The next generation in Commercial ducted air conditioning has arrived. This Australian engineered system features new technology that delivers a combination of superior performance, energy efficiency, flexibility of design and installation time saving features. Furthermore, ActronAir® believes this technology has one of the lowest lifecycle costs of any product in its class.

Advanced energy efficiency

A ‘typical’ commercial building air conditioner operates between 60% to 75% capacity most of the time. This is why ActronAir® chose to design an air conditioner better suited to meet the building load by developing the Tri-Capacity Series.

Energy usage is reduced through both the tri-capacity operation and the incorporation of a high efficiency EC plug fan. The tri-capacity twin compressor configuration is unique in its class and delivers 3-steps of cooling and heating, which allows the system to operate at 33%, 66% or 100% capacity. Not only does this improve seasonal energy efficiency through fewer adjustments, it also results in less cyclic degradation and improved end user comfort.

The EC evaporator plug fan uses significantly less energy versus traditional belt and pulley systems. The backward curve fan is non-overloading for maximum durability and results in lower life cycle costs. These plug fans also offer greater flexibility in supply and return air configurations.

Ease of Commissioning

The Tri-Capacity Series offer noticeable time savings for the mechanical contractor/installer during the commissioning process. For example the indoor air flow is adjusted using a simple ‘dial-up’ feature and results in more accurate air flow control.

In addition, standard inclusions such as a 3-phase load break isolation switch, in-built filter cavity, flexible handing configurations, Demand Response Ready operation, in-built safety tray (indoor units) and condensate drain points make life easier by reducing the amount of work required on site.

Designed to use the ActronAir® C7-4 controller with after hours run timer, the units are also easy to wire. The Commercial Control Interface (CCI) is included as standard and will suit most third party controls for greater flexibility.

Built for Australian conditions

Purpose built and designed for Australian conditions, these units have an operating range of -10°C to 50°C. In fact, all ActronAir® models are subjected to further Maximum Cooling Capacity tests at 52°C (AS 3823.1.2 Table 2 T3).

To provide independent performance verification, ActronAir® has gone one step further by testing these units in an ISO17025 accredited US laboratory. This reinforces ActronAir’s commitment to delivering and exceeding both current and future standards.

Tri-Capacity Options include:

- Fault detection
- Economiser
- Fresh air operation
- Additional coil protection
- 3Ph soft starter

For additional information regarding kW capacity please refer to the Unit Specifications tables located on the back page.
Tri-Capacity 470-960 Series

1. ActronAir® Louvre Grill
   • Standard inclusion for Packaged unit and Outdoor Unit
   • Protects condenser coil against mechanical damage eg. hail

2. Outdoor Coil
   • High performance outdoor coil to deliver improved cooling and heating performance
   • -10ºC to 50ºC operating range
   • Blue fin hydrophilic protection supplied standard for improved durability

3. TX Valves
   • Supplied standard for improved seasonal efficiency

4. Electrical Control Board
   • User-friendly wiring layout
   • Standard inclusions:
     - Individual motor protection (circuit breaker and thermal overload) and isolation (lockable)
     - Commercial Control Interface (CCI)
     - Demand Response Ready

5. Dial-up Indoor Air Flow
   • Quick and easy commissioning
   • Improved air flow control accuracy

6. High Performance Outdoor Fans
   • High quality, high performance fans, engineered and manufactured in Germany
   • Improved air flow
   • Quieter operation vs. traditional axial fans

7. 3 Phase Load Break Isolation Switch
   • Standard inclusion
   • External lockable handle

8. High performance 25mm Foil-Faced Polyethylene Insulation
   • Standard inclusion

9. In-built Filter Cavity
   • Standard inclusion
   • To suit 96mm filter width

10. High Efficiency EC Plug Fan
    • Uses significantly less energy than traditional belt and pulley systems
    • Backward curve non-overloading for maximum durability
    • High static as standard (up to 500 Pa)
    • Designed for maximum durability and lower life cycle operating costs
    • Greater flexibility in supply and return air configurations

11. Unique Tri-Capacity Operation
    • Designed for improved seasonal energy efficiency vs. traditional compressor configurations
    • Tri-capacity delivers 3 steps of cooling/heating
      - c.33%, c.66% and 100% capacity
    • Designed for maximum durability and lower life cycle operating costs
      - High quality Copeland compliant scroll compressors

Note: image shown is for illustrative purposes only.
Background
In 2010 System Solutions Engineering were engaged by DTEI Building Management Facilities Services, on behalf of the Courts Administration Authority (CAA), to design and document the replacement of the air conditioning system serving the Library of the Supreme Courts building in the Adelaide CBD.

Investigations & Design
Before undertaking the design and documentation for the air conditioning system, System Solutions Engineering placed a data logger for a period of 1 week on the original system to obtain a baseline of the fan energy consumed by the original air conditioning system, and to independently substantiate the manufacturer’s claims by recording energy data prior to the changeover.

After viewing all options on the market in regards to energy savings and cost, System Solutions chose the Actron Air, Tri Stage Split ducted unit (pictured). It represented a projected 50% energy saving when compared to the original air conditioning system, based on the manufacturer’s data.

Benefits & Outcome
At the end of the 1 week period, the resulting power consumption of the original system was 14,976 kW hours/year which is equivalent to 14.6 tonnes of CO2.

The new high efficiency EC fan motor (Electronic Communicated fan) recorded a power consumption of 8,320 kW hours/year which is equivalent to 5.9 tonnes of CO2. Therefore, this represents a saving of 8.7 tonnes per annum of CO2, which was exceeded the manufacturer’s claims, by providing 55% savings.

Supreme Courts Building Adelaide

Benefits & Outcome
At the end of the 1 week period, the resulting power consumption of the original system was 14,976 kW hours/year which is equivalent to 14.6 tonnes of CO2.

The new high efficiency EC fan motor (Electronic Communicated fan) recorded a power consumption of 8,320 kW hours/year which is equivalent to 5.9 tonnes of CO2. Therefore, this represents a saving of 8.7 tonnes per annum of CO2, which was exceeded the manufacturer’s claims, by providing 55% savings.

Supreme Courts Building Adelaide

Benefits & Outcome
At the end of the 1 week period, the resulting power consumption of the original system was 14,976 kW hours/year which is equivalent to 14.6 tonnes of CO2.

The new high efficiency EC fan motor (Electronic Communicated fan) recorded a power consumption of 8,320 kW hours/year which is equivalent to 5.9 tonnes of CO2. Therefore, this represents a saving of 8.7 tonnes per annum of CO2, which was exceeded the manufacturer’s claims, by providing 55% savings.

Supreme Courts Building Adelaide

Benefits & Outcome
At the end of the 1 week period, the resulting power consumption of the original system was 14,976 kW hours/year which is equivalent to 14.6 tonnes of CO2.

The new high efficiency EC fan motor (Electronic Communicated fan) recorded a power consumption of 8,320 kW hours/year which is equivalent to 5.9 tonnes of CO2. Therefore, this represents a saving of 8.7 tonnes per annum of CO2, which was exceeded the manufacturer’s claims, by providing 55% savings.