})	I/O/Com4	0 V _{ext out}
	ADDR (dummy plug)	connection for AS-i addressing device							
 <p>The diagram shows a blue PCB with eight M12 sockets labeled X1 through X8 and an ADDR socket. X1 and X2 are slave 1 ports, X3 and X4 are slave 2 ports. A 5-pin connector is shown with pinout: 1 (L-(0 V_{AS-i out})), 2 (24 V_{ext out}), 3 (L+(24 V_{AS-i out})), 4 (L-(0 V_{AS-i out})), 5 (0 V_{ext out}).</p>									

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)