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.
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.

OPTIMUM PERFORMANCE ENSURED
The ITW GSE PCA is, as standard, designed with one stage of ePM10 70% filter. 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**

<table>
<thead>
<tr>
<th>Model</th>
<th>Marking</th>
<th>Input voltage</th>
<th>Frequency</th>
<th>Current (Line)</th>
<th>Current (MCA)</th>
<th>Current (MOP)</th>
<th>Nominal compressor rating</th>
<th>Airflow</th>
<th>Airflow</th>
<th>Pressure</th>
<th>Pressure</th>
<th>Weight</th>
<th>Weight</th>
<th>Heater (Optional)</th>
<th>Condensate Pumps</th>
<th>Outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADF-130/2 (H)</td>
<td>CE 3 x 400</td>
<td>V [Hz] [A] [A] [A] [Tons] [kg/min] [lb/min] [Pa] [inH2O] [kg] [lbs] [kW] [Qty]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UL 3 x 480</td>
<td>50/60</td>
<td>120 145 160 180 165 140 130 280 8,500 34 3,200 7,000 72 2 1 x 14”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADF-130/2X (H)</td>
<td>CE 3 x 400</td>
<td>V [Hz] [A] [A] [A] [Tons] [kg/min] [lb/min] [Pa] [inH2O] [kg] [lbs] [kW] [Qty]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UL 3 x 480</td>
<td>50/60</td>
<td>145 170 200 225 190 160 130 280 8,500 34 3,200 7,000 72 2 1 x 14”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADF-210/3 (H)</td>
<td>CE 3 x 400</td>
<td>V [Hz] [A] [A] [A] [Tons] [kg/min] [lb/min] [Pa] [inH2O] [kg] [lbs] [kW] [Qty]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UL 3 x 480</td>
<td>50/60</td>
<td>220 250 300 350 280 240 210 460 10,000 40 4,000 8,800 120 4 2 x 14”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADF-210/4 (H)</td>
<td>CE 3 x 400</td>
<td>V [Hz] [A] [A] [A] [Tons] [kg/min] [lb/min] [Pa] [inH2O] [kg] [lbs] [kW] [Qty]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UL 3 x 480</td>
<td>50/60</td>
<td>290 310 350 400 320 280 210 460 10,000 40 4,500 9,900 120 4 2 x 14”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Specifications are subject to change without prior notice