Airedale
APPLIED THERMAL INNOVATION

SmartCool™ Downflow Fixed Speed 16 to 60kW
SmartCool™ i-Drive Variable Speed 5 to 83kW
R410A



Technical Manual

CE

bsi. ISO 9001 Quality Management FM00542

ISO 14001 Environmental Management EMS52086

Warranty

All AIAC products or parts (non consumable) supplied for installation within the UK mainland and commissioned by an AIAC engineer, carry a full parts & labour warranty for a period of 12 months from the date of commissioning or 18 months from the date of despatch, whichever is the sooner.

Parts or equipment supplied by AIAC for installation within the UK or for Export that are properly commissioned in accordance with AIAC standards and specification, not commissioned by an AIAC engineer; carry a 12 month warranty on non consumable parts only from the date of commissioning or 18 months from the date of despatch, whichever is the sooner.
Parts or equipment installed or commissioned not to acceptable AIAC standards or specification invalidate all warranty.

Warranty is only valid in the event that

In the period between delivery and commissioning the equipment: is properly protected & serviced as per the AIAC installation & maintenance manual provided where applicable the glycol content is maintained to the correct level.
In the event of a problem being reported and once warranty is confirmed as valid under the given installation and operating conditions, the company will provide the appropriate warranty coverage (as detailed above) attributable to the rectification of any affected Airedale equipment supplied (excluding costs for any specialist access or lifting equipment that must be ordered by the customer).

Any spare part supplied by Airedale under warranty shall be warranted for the unexpired period of the warranty or 3 months from delivery, whichever period is the longer.

To be read in conjunction with the Airedale conditions of sale - Warranty and warranty procedure, available upon request.

CAUTION ⚠
Warranty cover is not a substitute for maintenance. Warranty cover is conditional to maintenance being carried out in accordance with the recommendations provided during the warranty period. Failure to have the maintenance procedures carried out will invalidate the warranty and any liabilities by Airedale International Air Conditioning Ltd.

Spares

A spares list for 1, 3 and 5 years will be supplied with every unit and is also available from our spares department on request.

Training

As well as our comprehensive range of products, Airedale offers a modular range of Refrigeration and Air Conditioning Training courses, for further information please contact Airedale.

Customer Services

For further assistance, please e-mail: enquiries@airedale.com or telephone:

UK Sales Enquiries	+ 44 (0) 113 239 1000	enquiries@airedale.com
International Enquiries	+ 44 (0) 113 239 1000	enquiries@airedale.com
Spares Hot Line	+ 44 (0) 113 238 7878	spares@airedale.com
Airedale Service	+ 44 (0) 113 239 1000	service@airedale.com
Technical Support	+ 44 (0) 113 239 1000	tech.support@airedale.com
Training Enquiries	+ 44 (0) 113 239 1000	marketing@airedale.com

For information, visit us at our Web Site: www.airedale.com

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Health and Safety

IMPORTANT
The information contained in this manual is critical to the correct operation and maintenance of the unit and should be read by all persons responsible for the installation, commissioning and maintenance of the Airedale unit.

Safety
The equipment has been designed and manufactured to meet international safety standards but, like any mechanical/ electrical equipment, care must be taken if you are to obtain the best results.

CAUTION ⚠
Installation, service and maintenance of Airedale equipment should only be carried out by technically trained competent personnel.

When working with any air conditioning units, ensure that the electrical isolator is switched off prior to servicing or repair work and that there is no power to any part of the equipment.

Also ensure that there are no other power feeds to the unit such as fire alarm circuits, BMS circuits etc.

Electrical installation commissioning and maintenance work on this equipment should be undertaken by competent and trained personnel in accordance with local relevant standards and codes of practice.

The refrigerant used in this range of products is classified under the COSHH regulations as an irritant, with set Workplace Exposure Levels (WEL) for consideration if this plant is installed in confined or poorly ventilated areas.

A full hazard data sheet in accordance with COSHH regulations is available should this be required.

Personal protective equipment
Airedale recommends that personal protective equipment is used whilst installing, maintaining and commissioning equipment.

Refrigerant Warning
The Airedale SmartCool uses R410A refrigerant which is a high pressure refrigerant. It requires careful attention to proper storage and handling procedures.

Use only manifold gauge sets designed for use with R410A refrigerant. Use only refrigerant recovery units and cylinders designed for high pressure refrigerants.

R410A must only be charged in the liquid state.
The refrigerant must be stored in a clean, dry area away from sunlight and never be stored above 50°C.

Manual Handling
Some operations when servicing or maintaining the unit may require additional assistance with regard to manual handling. This requirement is down to the discretion of the engineer. Remember, do not perform a lift that exceeds your ability.

Environmental Policy
It is our policy to:

- Take a proactive approach to resolve environmental issues and ensure compliance with regulatory requirements.
- Train personnel in sound environmental practices.
- Pursue opportunities to conserve resources, prevent pollution and eliminate waste.
- Manufacture products in a responsible manner with minimum impact on the environment.
- Reduce our use of chemicals and minimise their release to the environment.
- Measure, control and verify environmental performance through internal and external audits.
- Continually improve our environmental performance.

Environmental Considerations

Units with supply water temperatures below +5°C

- Glycol is recommended when a supply water temperature of +5°C or below is required or when static water can be exposed to freezing temperatures.

Units subject to ambient temperatures lower than 0°C

- Glycol of an appropriate concentration (1) must be used within the system to ensure adequate freeze protection. Please ensure that the concentration is capable of protection to at least 3°C lower than ambient.
- Water / glycol solution should be constantly circulated through all waterside pipework and coils to avoid static water from freezing.
- Ensure that pumps are started and running even during shut down periods, when the ambient is within 3°C of the solution freeze point (1) (i.e. if the solution freezes at 0°C, the pump must be operating at 3°C ambient).

(1) Refer to your glycol supplier for details.

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CE Directive

Airedale certify that the equipment detailed in this manual conforms with the following EC Directives:

Electromagnetic Compatibility Directive (EMC)	2004/108/EC
Low Voltage Directive (LVD)	2006/95/EC
Machinery Directive (MD)	89/392/EEC version 2006/42/EC
Pressure Equipment Directive (PED)	97/23/EC Article 13 of 2014/68/EU

To comply with these directives appropriate national & harmonised standards have been applied. These are listed on the Declaration of Conformity, supplied with each product.

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Nomenclature

Example:	SV	18	D	083	-	X200	-	0

SC / SV	SmartCool Fixed speed / Inverter
09	Case width in decimetres (900mm)
12	Case width in decimetres (1200mm)
15	Case width in decimetres (1500mm)
18	Case width in decimetres (1800mm)
D	Downflow unit
083	Nominal Cooling Capacity (kW)
-	Separator
X100	DX air-cooled (single circuit - single compressor
X200	DX air-cooled (single circuit - tandem compressor)
-	Separator
0	400V/3~ & 230V/1~ 50Hz
1	380V/3~ & 220V/1~ 60Hz

Introduction

Designed to provide environmental precision air conditioning for applications such as telecommunication facilities, data centers, computer rooms, clean rooms and laboratories.

Description		Min Capacity kW (1)	Max Capacity kW (1)
SmartCool Fixed Speed			
X1X1	Dual circuit direct expansion air cooled	54	60
X200	Single circuit, tandem compressors direct expansion	21	47
X100	Single circuit single compressor direct expansion	16	26
SmartCool Variable Speed			
X200	Single circuit, tandem compressors direct expansion	10	83
X100	Single circuit single compressor direct expansion	5	48.6

(1) Based on nominal unit capacities

Full function units provide filtration as well as full control of temperature and humidity.
The modular design of the SmartCool allows grouping of differing model types and capacities to be installed side by side. The flexibility of this type of installation provides for multi-circuit functionality.

A full range of air cooled condensers shall be available with the direct expansion indoor units to provide a matched system with optional performance upgrade, refer to Outdoor Unit.

The SmartCool i-Drive range has been specifically designed to complement the existing range of SmartCool DX units and shall offer high air side efficiency, (up to 100m equivalent length) pipe runs and high return air temperatures.

The range has been designed and optimised for operation with ozone benign refrigerant R410A.

System Configurations

X100

The SmartCool X100 is an air cooled, direct expansion (DX), single circuit system linked to a remotely mounted air cooled condenser.

Optimised for heat transfer using energy efficient refrigerant R410A, the X100 system is located within the conditioned space, absorbing room heat and transferring it outside to the condenser.

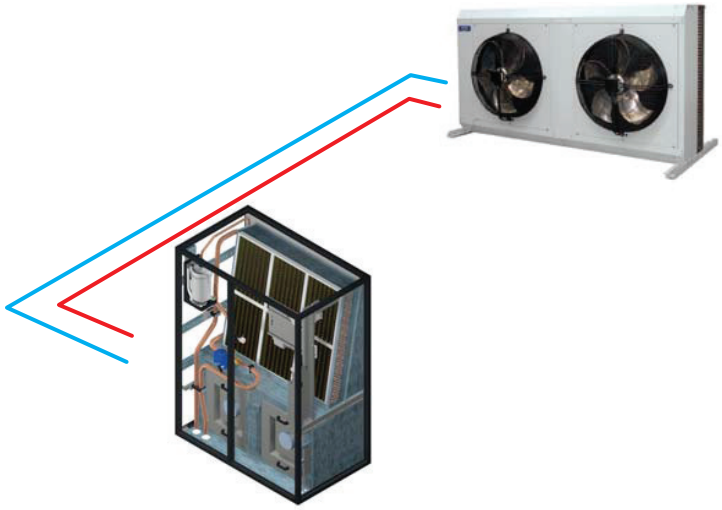
The X100 is similar to the X200 except it has one compressor

X200

The SmartCool X200 is an air cooled, direct expansion (DX), single circuit system linked to a remotely mounted air cooled condenser.

Optimised for heat transfer using energy efficient refrigerant R410A, the X200 system is located within the conditioned space, absorbing room heat and transferring it outside to the condenser.

By using two scroll compressors across the X200 single circuit, the unit can maintain high efficiency at high cooling capacities and capacity can be more precisely matched to application.

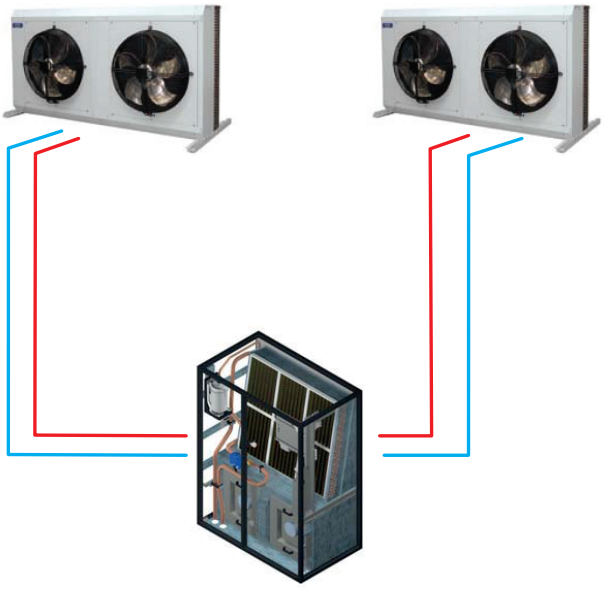


X1X1

The SmartCool X1X1 is an air cooled, direct expansion (DX), double circuit system linked to two separate, remotely mounted air cooled condensers.

Optimised for heat transfer using energy efficient refrigerant R410A in each circuit, the X1X1 system is located within the conditioned space, absorbing room heat and transferring it outside to the condensers.

By using two scroll compressors across the X1X1 double circuit, part load efficiency can be maximised and capacity more precisely matched to application.



Specifier's Guide

Precision Air Conditioning System

Each unit shall be capable of providing ___ kW total cooling and ___ kW sensible cooling at ____m³/sec of conditioned air. The room condition shall be ___°C dry bulb/ ___%RH at a summer design ambient temperature of ___°C dry bulb.

The computer room air conditioning equipment shall be designed specifically for precision temperature and humidity control applications. It shall automatically monitor and control cooling, heating, humidification, de-humidification and filtering functions for the conditioned space. The system shall be built to the highest quality engineering and manufacturing standards, and shall be subject to a functional test prior to leaving the factory.

Construction

The cabinet shall be manufactured using an external aluminium extrusion frame with aluminium corners. Panels shall be completely removable to gain unequalled access during installation as required. The galvanised sheet steel panels and aluminium frame and corners shall be coated with an epoxy baked powder paint to provide a durable finish.

Standard unit colour shall be Black Grey to RAL 7021 or Light Grey RAL 7035.

Cabinets shall be lined internally with 25mm fire resistant foam (BS 476) for thermal and acoustic insulation. The insulation density shall not be less than 75 kg/m³.

The cabinet doors shall be full height, hinged and key lock secured. The hinge arrangement shall allow flexible door opening/removal for improved access.

A propriety rubberised door seal shall reduce sound breakout and eradicate air leakage. In-seal type foam based door seals shall not be acceptable.

The control panel is mounted on hinges to allow easy removal of filters and access to several electrical components.

The unit design shall incorporate a series of M6 fixings to the top and bottom face to ease customer ductwork connection and reduce installation time.

Unit Overview

Case Sizes



Case Size	SC09/SV09	SC12/SV12	SC15/SV15	SC18/SV18
Width (mm)	900	1200	1500	1800

All units are 890mm deep and 1980mm tall

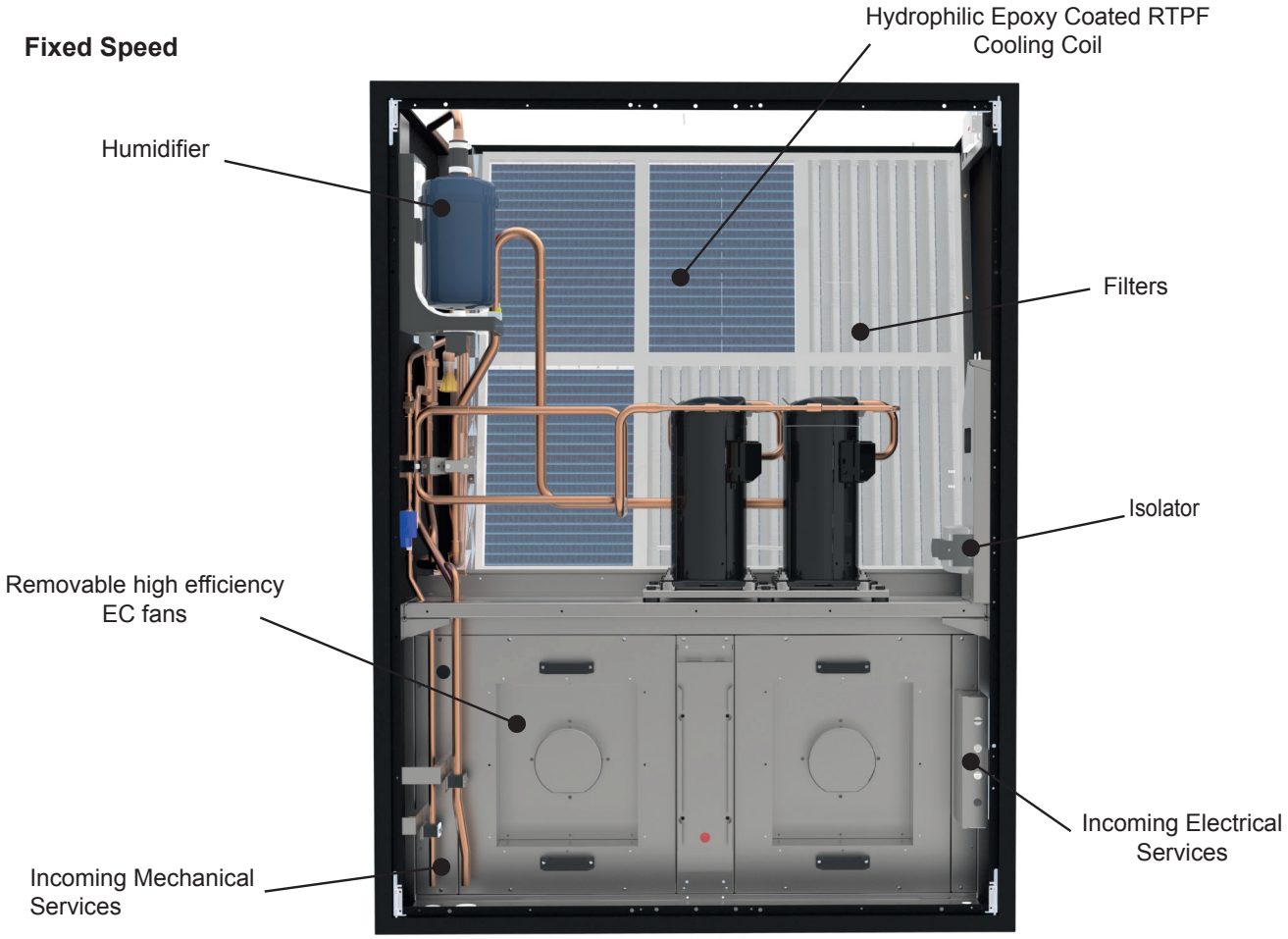
		System Configuration				
		SC Range			SV Range	
	Feature	X200	X100	X1X1	X100	X200
External	PGD1 Display	●	●	●	●	●
	Door Interlocked Mains Isolator Switch*	●	●	●	●	●
	Aluminium Extruded Frame	●	●	●	●	●
	Open, front and rear discharging floorstands	○	○	○	○	○

*All units have a max running current of 83A

● Standard Features ○ Optional Features

Refrigeration Components

Fixed Speed

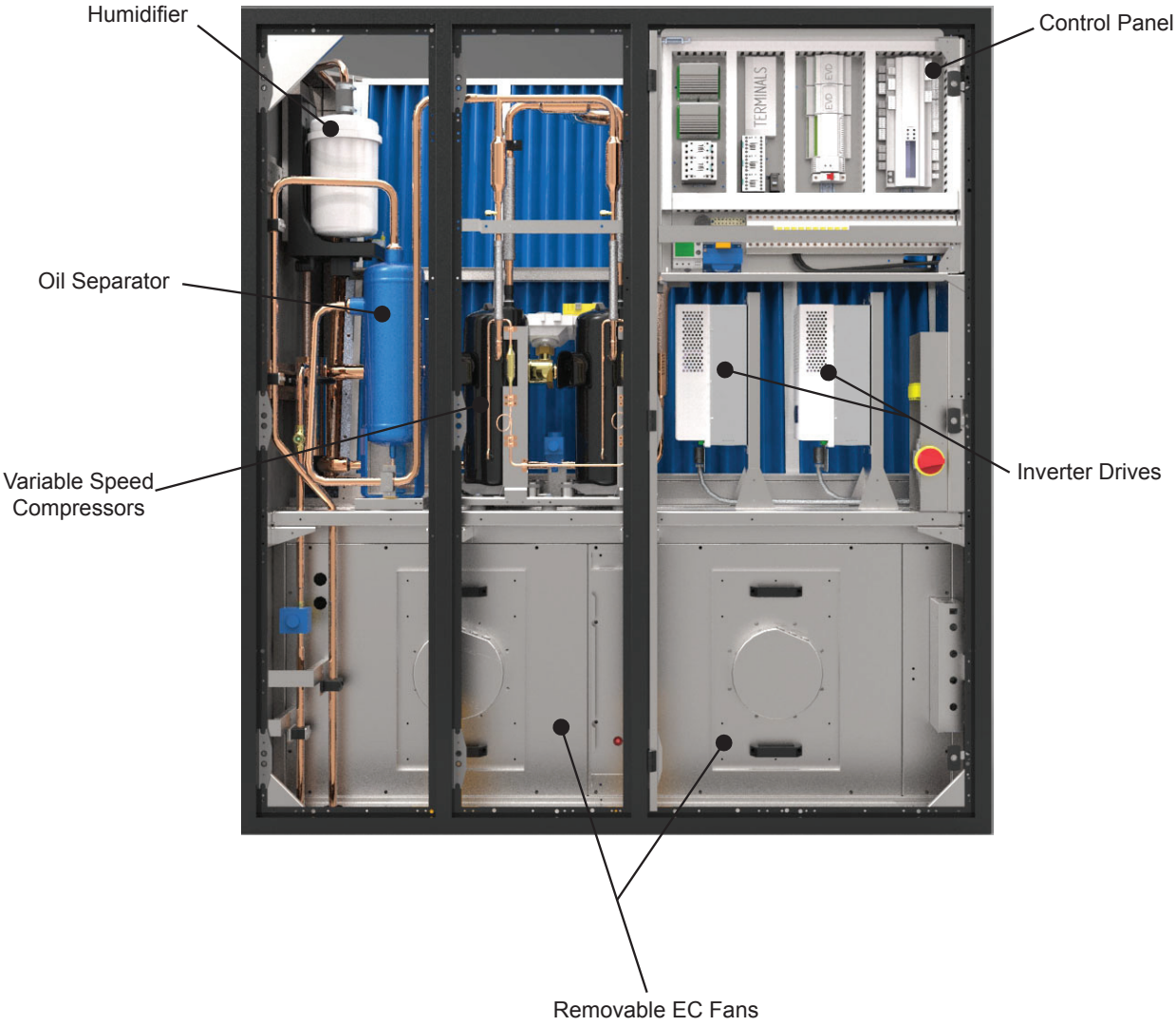


		System Configuration		
	Feature	X200	X100	X1X1
Refrigeration	Fixed Speed Scroll Compressor	●	●	●
	Electronic Expansion Valves (EEV)	●	●	●
	Liquid Line Sight Glass	●	●	●
	Liquid Line Solenoid Valves	●	●	●
	Discharge Line Non Return Valves	●	●	—
	Suction Throttle Valve	○	○	○
	Direct Refrigerant Leak Detection	○	○	○
	Refrigerant Pump Down	○	○	○
	Hydrophilic Epoxy Coated RTPF Cooling Coil	●	●	●

● Standard Features ○ Optional Features — Feature Not Available

Refrigeration Components

Variable Speed



		System Configuration	
	Feature	X100	X200
Refrigeration	Fixed Speed Scroll Compressor	—	—
	Variable speed compressor	●	●
	Electronic Expansion Valves (EEV)	●	●
	Liquid Line Sight Glass	●	●
	Liquid Line Solenoid Valves	●	●
	Oil Separator	●	●
	Liquid Receiver	●	●
	Vibration Eliminators	●	●
	Suction Strainer	●	●
	Filter Drier	●	●
	Discharge Line Non Return Valves	●	●
	Direct Refrigerant Leak Detection	○	○
	Refrigerant Pump Down	○	○
	Hydrophilic Epoxy Coated RTPF Cooling Coil	●	●
	Hydrophilic Epoxy Coated RTPF Cooling Coil (dehumidification)	○	○

● Standard Features ○ Optional Features — Feature Not Available

Evaporator

(X200, X100 and X1X1 Models)
A large surface area coil(s) shall be ideally positioned to optimise airflow and heat transfer; it shall be manufactured from refrigeration quality copper tube with mechanically bonded aluminium fins.

The copper tube shall be internally rifled for improved heat transfer.

Fins shall be coated with a non-stick acrylic (hydrophilic) film to provide additional corrosion protection and efficient surface water removal for improved performance. Plain aluminium shall not be acceptable.

The cooling coil shall be mounted over a full width stainless steel condensate tray.

The factory pressure test shall be not less than 45 barg.

Sweated copper pipe for brazed connection shall be standard.

Compressor

The scroll compressors shall be installed with vibration eliminators on the suction and discharge. The compressor(s) shall be mounted on the unit base via the use of vibration isolators. Each compressor shall be designed for use with R410A refrigerant.

Compressor Configurations		SC Range			SV Range	
		X200	X100	X1X1	X100	X200
Circuit 1 CP	Thermal Protection	●	●	●	●	●
	Single Compressor	—	●	●	●	—
	Tandem Compressors	●	—	—	—	●
Circuit 2 CP	Thermal Protection	—	—	●	—	—
	Single Compressor	—	—	●	—	—
	Tandem Compressors	—	—	—	—	—

Liquid Line Solenoid Valve

A liquid line solenoid valve shall be fitted to enable partial/full refrigerant pump down.

Compressor Discharge Line Non Return Valve

Non return valves shall be fitted to ensure liquid refrigerant cannot enter the compressors through the discharge line in the compressor off state.
(X1X1 unit the NRV is integral to the compressor.
X200 and X100 units the NRV is fitted to the discharge pipework).



Suction Strainers

A suction strainer shall be fitted on the suction line of the SmartCool Inverter units to protect the compressor.

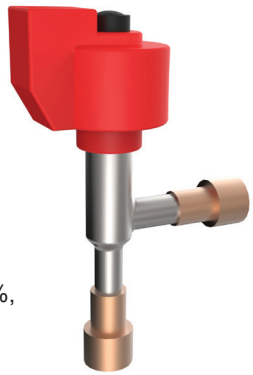
The design of the compressors is such that the suction gas enters the compressor and goes straight into the scroll head (rather than first passing through the sump).



Electronic Expansion Valves (EEV)

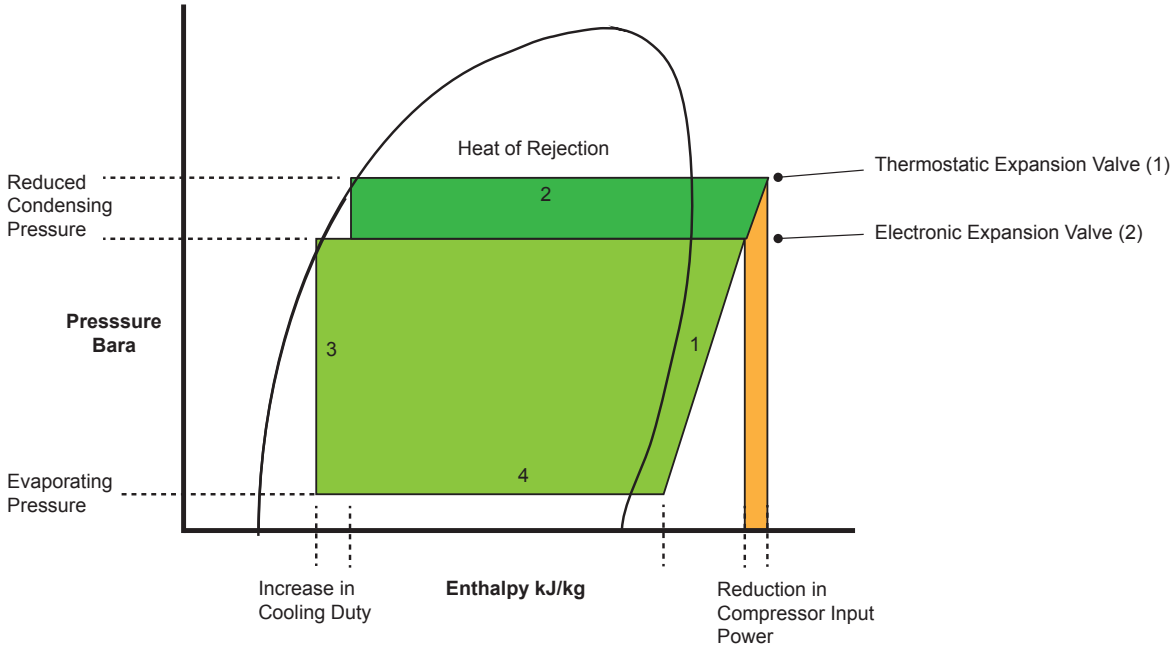
Electronic expansion valves differ to the normal thermostatic expansion valves in their ability to maintain control of the suction superheat at reduced head pressures. This can lead to significant energy savings particularly at reduced loading and low ambient temperatures. EEV step position, superheat setpoint, head pressure set point and other features can be viewed and adjusted via the microprocessor display.

Whilst offering versatile control at the full design duty of the unit, Thermostatic Expansion Valve's (TEV) do not automatically optimise themselves to all operating conditions. Therefore, if the refrigeration system is operating at 40% or 50% of full load, especially at a lower ambient temperature than that for which the valve was sized, the conventional TEV must have the design head pressure available to ensure good refrigerant control. Maintaining an artificially high condensing pressure is normal in conventional systems.



Using an EEV allows for good refrigeration control whilst operating at part load and lower ambient conditions with a reduced condensing pressure. By fitting an EEV and adjusting the head pressure control setting an increase in the system EER (Energy Efficiency Ratio) of up to 30% can typically be seen. The Mollier diagram shown below helps to illustrate how this increase in efficiency is achieved.

EEV's differ to normal thermostatic expansion valves in their ability to maintain control of refrigerant flow and the suction superheat at reduced head pressures. The turn-down rate of a typical EEV is superior to that of it's thermostatic equivalent, such that a reduced optimum condensing pressure can be maintained at low compressor load. However low the load is on the compressor, from zero to 100%, there will not be a problem with turn down, even down to 10% of the valve's rated capacity.



(1) Cooling Cycle @ 22°C ambient with a conventional TEV fitted.
(2) Cooling cycle @ 22°C ambient, demonstrating a typical EEV condensing temperature taking full advantage of lower ambient air temperatures (below 35°C).

Variable Speed Components

Discharge Check Valves



The unit shall use magnetic valves. This valve uses a magnet to hold the valve closed. As the valve opens, the distance between the magnets becomes larger, so the attractive force trying to close the valve diminishes.

As a result, the magnetic non return valves exhibit lower opening pressure differentials than the sprung non return valves as well as lower pressure drops across the valve at high flow rates.

Inverter Drives



The compressors shall be driven by an inverter drive, which has improved envelope management capabilities, a reduced footprint and a fast start sequence.

The inverter drive shall allow the compressors in the SmartCool Inverter range to vary running speed from 100% down to 16% of maximum achievable speed. The inverter drive is BMS compatible. Configuration and programming, as well as the start/stop controls and speed reference, are managed by a CAREL pCO controller or any BMS (Building Management System) via RS485 serial connection using the ModbusR protocol.

Oil Separator

Helical oil separators shall be used to separate a high proportion of oil from discharge gas at all flow rates. At low flow rates, the velocity through the main chamber of the separator is low enough that the oil can sink to the bottom without being dragged through the system. In inverter units, at high flow rates the path of the refrigerant around the helix creates centripetal forces within the fluid mixture, forcing the more dense oil to “sink” towards the outer shell of the separator and drain down to the bottom of the separator.

IMPORTANT ⚠

A scavenge cycle **must** be initiated once every 24 hours on systems with interconnecting pipework less than 50m equivalent length, and once every 8 hours on systems with interconnecting pipework exceeding 50m equivalent length, or with a vertical rise of 4m or more in inverter units. The scavenge cycle will be handled automatically by SmartCool controls.

Vibration Eliminators

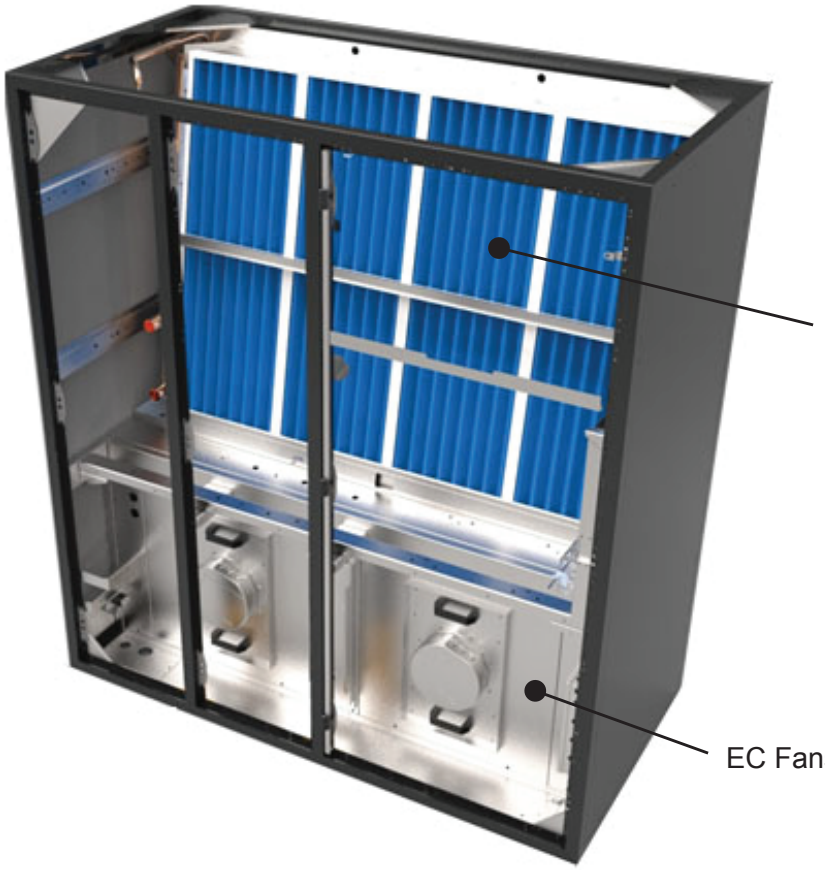
Vibration eliminators shall be installed on both the suction and the discharge of the compressors. This significantly reduces the compressor vibration from the rest of the unit, reducing stress on pipework as well as noise transmitted through the unit case.

Evaporator Coil (dehumidification)

When the evaporator coil is operating in dehumidification mode, the evaporating temperature is reduced below the dew point of the air even at high return air temperature conditions enabling precise humidity control in all modes of operation. This is especially useful when the SmartCool fans are being used for constant pressure control or air volume management.

The use of a variable speed compressor on the i-drive units ensures that the supply air temperature is maintained at set-point during the dehumidification process.

Airflow Components



		System Configuration				
		SC Range			SV Range	
	Features	X200	X100	X1X1	X100	X200
Airflow	EC Backward Curved Centrifugal Fans	●	●	●	●	●
	G4 Air Filtration	●	●	●	●	●
	High efficiency Filtration with pre-filter G3+F6	○	○	○	○	○
	Airflow Monitoring	●	●	●	●	●
	Airflow Switch	●	●	●	●	●
	Humidity Control	○	○	○	○	○
	Constant Air Volume*	○	○	○	○	○
	Constant Pressure Control*	–	–	–	○	○

*Options are mutually exclusive

● Standard Features ○ Optional Features – Feature Not Available

Fan & Motor Assembly

Backward curved impellers, direct drive centrifugal fan assemblies shall be used with integral EC motors. They shall be dynamically balanced for quiet operation.
Fan speed and air flow shall be controlled by the use of a voltage controller which shall maintain optimised performance and reduce energy consumption.

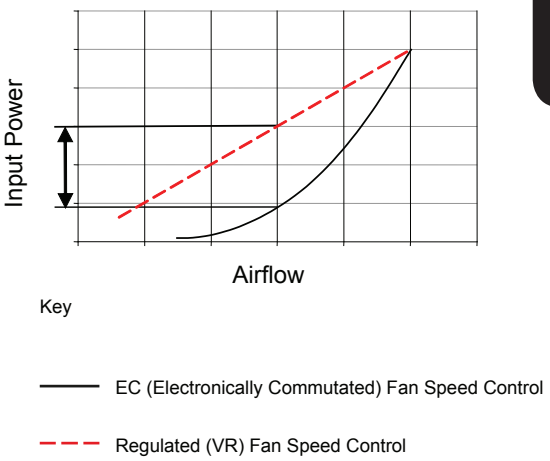
Designed for high corrosion resistance, the impellers shall be composite plastic with a galvanised rotor.

Electronically Commutated (EC) Fan Motor

EC motors incorporate integrated electronics to convert AC power to DC for efficient and accurate speed control and are adjustable via the microprocessor display keypad.

The fans offer maximum air flow performance while keeping sound levels to a minimum.
It gives the flexibility of connecting to AC mains with the efficiency and simple speed control of a DC motor. The EC fan offers significant power reduction in comparison with equivalent AC fan at both full and part load. The inbuilt EC fan control module allows for fan speed modulation from 15-100%. A standard AC fans modulating range is typically 40 -100% of full fan speed.

Standard voltage regulated (VR) fan speed controllers offer a linear response. The illustration to the right shows a comparison of the typical power input required by each motor type.



G4 Filtration

Pleated disposable panel filters in a rigid frame. Conform to BS EN 779-G4.

Access and removal from unit front.

As standard the microprocessor provides an alarm following a pre set run time limit being exceeded.

High Efficiency & Pre Filters

30mm, pleated disposable panel filters conforming to BS EN 779-F6 shall be provided. 15mm, disposable, synthetic type pre filters conforming to BS EN 779 G3 shall protect the main filter.

To maintain design airflow, fan selection may alter with high efficiency filters.
Access and removal from unit front.
As standard the microprocessor provides an alarm following a pre set run time limit being exceeded.

Air Flow Switch

An adjustable differential pressure switch shall activate a visual alarm at the status panel and break the power supply in the event of a fan or motor failure.

Electrical Components





		System Configuration				
		SC Range			SV Range	
	Features	X200	X100	X1X1	X100	X200
Electrical	Door Interlocked Mains Isolator*	●	●	●	●	●
	Electrical Switch Gear	●	●	●	●	●
	Hinged Electrical Panel	●	●	●	●	●
	Customer Connection Terminals	●	●	●	●	●
	Power Monitoring	○	○	○	○	○
	Phase Monitoring Relay	○	○	○	○	○
	Phase Rotation Relay	○	○	○	○	○
	Ultra Capacitive Module (Controller Power Backup)	○	○	○	○	○
	Dual Power Supply	○	○	○	○	○
	Variable Humidification	○	○	○	○	○
	Electric Heating	○	○	○	○	○
	Modulating Electric Heating	○	○	○	○	○

*For some larger units, selecting dual power supply will mean there is not enough room inside the unit for a door interlocked isolator. All units have a max running current of 83A

● Standard Features ○ Optional Features ━ Feature Not Available

Electrical

The control panel contains the necessary compressor starter contactors, transformer, sub circuit protection, volt free contacts for a common alarm and mains and interconnecting terminals. The panel is situated within the cabinet and can be opened to allow for essential maintenance of other components within the unit. The electrical control panels are wired to the latest European standards and codes of practice.

Sub Fusing

The electrical mains supply for the system's outdoor unit is supplied via the indoor unit.
MCBs are fitted for cable protection. Sub fusing is not avaliable with Short Case Axial Fans (SCAF).

Electric Heating

These shall be multi-stage finned electric heating elements complete with auto and manual reset overheat cut-out protection, element shall be phase balanced for increased efficiency.

Electric Heating Thyristor Control

In addition to the electric heat option a 0 – 100% Thyristor shall be provided to deliver accurate heating control.

Dual Power Supply

The SmartCool range shall be designed with dual power supply capability, so that in the event of a power failure the supply can be switched from utility to an alternative power supply (such as second utility or generator).

A dual power supply changeover switch shall be provided to enable continuous power to the SmartCool in order to reduce unit downtime and therefore loss of cooling to a minimum.

For the dual power supply feature to operate effectively the two incoming power supplies must have the same voltage and frequency.

During changeover of power there is an interval of ~180ms with no power. For critical applications a power backup module can be added to maintain power to the unit controls, allowing for immediate reinstatement of cooling following changeover.

The option as standard offers switch position status and supply priority set, both of which are configurable via the unit's display.

Supply priority set is fully configurable via the unit's display and is used to set which of the two power supplies power will be drawn from when both power supplies are active.

Switch position status indicates to the end user which position the switch is currently in i.e. A or B and is shown via the unit's display.

Ultracap UPS

The ultracap module is an external backup device for the controller. The module guarantees temporary power to the controller in the event of power failures and allows for enough time to keep the controller running with time to change power supplies. The module is made using Ultracap storage capacitors (EDLC = Electric Double Layer Capacitor), which are recharged independently by the module.
These ensure reliability in terms of much longer component life than a module made with lead batteries: the life of the Ultracap module is at least 10 years.

When the dual power supply is fitted the Ultracap UPS is fitted as standard.

Energy Manager

Analysis of system energy consumption can be monitored via a dedicated LCD display. Unit parameters can be adjusted via the unit microprocessor control to affect energy usage in line with the system need.

Phase Rotation Protection

A phase sequence relay shall be available for units containing 3 phase scroll compressors, to prevent possible damage by running the compressor in the wrong direction.

Humidification

Control Principles

In a humidifier with electrodes, water vapour shall be produced by passing a current between electrode plates to generate heat. The higher the current being passed between the electrodes, the greater the quantity of water vapour that is produced.
To modulate the rate of water vapour production, this system shall vary the level of water within the cylinder, thereby increasing the immersion level of the electrodes and the current being passed between them. The more conducting area that is available to pass current between the electrodes, the larger the amount of water vapour that shall be produced.

Modulated by the controller, the water level is varied so that the level of water vapour being produced ensures that the room humidity set-point is continually maintained within a tight tolerance.

Optimised Lifetime

The life span of the Airedale humidification system shall be optimised by the inclusion of a water conductivity sensor into the bottle feed. This sensor shall determine the conductivity level of the supply water and by using an algorithm embedded in the software, determines the frequency that the bottle should be drained.

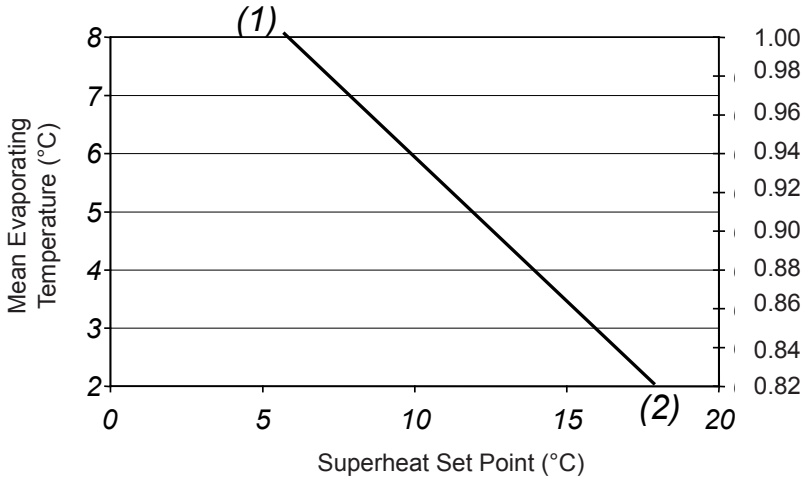
Example: (Optimised Lifetime with High Water Conductivity Supply)
As liquid water is vapourised, mineral deposits are left in solution increasing the conductivity of the water. To counter this, the intelligent software increases the frequency of drain meaning that the replenishing supply water keeps the concentration of minerals diluted. By maintaining an acceptable mineral concentration, the bottle life span is maximised.

De-humidification

(With Electric Heating and Humidification - SmartCool fixed speed range*)
Controlled by the microprocessor the de-humidification feature reduces fan speeds by 20% (adjustable). The reduction of fan speed increases de-humidification which means that the time taken to reduce the room humidity to the required level is drastically decreased, along with the energy required to do so. The air temperature is monitored during de-humidification to ensure that the temperature does not fall to a critical level. If the temperature reaches the low limit de-humidification is cancelled until the return air temperature increases.
*Electric heating not required for dehumidification on inverter range

Rapid De-humidification

Controlled by the microprocessor, electronic expansion valves are unlike their conventional thermostatic counterparts in that they can modulate independently of the suction line temperature. This unique feature allows the controller to raise the superheat set-point, in turn dropping the evaporating temperature to a point at which considerable de-humidification takes place.



(1) Normal Operating Conditions
(2) Rapid De-hum Condition

Humidifier - Intelligent Modulation

Humidification shall be provided by an electrode boiler. The sealed humidifier design shall ensure that only clean sterile water vapour is supplied to the conditioned area and corrosive salts and minerals are held in the disposable bottle. The water vapour shall be distributed through a sparge pipe fitted to the coil assembly.

Featuring modulating capacity output control as standard, the system shall provide continuous modulation of water vapour output in response to a proportional control signal. The output control shall range from 20%-100% of the humidifier rated value and be designed to give an approximate water vapour output of +/- 5% at 25°C (at the sensor), thus ensuring precise control of the conditioned space.

The cylinder operating life time shall be automatically optimised via the integrated water conductivity sensor, which combined with the controls shall monitor and regulate the water refill cycle to reduce excessive salt deposits and the progressive wear of the cylinder.

All humidifier parameters and alarms shall be accessible and adjustable via the microprocessor display keypad unit, main features shall include not less than:

- Supply water conductivity (µS/cm)
- Actual steam output (kg/h)
- Required steam output (kg/h)
- Actual current rating (A)
- Required current rating (A)
- Status mode (Start Up, Running, Filling, Draining)

Water Conductivity & Cylinder Type

Three different cylinders shall be available which correspond to the supply water conductivity.

The cylinder type shall be matched with the standard conductivity of the supply water to ensure optimum performance and increases the life span of the cylinder.

1	Low Conductivity (Soft Water)	100 to 350 µS/cm
2	Standard Conductivity (Moderate/Hard Water)	350 to 750 µS/cm
3	High Conductivity (Very Hard Water)	750 to 1250 µS/cm

Conductivity is a measure of the ability of water to pass an electric current, measured in micro Siemens/centimetre (µS/cm).

As standard the humidifier shall be fitted with the standard conductivity cylinder which shall cover the majority of water supplies. Where the water conductivity is known, please specify at order. For further details please contact Airedale.

Controls

Controls

The units shall be supplied with a European ROHS Directive 2002/95/EC compatible microprocessor controller connected to an 8 x 22 back-lit LCD keypad display. LEDs shall not be acceptable.

The microprocessor controller offers powerful analogue and digital control to meet a wide range of monitoring and control features including a real time clock and Industry standard communication port and network connections.

All the boards feature a 16 bit microprocessor, and consequently the calculation power and operation processing speed have been significantly increased.

Also featured are a visual alarm and the facility to adjust and display control settings by local operator for information and control.

		System Configuration				
		SC Range			SV Range	
	Features	X200	X100	X1X1	X100	X200
Controls	PCO5+ Microprocessor	●	●	●	●	●
	Airetronix Controls	●	●	●	●	●
	PGD1 Display (Door Mounted)	●	●	●	●	●
	PGD1 Display with Audible Alarm	○	○	○	○	○
	PGDTouch Display	○	○	○	○	○
	Constant Air Volume	○	○	○	○	○
	Constant Pressure Control	—	—	—	○	○
	Temperature Control	●	●	●	●	●
	Temperature & Humidity Control	○	○	○	○	○
	Supply Air Temp Control	—	—	—	●	●
	Filter Change Switch	○	○	○	○	○
	BMS and SNMP Compatibility	○	○	○	○	○
	Drip Tray Level Detection	○	○	○	○	○
	Fire Detection	○	○	○	○	○
	Smoke Detection	○	○	○	○	○
	Water Detection	○	○	○	○	○

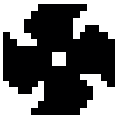
● Standard Features ○ Optional Features — Feature Not Available

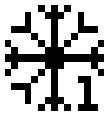
Display/Keypad
The display keypad features a simple array of keys to navigate through the in built menus.

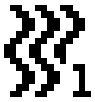
With an 8 x 22 character (132 x 64 pixel) screen size, back lit in white for improved contrast, the larger screen shall provide for user friendly viewing and easy status recognition by displaying a combination of text and icons.

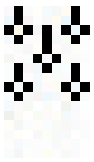
The default screen shall show the unit status and room condition (°C/RH %) without the need for interrogation and an easy to navigate menu structure for further interrogation and adjustment shall be provided.




Fan Operating


Cooling - 2 Stages


Heating - Up to 2 Stages


De-humidification


Humidification - Variable

NOTE
Dehumidification is variable on the inverter range with a segregated evaporator coil. Modulated cooling shall be available on inverter units.

Controls

Password Protection
The control system integrity shall be maintained by restricting access with a password PIN number.

IMPORTANT:
To change the PIN , please contact Airedale at time of order with the preferred 4 digit number.

Remote On/Off
Terminals for interlocking shall be provided to enable or disable the unit remotely.

Fire Shut Down
Terminals for interlocking shall be provided to shut down the unit in the event of fire.

Compressor Anti-Cycle Control
The microprocessor shall be programmed to provide automatic anti-cycling delays of up to 10 starts per hour with a minimum off time of 15 seconds.

Compressor Rotation
On tandem compressor units the controller is programmed to provide automatic compressor rotation to ensure equal compressor running times. In the event of a compressor fault on networked systems the controller shall be programmed to automatically select the next compressor in order of running hours.

Compressor Hours Run Log & Reset
Shall allow the user to monitor the running times of each compressor and reset after maintenance.

Hours run log or visual service indicator shall be provided.

Evaporator Fan Hours Run Log & Reset
Shall allow the user to monitor the running times of the evaporator fans and reset after maintenance.

Hours run log or visual service indicator shall be provided.

Head Pressure Control and Condenser Fan Speed Controller
Each refrigerant circuit shall be fitted with condenser pressure transducers and a modulating condenser fan speed controller to allow the designed head pressure to be monitored and maintained under varying ambient conditions. Condenser fan speed control settings shall be input via the display keypad.

Evaporator Fan Speed Controller
Evaporator fan speed control shall be easily set via the display keypad and can be incrementally increased or decreased to meet on site airflow and external static pressure requirements.

Filter Change Alarm
Filter change shall be managed by the software, and shall be based on fan(s) hours run with an alarm being generated when the pre-set run time limit has been exceeded. The set-point value shall be adjusted to suit each application and is factory set to 4000 hours.

Hours run log or visual service indicator shall be provided.

Controls

STANDARD NETWORK FEATURES

As standard the controller shall be capable of providing a platform for the following and shall be enabled on request for 2 to 8 units, please specify at order:

Networking

A Local Area Network (pLAN) shall be used to connect up to 8 units to offer intercommunication and Duty/Standby control. This also allows the connection of computers, printers and modems on the same communications ring.
For further details, please contact Airedale Controls.

CAUTION
When adding to an existing network, please consult Airedale to ensure strategy compatibility.

Duty/Standby Operation

The controller shall enable units to operate in run/standby mode, with up to 8 units networked together, without the need for additional hardware or controllers. Standby units shall be configured to start when the run unit has a critical alarm.

Smart Key

A smart key shall be supplied to offer software back-up of the control strategy. The key shall feature simple plug in operation and allow transfer of software programs from the key to the microprocessor and vice versa. The use of a service laptop shall not be necessary.

Audible Alarm

The display keypad shall be upgraded to include audible alerts.

Low Ambient Kit (LAK)

To ensure operation down to ambient temperatures of approximately -20 °C dry bulb liquid refrigerant migration shall be prevented by factory fitting head pressure control and crankcase heaters on compressors. The microprocessor shall feature an integrated 10 second delay timer to bypass the low pressure switch. A low pressure equalisation feature shall assist with low ambient starts.

Water Detector

Three methods shall be available:

1. A solid state (probe) sensor shall be supplied loose for remote mounting on site.
2. Tape suitable for sensing water droplets shall be supplied loose for remote mounting on site. Standard tape length 10m.
3. Condensate drain tray level detection.

Water Detection Tape

Monitored by a sensing relay, the water detection tape will provide an alarm when in contact with several drops of conductive liquid. High humidity should normally not cause an alarm unless it results in condensation dripping on the tape surface or condensation present on the surface to which the tape is applied.

Fire Detection

Shall be installed in the return air stream to shut down the unit in the event of an unusually high return air temperature.

R410A Refrigerant Leak Detection System

A factory calibrated and fitted leak detection system shall raise an alarm when refrigerant gas is detected. The detector shall be positioned close to the compressor section.

Smoke Detector

Shall be supplied loose for remote mounting to shut down the unit and activate the alarm upon sensing the presence of smoke.

Controls

Temperature Control

A temperature sensor shall be mounted in the return side of the unit to sense the return dry bulb condition (cooling only variants). A combined temperature and humidity sensor shall be supplied on full function units.

The temperature sensor shall be an NTC type thermistor with an accuracy of not less than +/ - 5% at 25°C at the sensor.

The microprocessor shall sense the return air conditions and maintain the return air temperature and humidity by controlling cooling, heating, humidification and dehumidification outputs accordingly.

The microprocessor shall monitor and display the following values as a minimum:

- Return Air Temperature
- Return Air Humidity (Optional on Full Function units)
- Fan run hours
- Condensing Pressure (Optional on DX units only)
- Coil Temperature Sensor (Indoor)
- Compressor run hours

The maintenance of key components such as compressors and air filters shall be monitored via a service indicator which visually demonstrates the status relative to the component service intervals.

Alarm Log

The controller shall log and allow viewing of not less than the last 100 conditions recorded in descending chronological order through the keypad display.
The standard display keypad shall visually display operating alarms. However, as an optional extra, a display keypad with audible alarms shall be available.

Supply Air Temperature Control (Inverter Compressors only)

Modulation of unit capacity to ensure that user defined supply air set points shall be maintained and / or a high / low return air temperature alarm.
During peak demand, the standby units shall temperature assist.

Duty Rotation

Networked units shall be configured to duty rotate, providing equal hours run of fans and compressors.

BMS Interface Cards

BMS Interface Card controlled units shall be interfaced with most BMS, factory fitted, please contact Airedale.

A wide range of protocols shall be accommodated through the use of interface devices. Available as a standard option are: ModBus / Jbus, and Carel.

For interfaces such as SNMP, LonWorks, Metasys and BACnet, please contact Airedale.

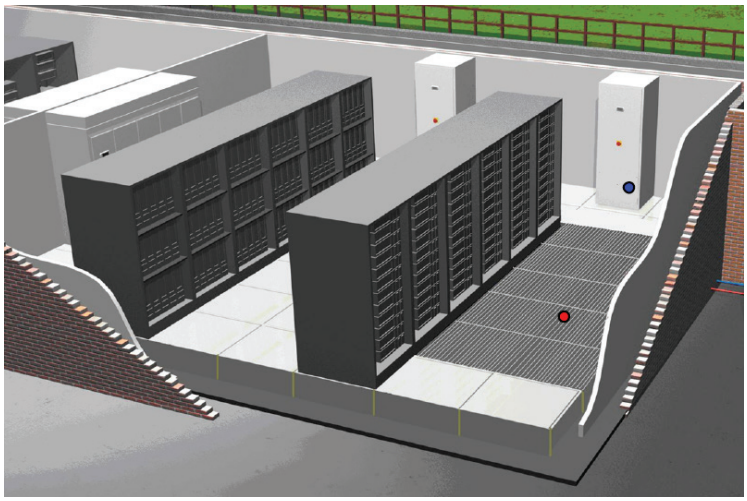
Also available shall be Airedale's own supervisory plug-in BMS card pCOWEB.
Based on Ethernet TCP/IP secure technology with SNMP features.

It shall require no proprietary cabling or monitoring software and be supplied pre - programmed with an IP address for ease of set up. Cables to the BMS to be supplied by others.

Constant Pressure Control

Constant pressure control is a method of controlling air pressure within a space, such as a floor void or a duct. The air pressure is controlled using a variable speed fan that is modulated to maintain a given set point.

Constant pressure control monitors the air pressure differential between two points. In a typical application (shown below) the pressure under the raised floor (red) is compared to the room pressure (blue).



The two pressure points, positive and negative, are routed back to an air differential pressure sensor inside the CRAC unit. The value from the air pressure sensor is compared to the set point and a fan speed demand is generated, to maintain the required pressure differential.

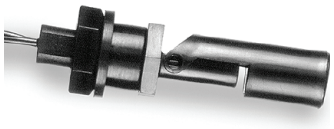
It is the responsibility of the installer to fit the air pressure sensor(s). The sensor shall be be located under the false floor with the 6mm flamtronix tubing routed back into the control panel of the unit (the tubing must not be obstructed / damaged to ensure accurate pressure control).
The contant pressure system shall be commissioned by Airedale following routing of tubing from the pressure diffuser and the unit.
A maximum of 8m/s air velocity is allowed at the diffuser so consideration must be made when locating the diffuser.

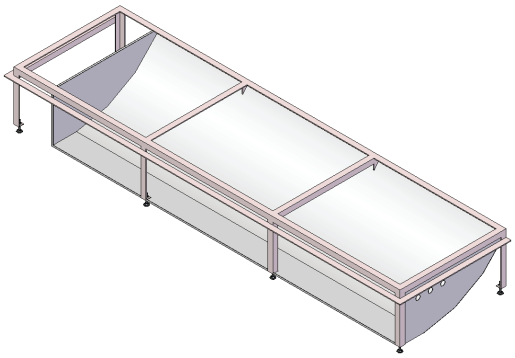
Constant Air Volume

Constant air volume is a method of automatically adjusting the unit fan speed to deliver a specific air volume.
When faced with a change in system resistance, the fan speed modulates to obtain the air volume set point.
Constant air volume monitors the air pressure differential between two points. These two pressure points, positive and negative, are routed back to an air differential pressure sensor inside the unit.

General Features







		System Configuration				
		SC Range			SV Range	
	Features	X200	X100	X1X1	X100	X200
General	Condensate Pump (Hot or Cold Water)*	○	○	○	○	○
	Condensate Drain Tray Monitoring	○	○	○	○	○
	Open floorstand	○	○	○	○	○
	Front and Rear Floorstands (enclosed)	○	○	○	○	○
	Sterling Board LAT (Wooden Case) Packing	○	○	○	○	○

* Condensate pump type depends if humidification is selected

● Standard Features ○ Optional Features ━ Feature Not Available

Open & Enclosed Floorstand

Open or enclosed floor stands shall be available, complete with adjustable feet and floor tile lip. Enclosed floor stands shall incorporate an air turning vane. The height of the floor stand shall be specified at order.

A discharge plenum shall also be available for applications without a false floor.

Discharge Air Configuration

Standard configuration shall be downflow “draw through” design.

Sterling board LAT (Wooden Case) Packing

Units shall be supplied complete with additional LAT corner protection and cross braces to afford extra transit protection. Sterling board heat treated man made material shall be used (including pallet) to comply with phytosanitary import regulations, please contact Airedale for this option).

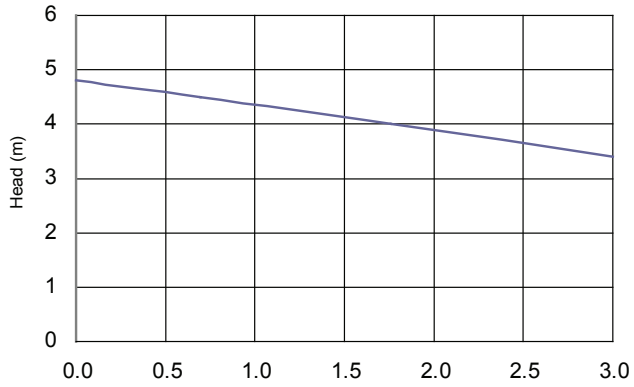
Condensate Pumps

The SmartCool condensate pump shall be either hot water (full function units when a humidifier is fitted) or cold water type (cooling only).

Performance

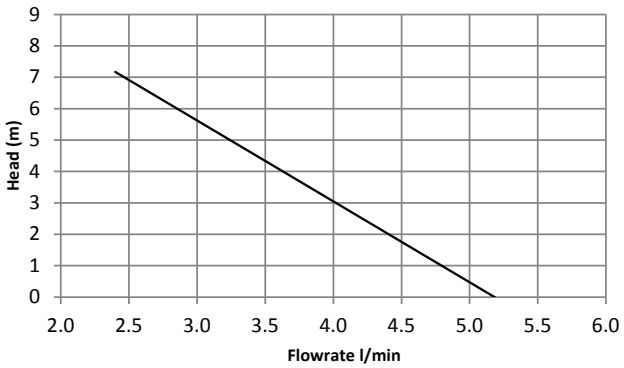
The following graphs illustrate the TOTAL static (head) pressure available. The system horizontal pipe losses and vertical lift should be factored in when calculating the condensate pump performance.

Cold Water (cooling only units)



The cold water condensate pump has 10mm quarter turn plastic “barbed” connection.

Hot Water (Full function units)



The hot water condensate pump uses 10mm (3/8”) copper tube when connecting to the discharge stub of the pump.

IMPORTANT

The discharge line from the pump should rise no more than 6 metres vertically and no more than 8 metres in total length before being interrupted with a swan neck, air break and tundish.

Condensate Drain Tray Monitoring

A float level switch shall be incorporated into the unit drain tray for indication of a high water alarm.

Measurement of Sound Data
All sound data quoted has been measured in the third-octave band limited values, using a Real Time Analyser calibrated sound intensity meter in accordance with BS EN ISO9614 Part 1: 2009.

All Sound Power Levels quoted are calculated from measured sound intensity according to BS EN ISO9614 Part 1: 2009.

Semi Hemispherical
Sound Pressure Levels are calculated from sound power using the semi-hemispherical method where the noise source is in junction with 2 boundaries i.e. the floor and 1 wall.

Free Field
For comparison, the semi hemispherical figures can typically be reduced by 3dB to provide free field conditions.

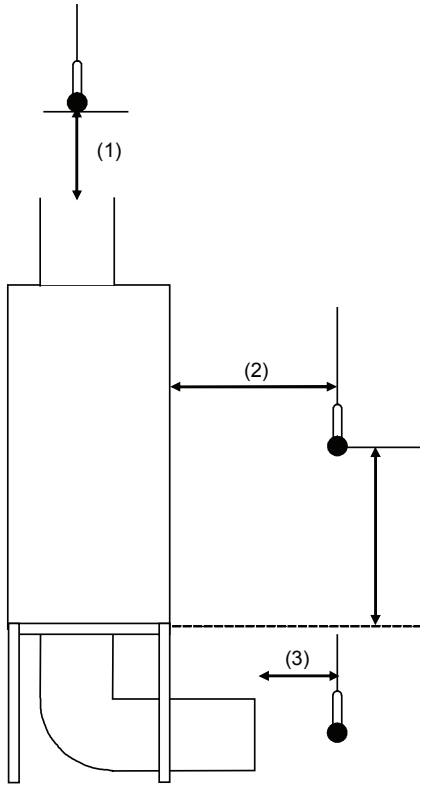
IMPORTANT
The sound data quoted is based on the unit having a ducted return air and standard backwards curved EC motors fitted, refer to illustration below.

Case breakout sound data is therefore independent of the discharge air and return air sound data.

For non-ducted return air applications, the overall case breakout sound levels may increase, due to the return air sound being predominant.

Within the conditioned space, sound from in-room ducted discharge air grilles and other equipment will contribute to the overall sound level and should therefore be considered as part of sound calculations.

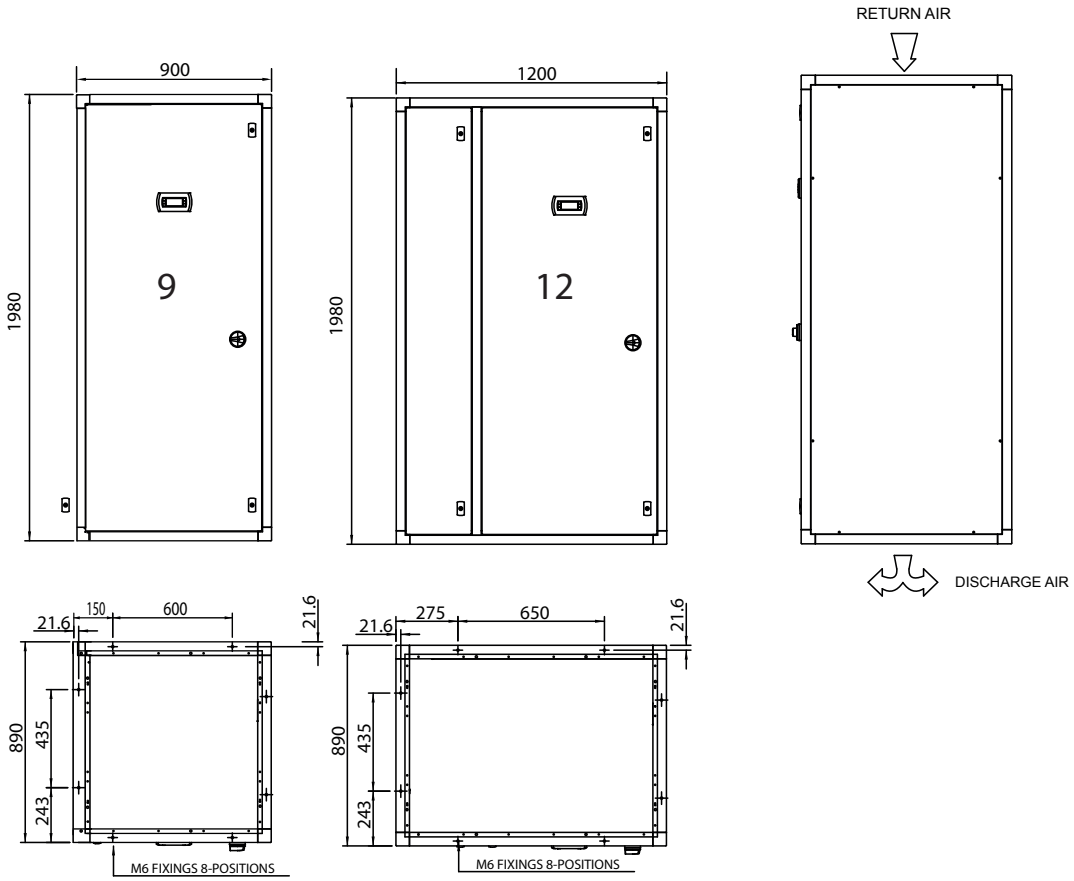
Specialist acoustic advice is recommended for noise critical applications.

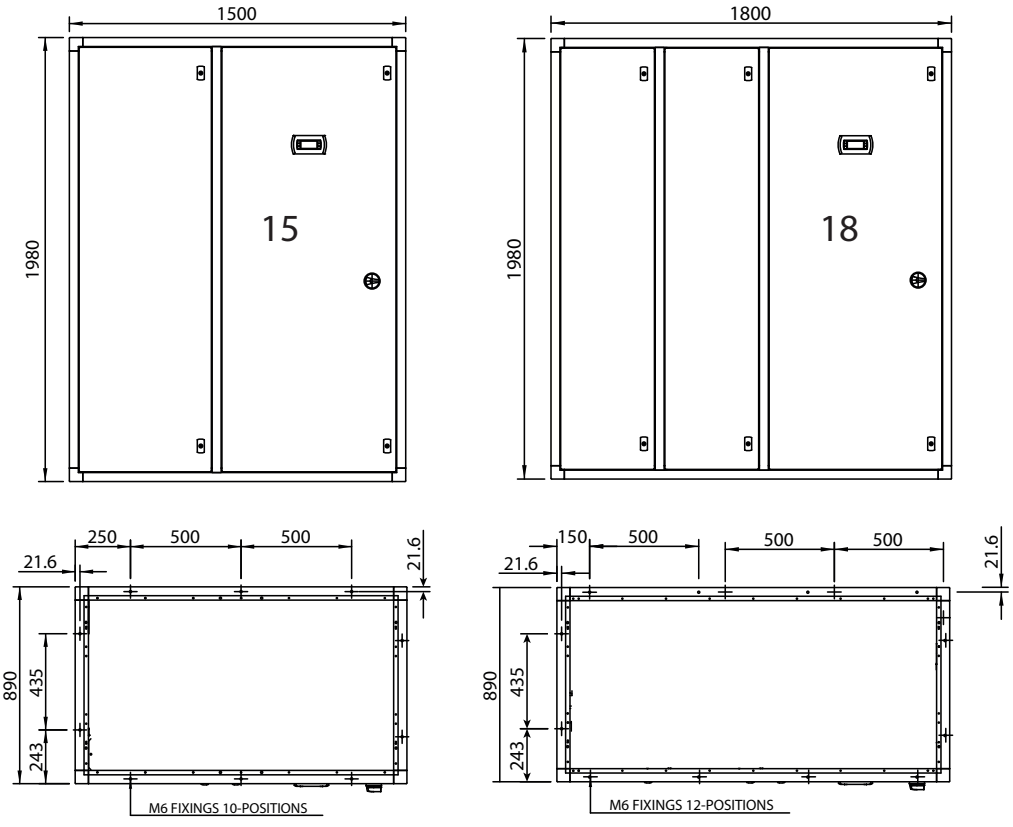


(1) Return Air
(2) Case Breakout
(3) Discharge Air

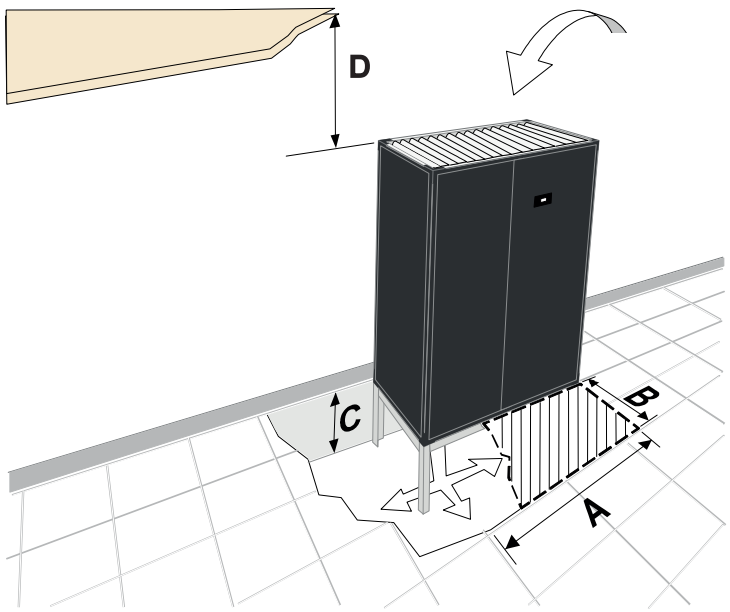
Installation Data

Dimensions





Positioning



Minimum Unit Clearance

Open and Enclosed Floorstand Option

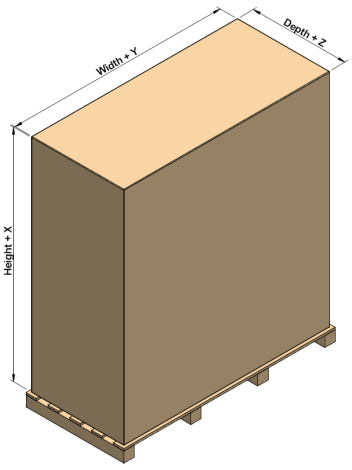
		A	B	C - Floorstand(3)
SC09D	mm	900	890	Min 200 – Max 750 (+ 50mm Feet Adjustable +/-20mm) (4)
SC12D	mm	1200	890	
SC15D	mm	1500	890	
SC18D	mm	1800	890	

		Minimum Ceiling Clearance- (D)			
		Forward Only	Forward and 1 Side	Forward and 2 Sides	All Faces
SC09D	mm	720	500	380	250
SC12D	mm	720	500	380	250
SC15D	mm	740	550	440	280
SC18D	mm	750	590	480	300

(1) Shown with optional open floor stand.
(2) Shaded area indicates minimum service and maintenance requirements. The unit must be installed with allowance for carpet tile clearance.
(3) Dimension C denotes recommended minimum/maximum floor stand height, refer to Airedale for special applications, please specify at order.
(4) Min = Threaded foot at minimum extension (additional to “C” dimension).
Max = Threaded foot at maximum extension (additional to “C” dimension).

Packed Dimensions

For specific markets units shall be shipped, mounted on wooden pallet and covered with polythene. The pallet shall be mechanically fixed to the unit for transportation only (Please contact Airedale for this option). Add 50mm to length and width, 160mm to height.



Lifting

Whenever the unit is lifted, it should be from the base and, where possible, with all packing and protection in position.If any type of slinging is used, due care should be taken to ensure that the slings do not crush the casework.

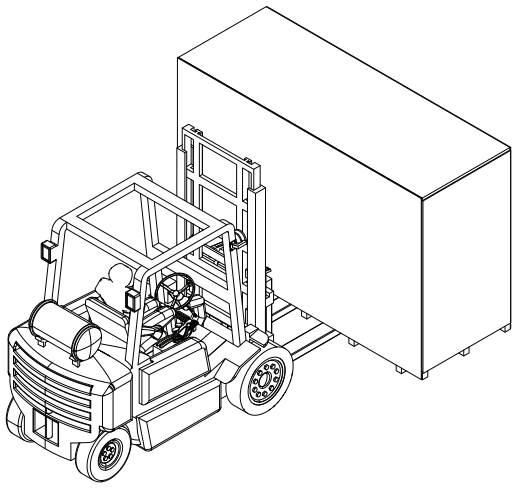
IMPORTANT

- If the unit is dropped, it should immediately be checked for damage
- Employ lifting specialists
- Local codes and regulations relating to the lifting of this type of equipment should be observed
- Lift the unit slowly and evenly

Positioning & Levelling

- The unit should be positioned on a stable and even base. With the use of a spirit level the base should be levelled to ensure good condensate removal and prevent door misalignment
- Positioning the unit should be achieved by the use of rollers or skids. Crowbars must not be used as they impose a point load on the unit frame which may cause damage and distortion
- Check the unit is as ordered. Discrepancies or transit damage should be reported to Airedale immediately
- Care should be taken during handling and lifting, that the unit is well supported and properly balanced
- Observe airflow and maintenance clearances
- Check all services are present and accessible

CAUTION ⚠
Airedale will accept no responsibility for mishandling during the positioning of the equipment.



⚠ **ATTENTION**
The unit comes fixed on a pallet.
Use forklifts for handling

Unpacking

The unit is to be carefully unpacked. Inspected and any damage reported to Airedale immediately.

All packaging is to be recycled accordingly.

Weights

Fixed Speed Units

	Unit	Shipped Weight (kg)	Installed Weight (kg)
X100/X200/X1X1	SC09D016-X100-0	310	320
	SC09D019-X100-0	310	320
	SC09D023-X100-0	310	320
	SC09D026-X100-0	330	340
	SC12D020-X200-0	390	400
	SC12D023-X200-0	400	400
	SC12D029-X200-0	410	420
	SC12D033-X200-0	410	420
	SC12D036-X200-0	410	420
	SC15D027-X200-0	460	460
	SC15D030-X200-0	470	470
	SC15D035-X200-0	470	470
	SC15D040-X200-0	470	470
	SC15D044-X200-0	470	480
	SC18D037-X200-0	520	530
	SC18D040-X200-0	520	530
	SC18D044-X200-0	530	530
	SC18D048-X1X1-0	560	570
	SC18D055-X1X1-0	570	580

Variable Speed Units

	Unit	Shipped Weight (kg)	Installed Weight (kg)
X100/X200	SV09D023-X100-0	336	340
	SV09D023-X100-1	336	340
	SV09D047-X100-0	358	362
	SV09D047-X100-1	358	362
	SV12D026-X100-0	415	420
	SV12D026-X100-1	415	420
	SV12D034-X100-0	436	441
	SV12D034-X100-1	436	441
	SV12D055-X100-0	436	441
	SV12D055-X100-1	436	441
	SV15D036-X100-0	501	506
	SV15D036-X100-1	501	506
	SV15D040-X100-0	510	516
	SV15D040-X100-1	510	516
	SV15D063-X200-0	572	579
	SV15D063-X200-1	572	579
	SV18D042-X100-0	556	562
	SV18D042-X100-1	556	562
	SV18D049-X100-0	556	562
	SV18D049-X100-1	556	562
	SV18D083-X200-0	638	646
	SV18D083-X200-1	638	646

Refrigerant Pipe Sizing Guide

The refrigerant pipe sizing information below is for a guide only. Pipe sizes based on 100% load.

				Equivalent Pipe Lengths with R410A					
Indoor Unit	Outdoor Unit	Indoor Unit Connection Size		0-15m	Discharge		15-40m	Discharge	
		Liquid	Discharge	Liquid 3	Horizontal 1	Vertical 2	Liquid 3	Horizontal 1	Vertical 2
SC09D016-X100-0	CR30	1/2	5/8	1/2	3/4	1/2	1/2	3/4	1/2
SC09D019-X100-0	CR30	1/2	5/8	1/2	3/4	5/8	1/2	3/4	5/8
SC09D023-X100-0	CR50	1/2	3/4	5/8	7/8	5/8	5/8	7/8	5/8
SC09D026-X100-0	CR50	1/2	3/4	5/8	7/8	3/4	5/8	7/8	3/4
SC12D020-X200-0	CR30	1/2	5/8	1/2	3/4	5/8	5/8	7/8	5/8
SC12D023-X200-0	CR50	1/2	5/8	1/2	3/4	3/4	5/8	7/8	3/4
SC12D029-X200-0	CR50	1/2	7/8	5/8	7/8	3/4	5/8	1 1/8	3/4
SC12D033-X200-0	CR65	5/8	7/8	5/8	1 1/8	7/8	3/4	1 1/8	7/8
SC12D036-X200-0	CR65	5/8	7/8	5/8	1 1/8	7/8	3/4	1 1/8	7/8
SC15D027-X200-0	CR30	1/2	5/8	1/2	3/4	3/4	5/8	7/8	3/4
SC15D030-X200-0	CR50	1/2	7/8	5/8	7/8	3/4	5/8	1 1/8	3/4
SC15D035-X200-0	CR50	5/8	7/8	5/8	1 1/8	7/8	3/4	1 1/8	7/8
SC15D040-X200-0	CR65	5/8	7/8	5/8	1 1/8	7/8	3/4	1 1/8	7/8
SC15D044-X200-0	CR80	5/8	7/8	5/8	1 1/8	7/8	3/4	1 1/8	7/8
SC18D037-X200-0	CR50	5/8	7/8	5/8	1 1/8	7/8	3/4	1 1/8	7/8
SC18D040-X200-0	CR50	5/8	7/8	5/8	1 1/8	7/8	3/4	1 1/8	7/8
SC18D044-X200-0	CR65	5/8	7/8	5/8	1 1/8	7/8	3/4	1 1/8	7/8
SC18D048-X1X1-0	CR50	5/8	7/8	5/8	7/8	3/4	5/8	7/8	3/4
SC18D055-X1X1-0	CR50	5/8	7/8	5/8	1 1/8	3/4	5/8	1 1/8	3/4

(1) For interconnecting pipework with a predominantly horizontal layout.
(2) For interconnecting pipework with a predominantly vertical layout.
(3) Careful pipework selection must be done if the liquid line rises. Additional system sub cooling may be required to overcome friction losses.

IMPORTANT

Tandem Compressor: In part load, gas velocity should be taken into account when selecting and commissioning pipework to ensure full oil return.

Excessive pressure loss in interconnecting pipework will impair system performance; this should be factored in during the design of the system and where necessary oil separators employed.
Excessive pressure drop in liquid lines can cause poor refrigerant distribution to expansion devices and can cause malfunction of the system (especially where the condensers are positioned lower than the evaporator).

Oil Traps

For long vertical rises in both liquid and discharge lines, it is essential that oil traps are located every 4m to ensure proper oil movement / entrapment. In addition there should be an oil trap at the exit of the air handling unit before a vertical riser is applied (refer to example below).

Pipe Supports

The following table identifies the maximum distance between pipe supports on vertical and horizontal pipe runs.

Pipe O/D (inches)	Support distance (m)
3/8 - 7/8”	1.0
1 1/8 - 2 1/8”	2.0

Lines passing through walls

Refrigerant lines that rub against solid objects wear holes in the copper pipework and cause leaks, the lines must pass through sleeved openings in such a manner that the lines do not touch.

Refrigerant Pipe Sizing Guide

The refrigerant pipe sizing information below is for a guide only. Pipe sizes based on 100% load.

	Indoor Unit Connection Size		Interconnecting Line Sizes			
			Horizontal		Vertical (<4m)	
Indoor Unit	Liquid	Discharge	Liquid	Discharge	Liquid	Discharge
SV09D023-X100	1/2	5/8	3/4	3/4	3/8	3/8
SV09D047-X100	5/8	7/8	7/8	1 1/8	1/2	1/2
SV12D026-X100	1/2	5/8	3/4	3/4	3/8	3/8
SV12D034-X100	5/8	7/8	7/8	7/8	3/8	3/8
SV12D055-X100	5/8	7/8	7/8	1 1/8	1/2	1/2
SV15D036-X100	5/8	3/4	3/4	7/8	3/8	3/8
SV15D040-X100	5/8	7/8	7/8	1 1/8	1/2	1/2
SV15D063-X200	3/4	7/8	1 1/8	1 1/8	1/2	1/2
SV18D042-X100	5/8	7/8	7/8	7/8	3/8	3/8
SV18D049-X100	5/8	7/8	7/8	1 1/8	1/2	1/2
SV18D083-X200	3/4	7/8	1 1/8	1 3/8	5/8	5/8

	Indoor Unit Connection Size		Line Sizes		
			Vertical (>4m)		
Indoor Unit	Liquid	Discharge	Liquid	Discharge Riser 1	Discharge Riser 2
SV09D023-X100	1/2	5/8	5/8	3/8	3/4
SV09D047-X100	5/8	7/8	3/4	1/2	7/8
SV12D026-X100	1/2	5/8	5/8	3/8	3/4
SV12D034-X100	5/8	7/8	3/4	3/8	7/8
SV12D055-X100	5/8	7/8	3/4	1/2	7/8
SV15D036-X100	5/8	3/4	5/8	3/8	3/4
SV15D040-X100	5/8	7/8	3/4	1/2	7/8
SV15D063-X200	3/4	7/8	7/8	1/2	1 1/8
SV18D042-X100	5/8	7/8	3/4	3/8	7/8
SV18D049-X100	5/8	7/8	3/4	1/2	7/8
SV18D083-X200	3/4	7/8	7/8	5/8	1 1/8

Line sizes have been chosen to allow for reliability over the full capacity range of each unit. For applications that will not exceed a certain capacity, line sizes may be further optimised for performance.

IMPORTANT

Pipe sizes are based on maintaining sufficient velocity in pipes for oil return to minimise the number of oil scavenge sequences required during part load operation.

Liquid Line

If the system is configured with the SmartCool higher than the condenser unit it may be required to increase the degree of sub cooling to prevent flashing gas occurring in the liquid line. This flashing is due to excess pressure drop caused by the static head of liquid refrigerant and can result in poor operation of the evaporator and expansion device.

Careful pipe sizing is recommended to ensure that the liquid line does not have excessive pressure drop.
Increasing the liquid line tube size can minimse pipe pressure drop. However, as a fail safe it is recommended that the condenser is installed above the indoor unit to allow for correct liquid drain.

Pipe Insulation

The liquid line of the system must be insulated if passing through extremely warm places (boiler houses etc) to ensure that the refrigerant does not become flash gas.
Insulating the discharge line can also reduce any potential noise.

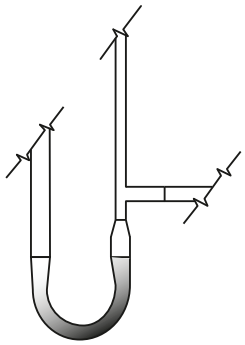
Discharge Risers

If required, double risers must be designed into the system. For systems with long vertical rises Airedale recommends a double riser system. Pipework must be sized based upon a reduction in unit capacity as low as 16% of maximum unit capacity. The double riser must be sized so that the refrigerant still maintains adequate velocity for the oil to travel around the system.

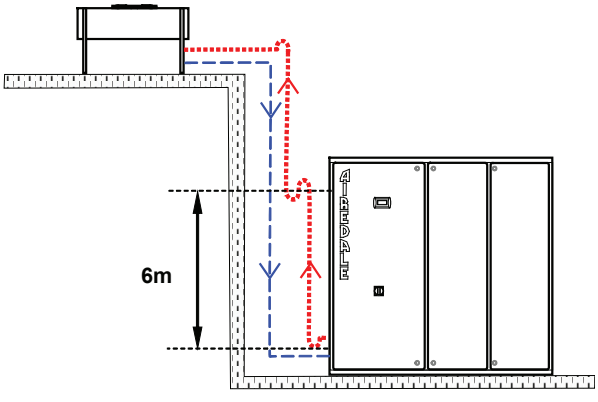
The use of double risers allows the refrigerant flow rate through a system to reduce without compromising oil return. It does this by reducing the effective cross sectional area of pipe at low flow rates. Consideration must be taken when designing vertical risers. Refrigerant velocity must be ensured in vertical risers at a minimum of 8m/s.

When the flow rate increases, the oil is forced through the oil trap and escapes the double riser. This leaves both discharge risers to share the refrigerant flow between them, allowing lower refrigerant velocities (hence lower pressure drops) at high flow rates.

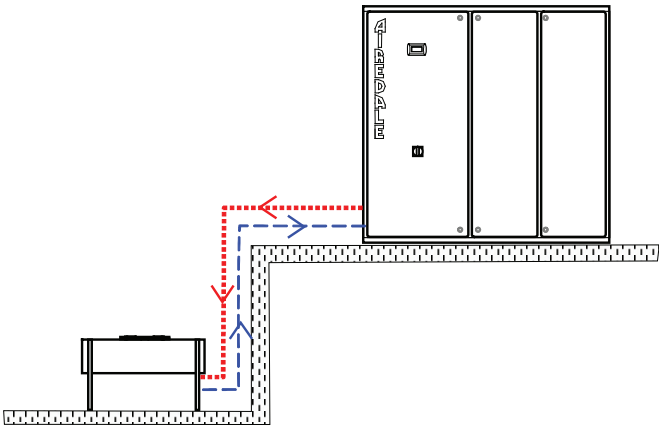
CAUTION
Care must be taken in sizing double riser systems.



Condenser above Air Handling Unit



Condenser below Air Handling Unit



Discharge Line Liquid Line

Refrigerant Charging Guide

The following information can be used to estimate the refrigerant quantity required in a typical split system installation.

Liquid Line Refrigerant Charge (kg/m)

The following table shows the refrigerant charge / metre for the liquid line, using R410A and assuming a liquid line temperature of 40°C.

Liquid Line (m)	kg/m
3/8”	0.05
1/2”	0.09
5/8”	0.15
3/4”	0.21
7/8”	0.30
1 1/8”	0.53

IMPORTANT

The pipe sizes/refrigerant charges quoted are for guidance only. It is the responsibility of the installing contractor/site engineer to check the pipe sizes/refrigerant charges are correct for each system installation and application.
Split systems may require additional oil which should be added to the low side of each compressor.

Design should be in accordance with accepted refrigeration practice to ensure good oil return to the compressor(s) under all normal operating conditions.

Refrigerant Charging Guide

Indoor Unit		Standard Condenser		Larger Condenser	
(Indoor Unit)	kg/Circuit	(Outdoor Unit)	kg/Circuit	(Outdoor Unit)	kg/Circuit
SC09D016-X100-0	2.3	CR30	4.3	CR50	4.9
SC09D019-X100-0	2.3	CR30	4.3	CR50	4.9
SC09D023-X100-0	2.3	CR50	4.9	CR65	9.8
SC09D026-X100-0	2.4	CR50	4.9	CR65	9.8
SC12D020-X200-0	2.9	CR30	4.3	CR80	8.4
SC12D023-X200-0	2.9	CR50	4.9	CR80	8.4
SC12D029-X200-0	3.0	CR50	4.9	CR80	8.4
SC12D033-X200-0	3.2	CR65	9.8	CR80	8.4
SC12D036-X200-0	3.2	CR65	9.8	CR80	8.4
SC15D027-X200-0	3.7	CR30	4.3	CR80	8.4
SC15D030-X200-0	3.8	CR50	4.9	CR80	8.4
SC15D035-X200-0	4.0	CR50	4.9	CR80	8.4
SC15D040-X200-0	4.0	CR65	9.8	CR80	8.4
SC15D044-X200-0	4.0	CR80	8.4	CR80	8.4
SC18D037-X200-0	4.8	CR50	4.9	CR80	8.4
SC18D040-X200-0	4.8	CR50	4.9	CR80	8.4
SC18D044-X200-0	4.8	CR65	9.8	CR80	8.4
SC18D048-X1X1-0	4.8	CR50	4.9	CR65	9.8
SC18D055-X1X1-0	4.8	CR50	4.9	CR65	9.8

Indoor Unit		Standard Condenser		Larger Condenser	
(Indoor Unit)	kg/Circuit	(Outdoor Unit)	kg/Circuit	(Outdoor Unit)	kg/Circuit
SV09D023-X100-0	3.9	CR30	4.3	CR50	4.9
SV09D023-X100-1	3.9	CR30	4.3	CR50	4.9
SV09D047-X100-0	4.3	CR50	4.9	CR65	9.8
SV09D047-X100-1	4.3	CR50	4.9	CR65	9.8
SV12D026-X100-0	4.5	CR30	4.3	CR50	4.9
SV12D026-X100-1	4.5	CR30	4.3	CR50	4.9
SV12D034-X100-0	4.7	CR50	4.9	CR65	9.8
SV12D034-X100-1	4.7	CR50	4.9	CR65	9.8
SV12D055-X100-0	5.0	CR65	9.8	CR80	8.4
SV12D055-X100-1	5.0	CR65	9.8	CR80	8.4
SV15D036-X100-0	5.3	CR50	4.9	CR65	9.8
SV15D036-X100-1	5.3	CR50	4.9	CR65	9.8
SV15D040-X100-0	5.5	CR50	4.9	CR65	9.8
SV15D040-X100-1	5.5	CR50	4.9	CR65	9.8
SV15D063-X200-0	6.7	CR80	8.4	CR105	16.7
SV15D063-X200-1	6.7	CR80	8.4	CR105	16.7
SV18D042-X100-0	5.9	CR50	4.9	CR65	9.8
SV18D042-X100-1	5.9	CR50	4.9	CR65	9.8
SV18D049-X100-0	6.1	CR65	9.8	CR80	8.4
SV18D049-X100-1	6.1	CR65	9.8	CR80	8.4
SV18D083-X200-0	7.6	CR80	8.4	CR105	16.7
SV18D083-X200-1	7.6	CR80	8.4	CR105	16.7

Installation

Calculation of System Refrigerant Charge (kg)

The system refrigerant charge can be calculated using the following equation:

SR = LR + IR + OR

Where:

SR	=	Total System Refrigerant Charge (kg)
LR	=	Total Liquid Line Refrigerant Charge. (As calculated from above)
IR	=	Indoor Unit Refrigerant Charge.
OR	=	Outdoor Unit Refrigerant Charge.

Calculation of Liquid Line Refrigerant Charge (kg)

The liquid line refrigerant charge can be calculated using the following equation:

LR = L x m

Where:

LR	=	Total Liquid Line Refrigerant charge (kg)
L	=	Length of Interconnecting pipework (metres)
m	=	Liquid Line Refrigerant charge / metre. Refer to Liquid Line Refrigerant Charge (kg/m), above.

Example

Indoor Unit Model Ref. = SC12D023-X200-0
Outdoor Unit Model Ref = CR50 Condenser
Interconnecting Pipework = 10 metres

From the Refrigerant Pipe Sizing Guide, the liquid line size given for pipework length of 10 metres is:0.09kg/m

LR = L x m

Where:

L	=	10 metres
m	=	0.09 kg/m (Liquid Line Size = 1/2”
LR	=	10 x 0.09 = 0.9kg

System Refrigerant Charge

SR = LR + IR + OR

Where:
LR = 0.9 kg. (As calculated from above)
IR = 2.9 kg
OR = 4.9 kg

SR = 0.9+ 2.9 + 4.9

Therefore

System Refrigerant Charge

= 8.7kg / Circuit

Installation

Liquid Sub Cooling

The degree of liquid sub cooling required to prevent flashing of liquid refrigerant can be calculated by the following method.

Subcooling = Condensing temperature — Saturation temperature (Nett pressure at expansion valve)

Given the following as an example:

- Refrigerant R410A
- Condensing temperature (54.4°C) equivalent condensing pressure at 54.4°C = 34 Bar
- Liquid lift 20m
- Piping friction loss 0.21 bar
- Losses through valves and fittings 0.5 Bar

Pressure Loss due to Liquid Lift

Lift = H x spl

Where
H = Height (m)
spl = Static pressure loss

Lift = 20 x 0.115 = 2.3 bar

Note:- At normal liquid temperatures the static pressure loss due to elevation at the top of a liquid lift 0.115 bar/m.

Total Pressure Loss in Liquid Line

TPL Liquid = Lift + PFL + Valves

Where
PFL = Pipe friction loss (0.21Bar)
Valves = Losses through Valves and fittings

= 0.21 +0.5 + 2.3
Total pressure loss in liquid line = 3.01 Bar

Nett Pressure at Expansion Valve

= Condensing pressure - Total pressure loss in liquid line

= 34 - 3.01 = 30.99 bar

Saturation temperature at the nett pressure at expansion valve (30.99 bar) = 52°C (from refrigerant tables)

Sub Cooling Required

= Condensing temperature - Saturation temperature

= 54.4 - 52 = 2.4 °C
Therefore liquid sub cooling required to prevent liquid flashing = 2.4 °C

Oil Charging Guide

In order to determine if a system requires additional oil to accommodate for long interconnecting pipe lines and oil traps, a simple calculation can be used to approximate the volume of oil required as follows:

OT = (RC / 200) - (OC x 0.09)

Where
OT = Additional Oil Charge / Circuit (kg)
RC = Total Refrigerant Charge / Circuit (kg)
OC = Total Compressor Oil Charge / Circuit (l)

This calculation is based on the following assumptions:

1) 10% of the total compressor oil charge enters the system
2) A specific gravity of 0.09 between oil and water
3) Oil is added at a rate of 5 grams per kilogram of refrigerant

Example
What is the additional oil charge required per circuit for an SC12D023-X200-0 matched with a CR50 and a 1/2" 80m interconnecting liquid line?

Refrigerant charge of an SC12D023-X200-0 = 2.9 kg

Refrigerant charge of a CR50 = 4.9 kg

Interconnecting pipe line = 80 x 0.09 = 7.2 kg

Total system refrigerant charge = 2.9 + 4.9 + 7.2 = 15 kg

Compressor oil charge(s) = 1.2 + 1.2 = 2.4 litre

So,

OT = (RC / 200) - (OC x 0.09)

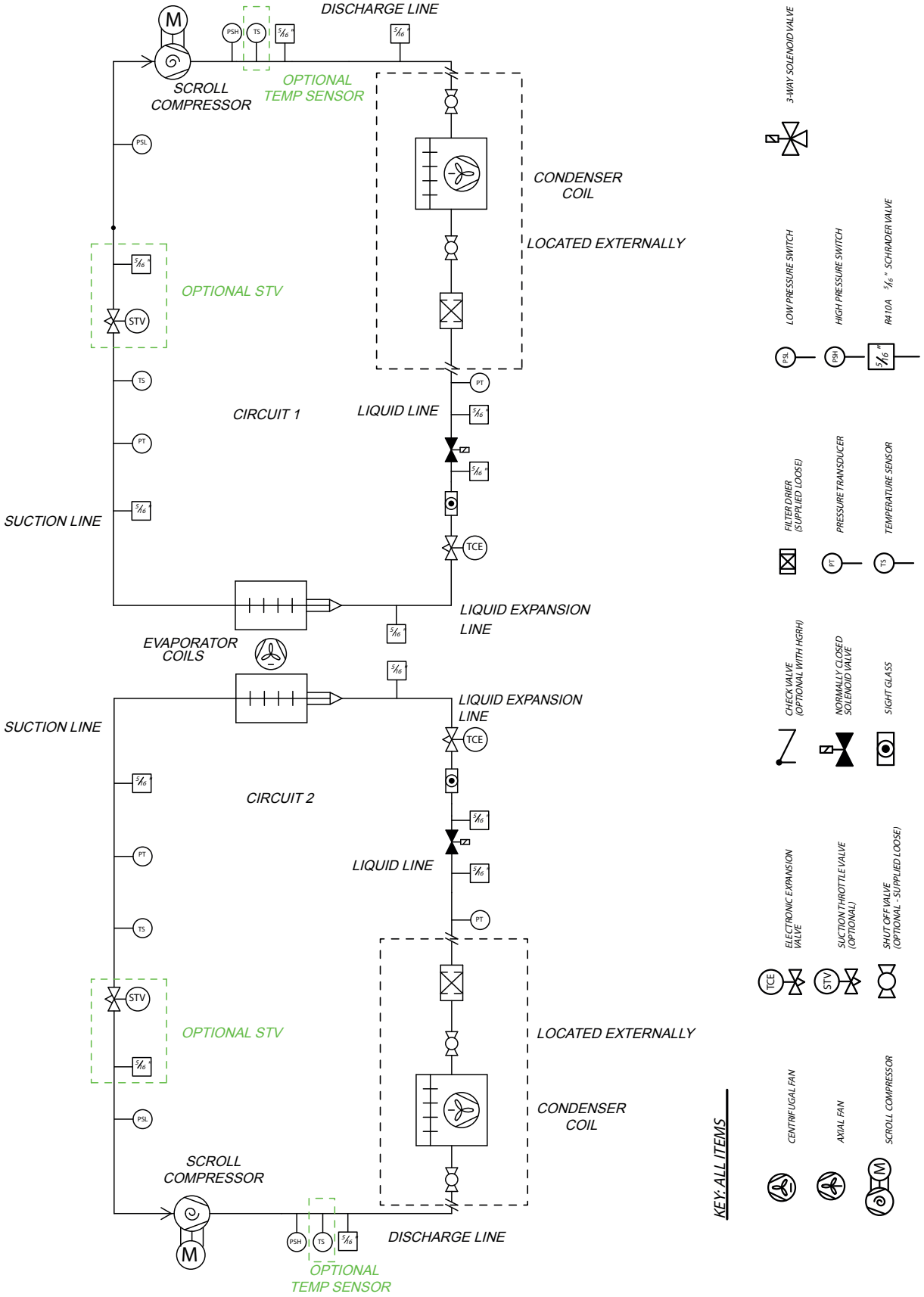
OT = (15 / 200) - (2.4 x 0.09)

OT = -0.141litre

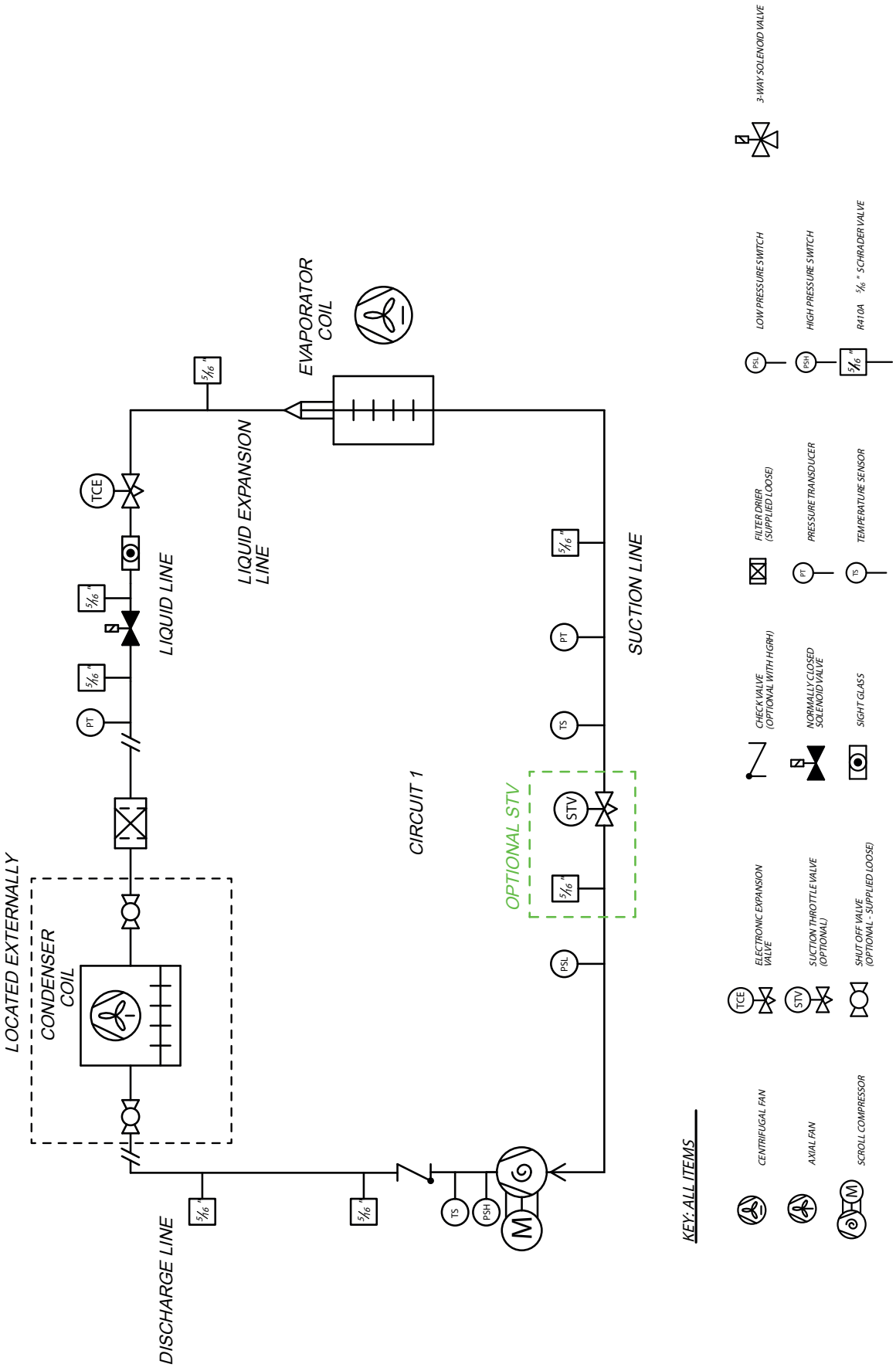
A negative value (as above) suggests that there is already sufficient oil in the system. You can calculate the maximum refrigerant charge for this system when additional oil charge is required as follows:

OT = (RC / 200) - (OC x 0.09)
RC = (OT + OC x 0.09) x 200
RC = (0 + 2.4 x 0.09) x 200
RC = 43.2 kg

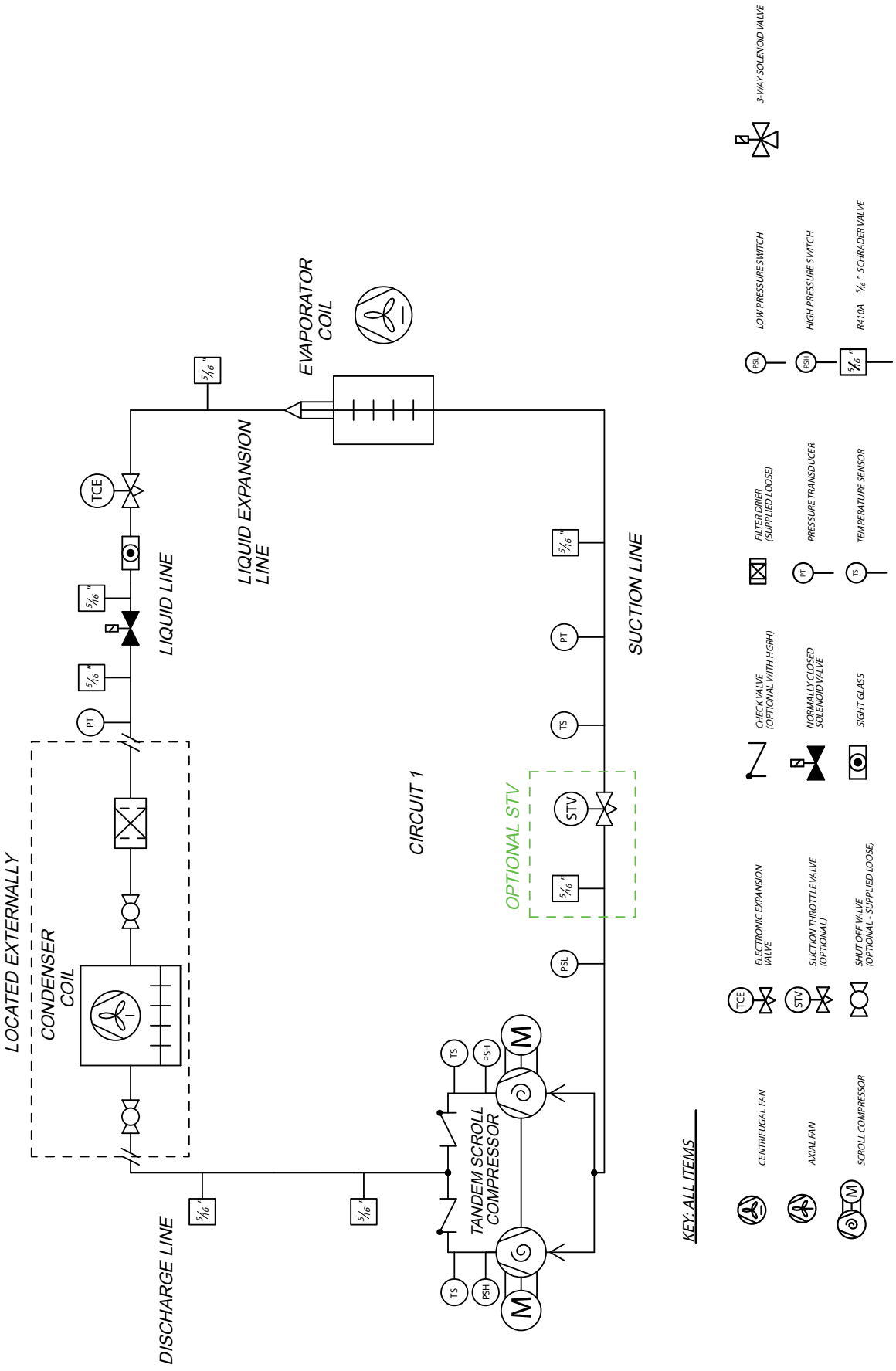
X1X1 Fixed Speed Pipework Schematics



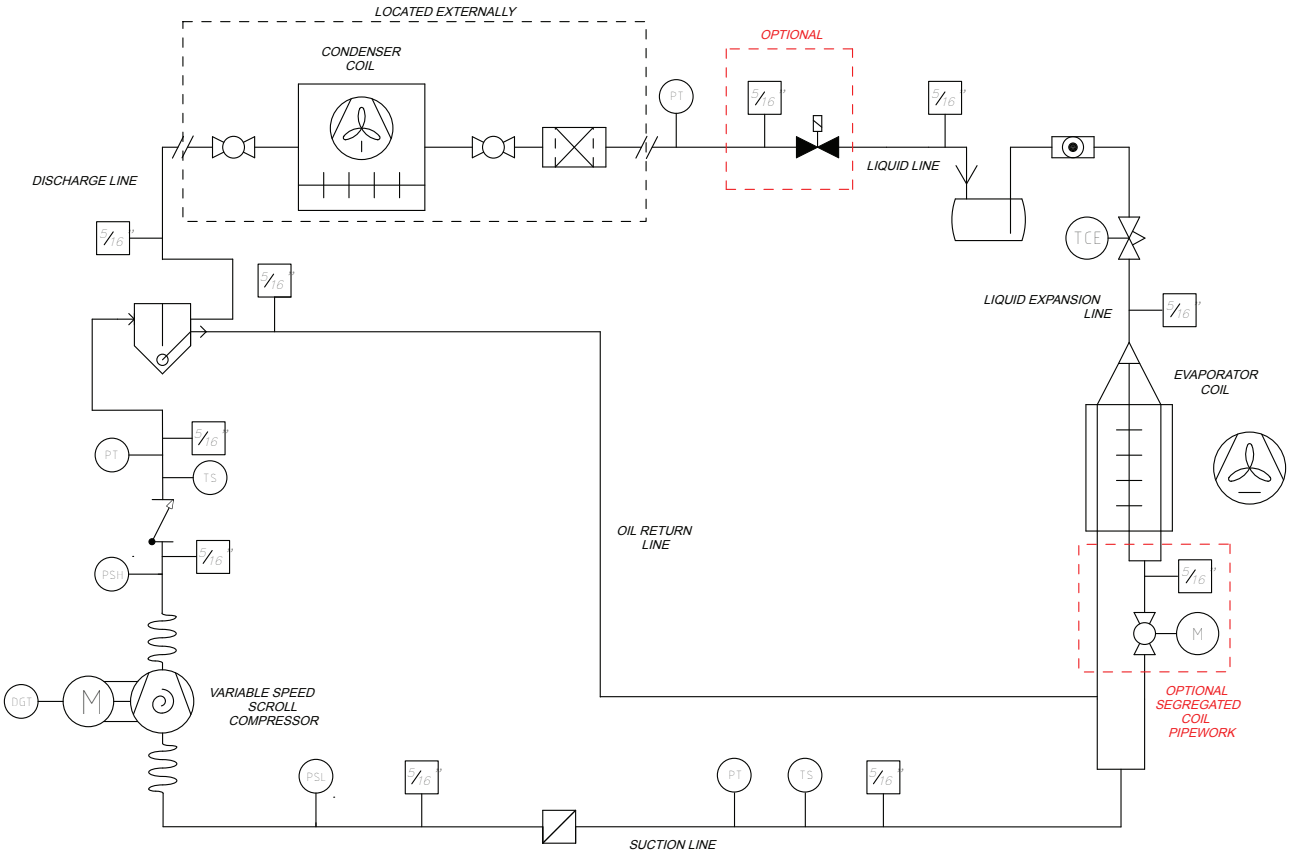
X100 Fixed Speed Pipework Schematics



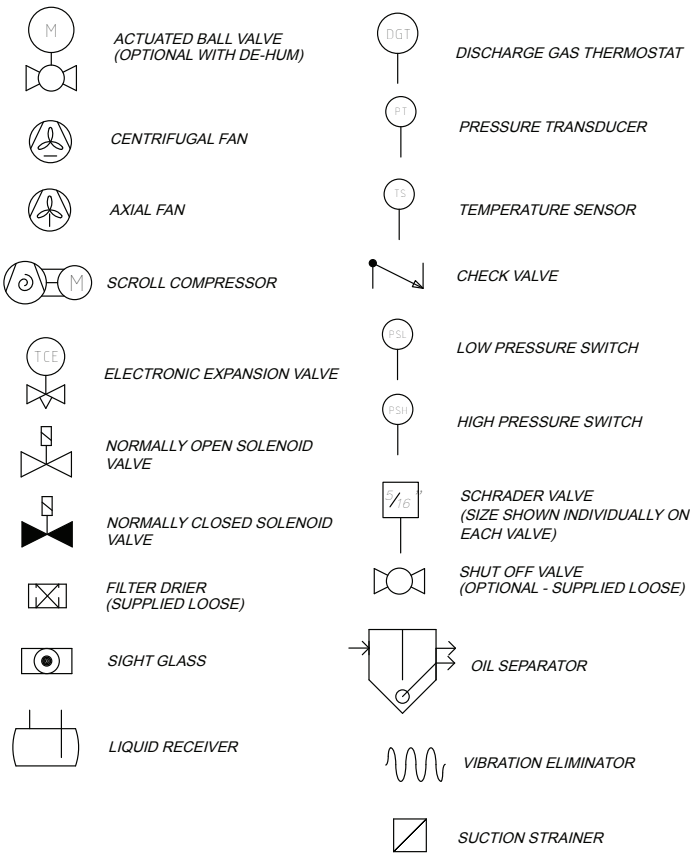
X200 Fixed Speed Pipework Schematics



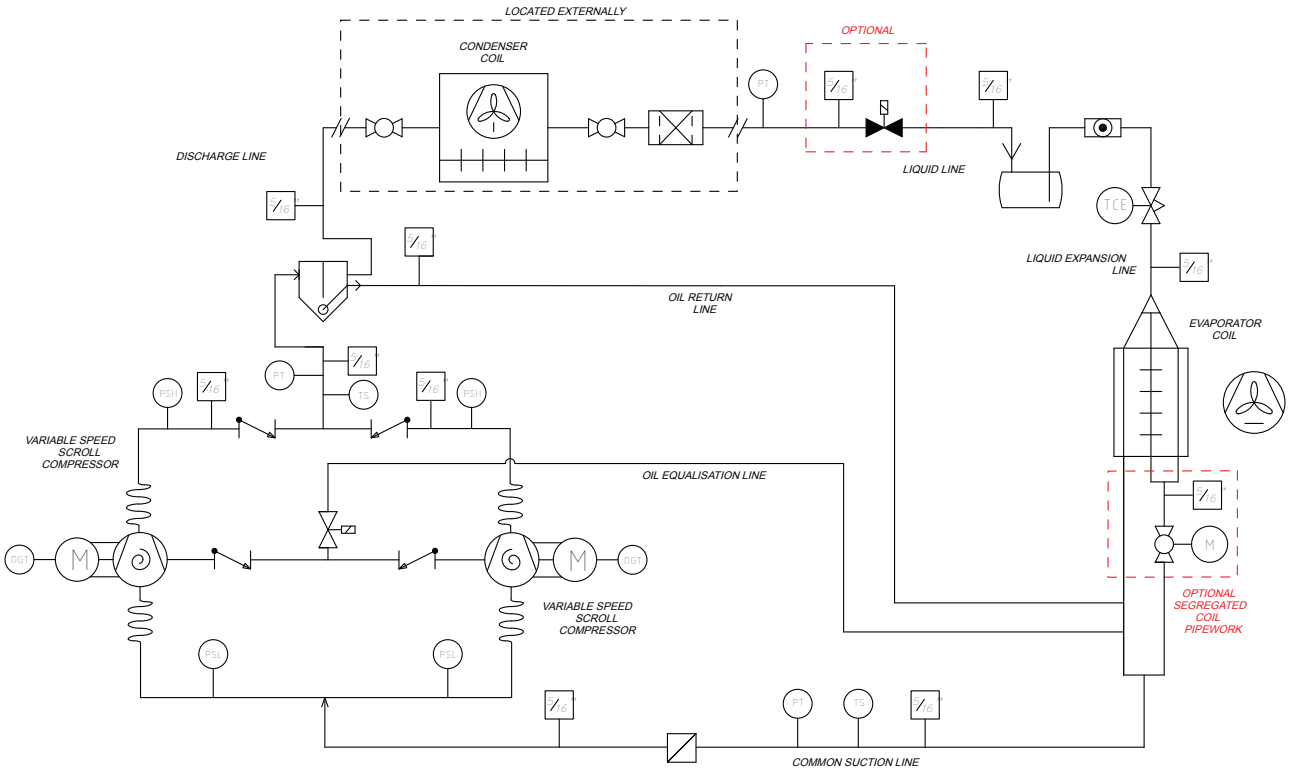
X100 Inverter Pipework Schematics



Key



X200 Inverter Pipework Schematics

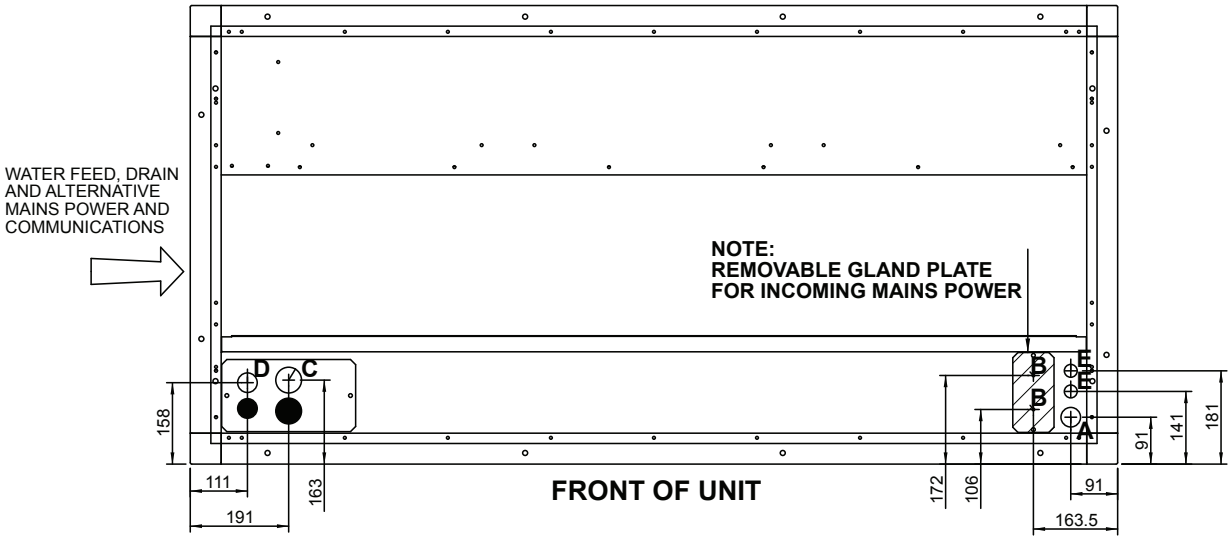


Key

- ACTUATED BALL VALVE (OPTIONAL WITH DE-HUM)
- CENTRIFUGAL FAN
- AXIAL FAN
- SCROLL COMPRESSOR
- ELECTRONIC EXPANSION VALVE
- NORMALLY OPEN SOLENOID VALVE
- NORMALLY CLOSED SOLENOID VALVE
- FILTER DRIER (SUPPLIED LOOSE)
- SIGHT GLASS
- LIQUID RECEIVER
- OIL SEPARATOR
- DISCHARGE GAS THERMOSTAT
- PRESSURE TRANSDUCER
- TEMPERATURE SENSOR
- CHECK VALVE
- LOW PRESSURE SWITCH
- HIGH PRESSURE SWITCH
- SCHRADER VALVE (SIZE SHOWN INDIVIDUALLY ON EACH VALVE)
- SHUT OFF VALVE (OPTIONAL - SUPPLIED LOOSE)
- VIBRATION ELIMINATOR
- SUCTION STRAINER

Incoming Service

Fixed Speed X200 / X100



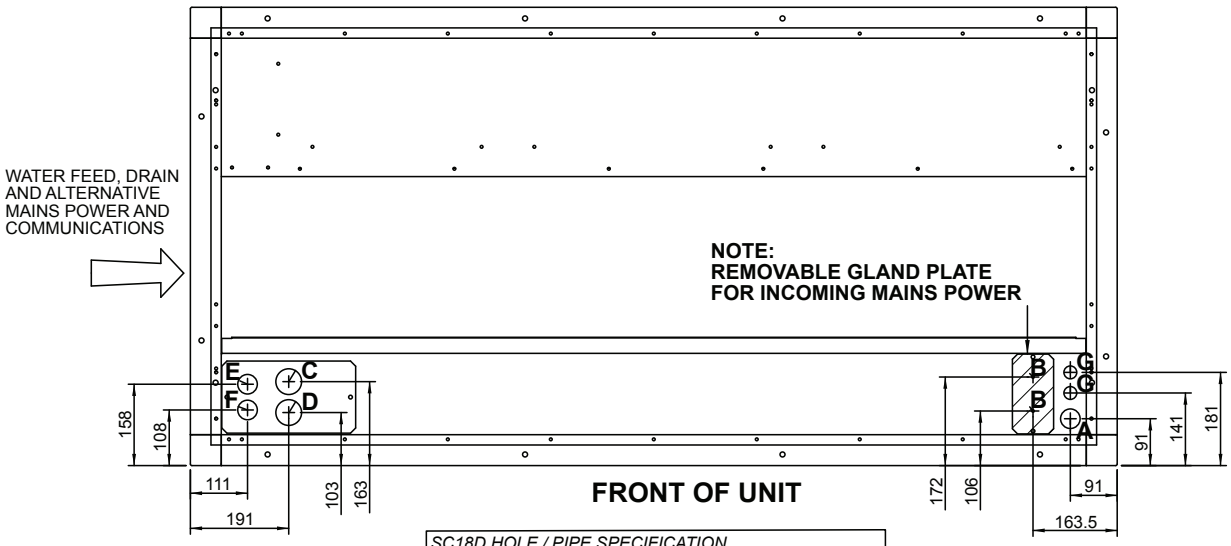
SC12D HOLE / PIPE SPECIFICATION	
HOLE 'A' Ø38MM	COMMUNICATIONS
HOLE 'B' Ø5MM	MAINS POWER
HOLE 'C' Ø50MM	Ø5/8" - 7/8" DISCHARGE LINE
HOLE 'D' Ø38MM	Ø1/2"-5/8" LIQUID LINE
HOLE 'E' Ø25MM	OUT GOING CR/DR POWER

SC15D HOLE / PIPE SPECIFICATION	
HOLE 'A' Ø38MM	COMMUNICATIONS
HOLE 'B' Ø5MM	MAINS POWER
HOLE 'C' Ø50MM	Ø7/8" DISCHARGE LINE
HOLE 'D' Ø38MM	Ø1/2"-5/8" LIQUID LINE
HOLE 'E' Ø25MM	OUT GOING CR/DR POWER

SC18D HOLE / PIPE SPECIFICATION	
HOLE 'A' Ø38MM	COMMUNICATIONS
HOLE 'B' Ø5MM	MAINS POWER
HOLE 'C' Ø50MM	Ø7/8" DISCHARGE LINE
HOLE 'D' Ø38MM	Ø5/8" LIQUID LINE
HOLE 'E' Ø25MM	OUT GOING CR/DR POWER

Incoming Services

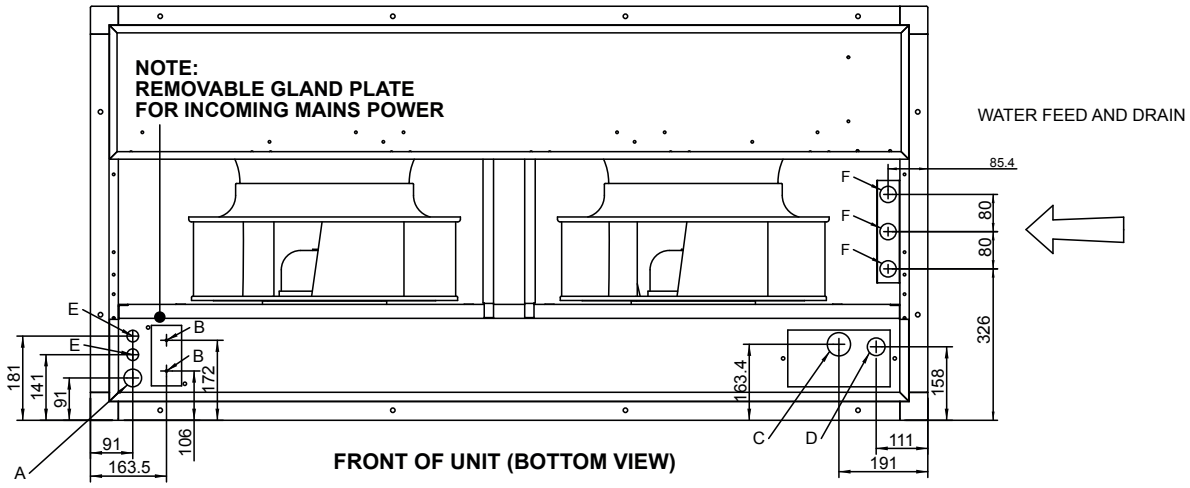
X1X1



SC18D HOLE / PIPE SPECIFICATION	
HOLE 'A' Ø38MM	COMMUNICATIONS
HOLE 'B' Ø5MM	MAINS POWER
HOLE 'C' Ø50MM	Ø7/8" DISCHARGE LINE (CIRCUIT 1)
HOLE 'D' Ø50MM	Ø7/8" DISCHARGE LINE (CIRCUIT 2)
HOLE 'E' Ø38MM	Ø5/8" LIQUID LINE (CIRCUIT 1)
HOLE 'F' Ø38MM	Ø5/8" LIQUID LINE (CIRCUIT 2)
HOLE 'G' Ø25MM	OUT GOING CR/DR POWER

Incoming Services

Inverter X200 / X100

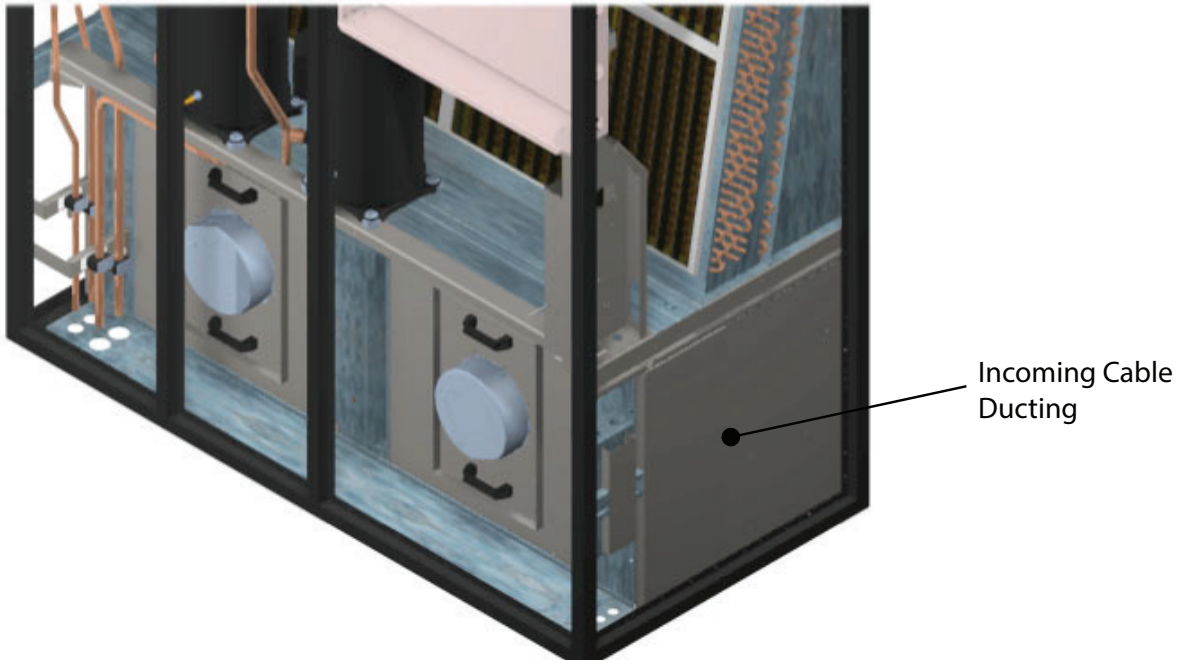


SV12D X200 HOLE / PIPE SPECIFICATION	
HOLE 'A' Ø38MM	COMMUNICATIONS
HOLE 'B' Ø5MM	MAINS POWER
HOLE 'C' Ø50MM	Ø7/8" DISCHARGE LINE
HOLE 'D' Ø38MM	Ø3/4" LIQUID LINE
HOLE 'E' Ø25MM	OUT GOING CR/DR POWER
HOLE 'F' Ø35MM	WATER FEED AND DRAIN

SV15 X200 HOLE / PIPE SPECIFICATION	
HOLE 'A' Ø38MM	COMMUNICATIONS
HOLE 'B' Ø5MM	MAINS POWER
HOLE 'C' Ø50MM	Ø7/8" DISCHARGE LINE
HOLE 'D' Ø38MM	Ø3/4" LIQUID LINE
HOLE 'E' Ø25MM	OUT GOING CR/DR POWER
HOLE 'F' Ø35MM	WATER FEED AND DRAIN

SV18D X200 HOLE / PIPE SPECIFICATION	
HOLE 'A' Ø38MM	COMMUNICATIONS
HOLE 'B' Ø5MM	MAINS POWER
HOLE 'C' Ø50MM	Ø7/8" DISCHARGE LINE
HOLE 'D' Ø38MM	Ø3/4" LIQUID LINE
HOLE 'E' Ø25MM	OUT GOING CR/DR POWER
HOLE 'F' Ø35MM	WATER FEED AND DRAIN

Electrical Incoming Services



Water Detector Tape Installation

Monitored by a sensing relay, the water detection tape will provide an alarm when in contact with several drops of conductive liquid. High humidity should normally not cause an alarm unless it results in condensation dripping on the tape surface or condensation present on the surface to which the tape is applied.

The recommended installation process is as follows:

- When applying to a surface such as concrete, the most popular method is to press the tape firmly onto a continuous film of approved adhesive or glue. When properly glued to the floor the tape lies flat on the floor avoiding “bridging” (where the detector lifts off the floor allowing water to run under the detector without detection) and avoids damage to the detector
- When applying the tape directly to the piping, the tape is simply strapped to the pipe
- Care should be taken to prevent the wire detectors in the tape from coming into contact with any electrically conductive material causing a “fault” condition. Anything used in applying the tape which interferes with the capability of the fleece substrate may adversely affect the detector’s function
- The tape should not be installed under piping or equipment that can condense liquid as the condensation could drip on the tape causing an alarm
- The tape should not be installed directly under an air handling unit, but around the unit
- In the sub-floor of a computer room the tape should be installed after the raised floor, conduit and piping are installed and the sub-floor cleaned and sealed

IMPORTANT

Any adhesive which alters the chemical composition of the tape must be avoided and any use thereof voids any warranty, expressed or implied. **3M Scotch-Weld™ 77 adhesive** is strongly recommended to ensure the warranty will be maintained. When adhesive is used, adhesive with an oily or greasy base MUST be avoided as this will affect the tape’s ability to detect moisture.
When the use of an adhesive is not desirable or practical, staples, clips or other devices may be used. When applying the tape to piping a combination of glue and plastic or nylon straps or wire ties may be used. The straps or ties help to cut down installation time and secures the tape to the pipe while the adhesive cures and dries.

CAUTION

Any electrically conductive attachment devices used must not touch the wires that are within the tape fabric. The maximum length of a detector loop, including wire and detector tape is 50 metres. However, this tape length is not practical for most applications. Where the tape is concealed or not easily accessible, tape runs should be limited to no more than 30 metres, and 10 to 15 metres per zone is generally used. If the water detector tape is to be attached to or covered by a metallic or conductive surface, care should be taken not to short the conductors.

When installing tape to any surface, be careful not to short circuit or ground out the conductors (such as over/under conduit or sharp edges of cable trays etc.). This also applies to any covering which may be applied over the tape. Before installing the tape, be sure to inspect areas where the tape is to be applied for presence of chemical materials that could create problems. If in doubt, it is recommended to clean the floor with a mild detergent.

For further information, please refer to Airedale’s Technical Bulletin and Loose Part Instruction Manual.

Downflow Fixed Speed

Operating Limits

Indoor Air Temperature	+18°C to +28°C
Indoor RH%	+40% to +55% (Based upon 24°C Dry Bulb)
Outdoor Temperature	-20°C to +46°C

Performance Data

X100 / X200 / X1X1		Ambient Temperature (°C)									
Model	Air On Temp. (°C) / %RH	25 TC (kW)	25 SC (kW)	30 TC (kW)	30 SC (kW)	35 TC (kW)	35 SC (kW)	40 TC (kW)	40 SC (kW)	46 TC (kW)	46 SC (kW)
SC09D016-X100-0 1 x CR30	22 / 50	17.90	17.40	17.40	17.40	16.70	16.70	16.00	16.00	15.10	15.10
	24 / 45	18.70	18.70	18.20	18.20	17.50	17.50	16.80	16.80	15.80	15.80
	26 / 40	19.60	19.60	19.00	19.00	18.30	18.30	17.60	17.60	16.60	16.60
SC09D019-X100-0 1 x CR30	22 / 50	20.70	19.80	19.80	19.80	18.90	18.90	18.00	18.00	17.00	17.00
	24 / 45	21.50	21.50	20.50	20.50	19.70	19.70	18.80	18.80	17.80	17.80
	26 / 40	22.40	22.40	21.40	21.40	20.60	20.60	19.70	19.70	18.60	18.60
SC09D023-X100-0 1 x CR50	22 / 50	24.80	22.30	24.20	22.00	23.20	21.40	22.20	20.90	21.00	20.20
	24 / 45	25.40	24.40	24.90	24.20	23.90	23.90	22.90	22.90	21.70	21.70
	26 / 40	26.30	26.30	25.70	25.70	24.80	24.80	23.80	23.80	22.70	22.70
SC09D026-X100-0 1 x CR50	22 / 50	27.70	23.60	26.90	23.30	25.80	22.80	24.70	22.20	23.30	21.50
	24 / 45	28.30	26.00	27.50	25.50	26.40	25.00	25.30	24.40	23.90	23.90
	26 / 40	29.10	28.40	28.20	28.20	27.20	27.20	26.10	26.10	24.80	24.80
SC12D020-X200-0 1 x CR30	22 / 50	23.80	22.00	22.30	20.90	21.20	20.20	20.10	19.30	18.70	18.70
	24 / 45	24.40	23.70	22.90	22.60	21.80	21.70	20.70	20.70	19.40	19.40
	26 / 40	25.20	25.20	23.70	23.70	22.70	22.70	21.70	21.70	20.40	20.40
SC12D023-X200-0 1 x CR50	22 / 50	30.10	27.20	29.00	26.50	27.60	25.60	26.20	24.60	24.50	23.50
	24 / 45	30.80	29.20	29.60	28.60	28.30	27.70	26.90	26.90	25.30	25.30
	26 / 40	31.70	31.70	30.50	30.50	29.20	29.20	27.90	27.90	26.30	26.30
SC12D029-X200-0 1 x CR50	22 / 50	33.40	30.00	32.00	29.10	30.60	28.10	29.10	27.10	27.20	25.90
	24 / 45	34.20	32.20	32.80	31.30	31.40	30.50	29.90	29.60	28.10	28.10
	26 / 40	35.10	35.10	33.70	33.70	32.40	32.40	31.00	31.00	29.30	29.30
SC12D033-X200-0 1 x CR65	22 / 50	38.50	33.40	37.30	33.10	35.60	32.00	33.80	30.80	31.70	29.40
	24 / 45	39.40	36.10	38.10	35.30	36.40	34.40	34.70	33.30	32.60	32.20
	26 / 40	40.40	39.20	39.00	38.40	37.40	37.40	35.70	35.70	33.80	33.80
SC12D036-X200-0 1 x CR65	22 / 50	42.80	34.70	41.10	34.20	39.40	33.70	37.50	33.10	35.20	31.70
	24 / 45	43.90	38.20	42.10	37.60	40.30	36.60	38.40	35.50	36.10	34.20
	26 / 40	44.80	41.80	43.00	40.70	41.20	39.70	39.40	38.60	37.20	37.20
SC15D027-X200-0 1 x CR30	22 / 50	31.10	28.90	28.10	27.30	26.70	26.00	25.30	25.30	23.60	23.60
	24 / 45	32.10	31.90	29.10	29.10	27.70	27.70	26.30	26.30	24.60	24.60
	26 / 40	33.30	33.30	30.30	30.30	28.90	28.90	27.50	27.50	25.70	25.70
SC15D030-X200-0 1 x CR50	22 / 50	34.80	32.60	33.30	31.80	31.90	31.00	30.40	30.40	28.60	28.60
	24 / 45	36.00	35.70	34.50	34.50	33.10	33.10	31.70	31.70	29.90	29.90
	26 / 40	37.50	37.50	36.00	36.00	34.60	34.60	33.20	33.20	31.30	31.30
SC15D035-X200-0 1 x CR50	22 / 50	40.60	37.70	38.20	36.40	36.50	35.30	34.70	34.70	32.50	32.50
	24 / 45	41.90	41.90	39.50	39.50	37.80	37.80	36.10	36.10	33.90	33.90
	26 / 40	42.70	42.70	41.20	41.20	39.50	39.50	37.70	37.70	35.50	35.50
SC15D040-X200-0 1 x CR65	22 / 50	45.30	40.10	43.30	39.10	41.50	38.10	39.60	37.10	37.20	35.80
	24 / 45	46.40	44.00	44.40	43.10	42.70	42.20	40.80	40.80	38.60	38.60
	26 / 40	47.90	47.90	45.90	45.90	44.30	44.30	42.50	42.50	40.30	40.30
SC15D044-X200-0 1 x CR80	22 / 50	48.60	41.80	47.00	40.90	44.90	39.90	42.80	38.80	40.30	37.50
	24 / 45	49.70	45.60	48.00	44.80	45.90	43.80	43.90	42.90	41.50	41.50
	26 / 40	51.00	50.20	49.30	49.30	47.30	47.30	45.40	45.40	43.10	43.10
SC18D037-X200-0 1 x CR50	22 / 50	41.00	38.60	38.50	37.10	36.70	35.70	35.00	35.00	32.80	32.80
	24 / 45	42.40	42.20	39.80	39.80	38.20	38.20	36.40	36.40	34.20	34.20
	26 / 40	43.10	43.10	41.50	41.50	39.80	39.80	38.00	38.00	35.80	35.80
SC18D040-X200-0 1 x CR50	22 / 50	44.90	41.80	43.00	40.90	41.20	39.80	39.20	39.20	36.80	36.80
	24 / 45	46.20	45.90	44.40	44.40	42.60	42.60	40.70	40.70	38.40	38.40
	26 / 40	48.00	48.00	46.30	46.30	44.50	44.50	42.60	42.60	40.10	40.10
SC18D044-X200-0 1 x CR65	22 / 50	50.60	46.50	47.70	45.00	45.60	43.80	43.40	43.40	40.90	40.90
	24 / 45	52.10	51.50	49.20	49.20	47.10	47.10	45.00	45.00	42.60	42.60
	26 / 40	54.20	54.20	51.20	51.20	49.20	49.20	47.10	47.10	44.60	44.60
SC18D048-X1X1-0 2 x CR50	22 / 50	57.10	50.20	55.40	49.30	52.90	48.10	50.50	46.80	47.60	45.40
	24 / 45	58.50	55.10	56.60	54.30	54.30	53.20	51.90	51.90	49.20	49.20
	26 / 40	60.30	60.30	58.40	58.40	56.10	56.10	53.90	53.90	51.20	51.20
SC18D055-X1X1-0 2 x CR50	22 / 50	64.50	53.40	62.10	52.60	59.50	51.40	56.60	49.90	52.90	48.10
	24 / 45	65.90	58.60	63.40	57.40	60.80	56.20	58.00	54.90	54.40	53.20
	26 / 40	67.40	64.30	64.90	63.10	62.40	61.90	59.70	59.70	56.30	56.30

IMPORTANT

Performance data provided is representative of a system with a 5m interconnecting pipe length tested to EN14511. Maximum interconnecting equivalent pipe length of 100m. Pipe sizing guidelines MUST be followed.

Downflow Fixed Speed

Sound Data

		Frequency (Hz) dB								
	Sound Measurement	Overall dB(A)	63	125	250	500	1000	2000	4000	8000
SC09D016-X100-0	Discharge Air	90.6	94.0	96.9	89.4	86.4	83.8	82.4	76.4	83.3
	Return Air	89.4	94.6	98.5	87.8	85.9	79.6	77.7	76.9	83.6
	Case Breakout	70.0	72.2	79.3	70.0	63.0	62.2	64.1	57.3	47.7
	Sound Pressure @ 3m	64.0	66.2	73.3	64.0	57.0	56.1	58.1	51.3	41.7
SC09D019-X100-0	Discharge Air	93.4	96.0	97.4	92.6	89.3	86.5	84.6	77.8	88.1
	Return Air	92.2	96.6	99.0	91.0	88.8	82.3	79.9	78.3	88.4
	Case Breakout	71.9	74.0	79.8	73.2	65.5	63.9	65.9	58.9	52.0
	Sound Pressure @ 3m	65.8	68.0	73.8	67.2	59.5	57.8	59.9	52.9	46.0
SC09D023-X100-0	Discharge Air	94.7	96.8	97.4	93.7	90.7	87.6	85.7	78.4	90.1
	Return Air	93.6	97.4	99.0	92.1	90.2	83.4	81.0	78.9	90.4
	Case Breakout	73.0	74.8	79.8	74.4	67.2	65.1	67.3	59.5	53.3
	Sound Pressure @ 3m	66.9	68.8	73.8	68.4	61.1	59.1	61.3	53.5	47.2
SC09D026-X100-0	Discharge Air	94.7	96.8	97.4	93.7	90.7	87.6	85.7	78.4	90.1
	Return Air	93.6	97.4	99.0	92.1	90.2	83.4	81.0	78.9	90.4
	Case Breakout	73.4	74.9	79.8	74.4	67.3	65.3	68.2	59.8	53.4
	Sound Pressure @ 3m	67.3	68.9	73.8	68.4	61.3	59.3	62.2	53.8	47.4
SC12D020-X200-0	Discharge Air	75.0	84.1	83.3	78.1	72.1	68.1	63.1	57.4	50.2
	Return Air	78.5	94.1	89.1	82.9	74.8	64.9	58.1	53.9	42.5
	Case Breakout	64.7	75.9	75.3	60.7	55.8	58.1	56.1	54.1	53.1
	Sound Pressure @ 3m	58.6	73.4	69.2	54.7	49.8	52.1	50.1	48.1	47.1
SC12D023-X200-0	Discharge Air	80.3	87.7	89.3	83.8	77.6	71.5	68.3	62.2	56.2
	Return Air	83.1	94.1	93.7	87.4	79.8	70.6	63.7	59.9	47.5
	Case Breakout	68.3	77.6	80.3	65.0	58.0	61.3	59.4	56.5	55.1
	Sound Pressure @ 3m	62.3	73.4	74.3	59.0	52.0	55.3	53.3	50.5	49.1
SC12D029-X200-0	Discharge Air	83.1	90.0	92.2	86.7	80.6	73.6	70.7	64.7	59.0
	Return Air	85.2	94.1	95.6	89.5	82.1	73.2	66.2	62.5	50.3
	Case Breakout	73.4	78.6	82.3	67.6	65.1	68.8	65.1	62.9	61.5
	Sound Pressure @ 3m	67.4	73.4	76.3	61.5	59.1	62.8	59.0	56.9	55.4
SC12D033-X2X2-0	Discharge Air	85.9	92.5	95.0	89.8	83.8	75.8	73.1	67.5	61.8
	Return Air	87.2	94.1	97.3	91.5	84.2	75.7	68.5	64.7	53.4
	Case Breakout	73.8	79.5	84.0	69.4	63.0	65.8	66.1	65.5	64.5
	Sound Pressure @ 3m	67.8	73.4	77.9	63.4	57.0	59.8	60.1	59.4	58.5
SC12D036-X200-0	Discharge Air	85.9	92.5	95.0	89.8	83.8	75.8	73.1	67.5	61.8
	Return Air	87.2	94.1	97.3	91.5	84.2	75.7	68.5	64.7	53.4
	Case Breakout	74.7	79.5	84.0	69.5	66.4	69.3	66.9	65.6	60.2
	Sound Pressure @ 3m	68.7	73.4	77.9	63.5	60.4	63.2	60.9	59.5	54.2

(1) dB(A) is the overall sound level, measured on the A scale
(2) All sound data measured at nominal conditions, Discharge Air, Return air and case breakout is sound power.

Downflow Fixed Speed

Sound Data

		Frequency (Hz) dB								
	Sound Measurement	Overall dB(A)	63	125	250	500	1000	2000	4000	8000
SC15D027-X200-0	Discharge Air	79.7	78.7	83.3	82.3	77.3	74.5	68.3	60.7	57.1
	Return Air	76.7	90.3	86.3	81.9	72.6	63.5	60.2	58.9	58.0
	Case Breakout	67.1	63.1	68.1	59.4	57.8	61.7	58.7	59.8	60.9
	Sound Pressure @ 3m	61.1	57.1	62.1	53.4	51.8	55.7	52.7	53.8	54.9
SC15D030-X200-0	Discharge Air	84.2	82.8	86.6	86.9	81.7	79.0	73.3	65.3	61.2
	Return Air	80.6	93.5	89.1	86.5	76.5	66.8	62.9	61.0	58.8
	Case Breakout	74.8	66.5	70.2	64.3	67.4	71.4	66.7	65.5	65.1
	Sound Pressure @ 3m	68.7	60.5	64.2	58.3	61.4	65.3	60.6	59.5	59.1
SC15D035-X200-0	Discharge Air	90.2	89.7	90.8	92.9	87.5	85.0	80.6	73.0	69.4
	Return Air	85.7	97.2	92.7	92.5	81.1	71.4	66.7	64.0	60.1
	Case Breakout	74.5	68.1	71.7	67.3	64.4	68.3	67.2	67.9	67.7
	Sound Pressure @ 3m	68.5	62.1	65.7	61.3	58.4	62.2	61.2	61.8	61.7
SC15D040-X200-0	Discharge Air	90.2	89.7	90.8	92.9	87.5	85.0	80.6	73.0	69.4
	Return Air	85.7	97.2	92.7	92.5	81.1	71.4	66.7	64.0	60.1
	Case Breakout	75.9	68.0	71.7	67.9	68.7	72.0	68.4	68.0	63.7
	Sound Pressure @ 3m	69.9	62.0	65.7	61.8	62.7	66.0	62.4	62.0	57.7
SC15D044-X200-0	Discharge Air	90.2	89.7	90.8	92.9	87.5	85.0	80.6	73.0	69.4
	Return Air	85.7	97.2	92.7	92.5	81.1	71.4	66.7	64.0	60.1
	Case Breakout	75.9	68.4	71.8	68.3	70.6	70.8	69.0	68.3	62.7
	Sound Pressure @ 3m	69.9	62.4	65.7	62.3	64.6	64.8	63.0	62.3	56.7
SC18D037-X200-0	Discharge Air	81.7	88.8	90.8	85.2	79.1	72.5	69.5	63.4	57.7
	Return Air	84.2	98.1	94.7	88.5	81.0	71.9	65.0	61.2	48.9
	Case Breakout	76.6	74.3	80.0	70.6	68.9	72.0	68.5	68.3	67.1
	Sound Pressure @ 3m	70.5	68.3	74.0	64.6	62.9	65.9	62.5	62.3	61.1
SC18D040-X200-0	Discharge Air	84.5	91.2	93.6	88.2	82.2	74.7	71.9	66.1	60.4
	Return Air	86.2	99.6	96.5	90.5	83.2	74.5	67.3	63.6	51.8
	Case Breakout	78.4	75.2	81.9	72.9	72.2	74.6	70.4	69.0	62.2
	Sound Pressure @ 3m	72.3	69.2	75.8	66.9	66.2	68.6	64.3	63.0	56.1
SC18D044-X200-0	Discharge Air	88.4	94.8	97.2	92.4	86.5	77.8	74.9	69.8	64.0
	Return Air	88.8	101.7	98.6	93.1	85.9	77.7	70.2	66.4	56.1
	Case Breakout	79.6	76.5	83.9	75.8	74.9	74.5	72.3	70.6	61.0
	Sound Pressure @ 3m	73.6	70.5	77.9	69.8	68.9	68.5	66.3	64.6	54.9
SC18D048-X1X1-0	Discharge Air	89.4	95.8	98.1	93.4	87.6	78.7	75.6	70.8	64.8
	Return Air	89.3	102.2	99.1	93.6	86.5	78.4	70.8	66.9	57.3
	Case Breakout	80.7	76.9	84.2	76.5	75.9	74.9	74.5	71.6	63.2
	Sound Pressure @ 3m	74.7	70.9	78.2	70.5	69.8	68.9	68.5	65.5	57.2
SC18D055-X1X1-0	Discharge Air	89.4	95.8	98.1	93.4	87.6	78.7	75.6	70.8	64.8
	Return Air	89.3	102.2	99.1	93.6	86.5	78.4	70.8	66.9	57.3
	Case Breakout	80.7	76.9	84.2	76.4	76.0	75.5	74.1	71.1	62.8
	Sound Pressure @ 3m	74.7	70.9	78.2	70.4	70.0	69.5	68.1	65.1	56.8

(1) dB(A) is the overall sound level, measured on the A scale
(2) All sound data measured at nominal conditions, Discharge Air, Return air and case breakout is sound power.

Downflow Fixed Speed SC09D016 - SC09D019

Mechanical Data

			SC09D016-X100-0	SC09D019-X100-0
Standard Condenser Match			1 x CR30	1 x CR30
Capacity				
Nom Cooling (Gross) –	(1)	kW	17.39	19.62
Capacity Steps			1	1
Dimensions – W x D x H		mm	900 x 890 x 1980	900 x 890 x 1980
Weight – Machine / Operating	(3)	kg	310 / 320	310 / 320
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)	
Material/Colour			Frame: Anodised Aluminium Frame with aluminium corners, Epoxy baked Powder Coated Paint - Black Grey (RAL 7021).	
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins	
Cooling/Dehum Stages			1 / 1	1 / 1
Fan Motor			Backwards Curved, Centrifugal Direct Drive	
Motor Type			EC	EC
Quantity x Motor Size		kW	1 x 1.7	1 x 1.7
Speed @25Pa / Maximum ESP		rpm	1440 / 1800	1575 / 1800
Maximum ESP		Pa	412	286
Nominal Airflow		m³/s	1.6	1.8
Fan Gain	(2)	kW	0.75	0.98
Compressor – Scroll				
Configuration – X100			Single Circuit – Single Compressors	
Quantity – X100			1	1
Oil Charge Volume – X100		l	1 x 1.7	1 x 1.8
Oil Type			POE	
Refrigeration			Single Circuit	
Refrigerant Control and Type			Electronic Expansion Valve	
Refrigerant type			R410A	
Holding Charge			Inert Gas	
Charge (per circuit)	(5)	kg	2.3	2.3
Connections				
Liquid (sweat)		in	1/2	1/2
Discharge (sweat)		in	5/8	5/8
Condensate Drain Hose		mm	22	22
Filtration			Disposable to BS EN 779-G4	
Quantity			4	4
Electric Heating (Total)		kW	7.5	7.5
Humidifier				
Capacity		kg/hr	3	3
Drain pump flow rate		l/m	7	7
Feed/Drain			3/4” BSPF Braided Flexible Hose / 19mm Hose Connection	
Hot Water Condensate Pump				
Head		m	10.8	10.8
Flow		l/m	5	5
Drain			10mm Stainless Steel Stub Connection	
Cold Water Condensate Pump				
Head		m	4	4
Flow		l/m	1.7	1.7
Drain			10mm Quarter Turn Plastic ‘Barb’ Connection	
Upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal Direct Drive	
Quantity x Motor Size	(4)	kW	1 x 3.6	1 x 3.6
Speed @ 25Pa / Maximum ESP		rpm	1444 / 2300	1577 / 2300
Maximum ESP		Pa	930	835
Fan Gain	(2)	kW	0.82	1.05

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.
(5) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/circuit)***

Downflow Fixed Speed

SC09D016 - SC09D019

Electrical Data

			SC09D016-X100-0	SC09D019-X100-0
Unit Data Full Function - X				
Nominal Run Amps	(1)	A	25.6	27.1
Maximum Start Amps		A	81.4	92.4
Recommended Mains Fuse Size		A	32	32
Unit Data Cooling Only - X				
Nominal Run Amps	(2)	A	14.8	16.2
Maximum Start Amps		A	70.5	81.5
Recommended Mains Fuse Size		A	20	20
Max Mains Incoming Cable Size		mm²	16	16
Mains Supply		V	400V / 3PH + N / 50HZ	
Control Circuit		VAC	24	24
Evaporator Fan - Motor Per Fan				
Motor Type			EC	EC
Quantity x Motor Size	(3)	kW	1 x 1.7	1 x 1.7
Full Load Amps			2.9	2.9
Locked Rotor Amps			2.9	2.9
Compressor - Per Compressor				
Quantity x Motor Size	(3)	kW	1 x 4.75	1 x 5.65
Nominal Run Amps		A	8.3	9.7
Locked Rotor Amps		A	64	75
Type of Start			Direct On Line	
Standard Condenser Match - AC Motor - Per Fan				
Quantity x Motor Size		kW	1 x 0.6	1 x 0.6
Full Load Amps		A	2.62	2.62
OPTIONAL EXTRAS				
Electric Heating				
Stage of Reheat			1	1
Number of Elements			3	3
Rating		kW	7.5	7.5
Current per Phase		A	10.83	10.83
Humidifier				
Capacity		kg/hr	3	3
Rating		kW	2.25	2.25
Full Load Amps		A	3.3	3.3
First upgrade EC Motor - Per Fan				
Quantity x Motor Size	(3)	kW	1 x 3.6	1 x 3.6
Full Load Amps		A	5.8	5.8
Locked Rotor Amps		A	5.8	5.8
Standard Condenser Motor - EC Motor - Per Fan				
Quantity x Motor Size		kW	1 x 0.73	1 x 0.73
Full Load Amps		A	3.3	3.3

(1) Values given for function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Fixed Speed SC09D023 - SC09D026

Mechanical Data

			SC09D023-X100-0	SC09D026-X100-0
Standard Condenser Match			1 x CR50	1 x CR50
Capacity				
Nom Cooling (Gross) –	(1)	kW	23.72	26.24
Capacity Steps			1	1
Dimensions – W x D x H		mm	900 x 890 x 1980	900 x 890 x 1980
Weight – Machine / Operating	(3)	kg	310 / 320	330 / 340
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)	
Material/Colour			Frame: Anodised Aluminium Frame with aluminium corners, Epoxy baked Powder Coated Paint - Black Grey (RAL 7021).	
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins	
Cooling/Dehum Stages			1 / 1	1 / 1
Fan Motor			Backwards Curved, Centrifugal Direct Drive	
Motor Type			EC	EC
Quantity x Motor Size	(4)	kW	1 x 1.7	1 x 1.7
Speed @25Pa / Maximum ESP		rpm	1632 / 1800	1632 / 1800
Maximum ESP		Pa	226	226
Nominal Airflow		m³/s	1.9	1.9
Fan Gain	(2)	kW	1.09	1.09
Compressor – Scroll				
Configuration – X100			Single Circuit – Single Compressors	
Quantity – X100			1	1
Oil Charge Volume – X100		l	1 x 1.8	1 x 1.8
Oil Type			POE	
Refrigeration			Single Circuit	
Refrigerant Control and Type			Electronic Expansion Valve	
Refrigerant Type			R410A	
Holding Charge			Inert Gas	
Charge (per circuit)	(5)	kg	2.3	2.4
Connections				
Liquid (sweat)		in	1/2	1/2
Discharge (sweat)		in	3/4	3/4
Condensate Drain Hose		mm	22	22
Filtration			Disposable to BS EN 779-G4	
Quantity			4	4
Electric Heating (Total)		kW	7.5	7.5
Humidifier				
Capacity		kg/hr	3	3
Drain pump flow rate		l/m	7	7
Feed/Drain			3/4" BSPF Braided Flexible Hose / 19mm Hose Connection	
Hot Water Condensate Pump				
Head		m	10.8	10.8
Flow		l/m	5	5
Drain			10mm Stainless steel Stub Connection	
Cold Water Condensate Pump				
Head		m	4	4
Flow		l/m	1.7	1.7
Drain			10mm Quarter Turn Plastic 'Barb' Connection	
Upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal Direct Drive	
Quantity x Motor Size	(4)	kW	1 x 3.6	1 x 3.6
Speed @ 25Pa / Maximum ESP		rpm	1634 / 2300	1634 / 2300
Maximum ESP		Pa	792	792
Fan Gain	(2)	kW	1.15	1.15

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.
(5) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/circuit)***

Downflow Fixed Speed

SC09D023 - SC09D026

Electrical Data

			SC09D023-X100-0	SC09D026-X100-0
Unit Data Full Function - X				
Nominal Run Amps	(1)	A	32.3	34.3
Maximum Start Amps		A	121	131
Recommended Mains Fuse Size		A	40	40
Unit Data Cooling Only - X				
Nominal Run Amps	(2)	A	21.5	23.5
Maximum Start Amps		A	110.1	120
Recommended Mains Fuse Size		A	25	32
Max Mains Incoming Cable Size		mm²	35	35
Mains Supply		V	400V / 3PH + N / 50HZ	
Control Circuit		VAC	24	24
Evaporator Fan - Motor Per Fan				
Motor Type			EC	EC
Quantity x Motor Size	(3)	kW	1 x 1.7	1 x 1.7
Full Load Amps			2.9	2.9
Locked Rotor Amps			2.9	2.9
Compressor - Per Compressor				
Quantity x Motor Size	(3)	kW	1 x 12.3	1 x 7.8
Nominal Run Amps		A	6.8	14.4
Locked Rotor Amps		A	101	111
Type of Start			Direct On Line	
Standard Condenser Match - AC Motor - Per Fan				
Quantity x Motor Size		kW	2 x 0.6	2 x 0.6
Full Load Amps		A	2.62	2.62
OPTIONAL EXTRAS				
Electric Heating				
Stage of Reheat			1	1
Number of Elements			3	3
Rating		kW	7.5	7.5
Current per Phase		A	10.83	10.83
Humidifier				
Capacity		kg/hr	3	3
Rating		kW	2.25	2.25
Full Load Amps		A	3.3	3.3
First upgrade EC Motor - Per Fan				
Quantity x Motor Size	(3)	kW	1 x 3.6	1 x 3.6
Full Load Amps		A	5.8	5.8
Locked Rotor Amps		A	5.8	5.8
Standard Condenser Motor - EC Motor - Per Fan				
Quantity x Motor Size		kW	2 x 0.73	2 x 0.73
Full Load Amps		A	3.3	3.3

(1) Values given for function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Fixed Speed

SC12D020-X200-0, SC12D023-X200-0, SC12D029-X200-0

Mechanical Data

			SC12D020-X200-0	SC12D023-X200-0	SC12D029-X200-0
Standard Condenser Match			1 x CR30	1 x CR50	1 x CR50
Capacity					
Nom Cooling (Gross)	(1)	kW	21.74	27.82	30.82
Capacity Steps			2	2	2
Dimensions – W x D x H		mm	1200 x 890 x 1980	1200 x 890 x 1980	1200 x 890 x 1980
Weight – Machine / Operating	(3)	kg	390 / 400	400 / 400	410 / 420
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with aluminium corners, Epoxy baked Powder Coated Paint - Black Grey (RAL 7021).		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2 / 2	2 / 2	2 / 2
Fan Motor			Backwards Curved, Centrifugal Direct Drive		
Motor Type			EC	EC	EC
Quantity x Motor Size	(4)	kW	1 x 1.5	1 x 3.1	1 x 3.1
Speed @25Pa / Maximum ESP		rpm	940 / 1230	1120 / 1560	1210 / 1560
Maximum ESP		Pa	290	540	460
Nominal Airflow		m³/s	1.7	2.1	2.3
Fan Power Input (Fan Gain)	(2)	kW	0.58	0.98	1.23
Compressor – Scroll					
Configuration			Single Circuit – Tandem Compressors		
Quantity			2	2	2
Oil Charge Volume		l	2 x 1.2	2 x 1.2	2 x 1.7
Oil Type			POE		
Refrigeration			Single Circuit		
Refrigerant Control and Type			Electronic Expansion Valve		
Refrigerant Type			R410A		
Holding Charge			Inert Gas		
Charge (per circuit)	(5)	kg	2.9	2.9	3
Connections					
Liquid (sweat)		in	1/2	1/2	1/2
Discharge (sweat)		in	5/8	5/8	7/8
Condensate Drain Hose		mm	22	22	22
Filtration			Disposable to BS EN 779-G4		
Quantity			6	6	6
Electric Heating (Total)		kW	7.5	7.5	**7.5**
Humidifier					
Capacity		kg/hr	3	3	8
Drain Pump Flow Rate		l/m	7	7	7
Feed / Drain			3/4" BSPF Braided Flexible Hose / 19mm Hose Connection		
Hot Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	10.8	10.8	10.8
Drain			10mm Stainless Steel Stub Connection		
Cold Water Condensate Pump					
Head		m	4	4	4
Flow		l/m	1.7	1.7	1.7
Drain			10mm Quarter Turn Plastic 'Barb' Connection		
Upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal Direct Drive		
Quantity x Motor Size	(4)	kW	1 x 3.1	1 x 3.5	1 x 3.5
Speed @ 25Pa / Maximum ESP		rpm	940/ 1560	1130 / 1620	1220 / 1620
Maximum ESP		Pa	670	630	550
Fan Power Input (Fan Gain)	(2)	kW	0.59	1.04	1.31

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.
(5) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/circuit)***

Downflow Fixed Speed

SC12D020-X200-0, Sc12D023-X200-0, SC12D029-X200-0

Electrical Data

			SC12D020-X200-0	SC12D023-X200-0	SC12D029-X200-0
Unit Data Full Function - X					
Nominal Run Amps	(1)	A	22.7	29.2	36.5
Maximum Start Amps		A	60.1	74.1	92.2
Recommended Mains Fuse Size		A	32	40	50
Unit Data Cooling Only - X					
Nominal Run Amps	(2)	A	17.4	25.4	27.8
Maximum Start Amps		A	54.8	70.3	83.5
Recommended Mains Fuse Size		A	20	32	32
Max Mains Incoming Cable Size		mm²	16	35	35
Mains Supply		V		400V / 3PH + N / 50HZ	
Control Circuit		VAC	24	24	24
Evaporator Fan - Motor Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(3)	kW	1 x 1.5	1 x 3.1	1 x 3.1
Full Load Amps			2.6	5	5
Locked Rotor Amps			2.6	5	5
Compressor - Per Compressor					
Quantity x Motor Size	(3)	kW	2 x 3.31	2 x 4.21	2 x 4.75
Nominal Run Amps		A	5.6	7.09	8.29
Locked Rotor Amps		A	43	52	64
Type of Start				Direct On Line	
Standard Condenser Match - AC Motor - Per Fan					
Quantity x Motor Size		kW	1 x 0.6	2 x 0.6	2 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			1	1	1
Number of Elements			3	3	3
Rating		kW	7.5	7.5	7.5
Current per Phase		A	10.83	10.83	10.83
Humidifier					
Capacity		kg/hr	3	3	8
Rating		kW	2.25	2.25	6
Full Load Amps		A	3.3	3.3	8.7
First upgrade EC Motor - Per Fan					
Quantity x Motor Size	(3)	kW	1 x 3.1	1 x 3.5	1 x 3.5
Full Load Amps		A	5.0	5.7	5.7
Locked Rotor Amps		A	5.0	5.7	5.7
Standard Condenser Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	1 x 0.73	2 x 0.73	2 x 0.73
Full Load Amps		A	3.3	3.3	3.3

(1) Values given for function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Fixed Speed SC12D033-X200-0, SC12D036-X200-0

Mechanical Data

			SC12D033-X200-0	SC12D036-X200-0
Standard Condenser Match			1 x CR65	1 x CR65
Capacity				
Nom Cooling (Gross)	(1)	kW	36.04	39.88
Capacity Steps			2	2
Dimensions – W x D x H		mm	1200 x 890 x 1980	1200 x 890 x 1980
Weight – Machine / Operating	(3)	kg	410 / 420	410 / 420
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)	
Material / Colour			Frame: Anodised Aluminium Frame with aluminium corners, Epoxy baked Powder Coated Paint - Black Grey (RAL 7021).	
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins	
Cooling/Dehum Stages			2 / 2	2 / 2
Fan Motor			Backwards Curved, Centrifugal Direct Drive	
Motor Type			EC	EC
Quantity x Motor Size	(4)	kW	1 x 3.1	1 x 3.1
Speed @25Pa / Maximum ESP		rpm	1300 / 1560	1300 / 1560
Maximum ESP		Pa	360	360
Nominal Airflow		m³/s	2.5	2.5
Fan Power Input (Fan Gain)	(2)	kW	1.53	1.53
Compressor – Scroll				
Configuration			Single Circuit – Tandem Compressors	
Quantity			2	2
Oil Charge Volume		l	2 x 1.8	2 x 1.8
Oil Type			POE	
Refrigeration			Single Circuit	
Refrigerant Control and Type			Electronic Expansion Valve	
Refrigerant Type			R410A	
Holding Charge			Inert Gas	
Charge (per circuit)	(5)	kg	3.2	3.2
Connections				
Liquid (sweat)		in	5/8	5/8
Discharge (sweat)		in	7/8	7/8
Condensate Drain Hose		mm	22	22
Filtration			Disposable to BS EN 779-G4	
Quantity			6	6
Electric Heating (Total)		kW	7.5	7.5
Humidifier				
Capacity		kg/hr	8	8
Drain Pump Flow Rate		l/m	7	7
Feed / Drain			3/4" BSPF Braided Flexible Hose / 19mm Hose Connection	
Hot Water Condensate Pump				
Head		m	5	5
Flow		l/m	10.8	10.8
Drain			10mm Stainless Steel Stub Connection	
Cold Water Condensate Pump				
Head		m	4	4
Flow		l/m	1.7	1.7
Drain			10mm Quarter Turn Plastic 'Barb' Connection	
Upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal Direct Drive	
Quantity x Motor Size	(4)	kW	1 x 3.5	1 x 3.5
Speed @ 25Pa / Maximum ESP		rpm	1320 / 1620	1320 / 1620
Maximum ESP		Pa	450	450
Fan Power Input (Fan Gain)	(2)	kW	1.61	1.61

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.
(5) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/circuit)***

Downflow Fixed Speed SC12D033-X200-0, SC12D036-X200-0

Electrical Data

			SC12D033-X200-0	SC12D036-X200-0
Unit Data Full Function - X				
Nominal Run Amps	(1)	A	39.4	43.4
Maximum Start Amps		A	104.7	132.7
Recommended Mains Fuse Size		A	50	50
Unit Data Cooling Only - X				
Nominal Run Amps	(2)	A	30.7	34.7
Maximum Start Amps		A	96	124
Recommended Mains Fuse Size		A	40	40
Max Mains Incoming Cable Size		mm²	35	35
Mains Supply		V	400V / 3PH + N / 50HZ	
Control Circuit		VAC	24	24
Evaporator Fan - Motor Per Fan				
Motor Type			EC	EC
Quantity x Motor Size	(3)	kW	1 x 3.1	1 x 3.1
Full Load Amps			5	5
Locked Rotor Amps			5	5
Compressor - Per Compressor				
Quantity x Motor Size		kW	2 x 5.65	2 x 6.42
Nominal Run Amps		A	9.72	11.74
Locked Rotor Amps		A	75	101
Type of Start			Direct On Line	
Standard Condenser Match - AC Motor - Per Fan				
Quantity x Motor Size		kW	2 x 0.6	2 x 0.6
Full Load Amps		A	2.62	2.62
OPTIONAL EXTRAS				
Electric Heating				
Stage of Reheat			1	1
Number of Elements			3	3
Rating		kW	7.5	7.5
Current per Phase		A	10.83	10.83
Humidifier				
Capacity		kg/hr	8	8
Rating		kW	6	6
Full Load Amps		A	8.7	8.7
First upgrade EC Motor - Per Fan				
Quantity x Motor Size	(3)	kW	1 x 3.5	1 x 3.5
Full Load Amps		A	5.7	5.7
Locked Rotor Amps		A	5.7	5.7
Standard Condenser Motor - EC Motor - Per Fan				
Quantity x Motor Size		kW	2 x 0.73	2 x 0.73
Full Load Amps		A	3.3	3.3

(1) Values given for function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Fixed Speed

SC15D027-X200-0, SC15D030-X200-0, SC15D035-X200-0

Mechanical Data

			SC15D027-X200-0	SC15D030-X200-0	SC15D035-X200-0
Standard Condenser Match			1 x CR30	1 x CR50	1 x CR50
Capacity					
Nom Cooling (Gross)	(1)	kW	27.53	32.84	37.47
Capacity Steps			2	2	2
Dimensions – W x D x H		mm	1500 x 890 x 1980	1500 x 890 x 1980	1500 x 890 x 1980
Weight – Machine / Operating	(3)	kg	460 / 460	470 / 470	470 / 470
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with aluminium corners, Epoxy baked Powder Coated Paint - Black Grey (RAL 7021).		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2 / 2	2 / 2	2 / 2
Fan Motor			Backwards Curved, Centrifugal Direct Drive		
Motor Type			EC	EC	EC
Quantity x Motor Size	(4)	kW	2 x 1.7	2 x 1.7	2 x 1.7
Speed @25Pa / Maximum ESP		rpm	1160 / 1770	1330 / 1770	1540 / 1770
Maximum ESP		Pa	610	500	320
Nominal Airflow		m³/s	2.4	2.8	3.3
Fan Power Input (Fan Gain)	(2)	kW	0.88	1.28	1.97
Compressor – Scroll					
Configuration			Single Circuit – Tandem Compressors		
Quantity			2	2	2
Oil Charge Volume		l	2 x 1.2	2 x 1.7	2 x 1.8
Oil Type			POE		
Refrigeration			Single Circuit		
Refrigerant Control and Type			Electronic Expansion Valve		
Refrigerant Type			R410A		
Holding Charge			Inert Gas		
Charge (per circuit)	(5)	kg	3.7	3.8	4.0
Connections					
Liquid (sweat)		in	1/2	1/2	5/8
Discharge (sweat)		in	5/8	7/8	7/8
Condensate Drain Hose		mm	22	22	22
Filtration			Disposable to BS EN 779-G4		
Quantity			6	6	6
Electric Heating (Total)		kW	15	15	15
Humidifier					
Capacity		kg/hr	3	3	3
Drain Pump Flow Rate		l/m	7	7	7
Feed / Drain			3/4" BSPF Braided Flexible Hose / 19mm Hose Connection		
Hot Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	10.8	10.8	10.8
Drain			10mm Stainless Steel Stub Connection		
Cold Water Condensate Pump					
Head		m	4	4	4
Flow		l/m	1.7	1.7	1.7
Drain			10mm Quarter Turn Plastic 'Barb' Connection		
Upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal Direct Drive		
Quantity x Motor Size	(4)	kW	2 x 3.6	2 x 3.6	2 x 3.6
Speed @ 25Pa / Maximum ESP		rpm	1170 / 2300	1340 / 2300	1550 / 2300
Maximum ESP		Pa	1070	970	820
Fan Power Input (Fan Gain)	(2)	kW	1.00	1.41	2.12

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.
(5) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/circuit)***

Downflow Fixed Speed

SC15D027-X200-0, SC15D030-X200-0, SC15D035-X200-0

Electrical Data

			SC15D027-X200-0	SC15D030-X200-0	SC15D035-X200-0
Unit Data Full Function - X					
Nominal Run Amps	(1)	A	38.2	42	43.4
Maximum Start Amps		A	83.1	97.7	108.7
Recommended Mains Fuse Size		A	50	50	50
Unit Data Cooling Only - X					
Nominal Run Amps	(2)	A	23.6	28.6	31.5
Maximum Start Amps		A	68.5	84.3	96.8
Recommended Mains Fuse Size		A	32	32	40
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50HZ	
Control Circuit		VAC	24	24	24
Evaporator Fan - Motor Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(3)	kW	2 x 1.7	2 x 1.7	2 x 1.7
Full Load Amps			2.9	2.9	2.9
Locked Rotor Amps			2.9	2.9	2.9
Compressor - Per Compressor					
Quantity x Motor Size		kW	2 x 4.21	2 x 4.75	2 x 5.65
Nominal Run Amps		A	7.09	8.29	9.72
Locked Rotor Amps		A	52	64	75
Type of Start				Direct On Line	
Standard Condenser Match - AC Motor - Per Fan					
Quantity x Motor Size		kW	1 x 0.6	2 x 0.6	2 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			2	2	2
Number of Elements			6	6	6
Rating		kW	15	15	15
Current per Phase		A	21.65	21.65	21.65
Humidifier					
Capacity		kg/hr	3	3	3
Rating		kW	2.25	2.25	2.25
Full Load Amps		A	3.3	3.3	3.3
First upgrade EC Motor - Per Fan					
Quantity x Motor Size	(3)	kW	2 x 3.6	2 x 3.6	2 x 3.6
Full Load Amps		A	5.8	5.8	5.8
Locked Rotor Amps		A	5.8	5.8	5.8
Standard Condenser Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	1 x 0.73	2 x 0.73	2 x 0.73
Full Load Amps		A	3.3	3.3	3.3

(1) Values given for function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Fixed Speed SC15D040-X200-0, SC15D044-X200-0

Mechanical Data

			SC15D040-X200-0	SC15D044-X200-0
Standard Condenser Match			1 x CR65	1 x CR80
Capacity				
Nom Cooling (Gross)	(1)	kW	42.30	45.39
Capacity Steps			2	2
Dimensions – W x D x H		mm	1500 x 890 x 1980	1500 x 890 x 1980
Weight – Machine / Operating	(3)	kg	470 / 470	470 / 480
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)	
Material/Colour			Frame: Anodised Aluminium Frame with aluminium corners, Epoxy baked Powder Coated Paint - Black Grey (RAL 7021).	
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins	
Cooling/Dehum Stages			2 / 2	2 / 2
Fan Motor			Backwards Curved, Centrifugal Direct Drive	
Motor Type			EC	EC
Quantity x Motor Size	(4)	kW	2 x 1.7	2 x 1.7
Speed @25Pa / Maximum ESP		rpm	1550 / 1770	1550 / 1770
Maximum ESP		Pa	300	300
Nominal Airflow		m³/s	3.3	3.3
Fan Power Input (Fan Gain)	(2)	kW	1.97	1.97
Compressor – Scroll				
Configuration			Twin Circuit – Single Compressors	
Quantity			2	2
Oil Charge Volume		l	2 x 1.8	2 x 1.8
Oil Type			POE	
Refrigeration			Twin Circuit	
Refrigerant Control and Type			Electronic Expansion Valve	
Refrigerant Type			R410A	
Holding Charge			Inert Gas	
Charge (per circuit)	(5)	kg	4.0	4.0
Connections				
Liquid (sweat)		in	5/8	5/8
Discharge (sweat)		in	7/8	7/8
Condensate Drain Hose		mm	22	22
Filtration			Disposable to BS EN 779-G4	
Quantity			6	6
Electric Heating (Total)		kW	15	15
Humidifier				
Capacity		kg/hr	8	8
Drain Pump Flow Rate		l/m	7	7
Feed / Drain			3/4" BSPF Braided Flexible Hose / 19mm Hose Connection	
Hot Water Condensate Pump				
Head		m	5	5
Flow		l/m	10.8	10.8
Drain			10mm Stainless Steel Stub Connection	
Cold Water Condensate Pump				
Head		m	4	4
Flow		l/m	1.7	1.7
Drain			10mm Quarter Turn Plastic 'Barb' Connection	
Upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal Direct Drive	
Quantity x Motor Size	(4)	kW	2 x 3.6	2 x 3.6
Speed @ 25Pa / Maximum ESP		rpm	1550 / 2300	1550 / 2300
Maximum ESP		Pa	820	820
Fan Power Input (Fan Gain)	(2)	kW	2.12	2.12

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.
(5) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/circuit)***

Downflow Fixed Speed SC15D040-X200-0, SC15D044-X200-0

Electrical Data

			SC15D040-X200-0	SC15D044-X200-0
Unit Data Full Function - X				
Nominal Run Amps	(1)	A	45.4	54.4
Maximum Start Amps		A	134.7	143.1
Recommended Mains Fuse Size		A	63	63
Unit Data Cooling Only - X				
Nominal Run Amps	(2)	A	35.5	45.1
Maximum Start Amps		A	124.8	133.8
Recommended Mains Fuse Size		A	40	63
Max Mains Incoming Cable Size		mm²	35	35
Mains Supply		V	400V / 3PH + N / 50HZ	
Control Circuit		VAC	24	24
Evaporator Fan - Motor Per Fan				
Motor Type			EC	EC
Quantity x Motor Size	(3)	kW	2 x 1.7	2 x 3.6
Full Load Amps			2.9	5.8
Locked Rotor Amps			2.9	5.8
Compressor - Per Compressor				
Quantity x Motor Size		kW	2 x 6.42	2 x 6.79
Nominal Run Amps		A	11.74	12.33
Locked Rotor Amps		A	101	101
Type of Start			Direct On Line	
Standard Condenser Match - AC Motor - Per Fan				
Quantity x Motor Size		kW	2 x 0.6	3 x 0.6
Full Load Amps		A	2.62	2.62
OPTIONAL EXTRAS				
Electric Heating				
Stage of Reheat			2	2
Number of Elements			6	6
Rating		kW	15	15
Current per Phase		A	21.65	21.65
Humidifier				
Capacity		kg/hr	8	8
Rating		kW	6	6
Full Load Amps		A	8.7	8.7
First upgrade EC Motor - Per Fan				
Quantity x Motor Size	(3)	kW	2 x 3.6	N/A
Full Load Amps		A	5.8	N/A
Locked Rotor Amps		A	5.8	N/A
Standard Condenser Motor - EC Motor - Per Fan				
Quantity x Motor Size		kW	2 x 0.73	3 x 0.73
Full Load Amps		A	3.3	3.3

(1) Values given for function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Fixed Speed

SC18D037-X200-0, SC18D040-X200-0, SC18D044-X200-0

Mechanical Data

			SC18D037-X200-0	SC18D040-X200-0	SC18D044-X200-0
Standard Condenser Match			1 x CR50	1 x CR50	1 x CR65
Capacity					
Nom Cooling (Gross)	(1)	kW	37.77	42.17	47.02
Capacity Steps			2	2	2
Dimensions – W x D x H		mm	1800 x 890 x 1980	1800 x 890 x 1980	1800 x 890 x 1980
Weight – Machine / Operating	(3)	kg	520 / 530	520 / 530	530 / 530
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with aluminium corners, Epoxy baked Powder Coated Paint - Black Grey (RAL 7021).		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2 / 2	2 / 2	2 / 2
Fan Motor			Backwards Curved, Centrifugal Direct Drive		
Motor Type			EC	EC	EC
Quantity x Motor Size	(4)	kW	2 x 1.5	2 x 1.5	2 x 3.1
Speed @25Pa / Maximum ESP		rpm	1020 / 1230	1100 / 1230	1210 / 1560
Maximum ESP		Pa	220	150	440
Nominal Airflow		m³/s	3.3	3.6	4
Fan Power Input (Fan Gain)	(2)	kW	1.53	1.90	2.53
Compressor – Scroll					
Configuration			Single Circuit – Tandem Compressors		
Quantity			2	2	2
Oil Charge Volume		l	2 x 1.8	2 x 1.8	2 x 1.8
Oil Type			POE		
Refrigeration			Single Circuit		
Refrigerant Control and Type			Electronic Expansion Valve		
Refrigerant Type			R410A		
Holding Charge			Inert Gas		
Charge (per circuit)	(5)	kg	4.8	4.8	4.8
Connections					
Liquid (sweat)		in	5/8	5/8	5/8
Discharge (sweat)		in	7/8	7/8	7/8
Condensate Drain Hose		mm	22	22	22
Filtration			Disposable to BS EN 779-G4		
Quantity			8	8	8
Electric Heating (Total)		kW	15	15	15
Humidifier					
Capacity		kg/hr	8	8	8
Drain Pump Flow Rate		l/m	7	7	7
Feed / Drain			3/4" BSPF Braided Flexible Hose / 19mm Hose Connection		
Hot Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	10.8	10.8	10.8
Drain			10mm Stainless Steel Stub Connection		
Cold Water Condensate Pump					
Head		m	4	4	4
Flow		l/m	1.7	1.7	1.7
Drain			10mm Quarter Turn Plastic 'Barb' Connection		
Upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal Direct Drive		
Quantity x Motor Size	(4)	kW	2 x 3.1	2 x 3.1	2 x 3.5
Speed @ 25Pa / Maximum ESP		rpm	1020 / 1560	1100 / 1560	1210 / 1620
Maximum ESP		Pa	590	530	530
Fan Power Input (Fan Gain)	(2)	kW	1.53	1.92	2.64

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.
(5) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/circuit)***

Downflow Fixed Speed

SC18D037-X200-0, SC18D040-X200-0, SC18D044-X200-0

Electrical Data

			SC18D037-X200-0	SC18D040-X200-0	SC18D044-X200-0
Unit Data Full Function - X					
Nominal Run Amps	(1)	A	42.8	44.8	45.4
Maximum Start Amps		A	108.1	134.1	134.1
Recommended Mains Fuse Size		A	50	50	63
Unit Data Cooling Only - X					
Nominal Run Amps	(2)	A	30.9	34.9	36.1
Maximum Start Amps		A	96.2	124.2	124.8
Recommended Mains Fuse Size		A	40	40	50
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50HZ	
Control Circuit		VAC	24	24	24
Evaporator Fan - Motor Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(3)	kW	2 x 1.5	2 x 1.5	2 x 1.5
Full Load Amps			2.6	2.6	2.6
Locked Rotor Amps			2.6	2.6	2.6
Compressor - Per Compressor					
Quantity x Motor Size		kW	2 x 5.65	2 x 6.42	2 x 6.79
Nominal Run Amps		A	9.72	11.74	12.33
Locked Rotor Amps		A	75	101	101
Type of Start				Direct On Line	
Standard Condenser Match - AC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 0.6	2 x 0.6	2 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			2	2	2
Number of Elements			6	6	6
Rating		kW	15	15	15
Current per Phase		A	21.65	21.65	21.65
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	8.7	8.7	8.7
First upgrade EC Motor - Per Fan					
Quantity x Motor Size	(3)	kW	2 x 3.1	2 x 3.1	2 x 3.1
Full Load Amps		A	5.0	5.0	5.0
Locked Rotor Amps		A	5.0	5.0	5.0
Standard Condenser Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 0.73	2 x 0.73	2 x 0.73
Full Load Amps		A	3.3	3.3	3.3

(1) Values given for function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Fixed Speed SC18D048-X1X1-0, SC18D055-X1X1-0

Mechanical Data

			SC18D048-X1X1-0	SC18D055-X1X1-0
Standard Condenser Match			2 x CR50	2 x CR50
Capacity				
Nom Cooling (Gross)	(1)	kW	53.67	60.04
Capacity Steps			2	2
Dimensions – W x D x H		mm	1800 x 890 x 1980	1800 x 890 x 1980
Weight – Machine / Operating	(3)	kg	560 / 570	570 / 580
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021) Frame: Anodised Aluminium Frame with aluminium corners, Epoxy	
Material/Colour			baked Powder Coated Paint - Black Grey (RAL 7021).	
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins	
Cooling/Dehum Stages			2 / 2	2 / 2
Fan Motor			Backwards Curved, Centrifugal direct drive	
Motor Type			EC	EC
Quantity x Motor Size	(4)	kW	2 x 3.1	2 x 3.1
Speed @25Pa / Maximum ESP		rpm	1230 / 1560	1320 / 1560
Maximum ESP		Pa	410	410
Nominal Airflow		m³/s	4.1	4.1
Fan Power Input (Fan Gain)	(2)	kW	2.70	2.70
Compressor – Scroll				
Configuration			Twin Circuit – Single Compressors	
Quantity			2	2
Oil Charge Volume		l	2 x 3.2	2 x 3.2
Oil Type			POE	
Refrigeration			Twin Circuit	
Refrigerant Control and Type			Electronic Expansion Valve	
Refrigerant Type			R410A	
Holding Charge			Inert Gas	
Charge (per circuit)	(5)	kg	4.8	4.8
Connections				
Liquid (sweat)		in	5/8	5/8
Discharge (sweat)		in	7/8	7/8
Condensate Drain Hose		mm	22	22
Filtration			Disposable to BS EN 779-G4	
Quantity			8	8
Electric Heating (Total)		kW	15	15
Humidifier				
Capacity		kg/hr	8	8
Drain Pump Flow Rate		l/m	7	7
Feed / Drain			3/4" BSPF Braided Flexible Hose / 19mm Hose Connection	
Hot Water Condensate Pump				
Head		m	5	5
Flow		l/m	10.8	10.8
Drain			10mm Stainless Steel Stub Connection	
Cold Water Condensate Pump				
Head		m	4	4
Flow		l/m	1.7	1.7
Drain			10mm Quarter Turn Plastic 'Barb' Connection	
Upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal Direct Drive	
Quantity x Motor Size	(4)	kW	2 x 3.5	2 x 3.5
Speed @ 25Pa / Maximum ESP		rpm	1240 / 1620	1240 / 1620
Maximum ESP		Pa	500	500
Fan Power Input (Fan Gain)	(2)	kW	2.82	2.82

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.
(5) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/circuit)***

Downflow Fixed Speed

SC18D048-X1X1-0, SC15D055-X1X1-0

Electrical Data

			SC18D048-X1X1-0	SC18D055-X1X1-0
Unit Data Full Function - X				
Nominal Run Amps	(1)	A	53.7	58.1
Maximum Start Amps		A	150.3	159.5
Recommended Mains Fuse Size		A	63	80
Unit Data Cooling Only - X				
Nominal Run Amps	(2)	A	45	49.4
Maximum Start Amps		A	141.6	150.8
Recommended Mains Fuse Size		A	50	63
Max Mains Incoming Cable Size		mm²	35	35
Mains Supply		V	400V / 3PH + N / 50HZ	
Control Circuit		VAC	24	24
Evaporator Fan - Motor Per Fan				
Motor Type	(3)	kW	EC	EC
Quantity x Motor Size			2 x 3.1	2 x 3.1
Full Load Amps			5	5
Locked Rotor Amps			5	5
Compressor - Per Compressor				
Quantity x Motor Size		kW	2 x 7.82	2 x 9.11
Nominal Run Amps		A	14.37	16.58
Locked Rotor Amps		A	118	118
Type of Start			Direct On Line	
Standard Condenser Match - AC Motor - Per Fan				
Quantity x Motor Size		kW	2 x 0.6	2 x 0.6
Full Load Amps		A	2.62	2.62
OPTIONAL EXTRAS				
Electric Heating				
Stage of Reheat			2	2
Number of Elements			6	6
Rating		kW	15	15
Current per Phase		A	21.65	21.65
Humidifier				
Capacity		kg/hr	8	8
Rating		kW	6	6
Full Load Amps		A	8.7	8.7
First upgrade EC Motor - Per Fan				
Quantity x Motor Size	(3)	kW	2 x 3.5	2 x 3.5
Full Load Amps		A	5.7	5.7
Locked Rotor Amps		A	5.7	5.7
Standard Condenser Motor - EC Motor - Per Fan				
Quantity x Motor Size		kW	2 x 0.73	2 x 0.73
Full Load Amps		A	3.3	3.3

(1) Values given for function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Interconnecting Wiring **X1X1**

Single Phase AC Condensers CR12, 16,22,30,50 and 65 Models

Fan Speed Control fitted to indoor unit (With sub-fusing supplied)

INDOOR UNIT		L4	O	←	L1	Mains Incoming Supply - Primary 400V / 3PH + N / 50Hz							
		L5	O	←	L2								
		L6	O	←	L3								
		N1	O	←	N								
		PE	O	←	PE								
		L7	O	←	L1	Mains Incoming Supply - Secondary 400V / 3PH + N / 50Hz (Only applicable for Dual Power Supply Option)							
		L8	O	←	L2								
		L9	O	←	L3								
		N2	O	←	N								
		PE	O	←	PE								
CIRCUIT 1		220	O	→		Mains Supply to Outdoor Unit 1			→	O	200	**OUTDOOR UNIT 1**	
		N3	O	→					→	O	N		
		PE	O	→					→	O	PE		
CIRCUIT 2		223	O	→		Mains Supply to Outdoor Unit 2			→	O	200	**OUTDOOR UNIT 2**	
		N4	O	→					→	O	N		
		PE	O	→					→	O	PE		

Single Phase EC Condensers CR12, 16, 22, 30 50 and 65 Models

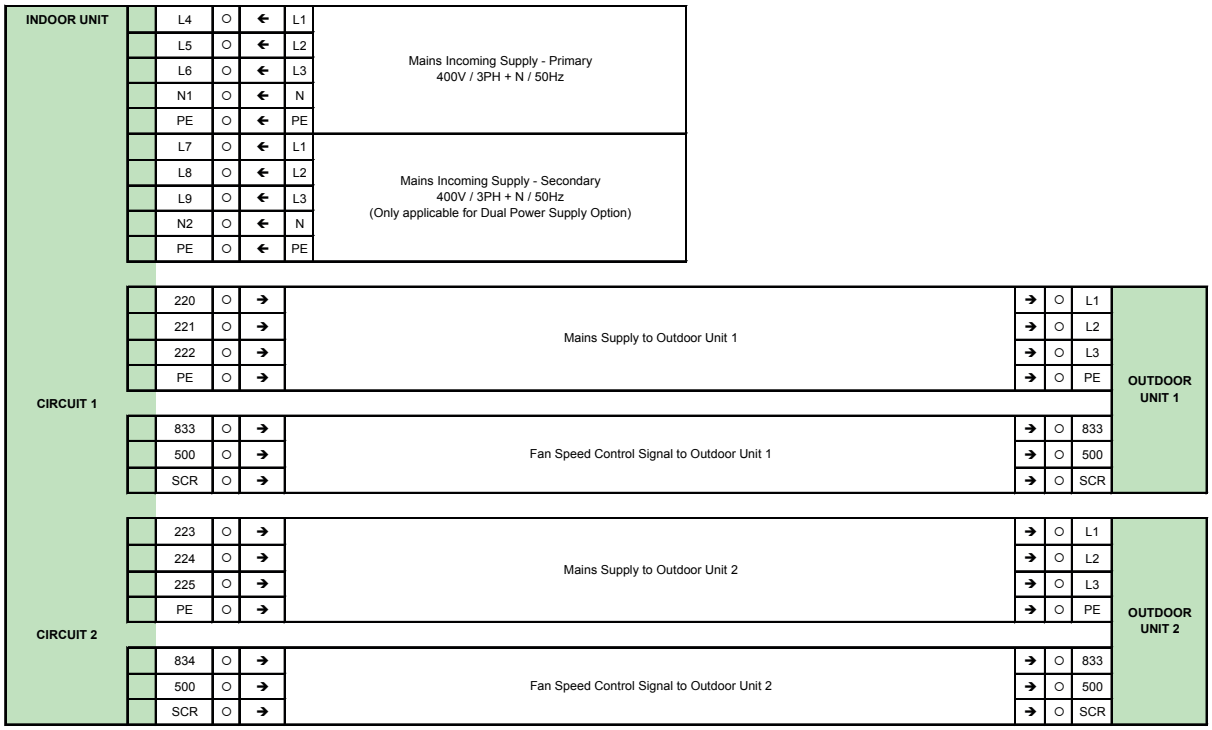
Fan speed control fitted to outdoor unit (With Sub-fusing supplied)

INDOOR UNIT		L4	O	←	L1	Mains Incoming Supply - Primary 400V / 3PH + N / 50Hz							
		L5	O	←	L2								
		L6	O	←	L3								
		N1	O	←	N								
		PE	O	←	PE								
		L7	O	←	L1	Mains Incoming Supply - Secondary 400V / 3PH + N / 50Hz (Only applicable for Dual Power Supply Option)							
		L8	O	←	L2								
		L9	O	←	L3								
		N2	O	←	N								
		PE	O	←	PE								
CIRCUIT 1		220	O	→		Mains Supply to Outdoor Unit 1			→	O	200	**OUTDOOR UNIT 1**	
		N3	O	→					→	O	N		
		PE	O	→					→	O	PE		
		833	O	→		Fan Speed Control Signal to Outdoor Unit 1			→	O	833		
		500	O	→					→	O	500		
		SCR	O	→					→	O	SCR		
CIRCUIT 2		223	O	→		Mains Supply to Outdoor Unit 2			→	O	200	**OUTDOOR UNIT 2**	
		N4	O	→					→	O	N		
		PE	O	→					→	O	PE		
		834	O	→		Fan Speed Control Signal to Outdoor Unit 2			→	O	833		
		500	O	→					→	O	500		
		SCR	O	→					→	O	SCR		

Interconnecting Wiring X1X1

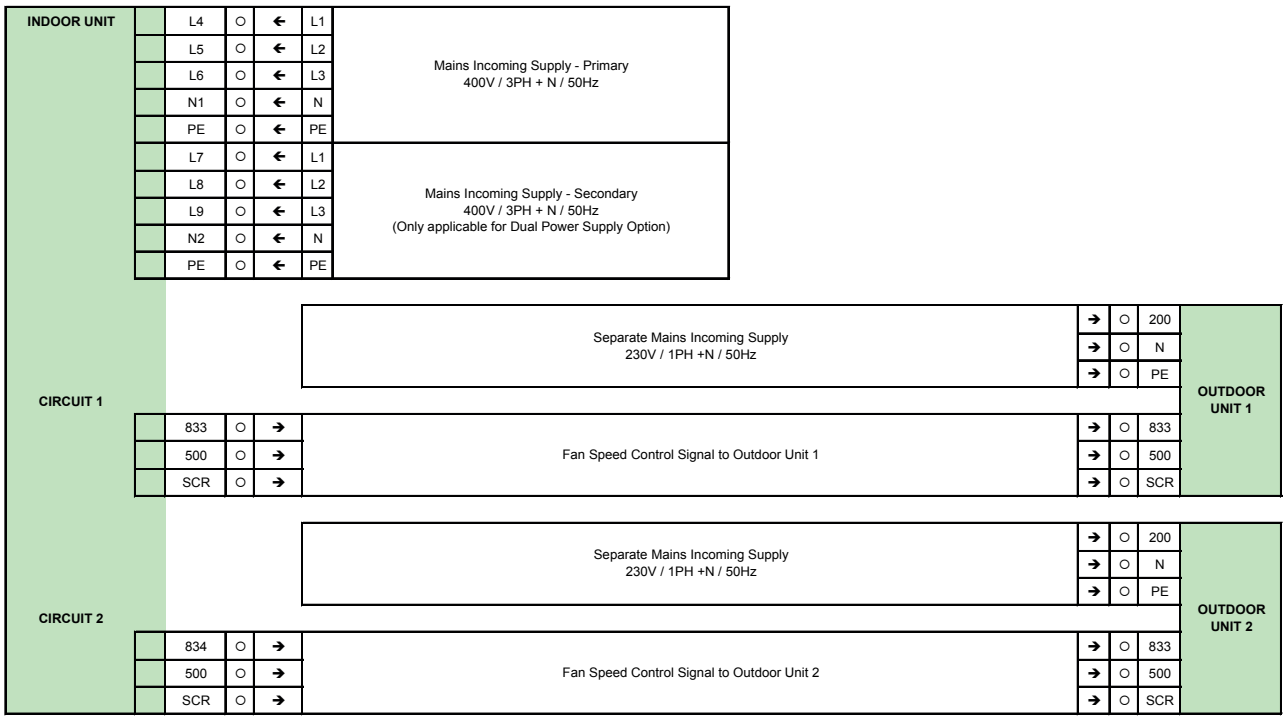
Three phase AC and EC Condensers CR 26, 35 and 60 Models

Fan speed control fitted to outdoor unit (With sub-fusing supplied)



Single phase SCAF Condensers CR12, 16, 22,30, 50 and 65 Models

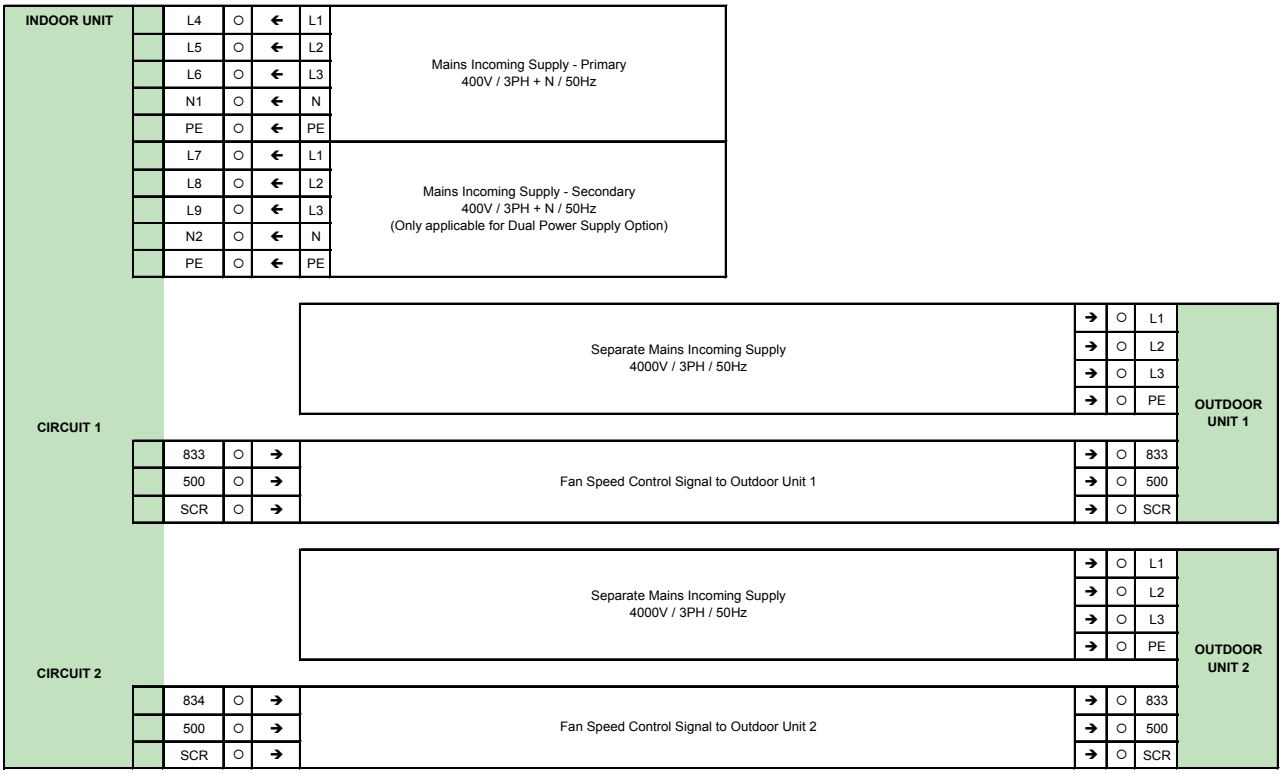
Fan Speed control fitted to outdoor unit (No sub-fusing supplied)



Interconnecting Wiring **X1X1**

Three phase SCAF Condensers CR26, 35, and 60 models

Fan speed control fitted to outdoor unit (No sub-fusing supplied)

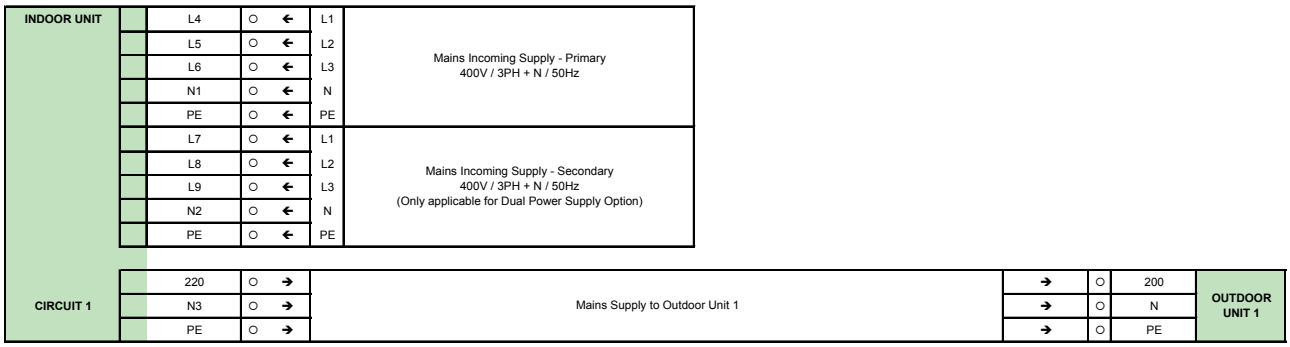


Remote On/Off	INDOOR UNIT	522 O ←	Remote On/Off
		502 O →	24Vac
Fire Shutdown		583 O ←	Fire Detection
		502 O →	24Vac
Alarm Volt Free Contacts		560 O →	Non-Critical Alarm Normally Open
		561 O ←	Common
		563 O →	Critical Alarm Normally Open
		564 O ←	Common
		565 O →	Critical Alarm Normally Closed
Run/Standby Network	INDOOR UNIT	Rx-Tx- O ←	Network Connections (Inward connection)
		Rx+Tx+ O ←	
		GND O ←	
		Rx-Tx- O →	Network Connections (Outward connection)
		Rx+Tx+ O →	
		GND O →	
BMS Connections	INDOOR UNIT	891 O ↔	Wired BMS Connection (ModBUS, BACNet, LON, RS485)
		892 O ↔	
		893 O ↔	
BMS Connections	INDOOR UNIT	N/A O ↔	BMS Network Connections (pCOWEB Ethernet)

Interconnecting Wiring **X100 / X200**

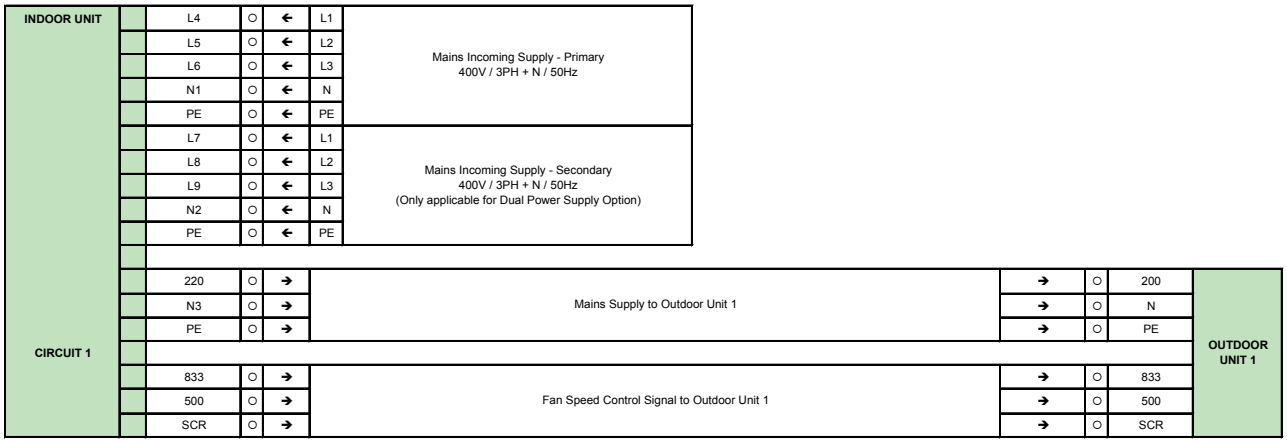
Single phase AC Condenser CR12, 16, 22, 30, 50, 65 and 80 Models

Fan speed control fitted to indoor unit (With sub-fusing supplied)



Single phase EC Condensers CR12, 16, 22, 30, 50, 65 and 80 models

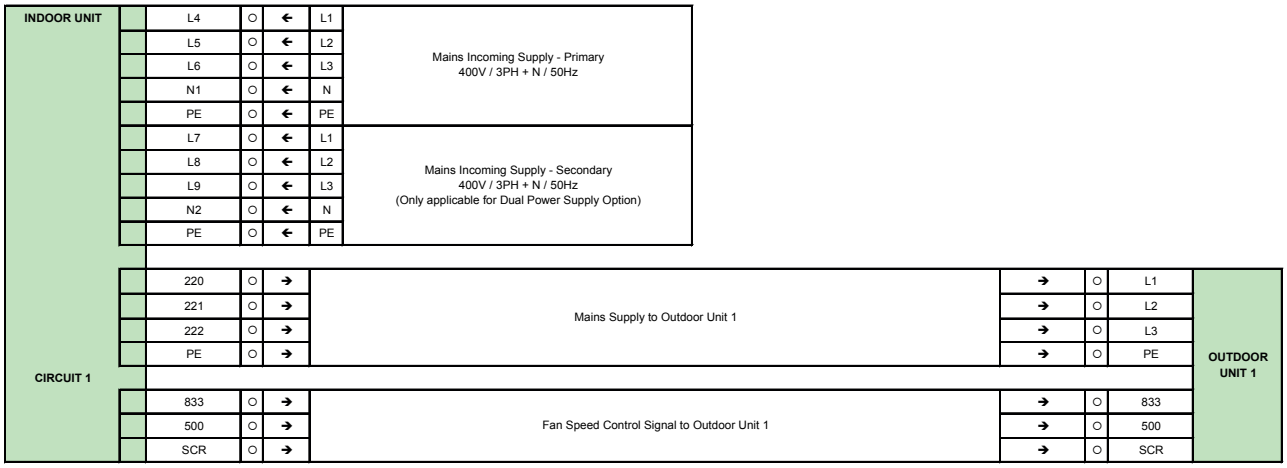
Fan speed control fitted to outdoor unit (with sub-fusing supplied)



Interconnecting Wiring **X100 / X200**

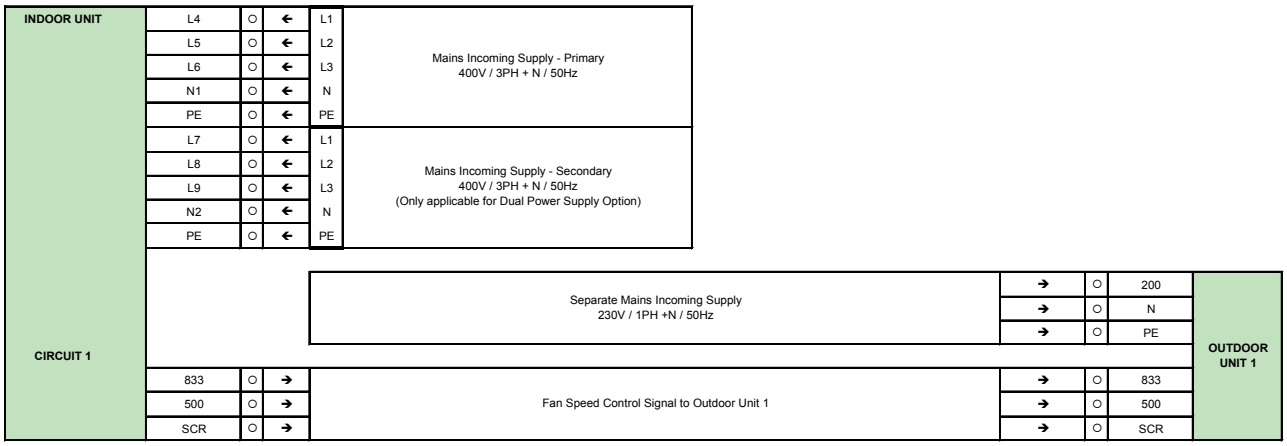
Three phase AC and EC Condenser CR26, 35, 60 and 75 Models

Fan speed control fitted to indoor unit (With sub-fusing supplied)



Single phase SCAF Condenser CR12, 16, 22, 30, 50, 65 and 80 Models

Fan speed control fitted to Outdoor unit (No sub-fusing supplied)



Interconnecting Wiring **X100 / X200**

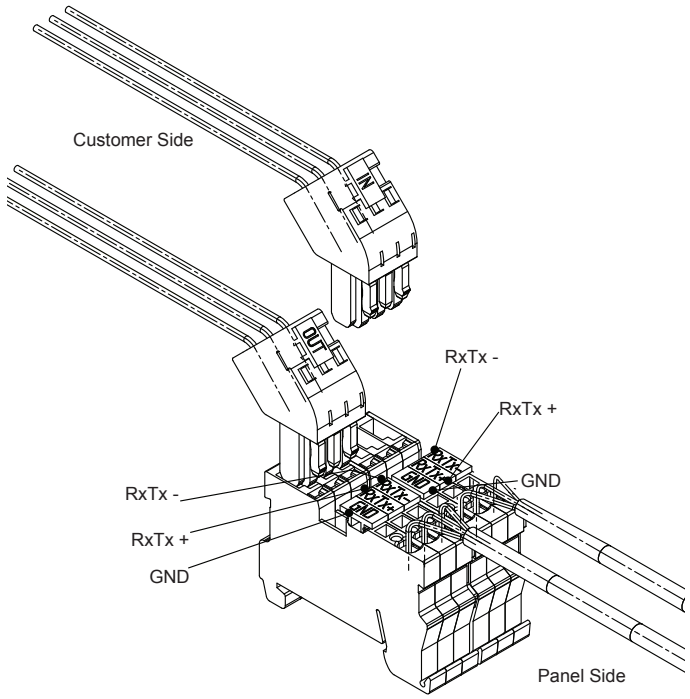
Fan speed control fitted to Outdoor unit (No sub-fusing supplied)

INDOOR UNIT		L4	O	←	L1	Mains Incoming Supply - Primary 400V / 3PH + N / 50Hz				
		L5	O	←	L2					
		L6	O	←	L3					
		N1	O	←	N					
		PE	O	←	PE					
		L7	O	←	L1	Mains Incoming Supply - Secondary 400V / 3PH + N / 50Hz (Only applicable for Dual Power Supply Option)				
		L8	O	←	L2					
		L9	O	←	L3					
		N2	O	←	N					
		PE	O	←	PE					
						Separate Mains Incoming Supply 4000V / 3PH / 50Hz	→	O	L1	OUTDOOR UNIT 1
							→	O	L2	
							→	O	L3	
							→	O	PE	
CIRCUIT 1		833	O	→		Fan Speed Control Signal to Outdoor Unit 1	→	O	833	
		500	O	→			→	O	500	
		SCR	O	→			→	O	SCR	

Remote On/Off	INDOOR UNIT	522	O	←	Remote On/Off
		502	O	→	24Vac
Fire Shutdown		583	O	←	Fire Detection
		502	O	→	24Vac
Alarm Volt Free Contacts		560	O	→	Non-Critical Alarm Normally Open
		561	O	←	Common
		563	O	→	Critical Alarm Normally Open
		564	O	←	Common
		565	O	→	Critical alarm Normally Closed
Run/Standby Network	INDOOR UNIT	Rx-Tx-	O	←	Network Connections (Inward connection)
		Rx+Tx+	O	←	
		GND	O	←	
		Rx-Tx-	O	→	Network Connections (Outward connection)
		Rx+Tx+	O	→	
		GND	O	→	
BMS Connections	INDOOR UNIT	891	O	↔	Wired BMS Connection (ModBUS, BACNet, LON, RS485)
		892	O	↔	
		893	O	↔	
BMS Connections	INDOOR UNIT	N/A	O	↔	BMS Network Connections (pCOWEB Ethernet)

pLAN Termination

The plugged termination ensures that the connections are made simultaneously. Failure to attach the cables this way may cause damage to the controller.



Intentionally Blank

Downflow Variable Speed

Performance Data

X100 / X200		Ambient Temperature (°C)							
Model	Air On Temp. (°C) / %RH	25		30		35		40	
		TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)
SV09D023-X100-0 1 x CR30	22 / 50	27.09	26.41	24.95	24.95	23.69	23.69	22.23	22.23
	24 / 45	27.86	27.86	25.73	25.73	24.37	24.37	23.01	23.01
	26 / 40	28.64	28.64	26.50	26.50	25.24	25.24	23.98	23.98
	28 / 35	29.61	29.61	27.48	27.48	26.31	26.31	24.95	24.95
SV09D047-X100-0 1 x CR50	22 / 50	38.74	32.33	36.99	31.46	35.73	30.68	34.37	29.90
	24 / 45	39.81	35.83	38.06	33.79	36.70	33.01	35.24	32.23
	26 / 40	40.58	38.45	38.83	36.21	37.48	35.53	36.12	34.85
	28 / 35	41.46	40.10	39.71	39.32	38.45	38.45	37.09	37.09
SV12D026-X100-0 1 x CR30	22 / 50	29.22	29.22	26.70	26.70	25.34	25.34	23.79	23.79
	24 / 45	30.29	30.29	27.77	27.77	26.41	26.41	24.95	24.95
	26 / 40	31.75	31.75	29.03	29.03	27.67	27.67	26.12	26.12
	28 / 35	33.20	33.20	30.29	30.29	28.93	28.93	27.38	27.38
SV12D034-X100-0 1 x CR50	22 / 50	39.32	36.80	37.48	36.02	35.92	35.34	34.27	34.27
	24 / 45	40.49	40.00	38.45	38.45	36.89	36.89	35.24	35.24
	26 / 40	41.46	41.46	39.42	39.42	37.96	37.96	36.41	36.41
	28 / 35	42.52	42.52	40.58	40.58	39.22	39.22	37.67	37.67
SV12D055-X100-0 1 x CR65	22 / 50	43.88	39.03	42.62	38.35	41.07	37.67	39.42	36.80
	24 / 45	45.24	42.23	43.79	41.55	42.23	40.87	40.49	40.10
	26 / 40	46.31	45.83	44.76	44.76	43.20	43.20	41.55	41.55
	28 / 35	47.18	47.18	45.63	45.63	44.17	44.17	42.52	42.52
SV15D036-X100-0 1 x CR50	22 / 50	36.31	36.31	34.95	34.95	33.50	33.50	31.94	31.94
	24 / 45	38.06	38.06	36.50	36.50	35.05	35.05	33.50	33.50
	26 / 40	39.90	39.90	38.25	38.25	36.70	36.70	35.15	35.15
	28 / 35	41.84	41.84	39.90	39.90	38.45	38.45	36.80	36.80
SV15D040-X100-0 1 x CR50	22 / 50	47.09	46.21	45.24	45.24	43.20	43.20	41.07	41.07
	24 / 45	48.35	48.35	46.50	46.50	44.47	44.47	42.43	42.43
	26 / 40	49.61	49.61	47.86	47.86	45.92	45.92	43.98	43.98
	28 / 35	51.26	51.26	49.51	49.51	47.67	47.67	45.73	45.73
SV15D063-X200-0 1 x CR80	22 / 50	60.10	52.23	57.67	50.97	55.34	49.90	52.91	48.74
	24 / 45	61.84	56.50	59.22	55.24	56.89	54.08	54.37	53.01
	26 / 40	63.40	61.26	60.58	59.90	58.16	58.16	55.73	55.73
	28 / 35	64.37	64.37	61.55	61.55	59.32	59.32	56.89	56.89
SV18D042-X100-0 1 x CR50	22 / 50	44.17	44.17	41.65	41.65	39.90	39.90	38.16	38.16
	24 / 45	46.12	46.12	43.50	43.50	41.75	41.75	39.90	39.90
	26 / 40	46.99	46.99	45.34	45.34	43.59	43.59	41.65	41.65
	28 / 35	49.13	49.13	47.38	47.38	45.63	45.63	43.69	43.69
SV18D049-X100-0 1 x CR65	22 / 50	51.36	51.36	48.93	48.93	46.89	46.89	44.85	44.85
	24 / 45	53.01	53.01	50.58	50.58	48.64	48.64	46.60	46.60
	26 / 40	55.15	55.15	52.62	52.62	50.68	50.68	48.64	48.64
	28 / 35	57.48	57.48	54.85	54.85	52.91	52.91	50.78	50.78
SV18D083-X200-0 1 x CR80	22 / 50	74.56	65.34	69.81	62.62	66.80	60.97	63.59	59.51
	24 / 45	76.02	69.71	71.17	67.38	68.25	66.12	65.15	64.66
	26 / 40	75.63	74.56	72.91	72.91	69.90	69.90	66.80	66.80
	28 / 35	76.89	76.89	74.27	74.27	71.46	71.46	68.45	68.45

IMPORTANT

Performance data provided is representative of a system with a 5m interconnecting pipe length tested to EN14511.
Maximum interconnecting equivalent pipe length of 100m.
Pipe sizing guidelines MUST be followed.

Operating Limits

Indoor Air Temperature	+18°C to +28°C
Indoor RH%	+40% to +55% (Based upon 24°C Dry Bulb)
Outdoor Temperature	-20°C to +46°C

Downflow Variable Speed

Performance Data

X100 / X200		Ambient Temperature (°C)							
Model	Air On Temp. (°C) / %RH	30		35		40		45	
		TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)
SV09D023-X100-0 1 x CR65	24 / 45	27.86	27.86	26.60	26.60	25.34	25.34	23.98	23.98
	28 / 35	29.51	29.51	28.45	28.45	27.28	27.28	26.02	26.02
	32 / 28	32.04	32.04	30.97	30.97	29.71	29.71	28.45	28.45
	36 / 23	34.85	34.85	33.69	33.69	32.43	32.43	31.07	31.07
SV09D047-X100-0 1 x CR80	24 / 45	39.42	35.53	38.16	33.79	36.89	33.11	35.53	32.33
	28 / 35	41.07	39.90	39.90	39.42	38.74	38.74	37.38	36.70
	32 / 28	43.11	43.11	42.04	42.04	40.87	40.87	39.51	39.51
	36 / 23	45.44	45.44	44.56	44.56	43.50	43.50	42.33	42.33
SV12D026-X100-0 1 x CR65	24 / 45	30.19	30.19	28.93	28.93	27.57	27.57	26.12	26.12
	28 / 35	32.91	32.91	31.65	31.65	30.29	30.29	28.74	28.74
	32 / 28	36.02	36.02	34.66	34.66	33.20	33.20	31.55	31.55
	36 / 23	39.22	39.22	37.77	37.77	36.21	36.21	34.56	34.56
SV12D034-X100-0 1 x CR80	24 / 45	40.00	39.90	38.64	38.64	37.09	37.09	35.44	35.44
	28 / 35	42.04	42.04	40.78	40.78	39.42	39.42	37.86	37.86
	32 / 28	45.53	45.53	44.27	44.27	42.82	42.82	41.26	41.26
	36 / 23	49.22	49.22	47.86	47.86	46.41	46.41	44.76	44.76
SV12D055-X100-0 1 x CR105	24 / 45	45.15	42.23	43.79	41.55	42.14	40.78	40.49	40.00
	28 / 35	47.09	47.09	45.63	45.63	44.17	44.17	42.52	42.52
	32 / 28	50.29	50.29	48.93	48.93	47.48	47.48	45.92	45.92
	36 / 23	54.17	54.17	52.82	52.82	51.36	51.36	49.81	49.81
SV15D036-X100-0 1 x CR80	24 / 45	37.86	37.86	36.50	36.50	35.05	35.05	33.50	33.50
	28 / 35	41.46	41.46	40.00	40.00	38.45	38.45	36.89	36.89
	32 / 28	45.34	45.34	43.79	43.79	42.14	42.14	40.39	40.39
	36 / 23	49.32	49.32	47.67	47.67	45.92	45.92	44.08	44.08
SV15D040-X100-0 1 x CR80	24 / 45	48.93	48.93	47.09	47.09	45.05	45.05	43.01	43.01
	28 / 35	51.84	51.84	50.19	50.19	48.45	48.45	46.50	46.50
	32 / 28	56.12	56.12	54.37	54.37	52.52	52.52	50.58	50.58
	36 / 23	60.78	60.78	58.93	58.93	56.99	56.99	54.85	54.85
SV15D063-X200-0 1 x CR140	24 / 45	61.75	56.41	59.51	55.34	57.09	54.27	54.66	53.11
	28 / 35	64.17	64.17	61.94	61.94	59.61	59.61	57.18	57.18
	32 / 28	68.06	68.06	65.92	65.92	63.69	63.69	61.46	61.46
	36 / 23	73.01	73.01	70.97	70.97	68.83	68.83	66.60	66.60
SV18D042-X100-0 1 x CR80	24 / 45	45.44	45.44	43.79	43.79	42.14	42.14	40.29	40.29
	28 / 35	49.61	49.61	47.96	47.96	46.12	46.12	44.17	44.17
	32 / 28	53.98	53.98	52.23	52.23	50.39	50.39	50.39	50.39
	36 / 23	50.39	50.39	56.80	56.80	54.76	54.76	52.52	52.52
SV18D049-X100-0 1 x CR105	24 / 45	52.62	52.62	50.78	50.78	48.74	48.74	46.70	46.70
	28 / 35	56.99	56.99	55.15	55.15	53.20	53.20	51.07	51.07
	32 / 28	61.94	61.94	60.00	60.00	57.96	57.96	55.73	55.73
	36 / 23	67.09	67.09	65.05	65.05	62.91	62.91	60.58	60.58
SV18D083-X200-0 1 x CR140	24 / 45	74.85	69.13	72.33	67.86	69.42	66.60	66.41	65.24
	28 / 35	77.96	77.96	75.44	75.44	72.72	72.72	69.81	69.81
	32 / 28	83.11	83.11	80.68	80.68	78.06	78.06	75.24	75.24
	36 / 23	89.61	89.61	87.18	87.18	84.56	84.56	81.65	81.65

IMPORTANT
Performance data provided is representative of a system with a 5m interconnecting pipe length tested to EN14511.
Maximum interconnecting equivalent pipe length of 100m.
Pipe sizing guidelines MUST be followed.

Operating Limits

Indoor Air Temperature	+18°C to +36°C
Indoor RH%	+40% to +55% (Based upon 24°C Dry Bulb)
Outdoor Temperature	-20°C to +46°C

Downflow Variable Speed SV09D023-X100-0 - SV09D047-X100-0

Mechanical Data

			SV09D023-X100-0	SV09D047-X100-0
Standard Condenser Match			1 x CR30	1 x CR50
Capacity				
Max Cooling (Gross) - X	(1)	kW	24.4	36.7
Min Cooling (Gross) - X	(1)	kW	5.1	9.3
Capacity Steps		%	17-100	17-100
Dimensions – W x D x H		mm	900 x 890 x 1980	900 x 890 x 1980
Weight – Machine / Operating		kg	336 / 340	358 / 362
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)	
Material/Colour			Frame:Anodised Aluminium Frame with Painted Aluminium Corners	
Evaporator				
Cooling/Dehum Stages		%	17-100	17-100
Standard Fan			Backwards Curved, Centrifugal direct drive	
Motor Type			EC	EC
Quantity x Motor Size		kW	1 x 1.7	1 x 1.7
Speed @25Pa / Maximum ESP		rpm	1636 / 1800	1636 / 1800
Maximum ESP		Pa	226	226
Nominal Airflow		m³/s	1.8	1.8
Fan Gain	(4)	kW	1.1	1.1
Compressor – Scroll				
Configuration – X100			Single Circuit - Single Compressors	
Quantity – X100			1	1
Oil Charge Volume – X100		l	1 x 1.9	1 x 2.3
Oil Type			PVE - FV50S	PVE - FVC68D
Refrigeration			Single Circuit	
Refrigerant control and type			Electronic Expansion Valve	
Refrigerant type			R410A	
Holding Charge			Inert Gas	
Charge (per circuit)		kg	3.9	4.3
Connections				
Liquid (sweat)		in	1/2	5/8
Discharge (sweat)		in	5/8	7/8
Condensate Drain Hose		mm	22	22
Filtration			**Disposable to BS EN 779-G4**	
Quantity			8	8
Electric Heating (Total)		kW	7.5	7.5
Humidifier				
Capacity		kg/hr	3	3
Drain pump flow rate		l/m	7	7
Feed/Drain			3/4” BSPF Braided Flexible Hose / 19mm Hose Connection	
Hot Water Condensate Pump				
Head		m	5	5
Flow		l/m	9.5	9.5
Drain			10mm Stainless steel Stub Connection	
Cold Water Condensate Pump				
Head		m	5	5
Flow		l/m	0.5	0.5
Drain			10mm quarter turn plastic ‘barb’ connection	
Upgraded Fan			Backwards Curved, Centrifugal direct drive	
Motor Type			EC	EC
Quantity x Motor Size		kW	1 x 3.6	1 x 3.6
Speed @ 25Pa / Maximum ESP		rpm	1646/ 2300	1646 / 2300
Maximum ESP		Pa	792	792
Fan Gain	(4)	kW	1.2	1.2

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.

Downflow Variable Speed

SV09D023-X100-0 - SV09D047-X100-0

Electrical Data

			SV09D023-X100-0	SV09D047-X100-0
Unit Data Full Function - X				
Nominal Run Amps	(1)	A	35.1	53.4
Maximum Start Amps		A	37	58.5
Recommended Mains Fuse Size		A	40	63
Unit Data Cooling Only - X				
Nominal Run Amps	(2)	A	24.3	42.6
Maximum Start Amps		A	26.2	47.7
Recommended Mains Fuse Size		A	32	63
Max Mains Incoming Cable Size		mm²	35	35
Mains Supply		V	400V / 3PH + N / 50HZ	
Control Circuit		VAC	24	
Evaporator Fan - Motor Per Fan			EC	EC
Motor Type			1 x 1.7	1 x 1.7
Quantity x Motor Size	(3)	kW	2.9	2.9
Full Load Amps			2.9	2.9
Locked Rotor Amps			2.9	2.9
Compressor - Per Compressor				
Quantity x Motor Size	(3)	kW	1 x 9.52	1 x 17.96
Nominal Run Amps		A	17.78	33.47
Locked Rotor Amps		A	19.68	38.54
Type of Start			Variable	
Standard Condenser Match - AC Motor - Per Fan				
Quantity x Motor Size		kW	1 x 0.6	2 x 0.6
Full Load Amps		A	2.62	2.62
OPTIONAL EXTRAS				
Electric Heating				
Stage of Reheat			1	1
Number of Elements			3	3
Rating		kW	7.5	7.5
Current per Phase		A	10.83	10.83
Humidifier				
Capacity		kg/hr	3	3
Rating		kW	2.25	2.25
Full Load Amps		A	3.3	3.3
First upgrade EC Motor - Per Fan				
Quantity x Motor Size	(3)	kW	1 x 3.6	1 x 3.6
Full Load Amps		A	5.8	5.8
Locked Rotor Amps		A	5.8	5.8
Standard Condenser Motor - EC Motor - Per Fan				
Quantity x Motor Size		kW	1 x 0.73	2 x 0.73
Full Load Amps		A	3.3	3.3

(1) Values given for full function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Variable Speed SV12D026-X100-0, SV12D034-X100-0, SV12D055-X100-0

Mechanical Data

			SV12D026-X100-0	SV12D034-X100-0	SV12D055-X100-0
Standard Condenser Match			1 x CR30	1 x CR50	1 x CR65
Capacity					
Max Cooling (Gross) - X	(1)	kW	26.4	36.9	42.2
Min Cooling (Gross) - X	(1)	kW	5.2	8.3	9.7
Capacity Steps		%	17-100	17-100	17-100
Dimensions – W x D x H		mm	1200 x 890 x 1980	1200 x 890 x 1980	1200 x 890 x 1980
Weight – Machine / Operating		kg	415 / 420	436 / 441	436 / 441
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame:Anodised Aluminium Frame with Painted Aluminium Corners		
Evaporator					
Cooling/Dehum Stages		%	17-100	17-100	17-100
Standard Fan			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	1 x 3.1	1 x 3.1	1 x 3.1
Speed @25Pa / Maximum ESP		rpm	1324 / 1560	1324 / 1560	1324 / 1560
Maximum ESP		Pa	350	350	350
Nominal Airflow		m³/s	2.5	2.5	2.5
Fan Gain	(4)	kW	1.6	1.6	1.6
Compressor – Scroll					
Configuration – X100			Single Circuit - Single Compressors		
Quantity – X100			1	1	1
Oil Charge Volume – X100		l	1 x 1.9	1 x 2.3	1 x 2.3
Oil Type			PVE - FV50S	PVE - FVC68D	
Refrigeration			Single Circuit		
Refrigerant control and type			Electronic Expansion Valve		
Refrigerant type			R410A		
Holding Charge			Inert Gas		
Charge (per circuit)		kg	4.5	4.7	5.0
Connections					
Liquid (sweat)		in	1/2	5/8	5/8
Discharge (sweat)		in	5/8	7/8	7/8
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			6	6	6
Electric Heating (Total)		kW	7.5	7.5	7.5
Humidifier					
Capacity		kg/hr	8	8	8
Drain pump flow rate		l/m	7	7	7
Feed/Drain			3/4" BSPF Braided Flexible Hose / 19mm Hose Connection		
Hot Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	9.5	9.5	9.5
Drain			10mm Stainless steel Stub Connection		
Cold Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	0.5	0.5	0.5
Drain			10mm quarter turn plastic 'barb' connection		
Upgraded Fan			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	1 x 3.5	1 x 3.5	1 x 3.5
Speed @ 25Pa / Maximum ESP		rpm	1334 / 1620	1334 / 1620	1334 / 1620
Maximum ESP		Pa	439	439	439
Fan Gain	(4)	kW	1.7	1.7	1.7

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.

Downflow Variable Speed

SV12D026-X100-0, SV12D034-X100-0, SV12D055-X100-0

Electrical Data

			SV12D026-X100-0	SV12D034-X100-0	SV12D055-X100-0
Unit Data Full Function - X					
Nominal Run Amps	(1)	A	37.2	49.1	55.5
Maximum Start Amps		A	39.1	53	60.6
Recommended Mains Fuse Size		A	50	63	80
Unit Data Cooling Only - X					
Nominal Run Amps	(2)	A	26.4	38.3	44.7
Maximum Start Amps		A	28.3	42.2	49.8
Recommended Mains Fuse Size		A	32	50	63
Max Mains Incoming Cable Size		mm²	35	35	70
Mains Supply		V		400V / 3PH + N / 50HZ	
Control Circuit		VAC		24	
Evaporator Fan - Motor Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(3)	kW	1 x 3.1	1 x 3.1	1 x 3.1
Full Load Amps			5	5	5
Locked Rotor Amps			5	5	5
Compressor - Per Compressor					
Quantity x Motor Size	(3)	kW	1 x 9.52	1 x 14.42	1 x 17.96
Nominal Run Amps		A	17.78	27.05	33.47
Locked Rotor Amps		A	19.68	30.93	38.54
Type of Start				Variable	
Standard Condenser Match - AC Motor - Per Fan					
Quantity x Motor Size		kW	1 x 0.6	2 x 0.6	2 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			1	1	1
Number of Elements			3	3	3
Rating		kW	7.5	7.5	7.5
Current per Phase		A	10.83	10.83	10.83
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	8.7	8.7	8.7
First upgrade EC Motor - Per Fan					
Quantity x Motor Size	(3)	kW	1 x 3.5	1 x 3.5	1 x 3.5
Full Load Amps		A	5.7	5.7	5.7
Locked Rotor Amps		A	5.7	5.7	5.7
Standard Condenser Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	1 x 0.73	2 x 0.73	2 x 0.73
Full Load Amps		A	3.3	3.3	3.3

(1) Values given for full function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Variable Speed SV15D036-X100-0, SV15D040-X100-0, SV15D063-X200-0

Mechanical Data

			SV15D036-X100-0	SV15D040-X100-0	SV15D063-X200-0
Standard Condenser Match			1 x CR50	1 x CR50	1 x CR80
Capacity					
Max Cooling (Gross) - X	(1)	kW	35.0	44.5	56.9
Min Cooling (Gross) - X	(1)	kW	7.2	9.9	10.0
Capacity Steps		%	17-100	17-100	17-100
Dimensions – W x D x H		mm	1500 x 890 x 1980	1500 x 890 x 1980	1500 x 890 x 1980
Weight – Machine / Operating		kg	501 / 506	510 / 516	572 / 579
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame:Anodised Aluminium Frame with Painted Aluminium Corners		
Evaporator					
Cooling/Dehum Stages		%	17-100	17-100	17-100
Standard Fan			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 1.7	2 x 1.7	2 x 1.7
Speed @25Pa / Maximum ESP		rpm	1559 / 1770	1559 / 1770	1559 / 1770
Maximum ESP		Pa	298	298	610
Nominal Airflow		m³/s	3.3	3.3	3.3
Fan Gain	(4)	kW	2.0	2.0	2.0
Compressor – Scroll					
Configuration – X100/X200			Single Circuit - Single Compressors		Single Circuit - Tandem Compressors
Quantity – X100/X200			1	1	2
Oil Charge Volume – X100/X200		l	1 x 2.3	1 x 2.3	(1 x 2.3) + (1 x 1.7)
Oil Type			PVE - FVC68D		
Refrigeration			Single Circuit		
Refrigerant control and type			Electronic Expansion Valve		
Refrigerant type			R410A		
Holding Charge			Inert Gas		
Charge (per circuit)		kg	5.3	5.5	6.7
Connections					
Liquid (sweat)		in	5/8	5/8	3/4
Discharge (sweat)		in	7/8	7/8	7/8
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			6	6	6
Electric Heating (Total)		kW	15	15	15
Humidifier					
Capacity		kg/hr	8	8	8
Drain pump flow rate		l/m	7	7	7
Feed/Drain			3/4" BSPF Braided Flexible Hose / 19mm Hose Connection		
Hot Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	9.5	9.5	9.5
Drain			10mm Stainless steel Stub Connection		
Cold Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	0.5	0.5	0.5
Drain			10mm quarter turn plastic 'barb' connection		
Upgraded Fan			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 3.6	2 x 3.6	2 x 3.6
Speed @ 25Pa / Maximum ESP		rpm	1562 / 2300	1562 / 2300	1562 / 2300
Maximum ESP		Pa	820	820	820
Fan Gain	(4)	kW	2.1	2.1	2.1

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.

Downflow Variable Speed

SV15D036-X100-0, SV15D040-X100-0, SV15D063-X200-0

Electrical Data

			SV15D036-X100-0	SV15D040-X100-0	SV15D063-X200-0
Unit Data Full Function - X					
Nominal Run Amps	(1)	A	56	67.2	69.8
Maximum Start Amps		A	59	72.2	115.8
Recommended Mains Fuse Size		A	63	80	80
Unit Data Cooling Only - X					
Nominal Run Amps	(2)	A	34.4	45.5	57.4
Maximum Start Amps		A	37.4	50.6	107.1
Recommended Mains Fuse Size		A	40	63	80
Max Mains Incoming Cable Size		mm²	35	70	70
Mains Supply		V	400V / 3PH + N / 50HZ		
Control Circuit		VAC	24		
Evaporator Fan - Motor Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(3)	kW	2 x 1.7	2 x 1.7	2 x 1.7
Full Load Amps			2.9	2.9	2.9
Locked Rotor Amps			2.9	2.9	2.9
Compressor - Per Compressor (compressor 1)					
Quantity x Motor Size		kW	1 x 11.6	1 x 17.96	1 x 17.96
Nominal Run Amps		A	22.35	33.47	33.47
Locked Rotor Amps		A	25.33	38.54	38.54
Type of Start				Variable	
Compressor - Per Compressor (compressor 2)					
Quantity x Motor Size		kW	n/a	n/a	1 x 5.46
Nominal Run Amps		A	n/a	n/a	9.3
Locked Rotor Amps		A	n/a	n/a	59
Type of Start			n/a	n/a	Fixed Speed
Standard Condenser Match - AC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 0.6	2 x 0.6	3 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			2	2	2
Number of Elements			6	6	6
Rating		kW	15	15	15
Current per Phase		A	21.65	21.65	21.65
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	8.7	8.7	8.7
First upgrade EC Motor - Per Fan					
Quantity x Motor Size	(3)	kW	2 x 3.6	2 x 3.6	2 x 3.6
Full Load Amps		A	5.8	5.8	5.8
Locked Rotor Amps		A	5.8	5.8	5.8
Standard Condenser Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 0.73	2 x 0.73	3 x 0.73
Full Load Amps		A	3.3	3.3	3.3

(1) Values given for full function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Variable Speed

SV18D042-X100-0, SV18D049-X100-0, SV18D083-X200-0

Mechanical Data

			SV18D042-X100-0	SV18D049-X100-0	SV18D083-X200-0
Standard Condenser Match			1 x CR50	1 x CR65	1 x CR80
Capacity					
Max Cooling (Gross) - X	(1)	kW	41.7	48.6	68.3
Min Cooling (Gross) - X	(1)	kW	8.7	10.2	16.3
Capacity Steps		%	17-100	17-100	17-100
Dimensions – W x D x H		mm	1800 x 890 x 1980	1800 x 890 x 1980	1800 x 890 x 1980
Weight – Machine / Operating		kg	556 / 562	556 / 562	638 / 646
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame:Anodised Aluminium Frame with Painted Aluminium Corners		
Evaporator					
Cooling/Dehum Stages		%	17-100	17-100	17-100
Standard Fan			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Speed @25Pa / Maximum ESP		rpm	1247 / 1560	1247 / 1560	1247 / 1560
Maximum ESP		Pa	411	411	411
Nominal Airflow		m³/s	4.1	4.1	4.1
Fan Gain	(4)	kW	2.7	2.7	2.7
Compressor – Scroll					
Configuration – X100			Single Circuit - Single Compressors		
Quantity – X100			1	1	2
Oil Charge Volume – X100		l	1 x 2.3	1 x 2.3	2 x 2.3
Oil Type			PVE - FVC68D		
Refrigeration			Single Circuit		
Refrigerant control and type			Electronic Expansion Valve		
Refrigerant type			R410A		
Holding Charge			Inert Gas		
Charge (per circuit)		kg	5.9	6.1	7.6
Connections					
Liquid (sweat)		in	5/8	5/8	3/4
Discharge (sweat)		in	7/8	7/8	7/8
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			8	8	
Electric Heating (Total)		kW	15	15	
Humidifier					
Capacity		kg/hr	8	8	
Drain pump flow rate		l/m	7	7	
Feed/Drain			3/4” BSPF Braided Flexible Hose / 19mm Hose Connection		
Hot Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	9.5	9.5	9.5
Drain			10mm Stainless steel Stub Connection		
Cold Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	0.5	0.5	0.5
Drain			10mm quarter turn plastic ‘barb’ connection		
Upgraded Fan			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 3.5	2 x 3.5	2 x 3.5
Speed @ 25Pa / Maximum ESP		rpm	1251 / 1620	1251 / 1620	1251 / 1620
Maximum ESP		Pa	500	500	500
Fan Gain	(4)	kW	2.8	2.8	2.8

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.

Downflow Variable Speed SV18D042-X100-0, SV18D049-X100-0, V18D083-X200-0

Electrical Data

			SV18D042-X100-0	SV18D049-X100-0	SV18D083-X200-0
Unit Data Full Function - X					
Nominal Run Amps	(1)	A	64.9	71.4	81.7
Maximum Start Amps		A	68.8	76.4	85.5
Recommended Mains Fuse Size		A	80	80	100
Unit Data Cooling Only - X					
Nominal Run Amps	(2)	A	43.3	49.7	73
Maximum Start Amps		A	47.2	54.8	76.8
Recommended Mains Fuse Size		A	63	63	100
Max Mains Incoming Cable Size		mm²	70	70	70
Mains Supply		V		400V / 3PH + N / 50HZ	
Control Circuit		VAC		24	
Evaporator Fan - Motor Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(3)	kW	2 x 3.1	2 x 3.1	2 x 3.1
Full Load Amps			5	5	5
Locked Rotor Amps			5	5	5
Compressor - Per Compressor (compressor 1)					
Quantity x Motor Size		kW	1 x 14.42	1 x 17.96	1 x 14.42
Nominal Run Amps		A	27.05	33.47	27.05
Locked Rotor Amps		A	30.93	38.54	30.93
Type of Start				Variable	
Compressor - Per Compressor (compressor 2)					
Quantity x Motor Size		kW	n/a	n/a	1 x 14.42
Nominal Run Amps		A	n/a	n/a	27.05
Locked Rotor Amps		A	n/a	n/a	30.93
Type of Start			n/a	n/a	Variable
Standard Condenser Match - AC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 0.6	2 x 0.6	3 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			2	2	2
Number of Elements			6	6	6
Rating		kW	15	15	15
Current per Phase		A	21.65	21.65	21.65
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	8.7	8.7	8.7
First upgrade EC Motor - Per Fan					
Quantity x Motor Size	(3)	kW	2 x 3.5	2 x 3.5	2 x 3.5
Full Load Amps		A	5.7	5.7	5.7
Locked Rotor Amps		A	5.7	5.7	5.7
Standard Condenser Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 0.73	2 x 0.73	3 x 0.73
Full Load Amps		A	3.3	3.3	3.3

(1) Values given for full function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Variable Speed

SV09D023-X100-1, SV09D047-X100-1

Mechanical Data

			SV09D023-X100-1	SV09D047-X100-1
Standard Condenser Match			1 x CR30	1 x CR50
Capacity				
Max Cooling (Gross) - X	(1)	kW	24.4	36.7
Min Cooling (Gross) - X	(1)	kW	5.1	9.3
Capacity Steps		%	17-100	17-100
Dimensions – W x D x H		mm	900 x 890 x 1980	900 x 890 x 1980
Weight – Machine / Operating		kg	336 / 340	358 / 362
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)	
Material/Colour			Frame:Anodised Aluminium Frame with Painted Aluminium Corners	
Evaporator				
Cooling/Dehum Stages		%	17-100	17-100
Standard Fan			Backwards Curved, Centrifugal direct drive	
Motor Type			EC	EC
Quantity x Motor Size		kW	1 x 1.7	1 x 1.7
Speed @25Pa / Maximum ESP		rpm	1636 / 1800	1636 / 1800
Maximum ESP		Pa	226	226
Nominal Airflow		m³/s	1.8	1.8
Fan Gain	(4)	kW	1.1	1.1
Compressor – Scroll				
Configuration – X100			Single Circuit - Single Compressors	
Quantity – X100			1	1
Oil Charge Volume – X100		l	1 X 1.9	1 x 2.3
Oil Type			PVE - FV50S	PVE - FVC68D
Refrigeration			Single Circuit	
Refrigerant control and type			Electronic Expansion Valve	
Refrigerant type			R410A	
Holding Charge			Inert Gas	
Charge (per circuit)		kg	3.9	4.3
Connections				
Liquid (sweat)		in	1/2	5/8
Discharge (sweat)		in	5/8	7/8
Condensate Drain Hose		mm	22	22
Filtration			**Disposable to BS EN 779-G4**	
Quantity			8	8
Electric Heating (Total)		kW	7.5	7.5
Humidifier				
Capacity		kg/hr	3	3
Drain pump flow rate		l/m	7	7
Feed/Drain			3/4” BSPF Braided Flexible Hose / 19mm Hose Connection	
Hot Water Condensate Pump				
Head		m	5	5
Flow		l/m	9.5	9.5
Drain			10mm Stainless steel Stub Connection	
Cold Water Condensate Pump				
Head		m	5	5
Flow		l/m	0.5	0.5
Drain			10mm quarter turn plastic ‘barb’ connection	
Upgraded Fan			Backwards Curved, Centrifugal direct drive	
Motor Type			EC	EC
Quantity x Motor Size		kW	1 x 3.6	1 x 3.6
Speed @ 25Pa / Maximum ESP		rpm	1646 / 2300	1646 / 2300
Maximum ESP		Pa	792	792
Fan Gain	(4)	kW	1.2	1.2

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.

Downflow Variable Speed

SV09D023-X100-1 ,SV09D047-X100-1

Electrical Data

			SV09D023-X100-1	SV09D047-X100-1
Unit Data Full Function - X				
Nominal Run Amps	(1)	A	35	53.7
Maximum Start Amps		A	36.9	58.8
Recommended Mains Fuse Size		A	40	63
Unit Data Cooling Only - X				
Nominal Run Amps	(2)	A	24.7	43.4
Maximum Start Amps		A	26.6	48.5
Recommended Mains Fuse Size		A	32	63
Max Mains Incoming Cable Size		mm²	35	35
Mains Supply		V	380V / 3PH + N / 60HZ	
Control Circuit		VAC	24	
Evaporator Fan - Motor Per Fan				
Motor Type			EC	EC
Quantity x Motor Size	(3)	kW	1 x 1.7	1 x 1.7
Full Load Amps			2.9	2.9
Locked Rotor Amps			2.9	2.9
Compressor - Per Compressor				
Quantity x Motor Size	(3)	kW	1 x 9.52	1 x 17.96
Nominal Run Amps		A	17.78	33.47
Locked Rotor Amps		A	19.68	38.54
Type of Start			Variable	
Standard Condenser Match - AC Motor - Per Fan				
Quantity x Motor Size		kW	1 x 0.69	2 x 0.69
Full Load Amps		A	3.02	3.02
OPTIONAL EXTRAS				
Electric Heating				
Stage of Reheat			1	1
Number of Elements			3	3
Rating		kW	6.77	6.77
Current per Phase		A	10.3	10.3
Humidifier				
Capacity		kg/hr	3	3
Rating		kW	2.25	2.25
Full Load Amps		A	3.5	3.5
First upgrade EC Motor - Per Fan				
Quantity x Motor Size	(3)	kW	1 x 3.6	1 x 3.6
Full Load Amps		A	5.8	5.8
Locked Rotor Amps		A	5.8	5.8
Standard Condenser Motor - EC Motor - Per Fan				
Quantity x Motor Size		kW	1 x 0.73	2 x 0.73
Full Load Amps		A	3.3	3.3

(1) Values given for full function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Variable Speed SV12D026-X100-1, SV12D034-X100-1, SV12D055-X100-1

Mechanical Data

			SV12D026-X100-1	SV12D034-X100-1	SV12D055-X100-1
Standard Condenser Match			1 x CR30	1 x CR50	1 x CR65
Capacity					
Max Cooling (Gross) - X	(1)	kW	26.4	36.9	42.2
Min Cooling (Gross) - X	(1)	kW	5.2	8.3	9.7
Capacity Steps		%	17-100	17-100	17-100
Dimensions – W x D x H		mm	1200 x 890 x 1980	1200 x 890 x 1980	1200 x 890 x 1980
Weight – Machine / Operating		kg	415 / 420	436 / 441	436 / 441
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame:Anodised Aluminium Frame with Painted Aluminium Corners		
Evaporator					
Cooling/Dehum Stages		%	17-100	17-100	17-100
Standard Fan			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	1 x 3.1	1 x 3.1	1 x 3.1
Speed @25Pa / Maximum ESP		rpm	1324 / 1560	1324 / 1560	1324 / 1560
Maximum ESP		Pa	350	350	350
Nominal Airflow		m³/s	2.5	2.5	2.5
Fan Gain	(4)	kW	1.6	1.6	1.6
Compressor – Scroll					
Configuration – X100			Single Circuit - Single Compressors		
Quantity – X100			1	1	1
Oil Charge Volume – X100		l	1 x 2.3	1 x 2.3	1 x 2.3
Oil Type			PVE - FV50S	PVE - FVC68D	
Refrigeration			Single Circuit		
Refrigerant control and type			Electronic Expansion Valve		
Refrigerant type			R410A		
Holding Charge			Inert Gas		
Charge (per circuit)		kg	4.5	4.7	5.0
Connections					
Liquid (sweat)		in	1/2	5/8	5/8
Discharge (sweat)		in	5/8	7/8	7/8
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			6	6	6
Electric Heating (Total)		kW	7.5	7.5	7.5
Humidifier					
Capacity		kg/hr	8	8	8
Drain pump flow rate		l/m	7	7	7
Feed/Drain			3/4" BSPF Braided Flexible Hose / 19mm Hose Connection		
Hot Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	9.5	9.5	9.5
Drain			10mm Stainless steel Stub Connection		
Cold Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	0.5	0.5	0.5
Drain			10mm quarter turn plastic 'barb' connection		
Upgraded Fan			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	1 x 3.5	1 x 3.5	1 x 3.5
Speed @ 25Pa / Maximum ESP		rpm	1334 / 1620	1334 / 1620	1334 / 1620
Maximum ESP		Pa	439	439	439
Fan Gain	(4)	kW	1.7	1.7	1.7

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.

Downflow Variable Speed SV12D026-X100-1, SV12D034-X100-1, SV12D055-X100-1

Electrical Data

			SV12D026-X100-1	SV12D034-X100-1	SV12D055-X100-1
Unit Data Full Function - X					
Nominal Run Amps	(1)	A	37.1	49.4	55.8
Maximum Start Amps		A	39	53.3	60.9
Recommended Mains Fuse Size		A	50	63	80
Unit Data Cooling Only - X					
Nominal Run Amps	(2)	A	26.8	39.1	45.5
Maximum Start Amps		A	28.7	43	50.6
Recommended Mains Fuse Size		A	32	50	63
Max Mains Incoming Cable Size		mm²	35	35	70
Mains Supply		V		380V / 3PH + N / 60HZ	
Control Circuit		VAC		24	
Evaporator Fan - Motor Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(3)	kW	1 x 3.1	1 x 3.1	1 x 3.1
Full Load Amps			5	5	5
Locked Rotor Amps			5	5	5
Compressor - Per Compressor					
Quantity x Motor Size	(3)	kW	1 x 9.52	1 x 14.42	1 x 17.96
Nominal Run Amps		A	17.78	27.05	33.47
Locked Rotor Amps		A	19.68	30.93	38.54
Type of Start				Variable	
Standard Condenser Match - AC Motor - Per Fan					
Quantity x Motor Size		kW	1 x 0.69	2 x 0.69	2 x 0.69
Full Load Amps		A	3.02	3.02	3.02
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			1	1	1
Number of Elements			3	3	3
Rating		kW	6.77	6.77	6.77
Current per Phase		A	10.3	10.3	10.3
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	9.2	9.2	9.2
First upgrade EC Motor - Per Fan					
Quantity x Motor Size	(3)	kW	1 x 3.5	1 x 3.5	1 x 3.5
Full Load Amps		A	5.7	5.7	5.7
Locked Rotor Amps		A	5.7	5.7	5.7
Standard Condenser Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	1 x 0.73	2 x 0.73	2 x 0.73
Full Load Amps		A	3.3	3.3	3.3

(1) Values given for full function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Variable Speed SV15D036-X100-1, SV15D040-X100-1, SV15D063-X200-1

Mechanical Data

			SV15D036-X100-1	SV15D040-X100-1	SV15D063-X200-1
Standard Condenser Match			1 x CR50	1 x CR50	1 x CR80
Capacity					
Max Cooling (Gross) - X	(1)	kW	35.0	44.5	56.9
Min Cooling (Gross) - X	(1)	kW	7.2	9.9	10.0
Capacity Steps		%	17-100	17-100	17-100
Dimensions – W x D x H		mm	1500 x 890 x 1980	1500 x 890 x 1980	1500 x 890 x 1980
Weight – Machine / Operating		kg	501 / 506	510 / 516	572 / 579
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame:Anodised Aluminium Frame with Painted Aluminium Corners		
Evaporator					
Cooling/Dehum Stages		%	17-100	17-100	17-100
Standard Fan			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 1.7	2 x 1.7	2 x 1.7
Speed @25Pa / Maximum ESP		rpm	1559 / 1770	1559 / 1770	1559 / 1770
Maximum ESP		Pa	298	298	610
Nominal Airflow		m³/s	3.3	3.3	3.3
Fan Gain	(4)	kW	2.0	2.0	2.0
Compressor – Scroll					
Configuration – X100/X200			Single Circuit - Single Compressors		Single Circuit - Tandem Compressors
Quantity – X100/X200			1	1	2
Oil Charge Volume – X100/X200		l	1 x 2.3	1 x 2.3	(1 x 2.3) + (1 x 1.7)
Oil Type			PVE - FVC68D		
Refrigeration			Single Circuit		
Refrigerant control and type			Electronic Expansion Valve		
Refrigerant type			R410A		
Holding Charge			Inert Gas		
Charge (per circuit)		kg	5.3	5.5	6.7
Connections					
Liquid (sweat)		in	5/8	5/8	3/4
Discharge (sweat)		in	7/8	7/8	7/8
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			6	6	6
Electric Heating (Total)		kW	15	15	15
Humidifier					
Capacity		kg/hr	8	8	8
Drain pump flow rate		l/m	7	7	7
Feed/Drain			3/4" BSPF Braided Flexible Hose / 19mm Hose Connection		
Hot Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	9.5	9.5	9.5
Drain			10mm Stainless steel Stub Connection		
Cold Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	0.5	0.5	0.5
Drain			10mm quarter turn plastic 'barb' connection		
Upgraded Fan			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 3.6	2 x 3.6	2 x 3.6
Speed @ 25Pa / Maximum ESP		rpm	1562 / 2300	1562 / 2300	1562 / 2300
Maximum ESP		Pa	820	820	820
Fan Gain	(4)	kW	2.1	2.1	2.1

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.

Downflow Variable Speed SV15D036-X100-1, SV15D040-X100-1, SV15D063-X200-1

Electrical Data

			SV15D036-X100-1	SV15D040-X100-1	SV15D063-X200-1
Unit Data Full Function - X					
Nominal Run Amps	(1)	A	55.8	66.9	69.9
Maximum Start Amps		A	58.8	72	117.5
Recommended Mains Fuse Size		A	63	80	80
Unit Data Cooling Only - X					
Nominal Run Amps	(2)	A	35.2	46.3	58.7
Maximum Start Amps		A	38.2	51.4	108.3
Recommended Mains Fuse Size		A	50	63	80
Max Mains Incoming Cable Size		mm²	35	70	70
Mains Supply		V	380V / 3PH + N / 60HZ		
Control Circuit		VAC	24		
Evaporator Fan - Motor Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(3)	kW	2 x 1.7	2 x 1.7	2 x 1.7
Full Load Amps			2.9	2.9	2.9
Locked Rotor Amps			2.9	2.9	2.9
Compressor - Per Compressor (compressor 1)					
Quantity x Motor Size		kW	1 x 11.6	1 x 17.96	1 x 17.96
Nominal Run Amps		A	22.35	33.47	33.47
Locked Rotor Amps		A	25.33	38.54	38.54
Type of Start			Variable	Variable	Variable
Compressor - Per Compressor (compressor 2)					
Quantity x Motor Size		kW	n/a	n/a	1 x 5.93
Nominal Run Amps		A	n/a	n/a	9.4
Locked Rotor Amps		A	n/a	n/a	59
Type of Start			n/a	n/a	Fixed Speed
Standard Condenser Match - AC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 0.69	2 x 0.69	3 x 0.69
Full Load Amps		A	3.02	3.02	3.02
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			2	2	2
Number of Elements			6	6	6
Rating		kW	13.54	13.54	13.54
Current per Phase		A	20.6	20.6	20.6
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	9.2	9.2	9.2
First upgrade EC Motor - Per Fan					
Quantity x Motor Size	(3)	kW	2 x 3.6	2 x 3.6	2 x 3.6
Full Load Amps		A	5.8	5.8	5.8
Locked Rotor Amps		A	5.8	5.8	5.8
Standard Condenser Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 0.73	2 x 0.73	3 x 0.73
Full Load Amps		A	3.3	3.3	3.3

(1) Values given for full function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Downflow Variable Speed

SV18D042-X100-1, SV18D049-X100-1, SV18D083-X200-1

Mechanical Data

			SV18D042-X100-1	SV18D049-X100-1	SV18D083-X200-1
Standard Condenser Match			1 x CR50	1 x CR65	1 x CR80
Capacity					
Max Cooling (Gross) - X	(1)	kW	41.7	48.6	68.3
Min Cooling (Gross) - X	(1)	kW	8.7	10.2	16.3
Capacity Steps		%	17-100	17-100	17-100
Dimensions – W x D x H		mm	1800 x 890 x 1980	1800 x 890 x 1980	1800 x 890 x 1980
Weight – Machine / Operating		kg	556 / 562	556 / 562	638 / 646
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame:Anodised Aluminium Frame with Painted Aluminium Corners		
Evaporator					
Cooling/Dehum Stages		%	17-100	17-100	17-100
Standard Fan			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Speed @25Pa / Maximum ESP		rpm	1247 / 1560	1247 / 1560	1247 / 1560
Maximum ESP		Pa	411	411	411
Nominal Airflow		m³/s	4.1	4.1	4.1
Fan Gain	(4)	kW	2.7	2.7	2.7
Compressor – Scroll					
Configuration – X100/X200			Single Circuit - Single Compressors		Single Circuit - Tandem Compressors
Quantity – X100/X200			1	1	2
Oil Charge Volume – X100/X200		l	1 x 2.3	1 x 2.3	2 x 2.3
Oil Type			PVE - FVC68D		
Refrigeration			Single Circuit		
Refrigerant control and type			Electronic Expansion Valve		
Refrigerant type			R410A		
Holding Charge			Inert Gas		
Charge (per circuit)		kg	5.9	6.1	7.6
Connections					
Liquid (sweat)		in	5/8	5/8	3/4
Discharge (sweat)		in	7/8	7/8	7/8
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			8	8	8
Electric Heating (Total)		kW	15	15	15
Humidifier					
Capacity		kg/hr	8	8	8
Drain pump flow rate		l/m	7	7	7
Feed/Drain			3/4" BSPF Braided Flexible Hose / 19mm Hose Connection		
Hot Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	9.5	9.5	9.5
Drain			10mm Stainless steel Stub Connection		
Cold Water Condensate Pump					
Head		m	5	5	5
Flow		l/m	0.5	0.5	0.5
Drain			10mm quarter turn plastic 'barb' connection		
Upgraded Fan			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 3.5	2 x 3.5	2 x 3.5
Speed @ 25Pa / Maximum ESP		rpm	1251 / 1620	1251 / 1620	1251 / 1620
Maximum ESP		Pa	500	500	500
Fan Gain	(4)	kW	2.8	2.8	2.8

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Backward curved EC fan options quote electrical power. All other options quote shaft power.

Downflow Variable Speed

SV18D042-X100-1, SV18D049-X100-1, SV18D083-X200-1

Electrical Data

			SV18D042-X100-1	SV18D049-X100-1	SV18D083-X200-1
Unit Data Full Function - X					
Nominal Run Amps	(1)	A	64.7	71.1	83.4
Maximum Start Amps		A	68.6	76.2	87.2
Recommended Mains Fuse Size		A	80	80	100
Unit Data Cooling Only - X					
Nominal Run Amps	(2)	A	44.1	50.5	74.2
Maximum Start Amps		A	48	55.6	78
Recommended Mains Fuse Size		A	63	63	100
Max Mains Incoming Cable Size		mm²	70	70	70
Mains Supply		V		380V / 3PH + N / 60HZ	
Control Circuit		VAC		24	
Evaporator Fan - Motor Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(3)	kW	2 x 3.1	2 x 3.1	2 x 3.1
Full Load Amps			5	5	5
Locked Rotor Amps			5	5	5
Compressor - Per Compressor (compressor 1)					
Quantity x Motor Size		kW	1 x 14.42	1 x 17.96	1 x 14.42
Nominal Run Amps		A	27.05	33.47	27.05
Locked Rotor Amps		A	30.93	38.54	30.93
Type of Start				Variable	
Compressor - Per Compressor (compressor 2)					
Quantity x Motor Size		kW	n/a	n/a	1 x 14.42
Nominal Run Amps		A	n/a	n/a	27.05
Locked Rotor Amps		A	n/a	n/a	30.93
Type of Start			n/a	n/a	Variable
Standard Condenser Match - AC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 0.69	2 x 0.69	3 x 0.69
Full Load Amps		A	3.02	3.02	3.02
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			2	2	2
Number of Elements			6	6	6
Rating		kW	13.54	13.54	13.54
Current per Phase		A	20.6	20.6	20.6
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	9.2	9.2	9.2
First upgrade EC Motor - Per Fan					
Quantity x Motor Size	(3)	kW	2 x 3.5	2 x 3.5	2 x 3.5
Full Load Amps		A	5.7	5.7	5.7
Locked Rotor Amps		A	5.7	5.7	5.7
Standard Condenser Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 0.73	2 x 0.73	3 x 0.73
Full Load Amps		A	3.3	3.3	3.3

(1) Values given for full function units with standard selections for heating, humidification, supply air fans
(2) Values given for Cooling only units incl. evaporator fan for optional data, please contact Airedale.
(3) Electrical input power relates to the maximum absorbed electrical power. Actual operating fan power input is shown in the mechanical data tables

Interconnecting Wiring **SV09-18D (50Hz)**

INDOOR UNIT		L1	○	←	L1	Mains Incoming Supply - Primary 400V / 3PH + N / 50Hz (Only applicable to units without Dual Power Supply option)					
		L2	○	←	L2						
		L3	○	←	L3						
		N	○	←	N						
		L4	○	←	L1	Mains Incoming Supply - Primary 400V / 3PH + N / 50Hz (Only applicable for units with Dual Power Supply Option)					
		L5	○	←	L2						
		L6	○	←	L3						
		N1	○	←	N						
		L7	○	←	L1	Mains Incoming Supply - Secondary 400V / 3PH + N / 50Hz (Only applicable for units with Dual Power Supply Option)					
		L8	○	←	L2						
		L9	○	←	L3						
		N2	○	←	N						
		PE	○	←	PE	Protective Earth Connection (always fitted)					
CIRCUIT 1		220	○	→		Mains Supply to Outdoor Unit 1 (CR12, 16, 22, 30, 50, 65, 80, 105) - AC / EC Subfused, Fan speed controller indoors (AC)	→	○	200	**OUTDOOR UNIT 1**	
		N3	○	→			→	○	N		
		PE	○	→			→	○	PE		
		833	○	→		Fan Speed Control Signal to Outdoor Unit 1 (CR12, 16, 22, 30, 50, 65, 80, 105) - EC	→	○	833		
		500	○	→			→	○	500		
		SCR	○	→			→	○	SCR		
CIRCUIT 1		220	○	→		Mains Supply to Outdoor Unit 1 (CR26, 35, 60, 75) - AC / EC Subfused, Fan speed controller outdoors (AC)	→	○	L1	**OUTDOOR UNIT 1**	
		221	○	→			→	○	L2		
		222	○	→			→	○	L3		
		PE	○	→			→	○	PE		
		833	○	→		Fan Speed Control Signal to Outdoor Unit 1 (CR26, 35, 60, 75) - AC / EC	→	○	833		
		500	○	→			→	○	500		
		SCR	○	→			→	○	SCR		
CIRCUIT 1						Separate Mains Incoming Supply 230V / 1PH +N / 50Hz CR12, 16, 22, 30, 50 ,65, 80, 105 - SCAF Not Subfused	→	○	200	**OUTDOOR UNIT 1**	
							→	○	N		
							→	○	PE		
		833	○	→		Fan Speed Control Signal to Outdoor Unit 1 CR12, 16, 22, 30, 50 ,65, 80, 105 - SCAF Not Subfused	→	○	833		
		500	○	→			→	○	500		
		SCR	○	→			→	○	SCR		
CIRCUIT 1						Separate Mains Incoming Supply 400V / 3PH / 50Hz CR26, 35, 60, 75 - SCAF Not subfused	→	○	L1	**OUTDOOR UNIT 1**	
							→	○	L2		
							→	○	L3		
							→	○	PE		
		833	○	→		Fan Speed Control Signal to Outdoor Unit 1 CR26, 35, 60, 75 - SCAF Not subfused	→	○	833		
		500	○	→			→	○	500		
		SCR	○	→			→	○	SCR		

Interconnecting Wiring **SV09-18D (50Hz)**

Remote On/Off	INDOOR UNIT		522	○	←	Remote On/Off
			502	○	→	24Vac
Fire Shutdown			583	○	←	Fire Detection
			502	○	→	24Vac
Alarm Volt Free Contacts			560	○	→	Non-Critical alarm Normally Open
			561	○	←	Common
			563	○	→	Critical alarm Normally Open
			564	○	←	Common
			565	○	→	Critical alarm Normally Closed
Run/Standby Network	INDOOR UNIT		RxTx-	○	←	Network Connections (Inward connection) AIRELan
			RxTx+	○	←	
			GND	○	←	
			RxTx-	○	→	Network Connections (Outward connection) AIRELan
			RxTx+	○	→	
			GND	○	→	
BMS Connections	INDOOR UNIT		891	○	↔	Wired BMS connection (ModBUS, BACNet, LON, RS485)
			892	○	↔	
			893	○	↔	
BMS Connections	INDOOR UNIT		N/A	○	↔	BMS Network Connections (pCOWEB Ethernet)

Technical

DF

After Sales

Warranty

All Airedale products or parts (non consumable) supplied for installation within the UK mainland and commissioned by an Airedale engineer, carry a full Parts & Labour warranty for a period of 12 months from the date of commissioning or 18 months from the date of despatch, whichever is the sooner.
Parts or Equipment supplied by Airedale for installation within the UK or for Export that are properly commissioned in accordance with Airedale standards and specification, not commissioned by an Airedale engineer; carry a 12 month warranty on non consumable Parts only from the date of commissioning or 18 months from the date of despatch, whichever is the sooner.
Parts or equipment installed or commissioned not to acceptable Airedale standards or specification invalidate all warranty.

Warranty is only valid in the event that

In the period between delivery and commissioning the equipment:

- is properly protected & serviced as per the Airedale installation & maintenance manual provided
- where applicable the glycol content is maintained to the correct level

In the event of a problem being reported and once warranty is confirmed* as valid under the given installation and operating conditions, the company will provide the appropriate warranty coverage (as detailed above) attributable to the rectification of any affected Airedale equipment supplied (excluding costs for any specialist access or lifting equipment that must be ordered by the customer).
*Once warranty is confirmed, maintenance must be continued to validate the warranty period.
Any spare part supplied by Airedale under warranty shall be warranted for the unexpired period of the warranty or 3 months from delivery, whichever period is the longer.
To be read in conjunction with the Airedale Conditions of Sale - Warranty and Warranty Procedure, available upon request.

Procedure

When a component part fails, a replacement part should be obtained through our Spares department. If the part is considered to be under warranty, the following details are required to process this requirement. Full description of part required, including Airedale's part number, if known. The original equipment serial number. An appropriate purchase order number.
A spares order will be raised under our warranty system and the replacement part will be despatched, usually within 24 hours should they be in stock. When replaced, the faulty part must be returned to Airedale with a suitably completed and securely attached "Faulty Component Return" (FCR) tag. FCR tags are available from Airedale and supplied with each Warranty order.
On receipt of the faulty part, suitably tagged, Airedale will pass to its Warranty department, where it will be fully inspected and tested in order to identify the reason for failure, identifying at the same time whether warranty is justified or not.
On completion of the investigation of the returned part, a full "Report on Goods Returned" will be issued. On occasion the release of this complete report may be delayed as component manufacturers become involved in the investigation.
When warranty is allowed, a credit against the Warranty invoice will be raised. Should warranty be refused the Warranty invoice becomes payable on normal terms.

Exclusions

Warranty may be refused for the following reasons.

- Misapplication of product or component
- Incorrect site installation
- Incomplete commissioning documentation
- Inadequate site installation
- Inadequate site maintenance
- Damage caused by mishandling
- Replaced part being returned damaged without explanation
- Unnecessary delays incurred in return of defective component

Returns analysis

All faulty components returned under warranty are analysed on a monthly basis as a means of verifying component and product reliability as well as supplier performance. It is important that all component failures are reported correctly.

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