



**ECO  
GATE**

ENABLED

ITW GSE

# 3500 PCA

Next generation PCA and a milestone  
in advancing gate economics



QUICK SWAP  
OF COOLING MODULE



INTELLIGENT  
POWER MANAGEMENT



AUTOMATED AIRCRAFT  
TYPE DETECTION

ITW  
GSE  
3500

It's all about connections





# THE SMART CHOICE



The ITW GSE 3500 provides a pleasant and welcoming atmosphere for crew and passengers as soon as they step into the aircraft. Automated Aircraft Type Detection allows the 3500 PCA to automatically adapt its airflow to the specific aircraft type – and not just an aircraft category. This not only helps to avoid operator errors – it also increases the PCA cooling performance by more than 50 % and improves the passenger comfort.

## DESIGNED FOR ALL KINDS OF AIRCRAFT

The truly modular ITW GSE 3500 PCA is an innovative, reliable and environmentally friendly point-of-use pre-conditioned air unit. It comes in two different configurations, e.g. for mounting on the passenger bridge or for apron mounting designed to cool all types of aircraft from regional jets to jumbos.

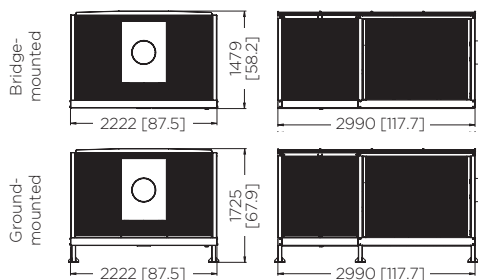
## IMPROVE YOUR ENVIRONMENT AND CUT COST

The increasing focus on environmental issues is a great incentive to switch to external PCA and 400 Hz solid-state units while the aircraft is parked at the gate, instead of running the aircraft APU. This “Go Green on Ground” approach reduces carbon emissions by approx. 80-85%. Furthermore, it leads to savings on the costly maintenance of the on-board APU. For the airports, the “Go Green on Ground” also means a reduction of the noise level to the benefit of the airport personnel, passengers and to surroundings in general.

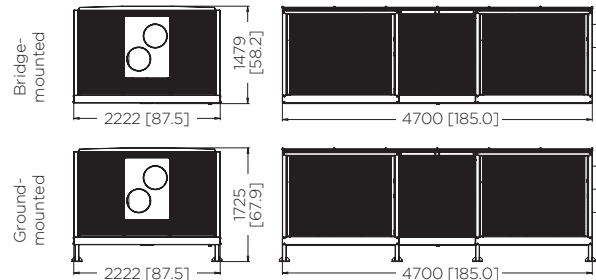
## UNPARALLELLED EFFICIENCY - THE BEATING HEART OF ECOGATE

The 3500 is much more than just a PCA. It is the centerpiece of EcoGate, ITW GSE’s visionary approach to advancing gate economics. By linking your ITW GSE equipment together in an integrated system, EcoGate unlocks new efficiencies and removes power-related barriers to progress at the gate. The 3500 hosts the communication and power distribution that EcoGate depends on, making it the beating heart of your EcoGate-setup.

### PCA 150 - 2 COOLING MODULES



### PCA 210 - 3 OR 4 COOLING MODULES



Dimensions are shown in mm and [inches]

## INTELLIGENT POWER MANAGEMENT

Intelligent Power Management (IPM) is a major EcoGate technology that utilizes installed power smarter. At existing gates, it lets you add more equipment without having to invest in new power capacity. At new terminals, it reduces installation costs and future-proofs the gate. Hosted in the IPM-equipped 3500 PCA, IPM monitors power consumption and allocates power dynamically, prioritizing the mission-critical needs of your GPUs. If a GPU experiences a sudden increase in power consumption that risks overloading the supply, IPM temporarily 'borrows' power from the PCA - ensuring that the gate's total power capacity is never exceeded.



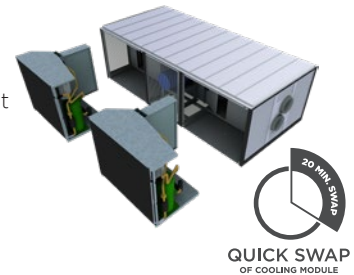
## HIGHER PASSENGER COMFORT

The PCA includes an integration to the Visual Docking and Guiding System or to the Airport Building Management System or the like. This means that the PCA receives information on the arriving aircraft type as soon as the aircraft approaches the gate. From its aircraft data base, the PCA already knows the exact aircraft settings. Based on these, it can adapt the airflow to the specific aircraft type and not just to an aircraft category. This optimizes cooling and passenger comfort.



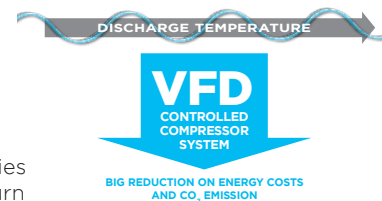
## INNOVATIVE DESIGN

The ITW GSE 3500 PCA is a truly modular PCA. It is designed around interchangeable cooling modules that are easy to swap by a technician with no special refrigeration skills and in 20 minutes only. This helps keep aircraft turn-arounds on schedule. The modular design also means big savings on spare part inventories. All parts (e.g. the self-containing cooling modules, condenser fans, main blower etc.) can be replaced without removing the PCA unit from underneath the passenger boarding bridge. The whole internal plenum and stainless-steel drain pan can be cleaned in less than 2 hours once the cooling modules have been pulled out.



## BETTER RETURN OF INVESTMENT

All main components are equipped with variable frequency drive technology (VFD). This unique technology enables an easy and stepless regulation of the discharge temperature which means that the energy consumption of the ITW GSE PCA unit is reduced to a very minimum since it supplies the exact amount of cold air required and not more. The stepless regulation further implies less mechanical stress, boosts reliability and service life and gives a better return on investment.



## MINIMAL POWER CONSUMPTION

The 3500 PCA enables limiting the current drawn. In this way, the PCA does not overload the entire mains supply leading to blown fuses and aircraft delays. In the event of an infrastructure upgrade, the current limit can be set to another value allowing the PCA to cool more!

The excellent high power factor of  $> 0.97$ , means a line current reduction of up to 20% compared to similar PCA units with the same rating. Also, smaller and less costly cables can be used. Furthermore, state-of-the-art components ensure a high performance at the output as well as a low energy consumption. Therefore, the lifetime costs of the ITW GSE 3500 PCA are as low as they can possibly be.



# SPECIFICATIONS

## ITW GSE 3500 PCA 150 & 210

### Input

- Rectification: 12 pulse
- Line current distortion: < 10%
- Inrush current: None, softstart
- Power factor: >0.97 at 100% load

### Output

- Discharge air temperature: Down to 0°C / 32°F, depending on ambient temperature, relative humidity, and air flow. For specified cooling calculations, please contact your Regional Sales Office.

### Environmental data

- Operating temperature: -30°C to +50°C (-22°F to +122°F)
- Relative humidity: 10-100%, non condensing
- Noise level: < 85 dB(A) at 4.6 m
- IP class: IP54 (Electronic part)

### Miscellaneous

- MTTR: Typically 20 minutes
- Refrigerant: R410A
- Construction: Welded and bolted, anti-corrosive coated steel frame

### Directive conformity

- ETL listing 60 Hz version, only
- 2004/108/EC EMC Directive
- 2006/95/EC LVD Directive
- 2006/42/EC Machinery Directive

### Conformity by complying with

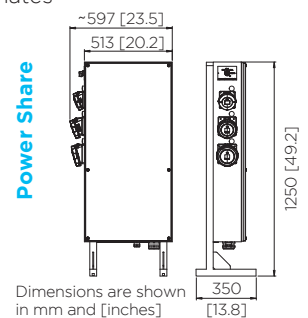
- UL 60335-2-40 480 V version, only
- EN61000-6-2 EMC - immunity standard
- EN61000-6-4 EMC - emission standard
- EN62040-1-1 LVD safety standard
- EN61558-2-6 General & safety requirement
- 1915-1&2 Machinery - general safety requirement
- 12312-17 Aircraft ground support equipment, specific requirements

### STANDARD Features

- Stepless regulation via VFD on main blower, compressors and heater
- Quick swap of cooling modules
- Internal ducts made of stainless steel
- Smoke detector
- Measure of outlet pressure and air flow
- Air temperature sensors (discharge and inlet)
- 2 pressure and 3 temperature sensors as well as 1 sight glass on each refrigerant circuit
- Micro channel condensers (sea water resistant aluminium)
- ePM10 70% medium filtration including clogging alarm (EN779: M6 / ASHRAE 52.2: MERV 11 eq.)
- Internal 14" damper on the second outlet
- Special condenser coating
- TCP/IP interface via RJ45 port
- Fast evaporator de-icing
- Automated Aircraft Type Detection
- Color: RAL 7035 (standard) or any other RAL colour on request

### Available options

- Cabin sensor
- Feet for ground mounted units
- RS485 port with Modbus/Jbus protocol
- 400 Hz output (AEF-150 only)
- Intelligent Power Management CE: all PCA models. UL: 60/90/120 T.
- ePM1 70% fine filtration (EN779: F8 / ASHRAE 52.2: MERV 14 eq.)
- Removable heater module with overtemperature protection
- Condensate separator for hot and humid climates
- Cover for modules (RAL 7035)
- 14" or 18" single outlet (for PCA 210 only)
- Remote control box with display and single communication cable
- Power Share: 50/60 Hz receptacle for charging eGPUs or other AC units



Model	Marking	Input voltage	Frequency	Current (Line)	Nominal compressor rating	Airflow		Pressure		Weight		Heater (Optional)	Condensate Pumps	Outlets
						[kg/min]	[lb/min]	[kPa]	[inH <sub>2</sub> O]	[kg]	[lbs]			
AEF-150/2 (H)	CE	3 x 400	50	145	45	150	330	10	40	3,200	7,000	72	2	1 x 14"
	UL	3 x 480	60	120	45	150	330	10	40	3,200	7,000	72	2	1 x 14"
AEF-150/2X (H)	CE	3 x 400	50	175	60	150	330	10	40	3,200	7,000	72	2	1 x 14"
	UL	3 x 480	60	145	60	150	330	10	40	3,200	7,000	72	2	1 x 14"
AEF-210/3 (H)	CE	3 x 400	50	275	90	210	460	10	40	4,000	8,800	120	4	2 x 14"
	UL	3 x 480	60	220	90	210	460	10	40	4,000	8,800	120	4	2 x 14"
AEF-210/4 (H)	CE	3 x 400	50	345	120	210	460	10	40	4,500	9,900	120	4	2 x 14"
	UL	3 x 480	60	290	120	210	460	10	40	4,500	9,900	120	4	2 x 14"

Specifications are subject to change without prior notice.

Exclusive Proprietary of ITW GSE.

For hot regions, a sub-freeze PCA is available. Contact us to hear more.

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