

Safe contact expander



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1 or 2 independent channels

4 contact sets per channel



(figure similar)

Article no.	BWU2539	BWU2548
General data		
Type of device	safe contacts, instantaneous	
Number of contact sets per channel	4	
Number of independent channels	2	1
Input		
Signal level	0-signal: < 2,4 V DC 1-signal: 18 ... 26,5 V DC	
Permissible test pulse time	max. 1,5 ms	
Rated current	60 mA per channel	
Output		
Connection	force-guided	
Short circuit protection of output circuits (external)	3 A quick; 2 A slow	
Max. inrush current	20 A for 20 ms	
Electrical life (switching operations)	AC1 (360 S/h) ca. 100 000	
Operate delay / delay time	< 20 ms / <20 ms	
Switching frequency	15 Hz	
Rated impulse voltage	4 kV ¹	
Contact load EDM (1.51, 1.52 and 2.51, 2.52)		
Switching current	max. 20 mA	
Contact load contact set (1.13, 1.14, 1.23, 1.24 and 2.13, 2.14, 2.23, 2.24)		
Switching voltage AC	10 ... 230 V	
Switching voltage DC	10 ... 230 V	
Insulation to input	double insulation	
Switching current	5 mA... 3 A	
Contact load contact set (1.33, 1.34, 1.43, 1.44 and 2.33, 2.34, 2.43, 2.44)		
Switching voltage AC	10 ... 230 V	
Switching voltage DC	10 ... 230 V	
Insulation to input	basic insulation	
Switching current	5 mA... 3 A	
Total current (per channel)	12A (see “Total current through all the contact sets of a channel:”)	
Usage category (acc. EN 60347-4-1 / EN 60947-5-1)	AC1: 230 V/3 A (ca. 150 x 10 ³ cycles) AC 15: 230 V/3 A (ca. 80 x 10 ³ cycles) DC 1: 24 V/3 A (ca. 500 x 10 ³ cycles) DC 13: 24 V/3 A/0,1 Hz (ca. 50 x 10 ³ cycles)	
B _{10d} (AC15)	1,96 x 10 ⁶ cycles	
B _{10d} (DC13)	780 x 10 ³ cycles	

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LED displays		
LED CH 1 (green)	safe input 1	
LED CH 2 (green)	safe input 2	–
LED EDM 1 (green)	EDM channel 1	
LED EDM 2 (green)	EDM channel 2	–
Environment		
Can be used in passively safe paths up to SIL3/PLe	ja ²	
Overvoltage category	III	
Degree of pollution	2	
Ambient temperature	-20 °C ... 50 °C	
Storage temperature	-40 °C ... 70 °C	
Relative humidity	not condensing	
Mechanical lifetime	approx. 10 x 10 ⁶ swi	
Protection class (EN 60529)	IP20	
Dimensions (L / W / H in mm)	99 / 22,5 / 114	

¹ Safe isolation, reinforced insulation and 6 kV between A1/A2, 51/52, 43/44, 33/34 and 23/24, 13/14.
Outputs one below the other have basic insulation.

² The module is suitable for safely switching off passively safe paths.

Wiring rules

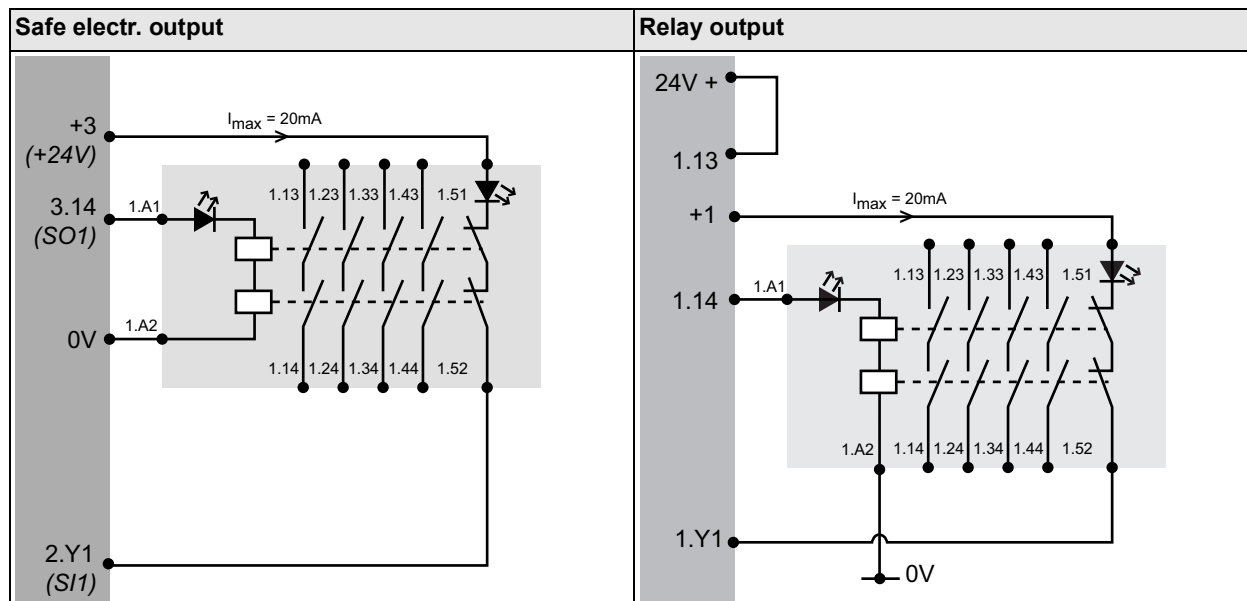
	Push-in terminals
General	
Nominal cross section	2.5 mm ²
Conductor cross section	
Conductor cross section solid	0.2 ... 2.5 mm ²
Conductor cross section flexible	0.2 ... 2.5 mm ²
Conductor cross section flexible, with ferrule	without plastic sleeve: 0.2 ... 2.5 mm ²
	with plastic sleeve: 0.25 ... 2.5 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) BWU2539, BWU2548	
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.

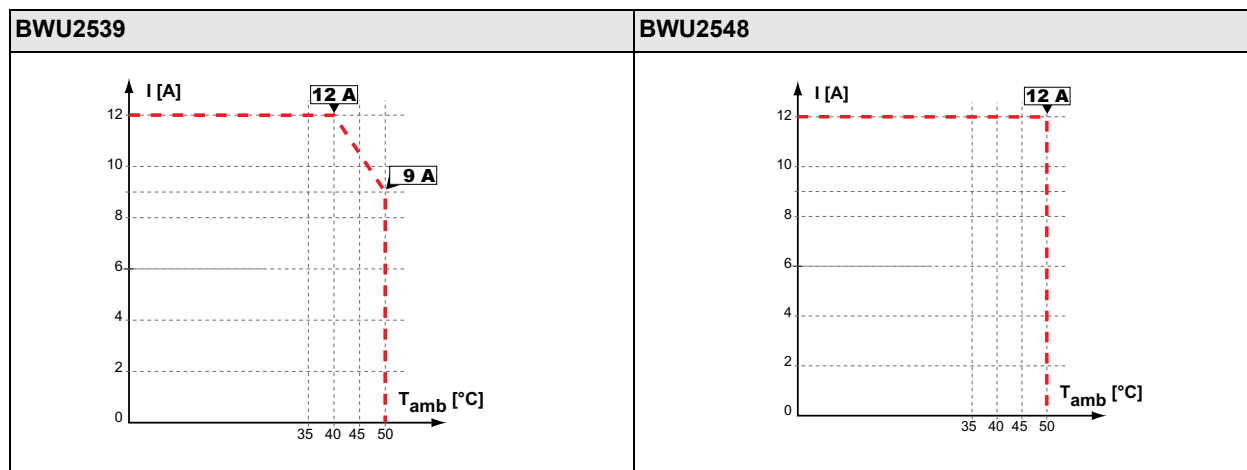
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Connection examples:

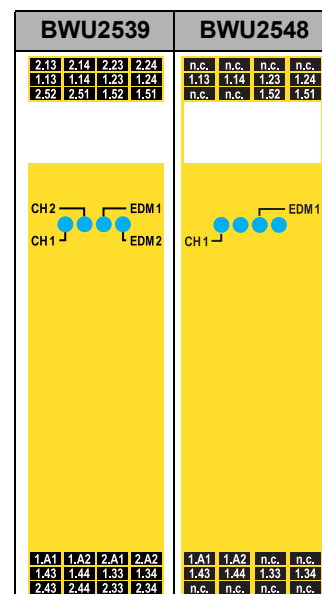
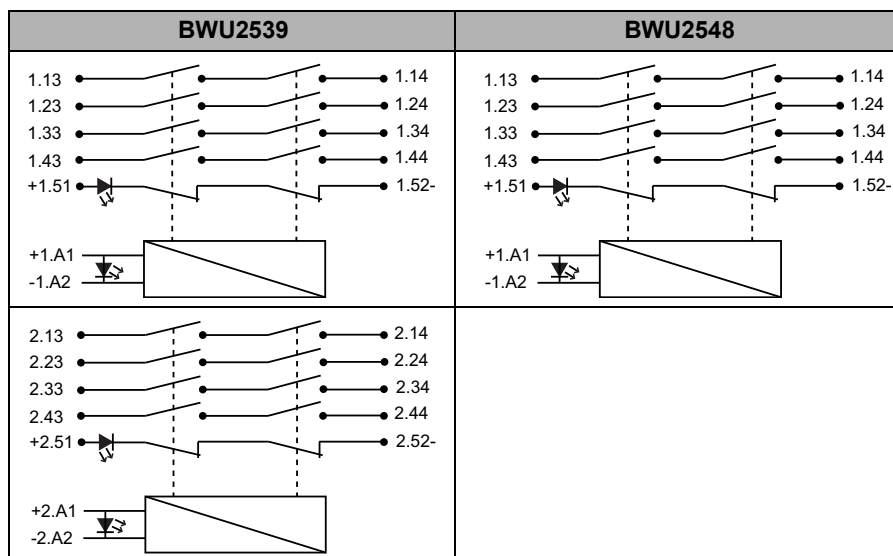


Total current through all the contact sets of a channel:



BWU2539	BWU2548
output channel 1.1: terminals 1.13, 1.14 output channel 1.2: terminals 1.23, 1.24 output channel 1.3: terminals 1.33, 1.34 output channel 1.4: terminals 1.43, 1.44	
output channel 2.1: terminals 2.13, 2.14 output channel 2.2: terminals 2.23, 2.24 output channel 2.3: terminals 2.33, 2.34 output channel 2.4: terminals 2.43, 2.44	—
EDM (feedback circuit) channel 1: terminals 1.51, 1.52	
EDM (feedback circuit) channel 2: terminals 2.51, 2.52	—
channel 1 working contacts 1.A1, 1.A2	
channel 2 working contacts 2.A1, 2.A2	—

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