



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	<= 12 mA
Reverse polarity protection	Internal for output circuit Internal for control 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	2 A at 40 °C
Local signalling	Green mechanical indicator for position of contacts and 1 green LED control signal state
Sale per indivisible quantity	5
Width pitch dimension	9.5 mm

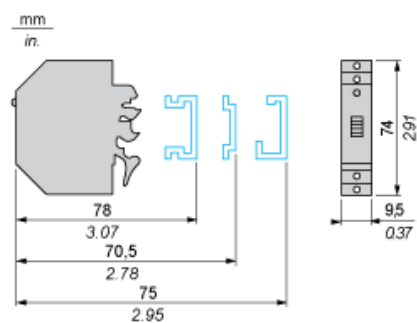
Complementary

Control voltage limits	28.8 V
Voltage state 1 guaranteed	16.9 V
Current state 1 guaranteed	7.7 mA
Voltage state 0 guaranteed	5.6 V
Current state 0 guaranteed	2 mA
[Ue] rated operational voltage	5...48 V
Output circuit type	DC
Rated operational voltage limits	<= 57.6 V
[Ie] rated operational current	0.9 A DC-13 vertical position, touching product conforming to IEC 60947-5-1 0.9 A DC-12 vertical position, touching product conforming to IEC 60947-5-1 0.6 A DC-14 vertical position, touching product conforming to IEC 60947-5-1 0.6 A DC-14 vertical position, single product conforming to IEC 60947-5-1 1.5 A DC-13 vertical position, single product conforming to IEC 60947-5-1 1.5 A DC-12 vertical position, single product conforming to IEC 60947-5-1
Minimum switching current	1 mA
Residual current	<= 1 mA
Drop-out voltage	<= 1.5 V
Response time	<= 0.6 ms from state 1 to state 0 <= 0.05 ms from state 0 to state 1
Switching frequency	<= 700 Hz on resistive load duty cycle: 50 % <= 6 Hz DC-13 module alone duty cycle: 40 % <= 1 Hz DC-14 module alone duty cycle: 40 %
[Ui] rated insulation voltage	300 V conforming to IEC 60947-1 250 V conforming to VDE 0110 group C
Flame retardance	V0 conforming to UL 94
Cable cross section	0.6...2.5 mm ² , 1 or 2 wires flexible without cable end screw clamp terminal 0.34...2.5 mm ² , 1 or 2 wires flexible with cable end 0.27...4 mm ² , 1 wire rigid
Operating position	Any position
Installation category	II conforming to IEC 60947-1

Mounting support	Asymmetrical DIN rail Combination rail Symmetrical DIN rail
Product weight	0.34 kg
Environment	
Dielectric strength	4000 V between I/O for 1 minute 2500 V between wired interface and earth 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	Fast transients immunity test level 3, on power supply 2 kV conforming to IEC 61000-4-4 Fast transients immunity test level 3, on input/output 1 kV conforming to IEC 61000-4-4 Electrostatic discharge immunity test level 3, 8 kV conforming to IEC 61000-4-2 Electromagnetic field immunity test level 3, 10 V/m between 27...1000 MHz conforming to IEC 61000-4-3 1.2/50 µs shock waves immunity test, 2.5 kV for U < 300 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, 0.5 kV for U < 50 V conforming to IEC 60947-1
Ambient air temperature for operation	-5...55 °C unrestricted operation -25...70 °C at Us
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

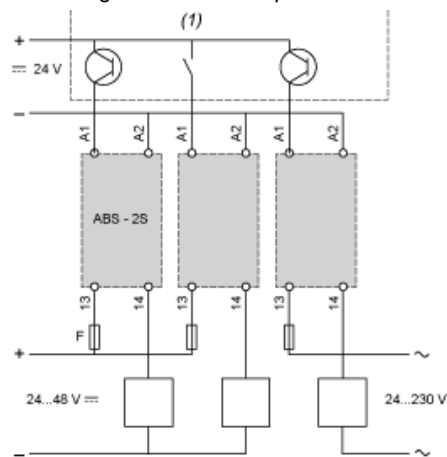
Dimensions



Slim Solid-State Interface Module

Example of Application with PLC

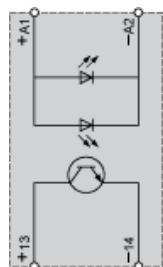
Interfacing PLC discrete outputs



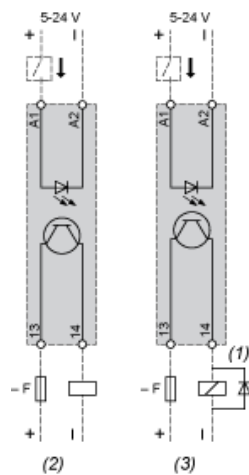
(1) PLC positive logic transistor (or relay) outputs

Solid-State Output Module

Circuit Diagram



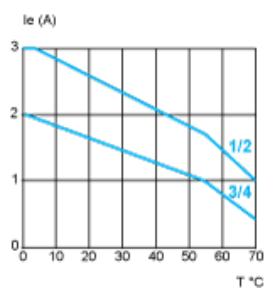
Wiring Diagrams



- F fuse DF1 SS133.2
(1) or peak limiter
(2) Resistive load
(3) Inductive load

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

DC 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: $T^{\circ}\text{C}$ is the ambient temperature.