



**CLIMATEWORX**  
MISSION CRITICAL CLIMATE CONTROL

# Series P

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## *Commissioning Checklist Single Circuit DX*



# 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. Failure to do so may damage the unit and void the 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 fan wheels & motors.
- 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 - L2 : \_\_\_\_\_ V  
L2 - L3 : \_\_\_\_\_ V  
L3 - L1 : \_\_\_\_\_ V



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

Switch on the control transformer and all the 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(s) is correct. Adjust potentiometer to meet specified air flow.

- Record the input and output voltage of transformers :

Transformer TX1 - Primary : \_\_\_\_\_ V \_\_\_\_\_ A  
Secondary tapping 1 : \_\_\_\_\_ V \_\_\_\_\_ A  
Secondary tapping 2 : \_\_\_\_\_ V \_\_\_\_\_ A

- Record the main fan motor running current :

Fan 1 L1 : \_\_\_\_\_ A  
L2 : \_\_\_\_\_ A  
L3 : \_\_\_\_\_ A  
Fan 2 (if applicable) L1 : \_\_\_\_\_ A  
L2 : \_\_\_\_\_ A  
L3 : \_\_\_\_\_ A

- Test “Low airflow” alarm.
- Test “Filter dirty” alarm.
- 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).



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the compressor. Ensure humidity setpoint is well above actual to ensure dehumidification demand is zero.

Check that rotation direction of the compressor is correct. Interchange two power wires if the rotation is reversed.

Record the compressor operating pressures:

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

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

Suction : \_\_\_\_\_ psig Temperature : \_\_\_\_\_ °C (at compressor suction port)

Liquid Line : \_\_\_\_\_ psig

Filter Drier Entering Temperature : \_\_\_\_\_ °C Leaving Temperature : \_\_\_\_\_ °C

Record room conditions:

Temperature : \_\_\_\_\_ °C Humidity : \_\_\_\_\_ % RH

Record the superheat: Normal superheat is 10-12<sup>0</sup>F (10-15<sup>0</sup>F at Compressor)

\_\_\_\_\_ °F

Record the subcooling: Normal subcooling is 12-19<sup>0</sup>F

\_\_\_\_\_ °F

Record the compressor running current

L1 : \_\_\_\_\_ A L2 : \_\_\_\_\_ A L3 : \_\_\_\_\_ A

Compressor: Test “Low pressure” alarm.

Compressor: Test “High pressure” alarm.

Reset temperature and humidity setpoints.

- 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/fuses only. Adjust temperature setpoint to energize the heaters.

For SCR controlled and step controlled reheat:

Switch on the main isolator and control transformer circuit breakers/fuses. Switch to {Testmode} tab and move cursor to heating analogue output symbol (see User 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 setpoint.





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			
<b>Description</b>	<b>Range</b>	<b>Default</b>	<b>Units</b>	<b>Actual Setting</b>
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	-	

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Page 5 :	Configuration 3			
<b>Description</b>	<b>Range</b>	<b>Default</b>	<b>Units</b>	<b>Actual Setting</b>
*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	-	

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Page 6 :	Configuration 4			
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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

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_____	_____	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 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