



PRAGATI's EFFICIENT & ENERGY SAVING FREE COOLING SYSTEM



Inlet



Outlet

Environment Friendly Cooling

PRAGATI's Free Cooling, Efficient, Energy Saving & Environmentally Protective Cooling Economic operation - Freon Free - Energy Saving - Long Service Intervals

Pragati's free cooling is a simple solution designed for easy installation. It is no longer necessary to have energy and maintenance demanding cooling machines for the telecom shelters. Our energy-saving system of free cooling is easy to handle and ensure an economic operation; apart from that it is a Freon free system.

The principle is easy, instead of cooling the warm air the system makes sure the heat is transported out. The cool outdoor air is forced through the filter hoses displacing the hot air in the shelter to the ceiling, where it is transported out through an exhaust grill.

Easy Installation

Unit delivered is operation ready. Unpack the unit, mount it on the wall and plug it. Install the exhaust and start up the unit.

Remote Monitoring and control

Pragati's FCU (Free Cooling Unit) has a control unit, which enables communication through GPRS/SMS by addition of Modem and a SIM thus enabling a remote monitoring and control. The control unit has a LCD-display and function buttons which are easy to use.

Appropriate cooling at all the times

A room temperature sensor controls the speed of fans steplessly with regard to the temperature. The fans are efficient with a high coefficient of utilization and low power consumption. The service is easy, the filters are easily accessible, and the time between filter changes is long and does not require any specialists to perform.

The FCU senses shelter temperature, ambient temperature and relative humidity. Based on the logical conditions, it provides suitable outputs in the form of 48V DC supply to ventilator fans and PFC for air conditioner operation.

When $(T_{in} > \text{Temp set})$, $\{(T_{in} - T_{amb}) > \text{Temp Diff Set}\}$ & $(RH < \text{Set RH})$ then 48VDC is available at Output to run two fan arrays. Simultaneously, PFC condition is available to keep air-conditioners (if deployed) in off position.

When $(T_{in} > \text{Temp Set})$, $\{(T_{in} - T_{amb}) < \text{Temp Diff Set}\}$ and/ or $(RH > \text{Set RH})$, 48V DC is not available at Output-1 and 2 to run two fans but PFC condition is available to keep air-conditioners (if deployed) in on position. Air conditioners take care of humidity control and Temperature.

When $(T_{in} > \text{Emergency})$ then 48VDC is available at Output to run two fan arrays independent of other conditions.

Features

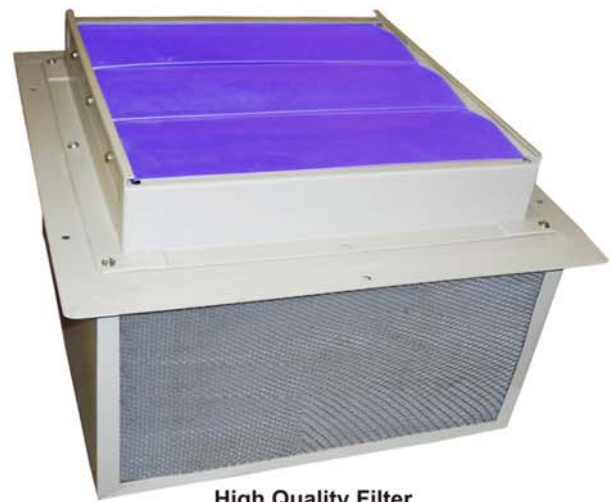
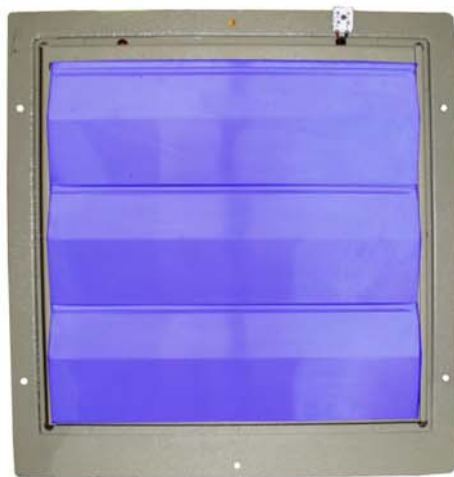
- Electric tariff reduction by 20-25%
- Wear & tear reduction of Air-conditioners due to their reduced running
- Very low Power Consumption (100-200 W)
- Monitors shelter's inside, outside temperature & inside humidity
- Controller allows AC operation only in case outside temperature is high.
- Increase in life of batteries
- Long service intervals
- Remote monitoring through GPRS/SMS (Optional)
- AC Controller (Optional)

- Variable inlet/outlet fan speed
- Battery Bank voltage monitoring.
- Emergency cooling
- Real time data logging of AC running, Free cooling and super cooling (optional)
- Storage of event records for one year (Optional)
- Storage of run hours of AC, Free Cooling and super cooling up to 9999 Hrs. (Optional)

Technical Brief:

Parameter	Value
1. Controller	
Input voltage	36 – 57 VDC
Sensing	Temperature inside shelter (Tin) Temperature Outside shelter (Tamb) Humidity inside shelter (RH) Aircon grill temp (For Aircon controller)
Programming Parameters	Tin for FCU on/off ΔT (Tamb-Tin) Threshold RH High temp. alarm Emergency cooling set point Battery bank low cutoff voltage Aircon mains HI/LO voltage cutoff Aircon mains HI/LO current cutoff Aircon max/ min grill Temp Aircon run time Temp set for Aircon on Run time for Aircon Date, Time
Output	PFC for Inlet/ outlet PFC for Aircon fail alarm PFC for high room temp. alarm
Indications	Processing on, Fan on, Aircon on, Tin high, Low battery RH high
LCD Display (16X2)	Date, Time, RH, Tin, Tamb Real time event display and recording of Aircon cooling, Free cooling, Super cooling (Optional) Log of up to 9999 Hrs of Aircon running, Free cooling, super cooling (Optional)
Remote Monitoring & Control (Optional)	Through GPRS/SMS using external modem and SIM
Mounting	Wall mounted
Size	250 X 390 X 75 mm (WXHxD)
Weight	4.5 Kg

2. Air Inlet	
Material	CRCA Steel
Size	380 X 380 X 300 mm (WXHxD); Other sizes on request
Finish	Powder Coated
Filter	Micro V Type HDPE, Washable
Filter Efficiency	80%, 20 Micron
3. Air Outlet	
Material	CRCA Steel
Size	380 X 380 X 300 mm (WXHxD); Other sizes on request
Finish	Powder Coated
Type of Fans	Axial
Voltage	48 V DC Nominal
Air Flow	1129 CFM (1920 m ³ /h), Other ratings available on request
Power	105 Watts or as per any other fan used
Fan Speed	2750 RPM or Variable (Optional)
Service life	57000 Hours (6.5 Years)
Heat Dissipation Capacity	Up to 4 KW with one inlet and one outlet
Energy Saving	10 KWH to 30 KWH per day depending on the location, season and climatic conditions prevailing at site.



High Quality Filter

Pragati Electrocom products are certified from ETDC, ERTC, IIT Delhi, SERC Chennai, TEC, PGCIL (Applied for), SEB.

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