Precision Air Conditioning Controller with BMS connectivity using modulating valves

A9-G 343-01-02

The model **A9-G-343-01-02** is an electronic controller that could be integrated into BMS was designed and built for meeting **precision air conditioning**, using chilled water three-way modulation valve, heaters, humidifier etc. Two independent and intelligent slave controllers under the direct supervision of a master controller operate individual three-way modulating valves, heaters, humidifiers for precision air conditioning. Exclusive communication ports for LAN for integrating to the in-house BMS using CAT 6 cable or FOC, RS 485 ports is also provided. The master controller interacting with the intelligent slave controllers is used for setting and displaying parameters using its four-line LCD screen, LED displays, operating keys etc. It is also provided with common error inputs, smoke & fire, alarms various other electrical & electronic interlocks for fire damper, evaporator fan, SPP, power good signal and so on. The controller is also provided with logging of temperature/humidity/errors data for three months (if configured to sample at every 15 minutes interval) with RTC time stamping. The controller working on PID control loop algorithm, outputs 0-10V or 4-20mA or two relay outputs (for forward & backward operation of the motor). This would facilitate controlling of chilled water flow and hence the temperature. BMS connectivity provided on the system would enable monitoring and controlling the system from a remote location using LAN or FOB network. The slave controllers could operate either independently, simultaneously, or at pre-defined time intervals. The detailed write-up and user manual provide more information about this field-proven controller and its various facilities, configuring etc.

2. Application

- Precision controlling of laboratories.
- Storage of critical items
- Libraries

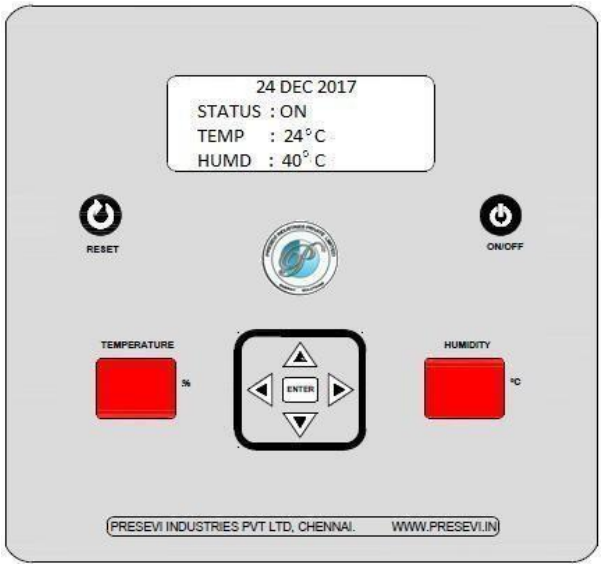

Fig.1 Air handling unit with BMS

1. Product Highlights

- 16 to 30°C temperature 30 to 80% humidity setting and controlling
- Facility to monitor& control the operation of the fire damper, blower, modulating valve, electrical damper, heaters and humidifier etc., from a remote location using BMS.
- Number of slave units accessible- (1 to 16)
- Two independent modulating controllers operating on PID algorithm.
- 0-10V or 4/20mA or three position control for modulation valve control.
- Real-time clock and calendar.
- LED and LCD to set and display room temperature and humidity.
- RS 485 and LAN port for BMS interface.
- Data logging of temperature, humidity, the status of functioning unit, fault with data and time sequence for up to three month on this menu drove system with password protection.
- Status indication.
- Auto or manual ON/OFF
- Alarm indication for critical error.
- Power down memory.
- Unique address ID selection of slaves.
- Duty cycle selection from 1 to 12 hrs. It is Scheduling or time based.
- Run/Test mode.

3. Product selection chart

Model Number	No. of slave units	No. of modulating valve	Cyclic timers(Hrs)	Outputs						Error Indication									
				Fire Damper	EL. Damper	Blower	Humidifier	Heater	Alarm	Blower Fail	MCCB	SPP	Sensor Communication error	Slave Communication error	Fire/smoke	High Temp.	High Humidity	Display type	
A9-G-343-01-02	2	2	1 to 12	3	2	2	2	4	3	✓	✓	✓	✓	✓	✓	✓	✓	LCD	LED

Fig.2 Product chart

4. Mechanical dimension (in mm)

L x B x H: 710 x 605 x 148

5. Electrical specification

Input Voltage	Frequency	Output Current
230 V AC	2Hz	5A, 250 v AC

Fig.3 Electrical ***specification***

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