

# Product datasheet

Specifications



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

TSI Code: 389854906 ABR1S418E

! Discontinued on: 27 February 2021

! End-of-service on: 01 March 2021

! To be discontinued

### 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
Maximum [In] rated current	32 mA AC 36 mA DC
Reverse polarity protection	With
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 circuit 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
Minimum holding current	4.7 mA DC 5.4 mA AC
Maximum 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

<b>Minimum switching current</b>	3 mA
<b>Minimum switching voltage</b>	17 V
<b>Electrical reliability</b>	<= 0.00000001
<b>Operating time</b>	<= 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
<b>Contact bounce time</b>	<= 3 ms
<b>Operating rate in Hz</b>	6 Hz at no-load 0.5 Hz at Ie
<b>Mechanical durability</b>	20000000 cycles
<b>[Ui] rated insulation voltage</b>	250 V conforming to IEC 60947-1 250 V conforming to VDE 0110 group C
<b>Flame retardance</b>	V0 conforming to UL 94
<b>Cable cross section</b>	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 0.27...2.5 mm <sup>2</sup> , 2 wires rigid 0.27...4 mm <sup>2</sup> , 1 wire rigid
<b>Operating position</b>	Any position
<b>Installation category</b>	II conforming to IEC 60947-1
<b>Mounting support</b>	Symmetrical DIN rail Combination rail Asymmetrical DIN rail
<b>Product weight</b>	0.095 kg

## Environment

<b>Immunity to microbreaks</b>	10 ms
<b>Dielectric strength</b>	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
<b>Standards</b>	IEC 60947-5-1
<b>Product certifications</b>	CSA BV UL DNV LROS (Lloyds register of shipping)
<b>IP degree of protection</b>	IP20 conforming to IEC 60529
<b>Protective treatment</b>	TC
<b>Fire resistance</b>	850 °C conforming to IEC 60695-2-1
<b>Shock resistance</b>	50 gn for 11 ms conforming to IEC 60068-2-27
<b>Vibration resistance</b>	6 gn conforming to IEC 60068-2-6 (f = 10...55 Hz)
<b>Electromagnetic compatibility</b>	1.2/50 ms shock waves immunity test 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
<b>Ambient air temperature for operation</b>	-20...60 °C at Un -5...40 °C unrestricted operation
<b>Ambient air temperature for storage</b>	-40...70 °C
<b>Operating altitude</b>	<= 3000 m
<b>Pollution degree</b>	3 conforming to IEC 60947-5-1

## Packing Units

<b>Unit Type of Package 1</b>	PCE
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<b>Number of Units in Package 1</b>	1
<b>Package 1 Weight</b>	100 g
<b>Package 1 Height</b>	1.8 cm
<b>Package 1 width</b>	7 cm
<b>Package 1 Length</b>	7.7 cm
<b>Unit Type of Package 2</b>	BB1
<b>Number of Units in Package 2</b>	5
<b>Package 2 Weight</b>	526 g
<b>Package 2 Height</b>	7 cm
<b>Package 2 width</b>	9 cm
<b>Package 2 Length</b>	10.8 cm
<b>Unit Type of Package 3</b>	S02
<b>Number of Units in Package 3</b>	50
<b>Package 3 Weight</b>	5.726 kg
<b>Package 3 Height</b>	15 cm
<b>Package 3 width</b>	30 cm
<b>Package 3 Length</b>	40 cm

## Offer Sustainability

<b>Sustainable offer status</b>	Green Premium product
<b>REACH Regulation</b>	<a href="#">REACH Declaration</a>
<b>EU RoHS Directive</b>	Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>
<b>Mercury free</b>	Yes
<b>RoHS exemption information</b>	<a href="#">Yes</a>
<b>China RoHS Regulation</b>	<a href="#">China RoHS declaration</a>
<b>Environmental Disclosure</b>	<a href="#">Product Environmental Profile</a>
<b>WEEE</b>	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins

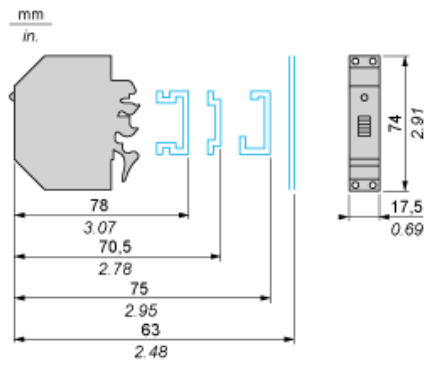
## Contractual warranty

<b>Warranty</b>	18 months
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**Electromechanical Interface Module**

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**Dimensions**

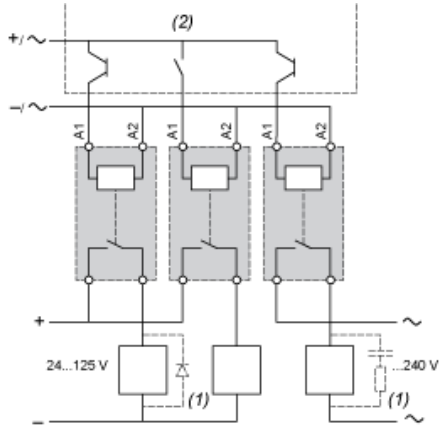


**Electromechanical Interface Module**

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**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**

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**Circuit Diagram**

2 N/O

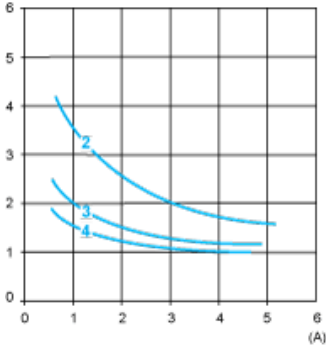


**Electrical Durability of Contacts**

**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).

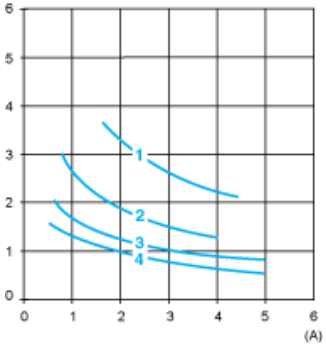
**AC-12 operating cycles in millions**



**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

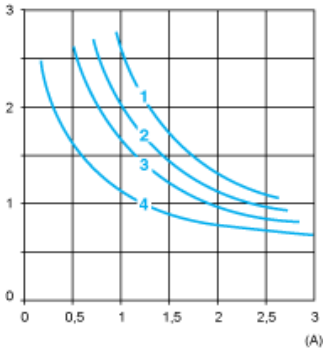
**AC-13 operating cycles in millions**



**AC-13** Control of isolated solid state loads via transformer ( $\cos \phi \geq 0.65$ )

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

**AC-14 and AC-15 operating cycles in millions**



**AC-14** Control of weak electromagnetic loads of electromagnets  $\leq 72$  VA (make:  $\cos \phi = 0.3$ , break:  $\cos \phi = 0.3$ )

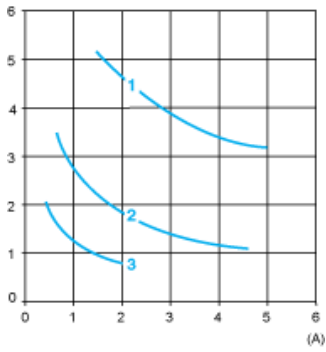
**AC-15** Control of electromagnetic loads of electromagnets  $> 72$  VA (make:  $\cos \phi = 0.7$ , break:  $\cos \phi = 0.4$ )

- (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).

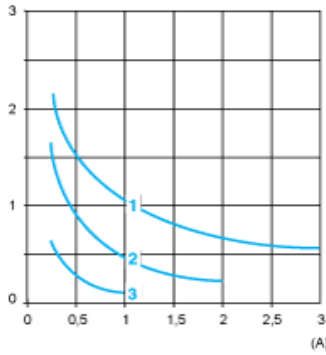
**DC-12 operating cycles in millions**



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

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

**DC-13 operating cycles in millions**



**DC-13** 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)

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