

Gas Detection.



Technical Datasheet



PolyGard®2

Analog-Relay-Board ARB2

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Specifications subject to change without notice.

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DESCRIPTION

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

The ARB2 is designed for the connection of 1x analog 4–20 mA sensor with increasing gas signal (nor for oxygen), e.g. of the PolyGard®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.

APPLICATION

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

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

FEATURES

- Hardware and software according to SIL 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
- 1x analog input 4–20 mA, e.g. MC2 series
- 1x analog output 4–20 mA / 2–10 V
- 2x relays with change-over contact, potential-free, max. 250 V AC, 5 A; 30 V DC, 2 A
- Different housing types with IP65
- 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 and CAN/CSA-C22.2 No. 61010-1 (option)
- Duct mounting kit (accessory): See datasheet MC2

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)	250 V AC, 5 A; 30 V DC, 2 A, potential-free, change-over contact (SPDT)	
Analog input	4–20 mA overload and short-circuit proof, input resistance 130 Ω	
Tension for analog sensor unit	24 V DC, max. 100 mA	
Analog output signal	Proportional, overload and short-circuit proof, load \leq 500 Ω (for 12 V DC supply max. 200 Ω) 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 (approx. 5000 ft.)	
Storage temperature	-20 °C bis +65 °C (-40 °F to +149 °F)	
Storage time	6 months	
PHYSICAL		
Housing	Type A	Type G
Material	Polycarbonate	Polycarbonate
Combustion	UL 94 V2	UL 94 V2
Housing colour	Light grey 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)
Weight ca. in kg / (lb.)	0.25 / (0.55)	0.3 (0.66)
Protection class (delivery status)*	NEMA 4X (IP65)	NEMA 4X (IP65)
Installation	Wall mounting, sensor downwards	
Knockouts for cable entry	2x M12 / 3x M20	2x M12 / 3x M20
Knockouts for installation of MC2/WAO	2x	2x
Wire connection: Power supply, field bus	Screw-type terminals 0.25–2.5 mm ² , 24–10 AWG	
Analog in/output; dig. input	Screw-type terminals 0.25–2.5 mm ² , 24–10 AWG	
Relays	Screw-type terminals 0.25–1.3 mm ² , 24–16 AWG	
Cable lengths for remote sensor	500 m (1640 ft.)	
REGULATIONS		
Directives	EMC directives 2014/30/EU Low voltage directive 2014/35/EU CE EN 61010-1:2010	
	Option: 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-evaluate.

OPTIONS	
DISPLAY	
Display	2 lines, 16 characters each
Consumption	5 V, 60 mA, 0.3 VA
WAO STATUS-LED/BUZZER	
LED colour / mode	Red / yellow / green (alarm – fault – operation)
Buzzer - acoustic pressure	> 85 dB (A)
Buzzer - frequency	2300 Hz ± 300 Hz
Protection class	IP65
POWER SUPPLY 110/230 V AC	
Wide range input	100–240 V AC, 50/60 Hz
Consumption	Max. 5 VA
Overvoltage category	II
POWER SUPPLY 12 V	
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)

All specifications were collected under optimal test conditions.

We confirm compliance with the minimum requirements of the applicable standard.

ORDERING INFORMATION

ARB2-	X-	X	X	X	X	X		
						0	No further options	Further Options
						A	Version UL/CSA 61010-1	
						0	Without sensor unit	
						1	Sensor unit MC2 installed ex works (please specify exact type when ordering)	Sensor unit¹
						2	Accessory kit for remote sensor	
						0	Without visual/audible indicator (WAO)	Visual/Audible indicator (WAO)
						1	With buzzer & status LED (red, yellow, green)	
						0	Without display	Display
						1	With display (only in connection with MC2 cartridge in the same housing)	
						1	12 V DC	
						2	24 V AC/DC	Power supply
						5	100–240 V AC	
						0	Without housing	
						A	Housing type A, (not for display option)	
						G	Housing type G (for display option)	Housing

¹ Not for oxygen

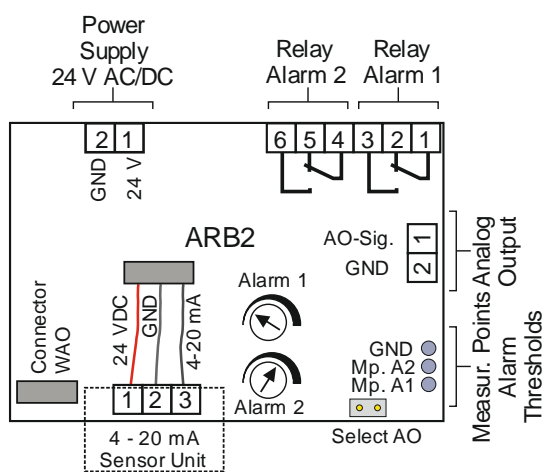
STANDARD VERSION

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

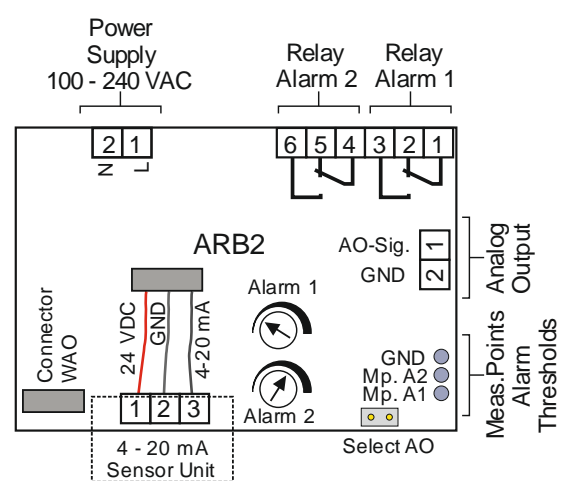
Ordering number: ARB2-A-20010

WIRING CONFIGURATION

24 V AC/DC



110 / 230 V AC



Note:

When connecting catalytic bead sensors for combustible gases, you must provide an external "self-holding" of the alarm relay if the measuring range may possibly be exceeded.