Fresh Air Package Unit Series

FAPU 048 to 600 MBH (4 to 50 TR) 50 Hz

Features / Benefits

- Statically and dynamically balanced belt driven Centrifugal, DIDW Backward Curved fan, designed for low sound operation.
- Motor pulleys are adjustable speed sheaves designed to allow changes to driven shaft speed.
- Painted electro-static powder coat, zinc coated steel panels provide additional protection against rusting and discoloration in areas with high UV factor.
- Cooling coils are built up of inner grooved copper tubes with mechanically bonded hydrophilic aluminum fins provide peak heat transfer.
- Standard factory installed thermostatic expansion vales (TXV).
- Motors are Totally Enclosed Fan Cooled (TEFC) type, IP55 Protected, 2 Pole Class F insulation conform to relevant IEC standards.
- High efficiency synthetic bag filter capturing the smaller particulate from the air stream.
- Easy panel removal of side panel allows access to serviceable components.
- Two refrigerant independent circuits starting on 12.5 Tons which provide efficient part load.

The new series of Coolex Package Units air conditioner are designed and manufactured to provide comfort cooling for residential and commercial applications with the optimum performance, high efficiency, reliability, ease of service & maintenance and capable to operate at extremely ambient conditions up to 125°F.

Fresh Air Package Units With Tropical Hermetic Compressor

R410a
Environment Friendly

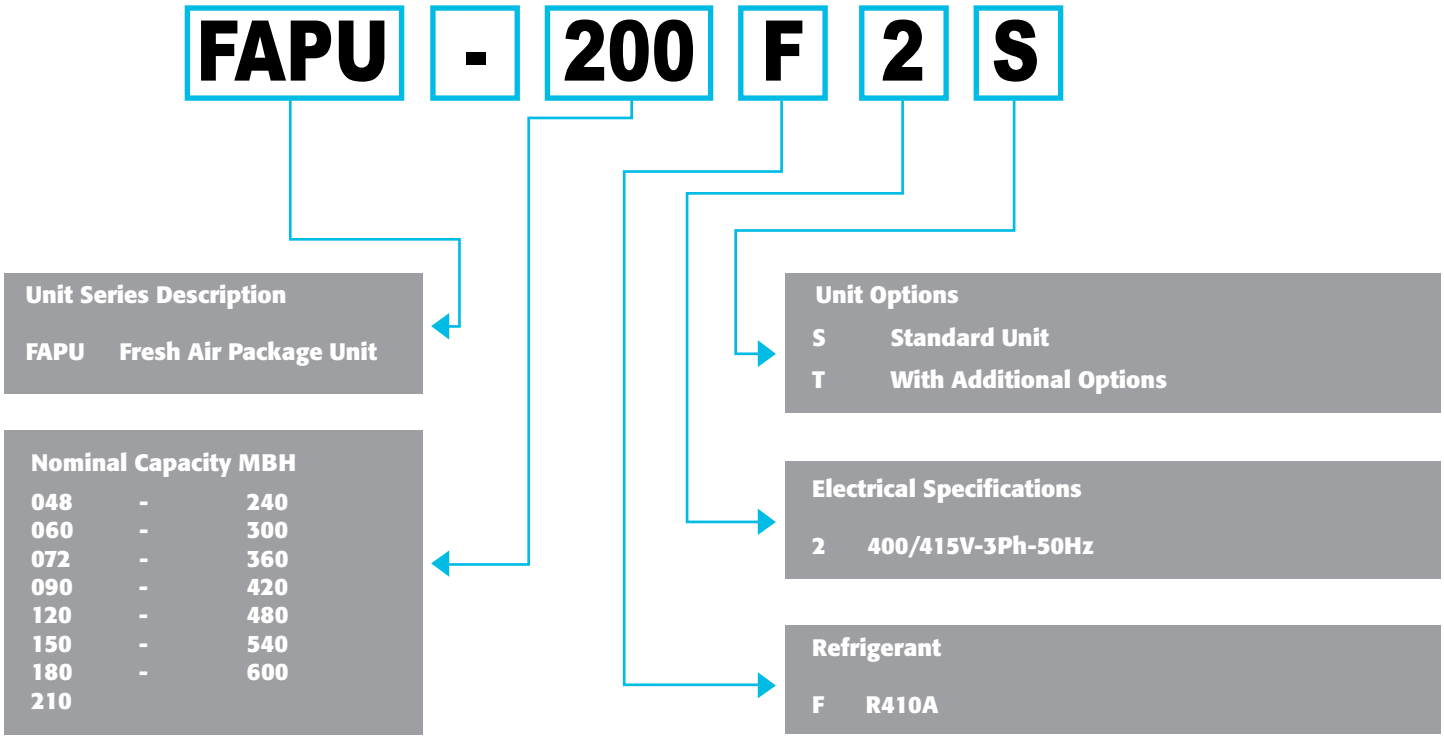
For more technical information please visit **www.coolex.com.kw**

Table of Contents

OTHER COOLEX PRODUCTS

1. Air Cooled Screw Water Chillers
2. Air Cooled Scroll Water Chillers
3. Air Handling Units
4. Ducted Split Units
5. Concealed Split Units
6. Fan Coil Units

NOMENCLATURE



OUT STANDING FEATURES

Superior Efficiency

- Low power consumption
- High volumetric efficiency scroll compressors
- Designed to operate at severe ambient temperature up to 52°C without tripping

Controls

- Microprocessor Controller
- Single point power supply
- Color coded wires
- Weather proof Control panel

Quiet operation

- Low noise level compressors, condenser fans and evaporator blower
- Compact physical footprint
- Special designed refrigerant piping in addition to the insulation for the evaporator section.

Quality Assurance

All units in the FAPU series are :

- Factory run tested.
- Produced in an ISO 9001-2015 listed manufacturing facility.
- Constructed in compliance with ASHRAE 15 safety requirements.
- AHRI rated cooling coils

STANDARD SPECIFICATIONS

General

- The Package Units (FAPU) are factory assembled cooling or combination of cooling and heating with electric heater, suitable for outdoor installation mounting on the roof or ground.
- The packaged unit consists of scroll compressors, cooling coil, condenser coil, fans, electric heater (optional), control wiring and interconnecting piping-all factory assembled.

Unit Casing

Panels are fabricated from hot dipped G90, Zinc coating and zero spangle galvanized steel, oven-baked powder coated. The unit is provided with an integral weather resistant control panel for outdoor application. Panels and access doors are provided for inspection and access for all internal parts.

Compressor

The compressors are hermetic scroll type provided with crankcase heater, internal pressure relief valve which provides high pressure protection to the refrigerant system and rubber vibration isolators for quiet and efficient operation. The compressors are equipped with internal motor protector for safe operation. The compressors are built to NF, VPE, CSA, & UL certification.

Evaporator Coils

The coils are built up of ripple finned seamless copper tubes and mechanically bonded to scientifically designed pre coated aluminum louvered fins. The assembled coils are factory leak tested under water at a pressure of 350 psig for quality and leak free units.

Condenser Coils

The coils are built up of ripple finned seamless copper tubes and mechanically bonded to scientifically designed pre coated aluminum louvered fins. The assembled coils are factory leak tested under water at a pressure of 700 psig for quality and leak free units.

Evaporator Fan

The units are provided with centrifugal backward curve fans which are statically and dynamically balanced belt driven, designed for low sound level operation.

Evaporator Blower Motor

Motors are totally enclosed fan cooled (TEFC) type with class F insulation for weather protection with permanently lubricated bearings and automatic thermal protection.

Condenser Fans

Condenser air fan is of the propeller type, aluminum blade with a direct drive motor upward discharge and provided with fan grille mounted in casing.

Condenser Fan Motor

Motors are Totally Enclosed Air-Over (TEAO) type with class F insulation for weather protection with permanently lubricated bearings and automatic thermal protection.

Drain Pan

The drain pan is fabricated of painted galvanized steel with insulation.

Aluminum Filter

High dust holding capacity, low resistance filter. It can be cleaned with regular water and prolonged use. It consists of 2" metal aluminum mesh with unique pattern.

Bag Filter

High efficiency synthetic bag filter capturing the smaller pacticulate from the air stream. The synthetic media consists of strategically layered and blended melt-blown polypropylene fibers fastened to a non-shed, high density polypropylene backing.

Refrigerant Circuit

FAPU series comes complete, as standard, with properly sized refrigerant lines including thermostatic expansion valve, sight glass, filter drier, automatic high and low pressure switch and full operating charge of R410A in each circuit.

Control Panel

The control panel enclosure is fabricated out of heavy gauge sheet steel powder coated bake finished. Internal power and and control wiring is neatly routed, properly anchored and all wires are identified with cable markers as per NEC standard applicable to HVAC units. Major components used in the control panel are UL approved.

MICROPROCESSOR BASED CONTROLLER

The Units (FAPU) are provided with technologically advanced Microprocessor based controller, incorporating the following benefits and features:

- Anti-recycling timing device
- Compressor lock out function
- Balance loading of compressors
- Compressors lead-lag operation
- Pump down option
- Fault diagnostics
- Indicator lights for high & low pressure safety

OPTIONAL SPECIFICATIONS

Construction

- Double skin for evaporator side
- Anti-corrossion coating for coils
- Copper fins for evaporator and/or condenser
- Stainless steel drain pan
- Special Air filter material
- Filter box with High Efficiency Bag filters
- Sand trap louver

Electrical

- Electric heater
- Compressor circuit breaker
- Blower motor circuit breaker
- Condenser fan motor circuit breaker
- External overload for condenser fan motor
- Mild ambient kit
- Anti - ice thermostat
- Air flow switch
- Ultra violet light
- Wi-Fi Thermostat
- Multi Stage Thermostat
- Modbus connectivity

Refrigeration

- Pump down kit
- High & Low Pressure gauges
- Rotalock valve for compressor
- Replaceable filter drier with mechanical shut-off valve
- Adjustable high/low pressure switch

Coolex App

Wi Fi Module

Typical Thermostat

SELECTION PROCEDURE

The below example illustrates the selection procedure to assist using this catalog to select the appropriate FAPU unit that meets the design requirements.

Altitude [ft]	Correction factor
Sea level	1
1000	0.996
2000	0.990
3000	0.984
4000	0.980
5000	0.974
6000	0.965
7000	0.960

Example :

Design requirements

•	Total cooling capacity	236	[MBH]
•	Sensible cooling capacity	124	[MBH]
•	Design ambient temperature	95	[°F]
•	Evaporator air flow	3600	[CFM]
•	Evaporator entering temperature DB/WB	95/80	[°F/°F]
•	External static pressure	0.7	[in.wg]
•	Altitude	2000	[ft]
•	Power supply	415V /3Ph /50Hz	

*Using the correction factor table at the specified altitude, thereby the required capacity will be:

Corrected capacity = Required capacity /corr. factor

Corrected total capacity = 236 [MBH]/0.99
= 238.38 MBH

Corrected sensible capacity = 124 [MBH]/0.99
= 125.25 MBH

From the cooling capacity at performance data tables (page 8), the closest selection model to the required capacity is FAPU-240. From the performance table:

Total capacity = 240 [MBH]

Sensible capacity = 121.8 [MBH]

GENERAL DATA

Outdoor Units		FAPU-048	FAPU-060	FAPU-072	FAPU-090	FAPU-120	FAPU-150	FAPU-180
Cooling Capacity (Nominal)	MBH	49.0	60.0	72.0	90.0	120.0	150.0	180.0
	KW	14.3	17.5	21.1	26.3	35.1	43.9	52.6
Compressor	Type	Hermetic Scroll						
	Quantity	1					2	
	Refrigerant	R410A						
	Refrigerant circuits	1					2	
	Expansion device type	Thermostatic Expansion Valve						
Condenser Fan	Type	Propeller						
	Diameter, mm	610			762		610	762
	No. of fans	1					2	
	Motor Enclosure/Ins Class	Open Drip-Proof, Class B						
	Nominal HP x Qty	0.75 x 1			1.5 x 1		0.75 x 2	1.5 x 2
	RPM	900						
Condenser Coil	Type	Enhanced Aluminum Fins & Inner Grooved Copper Tubes						
	Rows - FPI	2-12		2-14	3-14	3-16	2-12	
	Total Face area ft²	14.6		18.3		21.5	33.4	
Evaporator Blower	Type	Centrifugal Backward Curve						
	Motor Enclosure/Ins Class	Totally Enclosed Fan Cooled, Class F						
	Motor rating @ 1" ESP HP (KW)	1.0 (0.75)			1.5 (1.1)	2.0 (1.5)	3.0 (2.2)	4.0 (3.0)
Evaporator Coil	Type	Hydrophilic Aluminum Fins & Inner Grooved Copper Tubes						
	Rows - FPI	5-12						
	Total Face area ft²	2.0		3.0		4.5	6.0	
Air Filter	Type	Washable aluminum mesh + Bag Filter						
	Thickness (in)	2						
Drain Pipe	mm X TPI	27 X 14					42 X 11.5	
Weight	kg	330	335	343	350	424	663	689

Note:

1. Cooling capacities are based on 95°/80°F entering air temperature.

2. The above data maybe changed without prior notice due to continous improvement in quality and performance.

GENERAL DATA

Outdoor Units		FAPU-210	FAPU-240	FAPU-300	FAPU-360	FAPU-420	FAPU-480	FAPU-540	FAPU-600
Cooling Capacity (Nominal)	MBH	210.0	240.0	300.0	360.0	420.0	480.0	540.0	600.0
	KW	61.4	70.2	87.7	105.3	122.8	140.4	157.9	175.4
Compressor	Type	Hermetic Scroll							
	Quantity	2				4			
	Refrigerant	R410A							
	Refrigerant circuits	2				4			
	Expansion device type	Thermostatic Expansion Valve							
Condenser Fan	Type	Propeller							
	Diameter, mm	762			800	762		800	
	No. of fans	2				4			
	Motor Enclosure/Ins Class	Open Drip-Proof, Class B							
	Nominal HP x Qty	1.5 x 2			2.0 x 2	1.5 x 2		2.0 x 4	
	RPM	900							
Condenser Coil	Type	Enhanced Aluminum Fins & Inner Grooved Copper Tubes							
	Rows - FPI	3-14		4-16		3-14			
	Total Face area ft²	39.6		52.0		79.2			
Evaporator Blower	Type	Centrifugal Backward Curve							
	Motor Enclosure/Ins Class	Totally Enclosed Fan Cooled, Class F							
	Motor rating @ 1" ESP HP (KW)	4.0 (3.0)			5.0 (4.0)	7.5 (5.5)			10 (7.5)
Evaporator Coil	Type	Hydrophilic Aluminum Fins & Inner Grooved Copper Tubes							
	Rows - FPI	5-12							
	Total Face area ft²	8.0		12.0		16.0		20.0	
Air Filter	Type	Washable aluminum mesh + Bag Filter							
	Thickness (in)	2							
Drain Pipe	mm X TPI	42 X 11.5							
Weight	kg	780	795	1091	1166	1785	1858	1979	2012

Note:

1. Cooling capacities are based on 95°/80°F entering air temperature.

2. The above data maybe changed without prior notice due to continous improvement in quality and performance.

PERFORMANCE DATA TABLES

Model	Indoor Air Flow	Entering Air Temperature (DB/WB)											
	CFM	95/80 ° F			115/80 ° F			118.4/80 ° F			125/80 ° F		
		Capacity Btu/hr		kW Input	Capacity Btu/hr		kW Input	Capacity Btu/hr		kW Input	Capacity Btu/hr		kW Input
		Total	Sen.		Total	Sen.		Total	Sen.		Total	Sen.	
FAPU-048	500	44,175	21,243	4.37	40,162	30,593	5.37	39,358	32,056	5.58	37,845	34,846	6.01
	610	47,051	22,943	4.41	42,777	33,042	5.43	41,920	34,622	5.64	40,309	37,635	6.07
	720	49,000	24,583	4.44	44,549	35,404	5.47	43,656	37,097	5.68	41,978	40,325	6.12
FAPU-060	610	51,941	24,572	5.09	49,000	38,413	6.17	48,107	40,351	6.37	46,731	44,221	6.81
	750	57,614	28,435	5.18	52,190	41,487	6.23	51,239	43,581	6.44	49,774	47,760	6.89
	900	60,000	30,468	5.22	54,352	44,453	6.28	53,362	46,697	6.49	51,835	51,175	6.94
FAPU-072	750	65,124	31,511	6.18	58,760	46,209	7.51	57,632	48,561	7.77	56,629	53,379	8.35
	900	68,872	33,946	6.26	62,142	49,780	7.61	60,949	52,314	7.87	59,889	57,504	8.46
	1080	72,000	36,792	6.33	64,964	53,954	7.70	63,717	56,700	7.96	62,609	62,326	8.56
FAPU-090	950	81,257	39,369	7.55	73,240	57,604	9.01	71,985	60,584	9.29	69,914	66,419	9.93
	1150	85,889	42,481	7.64	77,415	62,157	9.12	76,089	65,373	9.41	73,899	71,668	10.05
	1350	90,000	45,899	7.72	81,120	67,159	9.22	79,730	70,633	9.51	77,436	77,436	10.17
FAPU-120	1200	107,027	51,549	10.36	97,239	75,346	12.35	96,086	79,357	12.57	92,426	86,568	13.57
	1500	114,831	56,364	10.51	104,329	82,383	12.54	103,091	86,769	12.76	99,165	94,654	13.78
	1800	120,000	60,966	10.61	109,026	89,110	12.67	107,732	93,854	12.90	103,629	102,382	13.93
FAPU-150	1600	136,128	65,787	13.29	123,661	95,821	15.83	122,149	100,902	16.16	117,073	109,789	17.39
	1900	143,372	70,405	13.43	130,242	102,546	16.00	128,649	107,984	16.34	123,303	117,495	17.58
	2250	150,000	75,462	13.56	136,263	109,912	16.16	134,597	115,741	16.51	129,003	125,935	17.76
FAPU-180	1900	163,577	79,134	16.73	149,689	115,613	19.59	147,369	121,622	20.13	142,507	132,924	21.27
	2300	173,331	85,476	16.87	158,615	124,878	19.78	156,157	131,368	20.33	151,005	143,577	21.47
	2700	180,000	91,666	16.97	164,718	133,922	19.90	162,165	140,882	20.45	156,815	153,975	21.61
FAPU-210	2150	188,621	91,013	18.69	174,714	134,305	22.12	171,783	141,341	22.78	165,630	154,263	24.17
	2650	201,362	99,010	18.90	186,516	146,106	22.40	183,387	153,759	23.07	176,818	167,817	24.47
	3150	210,000	106,741	19.05	194,517	157,515	22.58	191,253	165,766	23.26	184,403	180,922	24.68
FAPU-240	2400	213,657	102,888	20.64	194,710	149,146	24.65	191,258	157,005	25.43	184,009	171,184	27.06
	3000	229,390	112,541	20.93	209,048	163,139	25.02	205,343	171,735	25.81	197,560	187,244	27.47
	3600	240,000	121,816	21.13	218,717	176,584	25.27	214,840	185,888	26.07	206,697	202,676	27.75

See note on page 9

PERFORMANCE DATA TABLES

Model	Indoor Air Flow	Entering Air Temperature (DB/WB)											
	CFM	95/80 ° F			115/80 ° F			118.4/80 ° F			125/80 ° F		
		Capacity Btu/hr		kW Input	Capacity Btu/hr		kW Input	Capacity Btu/hr		kW Input	Capacity Btu/hr		kW Input
		Total	Sen.		Total	Sen.		Total	Sen.		Total	Sen.	
FAPU-300	3100	269,977	130,067	24.58	245,225	187,623	29.49	239,866	195,947	30.42	230,170	192,596	32.40
	3800	287,845	140,992	24.93	261,455	203,384	29.94	255,741	212,407	30.89	245,403	208,774	32.90
	4500	300,000	151,535	25.18	272,496	218,591	30.25	266,541	228,289	31.21	255,766	224,385	33.25
FAPU-360	3700	325,256	157,148	30.55	296,180	229,622	36.24	289,605	240,036	37.32	283,053	266,238	39.83
	4500	345,030	169,886	30.99	314,186	248,236	36.79	307,212	259,494	37.88	300,261	287,821	40.44
	5400	360,000	183,716	31.33	327,818	268,443	37.21	320,541	280,618	38.32	313,289	311,250	40.91
FAPU-420	4300	377,199	181,921	35.79	344,806	264,603	42.18	338,662	277,982	43.43	326,236	303,146	46.01
	5300	402,612	197,761	36.21	368,036	287,642	42.70	361,478	302,186	43.97	348,215	329,541	46.60
	6300	420,000	213,081	36.51	383,931	309,925	43.07	377,089	325,595	44.36	363,254	355,070	47.02
FAPU-480	5000	435,050	210,521	39.93	397,520	308,463	47.43	390,102	324,195	48.90	377,748	355,055	52.08
	6100	461,797	228,094	40.43	421,960	334,212	48.06	414,086	351,257	49.55	400,972	384,693	52.79
	7200	480,000	245,230	40.79	438,593	359,320	48.50	430,408	377,645	50.01	416,778	413,593	53.28
FAPU-540	5500	483,657	233,417	45.00	439,723	339,489	53.94	431,280	356,595	55.62	415,815	389,678	59.24
	6800	518,422	254,887	45.67	471,330	370,716	54.79	462,280	389,394	56.52	445,703	425,521	60.20
	8100	540,000	274,539	46.10	490,948	399,298	55.34	481,522	419,417	57.08	464,255	458,329	60.82
FAPU-600	6200	543,934	263,190	50.66	491,974	385,142	60.63	481,847	404,667	62.48	463,123	438,300	66.51
	7600	577,771	285,563	51.41	522,579	417,882	61.59	511,822	439,067	63.47	491,933	475,559	67.59
	9000	600,000	306,760	51.95	542,684	448,901	62.28	531,514	471,658	64.18	510,859	491,797	68.36

LEGEND:

CFM : Air flow rate (Ft^3/minute)
DB : Dry bulb temperature (°F)
WB : Wet bulb temperature (°F)
KW : Total Power Input (Kilowatts)

Note:

1. Cooling capacities are based on 95°/80°F entering air temperature.
2. Direct interpolation is permissible - Do not extrapolate.

UNIT ELECTRICAL DATA

MODEL	POWER SUPPLY	VOLTAGE RANGE		Condenser Fan Motor		Compressor 1		Compressor 1		Evaporator Blower Motor		MCA	MOCP
	(V-PH-HZ)	MIN.	MAX.	HP	FLA	RLA	LRA	RLA	LRA	HP (KW)	FLA		
FAPU-048	415-3-50	374	457	0.5	3.0	10.7	64.0	-	-	1.0 (0.75)	1.8	18.2	25
FAPU-060	415-3-50	374	457	0.5	3.0	10.9	64.0	-	-	1.0 (0.75)	1.8	18.4	25
FAPU-072	415-3-50	374	457	0.75	3.0	12.5	75.0	-	-	1.0 (0.75)	1.8	20.4	30
FAPU-090	415-3-50	374	457	0.75	3.0	14.5	101.0	-	-	1.5 (1.10)	2.5	23.6	35
FAPU-120	415-3-50	374	457	1.5	3.0	17.9	139.0	-	-	2.0 (1.50)	3.6	29.0	45
FAPU-150	415-3-50	374	457	0.75 (2)	3.0	13.6	100.0	13.6	100.0	3.0 (2.20)	4.5	41.1	50
FAPU-180	415-3-50	374	457	1.5 (2)	3.0	14.5	101.0	14.5	101.0	4.0 (3.00)	6.1	44.7	50
FAPU-210	415-3-50	374	457	1.5 (2)	3.0	17.9	139.0	14.5	101.0	4.0 (3.00)	6.1	49.0	60
FAPU-240	415-3-50	374	457	1.5 (2)	3.0	17.9	139.0	17.9	139.0	4.0 (3.00)	6.1	52.4	70
FAPU-300	415-3-50	374	457	1.5 (2)	3.0	24.3	140.0	24.3	140.0	4.0 (3.00)	6.1	66.8	90
FAPU-360	415-3-50	374	457	2.0 (2)	3.8	28.6	174.0	28.6	174.0	5.0 (4.00)	7.9	79.9	100
FAPU-420	415-3-50	374	457	1.5 (4)	3.00	17.9(2)	139.0	14.5(2)	101.0	7.5 (5.50)	11.0	99.1	100
FAPU-480	415-3-50	374	457	1.5 (4)	3.00	17.9(2)	139.0	17.9(2)	139.0	7.5 (5.50)	11.0	92.3	125
FAPU-540	415-3-50	374	457	2.0 (4)	3.8	20.8(2)	144.0	17.9(2)	139.0	7.5 (5.50)	11.0	108.8	125
FAPU-600	415-3-50	374	457	2.0 (4)	3.8	20.8(2)	144.0	20.8(2)	144.0	10.0 (7.50)	14.0	117.6	125

LEGEND:

FLA - Full Load Amps
HP - Horse Power
LRA - Locked Rotor Amps
RLA - Rated Load Amps
MCA - Minimum Circuit Amps
MOCP - Maximum Over Current Protection

FAN PERFORMANCE

Model	CFM	External Static Pressure [in.wg]									
		1.00		1.50		2.00		2.50		3.00	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
FAPU-048	500	3797	0.29	4105	0.38	4392	0.44	4662	0.52	4918	0.60
	610	3943	0.35	4238	0.43	4515	0.49	4776	0.59	5024	0.67
	720	4116	0.42	4398	0.49	4664	0.58	4915	0.67	5155	0.76
FAPU-060	610	3943	0.35	4238	0.43	4515	0.49	4776	0.59	5024	0.67
	750	4167	0.43	4446	0.52	4708	0.60	4957	0.70	5195	0.79
	900	4445	0.54	4705	0.63	4953	0.72	5189	0.83	5415	0.92
FAPU-072	750	4167	0.43	4446	0.52	4708	0.60	4957	0.70	5195	0.79
	900	4445	0.54	4705	0.63	4953	0.72	5189	0.83	5415	0.92
	1080	4817	0.70	5058	0.80	5289	0.91	5510	1.02	5722	1.14
FAPU-090	950	2838	0.67	3056	0.82	3257	0.97	3452	1.13	3638	1.29
	1150	2977	0.82	3181	0.97	3374	1.14	3560	1.30	3735	1.49
	1350	3137	0.99	3332	1.10	3516	1.34	3690	1.51	3856	2
FAPU-120	1200	3015	0.84	3218	1.02	3407	1.18	3589	1.35	3764	1.54
	1500	3270	1.14	3457	1.33	3633	1.51	3800	1.70	3964	1.90
	1800	3560	1.51	3731	1.73	3894	1.93	4049	2.16	4200	2.37
FAPU-150	1600	2758	1.53	2935	1.35	3104	1.57	3263	1.79	3415	2.02
	1900	2946	1.45	3111	1.68	3268	1.92	3419	2.16	3563	2.41
	2250	3189	1.89	3342	2.14	3487	2.41	3628	2.68	3764	2.95
FAPU-180	1900	2946	1.45	3111	1.68	3268	1.92	3419	2.16	3563	2.41
	2300	3227	1.96	3376	2.22	3520	2.49	3659	2.76	3793	3.04
	2700	3531	2.59	3671	2.89	3802	3.20	3931	3.51	4055	3.82
FAPU-210	2150	2405	1.30	2553	1.54	2695	1.77	2830	2.02	2963	2.28
	2650	2623	1.74	2760	2.01	2890	2.28	3013	2.56	3134	2.84
	3150	2858	2.26	2987	2.59	3111	2.89	3227	3.22	3339	3.54

LEGEND:

RPM : Fan Speed in revolution per minute
BHP : Fan absorbed power

Note:

1. Internal Static pressure is based on pressure drops through evaporator coil, fan casing, 2" washable filter and bag filter.
2. Blue shaded area indicates the operating range of a standard motor and drive combination.
3.Green shaded area indicates the operating range of a standard motor with non standard drive combination.
4. Gray shaded area indicates operating range using non standard motor and drive combination.
5. To determine the power of motor to be installed, just multiply the value of the absorbed power indicated above by 1.2.

FAN PERFORMANCE

Model	CFM	External Static Pressure [in.wg]									
		1.00		1.50		2.00		2.50		3.00	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
FAPU-240	2400	2511	1.51	2653	1.76	2788	2.01	2917	2.28	3042	2.55
	3000	2785	2.10	2918	2.40	3043	2.69	3162	3.10	3275	3.31
	3600	3075	2.86	3202	3.20	3322	3.55	3432	3.91	3539	4.28
FAPU-300	3100	2199	1.84	2330	2.13	2457	2.44	2582	2.76	2704	3.10
	3800	2410	2.47	2527	2.82	2640	3.18	2748	3.55	2855	3.93
	4500	2637	3.24	2748	3.66	2852	4.09	2953	4.50	3049	4.93
FAPU-360	3700	1916	2.14	2037	2.51	2154	2.89	2269	3.28	2384	3.69
	4500	2079	2.82	2187	3.24	2290	3.69	2391	4.13	2489	4.57
	5400	2282	3.77	2382	4.26	2476	4.77	2567	5.28	2655	5.80
FAPU-420	4300	2036	2.64	2146	3.06	2253	3.47	2356	3.90	2458	4.33
	5300	2258	3.65	2359	4.14	2455	4.64	2546	5.15	2635	5.66
	6300	2495	4.95	2589	5.51	2679	6.09	2764	6.68	-	-
FAPU-480	5000	1723	2.89	1826	3.38	1926	3.89	2023	4.41	2120	4.96
	6100	1881	3.85	1975	4.41	2064	5.00	2150	5.58	2234	6.18
	7200	2048	5.07	2138	5.70	2223	6.35	2303	7.02	2380	7.69
FAPU-540	5500	1468	3.07	1568	3.65	1666	4.24	1763	4.85	1857	5.50
	6800	1589	4.05	1677	4.70	1762	5.36	1844	6.06	1925	6.76
	8100	1725	5.28	1808	6.02	1886	6.78	1961	7.55	2033	8.32
FAPU-600	6200	1530	3.57	1623	4.18	1712	4.81	1800	5.47	1887	6.14
	7600	1672	4.77	1756	5.48	1836	6.21	1913	6.93	1988	7.69
	9000	1823	6.30	1904	7.10	1979	7.92	2051	8.75	2120	9.60

LEGEND:

RPM : Fan Speed in revolution per minute
BHP : Fan absorbed power

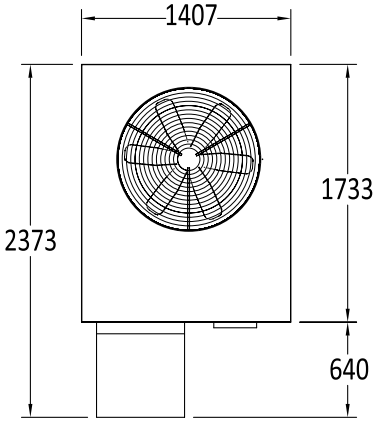
Note:

1. Internal Static pressure is based on pressure drops through evaporator coil, fan casing, 2" washable filter and bag filter.
2. Blue shaded area indicates the operating range of a standard motor and drive combination.
3.Green shaded area indicates the operating range of a standard motor with non standard drive combination.
4. Gray shaded area indicates operating range using non standard motor and drive combination.
5. To determine the power of motor to be installed, just multiply the value of the absorbed power indicated above by 1.2.

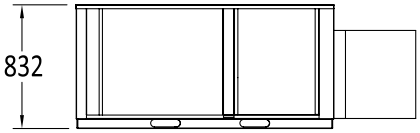
UNIT DIMENSIONS

FAPU-048/060/072/090

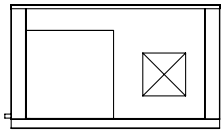
ALL DIMENSIONS ARE IN MM



TOP VIEW



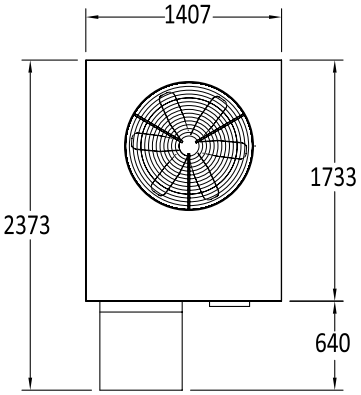
SIDE VIEW



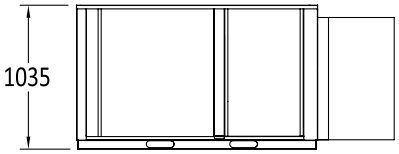
FRONT VIEW

FAPU-120

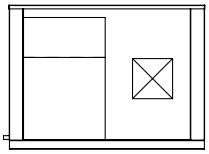
ALL DIMENSIONS ARE IN MM



TOP VIEW



SIDE VIEW

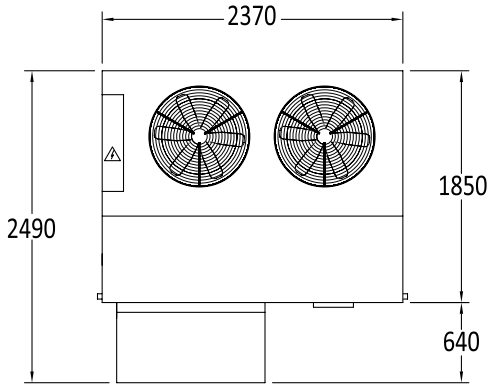


FRONT VIEW

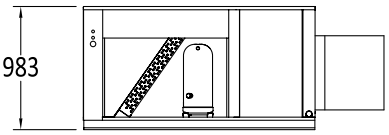
UNIT DIMENSIONS

FAPU-150/180

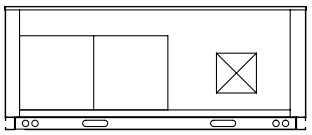
ALL DIMENSIONS ARE IN MM



TOP VIEW



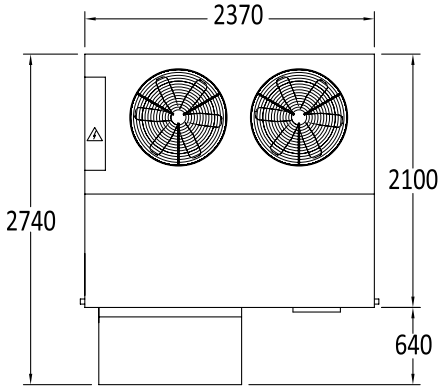
SIDE VIEW



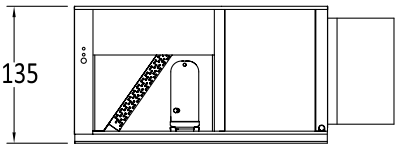
FRONT VIEW

FAPU-210/240

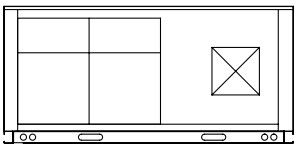
ALL DIMENSIONS ARE IN MM



TOP VIEW



SIDE VIEW

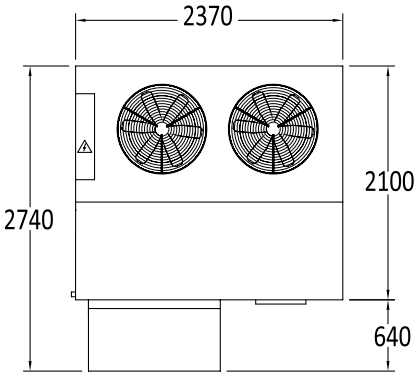


FRONT VIEW

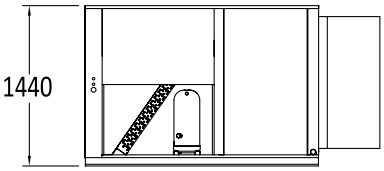
UNIT DIMENSIONS

FAPU-300

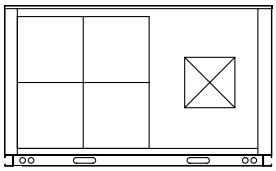
ALL DIMENSIONS ARE IN MM



TOP VIEW



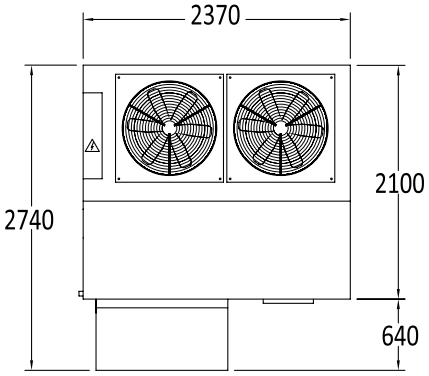
SIDE VIEW



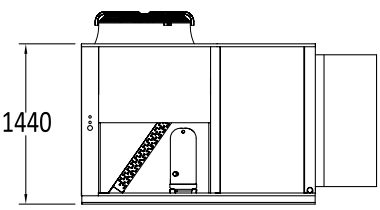
FRONT VIEW

FAPU-360

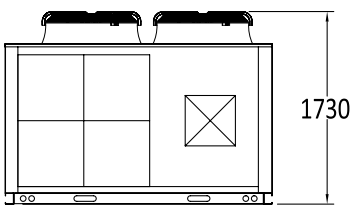
ALL DIMENSIONS ARE IN MM



TOP VIEW

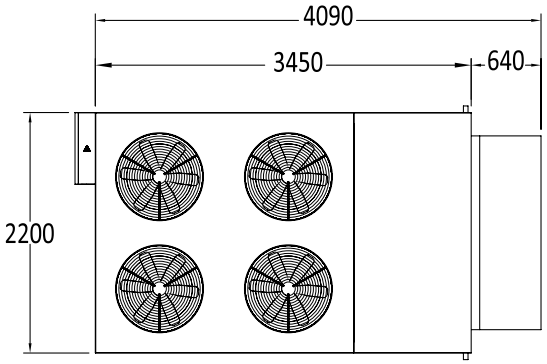


SIDE VIEW



FRONT VIEW

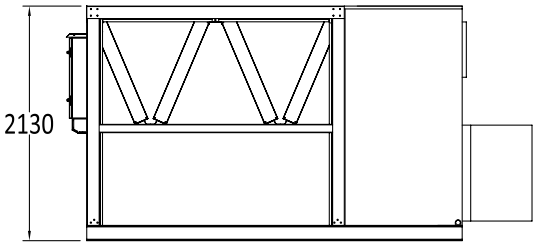
UNIT DIMENSIONS



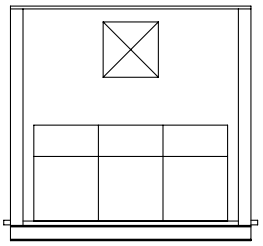
TOP VIEW

FAPU-420/480

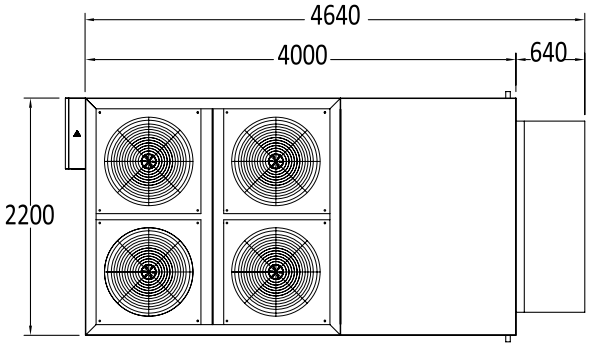
ALL DIMENSIONS ARE IN MM



FRONT VIEW



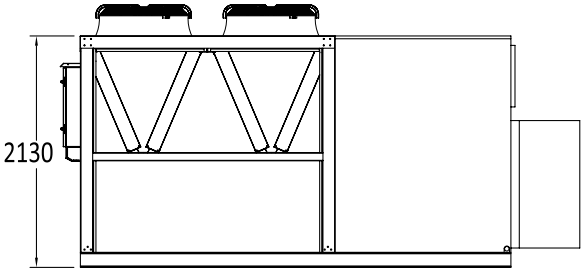
SIDE VIEW



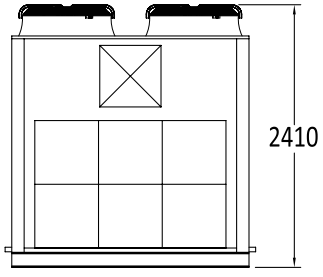
TOP VIEW

FAPU-540/600

ALL DIMENSIONS ARE IN MM



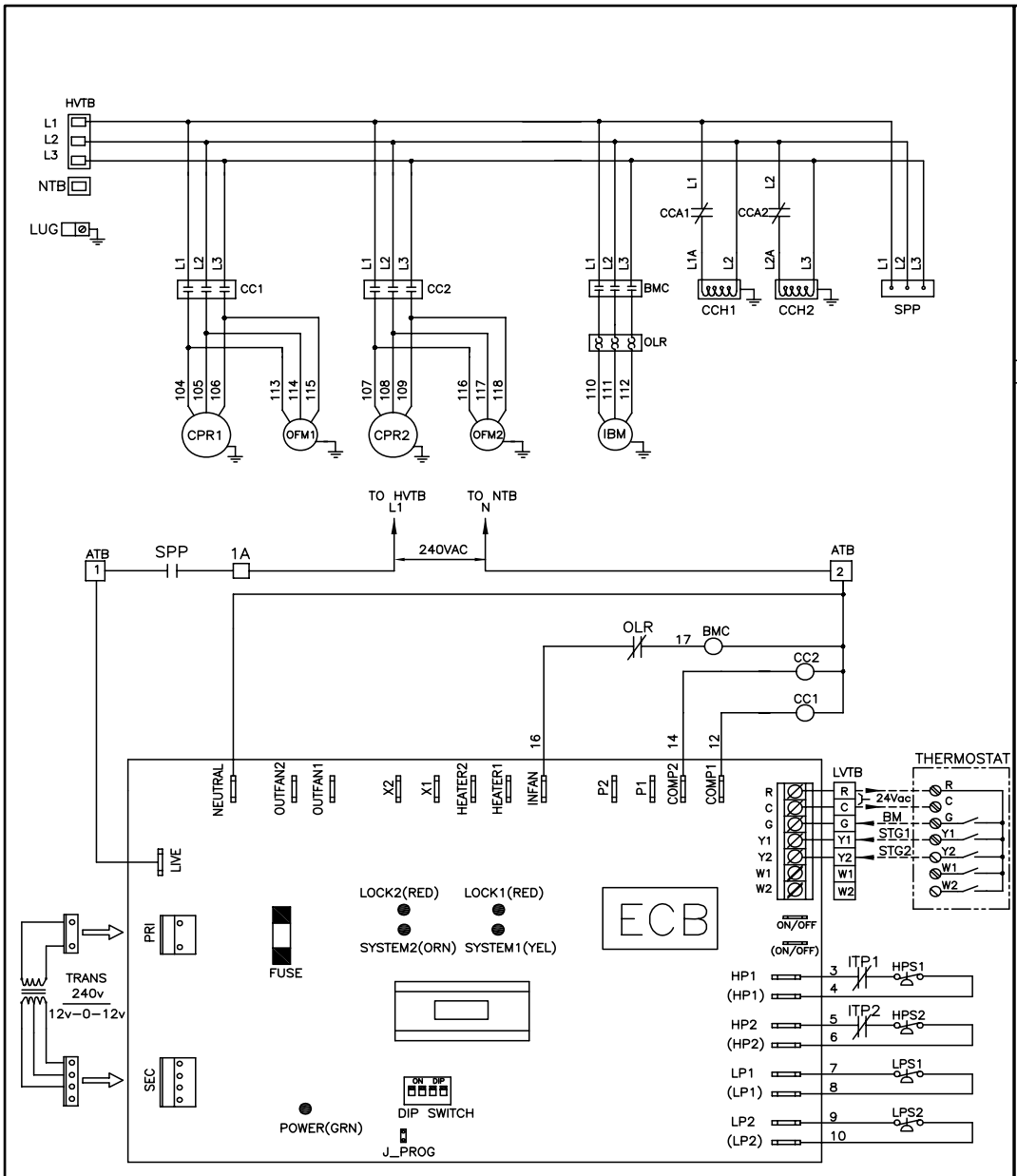
FRONT VIEW



SIDE VIEW

TYPICAL WIRING DIAGRAM

WITH MICROPROCESSOR BASED CONTROLLER (STANDARD)



LEGEND:

ATB	–	AUXILIARY TERMINAL BLOCK
BMC	–	BLOWER MOTOR CONTACTOR
CCH	–	CRANKCASE HEATER
CC	–	COMPRESSOR CONTACTOR
CCA	–	COMPRESSOR CONTACTOR AUXILIARY
CPR	–	COMPRESSOR MOTOR
FC	–	FAN CONTACTOR
HP	–	HIGH PRESSURE CONTROL
HVTB	–	TERMINAL BLOCK, HIGH VOLTAGE
IBM	–	INDOOR BLOWER MOTOR
ITP	–	INTERNAL THERMAL PROTECTOR–OFM
LP	–	LOW PRESSURE CONTROL
MAC	–	MILD AMBIENT CONTROL
NTB	–	NEUTRAL TERMINAL BLOCK
OFM	–	OUTDOOR FAN MOTOR
OLR	–	OVER LOAD RELAY
SPP	–	SINGLE PHASE PREVENTER
TRANS–		TRANSFORMER
□	–	TERMINAL BLOCK OR TERMINATION POINT
———	–	FACTORY WIRES & DEVICES
- - - -	–	FIELD WIRES BY OTHERS
- - - -	–	DEVICES BY OTHERS

NOTES

1. ANY WIRE REPLACEMENT, SHOULD BE OF THE 105°C TYPE OR ITS EQUIVALENT.
2. USE COPPER CONDUCTORS ONLY.
3. POWER MUST BE SUPPLIED TO CRANKCASE HEATER FOR A MINIMUM OF 12 HOURS, PRIOR TO SYSTEM START UP. IF POWER SUPPLY HAS BEEN INTERRUPTED FOR A PROLONGED PERIOD, OIL SUMP HEATERS MUST BE ENERGIZED FOR 12 HRS MINIMUM, BEFORE STARTING COMPRESSOR.
4. FUSED DISCONNECT SWITCH OR CIRCUIT BREAKER TO BE PROVIDED BY THE USER, AS PER ELEC. DATA IN INSTALLATION MAN'L.
5. COMPRESSOR IS PROVIDED WITH INTERNAL OVERLOAD.
6. IF ANY CHANGE IN DIP SWITCH SETTING IS REQUIRED, TURN OFF POWER FIRST & SET REQUIRED SETTING.

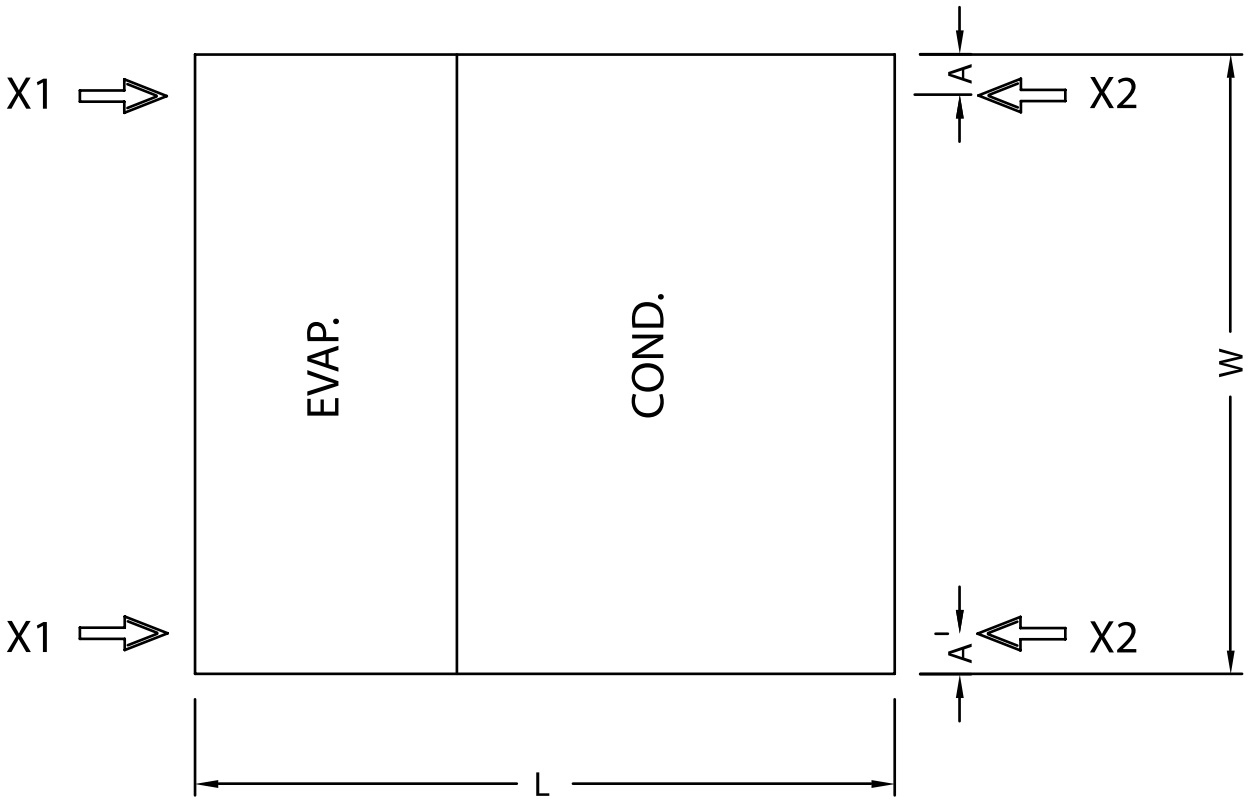
ECB DIP SWITCH SETTINGS & LED INDICATORS

DIP SWITCH FUCTIONS			FACTORY SETTINGS OF DIP SWITCHES
S1	OFF=TEST MODE DISABLE	ON= TEST MODE ENABLE	
S2	OFF= LOAD BALANCE (Comp1&2 Auto Lead Lag)	ON= COMPRESSOR 1 LEAD	
S3	OFF= WITHOUT PUMP DOWN	ON=WITH PUMP DOWN OPTION	
S4	OFF=SINGLE STAGE	ON=DUAL STAGE	

DIP SWITCH#	S1	S2	S3	S4
ON				✔
OFF	✔	✔	✔	

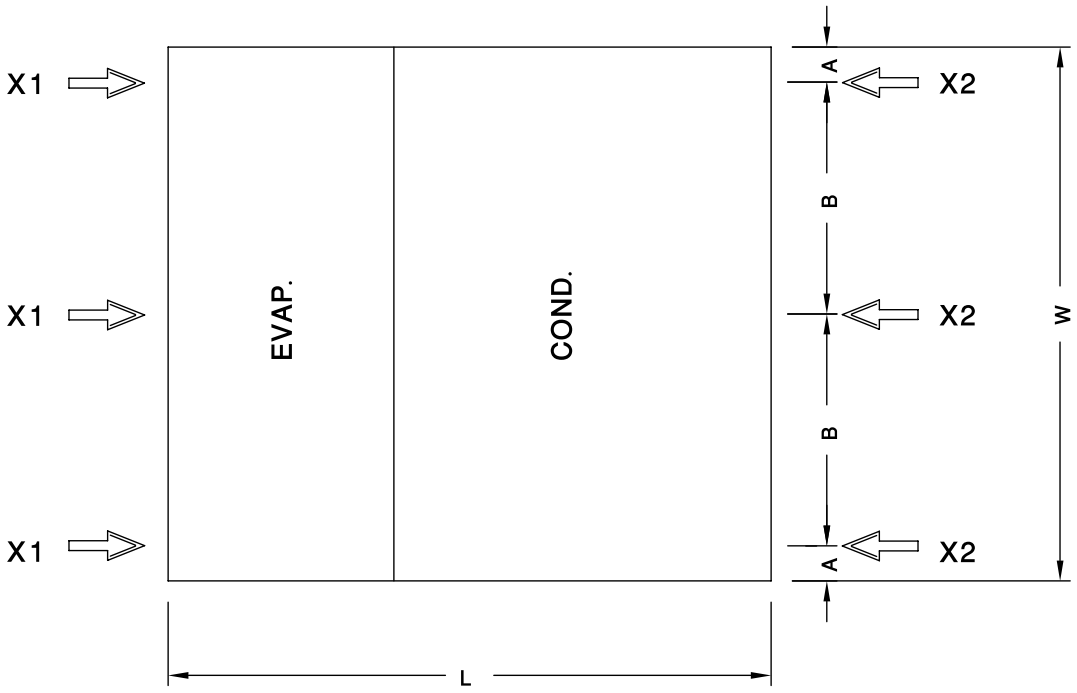
LED INDICATORS	
Green	power on/off indicator
Red	Lock–out due to system fault
Yellow	blinking slow – LPS1 Trip
	blinking fast – HPS1 Trip
Orange	blinking slow – LPS2 Trip
	blinking fast – HPS2 Trip

LOAD DISTRIBUTION



LOAD DISTRIBUTION (kg)						Total Weight
MODEL	L (mm)	W (mm)	A (mm)	X1 (kg)	X2 (kg)	
FAPU-048	1733	1407	75	78	87	330
FAPU-060	1733	1407	75	80	88	335
FAPU-072	1733	1407	75	81	90	343
FAPU-090	1733	1407	75	83	92	350
FAPU-120	1733	1407	75	101	111	424

LOAD DISTRIBUTION



LOAD DISTRIBUTION (kg)							Total Weight
MODEL	L (mm)	W (mm)	A (mm)	B (mm)	X1 (kg)	X2 (kg)	
FAPU-150	2370	1850	125	800	105	116	663
FAPU-180	2370	1850	125	800	109	121	689
FAPU-210	2370	2100	125	925	124	137	780
FAPU-240	2370	2100	125	925	126	139	795
FAPU-300	2370	2100	125	925	173	191	1091
FAPU-360	2370	2100	125	925	185	204	1166
FAPU-420	3450	2200	125	975	283	312	1785
FAPU-480	3450	2200	125	975	294	325	1858
FAPU-540	4000	2200	125	975	313	346	1979
FAPU-600	4000	2200	125	975	319	352	2012

NOTES

صناعات التبريد
REFRIGERATION INDUSTRIES

About RIC

Refrigeration Industries Company (KSE 504) is a group holding company with diversified interests in manufacturing, contracting and services. Recognized regionally for our engineering capabilities and management excellence, RIC and its subsidiaries offer a wide range of high quality products and services that cater to both residential and commercial customers, in the areas of climate control technologies and specialized storage solutions.

In view of the growing Kuwait infrastructure and the limitations imposed on it by the country's arid climate, the Refrigeration Industries Company was established 43 years ago in 1973, by Amiri Decree. The company's operations began with the construction of the first cold stores in the region, to enable the storage of the imported foods, on which Kuwait relied. Along with the development and advancement of the country, so has RIC prospered and expanded, and is now a milestone in the history of modern Kuwait.

RIC takes pride in its successful record and the many accolades it has garnered over time, but the greatest achievement has been the provision of comfort and protection from the harsh climate, to the people of Kuwait.

More than 43 years of uninterrupted service, overcoming extreme weather conditions, war, economic recessions and ever increasing competition, is testimony to the fact that RIC has met the expectations and responsibilities that was envisioned at the beginning and also highlights the tenacity and vision to exceed them in the future.

Facts throughout the years

1973 Warehouses were established by Amiri Decree.

1979 RIC Constructed the Medical Cold Stores Complex, the world's largest at that time.

1980 RIC Air Conditioning manufacturing plant set up in Sulaibya.

1981 Production of Package & Mini-Split A/Cs started under York-Gulf.

1984 RIC was listed in Kuwait Stock Exchange.

1986 COOLEX brand Production Launched.

1991 RIC rebuilt the manufacturing plant destroyed during the war.

1997 Achieved ISO Certification ISO 9001:1994.

2002 ETL Designed testing lab became fully operational.

2004 Privatization of RIC.

2010 COOLEX becomes the first A/C Unit to Pass MEW's new regulations.

2010 RIC Factory Renovation and Expansion into neighboring countries.

2012 Achieved UL & AHRI Certification for Coolex Units.

2014 Achieved SASO Certification for Concealed Ducted Split Series.

2014 Achieved EUROVENT Certification for Air Handling Units AHU.

2014 Achieved UL Certification for Air Cooled Chillers.

2015 Achieved ISO 17025 Certification for Psychrometric Laboratory.

2016 Achieved Energy Efficiency Certification for Concealed Ducted Split Series & Rooftop Package units (Kingdom of Bahrain).

نبذة عن الشركة

شركة صناعات التبريد (متداولة في سوق الكويت للأوراق المالية برقم 504) هي شركة متنوعة الأنشطة تعمل في مجال التصنيع والمقاولات والخدمات. ونحن نقدم مجموعة كبيرة من المنتجات والخدمات والحلول التقنية في مجال مواجهة الظروف المناخية وحلول التخزين. وقد حازت الشركة على إعتراف إقليمي بقدراتها الهندسية وكفاءتها الإدارية.

شركة صناعات التبريد هي مجموعة شركات تهدف إلى توفير أعلى مستويات الجودة من حيث المنتجات والخدمات التي تلبي إحتياجات عملائها السكنية والتجارية. وعلى مدى ثلاثة و أربعون عاماً مضت على إنشاء شركتنا فقد إستطعنا أن نوطد أقدامنا في جميع قطاعات السوق الكويتي. ونحن إذ نفتخر بالإنجازات التي حققناها، إلا أننا أشد فخرا بأننا تمكنا من الوقوف إلى جانب أهل الكويت على مدى سنوات طويلة في مواجهة تقلبات الظروف المناخية القاسية سواء من حيث درجات الحرارة العالية أو الأتربة أو الرطوبة.

وبإعتبارها إحدى الشركات الصناعية العاملة في دولة الكويت، فقد واجهت الشركة تحديات وآمال كبيرة في سعيها لتحقيق النجاح، وقد كانت الشركة – ولا تزال – معلما من المعالم المهمة في نظر أهل الكويت لما قدمته من منتجات وخدمات إستطاعت أن تغير الطبيعة القاسية لمناخ الكويت. فبعد نحو 43 عاما تقريبا، لا يزال السؤال مطروحا حول تحقيقنا لهذه التوقعات، فهل إستطاعت الشركة أن تتحمل مسؤولياتها على الوجه الأكمل؟ ويأتي الرد بالإيجاب، فعلى مدى ثلاثة و أربعين عاما تقريبا لم تتوقف الشركة خلالها عن الإستمرار في تقديم خدماتها وأعمالها رغم الصعوبات التي تمثلت في ظروف الطقس القاسية أو الحروب أو الكساد الاقتصادي أو إرتفاع حدة المنافسة، فقد كانت كل واحدة من هذه الظروف بمثابة شهادة على أننا حققنا ما وعدنا به وما عقدنا العزم على تنفيذه.

حقائق وتواريخ

1973 تم إنشاء المستودعات بناء على مرسوم أميري.

1979 عهدت وزارة الصحة الكويتية لشركة صناعات التبريد بإنشاء مجمع مستودعات مخازن التبريد الطبية، وقد كان هذا المجمع حينها هو الأضخم من نوعه على مستوى العالم، وقد وصلت تكلفته إلى 12,000,000 دينار كويتي.

1980 تم إنشاء مصنع مكيفات الهواء التابع لشركة صناعات التبريد في الصليبية.

1981 بدء إنتاج أجهزة التكييف المدمجة والمنفصلة الصغيرة تحت علامة York-Gulf.

1984 تم قيد شركة صناعات التبريد في سوق الكويت للأوراق المالية.

1986 بدء إنتاج مكيفات علامة كولكس.

1991 قامت شركة صناعات التبريد بإعادة بناء مصنعها الذي دمرته الحرب.

1997 الحصول على شهادة الآيزو 9001:1994

2002 بدء تشغيل مختبر فحص وحدات التكييف (ETL)

2004 خصخصة شركة صناعات التبريد.

2010 كانت وحدات كولكس أول وحدات تكييف هواء تجتاز اللوائح التي أقرتها (وزارة الكهرباء والماء).

2010 تم تجديد مصنع شركة صناعات التبريد وبدء التوسع والتصدير إلى الدول المجاورة.

2012 الحصول على شهادة UL و AHRI لأجهزة التكييف كولكس.

2014 الحصول على شهادة SASO لأجهزة التكييف المنفصلة.

2014 الحصول على شهادة EUROVENT لأجهزة مناولة الهواء.

2014 الحصول على شهادة UL لمبردات الهواء الشيلر.

2015 الحصول على شهادة الأيزو ISO 17025 لمختبر السيكرومترية.

2016 الحصول على شهادة كفاء الطاقة لأجهزة التكييف المنفصلة و الوحدات المدمجة (مملكة البحرين).

COOLEX

COOLEX DISTRIBUTORS

Sultanate of Oman

Al Noor Projects Engineering & Trading Company
Address: Third Floor, Oman House
P.O. Box: 1047, P.C: 114 Hay Al Mina - Muscat
Tel : +968 24709402/403
Fax : +968 24709401
Email : info@alnoorprojects.com
Email : gm@alnoorprojects.com
Website : www.alnoorprojects.com

United Arab Emirates UAE

Obaid Humaid Al-Tayer Engineering Division
Al Tayer Group
Address: Dubai – UAE, PO Box 2623
Tel : +971 4 2011272
Fax : +971 4 2825008
Mobile : +971 50 3500747
Email : bkrishnan@altayer-eng.com
Website : www.altayer.com

Kingdom of Bahrain

Y.K. Almoayyed & Sons
Address: EHAD – Project Department, Sehla Workshop
P.O. Box 143, Manama, Kingdom of Bahrain
Tel : +973 17 400 444, Extn. 205
Direct : +973 17 405 250
Fax : +973 17 400 388
Email : Pradeep@almoayyed.com.bh
Email : anshul.bawa@almoayyed.com.bh
Website : www.almoayyed.com

Kingdom of Saudi Arabia KSA

Al-Etmad for Refrigeration and Air Conditioning Industries Company
Address: Al Qortobah Quartier, King Abdullah Road
Riyadh – KSA, P.O. Box 50467 Riyadh 11533
Tel : + 966 11 2447789
Fax : + 966 11 4958812
Mobile : + 966 560034240
Email : abunaif722@ksacoolex.com
Website : www.Coolex.com

Republic of Iraq

SWEER Company Limited
Address: Al Senak -Jumhuria Street - Baghdad-Iraq
P.O. Box: 8095
Tel : +964 1 8181196
Mobile : +964 7705 884444
Email : sweerco@yahoo.com
Website : www.sweerco.com

State of Qatar

Al Jaber for air conditioning & Refrigeration industries
Address: PO.Box 23546 Doha
Tel : +974 44210963
Fax : +974 44448919
Mobile : +974 55610321
Mobile : +974 55843255
Email : Customercare@jaric-qatar.com
Website : www.jaric-qa.com

Iran

Capital ICEBERG Limited Company
Address: No. 31, 3rd Floor, Aghdasieyeh Trade Center
Aghdasiyeh Street. Tehran – Iran
Tel : +98 (021) 26110510
Fax : +98 (021) 26110510
Mobile : +98 912 119 2961
Email : info@capitaliceberg.com
Email : saeed.s@capitaliceberg.com
Email : sara.s@capitaliceberg.com
Website : www.capitaliceberg.com

Sudan

Abina For Advises And Engineering Work Company
Address: Katrena Street - East Qurashi Park
Sudan – Khartoum
Tel : +249 574064
Fax : +249 574064
Mobile : +249 900900246/247/248/249/250/251/252
Email : maha1237@yahoo.com

Islamic Republic of Pakistan

AG TEK Pvt. Ltd.
Address: 179-S, Imperial Garden Paragon City
Lahore - Pakistan
Tel : +92-42-37187640-43
Fax : +92-42-37187644
Cell : +92-300-4745624
Mobile : +92-321-2280011
Email : info@agtek.com.pk
Email : coo@agtek.com.pk
Website : www.agtek.com.pk

Egypt

Total Group Egypt Company
Address: 4 Buildings Al-Noor – Sheraton Housings
Cairo – Egypt
Tel : +202267240/837
Mobile : +20109966627
Mobile : +21201299444
Email : adel@coolex-eg.com
Email : ahmad@coolex-eg.com
Website : www.coolex-eg.com

Syrian Arab Republic

Team for Engineering & Trading co.
Address: Damascus - Kafer Souseh
P.O.Box: 16311
Tel : +963 11 222 2996
Tel-Fax : +963 11 222 1125
Mobile : +963 93 322 6288
Mobile : +963 94 421 1146
Email : info@team-syr.net
Email : georgeyoussef@team-syr.net
Website : www.team-syr.net

Nepal

Global Air Conditioning And Trading Pvt Ltd
Address: SINAMANGAL-9, KATHMANDU-NEPAL
Tel : +977 9813388560
Email : ajay.sharma2852@gmail.com

Please contact Sales and Marketing Department sales@ric.com.kw or www.coolex.com.kw for specific information on the current design and specifications. Ref no.: CFPCF21-5-000

CENTRAL AIR CONDITIONING AND SPLIT UNIT

Coolex continuously works towards the improvement of its products. Hence, the design and specifications of the ordered product may vary without prior notice.

COOLEX is a subsidiary of the RIC Group
www.ric.com.kw

www.coolex.com.kw