Product datasheet
Characteristics

ABR2S112B
output interface module - 9.5 mm - electromechanical - 24 V DC - 1 NC

Main

Range of product	Interface for discrete signals
Product or component type	Slim electromechanical output interface module
Contacts type and composition	1 NO
[Uc] control circuit voltage	24 V
Control circuit type	DC
Width pitch dimension	12 mm
[In] rated current	<= 28 mA
Reverse polarity protection	With for yes
Short circuit protection	6.3 A external fuse fast blow (Ik <= 1 kA AC and Ik <= 100 A DC)
[Ith] conventional free air thermal current	5 A conforming to IEC 60947-1
Local signalling	Green mechanical indicator for position of contacts and 1 green LED control signal state
Sale per indivisible quantity	5

Complementary

Control voltage limits	28.8 V energization threshold: 16.9 V
Connections - terminals	Screw clamp terminal
Drop-out voltage	<= 3.8 V
Holding current	2 mA
Power dissipation in W	0.64 W
Maximum switching voltage	150 V DC 250 V AC
[Ue] rated operational voltage	<= 120 V DC conforming to IEC 60947-5-1 <= 230 V AC conforming to IEC 60947-5-1
Network frequency	50/60 Hz
[Ie] rated operational current	1 A AC-14 Ue: 230 V per 1000000 cycles conforming to IEC 60947-5-1 1 A AC-15 Ue: 230 V per 1000000 cycles conforming to IEC 60947-5-1 3 A AC-12 Ue: 230 V per 1000000 cycles conforming to IEC 60947-5-1 1.5 A DC-13 Ue: 24 V per 1000000 cycles conforming to IEC 60947-5-1 1.7 A DC-12 Ue: 24 V per 1000000 cycles conforming to IEC 60947-5-1
Minimum switching current	5 mA
Minimum switching voltage	5 V
Electrical reliability	<= 0.00000001
Operating time	<= 10 ms between energisation of coil and closing of NO contact DC <= 12 ms between de-energisation of coil and closing of NO contact DC
Contact bounce time	<= 5 ms
Operating rate in Hz	10 Hz at no-load 0.5 Hz at Ie
Mechanical durability	>= 10000000 cycles
[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
Cable cross section	0.27...4 mm², 1 wire rigid 0.34...2.5 mm², 1 or 2 wires flexible with cable end 0.6...2.5 mm², 1 or 2 wires flexible without cable end
Operating position	Any position
Installation category	II conforming to IEC 60947-1
Mounting support	Asymmetrical DIN rail Combination rail Symmetrical DIN rail

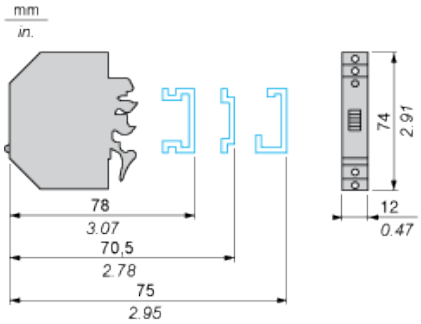
Product weight	0.041 kg

Environment

Immunity to microbreaks	1 ms
Dielectric strength	1000 V for 1 minute between open contacts 2500 V for 1 minute between wired interface and earth 4000 V for 1 minute between coil circuit and contact circuits
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	3 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 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	-5...40 °C unrestricted operation -5...55 °C from 0.85...1.1 Us -25...55 °C at Us -25...70 °C at Us with 8 mm space between ABR2S1...
Ambient air temperature for storage	-40...80 °C
Operating altitude	<= 3000 m
Pollution degree	2 conforming to IEC 60947-1

Slim Electromechanical Interface Module

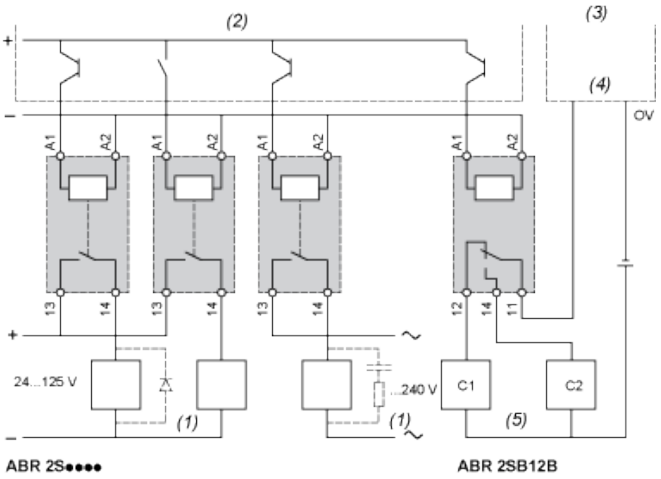
Dimensions



Slim Electromechanical Interface Module

Example of Application with PLC

Interfacing PLC discrete outputs



(1) Essential on inductive loads (can be replaced with peak limiter)

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

(3) PLC analog inputs

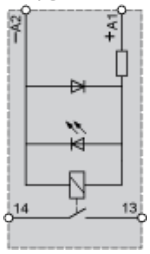
(4) Channel X

(5) Analog sensors

Slim Electromechanical Interface Module

Circuit Diagram

1 N/O

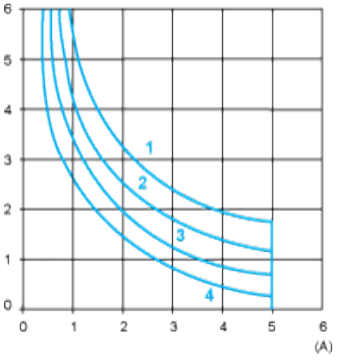


Electrical Durability of Contacts

AC Loads

Test conditions: in accordance with standard IEC 947-5-1 set up for rated control voltage.

AC-12 operating cycles in millions



AC-12 Control of resistive loads and isolated solid state loads via optocoupler (cos ϕ ≥ 0.9)

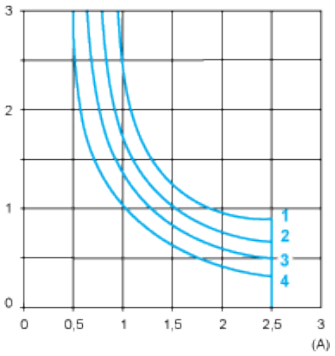
(1) 24 V

(2) 48 V

(3) 115 V

(4) 230 V

AC-14 and AC-15 operating cycles in millions



AC-14 Control of weak electro-magnetic loads of electro-magnets ≤ 72 VA (make: cos ϕ= 0.3, break: cos ϕ =0.3)

AC-15 Control of electro-magnetic loads of electro-magnets > 72 VA (make: cos ϕ= 0.7, break: cos ϕ= 0.4)

(1) 24 V

(2) 48 V

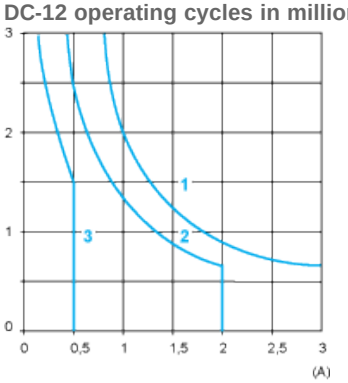
(3) 115 V

(4) 230 V

DC Loads

Test conditions: in accordance with standard IEC 947-5-1 set up for rated control voltage.

DC-12 operating cycles in millions



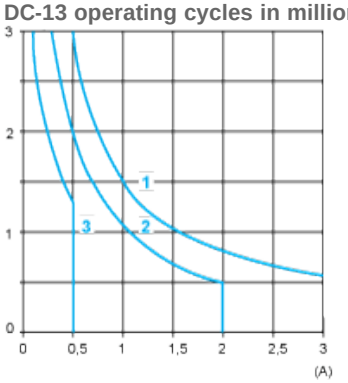
DC-12 Control of resistive loads and isolated solid state loads via optocoupler (L/R ≤ 1 ms)

(1) 24 V

(2) 48 V

(3) 115 V

DC-13 operating cycles in millions



DC-13 Control of electro-magnets (L/R ≤ 2 x (Ue x Ie) in ms, with Ue: rated operating voltage and Ie: rated operating current, with a load protection diode

(1) 24 V

(2) 48 V

(3) 115 V