



CLIMATEWORX
INTERNATIONAL

MISSION CRITICAL Air Conditioning Systems

24”In Row

Commissioning Checklist

Commissioning

WARNING!



Do not run this equipment for longer than 6 hours, or use this equipment for regular operation, in the absence of a heat load for which the system is designed. Failure to comply with these instructions, or failure to follow the steps in this manual will void the manufacturer's warranty and may damage the equipment, or result in a reduced operating life of some components, leading to early equipment failure.

*For machines with 410A refrigerant use manifold sets range up to 800 psig on the high side and 250 psig on the low side with a 250psig low side retard. *VM*



Before switching on the unit, the following checklist should be completed by ClimateWorx authorized personnel only. Failure to do so may damage the unit and void warranty.

Model no. : _____ Serial no. : _____

Client : _____

Location : _____ Unit no. : _____

Tested by : _____ Date : _____

General



Switch off main power isolator and all branch circuit breakers/fuses.

- Remove all transit bolts and fixtures.
- Check for smooth rotation of all fan blades.
- Check drain pipe connected and fitted with 100mm minimum air trap.
- Verify water flows away freely from drain pipe.
- Check air filter fitted and direction of airflow pointing into the unit.
- Check all electrical connections are tight.
- Check main power and interconnecting control wires installed are suitably sized to cope with the imposed load marked on the unit serial plate.
- Verify any short circuit in power branch circuits and control transformer circuits.
- Check supply voltage within $\pm 10\%$ of the values marked in the unit serial plate.

- Record supply voltage : L1 - : _____ V
- L2 - : _____ V
- L3 - : _____ V



The fans will start after the following procedure. Make sure the fans are ready to run.

Switch on the control transformer and fan circuit breakers, and power up the unit. The unit is factory programmed to automatic startup when power applied. Manually turn on the unit if necessary.

- Record the input and output voltage of transformers :
 - Transformer TX1 - Primary : _____ V _____ A
 - Secondary tapping 1 : _____ V _____ A
 - Secondary tapping 2 : _____ V _____ A

- Check that all fans are operating simultaneously

- Record the main fan motor running current :

| FAN 1 | FAN 2 | FAN 3 (IF EQUIPPED) |
|------------|------------|---------------------|
| L1 _____ A | L1 _____ A | L1 _____ A |
| L2 _____ A | L2 _____ A | L2 _____ A |
| L3 _____ A | L3 _____ A | L3 _____ A |

- Test “Low airflow” alarm. (Note: when low airflow alarm is selected with checkmark only remaining fans will increase speed to 100% when alarm is raised)
- Test “Filter dirty” alarm.
- Review Voltage % reading on page 1 of settings. If the reading is less than 95% or greater than 105% go to the setting page 6, log in with level 1 password and scroll down until you get to item “Volt adjust”. Adjust this setting until the reading on page 1 of settings is within the range above (adjusting up decreases percentage on readings and adjusting down increases percentage on readings).



Follow the instruction in the section “Refrigerant Pipe work Installation” in the Installation guide to ensure the proper placement of traps in the pipe work, proper pipe sizes have been used and that the lines have been connected properly (hot gas to hot gas, liquid to liquid etc.).

Cooling Only: Switch on main power isolator to turn on the unit. Adjust the temperature setpoint to energize the compressor.

- Record the compressor operating pressures:

Normal refrigerant operating pressures at 22°C (72°F), 50% R.H are:

R-410A: Suction Pressure 115 to 130 psig / Discharge Pressure 380 to 425 psig

Note: Discharge pressure may vary with outdoor ambient conditions. Adjustment to the low ambient control device (regulating valve, manual bypass valve if equipped, condenser fan speed control or condenser ORI valve) may be necessary.

Discharge : _____ psig Temperature : _____ ° F

Suction : _____ psig

- Record room conditions:

Temperature : _____ ° C Humidity : _____ % RH

- Record the superheat: Normal superheat is 10-12⁰F (10-15⁰F at Compressor)

_____ °F

- Record the subcooling: Normal subcooling is 12-19⁰F

_____ °F

- Record the compressor running current

L1 : _____ A L2 : _____ A L3 : _____ A

Electric heater

Switch on main isolator, control transformer, fan and heater circuit breakers/fuses only. Adjust temperature setpoint to energize the heaters.

For SCR controlled:

Switch on the main isolator and control transformer circuit breakers/fuses. Switch to {Testmode} tab, page 1 and put SCR reheat output into over-ride ‘ON’ then go to page 2 and move cursor to heating analogue output symbol (see Users Guide for details).

- Press the “Auto” selection box to switch to manual override operation.

- Adjust the output to 35% by pressing the “+” key and check the heater current and record below.

- Adjust the output to 66% by pressing the “+” key and check the heater current and record below.
- Adjust the output to 100% by pressing the “+” key and check the heater current and record below.
- Press the “Auto” selection box to return the output to automatic operation.
- Record heaters running current below: - Note: Units with SCR reheat will demonstrate pulsating current. The pulse rate will change as the demand changes. This is normal.

| 33% Demand | 66% Demand | 100% Demand |
|--------------|--------------|--------------|
| L1 : _____ A | L1 : _____ A | L1 : _____ A |
| L2 : _____ A | L2 : _____ A | L2 : _____ A |
| L3 : _____ A | L3 : _____ A | L3 : _____ A |

- Test “Heater overheat” alarm

Reset temperature set point.

Humidifier

Switch off the main power isolator.

- Check that humidifier water supply line is connected and supply water pressure is adequate.

Switch on main isolator and control transformer circuit breakers/fuses.

Switch on the fan circuit breaker and humidifier circuit breaker. Adjust the humidity setpoint to energize the humidifier.

- Check humidifier fill valve operation (energizes after a 3 minute time delay).
- Check humidifier water level control.
- Record humidifier running current -

| | | |
|--------------|--------------|--------------|
| L1 : _____ A | L2 : _____ A | L3 : _____ A |
|--------------|--------------|--------------|

- Test “Humid Ser.” alarm. (Change “Humid Ser. Delay”, see instructions in M52 Users Guide, to “0”sec. Alarm should activate in approximately 4 minutes when the water is at high level).

Note: If Humid Ser Alarm activates during normal start-up the “Humid. Ser. delay” default setting may need to be increased. See M52 User Guide.

Reset humidity setpoint and Humid Ser delay.

Settings Summary

The following tables summarize the settings in each page. Record the current settings. Use this as a reference in the future if any settings get changed. Record any new settings and keep record with the equipment.

| Page 3 : | Configuration 1 | Date: | | |
|---------------------|-----------------|---------|-------|----------------|
| Description | Range | Default | Units | Actual Setting |
| No. of duty unit | 1-16 | 1 | - | |
| *Temp. set point | 12-30 | 22 | °C | |
| *Temp. set point | 53-86 | 72 | °F | |
| Humid. Set point | 30-80 | 50 | % RH | |
| Ht/Dehum/Hum Fan | 10-100 | 80 | % | |
| Standby Fan | 0-100 | 10 | % | |
| Cooling Min Fan | 10-100 | 65 | % | |
| Cooling Max Fan | 10-100 | 90 | % | |
| CW Valve Start - Pt | 10-100 | 20 | % | |
| Discharge Set - Pt | 10-500 | 275 | Ps | |
| Discharge Dead Bd | 1-50 | 10 | Ps | |
| Water Reg Min AO | 10-100 | 20 | % | |
| Comp Max Speed | 0-7200 | 5400 | RPM | |
| Comp Min Speed | 0-7200 | 1800 | RPM | |
| Comp Hum Speed | 0-7200 | 3600 | RPM | |

*Display changes to °F when Temp Units on Page 3 settings is set to °F

| Page 4 : | Configuration 2 | Date: | | |
|------------------------|--------------------|---------|---------|----------------|
| Description | Range | Default | Units | Actual Setting |
| Baud rate | 1200-19.2k | 9600 | bps | |
| On/Off mode | Local/Remote/Timer | Local | - | |
| Auto changeover | 0-9999 | 24 | hours | |
| Warm-up period | 0-180 | 120 | seconds | |
| Fan purge delay | 0-9999 | 120 | seconds | |
| Comp. elapse | 30-300 | 180 | seconds | |
| Comp. Min time | 30-300 | 180 | seconds | |
| Pos. start delay | 0-600 | 180 | seconds | |
| Humid. Fault delay | 0-9999 | 900 | seconds | |
| Liquid H/L Fault delay | 0-60 | 60 | seconds | |
| *Temp. units | °C/°F | °C | - | |
| Sensor display | Unit/ Site | Unit | - | |
| Language | English/ Chinese | English | - | |
| Control Sensor | Return/Supply/Mix | Return | - | |

*Display changes to °F when Temp Units on Page 3 settings is set to °F

| Page 5 : | Configuration 3 | Date: | | |
|--------------------|-----------------|---------|-------|----------------|
| Description | Range | Default | Units | Actual Setting |
| *Temp. dead band | 0-10 | 2 | °C | |
| *Relaxed band Temp | 0-20 | 5 | °C | |
| *Temp. dead band | 0-18 | 4 | °F | |
| *Relaxed band Temp | 0-36 | 9 | °F | |
| Hum. Dead band | 0-30 | 6 | %RH | |
| Relaxed band Humid | 0-50 | 20 | %RH | |
| *Prop. band Cool | 1-10 | 2 | °C | |

| | | | | |
|-------------------------|-----------------|---------|---------|--|
| *Prop. band Heat | 1-10 | 2 | °C | |
| *Prop. band Cool | 2-18 | 4 | °F | |
| *Prop. band Heat | 2-18 | 4 | °F | |
| Prop. band Humid | 2-10 | 3 | %RH | |
| Prop. band Dehum | 2-10 | 3 | %RH | |
| Temp. I-time | 1-6000 | 1800 | seconds | |
| Humid. I-time | 1-6000 | 1800 | seconds | |
| Temp. D-time | 0-61 | 15 | - | |
| Humid. D-time | 0-94 | 15 | - | |
| Humid. Control | Enable/ Disable | Enable | - | |
| Reheat Control | Enable/ Disable | Enable | - | |
| Dehum. Control | Enable/ Disable | Enable | - | |
| Free Cooling Control | Enable/ Disable | Disable | - | |
| *Free Cooling T/D | 3-7 | 3 | °C | |
| *Free Cooling H/L | 4-12 | 7.2 | °C | |
| *Free Cooling T/D | 6-14 | 6 | °F | |
| *Free Cooling H/L | 39-54 | 45 | °F | |
| Damper end switch delay | 30-180 | 30 | seconds | |
| Temp Control | Avg/ Max | Avg | - | |

*Display changes to °F when Temp Units on Page 3 settings is set to °F

| Page 6 : | Configuration 4 | | | |
|--------------------|----------------------|---------|---------|----------------|
| Description | Range | Default | Units | Actual Setting |
| System Type | CHW/Single/Dual | Dual | - | |
| Control Mode | Auto/Manual | Auto | - | |
| Restart delay | 0-9999 | 10 | seconds | |
| Network address | 1-99 | 1 | F | |
| Sensor Mode | Local/Remote/Disable | Local | | |
| Heater Min. On | 0-100 | 0 | % | |
| Cool Min. On | 0-100 | 0 | % | |
| *R. Temp Hi limit | 12-37 | 30 | °C | |
| *R. Temp Low limit | 5-30 | 15 | °C | |
| *R. Temp Hi limit | 53-99 | 86 | °F | |
| *R. Temp Low limit | 41-86 | 59 | °F | |
| R. Humid. Hi limit | 50-90 | 70 | %RH | |
| R. Humid Lo limit | 20-50 | 30 | %RH | |
| *S. Temp Hi limit | 12-37 | 30 | °C | |
| *S. Temp Low limit | 5-30 | 15 | °C | |
| *S. Temp Hi limit | 53-99 | 86 | °F | |
| *S. Temp Low limit | 41-86 | 59 | °F | |
| S. Humid. Hi limit | 50-90 | 70 | %RH | |
| S. Humid Lo limit | 20-50 | 30 | %RH | |
| Volt Hi limit | 102-120 | 115 | % | |
| Volt Low limit | 80-98 | 85 | % | |
| Volt adjust | 80-120 | 100 | % | |
| *R. temp offset | +5 /- 5 | 0 | °C | |
| *R. temp offset | +10/ -10 | 0 | °F | |
| R. hum offset | +10/ -10 | 0 | %RH | |
| *S. temp offset | +5 /- 5 | 0 | °C | |
| *S. temp offset | +10/ -10 | 0 | °F | |
| S. hum offset | +10/ -10 | 0 | %RH | |

*Display changes to °F when Temp Units on Page 3 settings is set to °F

| Page 7 : | Configuration 5 | | | |
|-------------------------|-----------------|---------|---------|----------------|
| Description | Range | Default | Units | Actual Setting |
| *Max Superheat Temp | 2-20 | 10 | °C | |
| *Max Superheat Temp | 36-68 | 50.0 | °F | |
| *Min Superheat Temp | 1-10 | 7 | °C | |
| *Min Superheat Temp | 34-50 | 44.6 | °F | |
| *Dehum SH offset | 1-10 | 6 | °C | |
| *Dehum SH offset | 34-50 | 42.8 | °F | |
| E TX Max Step | 0-750 | 450 | - | |
| E TX Min Step | 0-750 | 100 | - | |
| Valve Adjust Time | 10-360 | 60 | seconds | |
| Initial Valve Step | 0-750 | 250 | - | |
| Low Pressure Reset | 20-100 | 60 | psi | |
| E TX Valve Step | 2-20 | 4 | - | |
| Comp1 VFD Speed | 1200-7200 | 0 | rpm | |
| Comp 2 VFD Speed | 1200-7200 | 0 | rpm | |
| Fan Run Time Reset | - | - | - | |
| Comp 1 Run Time Reset | - | - | - | |
| Comp 2 Run Time Reset | - | - | - | |
| Heater 1 Run Time Reset | - | - | - | |
| Heater 2 Run Time Reset | - | - | - | |
| Heater 3 Run Time Reset | - | - | - | |
| Humid Run Time Reset | - | - | - | |

*Display changes to °F when Temp Units on Page 3 settings is set to °F

Special Notes on Site Conditions:



Use the space provided to record site conditions or aspects of the installation that you feel may pose a concern for the unit’s proper operation. For example: Absence of adequate load, poor air flow, air short circuiting or obstructions, poor duct design, raised floor height, other cooling equipment in the space etc. Continued unit operation with improper conditions will void the manufacturer’s warranty and may damage the equipment, or result in a reduced operating life of some components, leading to early equipment failure. Please contact our office at 1-800-648-2584

_____ I have been advised of the conditions listed
 NAME PHONE NO. above and will not touch the equipment

_____ I have been instructed in the operation of the
 NAME PHONE NO. equipment.

You have finished the start-up checklist. Please return this checklist to the factory within 14 days to register the warranty. Failure to do so will cause undue stress on the end user in the event of a warranty claim

