HUMIDITY/TEMPERATURE CONTROLLER Model 7214

Features

- Bright 7 segment, 4 Digit Green Display for Humidity and 4 Digit Red Display for Temperature
- 4 separate Limits and Solid State Relay (SSR) outputs for Heater, Cooler, Humidifier and De-Humidifier.
- Proportional (PWM) SSR outputs for Heater and Humidifier with user settable Percentage Power
- On/Off SSR outputs for Cooler and De-Humidifier with user settable Hysterisis
- Digital Offset control for Temperature and Humidity
- Capacitive sensor for 0-100% Humidity and -20˚C to +80˚C
- Non-Volatile memory to hold settings and counts

Specifications

- Display   : 4 Digit, 7 segment Green LED display (0.56" height) for Humidity
                        4 Digit, 7 segment Red LED display (0.56" height) for Temperature

- Range   : 0-100.0% for Humidity (in 5˚C to 50˚C temperature range)
                        -20.0˚C to +80.0˚C for Temperature

- Set Limits   : 0-100.0% for Humidifier
                        0-100.0% for De-Humidifier
                        -40.0˚C to +100.0˚C for Heater
                        -40.0˚C to +100.0˚C for Cooler

- Percentage Power   : 0-200% for Set Limits of Humidifier and Heater.

- Hysterisis   : 0-9.9 for De-Humidifier and Cooler

- Digital Offsets   : -19.9 to +19.9 for Humidity

                        -19.9 to +19.9 for Temperature

- Sensor Supply   : 5V DC

- SSR Outputs   : +12VDC outputs Heater, Cooler, Humidifier and De-Humidifier

- Memory Retention: 10 years

- Mounting   : Panel Mounting

- Size   : 96mm x 96mm. Depth 50mm

- Weight   : Approx. 375 gms.

- Operating Temp.   : 0-50˚C

- Humidity   : 95% RH
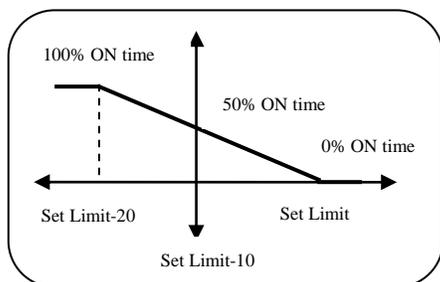
DIRECTIONS FOR USAGE

- Connect the 4 wires of the Humidity/Temperature Sensor to the rear top 4 terminals as per label
  - GRN-Green
  - RED-Red
  - BLK-Black
  - WH-White
- Connect L (Line) and N(Neutral) terminals to 220V AC Mains
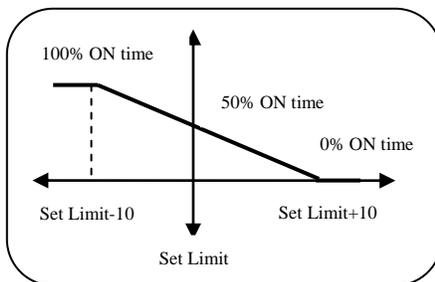- Connect the SSR outputs (Positive and Negative) as required

SET LIMITS

- ***Humidifier Set Limit***
  - Press the Reset switch.
  - Upper Display indicates "Hum" while lower display shows the current Humidifier Set Limit
  - Use Increment and Decrement switches to make changes
  - After changes have been made, press the Reset switch to move to next setting.
  - Humidifier SSR output is proportional in nature
  - When Humidifier Percentage Power is set to 100%,
    - For Humidity<HumiditySetLimit-10, SSR fully on
    - For Humidity >HumiditySetLimit+10, SSR fully off
    - For Humidity between HumiditySetLimit-10 to HumiditySetLimit+10, the SSR output varies from being fully on to being fully off
  - When Humidifier Percentage Power is set to 0%,
    - For Humidity<HumiditySetLimit-20, SSR fully on
    - For Humidity >HumiditySetLimit, SSR fully off
    - For Humidity between HumiditySetLimit-20 to HumiditySetLimit, the SSR output varies from being fully on to being fully off
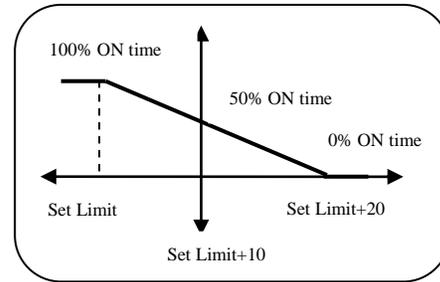 - When Humidifier Percentage Power is set to 200%,
    - For Humidity<HumiditySetLimit, SSR fully on
    - For Humidity >HumiditySetLimit+20, SSR fully off
    - For Humidity between HumiditySetLimit to HumiditySetLimit+20, the SSR output varies from being fully on to being fully off
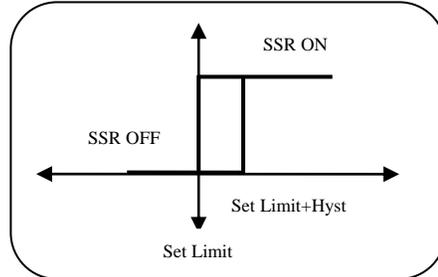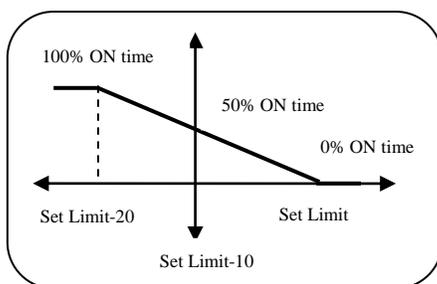
- **De-Humidifier Set Limit**
  - After previous setting, Upper Display indicates "dHum" while lower display shows the De-Humidifier Set Limit
  - Use Increment and Decrement switches to make changes
  - De-Humidifier SSR output is On/Off in nature
  - De-Humidifier Relay ON for Humidity > De-HumidfierSetLimit+HumidHysterisis
  - De-Humidifier Relay OFF for Humidity < De-HumidfierSetLimit
  - After changes have been made, press the Reset switch to move to next setting.
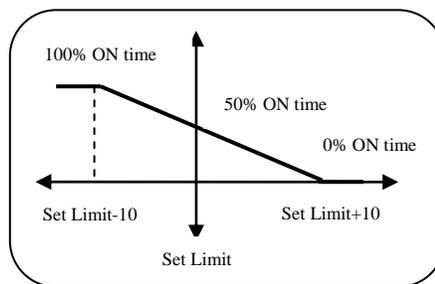

- **Heater Set Limit**
  - Press the Reset switch.
  - Upper Display indicates "Heat" while lower display shows the current Heater Set Limit
  - Use Increment and Decrement switches to make changes
  - After changes have been made, press the Reset switch to move to next setting.
  - Heater SSR output is proportional in nature
  - When Temperature Percentage Power is set to 100%,
    - For Temperature<TemperatureSetLimit-10, SSR fully on
    - For Temperature >TemperatureSetLimit+10, SSR fully off
    - For Temperature between TemperatureSetLimit-10 to TemperatureSetLimit+10, the SSR output varies from being fully on to being fully off
  - When Temperature Percentage Power is set to 0%,
    - For Temperature<TemperatureSetLimit-20, SSR fully on
    - For Temperature >TemperatureSetLimit, SSR fully off
    - For Temperature between TemperatureSetLimit-20 to TemperatureSetLimit, the SSR output varies from being fully on to being fully off
  - When Temperature Percentage Power is set to 200%,
    - For Temperature<TemperatureSetLimit, SSR fully on
    - For Temperature >TemperatureSetLimit+20, SSR fully off
    - For Temperature between TemperatureSetLimit to TemperatureSetLimit+20, the SSR output varies from being fully on to being fully off
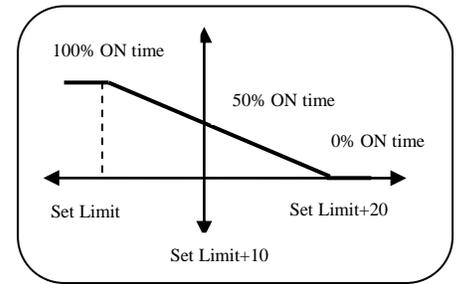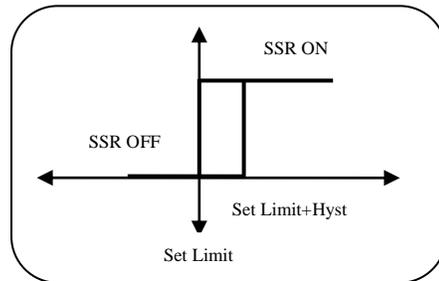

%Power = 0%

%Power = 100%

%Power = 200%

- *Cooler Set Limit*
  - After previous setting, Upper Display indicates "dHum" while lower display shows the Cooler Set Limit
  - Use Increment and Decrement switches to make changes
  - Cooler SSR output is On/Off in nature
  - Cooler Relay ON for Temperature > CoolerSetLimit+HumidHysterisis
  - Cooler Relay OFF for Temperature < CoolerSetLimit
  - After changes have been made, press the Reset switch to return to normal display

Percentage Power, Hysterisis and Offset Setting

- *Temperature Proportional Power for Heater*
  - Press the switch marked as Star '*'.
  - Upper Display indicates "t-Pr" while lower display shows the Set Temperature Proportional Power
  - Use Increment and Decrement switches to make changes
  - Range is 0-200%.
  - Action of Temperature Proportional power is explained in Heater set limit settings.
  - After changes have been made, press the Star switch to move to next setting.

- *Humidity Proportional Power for Humidifier*
  - After previous setting upper Display indicates "H-Pr" while lower display shows the Set Temperature Proportional Power
  - Use Increment and Decrement switches to make changes
  - Range is 0-200%.
  - Action of Humidity Proportional power is explained in Humidifier Set Limit settings.
  - After changes have been made, press the Star switch to move to next setting.

- *Hysterisis Setting for De-Humidifier*
  - After previous setting upper Display indicates "HHys" while lower display shows the Set Hysterisis for De-Humidifier
  - Use Increment and Decrement switches to make changes
  - Range is 0-9.9
  - Action of Set Hysterisis for Humidity is explained in De-Humidifier set limit settings.
  - After changes have been made, press the Star switch to move to next setting.

- *Hysterisis Setting for Cooler*
  - After previous setting upper Display indicates "tHys" while lower display shows the Set Hysterisis for Cooler
  - Use Increment and Decrement switches to make changes
  - Range is 0-9.9
  - Action of Set Hysterisis for Temperature is explained in Cooler set limit settings.
  - After changes have been made, press the Star switch to move to next setting.

- *Digital Offset for Humidity*
  - After previous setting upper Display indicates "HoFF" while lower display shows the Offset for Humidity
  - Use Increment and Decrement switches to make changes
  - Range is -9.9 to +9.9
  - After changes have been made, press the Star switch to move to next setting.

- *Digital Offset for Temperature*
  - After previous setting upper Display indicates "toFF" while lower display shows the Offset for Temperature
  - Use Increment and Decrement switches to make changes
  - Range is -9.9 to +9.9
  - After changes have been made, press the Star switch to return to normal display