

Package Units

AHU Section.

The unit casing is manufactured from laminated composite panels with an inner and outer covering of Chrom-A-Dek steel on a core of 45 mm thick polystyrene. The casing is assembled using anodised aluminum sections. Access doors are provided for easy access to all serviceable components of the AHU. These doors are fixed with aluminum hinges and are fastened with rugged glass reinforced nylon cam-locks, fitted with handles. Lockable handles are available on request. Stainless-steel inners/outers can be fitted on request.

Fan.

The supply fan is either a Nicotra FCC or BCC fan which, together with the fan motor is mounted on a common frame supported by suitably selected rubber or spring anti vibration mountings. The fan discharge opening is sealed into a flexible canvas collar. Correctly sized pulleys are then selected & fitted in consultation with the approved computer generated fan selection.

Cooling Coil.

Multi circuited evaporator coil/s, matching the compressor quantity, cools the supply air. The coil is traditionally "face split" circuited which provides the most flexibility for temperature & humidity control. Special "row split" and "interlaced" coil circuiting (entire coil face is active during cooling) is also available for applications with special features & requirements.

Heater Banks.

Electrical heater banks are installed to supply heating when required. The elements are manufactured from 3.2 Watt/cm² Incaloy and are fitted onto a sheet metal terminal box. The elements are removable as a single assembly. This removable assembly incorporates the element mounting plate and terminal cover. An auto overheat protection is also fitted onto this assembly as standard.

Filters.

A washable primary filter bank is installed upstream of the DX coil and the fan and motor. Industry standard 0-250Pa Dwyer Differential Magnehelic Pressure Gauges are installed across each filter bank for spot inspections.

Compressors.

Up to 12 hermetic compressors of equal capacity are fitted. Each compressor is fitted with service valves and a crankcase heater. When semi hermetic compressors are employed, a twin compressor arrangement normally meets the specified cooling requirement.

Condenser Coil.

A multi circuited condenser coil, matching the compressor quantity, condenses the refrigerant. This coil is also traditionally “face split” circuited & configured in such a way with condenser fans for optimum energy conservation & efficiency.

Air cooled condenser coils can be roof mounted, should space be limited, or remotely installed depending on space availability & client preferences.

Condenser Fans.

Direct driven CFW (Continental Fan Works) axial condenser fans, mounted in 2mm thick hot dipped galvanised casings, are fitted to condenser coils. Thanks to the 6 pole motors & impeller design these fans are ideally suited to noise sensitive environments & high performance. Each fan is complete with a hot dipped grill for personnel safety & keeping impellers free from debris.

Automatic HP switches on each refrigeration circuit govern how many fans should be operational providing up to 3 steps of head pressure control on large condensers. The circuit requiring the most cooling dictates fan cycling.

Refrigeration Components and Control.

Refrigeration circuits are complete with traditional components such as driers, sight glasses, thermal expansion valve, suitably positioned hand shut-off valves & electronically operated solenoid valves for compressor pump down sequences. Compressor pump down is one of the most effective ways to protect compressors from off-cycle migration of liquid refrigerant. HP/LP safety cut outs & head pressure control are also included.

Electrical Switchboards

Switchboards are fabricated from 1.6mm electro galvanised sheet metal, primed & spray painted, & recess mounted into unit casings with outer doors of the same material as the unit. The inner door houses the alpha numeric controller display, plant control switch, run/fault pilot lights & main isolator handle/s. Ammetres &

voltmetres are optional extras. Each switchboard incorporates door interlocking isolators, short circuit protection, contactors & overloads for the safe & efficient operation of the A/C unit.

Temperature Control.

A BMS compatible Satchwell programmable control system is installed enabling all units in the same complex to be linked and to be accessible from a remote location via modem or the web. When the Satchwell controller is supplied it is fully configured & operational.

Temperature control is based on two averaging room sensors or a return air sensor mounted in the HPI unit.

The unit control includes the following features:

- Adjustable 7 day timer
- Comprehensive compressor management, anti-recycling, pump down & run hours
- BMS compatibility
- Comprehensive alpha numeric status indication of all settings, conditions, alarms & running equipment.
- Up to 4 digital outputs for cooling & up to 4 steps heating based on a 0-10Vdc signal & analogue to digital relay. 3 analogue outputs for damper and/or fan inverter control.
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Installation.

The TRTP must be handled with care. Rough handling and dirty site conditions may damage coil fins and internal components as well as cause external damage to the casings.

The TPAC unit should be mounted on a firm, level surface, preferably on a 50-100mm high concrete plinth. The plinth, apart from raising the unit and base above standing water and ensuring a positive fall on the condensate drain, will also absorb all minor vibrations. A 150mm deep P-trap on the condensate drain is to be installed by the A/C contractor. These units are virtually vibration-free but, if desired, TECO pads can also be fitted under the feet of the unit.

Allow sufficient room around the unit for access as well as space to open access doors and to remove filters and other equipment.

Duct and pipe connections should be "self-supporting" and not place stress on the unit.

Connections to the Essential and Non-essential electrical supply and to the supply and return air ducting and external wiring are not included. The remote panel, if required must be installed by the contractor.

Testing.

The units will be supplied factory tested & split if deemed abnormal for road transport. On-site reconnection, re-commissioning and handing over to the resident engineer are also provided for units supplied in two pieces.

Performance and Specifications		
Model		TRTP 295
Reference		
Supply Air Volume	l/s	12000
Ext. Static	Pa	250
Fan Static	Pa	600
Fan Type		BCC 800
Fan Motor	kW	15
Ambient	°C	35 °C DB
On coil °C DB / °C WB	°C	24 °C DB/18 °C WB
Supply air °C DB / °C WB	°C	10 °DB/9 °C WB
Compressor Capacity	KW	8x 36kW
Coil air volume	L/s	12000
Total Cooling	kW	295
Altitude	masl	Sea level
Stages		4
Refrigerant		R 22
Electric heating	kW	15
Humidifier	Kg/hr	0
Essential Power supply	A	35A 380Vac
Non-Essential Power supply	A	190A 380Vac
Filter Media		EU 2-stage
Filter quan / size		16 600x600
Length / Depth	mm	4 400
Width	mm	2 900
Height	mm	4 400
Condenser Air	l/s	36 000 l/s (Axial fans)