Airedale by MODINE

Condensing Unit
CU1 - CU 4
3.3kW - 13.0kW

Technical Manual

CE

bsi. ISO 9001 Quality Management FM00542 ISO 14001 Environmental Management EMS52086

Customer Services

Warranty, Commissioning & Maintenance

As standard, Airedale guarantees all non consumable parts only for a period of 12 months, variations tailored to suit product and application are also available; please contact Airedale for full terms and details.

To further protect your investment in Airedale products, Airedale can provide full commissioning services, comprehensive maintenance packages and service cover 24 hours a day, 365 days a year (UK mainland).

For a free quotation contact Airedale or your local Sales Engineer.

All Airedale products are designed in accordance with EU Directives regarding prevention of build up of water, associated with the risk of contaminants such as legionella.

For effective prevention of such risk it is necessary that the equipment is maintained in accordance with Airedale recommendations.

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: connect@airedale.com or telephone:

UK Sales Enquiries	+ 44 (0) 113 239 1000	connect@airedale.com
International Enquiries	+ 44 (0) 113 239 1000	connect@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	training@airedale.com

For information, visit us at our web site: www.airedale.com

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 ⚠	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.

Protective Personal Equipment

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

Refrigerant Warning

This Airedale unit uses R407C refrigerant which requires careful attention to proper storage and handling procedures. Use only manifold gauge sets designed for use with R407C refrigerant. Use only refrigerant recovery units and cylinders designed for high pressure refrigerants. R407C must only be charged in the liquid state to ensure correct blend makeup. The refrigerant must be stored in a clean, dry area away from sunlight and must never be stored above 50°C.

Global Warming Potential

The R407C refrigerant has a GWP of 1774 (based on EN378-1:2016, 100 year life)

Pressure Equipment Directive (2014/68/EU)

Minimum and Maximum Operation Temperature (TS) and Pressure (PS)

Refrigeration

Allowable Temperature Range (TS), = Min -20°C* to Max 120°C**

Maximum Allowable Pressure (PS), = High Side 27.6 Barg

*Based on the refrigerant temperature in the unit off state in the lowest permitted ambient temperature.

**Based on the maximum allowable super-heated refrigerant temperature.

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.

Dangerous Substances and Explosive Atmospheres Regulations

The completion of a DSEAR (Dangerous Substances and Explosive Atmospheres Regulations) risk assessment must be completed as a legal requirement by the employer of the business where this equipment will be installed. This is not the responsibility of Airedale International Air Conditioning Ltd to undertake as the manufacturer of the equipment.

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

CE Directive

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

Electromagnetic Compatibility Directive (EMC)	2014/30/EU
Machinery Directive (MD)	89/392/EEC version 2006/42/EC
Pressure Equipment Directive (PED)	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.

Dangerous Substances and Explosive Atmospheres Regulations

The completion of a DSEAR (Dangerous Substances and Explosive Atmospheres Regulations) risk assessment must be completed as a legal requirement by the employer of the business where this equipment will be installed. This is not the responsibility of Airedale International Air Conditioning Ltd to undertake as the manufacturer of the equipment.

Contents

General Description

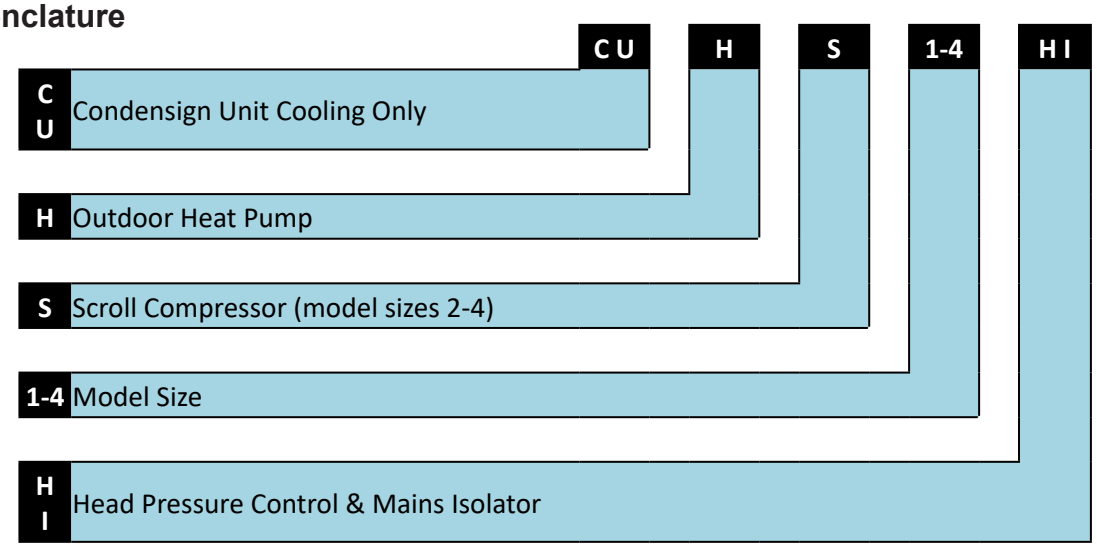
Introduction

This range of 8 air cooled condensing units and heat pumps covers the range of 3.3 to 13 kW in cooling mode. All condensing units are factory fitted with head pressure control and mains isolator as standard. The range is custom designed for a small footprint, low noise level, slimline and aesthetically pleasing appearance and lend themselves to wall mounting applications. These units can be used with many Airedale products from the mini split Answer Cassette and Concept 2000 units, Comfort modular comfort products and close control products. They can also be utilised as heat rejection equipment for applications featuring other cooling units.

Construction

Unit cabinets are manufactured from galvanised sheet steel coated with epoxy baked powder paint to provide a durable finish. The standard unit colour is Light Grey (RAL 7035).
Access to the compressors is via removable panels at the end and side of the units.

Nomenclature



Standard Features

Condenser

The large surface area coil is manufactured from refrigeration quality cooper tubes with mechanically bonded aluminium fins and is ideally positioned to optimise airflow and heat transfer.

Fan Motor & Assembly

The axial flow fan assembly has low noise sickly type blades and an inlet ring.
The external rotor motor allows the use of a low power output, single phase and speed controllable motor to power the fan. The motor has inbuilt thermal overload protection and the assembly is supplied complete with a finger guard for protection.

Compressor

CU/CUH 1 - 1.5
Fully hermetic reciprocating compressor fitted as standard with internal thermal motor protection. Compressor(s) are mounted to the base via the use of vibration isolators.

CUS/CUHS 2 - 4
Hermetic scroll compressors fitted as standard with internal thermal motor protection and internal pressure relief valve. Compressor(s) are mounted to the base via the use of vibration isolators.

Refrigeration

Cooling only units feature as standard:
- Liquid line shut off valve
- Suction line shut off valve
- High and low pressure switches
- Filter dryer (loose)
- Operating charge

Heat pump units feature as standard:
Each unit features as standard:
- Liquid line shut off line
- Suction line shut off valve
- High and low pressure switches
- Filter dryer (loose)
- Reversing valve
- Defrost function
- Oil sump heater
- Suction line accumulator
- Check valve (TEV inbuilt)
- Externally equalised bi-directional thermostatic expansion valve

Controls
A custom designed microprocessor system has been developed and is fitted to the units as standard so that an Airedale indoor unit can be matched to the condensing unit, and communication is available via a simple 2-wire link.
The microprocessor is programmed with compressor anticycle protection to prevent short cycling and subsequent additional wear on the compressor, limiting the compressor starts to 6 per hour. As an additional feature, communication between indoor and outdoor microprocessor units is carried by means of a low voltage 2 core screened cable. A set of volt free contacts, to relay a unit trip, is provided as standard. Alternatively, the condensing unit can be supplied with electro-mechanical controls – refer to Optional Extras for details.

Electrical
The unit control panel is fitted with the necessary contactors, sub-circuit protection and terminals to allow efficient and continuous unit operation. All wiring is colour coded and numbered for identification and all units are wired to current local and European standards.
This system has been designed to be connected to a TN type distribution system. For alternate distribution type systems, contact Airedale.

Head Pressure Control
Head pressure is maintained by a factory fitted head pressure controller which varies the speed of the fan(s) to provide optimum control under varying ambient conditions.

Mains Electric Isolator
The mains electric isolator ensures complete unit isolation of the electrical panel during adjustment and maintenance. The factory-fitted isolating device is a door interlocking type, preventing the panel from being accessed when the unit is running.

Optional Extras

Epoxy Coated Condenser Coils
In atmospheres where high corrosion is anticipated, epoxy coated aluminium finned coils can be fitted to provide extra protection.

Wall Mounting Brackets
A bracket and fixing kit for wall mounting can be supplied.

Defrost Drain Tray
A stainless steel drain tray can be provided to collect condensate when units are used in heat pump mode. This is recommended for wall mounted installations.

Hot Gas Bypass
To achieve capacity control during low load conditions or to maintain suction pressure when used with fresh air systems, the hot gas bypass system will modulate the capacity down to 40% of full load. A stub is provided for site connection of the hot gas line to the local expansion device. The hot gas option is supplied as a loose field fit kit.

Electro-Mechanical Controls
The condensing unit can be supplied with electro-mechanical controls to operate via a cooling/heating signal from the indoor unit. This is suitable where the condensing unit is matched to a non-Airedale indoor unit.

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

Capacity Data - Cooling Only Unit

Cooling Duty	Mean Evaporating Temperature	Ambient 25°C Output kW	25°C Input kW	30°C Output kW	30°C Input kW	35°C Output kW	35°C Input kW	40°C Output kW	40°C Input kW	45°C Output kW	45°C Input kW
CU1	-5	2.62	0.90	2.45	1.04	2.30	1.19	2.13	1.33	1.96	1.47
	0	3.11	0.95	2.92	1.08	2.73	1.23	2.55	1.37	2.35	1.51
	5	3.70	0.98	3.50	1.12	3.30	1.26	3.10	1.41	2.90	1.55
	10	4.32	1.02	4.11	1.15	3.90	1.28	3.67	1.44	3.44	1.59
CU1.5	-5	3.57	1.27	3.35	1.47	3.14	1.68	2.91	1.87	2.68	2.08
	0	4.25	1.31	4.02	1.52	3.79	1.71	3.55	1.92	3.31	2.13
	5	5.05	1.38	4.79	1.58	4.51	1.78	4.24	1.99	3.97	2.19
	10	5.90	1.44	5.62	1.63	5.33	1.81	5.02	2.04	4.70	2.25
CUS2	-5	4.01	1.09	3.76	1.26	3.52	1.44	3.27	1.61	3.01	1.79
	0	4.77	1.13	4.51	1.31	4.25	1.47	3.98	1.65	3.71	1.83
	5	5.67	1.19	5.37	1.36	5.06	1.53	4.76	1.71	4.45	1.88
	10	6.62	1.24	6.30	1.40	5.98	1.56	5.63	1.75	5.27	1.93
CUS2.5S	-5	5.97	1.74	5.61	2.01	5.24	2.26	4.83	2.55	4.41	2.83
	0	7.12	1.82	6.73	2.08	6.34	2.34	5.90	2.63	5.46	2.91
	5	8.40	1.93	7.98	2.18	7.55	2.42	7.06	2.73	6.56	3.01
	10	9.80	2.03	9.32	2.27	8.84	2.51	8.26	2.80	7.68	3.08
CUS2.5T	-5	5.90	1.72	5.69	2.00	5.47	2.27	5.27	2.54	5.53	2.82
	0	7.18	1.83	6.81	2.08	6.43	2.34	6.07	2.59	5.66	2.90
	5	8.40	1.91	7.99	2.17	7.57	2.42	7.13	2.71	6.68	2.99
	10	9.70	2.02	9.25	2.27	8.79	2.51	8.31	2.79	7.82	3.07
CUS3	-5	6.99	2.13	6.62	2.44	6.26	2.75	5.91	3.07	5.50	3.44
	0	8.28	2.27	7.86	2.54	7.44	2.81	6.99	3.14	6.54	3.53
	5	9.69	2.38	9.20	2.69	8.72	2.96	8.22	3.30	7.67	3.63
	10	11.20	2.51	10.67	2.79	10.12	3.09	9.55	3.42	8.99	3.74
CUS3.5	-5	8.66	2.48	8.19	2.79	7.71	3.10	7.23	3.42	6.75	3.73
	0	10.38	2.60	9.82	2.91	9.25	3.21	8.72	3.54	8.18	3.86
	5	12.35	2.77	11.53	3.05	10.76	3.33	10.24	3.66	9.72	3.98
	10	14.18	2.93	13.29	3.20	12.39	3.46	11.89	3.79	11.39	4.12
CUS4	-5	10.56	2.50	9.85	2.98	9.18	3.46	8.54	3.95	8.54	3.95
	0	12.44	2.63	11.74	3.11	11.05	3.59	10.32	4.07	9.78	4.61
	5	14.54	2.86	13.80	3.33	13.05	3.79	12.37	4.27	11.75	4.80
	10	16.95	3.11	16.17	3.56	15.38	4.00	14.51	4.42	13.62	5.00

1 Output kW refers to the compressor duty.
2 Input kW refers to the compressor input power only.
3 Cooling data for a cooling only unit.

Capacity Data - Heat Pump Unit

Cooling Duty	Mean Evaporating Temperature	Ambient 25°C Output kW	25°C Input kW	30°C Output kW	30°C Input kW	35°C Output kW	35°C Input kW	40°C Output kW	40°C Input kW	45°C Output kW	45°C Input kW
CUH1	-5	2.62	0.90	2.45	1.04	2.30	1.19	2.13	1.33	1.96	1.47
	0	3.11	0.95	2.92	1.08	2.73	1.23	2.55	1.37	2.35	1.51
	5	3.70	0.98	3.50	1.12	3.30	1.26	3.10	1.41	2.90	1.55
	10	4.32	1.02	4.11	1.15	3.90	1.28	3.67	1.44	3.44	1.59
CUH1.5	-5	3.57	1.27	3.35	1.47	3.14	1.68	2.91	1.87	2.68	2.08
	0	4.25	1.31	4.02	1.52	3.79	1.71	3.55	1.92	3.31	2.13
	5	5.05	1.38	4.79	1.58	4.51	1.78	4.24	1.99	3.97	2.19
	10	5.90	1.44	5.62	1.63	5.33	1.81	5.02	2.04	4.70	2.25
CUHS2	-5	3.85	1.05	3.61	1.21	3.38	1.38	3.14	1.55	2.89	1.72
	0	4.58	1.08	4.33	1.26	4.08	1.41	3.82	1.58	3.56	1.76
	5	5.44	1.14	5.16	1.31	4.86	1.47	4.57	1.64	4.27	1.80
	10	6.36	1.19	6.05	1.34	5.74	1.50	5.40	1.68	5.06	1.85
CUHS2.5S	-5	5.73	1.67	5.39	1.93	5.03	2.17	4.64	2.45	4.23	2.72
	0	6.84	1.75	6.46	2.00	6.09	2.25	5.66	2.52	5.24	2.79
	5	8.06	1.85	7.66	2.09	7.25	2.32	6.78	2.61	6.30	2.89
	10	9.41	1.95	8.95	2.18	8.49	2.41	7.93	2.69	7.37	2.96
CUHS2.5T	-5	5.66	1.65	5.46	1.92	5.25	2.18	5.06	2.44	5.31	2.71
	0	6.89	1.76	6.54	2.00	6.17	2.25	5.83	2.49	5.43	2.78
	5	8.06	1.83	7.67	2.08	7.27	2.32	6.84	2.60	6.41	2.87
	10	9.31	1.94	8.88	2.18	8.44	2.41	7.98	2.68	7.51	2.95
CUHS3	-5	6.71	2.04	6.36	2.34	6.01	2.64	5.67	2.95	5.28	3.30
	0	7.95	2.18	7.55	2.44	7.14	2.70	6.71	3.01	6.28	3.39
	5	9.30	2.28	8.83	2.58	8.37	2.84	7.89	3.17	7.36	3.48
	10	10.75	2.41	10.24	2.68	9.72	2.97	9.17	3.28	8.63	3.59
CUHS3.5	-5	8.31	2.38	7.86	2.68	7.40	2.98	6.94	3.28	6.48	3.58
	0	9.96	2.50	9.42	2.79	8.88	3.08	8.37	3.39	7.85	3.71
	5	11.86	2.66	11.09	2.93	10.33	3.20	9.83	3.51	9.33	3.82
	10	13.61	2.81	12.75	3.07	11.89	3.32	11.41	3.64	10.93	3.96
CUHS4	-5	10.14	2.40	9.46	2.86	8.81	3.32	8.20	3.79	8.20	3.79
	0	11.94	2.52	11.27	2.99	10.61	3.45	9.91	3.91	9.39	4.43
	5	13.96	2.75	13.25	3.20	12.53	3.64	11.88	4.10	11.28	4.61
	10	16.27	2.99	15.52	3.42	14.75	3.84	13.93	4.27	13.08	4.80

1 Output kW refers to the compressor duty.
2 Input kW refers to the compressor input power only.
3 Cooling data for a cooling only unit.

Heating Duty	°C	Outdoor Air On %RH	Mean Condensing Temperature 30°C Output kW	35°C Output kW	40°C Output kW	45°C Output kW	50°C Output kW	55°C Output kW
CUH1	5	85	3.81	3.76	3.70	3.72	3.70	3.51
	7	85	4.02	3.95	3.90	3.91	3.75	3.63
	10	80	4.29	4.22	4.16	4.16	4.15	4.11
CUH1.5	5	85	4.70	4.63	4.62	4.59	4.57	4.55
	7	85	4.98	4.90	4.87	4.84	4.80	4.78
	10	80	5.32	5.23	5.19	5.14	5.31	5.41
CUHS2	5	85	5.44	5.37	5.29	5.32	5.29	5.01
	7	85	5.74	5.65	5.57	5.59	5.36	5.19
	10	80	6.13	6.03	5.94	5.94	5.93	5.88
CUHS2.5S	5	85	8.14	8.02	7.99	7.95	7.91	7.87
	7	85	8.63	8.49	8.43	8.38	8.31	8.27
	10	80	9.19	9.04	8.99	8.93	8.87	8.72
CUHS2.5T	5	85	8.14	8.02	7.99	7.95	7.91	7.87
	7	85	8.63	8.49	8.43	8.38	8.31	8.27
	10	80	9.19	9.04	8.99	8.93	8.87	8.77
CUHS3	5	85	9.30	9.25	9.20	9.17	9.12	9.09
	7	85	9.83	9.79	9.77	9.77	9.76	9.73
	10	80	10.59	1046	10.32	10.26	10.20	10.08
CUHS3.5	5	85	11.92	11.71	11.62	11.51	11.40	11.32
	7	85	12.61	12.36	12.27	12.15	12.00	11.89
	10	80	13.51	13.23	13.12	12.95	12.78	12.59
CUHS4	5	85	13.57	13.51	13.48	13.43	13.38	13.36
	7	85	14.34	14.25	14.21	14.14	14.06	14.01
	10	80	15.42	15.19	15.08	15.05	14.89	14.79

1 Output kW refers to the compressor duty.
2 Indoor ambient at 20°C.

Technical Data

Mechanical Data

CU/CUH			1	1.5	S2	S2.5S	S2.5T	S3	S3.5	S4
Nominal Capacity - Cooling	(1)	kW	3.3	4.5	5.1	7.6	7.6	8.7	10.8	13.1
Nominal Input	(1)	kW	1.3	1.8	1.5	2.4	2.4	3	3.3	3.8
Capacity Steps		%	0-100	0-100	0-100	0-100	0-100	0-100	0-100	0-100
Dimensions										
Height		mm	828	828	828	828	828	1143	1140	1140
Width		mm	395	395	395	395	395	395	395	395
Length		mm	937	937	935	935	935	940	935	935
Condenser										
Type			Air Cooled							
Quantity			1	1	1	1	1	1	1	1
Face Area		m^2	0.76	0.76	0.76	0.76	0.76	0.89	0.89	0.89
Nominal Airflow		m^3/s	0.80	0.8	0.8	0.8	0.8	0.8	1.45	1.8
Coil Volume	(2)	l	2.03	2.03	2.03	4.33	4.33	5.12	5.12	5.12
Discharge			Horizontal							
Fans										
Type			Axial							
Quantity			1	1	1	1	1	1	2	2
Diameter		mm	400	400	400	400	400	400	400	400
Maximum Speed		rpm	1430	1430	1430	1430	1430	1430	1430	1430
Compressor										
Type			Reciprocating		Scroll					
Quantity			1	1	1	1	1	1	1	1
Oil Charge Volume		L	0.6	1.2	1	1.1	1.1	1.1	1.9	1.6
Refrigeration										
Number of Circuits			1	1	1	1	1	1	1	1
Refrigerant Type			R407C							
Holding Charge		kg	Inert Gas							
Refrigeration Control			Thermostatic Expansion Valve (CUH Only)							
Weights CU Units										
Machine Weight (nom)		kg	50.2	58.0	57.2	73.5	73.5	85.0	98.6	101.0
Operating Weight (nom)		kg	51.0	59.0	60.2	75.7	75.7	88.1	101.6	104.1
Weights CUH Units										
Machine Weight (nom)		kg	52.2	60.0	58.6	75.4	75.4	80.4	103	103.4
Operating Weight (nom)		kg	53	61.0	61.8	78.4	78.4	83.6	106	109.4
Connections										
Liquid Line	(3)	in	1/4	1/4	1/4	3/8	3/8	3/8	3/8	1/2
Suction Line	(3)	in	5/8	5/8	5/8	3/4	3/4	3/4	3/4	3/4
Hot Gas Stub		in	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2

(1) Nominal Capacity based on 5°C mean evaporating temperature and a 35°C ambient.

(2) Figures for guidance.

(3) Flare connections on service valves.

Technical Data

Electrical Data

CU/CUH			1	1.5	S2	S2.5S	S2.5T	S3.0	S3.5	S4.0
Unit Data										
Nominal Run Amps	(1)	A	6	9.7	10.3	14.3	6.4	7.1	8.8	9.5
Maximum Start Amps		A	35.0	59.0	49.6	78.6	39.1	46.6	59.2	67.0
Control Circuit		VAC	230	230	230	230	230	230	230	230
Mains Supply		V	230/1/50				400/3/50			
Rec. Mains Fuse		A	16	16	16	20	16	16	16	20
Max Incoming Mains		mm²	6	6	6	6	6	6	6	6
Compressor										
Motor Rating		kW	1.1	1.7	1.7	2.5	2.5	2.9	3.7	4.0
Nominal Run Amps	(1)	A	5.5	9.4	9.6	13.6	5.7	6.4	7.5	8.2
Locked Rotor Amps		A	37.5	61.0	47.0	76.0	36.5	44.0	54.0	61.8
Crankcase Heater Rating	(2)	W	24	24	40	40	40	40	65	65
Type of Start			Direct on Line							
Condenser Fan										
Motor Rating		kW	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Full Load Amps		A	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Locked Rotor Amps		A	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25

(1) Nominal data based on 5°C evaporating temperature and a 35°C ambient.

(2) Heat Pump units only.

Sound Data

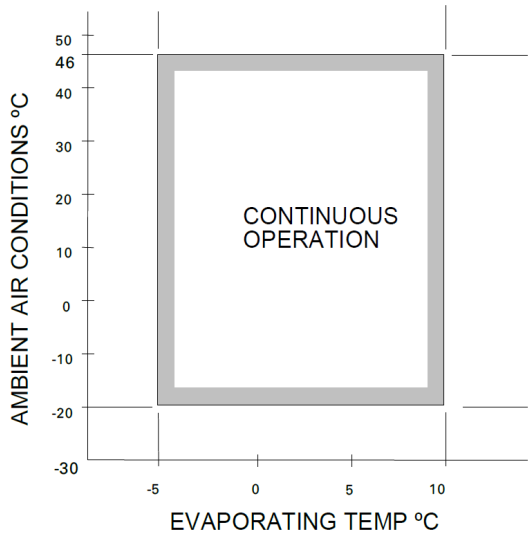
	Sound		Frequency (Hz)						
	Measurement		dBA	125	250	500	1000	2000	4000
CU/CUH	Power	dBA	64	67	67	62	59	53	46
1 - 1.5	Pressure	@ 1 m	53	40	47	49	48	43	36
	Pressure	@ 10 m	33	20	27	29	28	23	16
CUS/CUHS	Power	dBA	73	79	73	70	66	60	55
2 - 3	Pressure	@ 1 m	62	71	63	59	58	52	47
	Pressure	@ 10 m	42	51	43	39	38	32	27
CUS/CUHS	Power	dBA	73	79	75	72	66	64	57
3.5 - 4	Pressure	@ 1 m	65	71	67	64	58	56	49
	Pressure	@ 10 m	45	51	47	44	38	36	29

(1) Above noise levels are with the condenser fan running at full speed. Under normal operating conditions (ambients up to 35°C) noise levels will be reduced by 3 - 4 dB.

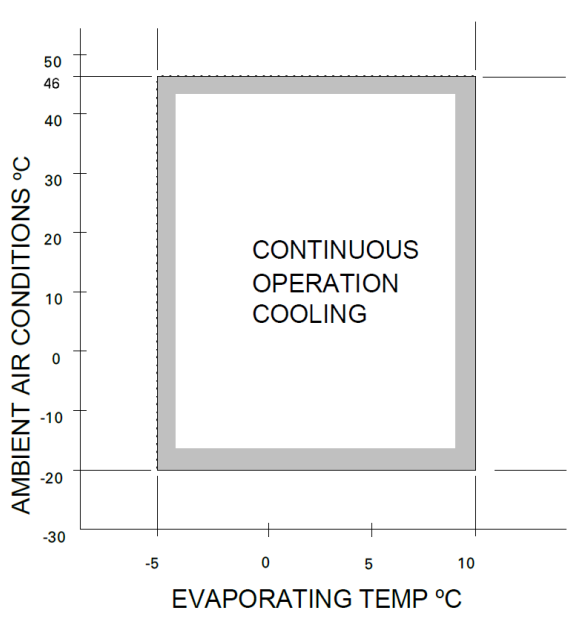
Operating Data

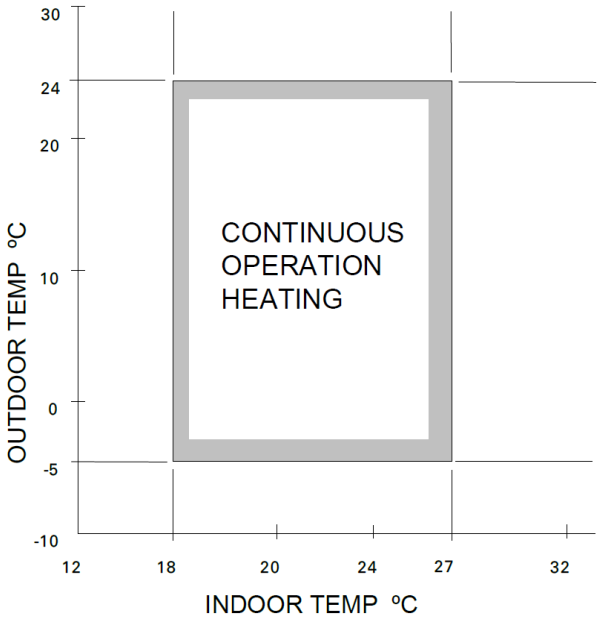
Operating Limits

Cooling Only



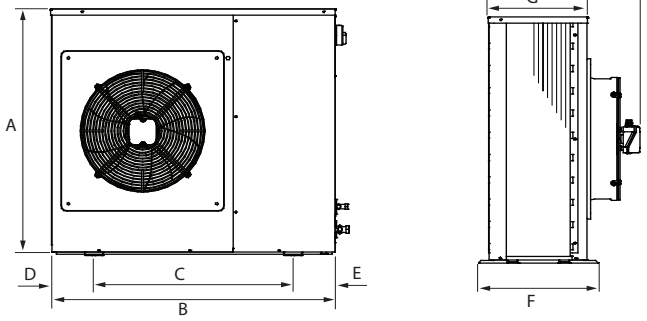
Heat Pump



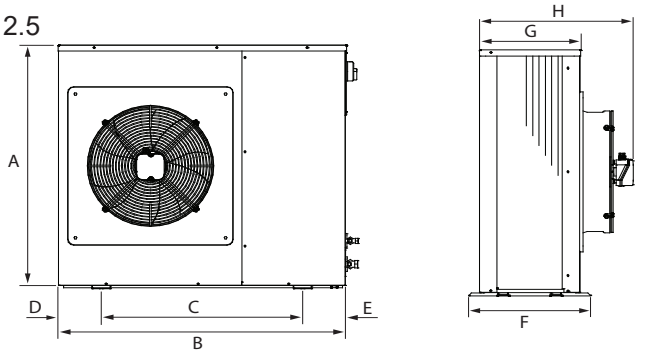


Dimensions

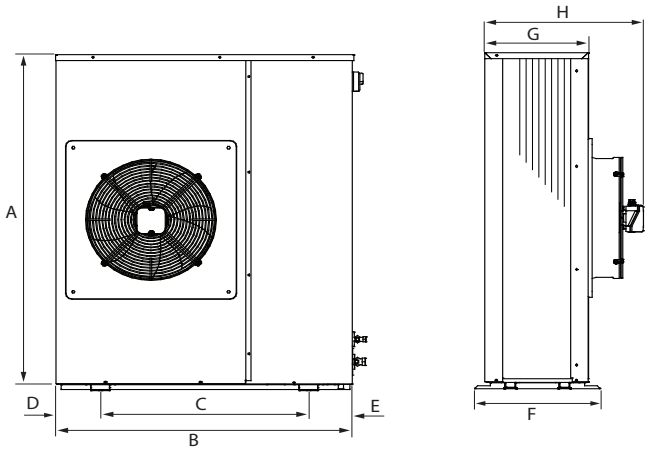
CU1 - 1.5



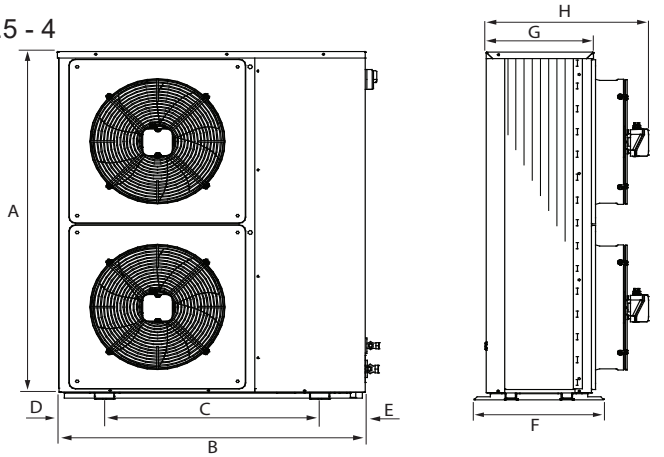
CUS2 - 2.5



CUS3



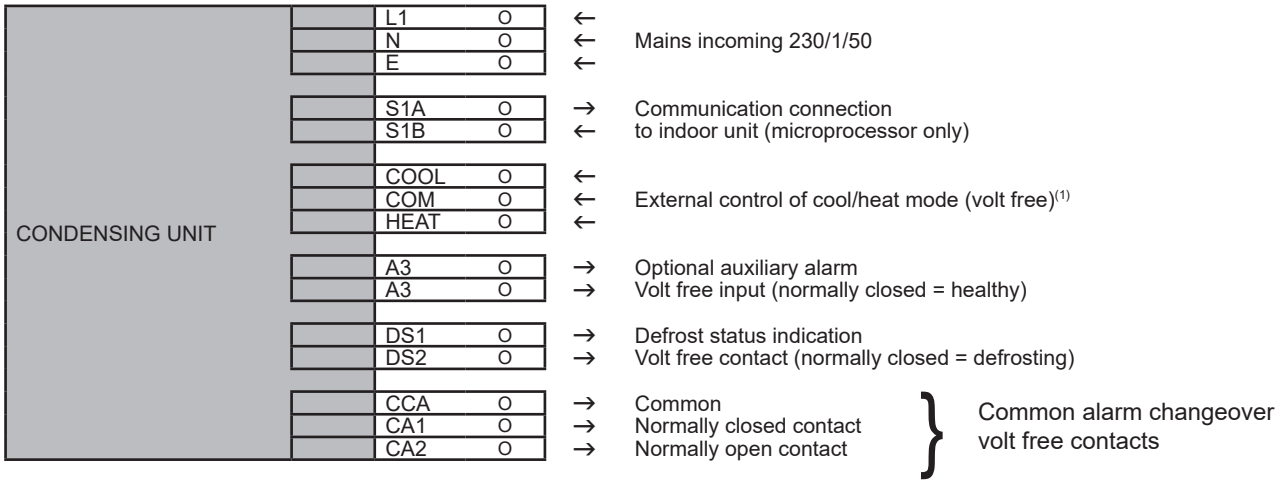
CUS3.5 - 4



	Units	A	B	C	D	E	F	G	H
CU1 - 1.5	mm	828	937	657	141	139	395	328	500
CUS2 - 2.5	mm	828	935	657	139	139	395	328	534
CUS3	mm	1143	940	657	140	140	395	330	534
CUS3.5 - 4	mm	1140	935	657	140	140	395	325	534

Field Connections

Microprocessor Controlled (AD05)

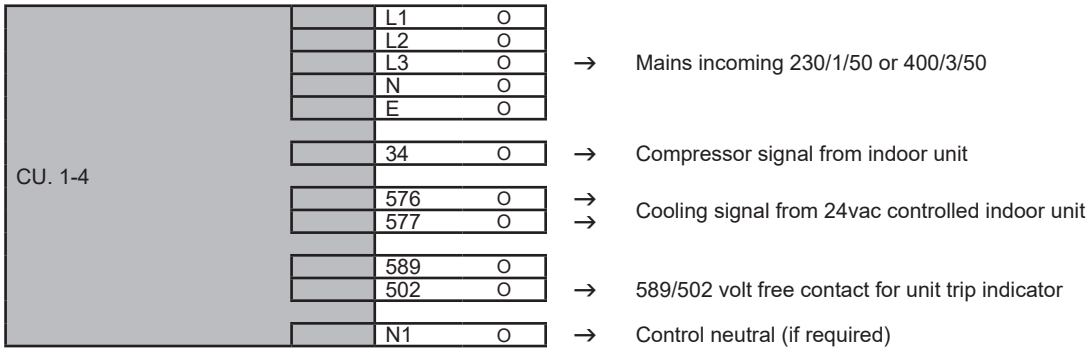


System Field Connections for AD05 Controlled Units

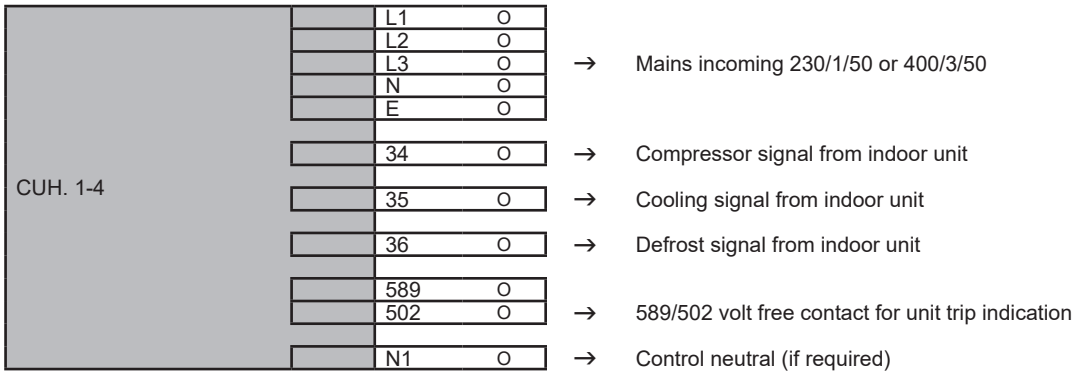
(1) The microprocessor (AD05) controlled condensing unit may be matched to non Airedale indoor air handling units. A contact can be closed across with the Cool and Common or Heat and Common terminals. Ensure that the cooling and heating cannot be initialised simultaneously.

Electro-Mechanically Controlled Units

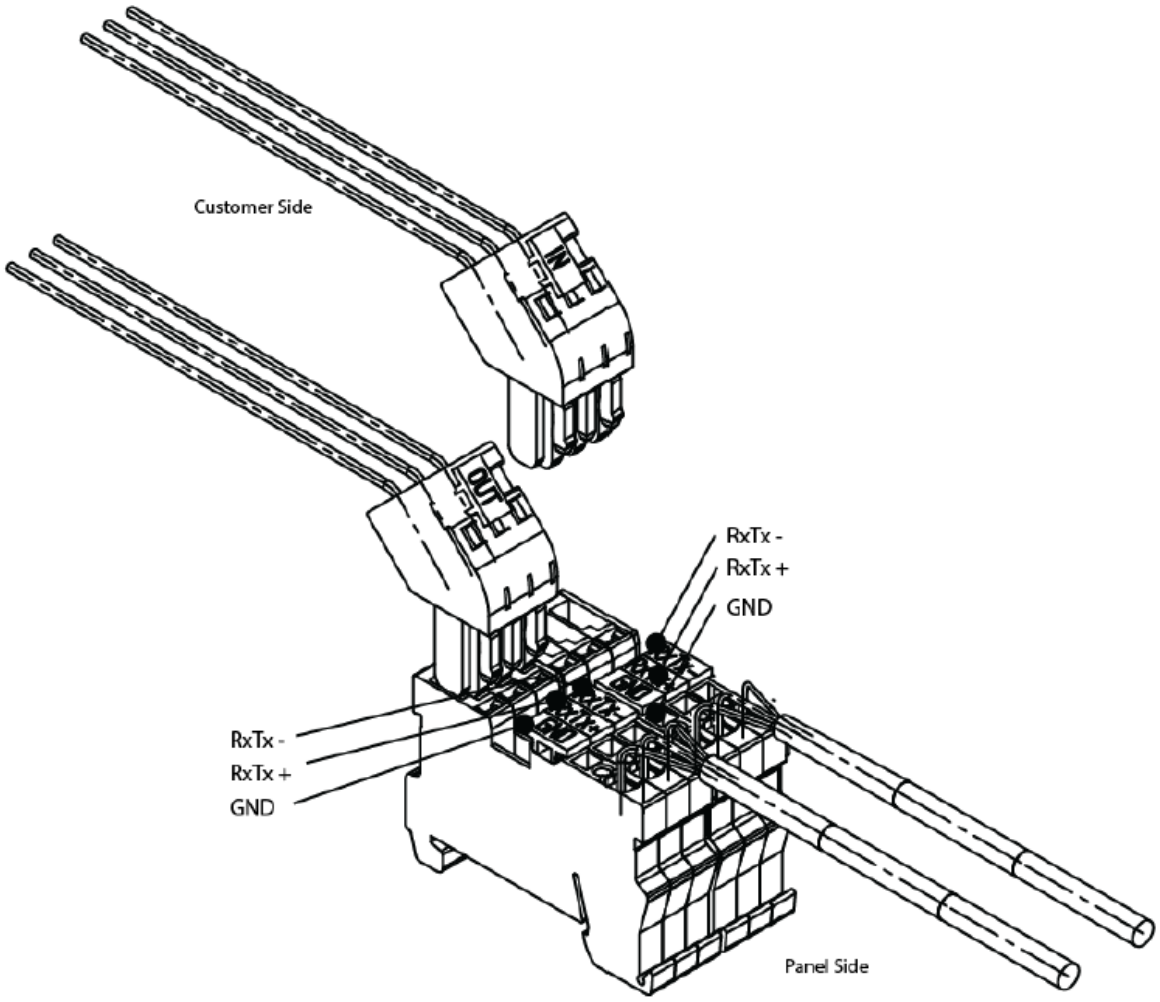
Cooling Only Units



Heat Pump Units



pLAN Terminations



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

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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