

ABR1S418E

output interface module - 17.5 mm -
electromechanical - 48 V AC/DC - 2 NO

Main

Range of product	Interface for discrete signals
Product or component type	Electromechanical output interface module
Contacts type and composition	2 NO
[Uc] control circuit voltage	48 V
Control circuit type	AC/DC
Control circuit frequency	50/60 Hz
Width pitch dimension	17.5 mm
[In] rated current	<= 32 mA AC <= 36 mA DC
Reverse polarity protection	With, circuit application: yes
Short circuit protection	16 A external fuse gF (Ik <= 2.5 kA AC and Ik <= 100 A DC) 16 A external fuse gG (Ik <= 2.5 kA AC and Ik <= 100 A DC)
[Ith] conventional free air thermal current	12 A conforming to IEC 60947-1
Local signalling	Green mechanical indicator for position of contacts and 1 green LED control signal state

Complementary

Control voltage limits	53 V energization threshold: 34 V
Maximum switching voltage	125 V DC
Housing colour	Grey
Connections - terminals	Screw clamp terminal
Drop-out voltage	<= 8.5 V
Holding current	>= 4.7 mA DC >= 5.4 mA AC
Power dissipation in W	<= 1.5 W
[Ue] rated operational voltage	<= 125 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-13 Ue: 230 V per 1000000 cycles conforming to IEC 60947-5-1 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 1 A DC-13 Ue: 24 V per 1000000 cycles conforming to IEC 60947-5-1 4 A AC-12 Ue: 230 V per 1000000 cycles conforming to IEC 60947-5-1 5 A DC-12 Ue: 24 V per 1000000 cycles conforming to IEC 60947-5-1
Minimum switching current	3 mA
Minimum switching voltage	17 V
Electrical reliability	<= 0.00000001
Operating time	<= 12 ms between de-energisation of coil and closing of NC contact <= 12 ms between de-energisation of coil and closing of NO contact <= 12 ms between energisation of coil and closing of NC contact <= 12 ms between energisation of coil and closing of NO contact
Contact bounce time	<= 3 ms
Operating rate in Hz	<= 6 Hz at no-load <= 0.5 Hz at le
Mechanical durability	>= 20000000 cycles
[Ui] rated insulation voltage	250 V conforming to IEC 60947-1 250 V conforming to VDE 0110 group C
Flame retardance	V0 conforming to UL 94
Cable cross section	0.27...4 mm ² , 1 wire rigid 0.34...2.5 mm ² , 1 or 2 wires flexible with cable end 0.6...2.5 mm ² , 1 or 2 wires flexible without cable end 0.27...2.5 mm ² , 2 wires rigid
Operating position	Any position

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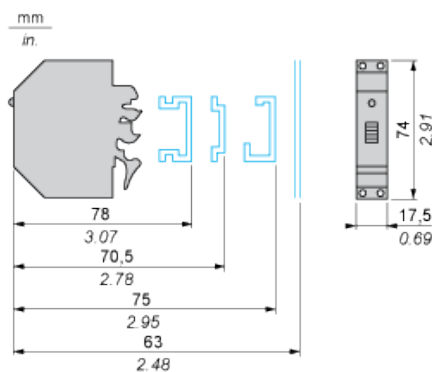
Installation category	II conforming to IEC 60947-1
Mounting support	Asymmetrical DIN rail Combination rail Symmetrical DIN rail
Product weight	0.095 kg

Environment

Immunity to microbreaks	10 ms
Dielectric strength	1500 V for 1 minute between independent 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	850 °C conforming to IEC 60695-2-1
Shock resistance	50 gn for 11 ms conforming to IEC 60068-2-27
Vibration resistance	6 gn (f = 10...55 Hz) conforming to IEC 60068-2-6
Electromagnetic compatibility	1.2/50 ms shock waves immunity test, 0.25 kV for U > 50 V conforming to IEC 255-4 1.2/50 ms shock waves immunity test, 0.5 kV for U < 50 V conforming to IEC 255-4 Electrostatic discharge immunity test level 3, 8 kV conforming to IEC 61000-4-2 Rapid transients immunity test, on input/output 1 kV conforming to IEC 61000-4-4 Rapid transients immunity test, on power supply 2 kV conforming to IEC 61000-4-4
Ambient air temperature for operation	-20...60 °C at Un -5...40 °C unrestricted operation
Ambient air temperature for storage	-40...70 °C
Operating altitude	<= 3000 m
Pollution degree	3 conforming to IEC 60947-5-1

Electromechanical Interface Module

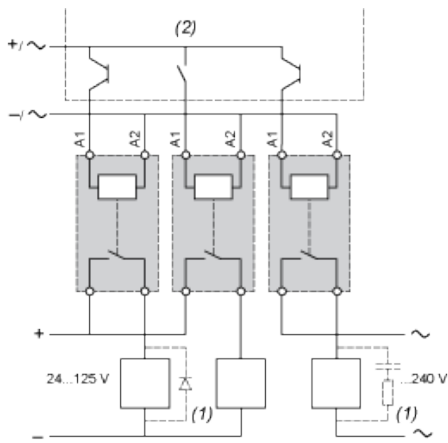
Dimensions



Electromechanical Interface Module

Example of Application with PLC

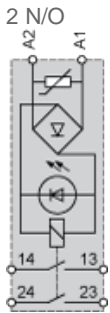
Interfacing PLC discrete outputs



- (1) Essential on inductive loads (can be replaced with peak limiter)
- (2) PLC positive logic transistor (or relay) outputs

Interface with Mechanical Indication + LED

Circuit Diagram

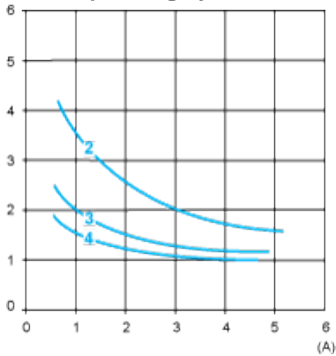


Electrical Durability of Contacts

AC Loads

Test conditions: in accordance with standard IEC 947-5-1 set up for rated control voltage, operating rate: 1800 cycles/hour. (0.5 Hz).

AC-12 operating cycles in millions

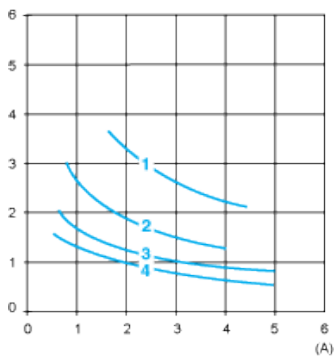


AC- Control of resistive loads and isolated solid state loads via optocoupler ($\cos \phi \geq 0.9$)

12

- (1) 24 V
- (2) 48 V
- (3) 127 V
- (4) 230 V

AC-13 operating cycles in millions

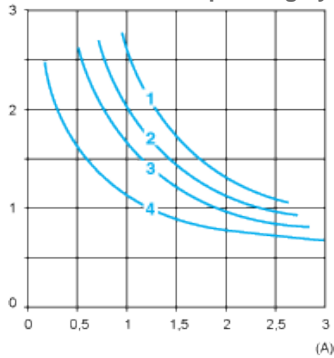


AC- Control of isolated solid state loads via transformer ($\cos \phi \geq 0.65$)

13

- (1) 24 V
- (2) 48 V
- (3) 127 V
- (4) 230 V

AC-14 and AC-15 operating cycles in millions



AC- Control of weak electromagnetic loads of electromagnets ≤ 72 VA (make: $\cos \phi = 0.3$, break: $\cos \phi = 0.3$)

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AC- Control of electromagnetic loads of electromagnets > 72 VA (make: $\cos \phi = 0.7$, break: $\cos \phi = 0.4$)

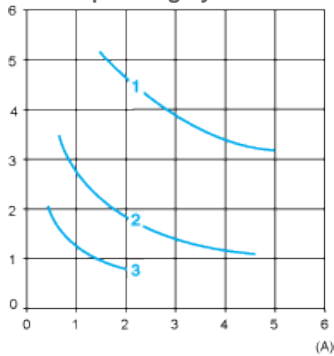
15

- (1) 24 V
- (2) 48 V
- (3) 127 V
- (4) 230 V

DC Loads

Test conditions: in accordance with standard IEC 947-5-1 set up for rated control voltage, operating rate: 1800 cycles/hour. (0.5 Hz).

DC-12 operating cycles in millions

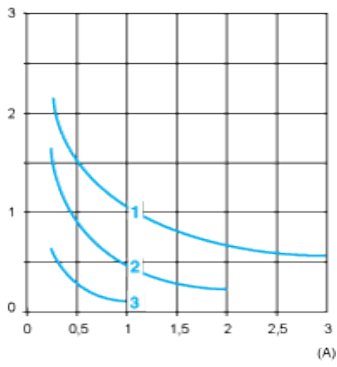


DC- Control of resistive loads and isolated solid state loads via optocoupler ($L/R \leq 1$ ms)

12

- (1) 24 V
- (2) 48 V
- (3) 127 V

DC-13 operating cycles in millions



DC- Control of electromagnets ($L/R \leq 2 \times (U_e \times I_e)$ in ms, with U_e : rated operating voltage and I_e : rated operating current)
 13

- (1) 24 V
- (2) 48 V
- (3) 127 V