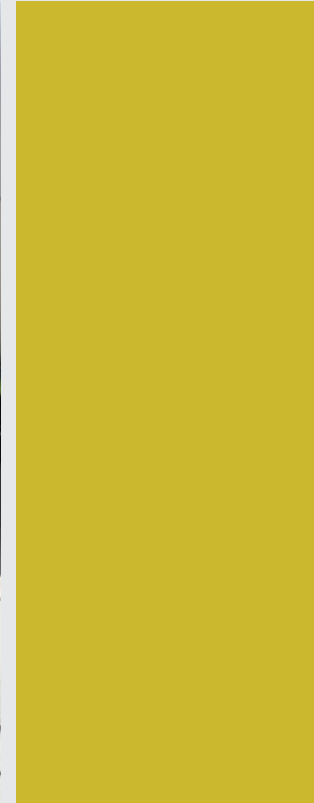


CoolAer

HEATING & COOLING SYSTEMS

AIRCRAFT PCA SERIES



PCA SERIES PRE-CONDITIONED AIR CONDITIONER

Coolaer Pre Conditioned Air PCA series are designed for cooling, heating and ventilating different types of aircrafts on the ground.

PCA units can be installed under the passenger boarding bridges, beside the GPU units or as centralized PCA which makes it a flexible solution for all airports.

Equipped with the state-of-the-art inverter compressors and heat pump technology, Coolaer PCA series offer efficiency, reliability and durability.



Their seamless operation in various weather conditions guarantees a consistent and comfortable temperature atmosphere within the aircraft cabin.

With Coolaer's in-depth knowledge of heat pump technology, the PCA series units optimize the energy usage resulting in significant energy savings for airport operators.

Coolaer's innovative, environmental friendly PCA units have under bridge, mobile and centralized types and can be adopted to any gate configuration.

PCA SERIES PRE-CONDITIONED AIR CONDITIONER

Components:

Standard equipment

- Unit's casing is made of galvanized steel that has been coldrolled to meet European standards EN 10 142. It is then finished with a polyester paint coating to enhance its resistance to the extreme environmental conditions.
- Units feature a self-supporting frame and removable fans, facilitating easy access to all internal parts for convenient maintenance.

Indoor circuit

- Units feature a centrifugal fan with direct coupling, driven by an electric motor (Class F, IP55) with internal thermal protection. The turbine is statically and dynamically balanced and mounted on permanently lubricated bearings.
- Frequency control for the air flow control.
- Prefilter and G4 air filter.
- The condensate drain pan in the ADX units is made of stainless steel and is tilted to prevent water stagnation.
- Condensate pump.
- Coil with copper pipes and aluminium fins.



Cooling circuit

- Hermetic scroll-type compressors assembled over shock absorbers.
- Crankcase heater.

Protections

- High pressure pressostat.
- Main door switch.
- Compressor discharge temperature control.
- Phase control relay.
- Automatic switch in the control circuit.
- Magnetothermic protection switches for the compressor power line and fan motor.
- Smoke detection.
- Clogged filter detector

Outdoor circuit

- Units have axial fans with two-speed settings, directly coupled to the unit. The fans feature watertight motors (Class F, IP55) with internal protection using magnetothermals. The propellers are dynamically balanced, and there is an outdoor protective grille for added safety.
- Anti-bird grid, in aspiration.
- Coil with copper pipes and aluminium fins.

Electric panel

- Complete and fully wired electrical panel. Protection IP55.
- High electromagnetic compatibility EMC.
- Main ground connection.
- Compressor and fan motor contacts.
- System comprised of a PLC and an NQ display which performs the following functions
- Selection of the operating mode and display of the operating parameters.
- Ambient temperature control with cabin probe.
- Outdoor temperature compensation.
- Failure diagnosis and main alarm.
- External remote keypad.

Optional functions

- Measurement of the unit's electric energy consumption.
- Measurement of the available pressure in duct.
- Possibility of connection to a local network with ETHERNET Modbus protocol.
- The "**Control PCA Pro**" offers real-time monitoring of cooling circuit conditions, including undercooling and overheating levels.
- Aspiration temperature and compressor discharge.
- Liquid temperature.
- High and low pressures using transducers.
- This improves control of the unit and facilitates its maintenance. With this control the external remote keypad is optional.



Options

- Copper pipe coils and copper fins.
- Coils with copper pipes and aluminium fins with polyurethane and blygold polual coating.
- The ADX units feature electronic EC axial fans in the outdoor circuit, which adjust their rotation speed to reduce electricity consumption, minimize sound levels at partial charge, and enhance overall seasonal efficiency.
- Complete level: Sound insulation of the main fan (motor and fan) and acoustic casing of the compressors.
- Outdoor plug-fans with condensation pressure control for ducted installation.
- Lighting of the electric panel with microswitch.
- Fan in the electric panel for its ventilation whilst the unit is at a stand-still. Especially recommended for very warm climates.
- Auxiliary electrical heaters.
- Discharge nozzle 18" (standard in models with 5 circuits).
- Additional discharge nozzle 14" (for JUMBO/NLA units).
- Motorised valve for additional nozzle (for JUMBO units with additional nozzle 14").
- Flange for additional nozzle (JUMBO units with additional nozzle 14").
- Change in the RAL colour and finish.



Application Areas



Airports



Aircraft Maintenance Hangars



Military Bases and Bases



Aircraft Test and Trial Centers



Private Flight Operators

Technical Specifications

		PDX40	PDX75	PDX100	PDX125	PDX140	PDX190	PDX210
Cooling capacities	Cooling capacity (kW)	36,9	74,1	95,3	126,8	138,3	188,6	211,6
	Power input (kW)	19,1	41,8	54,5	72,0	95,3	102,2	129,9
	Outlet temperature (°C)	-2						
Outdoor circuit fan	Nominal air flow (m3/h)	36.000		48.000		72.000	90.000	
	Type	Axial						
	Number	2		3		4	5	
	Diameter (mm)	2 x 800		3 x 800		4 x 800	5 x 800	
	Output (kW)	2 x 1,8		3 x 1,8		4 x 1,8	5 x 1,8	
	Speed (r.p.m.)	870						
Indoor circuit fan	Nominal air flow (kg/min)	40	70	90		100	150	200
	Nominal Avai. static pressure (Pa)	3.000	5.500	5.000	7.000	7.500	8.500	
	Minimum air flow (kg/min)	32	56	72		80	120	160
	Maximum air flow (kg/min)	50	87	112		124	186	248
	Type	Centrifugal						
	Number / no. turbines	1/1						
	Output (kW)	5,5	11,0		30,0		45,0	
Compressor	Type	Scroll						
	Number	2		3		4	5	6
	Number of circuits	2		3		4	5	6
	Number stages	2		3		4	5	6
Electrical characteristics	Electrical power supply	400 V / III ph / 50 Hz (+/-5%)						
	Power supply	3 Wires + Ground						
Current	Maximum input (A)	46,0	40,1	114,3	149,5	208,5	229,8	292,1
	Locked rotor (A)	163,6	279,7	309,9	388,9	446,7	468,9	759,9
Refrigerant	Type	R-410A						
	Global warming potential (GWP) ³	2.088						
	Charge (kg)	30,0	35,0	40,0		45,0	50,0	60,0
Dimensions	Length (mm)	3.105		4.260		4.710		
	Width (mm)	2.355						
	Height (mm)	1.388		1.638		1.375		
Weight	(kg)	2.086	2.288	2.526	2.819	3.270	3.742	3.917
Condensate outlet Ø		3/4" adaptor				3/4" adaptor		
<p>¹ - Cooling net capacity between conditions of entry and air exit, set for 35°C outdoor temperature and 40 % HR.</p> <p>² - Total power input by compressor and motorised fans under nominal conditions.</p> <p>³ - Climatic warming potential of a kilogram of fluorinated greenhouse gas in relation to a kilogram of carbon dioxide over a period of 100 years.</p>								

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