

Cost efficient solution in IP20



(Figure similar)

Figure	Type	Primary application ⁽¹⁾	Inputs digital	Outputs digital	Input voltage (sensor supply) ⁽²⁾	Output voltage (actuator supply) ⁽³⁾	ASi connection ⁽⁴⁾	ASi address ⁽⁵⁾	Article No.
	IP20, 22,5 mm x 114 mm, 6 x 4 contacts	control cabinet	4	4 x relay	out of ASi	—	Push-in terminals	1 AB address	BWU3549

(1) Primary Application

Control cabinet: Cost-optimized modules whereby the supply voltage for the sensors and actuators is connected via additional patch terminals. Optimal application in the main control cabinet.

Decentralized control cabinet: Ideal for use in decentralized control cabinets. 3-wire sensors or actuators can be connected directly to terminals in the module without additional patch terminals or the module has an extremely flat design.

(2) 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.

(3) 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

(4) ASi connection: the connection to ASi as well to AUX (auxiliary 24 V power) is made via yellow resp. black ASi profile cable with piercing technology or via M12 socket (in IP20 via clamps).

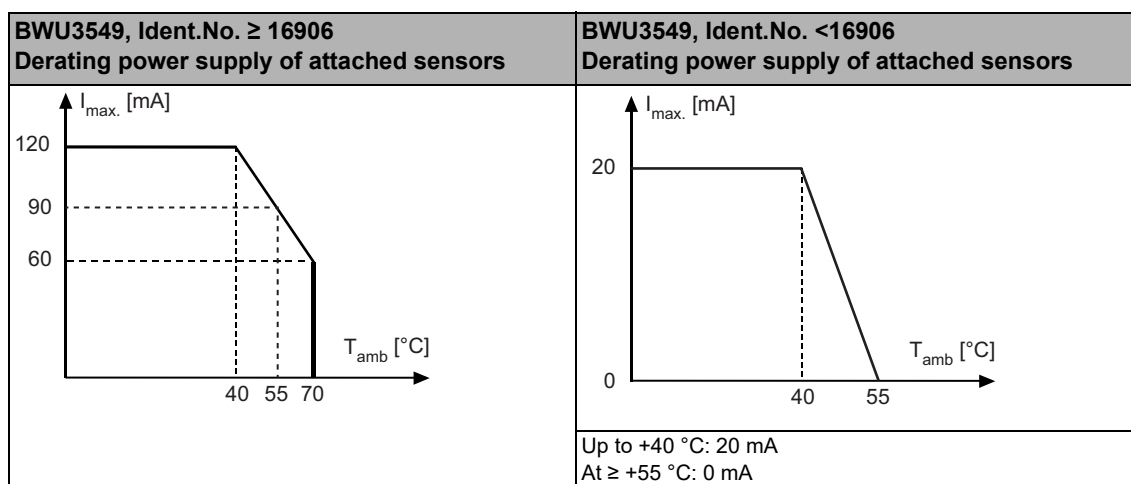
(5) ASi address: 1 AB address (max. 62 AB addresses/ASi network), 2 AB addresses (max. 31 modules with 2 AB addresses), Single addresses (max. 31 Single addresses/ASi network), mixed use allowed. For modules with two ASi nodes the 2nd ASi node is turned off as long as the 1st ASi node is addressed to address "0". Upon request, ASi nodes are available with specific ASi node profiles.

Article no.	BWU3549
General data	
Device type	input / output
Connection	
ASi / AUX Connection	Push-in terminals
Periphery connection	Push-in terminals
Primary application	control cabinet
Length of connector cable	I/O: unlimited ⁽¹⁾
ASi	
Profile	S-7.A.7, ID=7(fixed)
Address	1 AB address
Required Master profile	≥M4
Since ASi specification	3
Operating voltage	30 V (26,5 ... 31,6 V)
Max. current consumption	165 mA
Max. current consumption without sensor/ actuator supply	45 mA

Article no.		BWU3549
Input		
Number		4
Power supply		out of ASi
Sensor supply		short-circuit and overload protected according to EN 61131
Power supply of attached sensors	up to +40 °C	120 mA ⁽²⁾
	at +55 °C	90 mA ⁽²⁾
	at +70 °C	60 mA ⁽²⁾
Switching threshold		U<5 V (low) U>15 V (high)
Output		
Number		4 x relay outputs, normally open, 230 VAC/2A/AC-14, 30 VDC/2A/DC-13 Σ (Out) 8 A
Relay control		out of ASi
Max. output current		–
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: address 0 or offline flashing: peripheral fault ⁽³⁾ off: online
LEDs I1 ... In (yellow)		state of inputs I1 ... I4
LEDs O1 ... On (yellow)		state of outputs O1 ... O4
Environment		
Applied standards		EN 61000-6-2 EN 61000-6-3 EN 61131 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
Ambient temperature		-25 °C ... +55 °C (up to max. +70 °C) ⁽⁵⁾ ⁽²⁾ no condensation permitted
Storage temperature		-25 °C ... +85 °C
Housing		plastic, for DIN rail mounting
Pollution Degree		2
Protection category		IP20
Tolerable loading referring to humidity		according to EN 61131-2
Voltage of insulation		≥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"

(4) The module is suitable for use in passively safe paths as it has no connection to an AUX potential.

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

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

UL-specifications (UL508)	
External protection	An isolated source with a secondary open circuit voltage of ≤30 V _{DC} with a 3 A maximum over current protection. Over current protection is not required when a Class 2 source is employed.
In general	UL mark does not provide UL certification for any functional safety rating or aspects of the above devices.

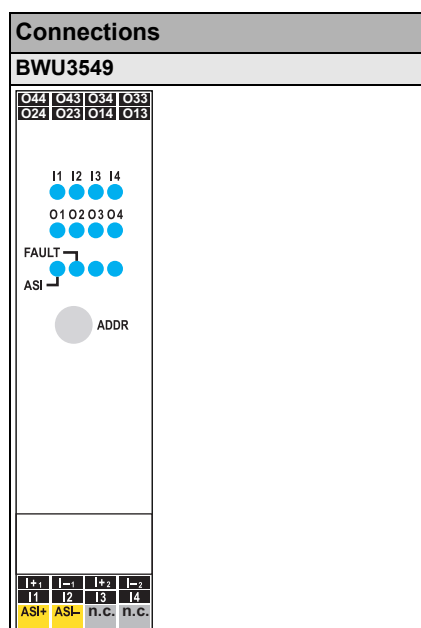
Article no.	Peripheral fault indication	
	Overload sensor supply	AUX voltage missing
BWU3549	•	–

Programming	Bit setting			
	D3	D2	D1	D0
	input			
BWU3549	I4	I3	I2	I1
	output			
BWU3549	O4	O3	O2	O1

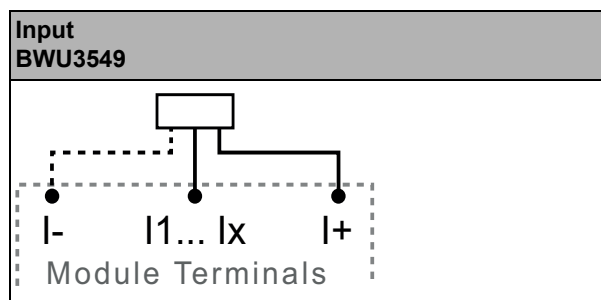
Programming	Bit setting			
	parameter bit			
	P3	P2	P1	P0
BWU3549	not used	0 = on / 1 = off (synchronous I/O mode)	0 = on / 1 = off (data input filter 128 µs)	0 = off / 1 = on (watchdog)

Connections

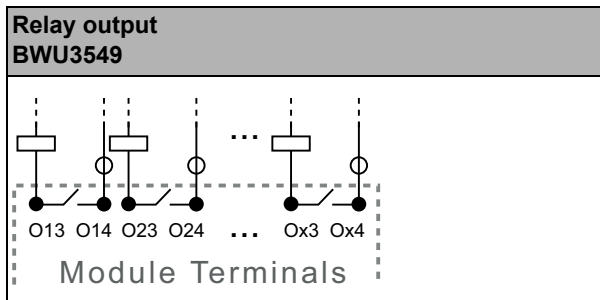
Name	Explanation
Ix	digital input x
Ox	digital output x
Ox3, Ox4	relay output x
I+, I-, I+n, I-n	sensor supply
O-n	GND for outputs (PNP)
O+n	GND for outputs (NPN)
AUX + _{ext.in}	power supply, out of external voltage, positive pole (AUX, actuator supply)
AUX - _{ext.in}	power supply, out of external voltage, negative pole (AUX, actuator supply)
ASi +, ASi -	connection to ASi bus
ADDR	connection for ASi addressing device
n.c. (not connected)	not connected



Power supply PNP



Connection relay output



Note

To achieve passive safety, the device must be installed in a switching cabinet with protection class IP54.

Accessories:

- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)