Temperature and Humidity Controller
A3-S321- 00 / A3- S 321-01

The model **A3-S321-AC** is an electronic controller that could be used for controlling both temperature and humidity of the conditioned room. A single controller could control systems that have two compressors, one blower fan, two humidification heaters (with loading/unloading facility), one de-humidifier etc. It, in addition, is provided with the safety interlocks. **A3-S321-00** is provided with the electronic controller alone where as **A3-S321-01** same with electrical control panel.

The controller is provided with the sensor module that could measure and control temperature & humidity of the conditioned area by interfacing with a cable that could be kept away up to a distance of about 500 meters.

The process values of both temperature (between 16 to 30°C) and humidity (between 40 to 70% RH) could be set using the digital displays and LEDs of the controller. The controller would choose humidification or de-humidification automatically, a select number of compressors as per the load by comparing the set points with the temperature & humidity of the return air. Fig.1 gives an idea about the control panel functions. The electrical panel would consist of contactors for compressors, evaporator fan, de-humidification heaters, with electrical protection interlocks.

Product Highlights

- Supports a set of twin compressors, heater banks and humidifier with loading/unloading algorithm.
- Controlling of temperature between 16 to 30°C and humidity between 40 and 70%.
- Display of temperature, humidity, operational status of the system, errors etc.
- Duty cycle time selection of compressors
- Error interlocks like HP/LP/ OL/Power fail/ Smoke/fire/ sensor fail etc.
- Operational protections for Blower error with compressor etc.

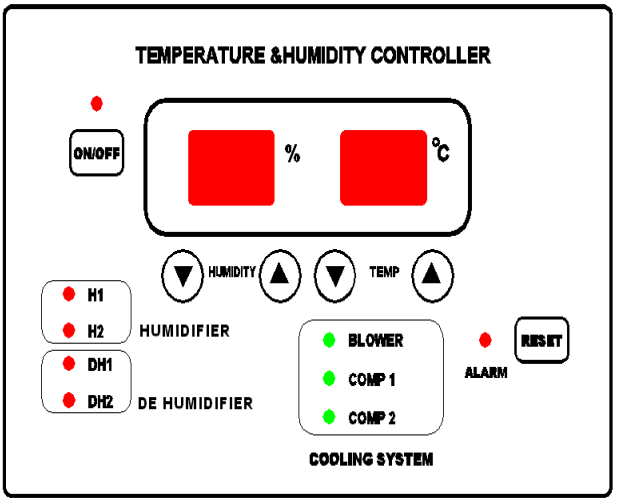


Fig. 1 Temperature and Humidity Controller

3. Other built-in features: Following features are built into the controller

3.1 safety interlocks & time equalization: It is provided with gas equalization delay and safety delays to avoid power surges between the operations of two compressors, algorithm to ensure the equal running of compressors etc.

3.2 safety interlocks: The interlocks like HP/LP/OL/Fan error/smoke & fire, power fail etc., are provided in the controller. An alarm is generated by activating a potential free relay contact.

3.3 The controllers designed as per **IEC** standards have been tested for **EMC/ EMI compliance** and field proven.

Application

- Telecom Exchanges (RLUs)
- Computer server rooms
- Libraries
- Machining Centers
- Dust free rooms.
- Processing units, etc

Product Selection Chart

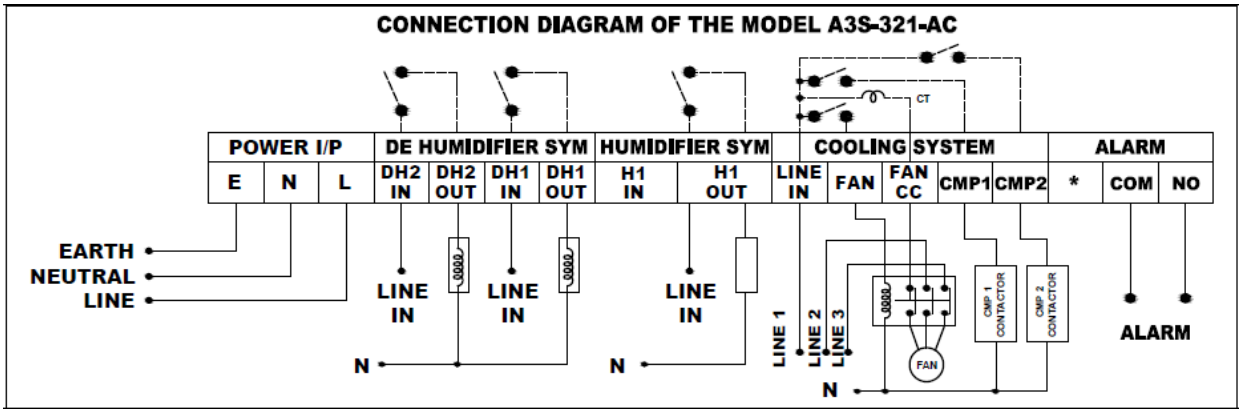
Model number		No. of Heaters	No. of de-humidifiers	Outputs					Errors							Display
				No. of compressors	Blower	Heaters for humidifying	De-humidifier	Alarm	HP	LP	Compressor O/L	Blower fail	Power fail	Smoke / fire	Sensor fail	
A3-S321-00	1	2	2	2	1	2	1	1	✓	✓	✓	✓	✓	✓	✓	LED
A3-S321-01	1	2	2	2	1	2	1	1	✓	✓	✓	✓	✓	✓	✓	LED

✓ - Provided * - Not provided

Mechanical dimensions (in mm)

L x B x H: 350 × 290 × 67

Connection diagram



Electrical specifications

Input Voltage (V AC)			Frequency (Hz)			Power consumption (VA)	Fan, Compressor & alarm relay rating (A)	Heater relay rating (A)
Min.	Typ	Max.	Min.	Typ	Max.		Steady state	Steady state
180	220	270	45	50	55	6	5	30

Notes & Abbreviations

HP- High Pressure *LP – Low Pressure*
EMC – Electro Magnetic Compatibility *EMI – Electro Magnetic Interference*