

15.02 AIR HANDLING UNIT SCHEDULES

The casing is constructed with nominal 50mm thick panels, with an Isofoam RM 6463 rigid foam insulation. All enclosure panels are double skinned with Goosewing Grey Pre-Coated Steel outer skin and self finish Magnelis inner skin to offer a corrosion resistance of C5. Smooth internal finish with no dirt or dust traps. All factory penetrations, either for mechanical (ie Pipe connections) or electrical (ie Isolators etc) are sealed inside and out, prior to leaving the factory. Heavy gauge steel channel base frames with painted finish as standard and twin pitched roof where units are mounted externally. Access panels have a universal compression hinge which can offer hinged or lift off access to suit site constraints.

AHUs have been designed in accordance with New Building Regulations.

Supply F7 bag filters, extract G4 panel filters manufactured by Messes Camfil Ltd.

Cooling coils shall be constructed of copper tube / aluminium fins. Galvanised coil casing, fixed eliminator and a galvanised drain pan.

Both sets of fans are EC technology complete with inbuilt speed control. 0-10 volt signal required by BMS.

Air handling unit shall be as manufactured and supplied by:

Air Handling Systems Ltd
3-5 Furnace Industrial Estate
Shildon
Co Durham
DL4 1QB

Tel: 01388 776287
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X.0X.1 AHU / 5.01 – MRI 3**1. AHU DETAILS**

Unit reference	AHU / 5.01
Unit model	AIR FLEX 85 F
Location	5 th Floor Externally

2. MECHANICAL STANDARD (BS EN 1886)

<u>Casing</u>	
Strength	D1
Air leakage	L2
<u>Thermal</u>	
Transmittance	T3
Bridging	TB3

3. PERFORMANCE DATA

<u>Supply</u>	
Air volume m ³ /s	5.688
Ext. Stat. Pressure Pa	400
<u>Extract</u>	
Air volume m ³ /s	5.779
Ext. Stat. Pressure Pa	400
SFP W/l/s	1.90

4. UNIT DIMENSIONS

<u>O/ALL</u>		
Width mm	3,750	
Height mm	2,450	
Length mm	7,050	
Weight kg	4,982	
<u>Connections</u>		
Spigot mm	1,850 x 2,100 (Intake/Exhaust)	1,850 x 2,100 (Supply/Extract)

5. SUPPLY PATH

<u>Inlet Section</u>	
Damper	Yes
Face Velocity m/s	1.79
Actuator	Automatic

Fog Coil Section (LTHW)

<u>Air Side:</u>	
Air Volume m ³ /s	5.688
Air on °C	-2.00
Air off °C	2.00
Total Duty kW	42.0
Air Press. Drop Pa	4

<u>Water Side:</u>	
Coil Type	Copper Cu - Standard
Medium	LTHW
LTHW Temperatures F/R °C	80/60
Flow Rate l/s	0.50
Fluid Press. Drop kPa	19.0

Filter Section

Specification	Panel
Grade	M5
Air Press. Drop (Clean) Pa	33

5. SUPPLY PATH

Air Press. Drop (Ave.) Pa 67
 Air Press. Drop (Dirty) Pa 100
 Face Velocity m/s 1.60

Plate Heat Exchanger Section

Winter:
 Air on °C 2.0
 Return air °C 21.0
 Air off °C 17.2

Heat Exchanger:

Fin Material Standard
 Bypass Damper Yes
 Winter Total Efficiency % 79.8
 Summer Total Efficiency % TBC
 Max. Air Press. Drop Pa 89

Supply Fan Section

Fan:
 Ext. Stat. Pressure Pa 400
 Total Stat. Pressure Pa 906
 Type Plenum-EC
 Impellor Backward Curved
 Quantity Dual
 Model GR40
 Max. Speed RPM 2,500
 Absorbed Power kW 7.40
 Total Efficiency 81.5%

Electrical:

Motor Power kW 2.5
 Full Load Current A 11.51
 Electrical Supply 380V / 3Ø / 50Hz

In-Duct Sound Spectrum PWL

Sound Power Lw	Hz	63	125	250	500	1K	2K	4K	8K
Fan Inlet	dB	81	83	82	80	75	73	69	67
Fan Discharge	dB	84	88	90	87	85	81	75	72

Outlet Section

Damper Yes
 Face Velocity m/s 1.79
 Actuator Automatic

6. EXTRACT PATH

Inlet Section

Damper Yes
 Face Velocity m/s 1.97
 Actuator Automatic

Filter Section

Specification Panel
 Grade M5
 Air Press. Drop (Clean) Pa 45
 Air Press. Drop (Ave.) Pa 72
 Air Press. Drop (Dirty) Pa 100
 Face Velocity m/s 2.13

6. EXTRACT PATH

Extract Fan Section

Fan:
 Ext. Stat. Pressure Pa 400
 Total Stat. Pressure Pa 593
 Type Plenum-EC
 Impellor Backward Curved
 Quantity 1
 Model GR56C-ZID.GQ.CR
 Max. Speed RPM 1,860
 Absorbed Power kW 2.77
 Total Efficiency 71%

Electrical:
 Motor Power kW 2.8
 Full Load Current A 6.0
 Electrical Supply 380V / 3Ø / 50Hz

In-Duct Sound Spectrum PWL

Sound Power Lw	Hz	63	125	250	500	1K	2K	4K	8K
Fan Inlet	dB	77	84	81	77	72	69	65	65
Fan Discharge	dB	81	91	85	84	80	75	72	69

Outlet Section

Damper Yes
 Face Velocity m/s 1.97
 Actuator Automatic

15.02.2 AHU / 1.01 – MRI 3

1. AHU DETAILS

Unit reference	AHU / 1.01
Unit model	AIR FLEX 89 F
Location	4 th Floor Roof

2. MECHANICAL STANDARD (BS EN 1886)

<u>Casing</u>	
Strength	D1
Air leakage	L2
<u>Thermal</u>	
Transmittance	T3
Bridging	TB3

3. PERFORMANCE DATA

<u>Supply</u>		
Air volume m ³ /s	0.719	
Ext. Stat. Pressure Pa	N/A	AHU/5.01 Sub-AHU
SFP W/l/s	N/A	AHU/5.01 Sub-AHU

4. UNIT DIMENSIONS

<u>O/ALL</u>		
Width mm	720	
Height mm	1,370	
Length mm	3,750	
Weight kg	572	
<u>Connections</u>		
Spigot mm	620 x 1,020 (Intake)	620 x 1,020 (Supply)

5. SUPPLY PATH

<u>Inlet Section</u>	
Damper	Yes
Face Velocity m/s	2.09
Actuator	Automatic

<u>Cooling Coil Section</u>	
Air Side:	
Air Volume m ³ /s	0.719
Air on °C	26.0
Air off °C	12.0
Total Duty kW	20.61
Air Press. Drop Pa	118
Face Velocity m/s	1.93

Water Side:	
Coil Type	Copper Cu - Standard
Medium	CHW
CHW Temperatures F/R °C	6/12
Flow Rate l/s	0.82
Fluid Press. Drop kPa	23.0
Internal Volume l	18.56

<u>Eliminator Section</u>	
Air Volume m ³ /s	0.719
Air Press. Drop Pa	6

5. SUPPLY PATH
Re-Heating Coil Section

Air Side:

Air Volume m ³ /s	0.719
Air on °C	16.00
Air off °C	28.00
Total Duty kW	10.62
Air Press. Drop Pa	12
Face Velocity m/s	1.74

Water Side:

Coil Type	Copper Cu - Standard
Medium	LTHW
LTHW Temperatures F/R °C	80/60
Flow Rate l/s	0.13
Fluid Press. Drop kPa	7
Internal Volume l	3.15

Filter Section

Specification	Bag
Grade	F7
Air Press. Drop (Clean) Pa	39
Air Press. Drop (Ave.) Pa	94
Air Press. Drop (Dirty) Pa	150
Face Velocity m/s	1.38

Outlet Section

Damper	Yes
Face Velocity m/s	2.09
Actuator	Automatic

15.02.3 AHU / 1.02 – CT 3

1. AHU DETAILS

Unit reference	AHU / 1.02
Unit model	AIR FLEX 39 F
Location	1 st Floor Externally

2. MECHANICAL STANDARD (BS EN 1886)

<u>Casing</u>	
Strength	D1
Air leakage	L2
<u>Thermal</u>	
Transmittance	T3
Bridging	TB3

3. PERFORMANCE DATA

<u>Supply</u>		
Air volume m ³ /s	1.602	
Ext. Stat. Pressure Pa	N/A	AHU/5.01 Sub-AHU
SFP W/l/s	N/A	AHU/5.01 Sub-AHU

4. UNIT DIMENSIONS

<u>O/ALL</u>		
Width mm	1,350	
Height mm	1,330	
Length mm	3,800	
Weight kg	851	
<u>Connections</u>		
Spigot mm	1,250 x 980 (Intake)	1,250 x 980 (Supply)

5. SUPPLY PATH

<u>Inlet Section</u>	
Damper	Yes
Face Velocity m/s	1.87
Actuator	Automatic

<u>Cooling Coil Section</u>	
Air Side:	
Air Volume m ³ /s	1.602
Air on °C	26.0
Air off °C	12.0
Total Duty kW	46.03
Air Press. Drop Pa	104
Face Velocity m/s	1.77

Water Side:	
Coil Type	Copper Cu - Standard
Medium	CHW
CHW Temperatures F/R °C	6/12
Flow Rate l/s	1.83
Fluid Press. Drop kPa	31.0
Internal Volume l	37.22

<u>Eliminator Section</u>	
Air Volume m ³ /s	1.602
Air Press. Drop Pa	8

5. SUPPLY PATHRe-Heating Coil Section

Air Side:	
Air Volume m3/s	1.602
Air on °C	16.00
Air off °C	28.00
Total Duty kW	23.6
Air Press. Drop Pa	20
Face Velocity m/s	1.74

Water Side:

Coil Type	Copper Cu - Standard
Medium	LTHW
LTHW Temperatures F/R °C	80/60
Flow Rate l/s	0.28
Fluid Press. Drop kPa	16
Internal Volume l	11.42

Filter Section

Specification	Bag
Grade	F7
Air Press. Drop (Clean) Pa	43
Air Press. Drop (Ave.) Pa	97
Air Press. Drop (Dirty) Pa	150
Face Velocity m/s	1.54

Outlet Section

Damper	Yes
Face Velocity m/s	1.87
Actuator	Automatic

15.02.4 AHU / 1.03 – CT 2

1. AHU DETAILS

Unit reference	AHU / 1.03
Unit model	AIR FLEX 39 F
Location	1 st Floor Externally

2. MECHANICAL STANDARD (BS EN 1886)

<u>Casing</u>	
Strength	D1
Air leakage	L2
<u>Thermal</u>	
Transmittance	T3
Bridging	TB3

3. PERFORMANCE DATA

<u>Supply</u>	
Air volume m ³ /s	1.752
Ext. Stat. Pressure Pa	N/A
SFP W/l/s	N/A
	AHU/5.01 Sub-AHU
	AHU/5.01 Sub-AHU

4. UNIT DIMENSIONS

<u>O/ALL</u>	
Width mm	1,350
Height mm	1,330
Length mm	3,800
Weight kg	856
<u>Connections</u>	
Spigot mm	1,250 x 980 (Intake)
	1,250 x 980 (Supply)

5. SUPPLY PATH

<u>Inlet Section</u>	
Damper	Yes
Face Velocity m/s	2.04
Actuator	Automatic

<u>Cooling Coil Section</u>	
Air Side:	
Air Volume m ³ /s	1.752
Air on °C	26.0
Air off °C	12.0
Total Duty kW	50.27
Air Press. Drop Pa	119
Face Velocity m/s	1.93

Water Side:	
Coil Type	Copper Cu - Standard
Medium	CHW
CHW Temperatures F/R °C	6/12
Flow Rate l/s	2.00
Fluid Press. Drop kPa	28.0
Internal Volume l	37.22

<u>Eliminator Section</u>	
Air Volume m ³ /s	1.752
Air Press. Drop Pa	9

5. SUPPLY PATHRe-Heating Coil Section

Air Side:

Air Volume m ³ /s	1.752
Air on °C	16.00
Air off °C	28.00
Total Duty kW	25.87
Air Press. Drop Pa	28
Face Velocity m/s	1.91

Water Side:

Coil Type	Copper Cu - Standard
Medium	LTHW
LTHW Temperatures F/R °C	80/60
Flow Rate l/s	0.31
Fluid Press. Drop kPa	19
Internal Volume l	11.42

Filter Section

Specification	Bag
Grade	F7
Air Press. Drop (Clean) Pa	47
Air Press. Drop (Ave.) Pa	99
Air Press. Drop (Dirty) Pa	150
Face Velocity m/s	1.68

Outlet Section

Damper	Yes
Face Velocity m/s	2.09
Actuator	Automatic

15.02.5 AHU / 1.04 – CT 1

1. AHU DETAILS

Unit reference	AHU / 1.04
Unit model	AIR FLEX 39 F
Location	1 st Floor Externally

2. MECHANICAL STANDARD (BS EN 1886)

<u>Casing</u>	
Strength	D1
Air leakage	L2
<u>Thermal</u>	
Transmittance	T3
Bridging	TB3

3. PERFORMANCE DATA

<u>Supply</u>		
Air volume m ³ /s	1.617	
Ext. Stat. Pressure Pa	N/A	AHU/5.01 Sub-AHU
SFP W/l/s	N/A	AHU/5.01 Sub-AHU

4. UNIT DIMENSIONS

<u>O/ALL</u>		
Width mm	1,350	
Height mm	1,330	
Length mm	3,800	
Weight kg	851	
<u>Connections</u>		
Spigot mm	1,250 x 980 (Intake)	1,250 x 980 (Supply)

5. SUPPLY PATH

<u>Inlet Section</u>	
Damper	Yes
Face Velocity m/s	1.89
Actuator	Automatic

<u>Cooling Coil Section</u>	
Air Side:	
Air Volume m ³ /s	1.617
Air on °C	26.0
Air off °C	12.0
Total Duty kW	46.46
Air Press. Drop Pa	105
Face Velocity m/s	1.78

Water Side:	
Coil Type	Copper Cu - Standard
Medium	CHW
CHW Temperatures F/R °C	6/12
Flow Rate l/s	1.85
Fluid Press. Drop kPa	32.0
Internal Volume l	37.22

<u>Eliminator Section</u>	
Air Volume m ³ /s	1.617
Air Press. Drop Pa	8

5. SUPPLY PATH

Re-Heating Coil Section

Air Side:

Air Volume m ³ /s	1.617
Air on °C	16.00
Air off °C	28.00
Total Duty kW	23.88
Air Press. Drop Pa	20
Face Velocity m/s	1.76

Water Side:

Coil Type	Copper Cu - Standard
Medium	LTHW
LTHW Temperatures F/R °C	80/60
Flow Rate l/s	0.29
Fluid Press. Drop kPa	16
Internal Volume l	11.42

Filter Section

Specification	Bag
Grade	F7
Air Press. Drop (Clean) Pa	43
Air Press. Drop (Ave.) Pa	97
Air Press. Drop (Dirty) Pa	150
Face Velocity m/s	1.55

Outlet Section

Damper	Yes
Face Velocity m/s	1.89
Actuator	Automatic