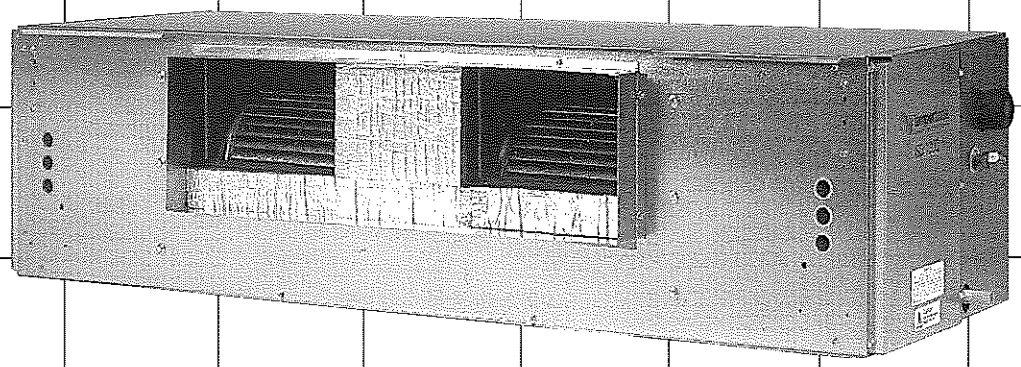
ENERGY EFFICIENT

temperzone

ISD 205Q / OSA 205

Technical Data

Ducted
Split System Air Conditioner



Nominal Cooling Capacity

20.5 kW

MARCH 1999

ISD 205Q / OSA 205 DUCTED SPLIT SYSTEM AIR CONDITIONER

GENERAL

ISD 205Q - Indoor unit usable for reverse cycle or cooling only
OSA 205 - A general designation for outdoor unit
OSA 205C - Outdoor unit, cooling only version
OSA 205R - Outdoor unit, reverse cycle version

The ISD indoor unit, together with its associated OSA outdoor unit, provides a three phase split system air conditioner designed and developed to comply with and exceed A.R.E.M.A. UEPS(7/84) specified conditions (i.e. guaranteed cooling cycle performance at 46°C outdoor temperature).

APPLICATIONS

These units have been specifically developed for air conditioning of commercial premises, e.g. offices, motels, shops and restaurants.

In tropical (high humidity) locations care must be taken to select an airflow which gives a suitable coil face air velocity that prevents water carry-over. Applications using full or high proportions of fresh air should be referred to your nearest **temperzone** sales office to establish the correct selection of units.

FEATURES

Efficient. The outdoor unit incorporates a high efficiency scroll compressor. Heat exchange coils incorporate inner grooved (rifled) tube for better heat transfer.

Performance. A dynamically balanced forward curved fan with a multi-speed motor enables fine tuning of the indoor unit to match the supply air requirements.

Quiet. The indoor unit is insulated for noise attenuation.

Slimline. The compact up-right design of the outdoor unit requires only a 150 mm gap on the coil side where installation is against a wall. Its slimline cabinet is particularly practical where there is restricted space, e.g. side access pathways, balconies, narrow ledges, etc. The unit is free standing, but can be fitted on a wall using the optional wall mounting brackets.

Durable. The outdoor unit's cabinet is constructed from high grade galvanised steel - polyester powder coated for all weather protection. External fasteners are stainless steel.

The indoor unit's cabinet is constructed from high grade galvanised steel and includes a polyester powder coated drain tray. Heat exchange coils comprise aluminium corrugated plate fins on mechanically expanded rifled copper tube.

Service Access. The indoor unit's built-in drain tray can be removed for ease of cleaning and service accessibility.

Insulated. Closed cell foam insulation has been used in the indoor unit's cabinet to ensure no particles are introduced into the air stream.

Mounting. The indoor unit can be mounted rigid, or using the optional spring mounting brackets which minimise transfer of vibration.

STANDARD EQUIPMENT

ISD Indoor Unit:
1. Coil
2. Fan - duplex forward curved centrifugal
3. Fan motor (x2) - multi-speed
4. Accurator expansion device
5. Drain tray - powder coated, removable
6. Spigots - supply and return

OSA Outdoor Unit:
1. Compressor
2. Coil
3. Fan motor (x2) - multi-speed
4. Propeller fan (x2) - direct drive
5. Fan guard
6. High/low pressure switch
7. Circuit breaker control
8. 24V control circuit
9. Phase rotation protection device

OSA 205R version also includes:
10. Reversing valve
11. Accurator expansion device
12. Time/temperature electronic de-ice control

OPTIONAL EQUIPMENT

Outdoor Unit:
1. **temperzone** HP Fan Speed Controller (4 amp) - recommended where cooling is required in below 20°C ambient conditions for long periods of time.
2. Epoxy Coated Coils - for protection in corrosive environments.
3. Coil protection guard.
4. Wall mounting brackets.

Indoor Unit:
1. Filter box - integrated return air spigot and washable filter (rated EU2).
2. Spring Mounting Kit.
3. 4.5 kW electric booster heater box - complete with heater safety cutout thermostat and air flow switch.

SAFETY FEATURES

1. HP switch (auto reset), LP switch (auto reset) and an anti rapid cycle timer for compressor protection. The compressor also has internal overload protection.
2. Circuit breaker control circuits.
3. Time-and-temperature controlled electronic de-ice switch prevents icing up of the outdoor coil during heating cycle (OSA 205R only).
4. Phase rotation protection device.

COMPRESSOR

Each high efficiency scroll type compressor is hermetically sealed, quiet running and supported on rubber mounts to minimise vibration.

REFRIGERATION PIPING

The standard unit allows for a line length of up to 35 m.

Max. height separations between units are :
Reverse Cycle systems:
Outdoor unit above indoor unit : 12 m
Outdoor unit below indoor unit : 12 m.
Cooling Only systems:
Outdoor unit above indoor unit : 18 m
Outdoor unit below indoor unit : 12 m.

For extended line lengths contact your nearest **temperzone** sales office for additional details on piping requirements.

The OSA 205 is shipped from the factory with a charge of HCFC-22 (R22) refrigerant sufficient for a 10 m line length. Liquid and suction service valves are provided. The matched indoor unit is shipped with a holding charge of nitrogen. Both units have one flare and one brazed pipe connection.

WIRING

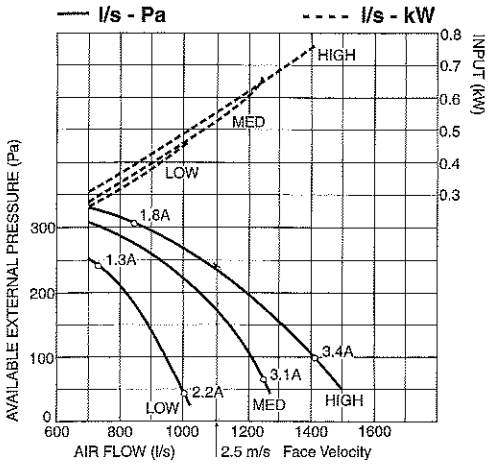
The electrical supply required (including voltage fluctuation limits) is:
3 phase 342-436 V a.c. 50 Hz with neutral and earth. A control panel, located in the outdoor unit, is fully wired ready to accept the main power supply.

The manufacturer operates a quality management system that conforms to international standard ISO 9002.

AIR HANDLING

Note: In a free blow application, beware of exceeding indoor fan motor's full load amp limit.

Amps and input watts are for each of the two motors.



ELECTRICAL

E.E.R. / C.O.P. (cooling)	10 / 2.95
Indoor Fan Full Load Amps	5.7 (x2)
Running Amps (Total System)	12 / 12 / 9
Recommended External Fuse	25 A

NOTE

Materials and specifications are subject to change without notice due to the manufacturer's ongoing research and development programme.

PERFORMANCE DATA

COOLING CAPACITY (kW)

Total = Total Capacity (kW) Sens. = Sensible Capacity (kW)
E.A.T. = Entering Air Temperature ◯ = Nominal Capacity (kW)

Note: Capacities are **gross** and do not include allowance for fan motor heat loss. Capacities are for close coupled systems. Interconnecting pipework will reduce capacity.

MODELS Indoor Unit / Outdoor Unit	INDOOR FAN SPEED	INDOOR FAN AIR l/s	INDOOR COIL E.A.T. W.B. °C	INDOOR COIL E.A.T. D.B. °C	OUTDOOR COIL ENTERING AIR TEMPERATURE °C D.B. 23 Total	23 Sens.	27 Total	27 Sens.	31 Total	31 Sens.	35 Total	35 Sens.	39 Total	39 Sens.	43 Total	43 Sens.
ISD 205Q / OSA 205	HIGH	1250	17	23	21.4	16.1	20.8	15.8	20.1	15.6	19.3	15.3	18.6	15.0	17.9	14.7
			19	27	22.7	18.6	22.0	18.4	21.2	18.1	(20.5)	17.8	19.7	17.5	18.9	17.2
			21	31	24.0	21.1	23.2	20.9	22.4	20.6	21.6	20.3	20.8	20.1	20.0	19.8

Indoor Air Flow Correction Factors @ nominal conditions

	Indoor Air Flow (%) -20%	-10%	Rated	+10%
Total Capacity	0.95	0.975	1.0	1.025
Sensible Capacity	0.89	0.950	1.0	1.050

NOTE: An optional Outdoor Unit fan speed controller is available and is recommended where cooling is required in below 20°C ambient conditions for long periods of time.

PIPE LENGTH CAPACITY LOSS

ON COOLING CYCLE DUE TO PRESSURE DROP

Note: Loss percentage is approximate only.
No allowance made for vertical piping.

Pipe Size (mm) Liquid	Suction	Equivalent Line Pipe Length (m) 5	10	15	20	30
13	28	0.5 %	1.5 %	2.5 %	3 %	4 %

Additional Pipe Length to allow per Bend	
Suction Pipe Size OD	28 mm
Large 90°Radius	0.61 m
Standard 90°Elbow	0.91 m

HEATING CAPACITY (kW)

G = Gross Heating Capacity kW, based on nominal air flow of 1250 l/s.
N = Net Heating Capacity kW allowing for average defrost.
◯ = Nominal Capacity (kW)

Reverse Cycle Systems

MODELS Indoor Unit / Outdoor Unit	INDOOR ENTERING AIR TEMP. °C D.B.	OUTDOOR COIL ENTERING AIR TEMPERATURE (E.A.T.) °C D.B. -4 G	-4 N	-2 G	-2 N	0 G	0 N	2 G	2 N	4 G	4 N	6 G	6 N	8 G	8 N	10 G	10 N
ISD 205Q / OSA 205R	15	13.6	12.2	14.5	13.1	15.5	13.8	16.5	14.2	17.4	14.8	18.7	17.0	19.9	19.9	20.5	20.5
	20	13.2	11.9	14.2	12.8	15.1	13.5	16.1	13.8	17.0	14.5	18.2	16.6	(19.3)	19.3	20.0	20.0
	25	12.8	11.5	13.7	12.3	14.6	13.0	15.5	13.4	16.4	14.0	17.6	16.0	18.7	18.7	19.4	19.4

SOUND LEVELS

Sound Power Levels (SWL)

Test Conditions: BS 848 PT2 1985. Installation Type A (free inlet and outlet). Direct method of measurement (reverberant room). Measured in decibels re 1 picowatt.

Indoor Unit - Supply Air Outlet

FAN SPEED	AIR FLOW l/s	SWL dB(A)	OCTAVE BAND FREQUENCY Hz 125	250	500	1 k	2 k	4 k
			SOUND POWER LEVELS (SWL) dB					
LOW	800	66	61	62	63	62	59	56
MED	970	71	65	64	67	67	64	61
HIGH	1260	76	70	72	72	72	69	67

Outdoor Unit

MODEL	FAN SPEED	SWL dB(A)	OCTAVE BAND FREQ. Hz 125	250	500	1 k	2 k	4 k
			SOUND POWER LEVELS dB					
OSA 205	MED	71	72	69	67	68	62	59
	HIGH	71	74	72	68	67	61	59

SPL @ 3 m dB(A)	OCTAVE BAND FREQ. Hz 125	250	500	1 k	2 k	4 k
	SOUND PRESSURE LEVELS dB					
55	56	53	51	52	46	43
55	58	56	52	51	45	43

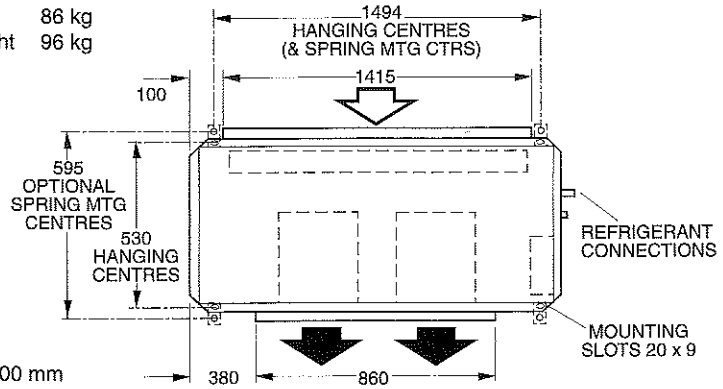
Sound Pressure Level (SPL) in decibels re 20 μPa.

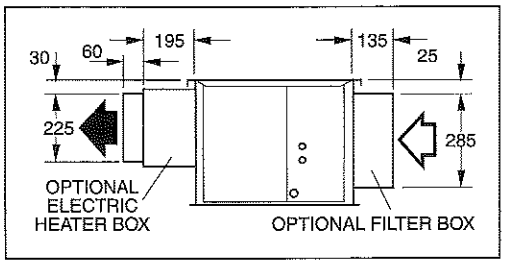
DIMENSIONS (mm)

Not to Scale

ISD 205Q Indoor Unit

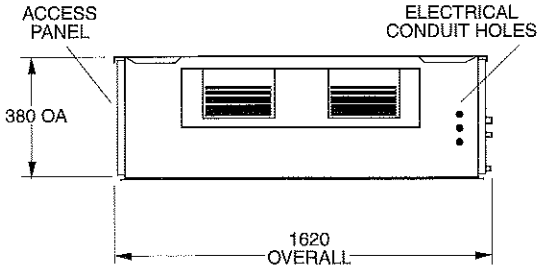
Net Weight	86 kg
Shipping Weight	96 kg

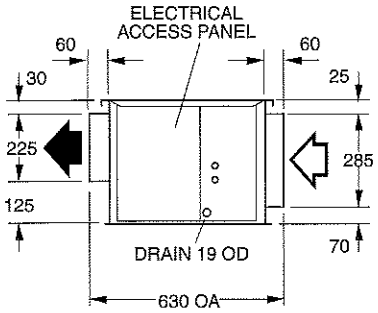




FAN ACCESS VIA
REMOVEABLE BASE
& DRAIN TRAY

Note : Allow 500 mm minimum clearance to each access panel.

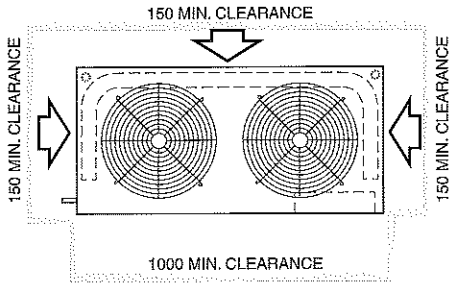




OSA 205 Outdoor Unit

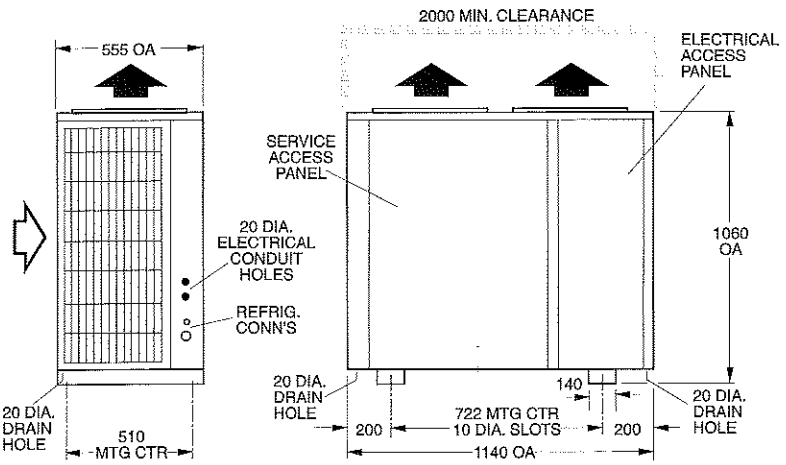
	OSA 205C	OSA 205R
Net Weight	138 kg	142 kg
Shipping Weight	162 kg	164 kg

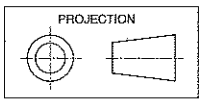
Note
Materials and specifications are subject to change without notice due to the manufacturer's ongoing research and development programme.



Recommended Pipe Sizes

Suction:	28 mm OD
Liquid:	13 mm OD





ISO 9002 CERTIFIED

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