



Industrial
Climate
Engineering™
An ACS Brand

CFH1012A
(1 Ton)

Environmental Control Unit



CFH1012A

General Description

The Industrial Climate Engineering CFH1012A line of Environmental Control Units (ECU) are designed for the telecommunication cabinet. The slim profile allows the unit to be mounted quickly and simply on the exterior of the building on either side of the splice chamber. CFH1012A units have, as standard, the necessary features to maintain the proper temperature control demanded by the telecommunications industry. The CFH1012A is designed for use in ambient temperatures from 0°F (-18°C) to 120°F (48°C). Their low noise level makes them ideal for installation in urban and residential areas. The CFH1012A is available in a nominal cooling capacities of 1 ton (12,000 BTUH). CFH1012A units are ETL listed. All ICE air conditioners conform to UL/CSA standard 60335-1 and 60335-2-40 and CAN/CSA C22.2 No. 236-95, 4th Ed.

Operation

The CFH1012A ECU is controlled by a thermostat that senses the internal cabinet temperature. When cooling is desired, the compressor, evaporator blower and condenser fan turn on. Cool air is discharged near the bottom of the CFH1012A into the cabinet. When two CFH1012As are used on the same cabinet, a CommStat 6 or CommStat 4 provides temperature control of the redundant units and equal run time on both units. A field installed jumper wire on the low voltage control board in the CFH1012A will permit the evaporator blower to run continuously. The CFH1012A can also be immediately shut off when used in cabinets with a fire or smoke alarm system. Please refer to the Operation & Maintenance Manual for details. Electric heat is optional.



Designed,
Engineered
&
Assembled
In the USA

Features and Benefits

Wide Range of Operation Conditions

- Low Ambient Control Cycles for Condenser Fan
- 3.6 kW Electric Heat

Built-In Reliability

- High Pressure Switch with Lockout Relay and Frost Sensor
- Compressor Time Delay Prevents Rapid Cycling

Rugged Construction

- Copper Tube, Aluminum Fin Evaporator & Condenser Coil
- High Efficiency Compressor
- Baked On Finish Over Galvanneal Steel
- Decorative Coil Guards



Standard Features

Designed for operation to 0°F (-18°C)

- Low ambient control cycles condenser fan to maintain proper refrigerant pressures.
- 3.6 kW of electric heat.

Built-in Reliability

- High pressure switch with lockout relay and frost sensor protect refrigerant circuit.
- Compressor time delay prevents rapid cycling of the compressor.

Vandal Resistant

- All mounting holes are inside the cabinet.
- Powder coated finish for long term durability.

Ease of Installation

- Factory installed disconnect.
- Can be installed on either side of splice chamber.
- Built-in mounting holes.

Remote Alarm Capability

- Dry contacts can be used for remote alarm or notification upon lock-out.

Rugged Construction

- Copper tube, aluminum fin evaporator and condenser coils.
- High efficiency compressor.
- Baked on neutral tan finish.
- Decorative coil guard.

Ease of Service

- All service access from front and top of unit.

Model Identification

Example	C	F	H	1	0	1	2	A	A	0	3	6	A	+	+	1	+	3	D	A	+	A	1	1	+	+	+	+	+	+
Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

1	Unit Designation/Family	C = Industrial Climate Engineering (ICE)
2	Energy Efficiency Ratio (EER)	F = EER <9
3	Refrigerant Type	H = R-454B
4	Compressor Type/Quantity	1 = Single
5	Unit Capacity/Nominal Cooling (BTUH)	012 = 12,000
6		
7		
8	System Type	A = Air Conditioner
9	Power Supply (Volts-Hz-Ph)	A = 208/230-60-1
10	Heat Designation @ Rated Voltage KW = Kilowatt	036 = 3.6KW
11		
12		
13	Ventilation Configuration	A = Solid Front Door
14	Dehumidification	+ = None
15	Controls	+ = None
16	Operating Condition	1 = Low Ambient w/FCC

17	Indoor Air Quality Features	+ = None
18	Air Flow	3 = Bottom Supply/Top Return (Counter)
19	Compressor Location	D = Left Hand
20	Filter Option	A = 2" Pleated (MERV 8)
21	Corrosion Protection	+ = None
22	Engineering Revision Level	A1
23		
24	Cabinet Color	1 = Beige
25	Sound Attenuation	+ = None
26	Security Option	+ = None
27	Fastener/Drain Pan Option	+ = None
28	Unused	+ = None
29	Unused	+ = None
30	Special Variation	+ = None

Accessories

► Supply Grille

For CFH1012A P/N 80685
13" x 5" (330 mm x 125 mm)

► Return Grille

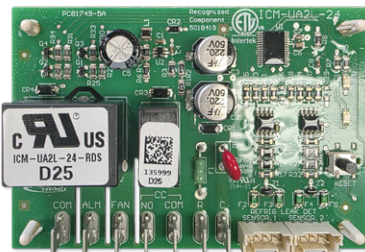
For CFH1012A P/N 80680
13³/₄" x 11³/₄" (349 mm x 298 mm)

Controllers and Thermostats

► Thermostats and Controllers for ICE Air Conditioners

See the *Marvair Thermostats and Controllers Product Data Sheet* for the thermostats and controllers for use with Marvair and ICE air conditioners.

➤ Refrigerant Mitigation Board



All models in this manual are equipped with a R454B refrigerant leak detection system. Once the unit is installed it must be powered, at all times, except for service. During normal operation the leak detection system has no impact on the operation of the unit, however upon detection of R-454B refrigerant all operations are stopped except for the indoor blower. The unit will then re-circulate air in the room for a minimum of 5 minutes. Once the 5 minutes have expired and the concentration of the refrigerant is below 8 percent of the Lower Flammability Limit (LFL) the unit will be allowed to operate as normal. If the concentration of the refrigerant remains above 8 percent of the LFL the unit will remain in re-circulation mode. To verify

actuation of mitigation simply remove the sensor from the mitigation control board and the system should stop all operation except for the indoor blower. There is no need to calibrate or service the sensor. The sensor will provide an alarm upon failure or end of life. The sensor must be replaced with an identical sensor, or a manufacturer approved alternative.

Summary Ratings

ELECTRIC HEAT		036 = 3.6 kW	
BASIC MODEL	VOLTS-HZ-PH	CKT #1	
		MCA ¹	MFS ²
CFH1012A	208/230-60-1	19.7	20

¹MCA = Minimum Circuit Ampacity (Wire Sizing Amps) ²MFS = Max. Fuse Size or HACR circuit breaker
MCA & MFS are calculated at 230 volts on the "A" & "C" models and 460v on the "D" models. This chart should only be used as a guideline for estimating conductor size and overcurrent protection. For the requirements of specific units, always refer to the data label on the unit.

- MFS (Maximum Fuse Size) value listed is the maximum value as per UL 60335-2-40 calculations for MOCP (branch-circuit conductor sizes in this chart are based on this MOCP). The actual factory installed Overcurrent Protective Device (Circuit Breaker) in the models may be lower than the maximum UL 60335-2-40 allowable MOCP value, but still above the UL 60335-2-40 minimum calculated value or Minimum Circuit Ampacity (MCA) listed.
- The end user shall size conductors based on the Single Point Power Entry (SPPE) - Minimum Circuit Ampacity. The service circuit breaker shall not be sized less than the minimum circuit ampacity associated to Single Point Power Entry value provided. The service circuit breaker shall also not be sized greater than the Maximum Fuse size associated to the Single Point Power Entry Value Provided.
- While this electrical data is presented as a guide, it is important to electrically connect properly sized fuses and conductor wires in accordance with the National Electrical Code and all local codes

Electrical Characteristics

BASIC MODEL	COMPRESSOR				OUTDOOR MOTOR				INDOOR MOTOR			
	TYPE	VOLTS-HZ-PH	RLA ¹	LRA ²	VOLTS-HZ-PH	RPM ³	FLA ⁴	HP ⁵	VOLTS-HZ-PH	RPM ³	FLA ⁴	HP ⁵
CFH1012A	Rotary	208/230-60-1	5.19	26.0	208/230-60-1	1050	0.50	1/15	208/230-60-1	1600	0.95	1/8

¹RLA = Rated Load Amps ²LRA = Locked Rotor Amps ³RPM = Revolutions per Minute ⁴FLA = Full Load Amps ⁵HP = Horsepower

Unit Load Amps

BASIC MODEL NUMBER	VOLTS-HZ-PH	CURRENT AMPS		LOAD OF RESISTIVE HEATING ELEMENTS ONLY (AMPS)	TOTAL MAXIMUM HEATING AMPS (STANDARD UNIT)
		AC UNIT	IBM ¹		
CFH1012A	208/230-60-1	6.64	0.95	15.00	15.95

¹IBM = Indoor Blower Motor

Air Flow

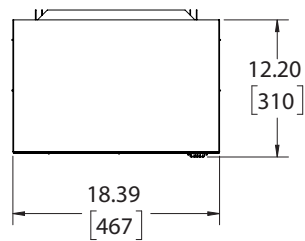
CFM @ ESP (Dry Coil)						
Model	.00	.05	.10	.15	.20	.25
CFH1012A	510	470	450	420	390	360

CFM = Cubic Feet/Minute Indoor Air Flow
ESP = External Static Pressure in Inches WG

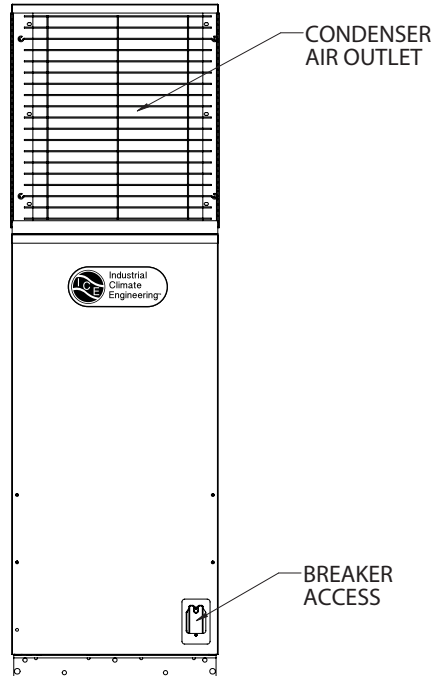
CFH1012A Total & Sensible Cooling Capacity

Data based upon 80°F Dry Bulb/ 67°F wet bulb return air temperature at Various Outdoor Temperatures. Airflow at 450 CFM											
Outdoor temperature	70°F	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°	120°F
Total cooling (BTUH)	10,570	10,370	10,170	9,975	9,788	9,600	9,165	8,730	8,105	7,480	6,860
Sensible Cooling (BTUH)	6,930	6,860	6,790	6,720	6,655	6,590	6,435	6,280	6,065	5,850	5,640
Data based upon 26.5°C Dry Bulb/ 19.5°C wet bulb return air temperature at Various Outdoor Temperatures. Airflow at 760 m3/hr.											
Outdoor temperature	21°C	24°C	26.5°C	29°C	32°C	35°C	38°C	40.5°C	43.3°C	46°	48.4°C
Total cooling (kW)	3.10	3.04	2.98	2.92	2.87	2.81	2.69	2.56	2.37	2.19	2.01
Sensible Cooling (kW)	2.03	2.01	1.99	1.97	1.95	1.93	1.89	1.84	1.78	1.71	1.65

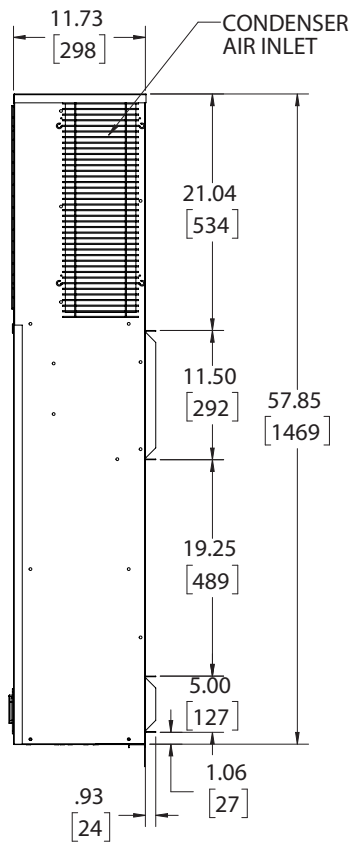
Dimensional Data – CFH1012A



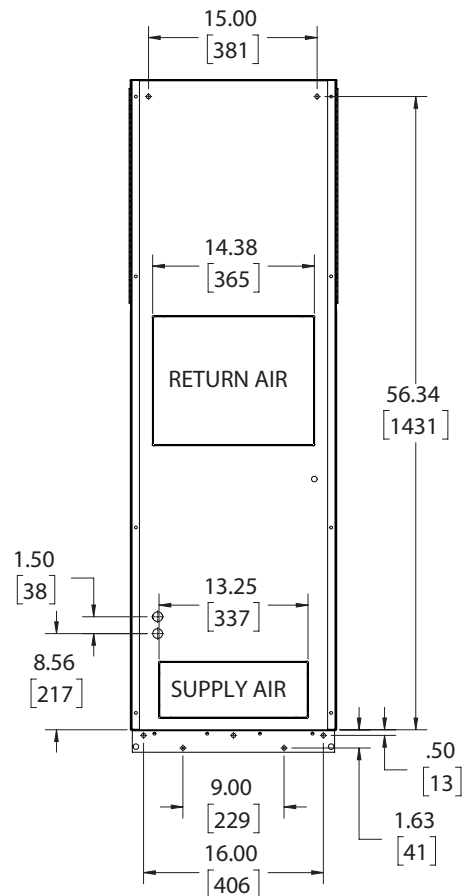
TOP VIEW



FRONT VIEW



RIGHT VIEW



REAR VIEW

Weight

CFH1012A 160 lbs/73 kg

Notes

Please consult the Industrial Climate Engineering website at www.acice.com for the latest product literature. Detailed dimensional data is available upon request. A complete warranty statement can be found in each product's Installation/Operation Manual, on our website. As part of the ICE continuous improvement program, specifications are subject to change without notice.



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