# Vertiv

## Liebert CRV

# VDI Cooling System Operation


# Liebert CRV

## Computer Room Vertical cooling

Model No : **CR035RA**

| CR | 035 | R | A |
|---|---|---|---|
| CR™ | Cooling capacity In Kilowatt | Row Based | Air cooled |

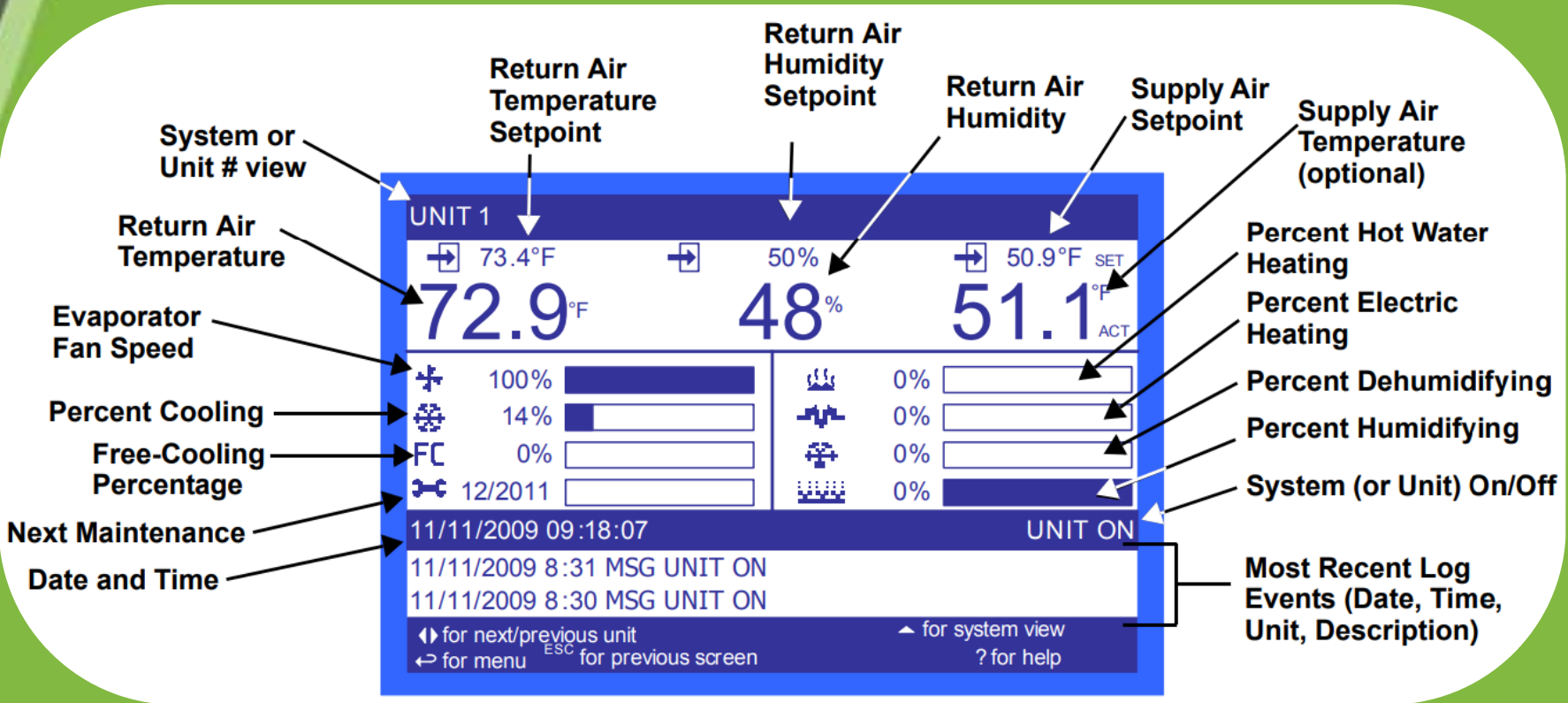
Cooling capacity = 35KW or 10 tr
Refrigerant : R-410A
Number of AC units : 2
Rotation frequency : 24 hours
Rotating at : 10:00 am

# Product Description

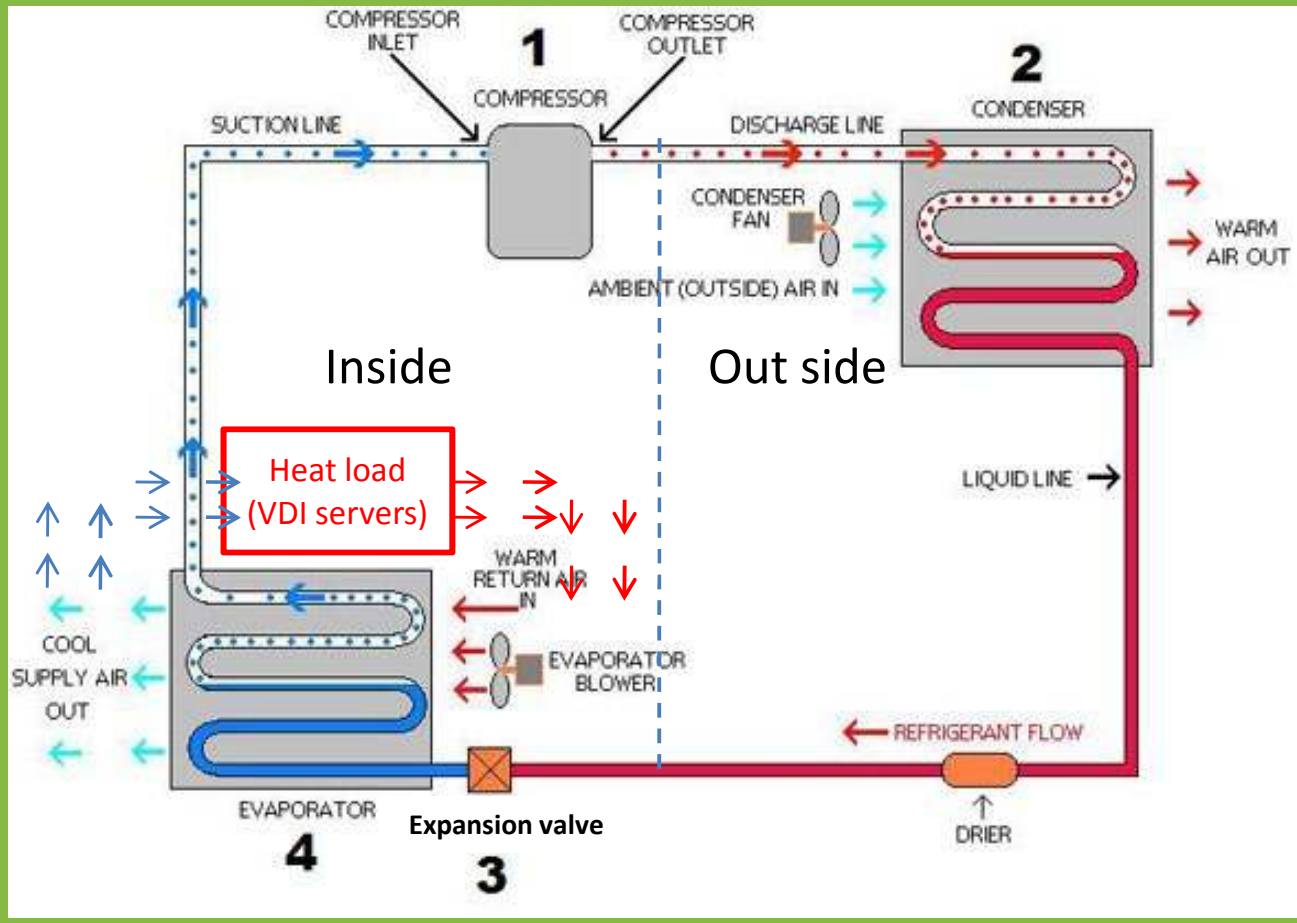
The Liebert CRV is a precision cooling unit available in compressorized air cooled configurations to be installed within a row of high-density computing racks in a “hot aisle-cold aisle” configuration.

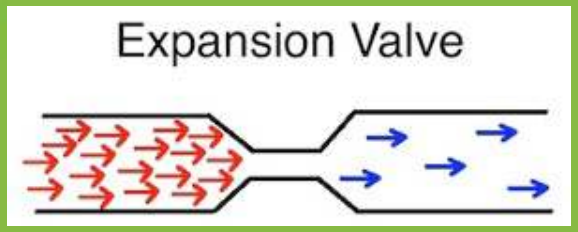
Air enters the rear of the Liebert CRV from the hot aisle, is filtered, cooled and conditioned, then discharged into the cold aisle. The Liebert CRV provides all the necessary functions of a standard precision air conditioner, including cooling, heating, humidification, dehumidification, air filtration, condensate management, temperature control, alarm monitoring and data Communication. The Liebert CRV is optimized for maximum cooling capacity in a minimal footprint.

# Understanding AC unit Display



# Basic Air conditioner Working principle



# VDI AC UNIT SETTINGS

| | |
|---|---|
| Temperature Set point | **27°C** |
| Temperature Control Sensor | **Return air Sensor** |
| Humidity set point | 40 % (Rh) |

To change above setting press enter key  two times in the ac unit display panel

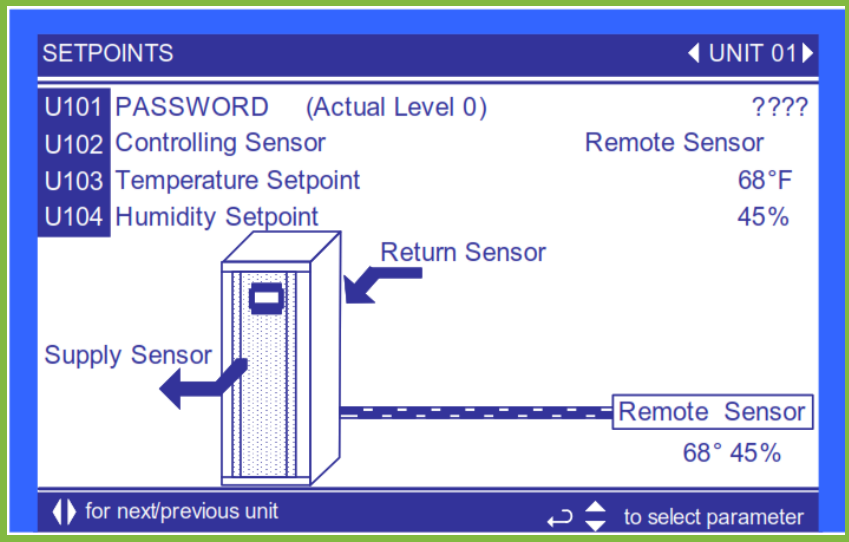
The User menu screen will appear. In that first one is selected 

for change the temperature and humidity set points by using up and down keys.

For exit press esc key 



**Password for change the settings : 1490**



**PROPORTIONAL BAND : 3°C**

**Temperature Proportional Band ( This settings available in service menu)**

The control uses the temperature proportional band to determine which operation to perform (cooling/heating) and how much capacity to provide. The Temperature Proportional Band is a user defined range that is divided into two equal parts for cooling and heating. The Temperature Set point is between these two equal parts.

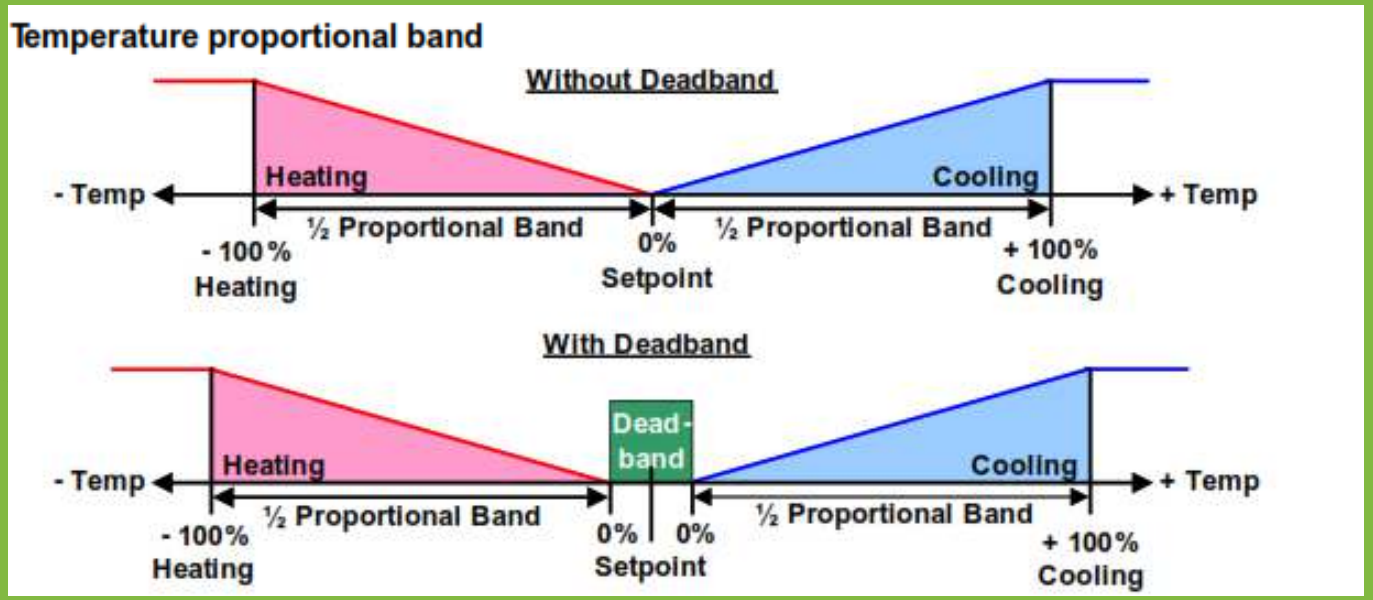
**Compressor on at +100% of proportional band , compressor off at -100% of Proportional band**

Example

Temp set point = 27°C
Proportion band = 3°C

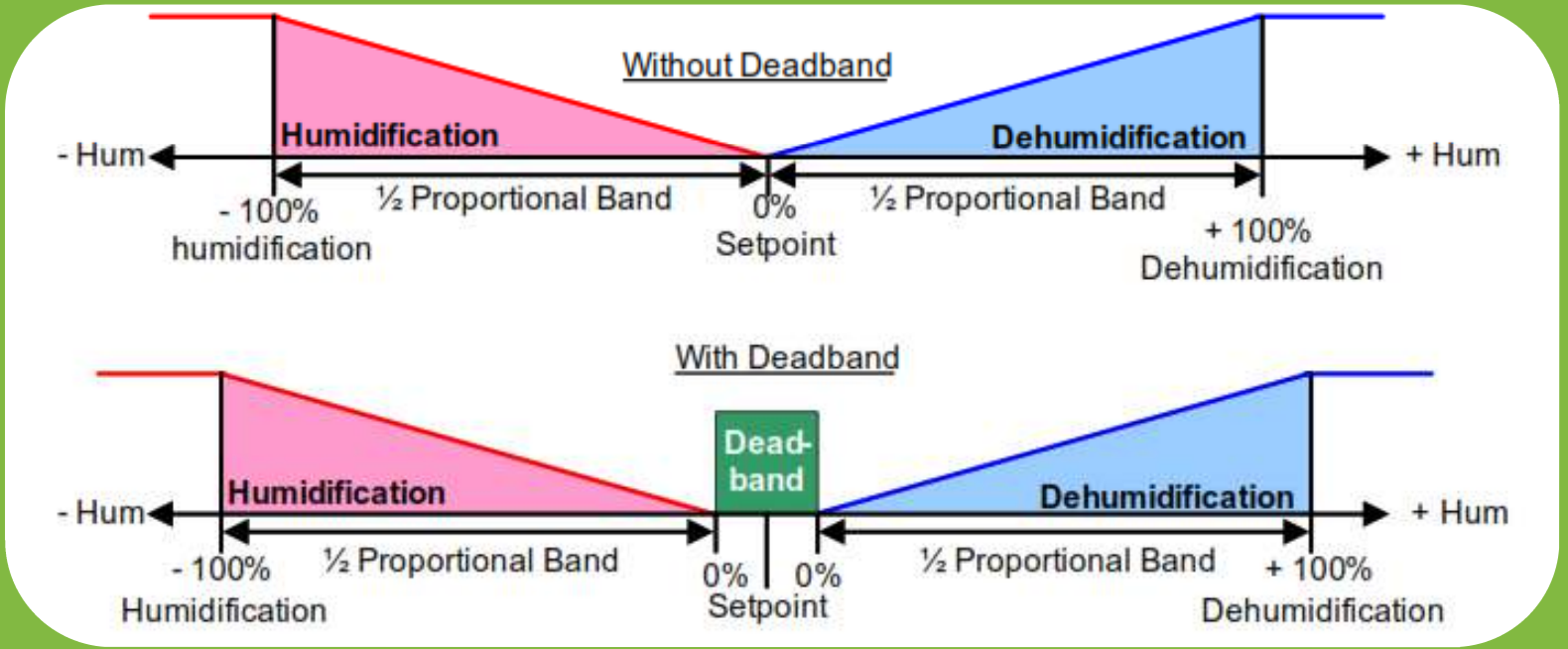
Compressor cut off at
27 – 1.5 ($_{1/2\ \text{proportion band}}$)
= 25.5°C

Compressor On at
27+1.5= 28.5°C



**Humidity Control**

The control uses the humidity proportional band to determine which operation to perform (dehumidification/humidification) and how much capacity to provide. The Humidity Proportional Band is a user defined range that is divided into two equal parts for dehumidifying and humidifying. The Humidity Set point is located between these two equal parts.



VDI Rack AC units are running in **“AUTO”** mode, so don’t touch the manual **‘on/off’** 

key in the display unit.

If pressed that key AC unit goes to DISPLAY OFF status, so auto mode will not work. That means AC unit change over will not happen in everyday at 10:00am.

| AC UNIT 1 | AC UNIT 2 | RESULT |
|---|---|---|
| UNIT ON | STANDBY | AUTO mode work |
| STANDBY | UNIT ON | AUTO mode work |
| UNIT ON | DISPLAY OFF | AUTO mode not work |
| DISPLAY OFF | UNIT ON | AUTO mode not work |

# Monitoring

Type following link in web browsers for monitoring the VDI AC units

http://10.1.100.2 for AC unit 1 http://10.1.100.3 for AC unit 2

# THANK YOU