

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 connectors	configurable connectors	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 connectors: Terminal assignment (C/Q, L+, L-, I) compatible with pin assignment 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 connectors: Terminal assignment (C/Q, L+, L-, I) compatible with pin assignment 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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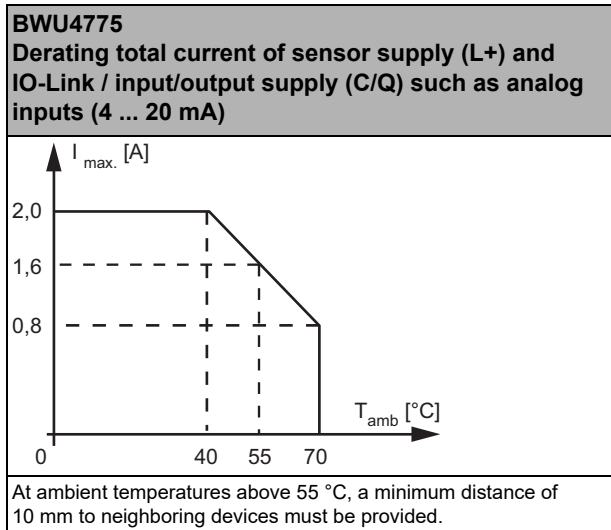
Article no.		BWU4775
Connection		
ASi / AUX connection	Push-in terminals, 2 poles	
Periphery connection	Push-in terminals, 5 poles	
Primary application	control cabinet	
Length of connector cable	IO-Link: max. 20 m I/O: max. 15 m ⁽¹⁾	
ASi		
Address	1 ASi-5 address	
Operating voltage	30 V (18 ... 31.6 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	0 ... 32 bytes	
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, $\sum(L+, C/Q, AI) 2 A^{(2)}$
	at +55 °C	400 mA per port, $\sum(L+, C/Q, AI) 1,6 A^{(2)}$
	at +70 °C	200 mA per port, $\sum(L+, C/Q, AI) 0,8 A^{(2)}$
IO-Link / input/output current (C/Q)	up to +40 °C	500 mA per port, $\sum(L+, C/Q, AI) 2 A^{(2)}$
	at +55 °C	400 mA per port, $\sum(L+, C/Q, AI) 1,6 A^{(2)}$
	at +70 °C	200 mA per port, $\sum(L+, C/Q, AI) 0,8 A^{(2)}$
Analog Input		
Number	4 (4 ... 20 mA)	
Resolution	16 Bit (1 μ A)	
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 -> $\pm 0.4\%$ 20 mA -> $\pm 0.2\%$	
Internal resistance	50 Ω / 100 k Ω	
Max. input voltage	25 V	
Max. input current	40 mA	
Power supply	out of AUX	
Power supply of attached sensors	500 mA, $\sum(L+, C/Q, AI) 2 A^{(2)}$	

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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)

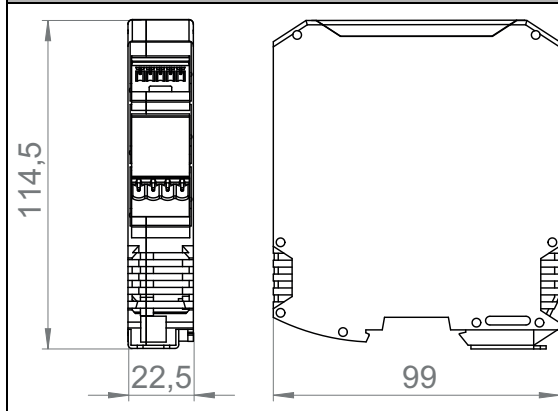


(3) See table "Peripheral fault indication"

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- (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)