

Explosion-safe air conditioners AR-050

Marine grade, high ambient temperatures



Features

- Meets the ATEX / IECEx requirements
- Suitable for environments in which gas, vapor or mist is present, classified as Zone 1
- Durable semi-hermetically sealed 2- or 4-cylinder piston compressor
- Robust axial fan with aluminum impeller
- Stainless steel AISI 316L housing
- Refrigerant R134A
- For ambient temperatures up to 55 °C
- Flameproof control box with 3.8" color display
- Increased safe connection box for easy installation
- 400 VAC, 3 P+N, 50 Hz



II 2 G Ex db eb IIB T4 Gc



Description

ARTIDOR's explosion-safe AR-050 air conditioners are made to safely ensure a comfortable climate in an area where a release of gas, vapor or mist could cause a hazardous area classified as zone 1. These air conditioners are designed with the harsh marine, offshore and coastal conditions of tropical countries in mind: they are corrosion resistant, durable and suitable for ambient temperatures up to 55 °C. By integrating an additional heat exchanger and water pump, the units can be delivered as a water chiller for process cooling purposes. The optional 4-way valve upgrades the air conditioner or water chiller to an actual heat pump, also capable of heating.

The controls of the air conditioner are all housed in a maintenance-free flameproof housing. The unit can be operated by means of the switches and push buttons on the outside of this housing. A 3.8" graphical color display gives feedback to the operator on the actual temperatures, the status of the system and provides troubleshooting information.

The electrical connections for the power cable and for the temperature reference sensor can easily be made in the stainless steel, increased safe housing. There is no need for special, and often hard to install, Ex d cable glands.

Other refrigerants can be applied on request to optimize the system and to increase the cooling capacity for other ambient temperature ranges.

The AR-050 air conditioners or water chillers are explosion-safe and meet the requirements of European Directive 2014/34/EU (ATEX 114), product category II 2G, group IIB and temperature class T4. The units are CE marked.



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Technical data

European directives:	2014/34/EU (ATEX) and 2014/30/EU (EMC)
Explosion safety:	ATEX / IECEx II 2 G Ex db eb IIB T4 Gb
Applied standards:	EN 60079-0:2012 / A11:2013, EN 60079-1:2014 and EN 60079-7:2015
Ambient temperature:	-20 °C up to +55 °C
Capacity:	5, 7, 10 or 15 kW at 55 °C ambient temperature
Operating temperature:	Cooling: -15 °C up to +55 °C Heating: -10 °C up to +55 °C (optional)
Refrigerant:	R134A
Compressor:	Semi-hermetically sealed 2- or 4-cylinder piston compressor with carter heating 400 VAC, 3 phase, 1,450 rpm
Fan:	Short cased 4-pole axial fan with Ø400 mm aluminum impellor and brass spark minimization track 400 VAC, 3 phase, 1,440 rpm, 3,500 m³/h, 66 dB(A)
Water pump (optional):	Vertical centrifugal water pump, 400 VAC, 3 phase, 3,000 rpm, 900 dm³/h 1" water feed and return line, 1" fill connection and 1" drain 0 – 3 Bar pressure gauge
Display:	3.8" graphical color display for status indication, temperature display and trouble shooting
Indicator lights:	<ul style="list-style-type: none">▪ Green: Power On▪ Red: Fault condition▪ Yellow: Compressor running Blinking: Compressor malfunction▪ Blue: Water pump running Blinking: Water pump malfunction
Buttons / switches:	<ul style="list-style-type: none">▪ Main switch▪ Emergency stop▪ Green: Start▪ Red: Stop▪ Black: Reset▪ Key switch: Test low pressure safety circuit
Electrical power:	400 VAC, 3 P+N, 50 Hz 5 x 4 mm² connection terminals in an Ex e housing
Housing:	Stainless steel AISI 316L sheet metal parts, hinges, locks and bolts
Dimensions:	1,250 x 700 x 1,500 mm (overall, excluding water / refrigerant connections)
Weight:	Air conditioner: 295 – 400 Kg Water chiller: 345 - 450 Kg
Lifting and transportation:	Four (4) lifting lugs and two (2) fork lift channels are integrated in the design

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Airconditioning outdoor units, cooling only, aluminum Ex d housing and fan casing

Type number	Cooling capacity [kW]	Maximum current [A]	Dimensions [mm]	Weight [Kg]
AR-050/050	5	10,1	1,250 x 700 x 1,500	295
AR-051/070	7	14.6	1,250 x 700 x 1,500	310
AR-051/100	10	19.2	1,250 x 700 x 1,500	350
AR-051/150	15	24.2	1,350 x 800 x 1,600	400

Water chiller, cooling only, aluminum Ex d housing and fan casing

Type number	Cooling capacity [kW]	Maximum current [A]	Dimensions [mm]	Weight [Kg]
AR-050/051	5	10.6	1,250 x 700 x 1,500	345
AR-051/071	7	15.1	1,250 x 700 x 1,500	360
AR-051/101	10	19.7	1,350 x 800 x 1,600	410
AR-051/151	15	24.7	1,350 x 800 x 1,600	450

Options

Type number	Description
AR-050/9900	Cooling and heating
AR-050/9910	Stainless steel execution of the Ex d control box and fan casing
AR-050/9920	Blygold PoluAl XT coating of the condenser coils and copper tubing
AR-050/9990	Export packing in palletized wooden crates meeting the requirements of ISPM 15