



CLIMATEWORX
MISSION CRITICAL CLIMATE CONTROL

Series 7 & 11

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.



Before switching on the unit, the following checklist should be completed by ClimateWorx authorized personnel only. Fail 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.

- Remove all transit bolts and fixtures.
- Check smooth rotation of blower wheels & bearings.
- Check drain pipe connected and a "P" trap is installed.
- 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 : _____ V



The main fan and motor will start after the following procedure. Make sure the fan and motor is ready to run.

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

- Check that rotation direction of the fan is correct.
- Record the input and output voltage from transformers :
Transformer TX1 - Primary : _____ V _____ A
Secondary tapping 1 : _____ V _____ A
Secondary tapping 2 : _____ V _____ A
- Record the blower motor running current: _____ A
- Check calibration of temperature and humidity sensors. See Maintenance Guide for calibration procedure.
- 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).

Chilled water circuit



Switch off main isolator and all branch circuit breakers.

- Check chilled water supply pipe fitted and direction of water flow correct.
- Check any sign of water leak.
- Check air purged from the cooling coil.
- Check valve manual override operation.

Switch on the main isolator and control transformer circuit fuses/breakers. Switch to {Testmode} tab and move cursor to cooling analogue output symbol (see User guide for details).

- Press the “Auto” selection box to switch to manual override operation.
- Adjust the output to 0% by pressing the “-” key and check the chilled water valve at fully closed position.
- Adjust the output to 50% by pressing the “+” key and check the chilled water valve at

half open position.

- Adjust the output to 100% by pressing the “+” key and check the chilled water valve at fully open position.
- Press the “Auto” selection box to return the output to automatic operation.

Air-cooled condenser



Make sure the main isolator on the condenser power box is switched off.

- Check that condenser fans rotate freely.
- Check supply voltage within $\pm 10\%$ of the values marked in the unit serial plate.
- Record supply voltage: _____ V

Insert a jumper wire on the condenser interlock terminals. Switch on the main isolator on the condenser power box.

- Check the rotation direction of the condenser fans.
- Record the running current of the condenser fan motors _____ A

Refrigeration system

- Check signs of oil leak



Follow the instruction in the section “Charging” in the Installation guide to properly charge the refrigeration circuit if this has not been done already. It is generally the responsibility of the installing contractor to assure the proper charging of the system.

- Check refrigerant lines



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.).

Switch on main power isolator to turn on the unit. Adjust the temperature setpoint to energize the compressor. Ensure humidity setpoint is well above actual to ensure dehumidification demand is zero.

- Record the compressor operating pressures:

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

R-22 : Suction Pressure 65 to 70 psig / Discharge Pressure 235 to 265 psig

R-407C: Suction Pressure 65 to 70 psig / Discharge Pressure 255 to 285 psig

Note: Discharge pressure may vary with outdoor ambient conditions.

Discharge : _____ psig Temperature : _____ °C

Suction : _____ psig

Record room conditions:

Temperature : _____ °C Humidity : _____ % RH

Record the superheat: Normal superheat is 10-15⁰F at compressor
_____ °F

Record the subcooling: Normal subcooling is 12-19°F
_____ °F

Record the compressor running current _____ A

Check for touching Pipes



Once charging and adjusting of the refrigeration circuit is complete make sure that all pipes, distributor tube and capillary lines are not in contact with each other or other objects that will result in premature failure from wear. It is the responsibility of the installing contractor to assure this step has been followed.

Electric heater

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

Record heaters running current below: _____ A

Test “Heater overheat” alarm

Reset temperature setpoint.

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.

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 3 minute time delay).

- Check humidifier water level control.
- Record humidifier running current - L1: _____ A
- Test “Boiler dirty” alarm. (Change “Boiler Dirty T”, see instructions in M52 User Guide, to “0”sec. Alarm should activate in approximately 4 minutes when the water is at high level).

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

Reset humidity setpoint and Boiler Dirty T.

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 | | | |
|-------------------------|-----------------|---------|---------|----------------|
| 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 above and will not touch the equipment |
| NAME | PHONE NO. | |
| _____ | _____ | I have been instructed in the operation of the equipment. |
| NAME | PHONE NO | |

You have finished the start-up check list. 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