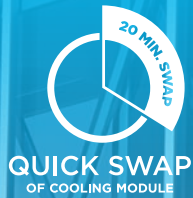


ITW GSE

3400 PCA

Pre-conditioned air unit - 130 & 210



It's all about connections





THE SMART CHOICE

ITW GSE is a trustworthy partner designing and optimizing GSE equipment. We have strong expertise within cooling technology and the ITW GSE 3400 PCA is the market's most innovative, reliable and environmentally friendly point-of-use PCA. The 3400 PCA is also the market's only true modular PCA (patented).

The 3400 PCA supplies fresh, clean air into parked aircraft, at carefully monitored temperatures and provides a pleasant atmosphere for the crew and the passengers. It also makes aircraft turn-around faster and more effective.

DESIGNED FOR ALL KINDS OF AIRCRAFT

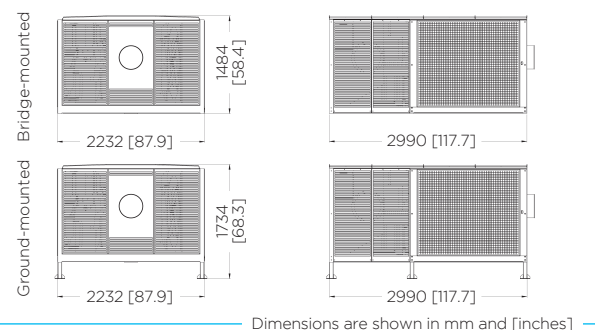
The 3400 PCA is available for bridge- or ground-mounting for aircraft parking positions or hangar applications. It is designed to suit all types of aircraft from the Narrow-Body (Code C: A320) & Wide-Body (Code D: B767) equipped with 1 PCA connector over the Jumbo (Code E: B777) to the Super Jumbo (Code F: A380) equipped with 4 PCA connectors connected to two ITW GSE 3400 PCA 210 units.

The 3400 PCA uses a minimal amount of refrigerant due to micro channel condenser technology and the compact design of the unit. The refrigerant R410A does not degrade the ozone layer at all. The refrigerant further provides reliable operation at high ambient temperatures. The distance between the evaporators and the low air velocity optimize the efficiency of each cooling circuit and prevent condensation drops from moving from one evaporator to the next.

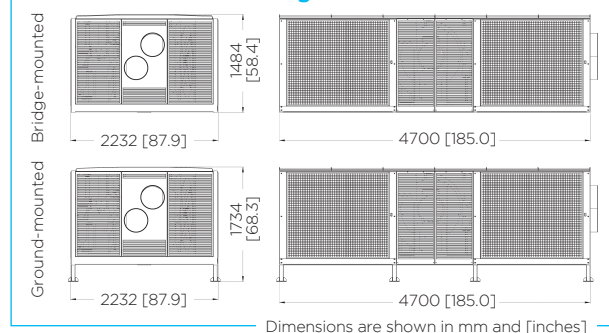
IMPROVE YOUR ENVIRONMENT AND CUT COST

The increasing focus on environmental issues means that airports aim to let an external pre-conditioned air unit and a 400 Hz solid-state unit take over the functions of the aircraft APU while the aircraft is parked at the gate. We call this the "Go Green on Ground" concept whereby carbon emission is reduced by approx. 80-85%. The concept furthermore provides savings on the costly maintenance to the on-board APU, based on hours of operations. 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.

PCA 130 - 2 Cooling Modules



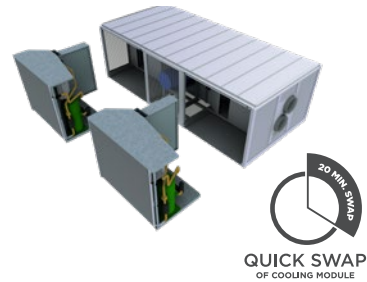
PCA 210 - 3 or 4 Cooling Modules



INNOVATIVE DESIGN

The ITW GSE 3400 PCA is the market's only modular PCA. It is designed around identical cooling modules that are easy to swap by a technician with no special skills and in 20 minutes only. This helps you 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.



POWER CONSUMPTION

The 3400 PCA enables limiting of the current drawn. In this way, the PCA does not overload the entire mains supply with blown fuses and aircraft delays as possible consequences. In the event of a later 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. Add to this the choice of state-of-the-art components that ensures a high performance at the output as well as a low energy consumption. Further reductions on the energy consumption are achieved due to the variable frequency drive (VFD) control of all main parts such as compressors and blowers. Therefore, the life time costs of the ITW GSE 3400 PCA are as low as they can possibly be.

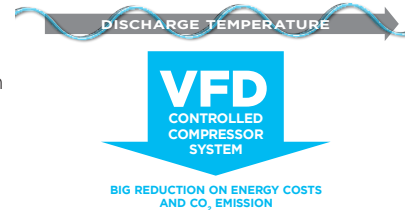


STEPLESS REGULATION

The 3400 design breaks completely new ground by using variable frequency drive technology that gives easy, stepless regulation of the discharge temperature. Therefore, the ITW GSE 3400 PCA units supply exactly the required amount of cold air and not more. They use much less energy than other PCAs that are designed for peak load conditions although these conditions probably only apply for 10-20 days each year. Those PCAs deliver excess capacity for about 80% of the time, wasting lots of expensive energy and creating undesirable emissions. Another advantage of the stepless regulation is less mechanical stress – which boosts reliability and service life and gives you a better return on investment.

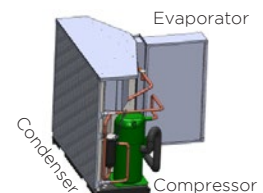
steplessREGULATION

The variable frequency drive of the ITW GSE 3400 PCA ensures stepless regulation of the discharge temperature



OPTIMUM PERFORMANCE ENSURED

The ITW GSE PCA is, as standard, designed with one stage of ePM10 70% filtre. 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. Afterwards, the evaporators and condensers can be cleaned to optimize the efficiency of the 3400 PCA, which again reduces the whole life costs of the PCA to a minimum.



THE ITW GSE OPERATOR INTERFACE

The ITW GSE operator interface is easy and intuitive. This is your guarantee for correct operation and on-time aircraft departures. The operator only has to press the combined start/stop button. Also, he can monitor various parameters such as temperature and air flow at the display screen.

The operator interface is common from one ITW GSE product to another. Therefore, airport staff familiar with one ITW GSE product can easily switch to another as the icons and display are the same. For easy set-up and maintenance purposes, there is a deeper level dedicated for the technician. The software-based control system means that your 3400 PCA can be updated and given additional capabilities in the future, simply by transferring new software from a USB stick.



SPECIFICATIONS

ITW GSE 3400 PCA 130 & 210

Input

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

Output

- Discharge air temperature:
Subzero, depending on
ambient temperature relative
humidity and air flow

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, anti-
corrosive coated steel frame

Directive conformity

- UL 1995 480 V version, only
- 2004/108/EC EMC Directive
- 2006/95/EC LVD Directive
- 2006/42/EC Machinery Directive

Conformity by complying with

- ETL listing 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

The 3400 PCA is equipped with the following features

- Stepless regulation via VFD on main blower & compressors
- Quick swap of cooling module; only takes 20 minutes
- 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%" filtration including clogging alarm
- Remote control station with display and single communication cable
- Internal 14" damper of the second outlet
- Special condenser coating
- TCP/IP interface via RJ45 port
- Fast evaporator de-icing

Available standard options

- Cabin sensor
- Feet for ground mounted units
- RS485 port with Modbus/Jbus protocol
- ITW GSE Service Tool
- Colour: RAL 7035 (standard) or any other RAL colour on an optional basis
- Heater with overtemp. protection

Model	Marking	Input voltage	Frequency	Current (Line)	Current (MCA)	Current (MOP)	Nominal compressor rating	Airflow	Airflow	Pressure	Pressure	Weight	Weight	Heater (Optional)	Condensate Pumps	Outlets
		[V]	[Hz]	[A]	[A]	[A]	[Tons]	[kg/min]	[lb/min]	[Pa]	[inH ₂ O]	[kg]	[lbs]	[kW]	[Qty]	[Qty]
ADF-130/2 (H)	CE	3 x 400	50	145	180	200	45	130	280	8,500	34	3,200	7,000	72	2	1 x 14"
	UL	3 x 480	50/60	120	146	150	45	130	280	8,500	34	3,200	7,000	72	2	1 x 14"
ADF-130/2X (H)	CE	3 x 400	50	175	200	225	60	130	280	8,500	34	3,200	7,000	72	2	1 x 14"
	UL	3 x 480	50/60	145	170	200	60	130	280	8,500	34	3,200	7,000	72	2	1 x 14"
ADF-210/3 (H)	CE	3 x 400	50	275	300	350	90	210	460	10,000	40	4,000	8,800	120	4	2 x 14"
	UL	3 x 480	50/60	220	250	300	90	210	460	10,000	40	4,000	8,800	120	4	2 x 14"
ADF-210/4 (H)	CE	3 x 400	50	345	370	400	120	210	460	10,000	40	4,500	9,900	120	4	2 x 14"
	UL	3 x 480	50/60	290	310	350	120	210	460	10,000	40	4,500	9,900	120	4	2 x 14"