

# *Ceiling Type Air Conditioner For Precision Temperature & Humidity Controls*

Design for data communication center, cell site,  
laboratory, or where is humidity important.



## R407c

°C +  
%RH



## SUH Series

Cooling capacity range 3.7 - 11.2 kW



# SUH Series

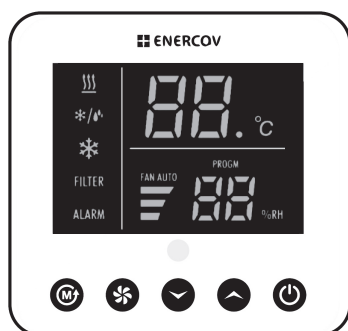
## ENERCOV air conditioner for humidity control

SUH series, Air conditioner system for special function room application to maintain environment such as temperature and humidity at desirably range. The indoor unit is ceiling type installation. Matching to high performance and heavy duty condensing unit SPA and PV series for widely applications.

## Micro-processor controls

Intelligent temperture & humidity controller with completed FUZZY algorithm provides very precise of room parameters. It consist of display unit, temperature & relative humidity sensors, controller and fan motor speed control. LED display on the display unit shows real time actual temperature.and relative humidity.

## Display unit functions



Dim : 87Wx87Hx20D mm.  
Wall mount

Heating Element On/Off

Temperature and Humidity Control Mode

Cooling Control Mode

**FILTER** Filter Clog Indicator

**ALARM** Unit Alarm Indicator

**FAN AUTO** Fan Automatic Control Status Indicator

25.°C Actual Room Temperature or Setpoint Indicator

50 %RH Actual Room Humidity or Setpoint Indicator

Fan Speed Running Indicator

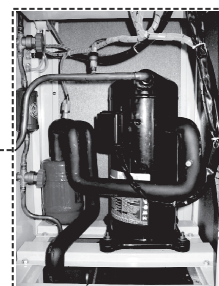


Function Keypads



FCU

Intelligent temp & humidity controller w/fan speed control board



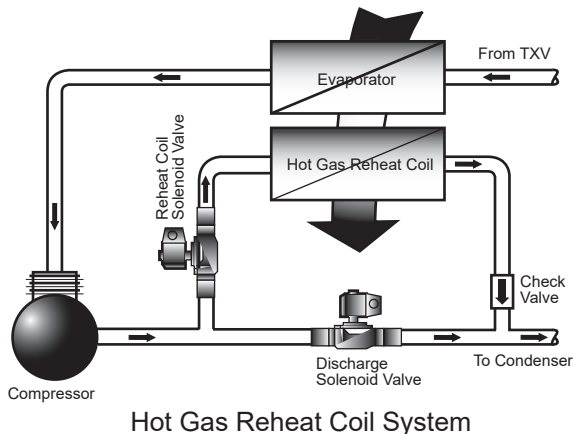
Compressor & system devices



Room temperature & humidity sensor

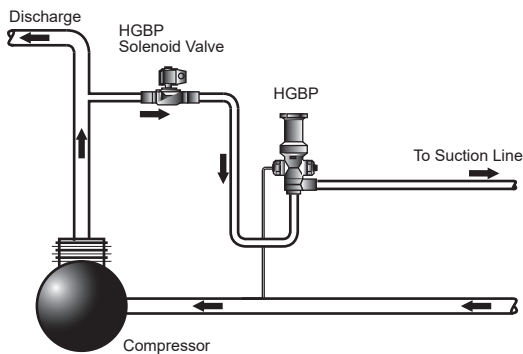
## Control Functions

1. Room temp. & humidity are controlled by FUZZY adaptive algorithm.
2. Cooling mode and temperature/humidity control mode selectable.
3. Aux HEATER lights up means hot gas reheat coil energized.
4. Room temperature and relative humidity real time display
5. Supply air fan can config to vary speed to maintain room condition by automatically.
6. Room sensors faulty alarm codes.
7. Condensing fan is adjust speed to control refrigerant discharge pressure.
8. Room temperature & humidity sensors calibration is also available.
9. Proportional, integral gain and calculation time are configurable.
10. FCU fan minimum speed is configurable.
11. Alarm display codes.
12. Compressor speed controls (for VRF system).
13. Pre configuration programmable software.



## Hot gas reheat coil

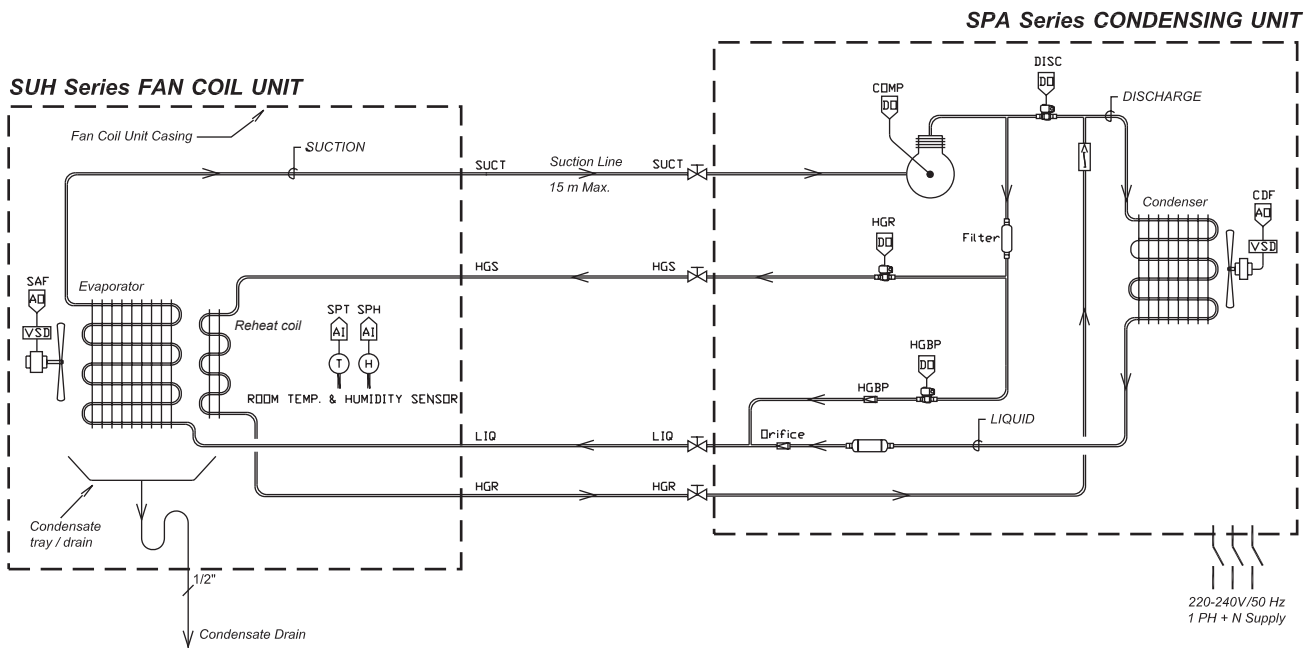
When compressor is running to reduce room sensible and latent heat in term of temperature and humidity respectively. In case of high latent heat and low sensible heat, the compressor still run although room temperature is reduced below setpoint to keep dehumidifying process. The system requires reheat process to compensate too much cooling supplied. Generally, electric heaters are applied to this function which is very high power consumption for re-heating. ENERCOV provides hot gas reheat coil instead of electric heater position. By using the waste heat energy from discharge superheat gas approximately 80-90°C and controls hot gas flows through reheat coil by solenoid valve. The refrigerant sub-cool also increases whilst hot gas reheat is operated. Energy saving over 40% is guaranteed.



## Compressor capacity control system

Generally, the compressor will be controlled to start and stop to maintain room temperature and humidity. During stopping, room humidity fluctuates due to the latent heat of room condition. Compressor can be re-started after 1-3 minutes to prevent short cycling. ENERCOV SUH series develops a new improved technology to unload compressor during low load condition down to 50% of compressor capacity by Hot Gas Bypass (HGBP) Valve. The HGBP valve bypasses discharge gas of refrigerant back to suction line at appropriated amount and related to actual room heat load. So, the system is regulated refrigerant quantity flows to evaporator based on room heat load requirement. We can guaranty room temperature error within  $\pm 1.0^{\circ}\text{C}$  and humidity  $\pm 10\%\text{RH}$  controlled range possibility.

## Refrigerant diagram



# SUH Series



Indoor Unit



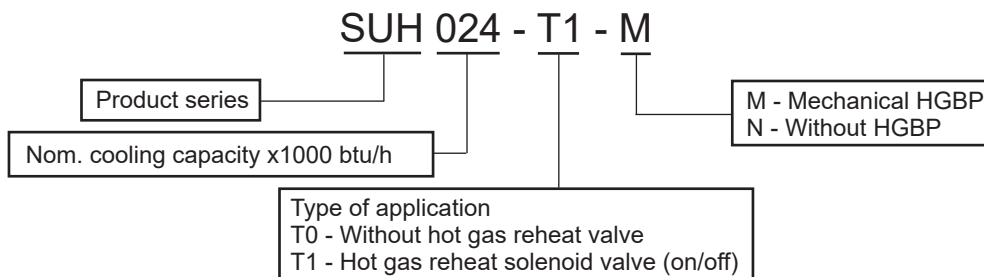
Outdoor Unit

## Specification, floor/ceiling mount

Model	Indoor unit	SUH018	SUH024	SUH032	SUH036
	Outdoor unit	SPA018-T2	SPA024-T2	SPA032-T2	SPA036-T2
Nominal cooling capacity	kW	5.60	7.50	9.70	11.20
	Btu/hr	19,107	25,590	33,096	38,214
Indoor Unit					
Reheat coil capacity	kW	4.50	6.00	8.00	9.00
Motor current	Amp	0.55	0.7	0.7	1.6
Nominal air flow Rate (Hi Speed)	CFM	800	1200	1600	1800
Control type		LCD microprocessor-wired control/temp. & humidity display			
Dimension HxWxD	mm	620x1278x245	620x1778x245	620x1778x245	620x1778x245
Net weight	kg	52	74	81	84
Outdoor Unit					
Compressor Type	-	Hermetic Scroll			
Compressor running amps	Amp	9.6	14.3	17.1	7.2
Comp power supply V/PH/Hz	-	220/1/50			380/3/50
Fan Type	-	Propeller Direct Drive			
No. of fan	-	1			
Fan motor supply V/PH/Hz	-	220/1/50			
Motor current	Amp	0.72	0.72	0.72	1.44
Dimension HxWxD	mm	915x650x400	915x650x400	915x750x400	1170x940x370
Pipe conn. Liquid,Suction	inch	3/8,5/8	3/8,5/8	3/8,5/8	3/8,3/4
Pipe conn. Reheat Coil (in & out)	inch	1/2	1/2	1/2	5/8
Net weight	kg	67	75	93	112

Note : - Total heat removal based on 26.7 deg C, 50%RH air on cooling coil and 35 deg C outdoor air temperature.  
- All specifications are subject to change without prior notice.

## Product Nomenclature



**ENERCOV**™



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