
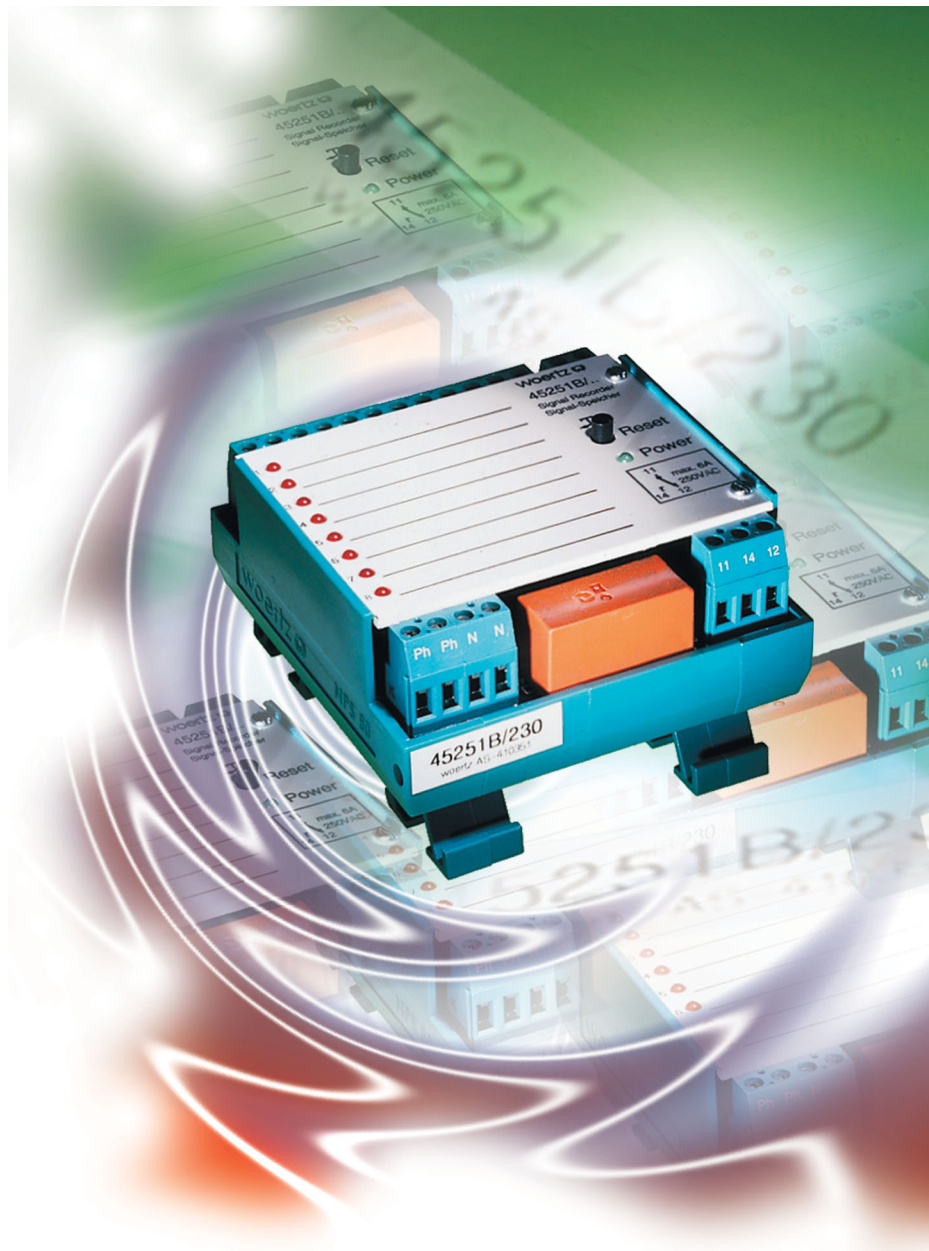


MODULES FOR SAFETY


woertz



AND MONITORING

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Modules for safety and monitoring

Introduction

Thanks to the modules described in this brochure, safety or monitoring functions may easily be incorporated into circuits.

Diode modules have a wide field of applications such as polarity protection, logical functions, general alarm, lamp test, recovery diode or rectifier functions.

Modules with indicators allow a direct and easy monitoring of the voltage applied on various conductors.

Modules with fuseboards offer the possibility to protect power supplies or outputs against the failure of the individual devices and also to limit the supplied current.

Overvoltage protection modules protect efficiently sensitive devices against short-time overvoltages.

If you need modules with other functions, there are **circuit boards** available, which can be fitted with the desired components (see brochure "Modules for special applications").

For special applications or if you need for instance another type of diodes, other specification or circuit diagram please contact us! Our flexible team will be pleased to help you fulfil your ideas and to develop **new modules** for you.



Properties

- SnapLine terminals with integrated diodes
- Through-going, lamp control and common alarm functions
- Applications: rectifier, surge suppression, logical functions, polarity protection etc.
- Two Snap-Lines can easily be connected as a 1.6 A full wave rectifier bridge
- Modular stacking of common alarm or lamp control functions



Accessories

30407T	End barrier
30403	Compatible 3-level terminal
30413RO	Cross connection 20-pole red
30413BL	Cross connection 20-pole blue
30790	Cross connection 10-pole grey
81535/x	Insulated cross-connections w. screws x = 2, 3, 4, 5, 10 poles
30411, 12	Isolation strip red, blue
80247, 48	Test plug red, black
35455/55xx	Labels for custom use RB/5x5



Technical data ($T_a = 25^\circ\text{C}$)

Diodes

Max. reverse voltage
Max. continuous current (single terminals)
Max. continuous current (stacked, continuously operating terminals)
Max. surge current
Voltage drop over diode
Leakage current

Terminal

Max. operating voltage
Max. terminal current

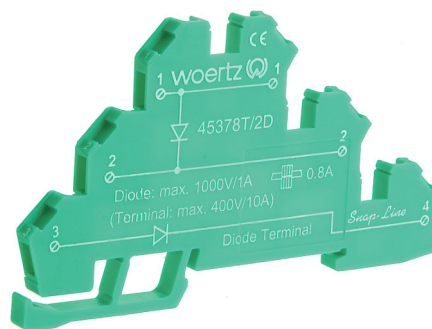
General data

Operating temperature range
Nominal cross section of connecting terminals
Maximum torque
Size W x H x D (from rail)

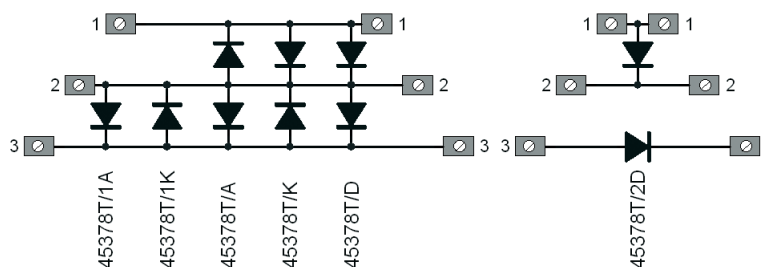


Order numbers

1 diode, anode in the middle, an additional terminal on top
1 diode, cathode in the middle, an additional terminal on top
2 diodes with common anode (lamp control function)
2 diodes with common cathode (common alarm function)
2 diodes with serial connection and common middle terminal
2 independent diodes



45378T/2D



1000 V
1 A
0.8 A

30 A
about 0.8 V (max. 1.1 V)
< 10 μA

400 V (SEV), 300 V (UL)
10 A

-55°C up to +80°C
2.5 mm² (AWG24-14)
0.4 Nm
5.08 x 86.5 x 44 mm

45378T/1A

45378T/1K

45378T/A

45378T/K

45378T/D

45378T/2D

Diode modules

with diodes to be connected individually



Properties

- Modules with diodes for general purpose
- With white cover protecting against inadvertent contact
- Wiring diagram printed on cover
- For clipping on to DIN rails according to EN 60715 TH 35-7.5 and EN 60715 TH 35-15



Accessories

- 30413RO Junction rack 20 pole red
30413BL Junction rack 20 pole blue



On request

Other types of diodes



Technical data ($T_a = 25^\circ\text{C}$)

Versions

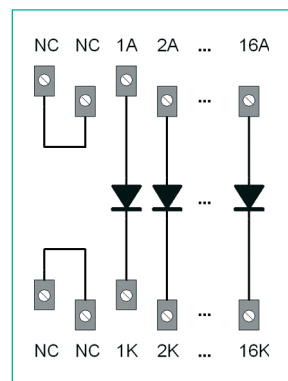
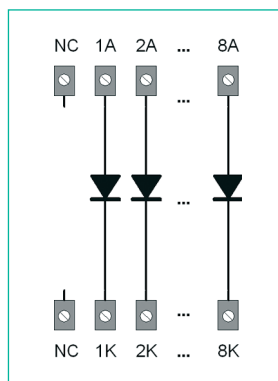
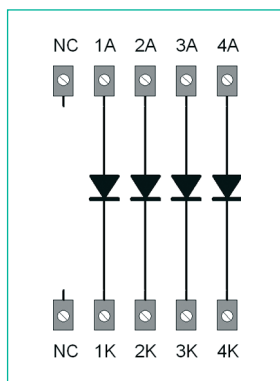
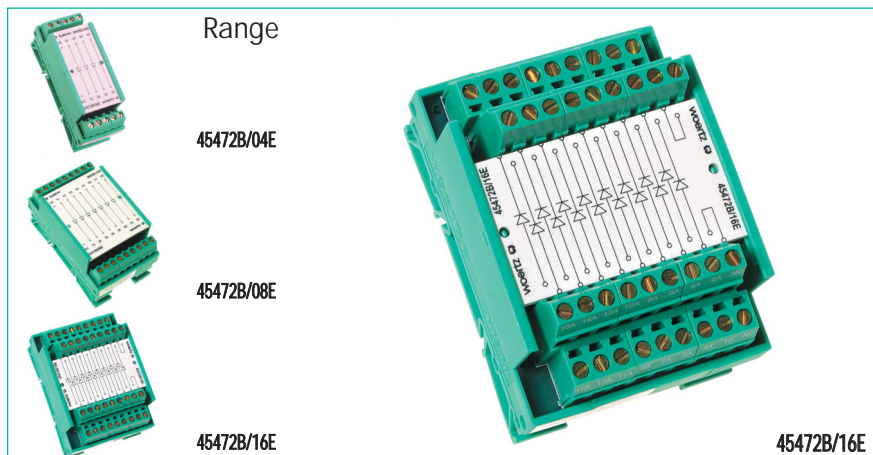
- Max. rated voltage
Max. diode blocking voltage
Max. diode blocking current
Diode on-state voltage
Max. diode on-state current at single load
Max. diode on-state current at simultaneous load

General data

- Nominal cross section of connecting terminals
Operating temperature range
Weight
Size W x H x D



Order numbers



4 channels

- 250 V
1000 V
10 μA
about 1 V
0.7 A
0.5 A

- 2.5 mm²
-20°C up to +45°C
50 g
30 x 83 x 45 mm

45472B/04E

8 channels

- 250 V
1000 V
10 μA
about 1 V
0.7 A
0.5 A

- 2.5 mm²
-20°C up to +45°C
78 g
50 x 83 x 45 mm

45472B/08E

16 channels

- 250 V
1000 V
10 μA
about 1 V
0.7 A
0.5 A

- 2.5 mm²
-20°C up to +45°C
120 g
60 x 83 x 54 mm

45472B/16E



Properties

- Modules with diode circuit with common anode
- Modules with a great area of applications for instance for lamp tests
- Removing the wire bridge J1 (under the cover) enables the module to be split into two separate units
- With white cover protecting against inadvertent contact
- For clipping on to DIN rails according to EN 60715 TH 35-7.5 and EN 60715 TH 35-15



Accessories

- 30413RO Junction rack, 20 poles, red
30413BL Junction rack, 20 poles, blue



On request

Other types of diodes



Technical data ($T_a = 25^\circ\text{C}$)

Versions

- Max. rated voltage
Max. diode blocking voltage
Max. diode blocking current
Diode on-state voltage
Max. diode on-state current at single load
at simultaneous load

General data

- Nominal cross section of connecting terminals
Operating temperature range
Weight
Size W x H x D

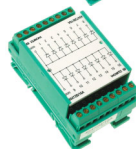


Order numbers

Range



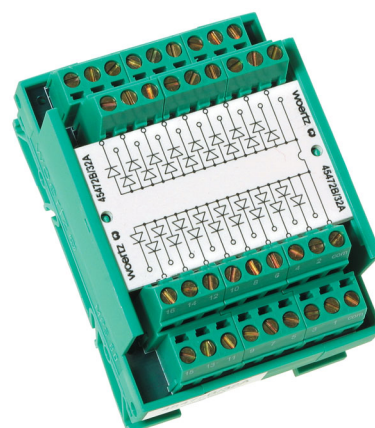
45472B/08A



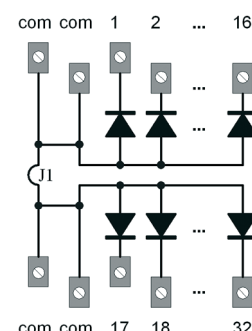
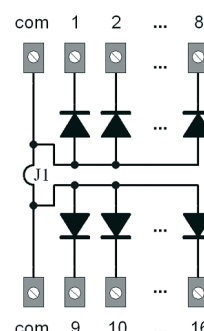
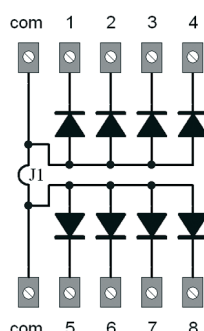
45472B/16A



45472B/32A



45472B/32A



8 channels

- 250 V
1000 V
10 μA
about 1 V
0.7 A
0.5 A

- 2.5 mm²
-20°C up to +45°C
51 g
30 x 83 x 45 mm

45472B/08A

16 channels

- 250 V
1000 V
10 μA
about 1 V
0.7 A
0.5 A

- 2.5 mm²
-20°C up to +45°C
79 g
50 x 83 x 45 mm

45472B/16A

32 channels

- 250 V
1000 V
10 μA
about 1 V
0.7 A
0.5 A

- 2.5 mm²
-20°C up to +45°C
122 g
60 x 83 x 54 mm

45472B/32A

Diode modules

with common cathode



Properties

- Modules with diode circuit with common cathode
- Modules with a great area of applications for instance for general alarms
- Removing the wire bridge J1 (under the cover) enables the module to be split into two separate units
- With white cover protecting against inadvertent contact
- Wiring diagram printed on cover
- For clipping on to DIN rails according to EN 60715 TH 35-7.5 and EN 60715 TH 35-15



Accessories

- 30413RO Junction rack, 20 poles, red
30413BL Junction rack, 20 poles, blue



On request

Other types of diodes



Technical data ($T_a = 25^\circ\text{C}$)

Versions

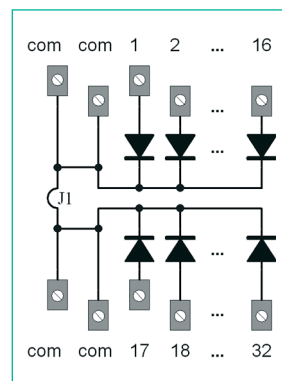
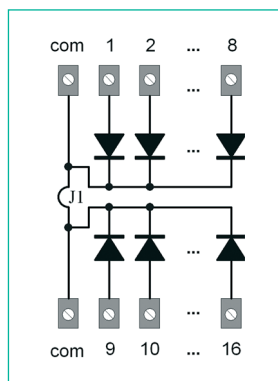
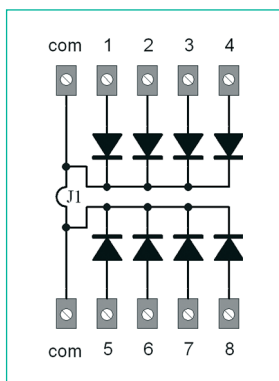
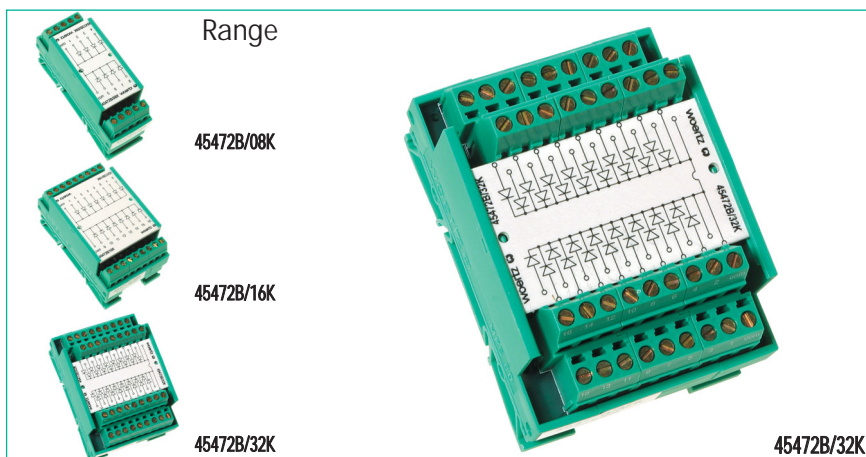
- Max. rated voltage
Max. diode blocking voltage
Max. diode blocking current
Diode on-state voltage
Max. diode on-state current at single load
Max. diode on-state current at simultaneous load

General data

- Nominal cross section of connecting terminals
Operating temperature range
Weight
Size W x H x D



Order numbers



8 channels

- 250 V
1000 V
10 μA
about 1 V
0.7 A
0.5 A

- 2.5 mm²
-20°C up to +45°C
51 g
30 x 83 x 45 mm

45472B/08K

16 channels

- 250 V
1000 V
10 μA
about 1 V
0.7 A
0.5 A

- 2.5 mm²
-20°C up to +45°C
79 g
50 x 83 x 45 mm

45472B/16K

32 channels

- 250 V
1000 V
10 μA
about 1 V
0.7 A
0.5 A

- 2.5 mm²
-20°C up to +45°C
122 g
60 x 83 x 54 mm

45472B/32K



Properties

- Modules for general alarm and lamp test
- Different types:
16U: 16 channels with general alarm, lamp test and longitudinal diodes
32Z: 32 channels with general alarm and lamp test
- With white cover protecting against inadvertent contact
- Wiring diagram printed on cover
- For clipping on to DIN rails according to EN 60715 TH 35-7.5 and EN 60715 TH 35-15



Accessories

- 30413RO Junction rack, 20 poles, red
30413BL Junction rack, 20 poles, blue



On request

Other types of diodes



Technical data ($T_a = 25^\circ\text{C}$)

Versions

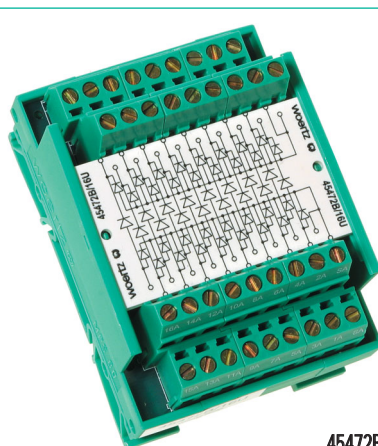
- Max. rated voltage
Max. diode blocking voltage
Max. diode blocking current
Diode on-state voltage
Max. diode on-state current at single load
at simultaneous load

General data

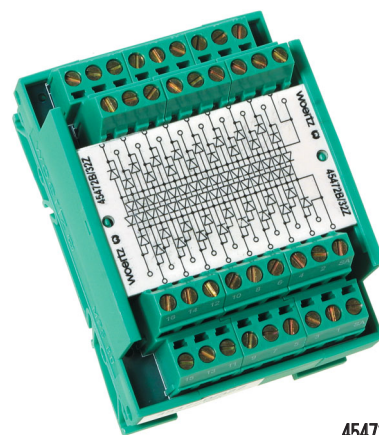
- Nominal cross section of connecting terminals
Operating temperature range
Size W x H x D



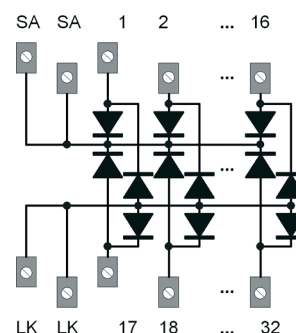
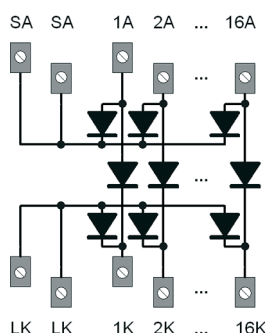
Order numbers



45472B/16U



45472B/32Z



16 channels

- 250 V
1000 V
10 μA
about 1 V
0.7 A
0.5 A

- 2.5 mm²
-20°C up to +45°C
60 x 83 x 45 mm

45472B/16U

32 channels

- 250 V
1000 V
10 μA
about 1 V
0.7 A
0.5 A

- 2.5 mm²
-20°C up to +45°C
60 x 83 x 45 mm

45472B/32Z

Modules with indicators

LED indicators with lamp test and general alarm



Properties

- Marking facilities with self-adhesive labels
- Compact
- With lamp test for checking the LED

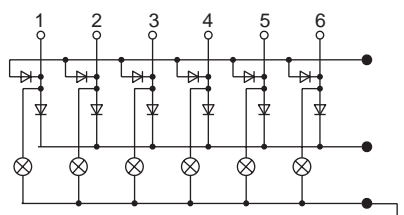


On request

LED of different color



45195B/2



Technical data ($T_a = 25^\circ\text{C}$)

Version

General alarm output
Diode blocking voltage
Diode blocking current
Diode on-state voltage
LED

General data

Operating temperature
Size W x H x D

6 channels

max. 0.7 A
1000 V
10 μA
about 1 V
red

-20°C up to +45°C
50 x 83 x 45 mm



Order numbers

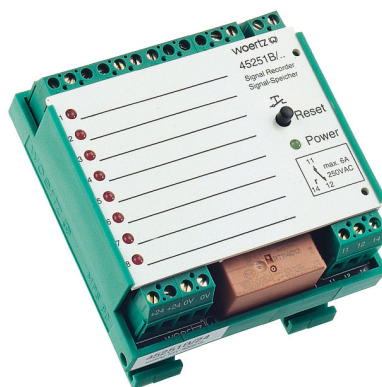
Rated voltage
12 V
24 V
48 V

45195B/1
45195B/2
45195B/3

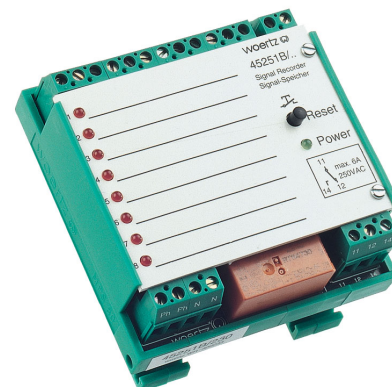


Properties

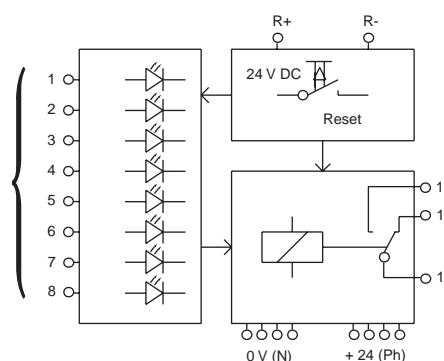
- LED signalize and memorize one or several active inputs
- Relay switches potential-free contact, as soon as one input is active
- Reset-function by push button or over terminals
- Easy marking by means of marker pen or labels



45251B/24



45251B/115



Technical data ($T_a = 25^\circ\text{C}$)

Versions

Supply and signal voltage
External reset voltage
Max. external reset current
Max. supply current (8 active inputs)
Max. signal current / input
Min. signal pulse length
Relay contacts

General data

Operating temperature range
Dimensions W x H x D



Order numbers

24 V DC, 8 channels

20 - 30 V DC
10 - 30 V DC
10 mA (24 V DC)
60 mA
0.4 mA
5 ms
250 V AC / 6A
(12 A max. 10 s)

-20°C up to +65°C
80 x 83 x 50 mm

45251B/24

115 V AC, 8 channels

98 - 132 V AC (50 - 60 Hz)
10 - 30 V DC
10 mA (24 V DC)
40 mA
0.8 mA
20 ms
250 V AC / 6A
(12 A max. 10 s)

-20°C up to +60°C
80 x 83 x 50 mm

45251B/115

230 V AC, 8 channels

230 V AC $\pm 10\%$ (50 - 60 Hz)
10 - 30 V DC
10 mA (24 V DC)
35 mA
0.7 mA
20 ms
250 V AC / 6A
(12 A max. 10 s)

-20°C up to +45°C
80 x 83 x 50 mm

45251B/230

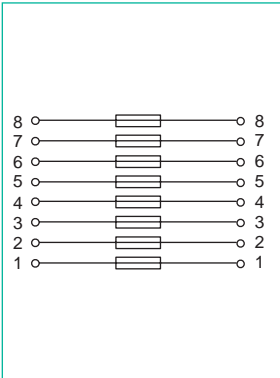
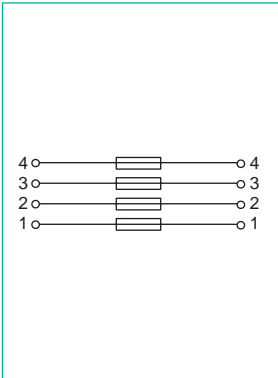
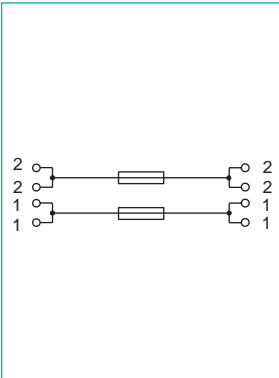
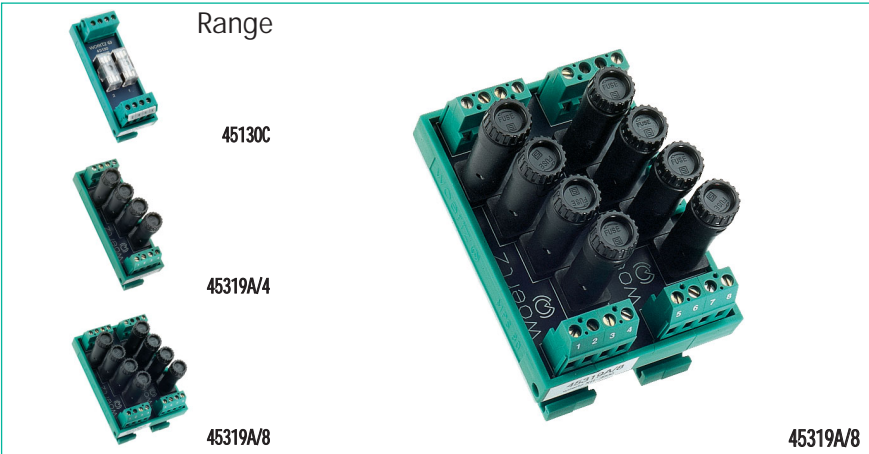
Modules with fuseboards

for fuses type 5 x 20 mm



Properties

- Compact
- Protected fuses



Technical data (T_a = 25°C)

Versions
Number of poles
For fuses

General data
Operating temperature
Size W x H x D

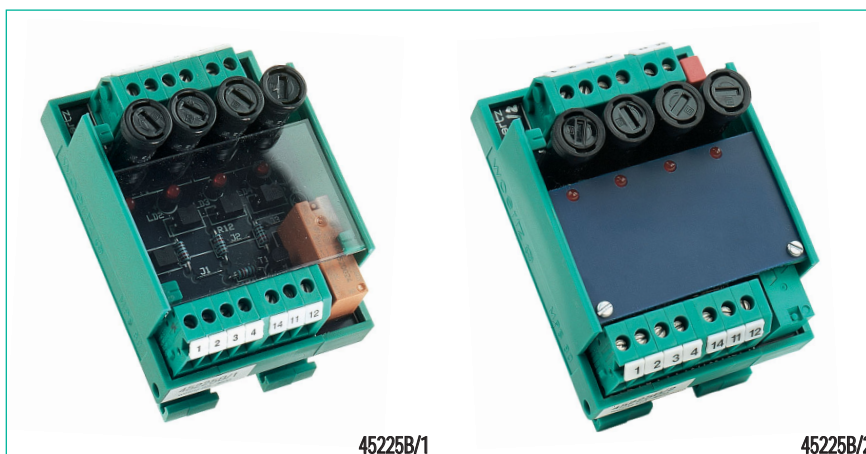
Order numbers

2 channels horizontal	4 channels vertical	8 channels vertical
2 5 x 20 mm up to max. 6.3 A	4 5 x 20 mm up to max. 10 A	8 5 x 20 mm up to max. 10 A
-20°C up to +40°C 30 x 83 x 43 mm	-20°C up to +60°C 30 x 83 x 58 mm	-20°C up to +60°C 60 x 83 x 58 mm
45130C	45319A/4	45319A/8



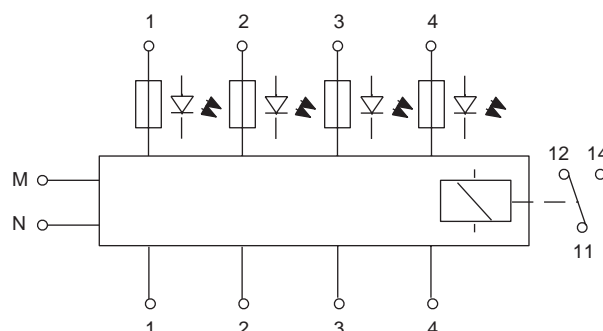
Properties

- Consist of 4 fuses, the state of which indicated through red LED
- Failure of one of the fuses activates the general alarm relay (changeover contact may be used with an external visual or audible alarm)
- For fuses type 5 x 20 mm up to 6.3 A



45225B/1

45225B/2



Technical data ($T_a = 25^\circ\text{C}$)

Versions

Number of fuses
Operating voltage (at the fuses)
Minimum load current
Maximum load current (fuse)
Leakage resistance when fuse has blown
Relay operating voltage (M+N)
Type of relay switch
Contact rating (general alarm relay)

General data

Operating temperature
Size W x H x D

6.5 - 60 V AC/DC

4
6.5 - 60 V AC/DC
0.7 mA
6.3 A
min. 330 k Ω
18 - 35 V AC/DC
1 changeover contact, potential free
8 A / 250 V AC

-20°C up to +50°C
60 x 83 x 57 mm

45225B/1

90 - 240 V AC/DC

4
90 - 240 V AC/DC
0.7 mA
6.3 A
min. 330 k Ω
90 - 240 V AC/DC
1 changeover contact, potential free
8 A / 250 V AC

-20°C up to +50°C
60 x 83 x 57 mm

45225B/2



Order numbers

Transient Suppressor

SnapLine overvoltage protection



Properties

- Very fast overvoltage protection for sensitive devices
- Absorbs power pulses up to 600W during 1ms (10/1000ms wave-shape)
- If overloaded, it makes a short circuit (Serial fuse gives an excellent protection)
- Through-going conductors for high security
- Bidirectional protection
- Integrated, insulated extra terminal



Accessories

30407T	End barrier
30403	Compatible 3-level terminal
30413RO	Cross connection 20-pole red
30413BL	Cross connection 20-pole blue
30790	Cross connection 10-pole grey
81535/x	Insulated cross-connections w. screws x = 2, 3, 4, 5, 10 poles
30411, 12	Isolation strip red, blue
80247, 48	Test plug red, black
35455/55xx	Labels for custom use RB/5x5



Technical data ($T_a = 25^\circ\text{C}$)

Protection diodes

Maximum pulse energie
Maximum surge current (one half wave 60Hz)
Maximum repetitive surge current
5/ 12/ 24/ 48/ 110 V DC
Maximum repetitive surge current 115/ 230 V AC
Breakdown voltage at 10 mA: 5 VDC
Breakdown voltage at 1 mA:
12/ 24/ 48/ 110 V DC
Breakdown voltage at 1 mA: 115/ 230 V AC
Maximum continuous overload

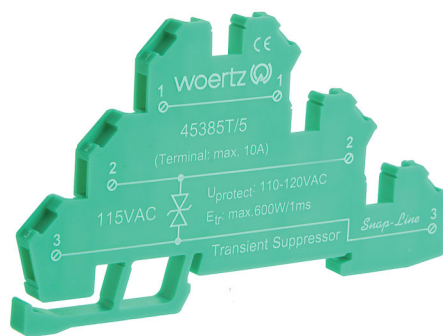
General data

Operating temperature range
Maximum rated current through terminal
Nominal cross section of connecting terminals
Maximum torque
Size W x H x D (from rail)

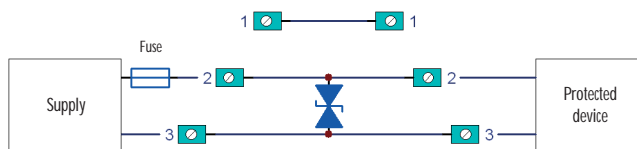


Order numbers

5 V DC
12 V DC
24 V DC
48 V DC
110 V DC
115 V AC
230 V AC



45385T/5



Typical use

600W / 1 ms; 2kW / 100 μs
100 A
57 / 33 / 16 / 8.6 / 3.6 A

2.2 / 1 A
6.8 V DC $\pm 5\%$
13 / 27 / 51 / 120 V DC $\pm 5\%$

141 / 283 V AC $\pm 5\%$
2W (5W / 60 s)

-55°C up to +80 °C
10 A

2.5 mm² (AWG24-14)
0.4 Nm

5.08 x 86.5 x 44 mm

45385T/7
45385T/1
45385T/2
45385T/3
45385T/9
45385T/5
45385T/4

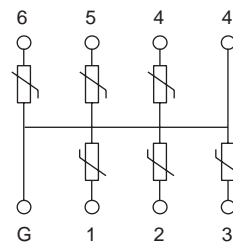


On request

Connection of pluggable PCB terminals.



45128A/4



Technical data ($T_a = 25^\circ\text{C}$)

Version

Varistors

Surge current max. 8 / 20

Max. continuous load capacity

General data

Operating temperature

Size W x H x D



Order numbers

Rated voltage varistor

24 V DC
24 V AC
110 V AC
220 V AC
250 V AC

6 channels, common connection

SIOV - S20K xx
6.5 kA
1 W

-20°C up to +40°C
30 x 83 x 45 mm

45128A/1
45128A/2
45128A/3
45128A/4
45128A/5

