

Active Distributor ASi Safety, IP67



2 x connectors for profile cable

Periphery connection

1 x M12 cable socket, straight, 5 poles



(Figure similar)

Figure	Inputs Safety, SIL 3, Cat. 4	Safety signal inputs	Inputs digital	Input voltage (sensor supply) ⁽¹⁾	Output voltage (actuator supply) ⁽²⁾	Connection ⁽³⁾	ASi address ⁽⁴⁾	Special function	Art. no.
	1 x 2-channels	OSSDs	1	out of AUX	out of AUX	1 x M12 cable socket, straight, 5 poles	1 single address	to connect door contact switch Keyence GS-10PC series	BWU4990

(1) **Input voltage (sensor supply):** inputs are supplied by ASi or by AUX (auxiliary 24 V power). If supplied by ASi, inputs shall not be connected to earth or to external potential.

(2) **Output voltage (actuator supply):** outputs are supplied by ASi or by AUX (auxiliary 24 V power). If supplied by ASi, outputs shall not be connected to earth or to external potential

(3) **Connection:** further connection options are available on request.

M12 cable socket, angled	M12 cable socket, straight	M8 cable socket, straight	round cable / connecting wires	Push in terminals
PUR line: oil resistant				

(4) **ASi address:** 1 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), mixed use allowed.
For modules with two nodes the second node is turned off as long as the first node is addressed to address "0".
Upon request, nodes are available with specific ASi address profiles.

Article No.	BWU4990
General data	
Device type	safe input
Connection	
ASi/AUX connection	profile cable and piercing technology
Periphery connection	1 x M12 cable socket, straight, 5 poles
Round cable	5 m
	max. allowed tensile strain 10 N
ASi	
Profile	S-7.B.1, ID1=F
Address	1 single address
Required Master profile	≥M3
As of ASi specification	2.1
Operating voltage	30 V (21,6 ... 31,6 V)
Max. current consumption	60 mA
Max. current consumption without sensor/ actuator supply	60 mA
AUX	
Operating voltage	24 V (20 ... 30 V _{DC}) (PELV)
Max. current consumption	max. 1 A ⁽¹⁾

Article No.		BWU4990
Input		
Number		1 x 2-channels safe input + 1 x standard input
Safety signal		OSSDs
Power supply		out of AUX
Sensor supply		short-circuit and overload protected according to EN 61131-2
Power supply of attached sensors	up to +50 °C	750 mA,
	at +60 °C	750 mA
	at +70 °C	500 mA
Switching threshold safe input		V _{in} >11 V for High-Level, V _{in} <5 V for Low-Level, input current>2,5 mA at 15 V
Switching threshold standard input		U<4 V (low) U>15 V (high) (data bit inverted)
OSSD test pulses		0 ... 50 Hz
OSSD test pulse width		U _{aux} ≥21,5 V= 0 ... 1 ms test pulses possible U _{aux} ≥17 V= 0 ... 0,8 ms test pulses possible U _{aux} <17 V= 0 ... 0,6 ms
Start delay		<22 ms
Display		
LED ASi/FLT (red/green)		green: ASi voltage on, ASi node online green/red: ASi voltage on, but ASi node offline green flashing/red: address 0 red/green flashing: peripheral fault ⁽¹⁾ off: no ASi voltage
LED AUX (green)		on: 24 V _{DC} AUX off: no 24 V _{DC} AUX
LEDs S1, S2 (yellow)		state of inputs S1, S2
LED I1 (yellow)		state of input I1
Environment		
Applied standards		EN ISO 13849-1 PLe Kat4 EN ISO13 849-2 EN 62061 SIL 3 EN 62026-2 EN 61000-6-2 EN 61000-6-4 EN 60529
It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe		no ⁽²⁾
Operating altitude		max. 2000 m
Ambient temperature		-30 °C ... +60 °C (up to max. +70 °C) ^{(1) (3)}
Storage temperature		-25 °C ... +85 °C
Intended environment		for indoor use only ⁽⁴⁾
Housing		plastic, for screw mounting, suitable for cable ducts (installation depth ≥19 mm)
Pollution Degree		2
Protection category		IP67 ⁽⁵⁾
Overvoltage category		II
Tolerable loading referring to humidity		according to EN 61131-2
Maximum tolerable shock and vibration stress		≤15g, T≤11 ms 10 ... 55 Hz, 0,5 mm amplitude
Insulation voltage		≥500 V
Weight		100 g
Dimensions (W / H / D) in mm		60 / 45 / 19

- (1) **see table "Peripheral fault indication"**
- (2) 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.
- (3) Down to -25 °C with flexibly mounted cable, -30 °C only with fixed mounted cable.
- (4) Intended environment according to UL certificate for the use in the USA and Canada.
- (5) Manufacturer specification, IP rating not evaluated by UL.

UL-specifications (UL61010) BWU4990	
Model (1)	PBC.DBA1-4990
In general	UL mark does not provide UL certification for any functional safety rating or aspects of the above devices.
External protection	The supply source to these devices shall meet the requirements of Class 2 of NEC, or Limited Energy of UL/CSA 61010-1, -2-201 or Limited Power Source of UL/CSA 60950/62368-1.

- (1) For reference see UL file E227214 "Programmable Controllers "Active Distributor Family""

Article no.	Peripheral fault indication		
	Overload sensor supply	Output short circuited	AUX voltage missing
BWU4990	•	–	•

Programming	ASi bit assignment			
	D3	D2	D1	D0
	safe input			
BWU4990	OSSD2	OSSD2	OSSD1	OSSD1
	parameter bit			
	P3	P2	P1	P0
BWU4990	not used	not used	I1 (inverted) (1)	0= off / 1= on (Watchdog)

- (1) Parameter bit 1 should not be changed from default 1 to 0, otherwise the input cannot be read.

Pin assignment

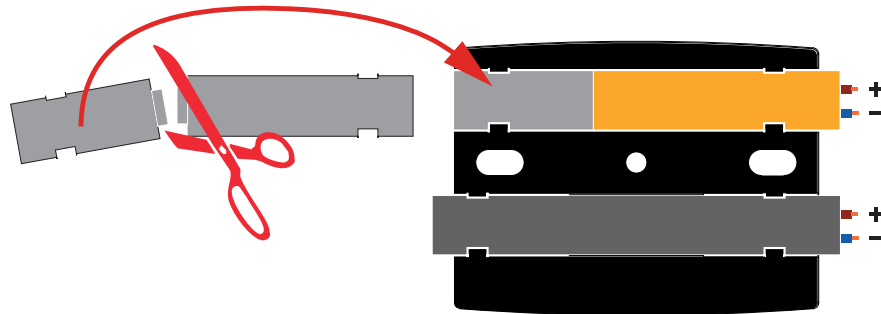
Signal name	Explanation
Sx +, Sx -	safe input x
Ix	digital input x
24V _{ext out}	power supply, out of external voltage, positive pole (AUX, actuator supply)
0V _{ext out}	power supply, out of external voltage, negative pole (AUX, actuator supply)
24V _{out of ASi}	power supply, out of ASi, positive pole (sensor supply)
0V _{out of ASi}	power supply, out of ASi, negative pole (sensor supply)
ASi +, ASi -	connection to ASi bus
n.c. (not connected)	not connected

Connections: M12 cable sockets, straight, 5 poles

Article no.	M12 connection	Pin1	Pin2	Pin3	Pin4	Pin5	
BWU4990	X1	24 V _{ext out}	OSSD2	0 V _{ext out}	OSSD1	I1 (1)	

(1) Parameter bit inverted

Line termination with sealing profile



(1) Manufacturer specification, IP rating not evaluated by UL.

Accessories:

- Sealing profile IP67 (IDC plug), 60 mm (art. no. BW3282)
- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)
- Bihl+Wiedemann Safety Suite License - Safety Software for Configuration, Diagnostics and Commissioning (art. no. BW2916)