



µGard®2

# Analog Relay Board ARB2

ARB2-X-XXXX

**Gas measuring and warning controller board based on state-of-the-art technology for continuous monitoring of the ambient air to detect toxic, combustible and refrigerants gases.**

The ARB2 is designed for the connection of one 4-20 mA analog sensor with increasing gas signal (not for oxygen), e.g. of the µGard®2 MC2 series. The board monitors the measured value and activates the alarm relays if the set alarm thresholds for pre-alarm and main alarm are exceeded. In addition, the value is provided at the analog output as 4-20 mA signal.

Options such as LCD display and warning unit (WAO) ensure proper adaptation to the wide range of applications in gas detection technology.



Similar to picture

## APPLICATION

The ARB2 is designed for measuring and warning of toxic and combustible environment and refrigerant gases in many commercial and industrial applications.

The sensor can be placed remotely in a distance of up to 500 m away from the ARB2.

## FEATURES

- Hardware and software according to SIL2 compliant development process
- Easy maintenance / calibration by replacing the MC2 sensors or via comfortable on-site calibration
- Modular technology (plug-in and exchangeable)
- Remote installation of the sensor in a distance of up to 500 m
- Reverse polarity protected, overload and short-circuit proof
- One analog input 4-20 mA, e.g. MC2 series
- One analog output 4-20 mA / 2-10 V
- Two relays with change-over contact, potential-free, max. 240 V AC, 5 A
- Different housing types with IP 65
- Operating voltage 24 V AC/DC
- 100 - 240 V AC (option)
- 12 V DC (option)
- WAO, status LEDs with warning buzzer (option)
- Display (option)
- ANSI/UL 61010 1 & CAN/CSA-C22.2 No. 61010-1 (option)
- Duct mounting kit (accessory): See datasheet MC2



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Specifications subject to change without notice.

Up-to-date data sheets and user manuals can be found in the download area of [www.msr-24.com](http://www.msr-24.com).

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## SPECIFICATIONS

### Electrical

Power supply	24 V DC $\pm$ 20 % AC $\pm$ 15 % , reverse-polarity protected
Power consumption (24 V)	
- Control Board	Max. 60 mA (1.5 VA), w/o sensor, w/o WAO
- Sensor (MC2)	Max. 85 mA (2.1 VA)
- WAO	Max. 40 mA (1.0 VA)
Overvoltage category	I
Alarm relays (2)	240 V AC, 5 A, potential-free, change-over contact (SPDT)
Analog input	4 – 20 mA overload and short-circuit proof, input resistance 200 $\Omega$
Tension for analog sensor unit	24 V DC, max.100 mA
Analog output signal	Proportional, overload and short-circuit proof, load $\leq$ 500 Ohm (for 12 V DC supply max. 200 Ohm) 4 - 20 mA or 2-10 V

### Ambient conditions

Temperature range	-25 °C to +50 °C (-13 °F to +122 °F)
Humidity range	15 - 95 % RH not-condensing
Pressure range	Atmosphere $\pm$ 10 %
Pollution degree	2 (for indoor use only), not suitable for wet environment
Permissible height above sea level	1500 m (env. 5000 ft.)
Storage temperature	+5 °C to +40 °C (+41 °F to +104 °F)
Storage time	6 months

### Physical

Housing	Type A	Type G	Type N
Material	Polycarbonate	Polycarbonat	ABS
Combustion	UL 94 V2	UL 94 V2	---
Housing colour	Light grey RAL 7032	Hellgrau RAL 7032	Light grey RAL 7032
Dimensions W x H x D in mm / (inch.)	94 x 130 x 57 / (3.70 x 5.12 x 2.24)	94 x 130 x 81 (3.70 x 5.12 x 3.18)	80 x 82 x 56 / (3.15 x 3.22 x 2.20)
Weight ca. in kg / (lb.)	0.25 / (0.55)	0.3	0.2 / (0.44)
Protection class (delivery status)*	NEMA 4X (IP 65)	NEMA 4X (IP 65)	IP 65
Installation	Wall mounting, sensor downwards		
Knockouts for cable entry	2 x M12 / 3 x M20	2 x M12 / 3 x M20	1 x M20 (borehole)
Knockouts for installation of MC2/WAO	2 x	2 x	1 x MC2, 1 x WAO (borehole)

Wire connection: Power supply, field bus	Screw-type terminals 0.25 to 2.5 mm <sup>2</sup> , 24 to 10 AWG
Analog in/output; dig. input	Screw-type terminals 0.25 to 2.5 mm <sup>2</sup> , 24 to 10 AWG
Relays	Screw-type terminals 0.25 to 1.3 mm <sup>2</sup> , 24 to 16 AWG
Cable lengths for remote sensor	500 m (1640 ft.)

### Directives

EMC directives 2014/30/EU
Low voltage directive 2014/35/EU
CE
EN 61010-1:2010
Optional:
ANSI/UL 61010-1
CAN/CSA-C22.2 No. 61010-1

### Warranty

1 year on sensor (not if poisoned or overloaded),
2 years on device

\*If there are changes on the housing it has to be re-evaluated.



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## OPTIONS

<b>Display</b>	LCD, two lines, 16 characters each
Power consumption	5 V, 60 mA, 0.3 VA
<b>Status LED / buzzer (WAO)</b>	
Colour / mode	Red / yellow / green (alarm – fault – operation)
Buzzer	Acoustic pressure > 85 dB (A), frequency 2300 Hz
Protection class	IP 65
<b>Power supply 110 / 230 V AC</b>	
Wide range input	100 -240 V AC - 50/60 Hz
Consumption	5 VA
Overvoltage category	II
<b>Power supply 12 V</b>	
Power consumption (12 V DC)	
- Control Board	Max. 120 mA (1.5 VA), w/o sensor, w/o WAO
- Sensor	Max. 170 mA (2.1 VA)
- WAO	Max. 80 mA (1.0 VA)

## ORDERING INFORMATION

<b>ARB2-</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
						<b>FURTHER OPTIONS</b>
						<b>0</b> No further options
						<b>A</b> Version UL/CSA 61010-1
						<b>SENSOR UNIT<sup>1</sup></b>
						<b>0</b> Without sensor unit
						<b>1</b> Sensor unit MC2 installed ex works (please specify exact type when ordering)
						<b>2</b> Accessory kit for remote sensor
						<b>VISUAL/ AUDIBLE WARNING DEVICES (WAO)</b>
						<b>0</b> Without visual / audible warning device
						<b>1</b> With buzzer & status LED (red, yellow, green) (not retrofittable in housing N)
						<b>DISPLAY</b>
						<b>0</b> Without display
						<b>1</b> With display (only in connection with MC2 sensor unit mounted in the same housing – N <sup>2</sup> or G)
						<b>POWER SUPPLY</b>
						<b>1</b> 12 V DC
						<b>2</b> 24 V AC/DC
						<b>5</b> 100 – 240 V AC
						<b>HOUSING</b>
						<b>N</b> Housing type N <sup>2</sup> (not compliant to ANSI/UL 610010-1 and CAN/CSA-C22 No. 610010-1)
						<b>A</b> Housing type A (not for display option)
						<b>G</b> Housing type G (for display option)

<sup>1</sup> Not for oxygen

<sup>2</sup> Housing type N is not possible for display option & 230 V supply option together.

## Standard version: ARB2-N-20010

Description: Analog Relay Board, 24 V DC, 2 x digital output (pot. free relays), thresholds adjustable via potentiometer, 1 x analog input (4-20mA), 1 x analog output (4-20mA or 2 – 10 V), w/o display, w/o WAO, sensor integrated, w/o further options.



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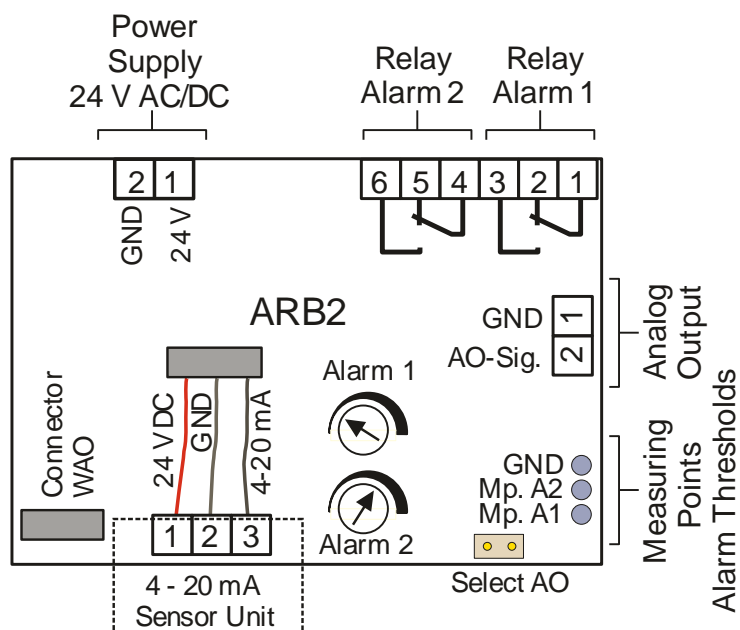


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### ELECTRICAL CONNECTION

Example 24 V AC/DC



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