Self Contained Roof Top Units

ETA

Roof Top Unit

ETA

FRONT VIEW

SIX POWERFUL FEATURES

- Power Saving
- Clean Air
- Energy Efficiency
- Humidity Control
- Space Saving
- Programmable Operation

TOP VIEW

E.T.A -Self contained Roof Top Units

The sleek new look of E.T.A's packaged Rooftops with the efficiency simply unmatched in this category.Taking the feedback from H.V.A.C Consultants and Clients this system is designed to keep the Client happy for the years to come. This well balanced high efficiency Root Top machines are very easy to Install & of course very easy to service too.

Our New range of Rooftop Units (R.T.U's) are ideal for the commercial applications like Malls, Store, Shops, Restaurants, laboratories, offices, commercial complexes etc.
R.T.U's as the name suggests are installed on the Roof of a building. It has condenser as well as the evaporator unit enclosed in a single body.

Features of Roof Top Units (R.T.U's)

Sleek and yet heavy duty :Outer dimensions of units are minimised. This compact size enables the units installed in a very small area (Foot Print) thereby saving on the space OR Virtually zero floor space is required on the air-conditioned /Prime floor.Rugged cabinet/Excellent Coating: Outer cabinet is constructed of heavy gauge corrosion resistant galvanized steel, finished with electro deposition paint and synthetic resin baked enamel. Weather proof with an attractive appearance and convenient service access to the interior of the Cabinet.

Efficient Scroll Compressor

Imported Scroll Compressors are used in all the R.T.U's.
Robust engineered design meets heavy duty & critical Applications viz. I.T, B.P.O. Malls, Laboratories etc.
Less prone to damages due to liquid not entering the compressor.
Less wear and tear due to fewer moving parts.
Side glass for checking of oil level.
Silent operation.
Low operational cost.
These units are mdesigned for year round cooling to provide energy saving air conditioning at high outdoor temperatures too.
The scroll compressors are internally.
protected from vibration and excessively high coil temperatures Insulation protects the compressors from extreme weather conditions.

Efficient Evaporator and Condenser Coils: Aluminium fins are machine fitted to copper tubes. The coil design provides large surface and contact area for high efficiency. Fins are equipped with collars that grip tubing to maximum contact area, resulting in excellent heat transfer. Flared shoulder tubing joints and silver soldering provides tight leak-proof joints. Coils are thoroughly tested under pressure to ensure leak proof construction.

Control Panel : All electrical devices are enclosed in weather-proof locations and are completely sealed from dust and are conveniently located for easy service access.

Super Slit fin and Thermopin Tube : In Indoor and Outdoor coils, the combination of aluminum super slit fin has improved in pursuit of a ideal air current and thermopin tube, with precise screw tapping inside for a large heat transfer area, which ensures maximum heat transferring efficiency.

Outdoor Fan : The outdoor fan is a direct drive propeller fan. The fan motor is permanently lubricated and totally enclosed, assuring quite and trouble-free operation.

Factory Charged : The chances of refrigerant leakages had been reduced to a minimum due to the entire factory-charged and sealed refrigerant cycle.

Motor mounted on slide rail

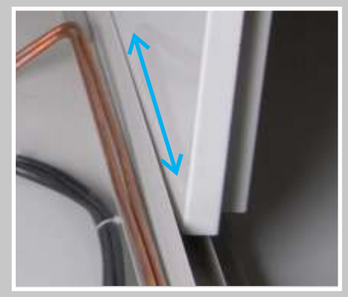
- Facilitate easy belt alignment/ belt tention
- Improve efficiency, Lower maintenance cost

Imported Blower

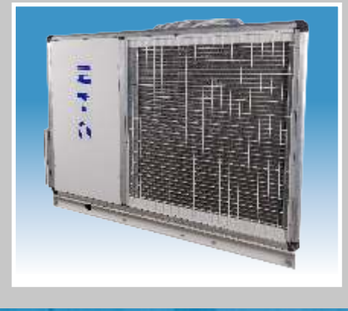
- Low noise and high capacity
- Lower energy consumption & noise less operation

Weather Proof Condenser Motor

- IP - 55 class motor.
- Weather proof motor directly coupled to fan assuring quite & trouble free operation



- Multiple circuit ensures higher redundancy
- Movable / Sliding partition gives the flexibilityto service through one servicedoor only.
- Higher surface area increases heat transfer rate.
- Faster cooling, lower energy consumption, can work effectively even at higher ambient.



Roof Top Unit

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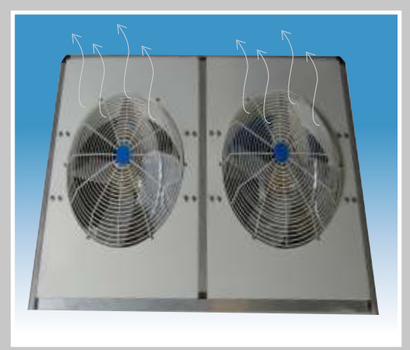
Supply of return front side

- Compact design.
- Supply & Return from same side ensures easy installation of duct connection.

TOP DISCHARGE

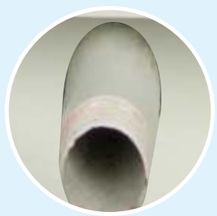


- Top discharge ensures better circulation i.e better efficiency for the unit.
- Space saver - side by side machines can installed.

- Extruded Anodised frame work
- Corrosion Proof, Easier to maintain
- Sleek Looks, Longer Life

- Detachable type Drier
- Provided in refrigerant circuit to reduce moisture content.
- Eliminated foreign particles.

- Nylon Corner Profile
- Avoide sharp edge, robust design.
- Sleek Look, longer life



- Drain on Both Sides.
- Helps to drain from any side of machine.
- Reduce bends & ensure easy flow of condensate water.

- Thermostatic Expansion Valve.
- Modulate the flow of refrigerant according to load.
- Prevents liquid flood back to compressor, increase life of compressor.

- Imported Condenser Fan.
- Lower noise even at higher throw.
- Reduce overall noise of outdoor unit & increases life of motor.

- Imported Pressure control.
- Auto reset type LP/HP cutout.
- Improve reliability of compressor & reduce maintainance cost.

- Powerful Scroll Compressor.
- Higher Efficiency, High EER.
- Less Electrical Consumption, More Cooling.

Scroll Compressor

- One of the most study & rugged compressor in the world.

Scroll Compressor

Roof Top Unit

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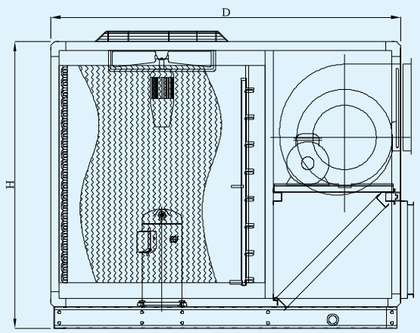
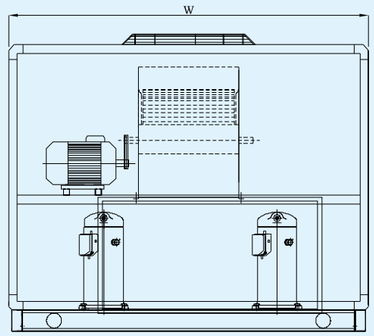
Micro Processor

SELF CONTAINED ROOF TOP UNIT





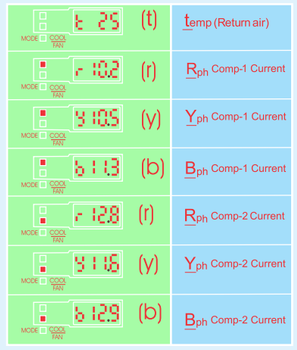
Capacity	Cooling Capacity	TR	5.5	8.3	11.0	16.6	25.0
Indoor Fan	Type		Centrifugal Blower	Centrifugal Blower	Centrifugal Blower	Centrifugal Blower	Centrifugal Blower
	No. Used		1	1	1	1	1
	Air Flow	cfm	2200	3320	4400	6,640	10,000
	External Static	mm of wg	5	7.5	9.2	12	15
	Drive Type		Belt Driven	Belt Driven	Belt Driven	Belt Driven	Belt Driven
	No.motors		1	1	1	1	1
	Motor output	KW	0.75	1.1	1.5	3.7	5.5
	Motor Speed	rpm	1380	1420	1415	1,425	1,440
Compressor	Type		Scroll	Scroll	Scroll	Scroll	Scroll
	Quantity		1	1	2	2	2
Outdoor Fan	Type		Axial	Axial	Axial	Axial	Axial
	Drive Type		Direct	Direct	Direct	Direct	Direct
	Motor output	KW	0.55	0.75	0.55	0.75	0.55
	No. Motor		1	1	2	2	4
	Motor RPM		900	910	900	910	900
Dimensions	(W*D*H)	mm	1000*1400*1100	1300*1578*1270	1700*1650*1340	2050*1625*1500	2400*2240*1500
Filter	Non Woven Synthetic media fiber		335*460*25 - 2 Nos	425*810*25 - 2 Nos	445*810*25 - 2 Nos	645*655*25 - 3 Nos	615*575*25 - 4 Nos
Drain Connection Size		inch	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Control Panel			Microprocessor Controller				
Protective Device for Compressor			High Pressure Cut out,Low Pressure Cut out				

Product Development is a continuous process in ETA, hence specification & Technical Data are subject to Alteration without notice

Intuitive UM [*] - Optional available at extra cost

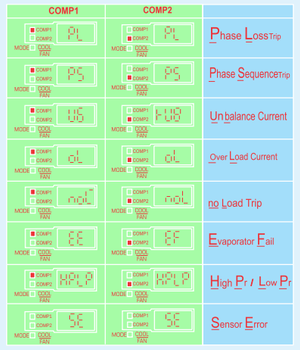
1. Extensive Monitoring

[Easy Operation] operation status displayed & continuous scrolling display of following seven analog inputs:



2. Service Tool

[Malfunction Analysis Function] [16 Points Visual Alarm Annunuciator] continuously monitoring of compressor to detect even smallest abnormality. All following faults after analysis & diagnosis are displayed on main microprocessor controller.



Features of Intutive UM

3. Friendly Operation

[Using Keyboard & Display] for extensive monitoring, analysis, diagnosis, program settings. selecting fan speed,...etc.

4. Auto Restart

AC unit will automatically restart in the same operating mode as before once the power supply is restored(after temporary power failure].

5. Anti Recycle Timer

Increases the compressor life.

6. Power Saving

Accurate digital temperature control action & electronic temperature sensor saves the power.

7. Equal Run Of Compressors

In case of multiple compessors in one unit, automatic equal run of compressor is present

8. High Reliability

SIX POWERFUL FEATURES

- Fault Diagnostics
- Auto Restart
- Anti Recycle Timer
- Programmable Operation
- Countrywide Service
- Power Saving

Micro Processor

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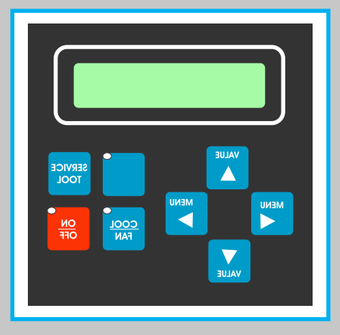
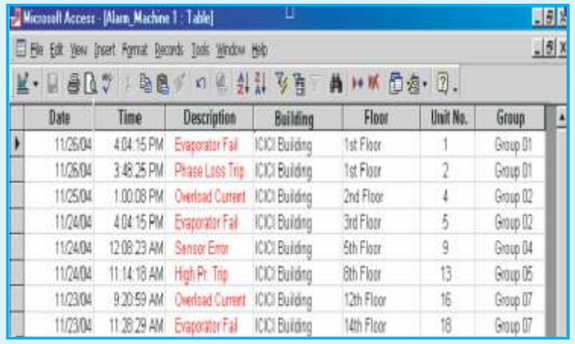
SIX POWERFUL FEATURES

- Authorisation
- Operation Friendly
- Delay Timer
- Yearly Schedule
- Flexible System
- Real Time Clock



Advanced MMI

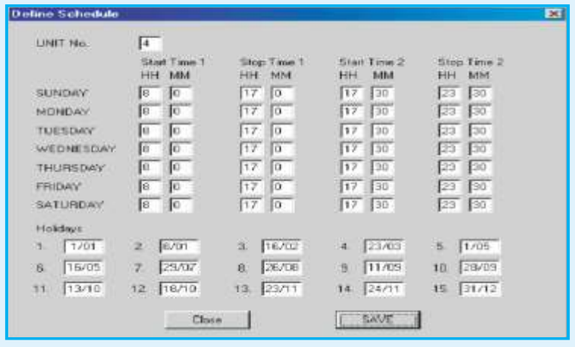
1. Easy to understand operation ;advanced man machine interface (advanced MMI) through keyboard & 32 character's Lcd display with backlit.
2. Group staggered delay timer to avoid same time starting of all units in one building after the Power supply is restored.
3. Diagnose check function.
   a. Malfunction analysis function should an abnormality occurs during system operation the alarm is displayed with cause, date & time.
   b. Alarm history the last 10 alarms can be accessed in the controller. This is useful for troubleshooting system abnormalities & helpful for determining error causes.
4. Flexible control system.
   a. Individual control intuitive UM model controller.
   b. Central control 64 units can be monitored by one central controller.
   c. Group control this function is used when operating multiple controller groups at one time, using initiative utility manager (software) or central controller.
   d. Network Gateway.
   e. BMS Compatibility.
   f. Service Tool.
5. Yearly Schedule Control
   a Day timer possible to set on/ off time twice \ a day.
   b. Set back timer possible to set temperatures for two time spans.
   c. Weekly timer possible to set on/off timings from Sunday to Saturday.
   d. Yearly timer holiday setting including public holidays for a complete year can be programmed.
6. Control system reliability.
   a. Individual operation of each unit ensures that the failure of one does not affect the whole system.
   b. Maintainance efficiencies are raised through connection of a P.C. anywhere on data transmission line.
7. Authorisation prevention of unauthorised & unwanted access is achieved through two level passwords.
8. Models of operation 3 difficult modes of operation are available:
   a. Scheduled Auto.
   b. Auto.
   c. Test.
9. Real time clock.



Date	Time	Description	Building	Floor	Unit No.	Group
11/26/04	4:04:15 PM	Evaporator Fail	ICICI Building	1st Floor	1	Group 01
11/26/04	3:48:25 PM	Phase Loss Trip	ICICI Building	1st Floor	2	Group 01
11/25/04	1:00:08 PM	Overload Current	ICICI Building	2nd Floor	4	Group 02
11/24/04	4:04:15 PM	Evaporator Fail	ICICI Building	3rd Floor	5	Group 02
11/24/04	12:08:23 AM	Sensor Error	ICICI Building	5th Floor	9	Group 04
11/24/04	11:14:18 AM	High Pr. Trip	ICICI Building	8th Floor	13	Group 05
11/23/04	9:20:59 AM	Overload Current	ICICI Building	12th Floor	16	Group 07
11/23/04	11:28:29 AM	Evaporator Fail	ICICI Building	14th Floor	18	Group 07

Trends

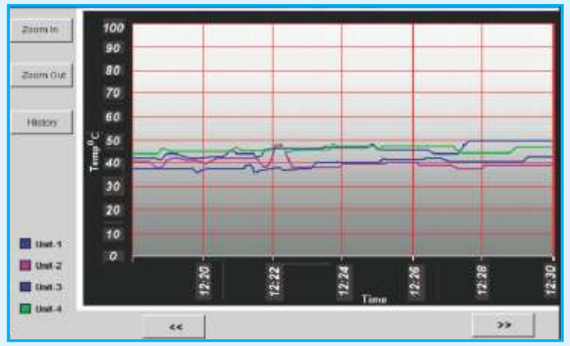
Trends offer the most powerful tool for analysing units operation pattern and data values.



When Monitoring & Operation in tabular format of whole bldg.

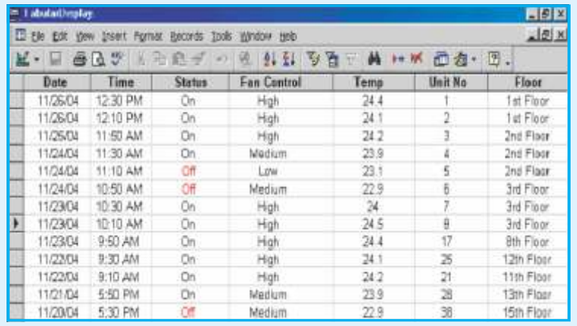
Extensive Service Tool

Alarms are accompanied with explanatory text many alarms can be recorded for each unit
A. Malfunction Diagnose Function
B. Alarm History useful for Troubleshooting.



Schedule Control

Early schedule can be set for each unit

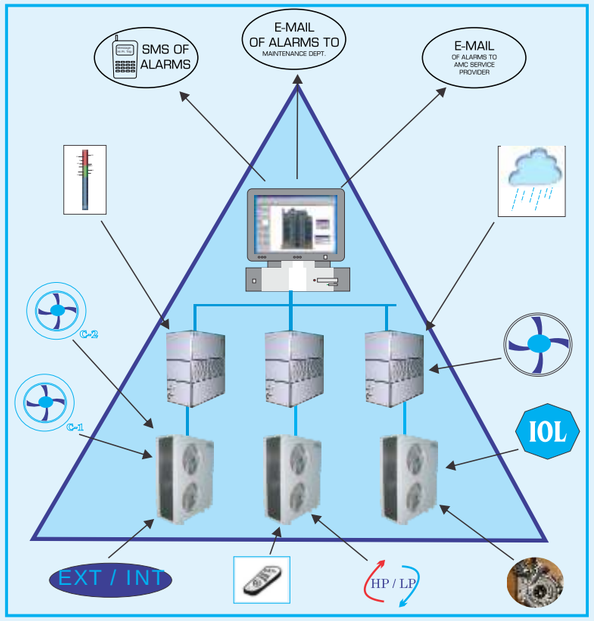


Date	Time	Status	Fan Control	Temp	Unit No	Floor
11/26/04	12:30 PM	On	High	24.4	1	1st Floor
11/26/04	12:10 PM	On	High	24.1	2	1st Floor
11/25/04	11:50 AM	On	High	24.2	3	2nd Floor
11/24/04	11:30 AM	On	Medium	23.9	4	2nd Floor
11/24/04	11:10 AM	Off	Low	23.1	5	2nd Floor
11/24/04	10:50 AM	Off	Medium	22.9	6	3rd Floor
11/23/04	10:30 AM	On	High	24	7	3rd Floor
11/23/04	10:10 AM	On	High	24.5	8	3rd Floor
11/23/04	9:50 AM	On	High	24.4	17	8th Floor
11/22/04	9:30 AM	On	High	24.1	25	12th Floor
11/22/04	9:10 AM	On	High	24.2	21	11th Floor
11/21/04	5:50 PM	On	Medium	23.9	28	13th Floor
11/20/04	5:30 PM	Off	Medium	22.9	38	15th Floor

Intuitive UM*

ETA

Intuitive UM*



Intuitive Utility Manager Software

High performance and optimum control system for various building applications.

A. For Better Facility Management ability to collect data, share information & to control all the building AC system.

B. Finance Control Of Modern Buildings calculating electricity charges. Total electricity charges billed for multiple AC units connected. To the charges meter for air conditioning, is apportioned according.To the accumulated on the AC unit capacity.

C. Economic Alternative.

D. More Functions Greater Flexibility.

E. Service Tool [Software] extensive monitoring & analysing functions operational status can be checked & analised to detect even the smallest abnormality. By storing system operations in a PC, data can be checked even when offline.

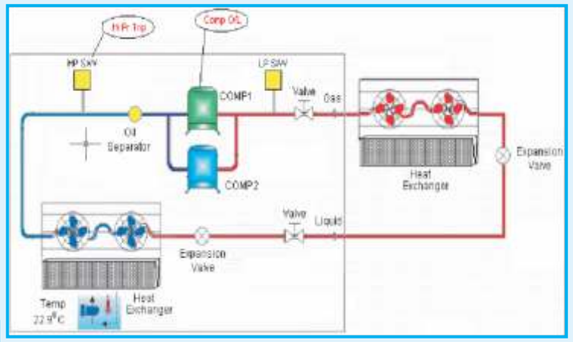
When Monitoring & Controlling the operation of each unit in detail

User Friendly Operation

When monitoring & controlling the Operation of Whole Building

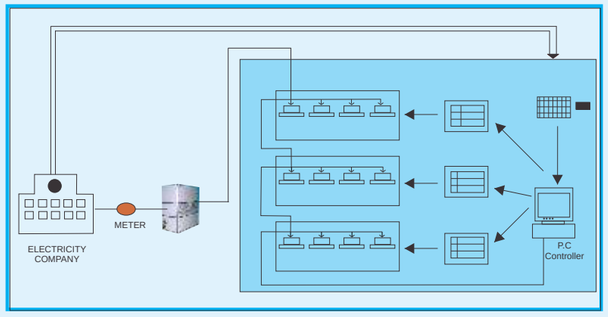
1-Operational status can be colour coded for easy recognition eg. ON/ GREEN, OFF/RED, ERROR

2-Operational status can be displayed to suit the user.



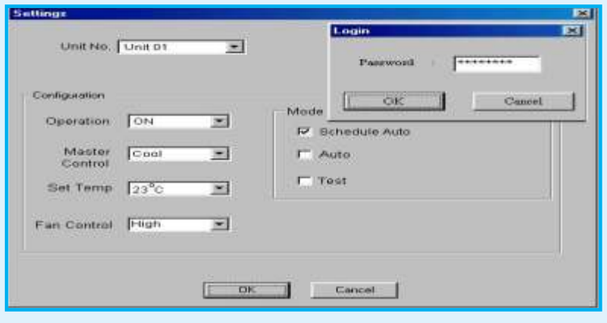
Finance Manager Operation

The total electricity charges billed in apportioned according to the accumulated unit capacity



Operation Of Each Floor

When monitoring & controlling the Operation of Each Floor

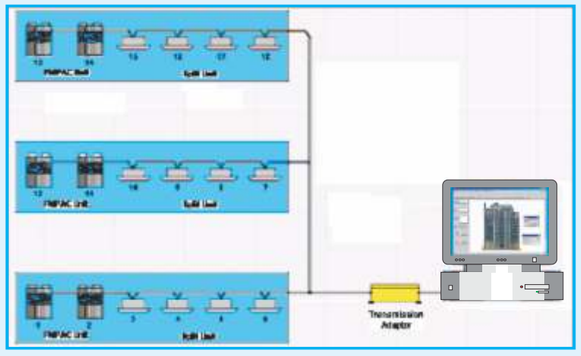


Pattern Setting

It enables to recognize operation status, operation mode, set temp as a combination pattern

Easy installation.

A. Simple Connection by 2 core transmission line.
B. Simple installation of software using only the CD supplied.



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