

# ABR1S318B

output interface module - 17.5 mm -  
electromechanical - 24 V AC/DC - 1 C/O



## Main

|                                             |                                                                                                                          |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Range of product                            | Interface for discrete signals                                                                                           |
| Product or component type                   | Electromechanical output interface module                                                                                |
| Contacts type and composition               | 1 C/O                                                                                                                    |
| [Uc] control circuit voltage                | 24 V                                                                                                                     |
| Control circuit type                        | AC/DC                                                                                                                    |
| Control circuit frequency                   | 50/60 Hz                                                                                                                 |
| Width pitch dimension                       | 17.5 mm                                                                                                                  |
| [In] rated current                          | <= 55 mA AC<br><= 62 mA DC                                                                                               |
| Short-circuit protection                    | 16 A external fuse gF (Ik <= 2.5 kA AC and Ik <= 100 A DC)<br>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 circuit voltage limits | 30 V energization threshold: 16.5 V                                                                                                                                                                                                                                                                                                                                                                                            |
| Maximum switching voltage      | 125 V DC                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Housing colour                 | Grey                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Connections - terminals        | Screw clamp terminal                                                                                                                                                                                                                                                                                                                                                                                                           |
| Drop-out voltage               | 3.8 V                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Holding current                | >= 4.9 mA DC<br>>= 5.2 mA AC                                                                                                                                                                                                                                                                                                                                                                                                   |
| Power dissipation in W         | <= 1.5 W                                                                                                                                                                                                                                                                                                                                                                                                                       |
| [Ue] rated operational voltage | <= 125 V DC conforming to IEC 60947-5-1<br><= 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<br>1 A AC-14 Ue: 230 V per 1000000 cycles conforming to IEC 60947-5-1<br>1 A AC-15 Ue: 230 V per 1000000 cycles conforming to IEC 60947-5-1<br>1 A DC-13 Ue: 24 V per 1000000 cycles conforming to IEC 60947-5-1<br>4 A AC-12 Ue: 230 V per 1000000 cycles conforming to IEC 60947-5-1<br>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<br><= 12 ms between de-energisation of coil and closing of NO contact<br><= 12 ms between energisation of coil and closing of NC contact<br><= 12 ms between energisation of coil and closing of NO contact                                                                                                                                                 |
| Contact bounce time            | <= 3 ms                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Operating rate in Hz           | 0.5 Hz at Ie<br>6 Hz at no-load                                                                                                                                                                                                                                                                                                                                                                                                |
| Mechanical durability          | 10000000 cycles                                                                                                                                                                                                                                                                                                                                                                                                                |
| [Ui] rated insulation voltage  | 250 V conforming to IEC 60947-1<br>250 V conforming to VDE 0110 group C                                                                                                                                                                                                                                                                                                                                                        |
| Flame retardance               | V0 conforming to UL 94                                                                                                                                                                                                                                                                                                                                                                                                         |
| Cable cross section            | 0.27...4 mm², 1 wire rigid<br>0.34...2.5 mm², 1 or 2 wires flexible with cable end<br>0.6...2.5 mm², 1 or 2 wires flexible without cable end                                                                                                                                                                                                                                                                                   |

The information provided in this documentation contains general descriptions and/or technical characteristics of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

|                       |                                                                   |
|-----------------------|-------------------------------------------------------------------|
|                       | 0.27...2.5 mm², 2 wires rigid                                     |
| Operating position    | Any position                                                      |
| Installation category | II conforming to IEC 60947-1                                      |
| Mounting support      | Asymmetrical DIN rail<br>Combination rail<br>Symmetrical DIN rail |
| Product weight        | 0.095 kg                                                          |

## Environment

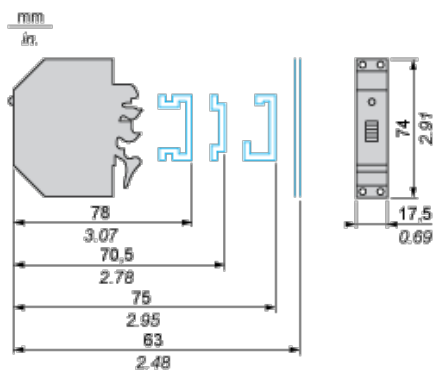
|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| immunity to microbreaks               | 8 ms                                                                                                                                                                                                                                                                                                                                                                                                                             |
| dielectric strength                   | 1500 V for 1 minute between independent contacts<br>2500 V for 1 minute between wired interface and earth<br>4000 V for 1 minute between coil circuit and contact circuits                                                                                                                                                                                                                                                       |
| standards                             | IEC 60947-5-1                                                                                                                                                                                                                                                                                                                                                                                                                    |
| product certifications                | BV<br>CSA<br>DNV<br>LROS (Lloyds register of shipping)<br>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<br>1.2/50 ms shock waves immunity test, 0.5 kV for U < 50 V conforming to IEC 255-4<br>Electrostatic discharge immunity test level 3, 8 kV conforming to IEC 61000-4-2<br>Rapid transients immunity test, on input/output 1 kV conforming to IEC 61000-4-4<br>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<br>-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                                                                                                                                                                                                                                                                                                                                                                                                    |

## Contractual warranty

|                 |           |
|-----------------|-----------|
| Warranty period | 18 months |
|-----------------|-----------|

## Electromechanical Interface Module

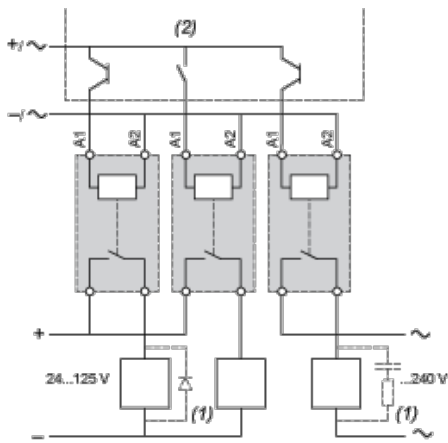
### Dimensions



## Electromechanical Interface Module

### Example of Application with PLC

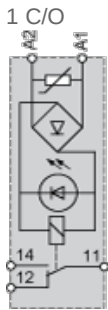
Interfacing PLC discrete outputs



- (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

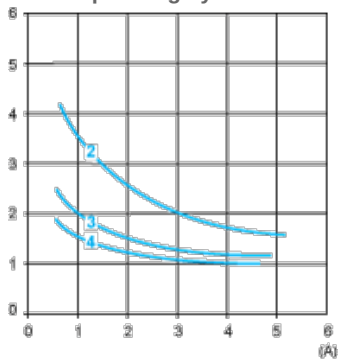


## Electrical Durability of Contacts

### 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).

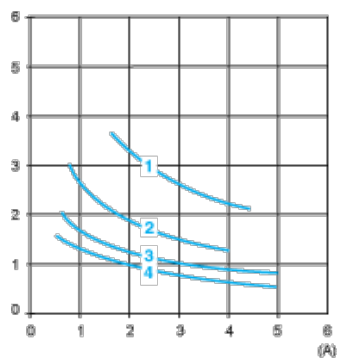
### AC-12 operating cycles in millions



AC-12 Control of resistive loads and isolated solid state loads via optocoupler ( $\cos \phi \geq 0.9$ )

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

### AC-13 operating cycles in millions

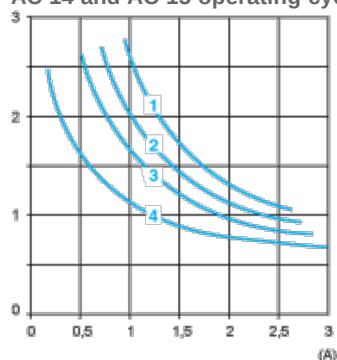


AC- Control of isolated solid state loads via transformer ( $\cos \phi \geq 0.65$ )

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- (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  $\leq 72$  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:  $\cos \phi = 0.4$ )

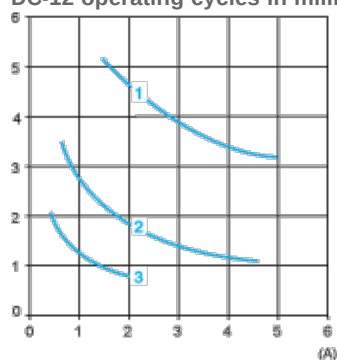
15

- (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

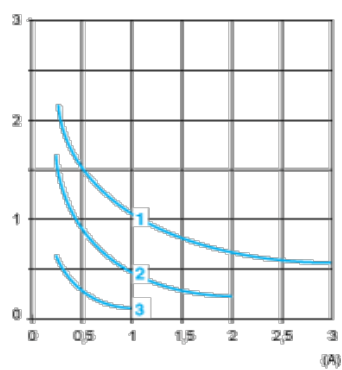


DC- Control of resistive loads and isolated solid state loads via optocoupler ( $L/R \leq 1$  ms)

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