

Variable Air Volume & Constant Volume Terminal Units Model HQ



AIR IN MOTION

Variable Air Volume & Constant Volume Terminal Units

Model HQ



Our model HQ terminal units have been designed to regulate the flow of conditioned air in single duct Variable Air Volume or Constant Volume air conditioning systems whilst providing the following design features:-

- Low Noise Levels.
- Integral Non Fibrous Attenuation.
- Suitable For Supply Or Extract Systems.
- Unique Multi-point Flow Sensor For Easy On Site Commissioning.
- Low Minimum Inlet Static Pressures.
- Electronic Or Pneumatic Control.
- Multi Outlets.
- Electric Or Water Terminal Reheat

Description

The model HQ terminal units provide air volume control whilst meeting today's acoustic requirements without the need for additional attenuator sections.

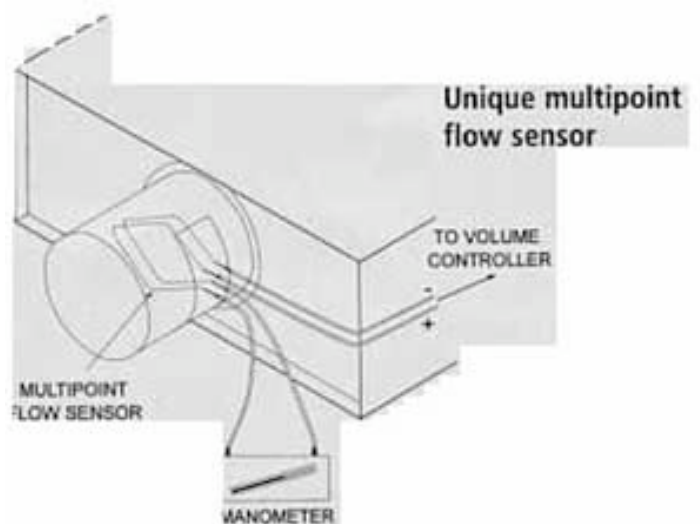
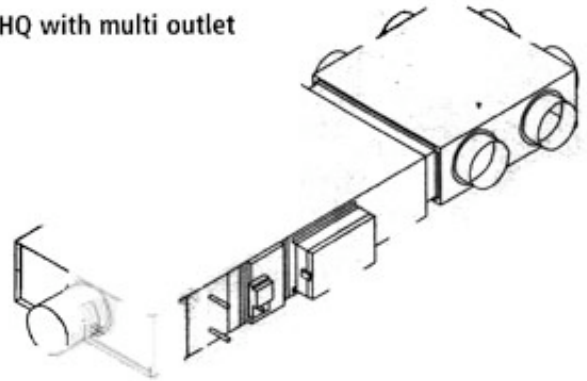
The terminal units consist of a low noise, removable, blind type damper, multipoint flow sensor and integral attenuator fitted within a sheet metal housing.

The built-in attenuator section is manufactured from non fibrous acoustic material to eliminate the danger of fibre migration.

Control components are fitted to an external heavy duty mounting plate and are supplied calibrated and wired prior to shipment. A control panel enclosure is fitted as standard.

The unique multipoint flow sensor allows accurate control of the terminal unit air volume in conjunction with either electronic or pneumatic control systems, and easy on site commissioning without loss of control, due to the incorporation of additional flow measurement tappings.

HQ with multi outlet



Model HQ terminals unit are available in 7 different sizes covering the volume range from 0.024 mJ/s to 1.885 mJ/s, suitable for supply or extract applications and inlet static reassures up to 1500 pascals.

Hot water or electric heaters can be supplied along with multiple outlet plenum sections. Additional discharge attenuators can be supplied for projects requiring even lower noise levels.

Control Requirements

Model HQ

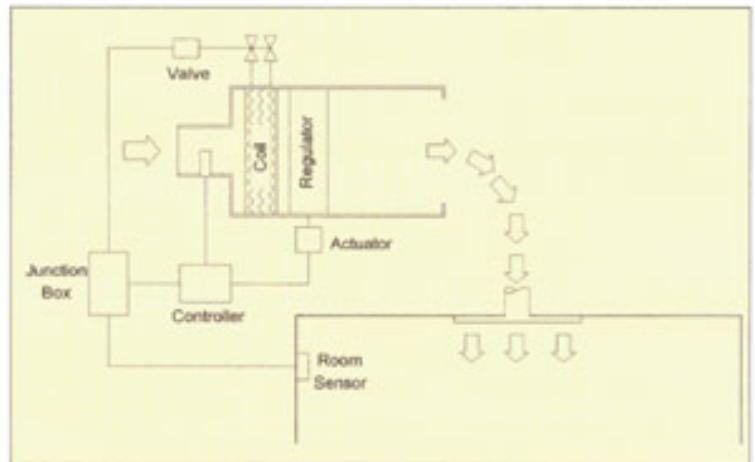


The model HQ can be integrated with all manufacturers control systems for various applications such as:-

- Constant Volume.
- Variable Air Volume.
- Terminal Reheat (LPHW or Electric).
- BMS or Stand alone.
- Pressure dependent or pressure independent control.

A pressure dependent terminal unit will respond directly to the thermostat signal. If the system pressure to the terminal unit varies, the amount of air delivered to the controlled zone may fluctuate over the air volume range of the unit.

A pressure independent terminal unit responds to the thermostat signal within the minimum & maximum values set on its flow control device. Flow controllers sense the amount of air delivered to the terminal unit and adjusts the damper to achieve and maintain the desired flow irrespective of changes in system pressure.

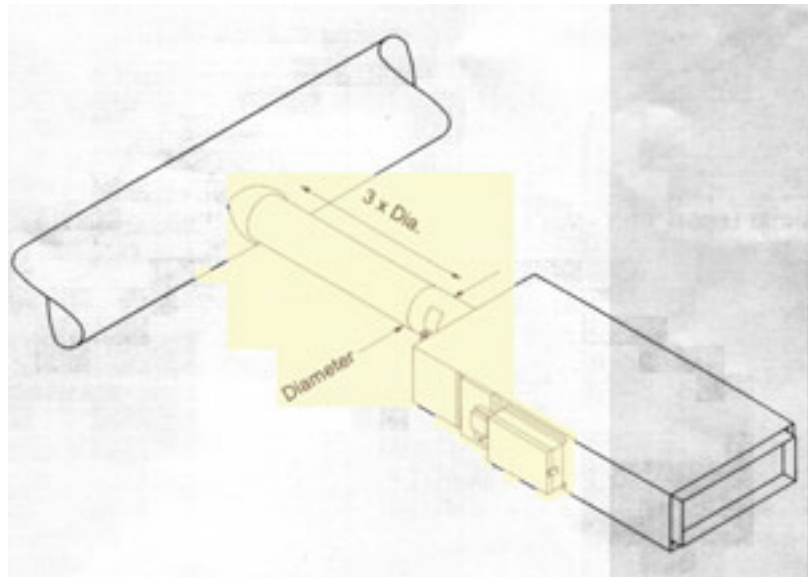


Pressure independent system
Showing cooling with reheat

Entry Flow Conditions:

The utilisation of the multipoint flow sensor allows the flow controller to measure the actual air volume of the terminal units.

However care must be taken to ensure an even velocity profile across the sensor, therefore 3 diameters of straight duct is required onto the terminal unit inlet to ensure control accuracy.

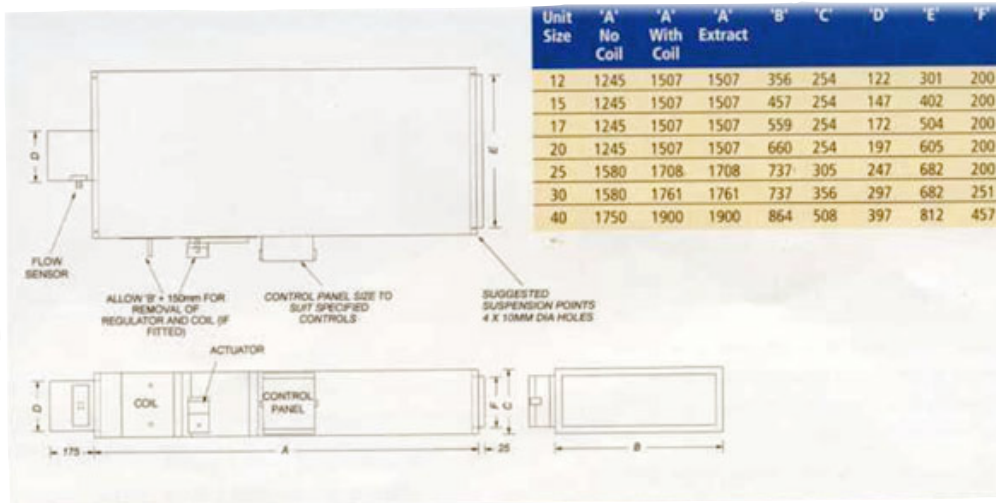


Service/Maintenance:

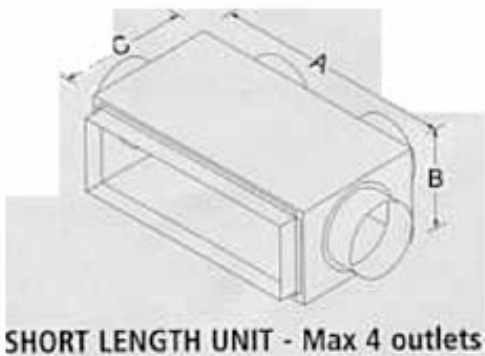
The model HQ is virtually maintenance free. However, it is recommended that the terminal unit controls are checked on an annual basis. Our Service Department are able to offer service contracts to undertake such work. Contact Head Office for details.

Dimensional Details

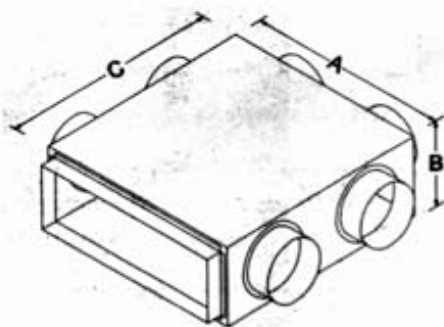
Model HQ



Standard Multi Outlet Section



Unit Size	'A'	'B'	Max Spigot Dia.	No. of End Outlets	SHORT UNIT		LONG UNIT	
					No. of Side Outlets	'C'	No. of Side Outlets	'C'
12	356	254	200	1	1	300	2	600
15	457	254	200	1	1	300	2	600
17	559	254	200	2	1	300	2	600
20	660	254	200	2	1	300	2	600
25	737	305	250	2	1	350	2	700
30	737	356	300	2	1	400	2	800
40	864	508	350	2	1	450	2	900



UNIT WEIGHTS				
Unit Size	Without Coil (kg)	With Coil (kg)	Multi outlet Long Unit (kg)	Multi outlet Short Unit (kg)
12	16	21	9	5
15	19	25	11	6
17	22	28	12	7
20	25	32	14	8
25	36	46	17	11
30	41	52	20	12
40	63	80	29	18

Model HQ



Casing

- High pressure side, circular spigots suitable for duct sizes:- 125, 150, 175, 200, 250, 300 & 400mm Ø (nominal).
- Low pressure side suitable for slip on duct joints as standard.
- Flanged outlets available upon request.
- Provision made in periphery of casing for hanger rods (supplied by others).
- Control Equipment protected by sheet metal enclosure, complete with quick release cover for easy site inspection.
- lightweight Non Fibrous class '0' rated attenuator section integral to main casing.
- Fire performance -BS476 Part 6: Pass. BS476 Part 7: Class 1.
- Galvanised sheet metal casing thermally lined with non fibrous open cell foam to class '0',
- Pressure dependent or Pressure independent control.
- Electronic or Pneumatic Controllers. Control range typically 100% -10%, dependent on control type.

Reheat Coils

- Galvanised sheet metal enclosure, allowing easy removal
- Factory fitted.

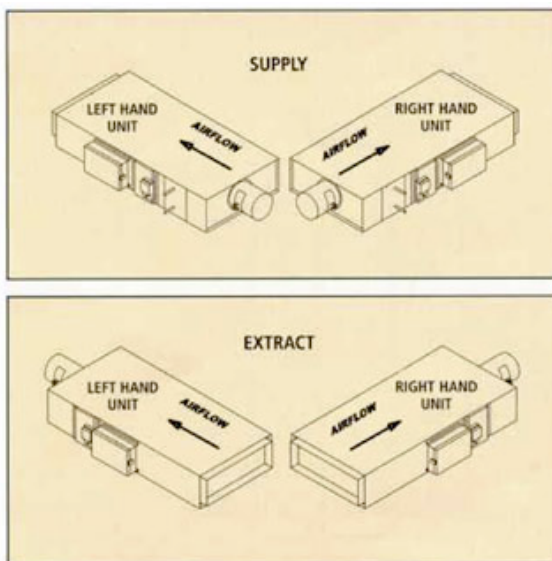
Water

- Copper tubes and Aluminium fins.
- Supplied with integral vent & drains.

Electric

- Suitable for modulating or staged control.
- Supplied with high temperature cut out.

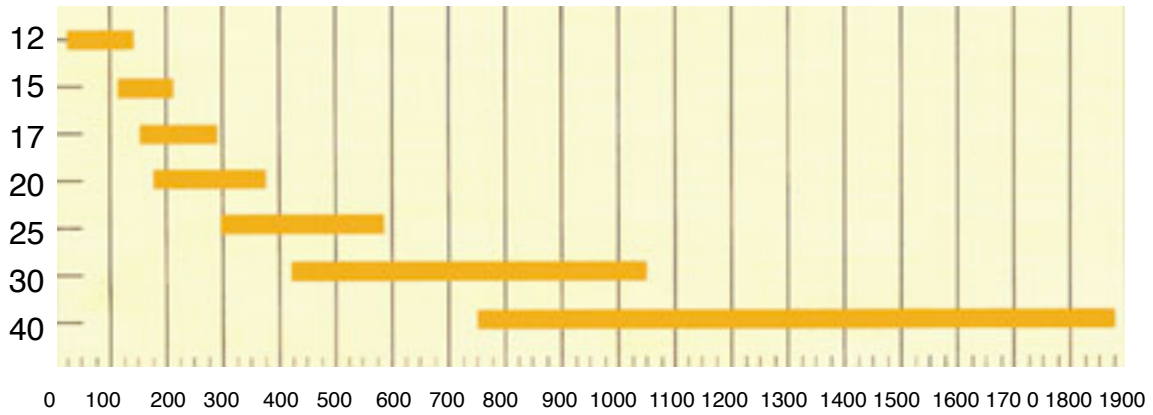
Terminal Unit Handing Details



Coil and Regulator are removable from the side. Bottom removable regulators are available (upon request) where access is limited.

Quick Selection Chart

Model HQ



Maximum Air Volume Range (l/s)

HQ Supply Noise Data

Unit Size	Air Volume l/s	Minimum Inlet Static Pressure Pa	NR LEVELS									
			200 Pa		375 Pa		500 Pa		750 Pa		1000 Pa	
			Discharge	Radiated	Discharge	Radiated	Discharge	Radiated	Discharge	Radiated	Discharge	Radiated
12	48	10	<20	<20	<20	24	20	27	23	32	25	35
	74	23	<20	20	21	24	23	27	26	32	27	35
	98	40	<20	21	23	25	25	27	28	32	29	35
	122	62	20	23	25	26	26	28	29	32	31	35
	148	91	22	24	26	27	27	29	31	32	34	36
15	70	13	<20	<20	21	24	23	27	26	31	28	34
	106	30	<20	21	23	26	25	28	28	32	31	34
	141	53	20	23	25	27	27	29	30	32	32	34
	176	83	22	25	27	28	29	30	31	32	34	35
	212	120	24	26	28	29	30	31	33	34	36	36
17	96	14	<20	<20	23	24	25	27	29	32	32	36
	144	31	<20	22	25	26	27	29	31	32	34	36
	192	55	21	25	27	28	28	30	32	33	35	36
	240	86	23	27	28	29	30	31	32	34	36	36
	289	125	24	28	29	30	31	32	34	34	36	37
20	125	15	20	<20	25	26	27	29	30	34	32	38
	188	33	22	22	27	27	29	30	32	34	35	38
	251	59	24	25	29	28	31	31	35	34	37	38
	314	93	26	26	30	29	32	31	36	34	38	38
	377	133	27	28	28	30	35	32	37	35	39	38
25	196	12	21	20	23	26	25	28	29	33	32	36
	294	27	21	24	26	28	28	30	31	34	34	36
	392	49	22	26	28	29	30	31	33	35	37	37
	490	76	24	27	29	30	31	32	34	35	38	37
	589	110	25	29	30	31	32	33	35	36	39	37
30	282	14	<20	21	25	25	30	28	37	32	40	37
	424	30	20	24	28	29	31	31	37	34	40	37
	565	54	22	27	29	31	32	34	37	36	40	38
	707	86	25	29	29	34	32	36	37	38	40	39
	848	122	27	30	30	35	32	37	37	39	40	41
40	1060	194	29	32	32	37	34	39	38	41	40	42
	502	17	23	24	28	31	33	34	38	38	41	42
	754	38	23	26	31	32	34	35	39	39	42	42
	1005	68	24	27	31	33	34	36	40	39	43	42
	1256	108	28	29	34	33	38	36	43	39	46	42
40	1508	155	31	30	38	35	41	37	46	40	49	43
	1885	242	34	31	41	36	46	37	49	40		

HQ Extract Noise Data

Model HQ



Unit Size	Air Volume l/s	Minimum Inlet Static Pressure Pa	NR LEVELS									
			200 Pa		375 Pa		500 Pa		750 Pa		1000 Pa	
			Discharge	Radiated	Discharge	Radiated	Discharge	Radiated	Discharge	Radiated	Discharge	Radiated
12	48	35	<20	<20	<20	23	<20	24	22	29	24	33
	74	83	<20	<20	<20	23	20	25	24	29	27	34
	98	145	<20	<20	<20	23	21	25	25	30	28	34
	122	225	<20	<20	<20	23	22	26	26	30	29	34
	148	331	<20	<20	20	24	23	27	27	31	31	34
15	70	28	<20	<20	<20	23	21	25	24	30	26	34
	106	63	<20	<20	<20	24	21	26	24	31	27	35
	141	112	<20	<20	20	24	22	26	25	31	27	35
	176	175	<20	<20	20	25	22	27	25	32	28	36
	212	254	<20	20	20	25	22	27	26	32	28	37
17	96	29	<20	<20	20	25	22	30	25	36	27	40
	144	66	<20	21	21	27	23	31	26	37	28	40
	192	118	<20	23	22	28	24	32	27	37	29	41
	240	184	<20	25	22	29	24	32	27	37	30	41
	289	267	20	27	23	30	28	33	28	38	30	41
20	125	33	<20	<20	20	25	23	28	26	34	29	37
	188	75	<20	21	22	27	24	30	27	34	29	38
	251	134	<20	23	23	28	25	31	28	34	30	38
	314	209	20	24	24	29	25	31	28	35	30	38
	377	302	21	25	25	30	26	32	29	35	30	39
25	196	26	<20	22	22	29	24	32	26	36	28	40
	294	60	<20	22	22	29	25	32	28	36	30	40
	392	106	26	23	28	29	29	33	30	37	32	40
	490	165	33	23	33	29	34	33	34	37	34	40
	589	239	38	24	37	30	37	34	37	38	36	41
30	282	28	20	23	25	28	25	29	27	35	29	40
	424	65	20	25	27	29	27	30	29	35	33	41
	565	115	26	26	29	30	30	31	32	36	36	42
	707	180	30	28	32	31	34	31	36	36	40	43
	848	259	34	29	36	31	38	32	40	37	44	43
40	502	33	<20	25	28	29	32	31	38	37	42	40
	754	75	<20	25	28	29	32	31	38	37	43	41
	1005	133	20	25	29	30	33	32	38	37	43	41
	1256	207	20	25	29	30	33	34	39	37	43	41
	1508	299	20	25	29	30	33	34	39	37		

Data Basis

- Sound power levels measured in accordance with BS4196: Part 1991.
- NR levels above take account of: Discharge 8dB room absorption, Radiated 8dB room + 3 dB ceiling effect.
- NR levels below NR 20 are indicated as < 20.
- Octave Band Sound Power Levels are available upon request.
- For heating coil sizing please contact your local representative on our main sales office.
- Minimum inlet static pressure given with damper fully open.

HQ terminal units have been tested in Senior Colman's air distribution and acoustic test laboratory. These facilities are available for external use for performance verification -contact us for further details.



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Model HQ Terminal Units

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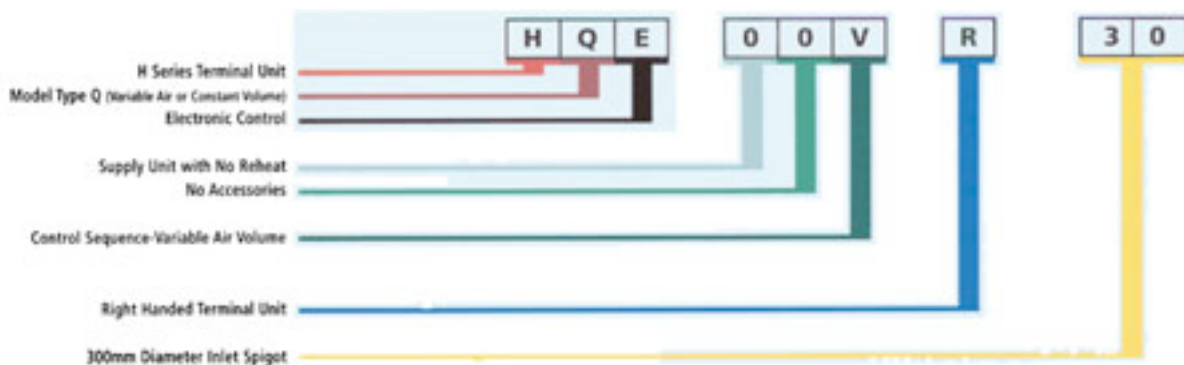


1	2	3 CONTROL	4 TYPE	5 ACCESSORIES	6 SEQUENCE	7 HANDING
H	Q	E Electronic P Pneumatic 0 Controls Supplied & Fitted by others 1 Special	0 No Reheat* L Electric Reheat* W 1 Row LPHW Reheat* X 2 Row LPHW Reheat* E Extract 1 Special	0 None S Short Multi outlet L Long Multi outlet A Attenuator 600 long B Attenuator 900 long C Attenuator 1200 long D Short Multi Outlet + 600 long Attenuator E Short Multi Outlet + 900 long Attenuator F Short Multi Outlet + 1200 long Attenuator G Long Multi Outlet + 600 long Attenuator H Long Multi Outlet + 900 long Attenuator J Long Multi Outlet + 1200 long Attenuator 1 Special	C Constant Volume V Variable Air Volume 1 Special	L Left R Right 1 Special

* Supply Units Only

Note: The items shown in red print above and in the order code example are the standard options for this product. Unless shown otherwise on any quotation or order the units will be supplied in this configuration.

Example of our order codes:



Projects List:

- Barclays HQ Lombard Street
- DSS Offices - Newcastle-Upon-Tyne
- Thames House, Ministry of Defence, London
- Smithkline Beecham, Harlow
- Cheltenham & Gloucester Building Society, Cheltenham
- Credit Suisse, Canary Wharf, London
- Bradford & Bingley Building Society, Bradford
- Yorkshire Building Society, Leeds

SPECIFICATION:

Model HQ single duct terminal unit suitable for supply or extract applications in Variable Air Volume/Constant Volume Systems. The terminal units are available in 7 sizes covering an air volume range of 0.024m³/s to 1.885m³/s. The units can be supplied with various accessories including multi outlet sections or water reheat coils. The model HQ terminal unit is suitable for use with all major manufacturers systems whether electronic or pneumatic.

The terminal unit consists of a 20's gauge galvanised sheet metal casing with a circular high pressure duct connection and rectangular, slip joint or flanged, low pressure duct connection. The casing is thermally lined with open cell foam and incorporates a built in attenuator section as standard. All linings and acoustic materials are lightweight, non fibrous and fire retardant to class '0' rating.

The air volume is regulated by a low noise, blind type, damper housed in a galvanised sheet metal assembly which can be fully removed to aid on site maintenance. The model HQ incorporates a unique 4 port multipoint differential pressure sensor to provide accurate control of the primary air volume. Easy commissioning is achieved, without the loss of control, by the incorporation of additional measuring ports on the flow sensor.

The units are suitable for use up to 1500 Pascals differential pressure.



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