

## Product datasheet

### Characteristics

# ABS2SA02MB

output interface module - 17.5 mm - solid state -  
24..230 V AC - 3 A



### Main

Range of product	Interface for discrete signals
Product or component type	Slim solid state output interface module
Contacts type and composition	1 NC
[Uc] control circuit voltage	24 V
Control circuit type	DC
[In] rated current	<= 13.6 mA
Reverse polarity protection	Internal for control circuit Internal for output circuit
Short circuit protection	3.15 A external fuse fast blow (Ik <= 1 kA AC and Ik <= 100 A DC)
[Ith] conventional free air thermal current	3 A at 40 °C
Local signalling	Green mechanical indicator for position of contacts and 1 green LED control signal state
Sale per indivisible quantity	1
Width pitch dimension	17.5 mm

### Complementary

Control circuit voltage limits	28.8 V
Voltage state 1 guaranteed	16.9 V
Current state 1 guaranteed	8.3 mA
Voltage state 0 guaranteed	5.3 V
Current state 0 guaranteed	2 mA
[Ue] rated operational voltage	24...240 V
Output circuit type	AC
Rated operational voltage limits	<= 264 V
[Ie] rated operational current	1 A AC-15 vertical position, single product conforming to IEC 60947-5-1 1 A AC-15 vertical position, touching product conforming to IEC 60947-5-1 1.6 A AC-13 vertical position, single product conforming to IEC 60947-5-1 1.6 A AC-14 vertical position, single product conforming to IEC 60947-5-1 2.1 A AC-12 vertical position, single product conforming to IEC 60947-5-1 1.5 A AC-12 vertical position, touching product conforming to IEC 60947-5-1 1.5 A AC-13 vertical position, touching product conforming to IEC 60947-5-1 1.5 A AC-14 vertical position, touching product conforming to IEC 60947-5-1
Minimum switching current	10 mA
Residual current	<= 2.5 mA
Drop-out voltage	<= 3 V Ie >= 10 mA <= 1.5 V Ie >= 100 mA
DV/dt	500 V/μs
0 crossing voltage	50 V peak
Response time	<= 10 ms from state 0 to state 1 at 50 Hz <= 10 ms from state 1 to state 0 at 50 Hz <= 8 ms from state 0 to state 1 at 60 Hz <= 8 ms from state 1 to state 0 at 60 Hz
Switching frequency	<= 0.7 Hz AC-13 module alone duty cycle: 40 % <= 0.7 Hz AC-14 module alone duty cycle: 40 % <= 0.7 Hz AC-15 module alone duty cycle: 40 % <= 50 Hz on resistive load duty cycle: 50 %
[Ui] rated insulation voltage	250 V conforming to VDE 0110 group C 300 V conforming to IEC 60947-1
Flame retardance	V0 conforming to UL 94

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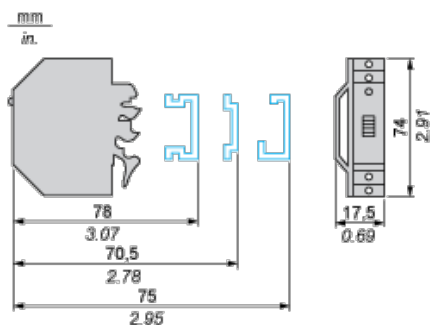
Cable cross section	0.27...4 mm <sup>2</sup> , 1 wire rigid 0.34...2.5 mm <sup>2</sup> , 1 or 2 wires flexible with cable end 0.6...2.5 mm <sup>2</sup> , 1 or 2 wires flexible without cable end screw clamp terminal 0.6...2.5 mm <sup>2</sup> , 1 or 2 wires flexible without cable end screw clamp terminal
Operating position	Any position
Installation category	II conforming to IEC 60947-1
Mounting support	Asymmetrical DIN rail Combination rail Symmetrical DIN rail
Product weight	0.44 kg

## Environment

dielectric strength	2500 V between wired interface and earth for 1 minute 4000 V between I/O for 1 minute
standards	IEC 60947-5-1
product certifications	BV CSA DNV LROS (Lloyds register of shipping) UL
IP degree of protection	IP20 conforming to IEC 60529
protective treatment	TC
fire resistance	960 °C conforming to IEC 60695-2-1
shock resistance	30 gn for 11 ms conforming to IEC 60068-2-27
vibration resistance	5 gn (f = 10...150 Hz) conforming to IEC 60068-2-6
electromagnetic compatibility	1.2/50 µs shock waves immunity test, 0.5 kV for U < 50 V conforming to IEC 60947-1 1.2/50 µs shock waves immunity test, 1.5 kV for U < 150 V conforming to IEC 60947-1 1.2/50 µs shock waves immunity test, 2.5 kV for U < 300 V conforming to IEC 60947-1 Electromagnetic field immunity test level 3, 10 V/m between 27...1000 MHz conforming to IEC 61000-4-3 Electromagnetic field immunity test level 3, 10 V/m between 27...1000 MHz conforming to IEC 61000-4-3 Electrostatic discharge immunity test level 3, 8 kV conforming to IEC 61000-4-2 Fast transients immunity test level 3, on input/output 1 kV conforming to IEC 61000-4-4 Fast transients immunity test level 3, on power supply 2 kV conforming to IEC 61000-4-4
ambient air temperature for operation	-25...70 °C at Us -5...55 °C unrestricted operation
ambient air temperature for storage	-40...80 °C
operating altitude	<= 3000 m
pollution degree	2 conforming to IEC 60947-1

## Slim Solid-State Interface Module

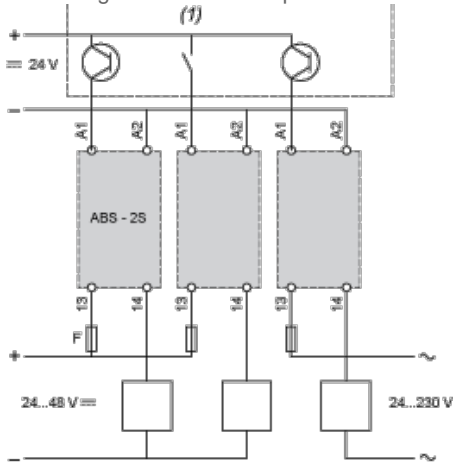
### Dimensions



## Slim Solid-State Interface Module

### Example of Application with PLC

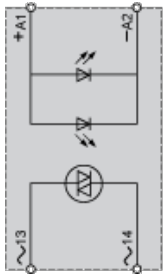
### Interfacing PLC discrete outputs



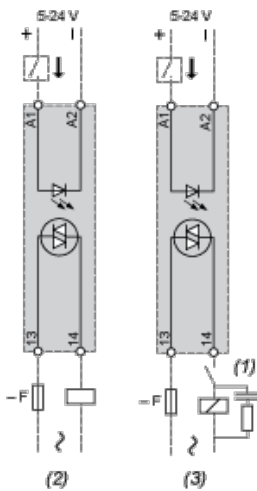
(1) PLC positive logic transistor (or relay) outputs

## Solid-State Output Module

### Circuit Diagram



### Wiring Diagrams

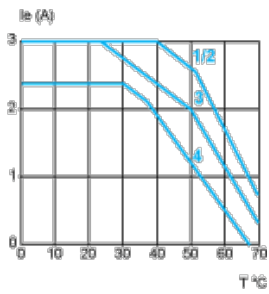


F fuse DF1 SS133.2

- (1) or peak limiter
- (2) Resistive load
- (3) Inductive load

## Temperature Derating Curves - $U_c = U_s = 24\text{ V}$

### AC Loads



- (1) Vertical module alone or adjacent to modules with low heat dissipation
- (2) Horizontal module alone or adjacent to modules with low heat dissipation
- (3) Vertical module mounted with 2 modules with identical heat dissipation on both sides
- (4) Horizontal module mounted with 2 modules with identical heat dissipation on both sides

NOTE: T°C is the ambient temperature.