ASi-5 Module/IO-Link Master with 4 Ports, 4 IO-Link Ports/4 AI (4...20 mA), IP20

ASi-5 Module with integrated IO-Link Master

New standard ASi-5

Quadruple IO-Link master

Suitable for port class A and class B

4 analog inputs (4 ... 20 mA)

Power supply of IO-Link ports out of AUX

(Figure similar)

Figure	Type	Number of IO-Link Ports	IO-Link Port Class A (1)	IO-Link Port Class B (2)	Inputs analog	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.
	IP20, 22,5 mm x 114 mm, 6 x 4 contacts, ASi-5	4	configurable conectors	configurable conectors	4 x 4 ... 20 mA	out of AUX	out of AUX	Push-in terminals	ASi-5 address	**BWU4775**

(1) **IO-Link Port Class A**
Configurable conectors: Terminal assignment (C/Q, L+, L-, I) compatible with pin assigment of IO-Link port class A (M12). Connected IO-Link devices with port class B (M12) with a higher current consumption have to be supplied directly via a separate power supply. Compatible with 3 pol IO-Link devices (M8).

(2) **IO-Link Port Class B**
Configurable conectors: Terminal assignment (C/Q, L+, L-, I) compatible with pin assigment of IO-Link port class A (M12). Connected IO-Link devices with port class B (M12) with a higher current consumption have to be supplied directly via a separate power supply. 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.		BWU4775
Connection		
ASi / AUX connection		Push-in terminals, 2 poles
Periphery connection		Push-in terminals, 5 poles
Primary application		control cabinet
Length of connector cable		IO-Link: max. 20 m I/O: max. 15 m (1)
ASi		
Address		1 ASi-5 address
Operating voltage		30 V (18 … 31.6 V)
Since ASi specification		ASi-5
Process data width		8 ... 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		2 A
Configurable I/Os		
Number		4 ports 4 analog inputs (4 ... 20 mA)
		4 x C/Q (IO-Link communication or configurable as digital input or digital output) + 4 x analog inputs (4 ... 20 mA)
IO-Link data rate		COM1 / COM2 / COM3
IO-Link data width		per port: up to 32 byte process data + 1 byte PQI
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, ∑(L+, C/Q, AI) 2 A (2)
	at +55 °C	400 mA per port, ∑(L+, C/Q, AI) 1,6 A (2)
	at +70 °C	200 mA per port, ∑(L+, C/Q, AI) 0,8 A (2)
IO-Link / input/output current (C/Q)	up to +40 °C	500 mA per port, ∑(L+, C/Q, AI) 2 A (2)
	at +55 °C	400 mA per port, ∑(L+, C/Q, AI) 1,6 A (2)
	at +70 °C	200 mA per port, ∑(L+, C/Q, AI) 0,8 A (2)
Analog Input		
Number		4 (4 ... 20 mA)
Resolution		16 Bit (1 µA)
Range of value		4000 ... 20000 dec.
A/D converter		Conversion time approx. 1.5 ms (1/860 s)
Update rate of analog values (typical)		approx. 5 ms per active analog channel (5 ms for 1 channel, 10ms for 2 channels, 15 ms for 3 channels, 20 ms for 4 channels)
Measuring accuracy (at +25 °C)		4 mA -> ±0.4% 20 mA -> ±0.2%
Internal resistance		50 Ω /100 kΩ
Max. input voltage		25 V
Max. input current		40 mA
Power supply		out of AUX
Power supply of attached sensors		500 mA, ∑(L+, C/Q, AI) 2 A (2)

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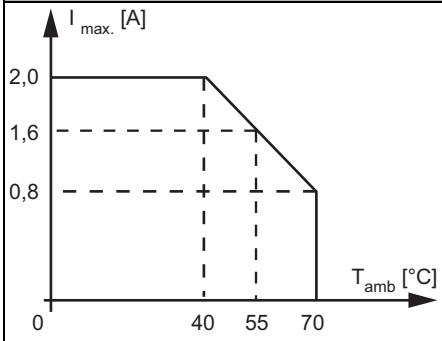
Article no.	BWU4775
Display	
LED ASI (green)	on: ASi voltage on flashing: ASi voltage on, but peripheral fault (3) or address 0 off: no ASi voltage
LED FLT/FAULT (red)	on: ASi address 0 or ASi node offline flashing: peripheral fault (3) off: ASi node online
LED AUX (red/green)	green: AUX voltage OK red: 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 terminal C/Q1 ... C/Q4 red: IO-Link communication error or short-circuit
LEDs AI1 ... AIx (yellow)	state of analog inputs AI1 ... AI4 off: the corresponding analog input is off flashing: peripheral fault (3) on: the corresponding analog input is on
Environment	
Applied standards	EN 61000-2 EN 61000-3 EN 61131-2 EN 60529
It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe	yes (4)
Operating altitude	max. 2000 m
Operating temperature	-25 °C … +55 °C (up to max. +70 °C) (2)
	no condensation permitted
Storage temperature	-25 °C … +85 °C
Housing	plastic, din-rail mounting
Pollution degree	2
Protection category	IP20
Tolerable loading referring to humidity	according to EN 61131-2
Insulation voltage	≥500 V
Weight	120 g
Dimensions (W / H / D in mm)	22,5 / 99 / 114

(1) Loop resistance ≤150 Ω

(2)

BWU4775
Derating total current of sensor supply (L+) and IO-Link / input/output supply (C/Q) such as analog inputs (4 ... 20 mA)

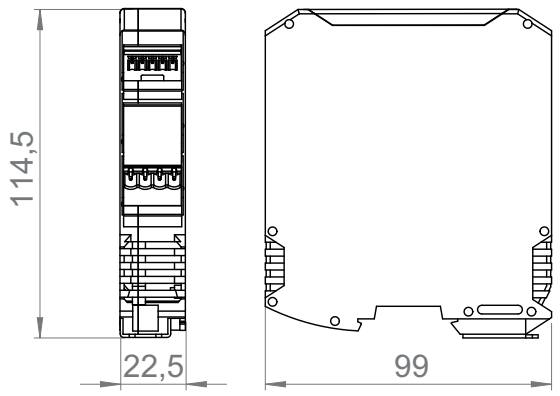


At ambient temperatures above 55 °C, a minimum distance of 10 mm to neighboring devices must be provided.

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

(4) The module is suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors can be assumed for the connection of the two ASi and AUX potentials.

Dimensional drawing



Wiring rules

	Push-in terminals, 2 /3 /4 poles (pitch 5 mm)
General	
Nominal cross section	2.5 mm^2
Conductor cross section	
Conductor cross section solid	0.2 ... 2.5 mm^2
Conductor cross section flexible	0.2 ... 2.5 mm^2
Conductor cross section flexible, with ferrule	without plastic sleeve: 0.25 ... 2.5 mm^2
	with plastic sleeve: 0.25 ... 2.5 mm^2
2 conductors with same cross section, stranded, with TWIN ferrules	without plastic sleeve: 0.5 ... 1.5 mm^2
AWG	24 ... 14
Stripped insulation length	10 mm

	Push-in terminals, 5 poles (pitch 3.5 mm)
General	
Nominal cross section	1.5 mm^2
Conductor cross section	
Conductor cross section solid	0.14 ... 1.5 mm^2
Conductor cross section flexible	0.14 ... 1.5 mm^2
Conductor cross section flexible, with ferrule	without plastic sleeve: 0.25 ... 1.5 mm^2
	with plastic sleeve: 0.25 ... 0.5 mm^2
2 conductors with same cross section, stranded, with TWIN ferrules	–
AWG	26 ... 16
Stripped insulation length	10 mm

Article no.	Peripheral fault indication					
	Overload sensor supply	Output short circuited	AUX voltage missing	IO-Link event	Analog Input: line break	Analog Input: current over/under measuring range
BWU4775	•	•	•	•	•	•

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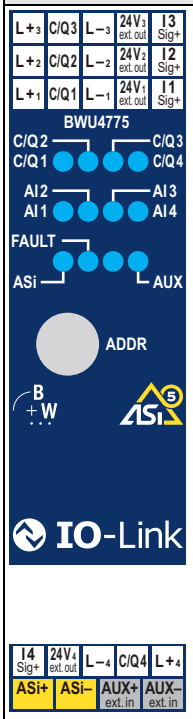
Programming

- **ASi-5 bit assignment: default 2 byte per port, configurable over ASi-5.**

Connections

BWU4775	Name	Explanation
	Ix Sig+/24V$_{ext.out}$	analog input x (4 ... 20 mA)
	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
	AUX+$_{ext.in}$	External power supply, input, positive pole
	AUX-$_{ext.in}$	External power supply, input, negative pole
	ADDR	connection for ASi-5 addressing plug

Note

If connected IO-Link nodes with Port Class B need a higher current consumption, additionally they can be supplied directly via the power supply.

Accessories:

- **ASi-5/ASi-3 Address Programming Device (art. no. BW4925)**
- **Bihl+Wiedemann Suite license - Software for Configuration, Diagnostics and Commissioning (art. no. BW2902)**