CLIMATEWORX
MISSION CRITICAL CLIMATE CONTROL

Series 11, Ceiling Units

Installation Manual

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Site Preparation

In order to maximize operating efficiency and performance, the following areas should be observed at the site-planning stage:

- The room should be surrounded with a vapor seal to eliminate moisture migration through the building structure. Windows should be sealed and at least double-glazed to prevent sweating. All door jams should fit tightly and should not have any grilles in them. Polyethylene film type ceiling, vinyl wallpaper or plastic based paint on the walls and slabs are recommended to minimize absorption and transmission of moisture into the room.

- Owing to a generally small population, a typical room should have fresh air kept at only about 5% of the re-circulated air. This provides enough ventilation for personnel and pressurizes the room to prevent dust from entering through leaks. The incoming fresh air must be filtered very closely, and preferably pretreated. Otherwise heating, cooling, humidifying and dehumidifying loads of the incoming fresh air should be taken into account in determining total loading requirements.

Location Consideration

Positioning of Indoor units

The Series 11 unit is designed for ceiling mounting in or above a suspended T-bar ceiling grid. Care should be taken to ensure that the supply and return air-paths are not blocked by equipment; preferably the unit should be located over a clear floor space for ease of service. Additionally the units contain water and as a result should not be mounted above equipment that could be damaged by water. It is recommended that a field supplied drain pan complete with drain be installed beneath ducted units and all water and glycol condensing units / condensers.

The unit should be mounted in such a way that the side panels can be easily accessed through the surrounding ceiling tiles for service.

For spot cooling units (fully packaged) care should be taken in orienting the air grille supplied. The filter grille (return air to the unit) should be located under the evaporator and the three way grill located under the supply air section. The louvers on the supply air grill should be directed away from the return air to avoid short circuiting of air.

The unit should be mounted above the flange of the T-Bar ceiling grid using the foam insulation provided with the grille to seal to the bottom of the unit. Adjusting Fan Speed with M52 on grille supply/ return models. For thermostat or ducted applications air balancing is required to adjust for correct fan speed.

Model		**11XX15**	**11XX20**	**11XX25**	**11XX30**
Standard Air Volume	CFM	750	950	1100	1400
Cooling Max	%	43	51	57	71
Idle Air Volume	CFM	490	620	715	910
Cooling Min	%	29	36	41	49

Hanging the Unit

Before hanging the unit, ensure the mounting surface is capable of supporting the unit's weight. Refer to Table 1 for unit weights.

Model	1 Ton (Weight lbs)	1.5 Ton (Weight lbs)	2 Ton (Weight lbs)	2.5 Ton (Weight lbs)	3 Ton (Weight lbs)	4 Ton (Weight lbs)	5 Ton (Weight lbs)
Air-cooled self contained	235	240	245	250	N/A	N/A	N/A
DX Air-cooled	175	180	185	190	230	475	490
Air Handling Unit	110	110	110	110	140	415	430
Water-cooled self-contained	215	220	225	230	275	545	560
Glycol-cooled self-contained	215	220	225	230	275	545	560
Chilled water	110	110	110	110	140	415	430
Dual Cooled CW+CW	N/A	N/A	N/A	N/A	N/A	515	530
Dual Cooled CW + DX Air	N/A	N/A	N/A	N/A	N/A	575	590
Dual Cooled CW + DX Water	N/A	N/A	N/A	N/A	N/A	645	660
Dual Cooled CW + DX Glycol	N/A	N/A	N/A	N/A	N/A	645	660
Free Cooling	N/A	N/A	N/A	N/A	N/A	665	680

Table 1: Unit Weights

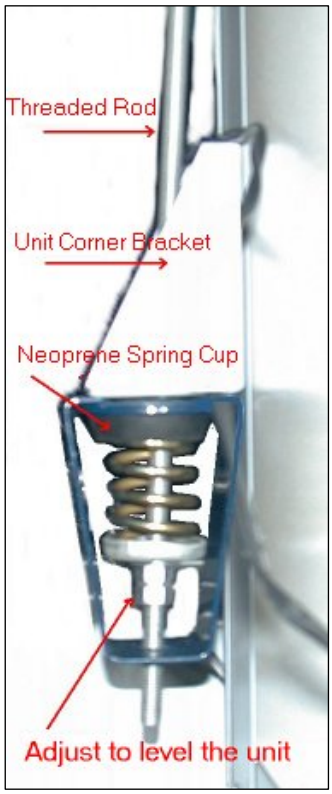


Figure 1

Attach the corner brackets to the corner posts of the unit. Remove all the access panels and lift the unit into the selected position. Using threaded hanging rod (3/8" diameter) secure the unit in place using nuts and washers (all field supplied).

For units supplied with vibration isolating spring mounts place spring under corner bracket and attach locking hardware. After hanging the unit, adjust spring tensions to level the unit, shown in Figure 1.

Positioning of Condensers or Condensing Units

Condensing units should be located as close to the indoor unit as possible. From a security and environment standpoint, outdoor air-cooled condensing units should be installed away from public access and occupied spaces where low ambient sound level is required. Indoor air-cooled condensers or condensing units should be located in areas where normal unit operating sound will not disturb the working environment. Water and glycol condensing units should not be located above sensitive equipment that could be damaged by water.

In order to avoid air short circuiting and inter unit re-circulation, air-cooled condensing units/condensers should be located at least 1m (3 ft.) away from any walls, obstructions or adjacent units. To ensure maintenance-free operation, air cooled condensing units/condensers should be located away from the areas that are continuously exposed to loose dirt and foreign materials that may clog the coil.

Indoor condensing units / condenser should be hung following the procedure outlined earlier. Outdoor units should be firmly secured on steel supports or concrete plinths.

For packaged units the condenser fan box is supplied loose. To attach, position evaporator section, then bring the fan box in from below and place the lip (Figure 2) inside the top cover lip (on evaporator unit). Push the condenser fan box from the bottom until it fits snugly. Use hardware provided to attach the fan box to the evaporator section.

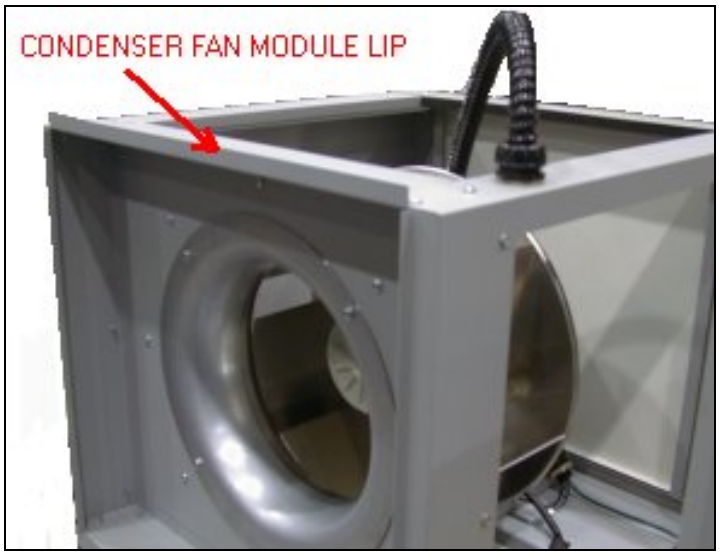


Figure 2

Positioning of Remote Controller Unit

The remote mounted controller should be located in an easily accessible area within reach of operating personnel. For proper operation the thermostat should be located on an inside wall. In addition its position must be at least 18" (46 cm) from any outside wall, and approximately 5' (1.5m) above the floor in an area with freely circulating air of average room temperature. In addition the following locations should be avoided:

1. Behind doors or in corners where freely circulating air is unavailable.
2. Where direct sunlight or radiant heat might affect readings.
3. On outside walls
4. Adjacent to or in line with conditioned air discharge grilles, stairwells or outside doors.
5. Where its operation may be affected by steam or water pipes or warm air stacks in an adjacent partition, or by an unheated /uncooled area behind the thermostat.
6. Where its operation will be affected by the supply air of an adjacent unit.

Consideration should be given to interconnecting wiring between indoor unit and controller. The maximum distance between indoor unit and controller should be 50'.

Positioning of Remote Temperature/ Humidity Sensor

The remote mounted Temperature/ Humidity sensor should be located in an easily accessible area within reach of maintenance personnel. Its position must be at least 18" (46 cm) from any outside wall, and approximately 5' (1.5m) above the floor in an area with freely circulating air of average room temperature. In addition the following locations should be avoided:

1. Behind doors or in corners where freely circulating air is unavailable.
2. Where direct sunlight or radiant heat might affect readings.
3. On outside walls
4. Adjacent to or in line with conditioned air discharge grilles, stairwells or outside doors.
5. Where its operation may be affected by steam or water pipes or warm air stacks in an adjacent partition, or by an unheated /uncooled area behind the sensor.
6. Where its operation will be affected by the supply air of an adjacent unit.

Consideration should be given to interconnecting wiring between the M52 Remote Supervisory panel and the Remote T/H sensor. The Remote T/H sensor is provided with 25' of cable from the connection point within the Remote Supervisory panel.

Electrical Installation

Power Feeding

All models are fitted with a 3-terminal connection block. Single-phase power should be connected to the line side of the connection block. A ground lug is provided near the main power connection block for ground connection. (3 phase is an option on some units). Entering service cable should be fed through the hole on the side of the unit marked “Power”.The power cables should be sized in accordance with local and national codes. Refer to the unit nameplate for circuit ampacity.

Interconnecting Wiring

Thermostat Control

Field supplied thermostat grade 5 conductor cable to be used between evaporating section and the wall mount thermostat.

M52 Controller

Pre-made control cable sets are supplied with each unit fitted with the M52 Controller, for connecting the remote mounted controller and remote mounted temperature/ humidity sensor to the indoor unit. Standard cable lengths are 25 feet between the evaporator section and wall mount controller, and 25 feet between the evaporator section and the temperature/ humidity sensor. Each cable will be clearly marked and care should be taken to ensure cables are connected correctly. Internal wiring for all Series 11 is completed and tested prior to delivery. Numbered terminal blocks for field installed control wiring are provided next to the main power isolator at the lower right corner of the power panel.

The numbered terminal blocks will accept control wiring up to #12 AWG (4mm²) gauge. The terminal assignments are listed as follows:

Terminal	Function	Requirement
11-12	Standby enable	Normally open output
13-14	Common alarm (General)	Normally open output
21-22	Common alarm (Critical)	Normally open output
15-16	Remote on / off	Normally open dry contact input
17-18	Standby start	Normally open dry contact input
19-20	Fire alarm	Normally closed dry contact input
23 thru 28	Condenser/Pump interlock	Normally open dry contact output
31-32	Compressor disable **(optional)**	Normally open dry contact input
35-36	Remote on/off Interrupt **(optional)**	Normally open dry contact input
37-38	Unit Status **(optional)**	Normally open dry contact output
39- 42	Custom Fault1/2 **(optional)**	Normally closed dry contact input
43- 44	Liquid High Limit **(optional)**	Normally closed dry contact input
49- 50	Hum/ Reheat disable **(optional)**	Normally open dry contact input
57- 58	Damper Motor Interlock **(optional)**	Normally open dry contact output
59- 60	Damper End Switch **(optional)**	Normally open dry contact input

Packaged unit condenser fans

The condenser fan is supplied with a 3’ length conduit/cable assembly. Attach conduit connector through the 1” hole located at the bulkhead at the top left hand corner of the electrical panel (Figure 3). Connect the two cables as per wiring diagram to the loom marked condenser fan.

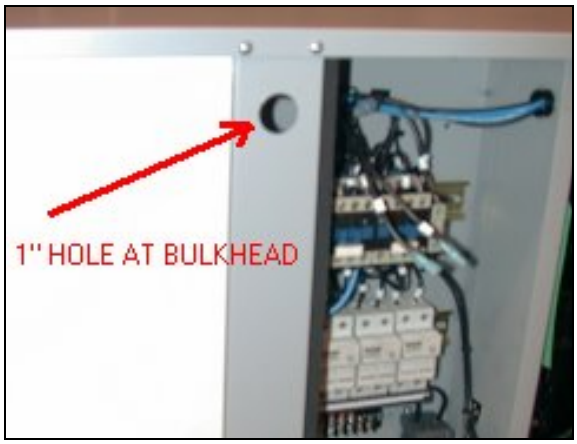


Figure 3

Piping Connections

Condensate Drain

For proper drainage a P-trap MUST be installed. Total height for the trap should be measured from the bottom of the drain pan (3” above unit bottom), to the bottom of the “U” in the trap. Minimum recommended height is 3.5” to ensure proper drainage.

Refrigerant Piping

For self contained (packaged) systems no refrigerant connections are required.

Good practice should always be followed when connecting refrigerant piping in direct expansion systems.

As many of the operational problems encountered in a refrigeration system can be traced back to improper design and installation of refrigerant piping, it is essential that the following guidelines be observed:

- Use clean and dehydrated refrigeration quality tubing with both ends sealed.

- Cut and form tubes carefully to avoid getting dirt or metal particles into the refrigeration lines. Never use a hacksaw to cut the tubing.

- Once the system is open, complete the work as quickly as possible to minimize ingress of moisture and dirt into the system. Always put caps on ends of tubes and parts not being worked on.

- To prevent scaling and oxidation inside the tubing, pass an inert gas such as nitrogen through the line while carrying out brazing, silver soldering or any other welding processes.

- It is recommended that quality refrigeration solder (95% tin, 5% silver) is used for its excellent capillary action.

- Use minimum amount of solder flux to prevent internal contamination of the piping. Use flux with care as it is usually acidic in nature.

- Install a trap at the bottom of every on the vertical riser of a hot gas or suction line and one for every 6m (20ft.) in elevation to collect refrigerant and lubrication oil during off cycle. A discharge line trap is an important function both during the compressor on and during the compressor off cycle. During the on cycle, the trap collects oil droplets and carries them efficiently up the elevated discharge line. During the off cycle, the traps captures and retains oil residing on the pipe walls that would otherwise drain back to the compressor head, causing damage on startup.

- Install inverted trap whenever a condenser is located above the compressor. An inverted trap or check valve should be installed at the condenser inlet and outlet to prevent liquid refrigerant from flowing backwards into the compressor during off cycles.

- Insulate the suction line and insulate liquid lines that may be subjected to high heat gains. Insulate low level discharge lines to avoid burning due to accidental contact.

- Design and arrange refrigerant piping for the remote condenser in such a way so that adequate velocity of refrigerant can be maintained to prevent oil trapping. Under sizing discharge lines will reduce compressor capacity and increase compressor load. Over sizing discharge lines increases the initial cost of the project and can reduce the refrigerant gas velocity to a level where oil is not returned to the compressor.Recommended pipe sizes are tabulated as follows:

Recommended Pipe Size for Remote Condensing Units

Model	**1 Ton**	**1.5 Ton**	**2 Ton**	**2.5 Ton**	**3 Ton**	**4 Ton**	**5 Ton**
Liquid Line							
50 ft. equivalent pipe length	3/8”	3/8”	3/8”	3/8”	½”	½”	½”
Suction Line							
50 ft. equivalent pipe length	5/8”	5/8”	3/4”	3/4”	7/8”	7/8”	1 1/8”

Recommended Pipe Size for Remote Condensers

Model	**1 Ton**	**1.5 Ton**	**2 Ton**	**2.5 Ton**	**3 Ton**	**4 Ton**	**5 Ton**
Hot Gas Line							
50 ft. equivalent pipe length	1/2”	1/2”	5/8”	5/8”	5/8”	3/4”	3/4”
100 ft. equivalent pipe length	1/2”	5/8”	5/8”	3/4”	3/4”	3/4”	7/8”
150 ft. equivalent pipe length	5/8”	5/8”	3/4”	3/4”	3/4”	7/8”	7/8”
175 ft. equivalent pipe length	N/A	N/A	3/4”	3/4”	7/8”	7/8”	1 1/8”
200 ft. equivalent pipe length	N/A	N/A	N/A	3/4”	7/8”	7/8”	1 1/8”
Liquid Line							
50 ft. equivalent pipe length	3/8”	3/8”	3/8”	3/8”	1/2”	1/2”	1/2”
100 ft. equivalent pipe length	3/8”	3/8”	3/8”	1/2”	1/2”	1/2”	1/2”
150 ft. equivalent pipe length	3/8”	3/8”	1/2”	1/2”	1/2”	5/8”	5/8”
175 ft. equivalent pipe length	N/A	N/A	1/2”	1/2”	1/2”	5/8”	5/8”
200 ft. equivalent pipe length	N/A	N/A	N/A	1/2”	1/2”	5/8”	5/8”

Consult Factory for additional distances

Evacuation

The procedure for leakage testing and evacuation of the system is as follows:

1. Disconnect all line voltage fuses except the fuses for control transformers.
2. Connect a gauge manifold to the compressor suction and discharge access valve.
3. Close the compressor discharge and suction ports and open all service valves.
4. Charge the system with dry nitrogen to approximately 150 psig.
5. Leave pressure in system for at least 12 hours. If pressure holds, continue with next step. If the pressure drops, detect and seal leak before continuing.
6. Release all pressure. Connect a vacuum pump to the compressor suction and discharge valves with refrigerant or high vacuum hoses. Provide an isolating valve and a pressure gauge for pressure checking.
7. Evacuate the system to an absolute pressure not exceeding 1500 microns. Break the vacuum to 2psig with dry nitrogen. Repeat the evacuation process and then re-break the vacuum with dry nitrogen.
8. Open the compressor discharge and suction ports. Evacuate to an absolute pressure not exceeding 500 microns. Let the vacuum pump run without interruption for minimum two hours.

9. Stop the vacuum pump. Break the vacuum and charge the system with vapor R22/R407c (see spec label for unit refrigerant) through the discharge side of the compressor. It is a good practice to weigh the charge that is put into the system.

10. Allow the pressure to equalize.

Fan Speed Control System

The fan speed control system maintains not only a constant condensing pressure over a wide range of climatic conditions but also high sensible cooling for the evaporator so that re-humidification is rarely required throughout the year.

A pressure-sensitive fan speed controller is employed in the fan speed control system. It regulates the condenser head pressure at low ambient temperatures by varying the airflow volume through the condenser.

Upon engaging the interlock contact in the indoor unit, the fan speed controller will directly sense the changes in the refrigerant head pressure and vary the output voltage from 15% to 97% of the applied voltage.

Charging

Calculate the total charge required using this formula:

Indoor Unit Charge + Liquid Line Charge + Condenser Charge

+ Hot gas Line Charge = Total Charge

Proper performance of the system depends largely on proper charging. Adhere to the following guidelines for charging:

1. Open the main isolator and insert the fuses for the fans, control transformers and the compressor.
2. Close the main isolator and allow the compressor crankcase heater to operate for at least one hour.
3. Connect the gauge manifold to both discharge and suction rotalock valves, with a common connection to the refrigerant cylinder. Purge the lines by opening the refrigerant cylinder vapor valve.
4. Connect the refrigerant cylinder to recovery unit and charge system with 90% of calculated amount.
5. Start the unit using the test mode to energize the main fan and compressor. Please make sure outdoor condenser (if any) is powered.
6. Add additional refrigerant to the system until the sight glass is clear of bubbles and subcooling is measured between 10-15 ^{o}F.
7. Run system to maintain a hot gas (discharge) pressure based on refrigerant used (R407C @240psi and R22 a @225psi) then re-check subcooling, Add refrigerant if subcooling has dropped below 10 ^{o}F.

8. The system is now correctly charged for operating under fan speed control. It is a good practice to weigh the amount of additional refrigerant that was added and keep a record of the total charge in the system.

Note: Packaged Air cooled systems come completely factory charged (except when a factory split is ordered). Fan speed control is provided by a discharge pressure transducer to maintain a constant head pressure. This is factory set to perform at peak performance and does not need to be set or adjusted on site.

Head Pressure Control System

For condensers possibly subjected to extremely low ambient temperature, it is recommended that a head pressure control system be installed. This avoids starving the evaporator coil, with the consequence of oil clogging; short cycling on low pressure control, reduction of the system capacity and erratic expansion valve operation.

A drop in the condensing pressure often occurs in air-cooled systems as a result of low ambient conditions encountered during fall-winter-spring operation. Head pressure control renders part of the condenser surface inactive. The reduction of active condensing surface results in a rise in condensing pressure and hence provides a sufficient liquid line pressure for normal system operation. The head pressure control system allows operation at extremely low ambient temperature down to -40°F.

ClimateWorx uses a two-valve head pressure control with receiver, for factory ordered condensers. The ORI is located in the liquid drain line between the condenser and the receiver, and the ORD is located in a hot gas line bypassing the condenser.

During periods of low ambient temperature, the condensing pressure falls until it approaches the setting of the ORI valve. The ORI then throttles, restricting the flow of liquid from the condenser. This causes refrigerant to back up in the condenser thus reducing the active condenser surface. This raises the condensing pressure. Since it is really the receiver pressure that needs to be maintained, the bypass line with the ORD is required.

The ORD opens after the ORI has offered enough restriction to cause the differential between condensing pressure and receiver pressure to exceed 20psi. The hot gas flowing through the ORD serves to heat up the cold liquid being passed by the ORI. Thus the liquid reaches the receiver warm and with sufficient pressure to assure proper expansion valve operation. As long as sufficient refrigerant charge is in the system, the two valves modulate the flow automatically to maintain proper receiver pressure regardless of outside ambient.

Charging

Calculate the total charge required using this formula:

Indoor Unit Charge + Liquid Line Charge + Condenser Charge

+ Hot gas Line Charge + 20% of Receiver volume = Total Charge

When head pressure control is utilized, there must be enough refrigerant to flood the condenser at the lowest expected ambient and still have enough charge in the system for proper operation. After

completing the evacuation procedures as in the fan speed control system, follow the following guidelines for charging:

1. Open the main isolator and insert the fuses for the fans, control transformers and the compressor.

2. Close the main power and allow the compressor crankcase heater to operate for at least one hour.

3. Connect the gauge manifold to both discharge and suction rotalock valves, with a common connection to the refrigerant cylinder. Purge the lines by opening the refrigerant cylinder vapor valve.

4. Connect the refrigerant cylinder to recovery unit and charge system with 90% of calculated amount.

5. Start the unit using the test mode to energize the main fan and compressor. Please make sure outdoor condenser (if any) is powered.

6. Add additional refrigerant to the system until the sight glass is clear of bubbles and subcooling is measured between 10-15 ^{o}F.

7. Run system to maintain a hot gas (discharge) pressure based on refrigerant used (R407C @240psi and R22 a @225psi) by adjusting ORI valve(s) then re-check subcooling, Add refrigerant if subcooling has dropped below 10 ^{o}F.

8. The system is now correctly charged for operating under head pressure control at the ambient temperature charging is being carried out. It is a good practice to weigh the amount of additional refrigerant that was added and keep a record of the total charge in the system.

9. If the system is designed to operate at ambient below the ambient that exists during charging, additional charge will have to be added now.

Method to Determine Additional Refrigerant Charge to Operate to an Expected Minimum Ambient Temperature

Ambient Temp (°F)	% of Condenser to be Flooded
70	0
65	0
60	10
55	24
50	33
45	41
40	46
35	52
30	55
25	59
20	62
10	66
0	70
-10	73
-20	76
-30	77
-40	79

Example for KS11-078-1 Ambient Temp at Time of Charging = 60°F to Operate to -30°F

Step 1. At the ambient temperature at the time of charging the system (e.g 60°F) Read from the table – % of Condenser to be Flooded (e.g - 10 %)

Step 2. At the expected minimum ambient Temperature (e.g - - 30 °F) Read from the table - % of the Condenser to be Flooded (e.g - 77 %)

Step 3. Calculate the difference of the above two values (77 % - 10 % = 67 %)

Step 4. From the " Air Cooled Condenser Guide" read Winter Flooded (-40°F) Refrigerant Charge (6.4 lbs)

Step 5. Multiply the value found in Step 4 by the difference in %'s calculated in Step 3.

Additional Required Charge = 6.4 lb * (67 %) = 4.30 lb / Condenser
(If Two (2) Circuit Condenser 2.15 lb / Ref Circuit

Operating the Thermostat

Setting the Current Day and Time

1. Press the **CLOCK** Button. The display will flash a day of the week.
2. Press the up or down arrow buttons until the current day shows.
3. Press the **CLOCK** button again. The display will flash the hour. (Note the AM/ PM indicator.)
4. Press the up or down arrow buttons until the current hour shows.
5. Press the **CLOCK** button again. The display will flash the minutes.
6. Press the up or down arrow buttons until the current minutes show.
7. Press the **CLOCK** button and the current day and time are now set.

* Note: If a button is not pushed in 15 seconds, the thermostat will automatically return to normal operation.

Setting your Program Temperatures

With your specific program determined, you are ready to begin programming. You will now enter the individual program period temperatures for the heating program.

1. Press the **MODE** button until **HEAT** is displayed.
2. Press the **SET TEMP** button. The first program period (Morning) will be displayed.
3. Press the up or down arrow buttons to adjust that program period's temperature for heating.
4. Repeat Steps 2 and 3 for the Day, Evening and Night program periods. Remember, if your thermostat was set for two program periods, you will only have to repeat Steps 2 and 3 for the Night program period.
5. Press the **MODE** button until **COOL** is displayed. You now will enter the individual program period temperatures for the cooling program.
6. Repeat Steps 2, 3 and 4 for the cooling temperatures.
7. Press the **MODE** button until your desired mode of operation appears: HEAT- AUTO- OFF- COOL.
8. Press the **RESUME** button to return to normal operation.

Note: If a button is not pushed in 15 seconds, the thermostat will automatically return to normal operation. You may go back into the programming portion simply by repeatedly pressing the **SET TEMP** button until you get back to where you left off.

Setting your Program Times

Referring to your Schedule Planner, you now will enter the times for the program periods.

1. Press the **PROGRAM** button. The display will flash a day of the week.
2. Press the up or down arrow buttons to select the day you wish to program. (We suggest starting with Monday.)
3. Press the **PROGRAM** button. The display will flash the hour of the first period (Morning). (Note the AM/ PM indicator.)
4. Press the up or down arrow buttons to adjust the desired hour for the first program period.
5. Press the **PROGRAM** button again. The display will flash the minutes.
6. Press the up or down arrow buttons to adjust the desired minutes for the first period. (Note the minutes are in increments of 10.)
7. Repeat Steps 3- 6 for the Day, Evening and Night periods. Remember that if your thermostat was set for two program periods, you will only have to repeat Steps 3- 6 for the Night period.
8. After entering the Night period, press the **PROGRAM** button. **COPY** will be displayed. The copy function will allow program times to be copied to sequential days. If you do not wish to copy the program times to another day (or block of days), proceed to Step 11.
9. Press the up or down arrow buttons to select the next individual day, or block of days, to copy the program times to.
10. Press the **PROGRAM** button to copy the program times to the selected days of the week.
11. Repeat Steps 1- 10 for any remaining unprogrammed days of the week.
12. When finished, you can verify that all program periods are programmed correctly by repeatedly pressing the **PROGRAM** button. When **COPY** appears, press the **PROGRAM** button to skip to the next day.

* Note: If a button is not pushed in 15 seconds, the thermostat will automatically return to normal operation. You may go back into the programming portion simply by repeatedly pressing the **PROGRAM** button until you get back to where you left off.

Temperature Override

Temporary Override (3 hours)
You may change the temperature setting temporarily at any time without affecting the program. Press the up or down arrow buttons. The current event temperature and mode of operation will be displayed. Press the up or down arrow buttons again to adjust the temperature. This temperature will be maintained for three hours. To cancel, simply press the **RESUME** button.

Temporary Override with Keyboard Locked (1 hour) (300- 225, 300- 227, 300- 229)
You may change the temperature setting temporarily at any time without affecting the program, even though the keypad is locked.
• Press the up or down buttons. The display will show the temperature for the first event. Press the up or down buttons again to adjust the temperature +/- 3 degrees. This temperature will be maintained for one hour.

Continuous Override (Hold)
You also may maintain a constant temperature setting at any time without affecting the program.

1. Press and release the **MODE** button until the desired mode is displayed (HEAT – AUTO – OFF – COOL)
2. Press and release the **HOLD** button. **HOLD** will be displayed.
3. Press the up or down buttons to adjust the temperature. This temperature will be maintained indefinitely. To cancel, simply press the **RESUME** button.

Note: If the auto mode is used, press the **MODE** button, then press the up or down buttons to select a heating setpoint. Press the **MODE** button, and then press the up or down buttons to select a cooling setpoint.

Changing Fahrenheit (°F) to Celsius (°C)

This thermostat is preset to display the temperature in Fahrenheit. You may change the display to Celsius. To change from one to the other, simultaneously press the up and down buttons. The display will change automatically.

Changing 12 Hour Time to 24 Hour Time

This thermostat is preset to display the standard 12 hour time format. You may change the display to the 24 hour time format. To change from one to the other, press and release the **CLOCK** button, then press the **MODE** button. The display will change automatically.

Power Failures

This Robertshaw thermostat will maintain the program settings during any type of power failure. If power fails, **AC** will be displayed for 30 minutes. After 30 minutes, the display will go blank. If power is restored within the first 30 minutes, the thermostat will resume normal operation. If power is restored after 30 minutes, **12: 00 AM** will flash, and the thermostat will control to the night event set point until the clock is reset. Once the clock is reset, the thermostat will resume normal operation.

Dimensional Details

The following tables summarize the dimensional detail drawing number for Series 11 units with standard options. For units with a special option or configuration, please consult factory for details.

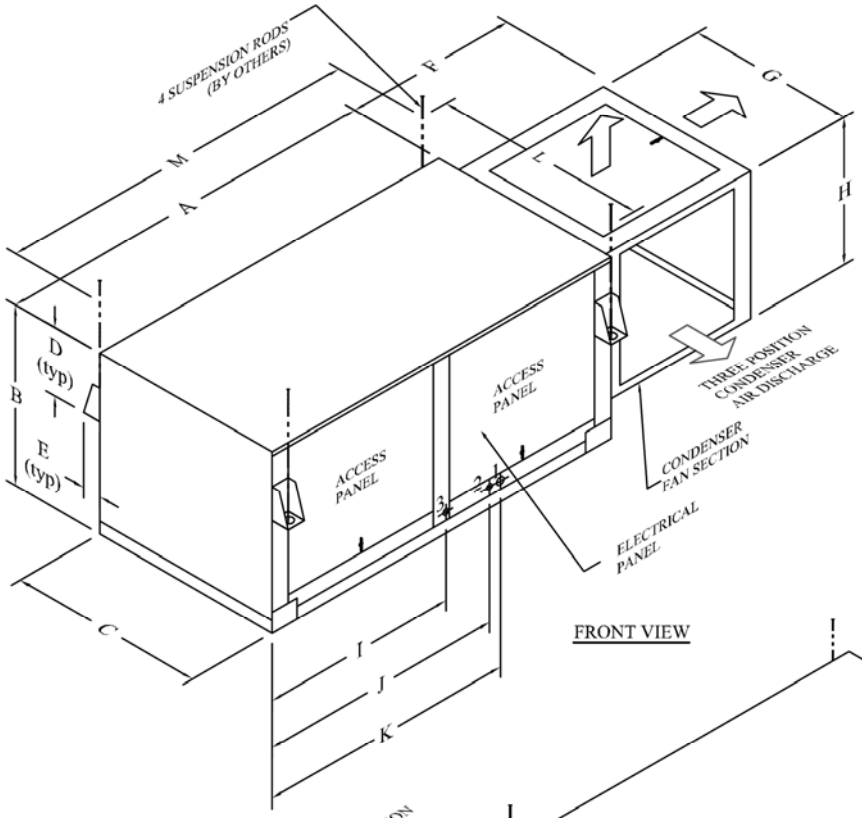
Model	**-10**	**-15**	**-20**	**-25**
Self-contained air-cooled unit	S11DD101	S11DD101	S11DD101	S11DD101
Ducted self-contained air-cooled unit	S11DD152	S11DD152	S11DD152	S11DD152
Self-contained water/glycol unit	S11DD111	S11DD111	S11DD111	S11DD111
Chilled water unit	S11DD121	S11DD121	S11DD121	S11DD121
Indoor evap. section w/compressor	S11DD131	S11DD131	S11DD131	S11DD131
Indoor evap. section	S11DD141	S11DD141	S11DD141	S11DD141
Ducted evaporator connections	S11DD151	S11DD151	S11DD151	S11DD151
Condenser/Condensing Unit				
Outdoor condenser/condensing unit	S11DD202	S11DD202	S11DD202	S11DD202
Indoor condenser/condensing unit	S11DD161	S11DD161	S11DD161	S11DD161

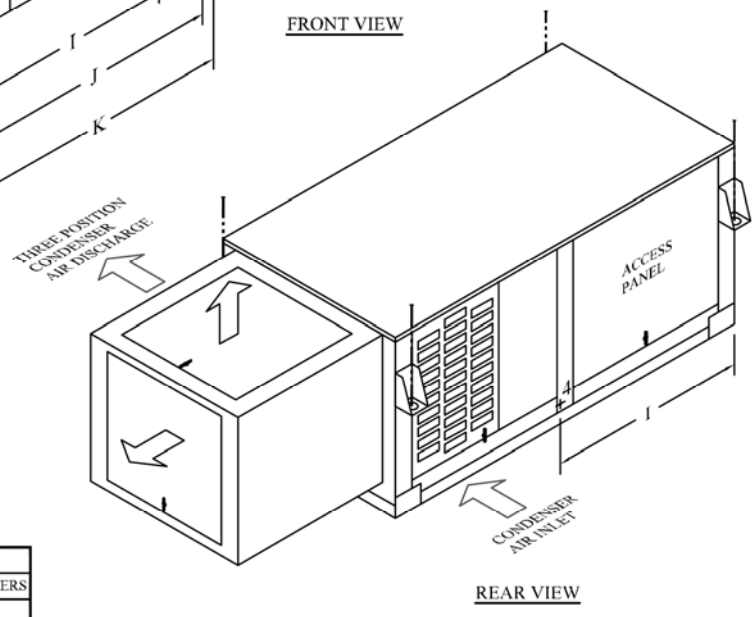
Model	**-30**	**-40**	**-50**
Self-contained unit	S11D-BB-300	N/A	N/A
Ducted self-contained unit	S11-D-DD-300	S11DD501	S11DD501
Chilled water unit	S11D-BB-300	N/A	N/A
Ducted Chilled Water unit	S11D-DD-300	S11DD501	S11DD501
Indoor evap. section	S11D-BB-300	N/A	N/A
Ducted Indoor evap. section	S11D-DD-300	S11DD501	S11DD501
Condenser/ Condensing Unit			
Outdoor condenser Horizontal*	KS-F_H_R407C	KS-F_H_R407C	KS-F_H_R407C
Outdoor condenser Vertical*	KS-F_V_R407C	KS-F_V_R407C	KS-F_V_R407C
Outdoor condenser w/ Receiver Kit*	KS-H_V_R407C MOD.KS11-065-01	KS-H_V_R407C MOD.KS11-065-01	KS-H_V_R407C MOD.KS11-078-01
Outdoor condensing unit	S11DD202	N/A	N/A
Indoor condenser WC/GC	S11DD301	S11DD301	S11DD301
Indoor condensing unit WC/GC	S11DD301	S11DD301	S11DD301
Indoor condenser unit Air Cooled	S11DD301	S11DD301	S11DD301
Indoor condensing unit Air Cooled	S11D-DD-300-004	S11D-DD-300-004	S11D-DD-300-004

Appendix A: Dimensional Drawings

CLIMATEWORX INTERNATIONAL

SERIES 11- CEILING MOUNTED UNIT
SELF-CONTAINED AIR-COOLED UNIT





DIMENSIONAL DATA

ITEM	DIMENSION	
	INCHES	MILLIMETERS
A	46 3/4	1187
B	21 3/4	552
C	23 3/4	603
D	8 1/4	210
E	2 1/4	57
F	21	533
G	20 1/4	514
H	17 3/4	451
I	24	610
J	30	762
K	31 1/2	800
L	26	660
M	44 1/2	1130

MODELS

11AX10 Through 11AX25

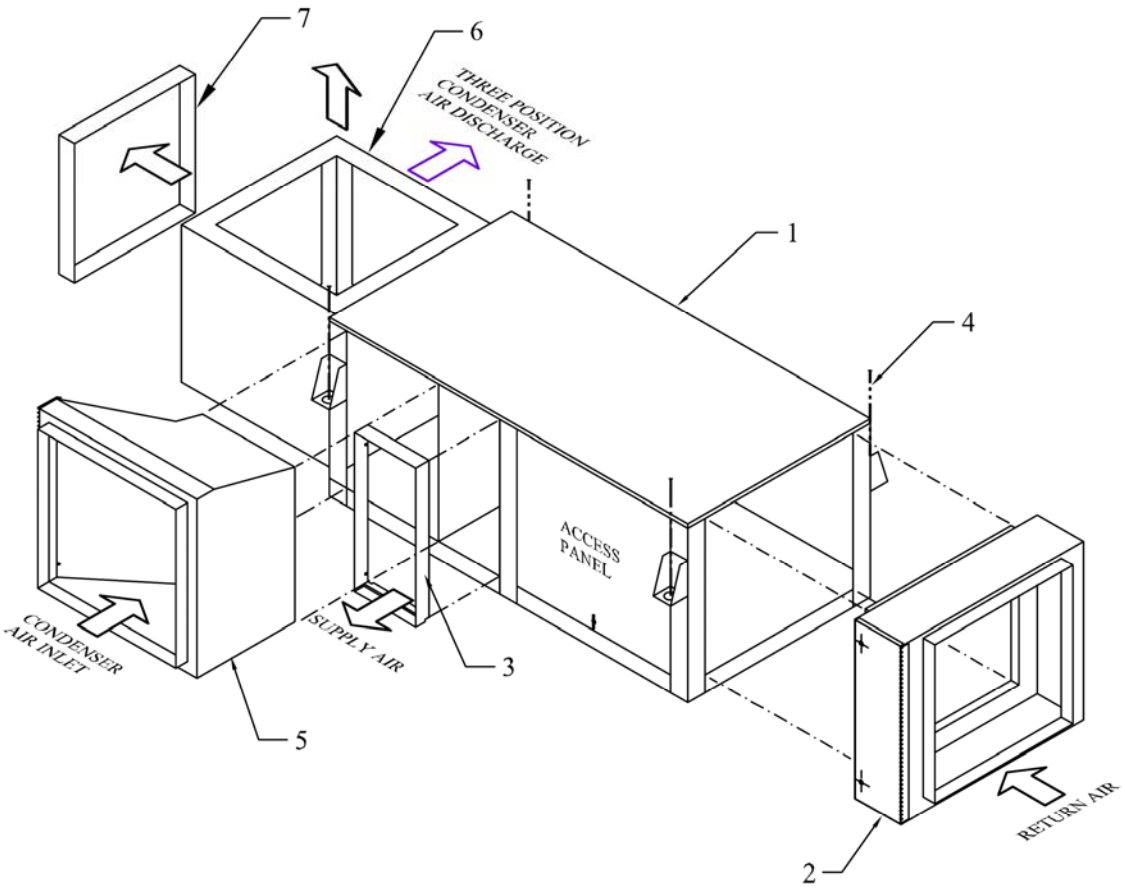
PIPING CONNECTION DATA

ITEM	DIAMETER (O.D.)		DESCRIPTION
	INCHES	MILLIMETERS	
1	1	25	Electrical Power Supply
2	3/4	19	Electrical Control Wiring
3	1	25	Drain Outlet
4	1/4	6	Humidifier Water Supply

S11DD101D 11 NOVEMBER 2002 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11- CEILING MOUNTED UNIT
DUCTED EVAPORATOR AND CONDENSER CONNECTIONS



REAR VIEW

ITEM	DESCRIPTION	DUCT CONNECTION SIZE	
		INCHES	MILLIMETERS
1	Main Unit	--	--
2	Return Air Filter Box for Evaporator	18 x 18	457 x 457
3	Supply Air Duct Collar	8 x 18	203 x 457
4	Suspension Rods (By Others)	--	--
5	Return Air Filter Box for Condenser	18 x 18	457 x 457
6	In Door Air-cooled Fan Box	--	--
7	Discharge Air Duct Collar	15 3/4 x 15 3/4	400 x 400

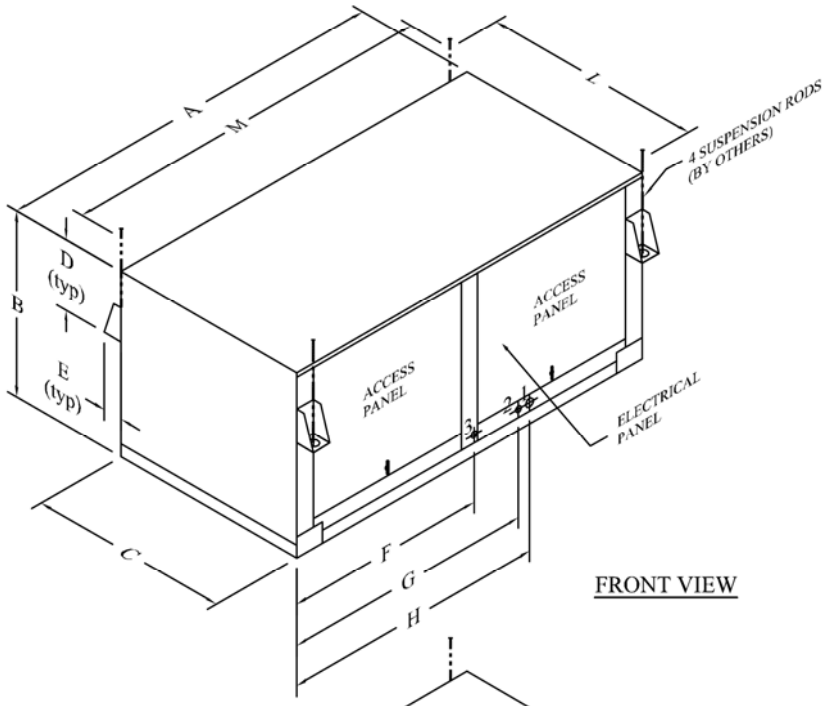
MODELS

Applicable for all Series 11 units, size 10 through 25

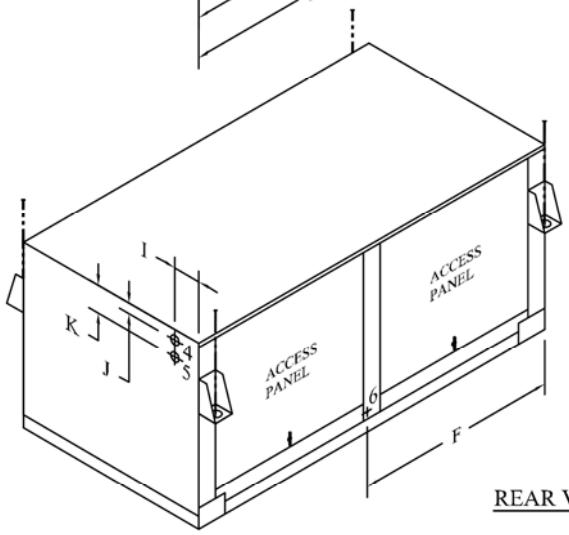
S11DD152B 19 NOVEMBER 2002 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11- CEILING MOUNTED UNIT
SELF-CONTAINED WATER/GLYCOL-COOLED UNIT



FRONT VIEW



REAR VIEW

DIMENSIONAL DATA

ITEM	DIMENSION	
	INCHES	MILLIMETERS
A	46 3/4	1187
B	21 3/4	552
C	23 3/4	603
D	8 1/4	210
E	2 1/4	57
F	24	610
G	30	762
H	31 1/2	800
I	3 1/4	83
J	1 1/4	32
K	3 1/4	83
L	26	660
M	44 1/2	1130

PIPING CONNECTION DATA

ITEM	DIAMETER (O.D.)		DESCRIPTION
	INCHES	MILLIMETERS	
1	1	25	Electrical Power Supply
2	3/4	19	Electrical Control Wiring
3	1	25	Drain Outlet
4	1 1/8	32	Water/Glycol Supply
5	1 1/8	32	Water/Glycol Return
6	1/4	6	Humidifier Water Supply

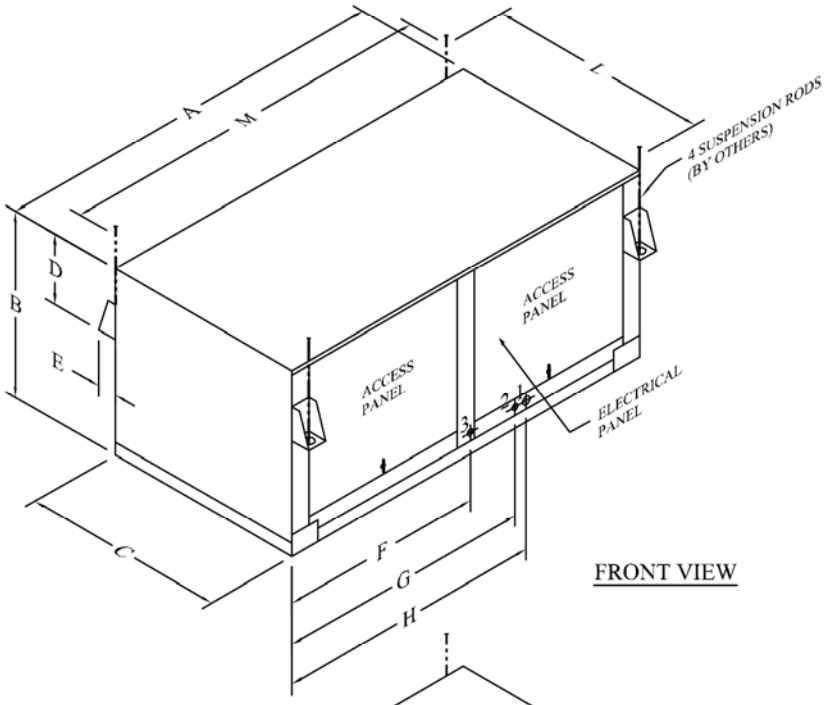
MODELS

11WX10 through 11WX25
11GX10 through 11GX25

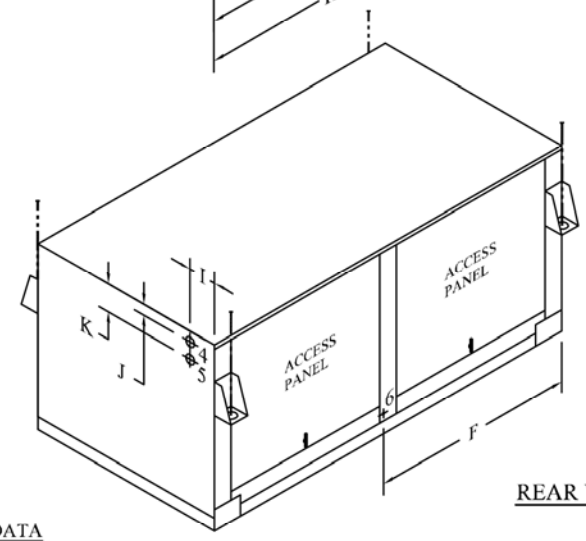
S11DD111C 12 NOVEMBER 2002 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11- CEILING MOUNTED UNIT
CHILLED WATER UNIT



FRONT VIEW



REAR VIEW

DIMENSIONAL DATA

ITEM	DIMENSION	
	INCHES	MILLIMETERS
A	46 3/4	1187
B	21 3/4	552
C	23 3/4	603
D	8 1/4	210
E	2 1/4	57
F	24	610
G	30	762
H	31 1/2	800
I	3 1/4	83
J	1 1/4	32
K	3 1/4	83
L	26	660
M	44 1/2	1130

PIPING CONNECTION DATA

ITEM	DIAMETER (O.D.)		DESCRIPTION
	INCHES	MILLIMETERS	
1	1	25	Electrical Power Supply
2	3/4	19	Electrical Control Wiring
3	1	25	Drain Outlet
4	1 1/8	32	Chilled Water Supply
5	1 1/8	32	Chilled Water Return
6	1/4	6	Humidifier Water Supply

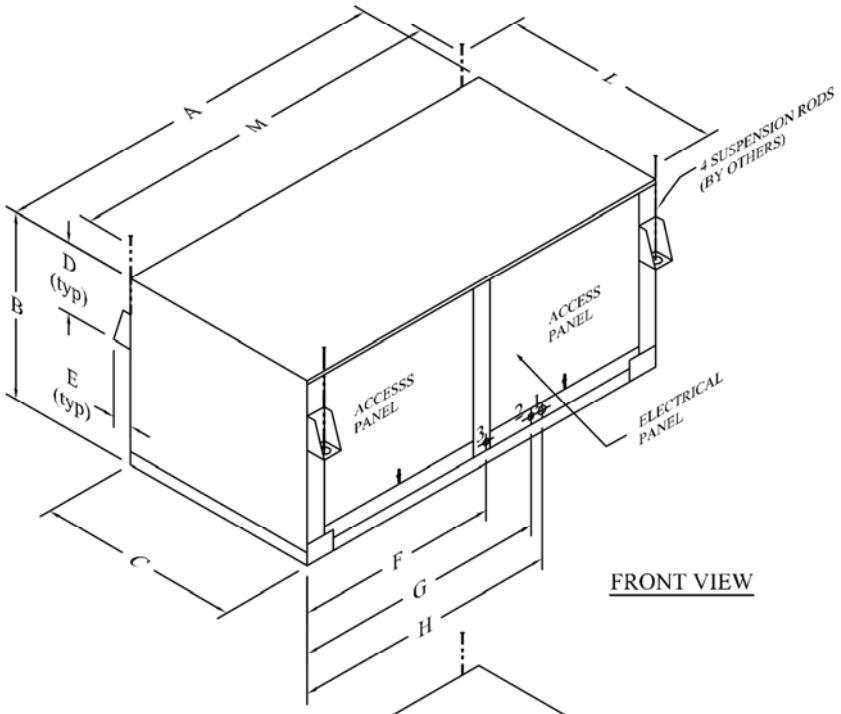
MODELS

11CW10 through 11CW25

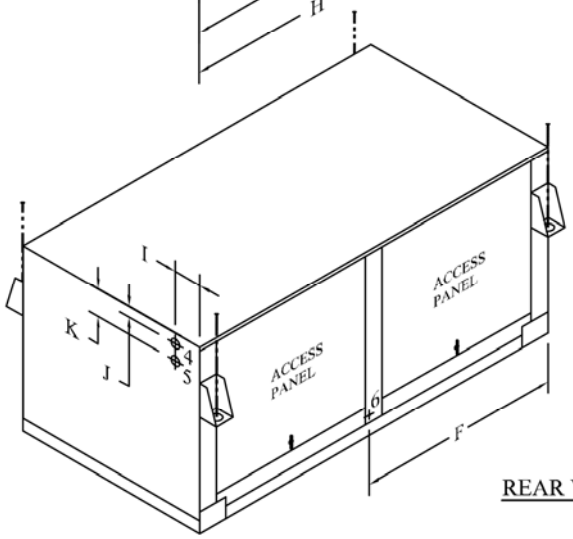
S11DD121C 12 NOVEMBER 2002 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11- CEILING MOUNTED UNIT
INDOOR EVAPORATOR SECTION w/ COMPRESSOR



FRONT VIEW



REAR VIEW

DIMENSIONAL DATA

ITEM	DIMENSION	
	INCHES	MILLIMETERS
A	46 3/4	1187
B	21 3/4	552
C	23 3/4	603
D	8 1/4	210
E	2 1/4	57
F	24	610
G	30	762
H	31 1/2	800
I	3 1/4	83
J	1 1/4	32
K	3 1/4	83
L	26	660
M	44 1/2	1130

PIPING CONNECTION DATA

ITEM	DIAMETER (O.D.)		DESCRIPTION
	INCHES	MILLIMETERS	
1	1	25	Electrical Power Supply
2	3/4	19	Electrical Control Wiring
3	1	25	Drain Outlet
4	3/8	10	Liquid Line
5	1/2	13	Hot Gas Line
6	1/4	6	Humidifier Water Supply

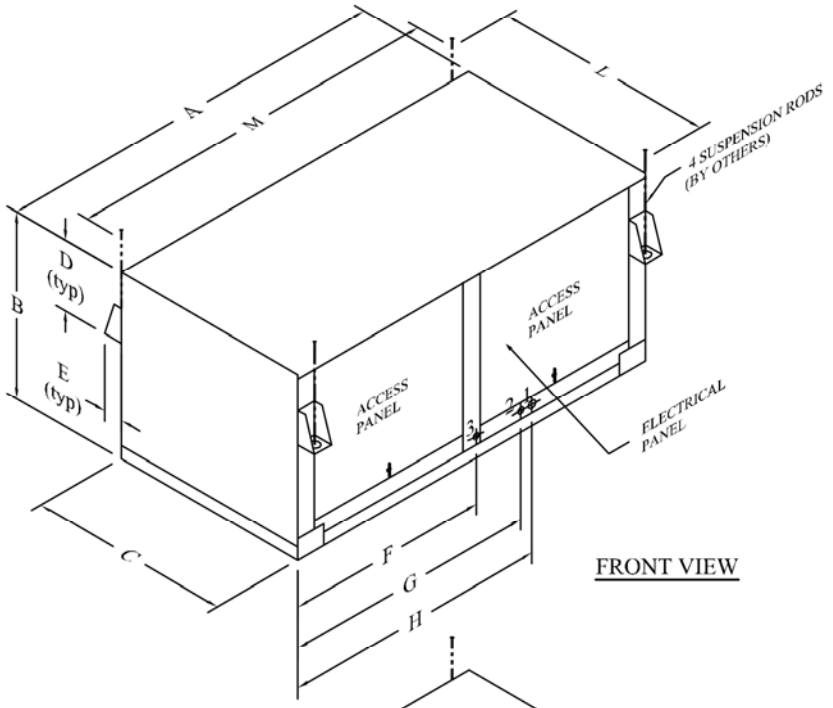
MODELS

11DX10 through 11DX25

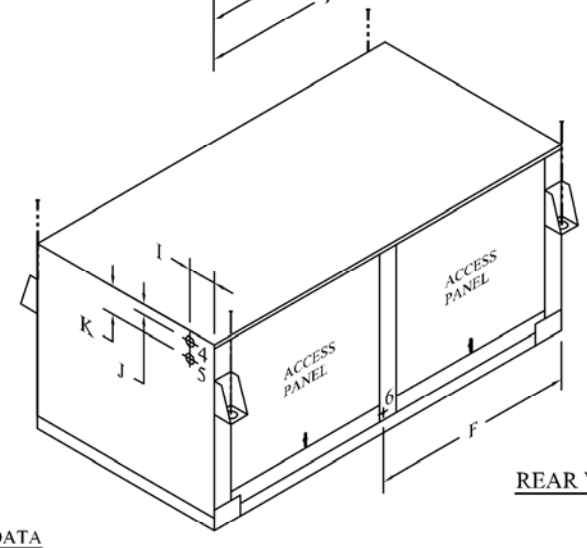
S11DD131C 12 NOVEMBER 2002 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11- CEILING MOUNTED UNIT
INDOOR EVAPORATOR SECTION



FRONT VIEW



REAR VIEW

DIMENSIONAL DATA

ITEM	DIMENSION	
	INCHES	MILLIMETERS
A	46 3/4	1187
B	21 3/4	552
C	23 3/4	603
D	8 1/4	210
E	2 1/4	57
F	24	610
G	30	762
H	31 1/2	800
I	3 1/4	83
J	1 1/4	32
K	3 1/4	83
L	26	660
M	44 1/2	1130

PIPING CONNECTION DATA

ITEM	DIAMETER (O.D.)		DESCRIPTION
	INCHES	MILLIMETERS	
1	1	25	Electrical Power Supply
2	3/4	19	Electrical Control Wiring
3	1	25	Drain Outlet
4	3/8	10	Liquid Line
5	5/8	16	Suction Line
6	1/4	6	Humidifier Water Supply

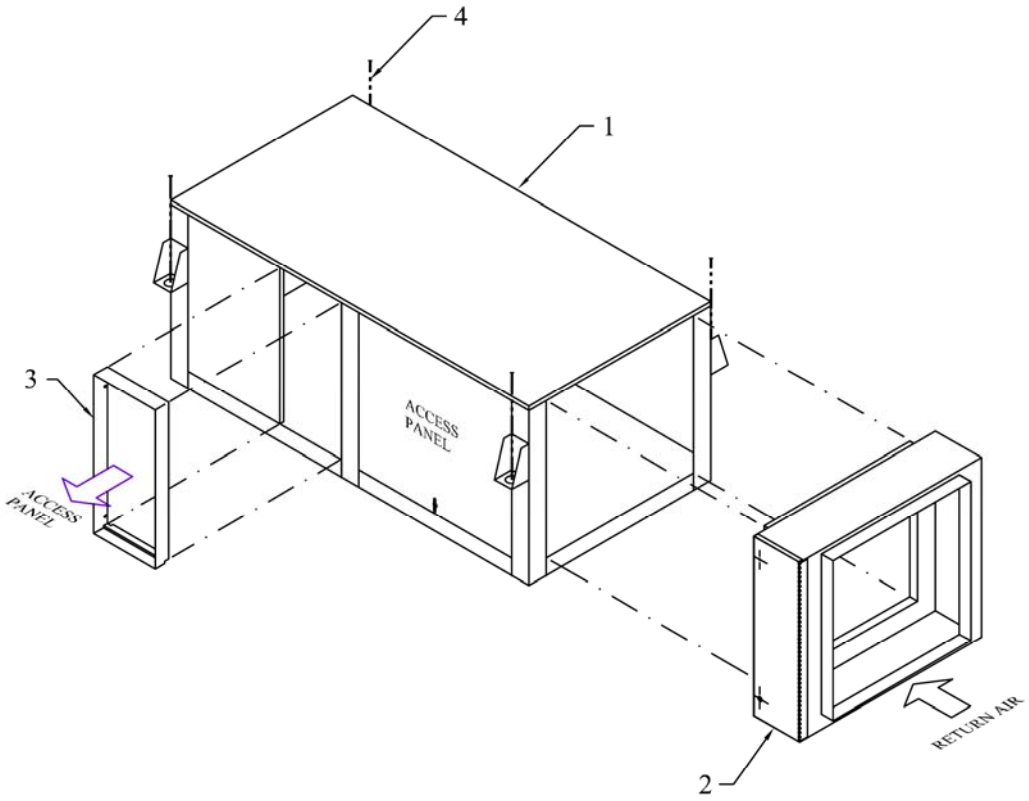
MODELS

11AH10 through 11AH25

S11DD141C 12 NOVEMBER 2002 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11- CEILING MOUNTED UNIT
DUCTED EVAPORATOR CONNECTIONS



REAR VIEW

ITEM	DESCRIPTION	DUCT COLLAR CONNECTION SIZE	
		INCHES	MILLIMETERS
1	Main Unit	--	--
2	Return Air Filter Box	18 x 18	457 x 457
3	Supply Air Duct Collar	8 x 18	203 x 457
4	Suspension Rods (By Others)	--	--

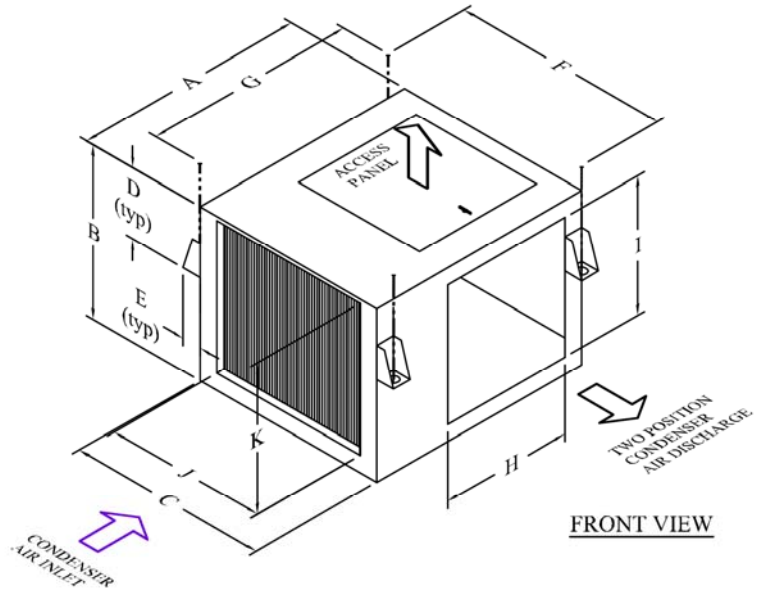
MODELS

Applicable for all Series 11 units, size 10 through 25

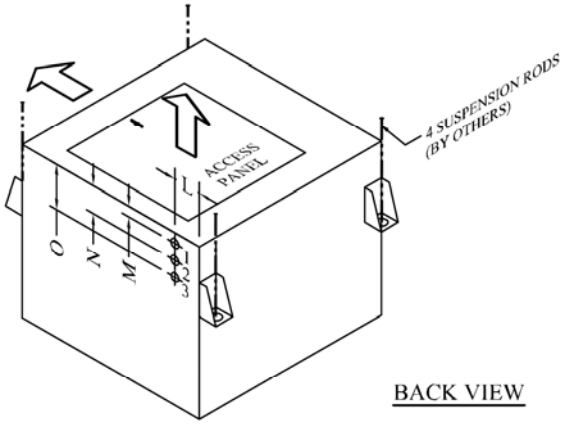
S11DD151C 12 NOVEMBER 2002 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11- CEILING MOUNTED UNIT
INDOOR CONDENSING UNIT/ CONDENSER



FRONT VIEW



BACK VIEW

DIMENSIONAL DATA

ITEM	DIMENSION	
	INCHES	MILLIMETERS
A	24 1/2	622
B	20 1/4	514
C	23 3/4	603
D	8 1/4	210
E	2 1/4	57
F	26	660
G	25 1/4	641
H	20	508
I	17 1/4	438
J	19 1/4	489
K	17 3/4	451
L	3 1/4	83
M	1 1/4	32
N	3 1/4	83
O	5 1/4	133

PIPING CONNECTION DATA

ITEM	DIAMETER (O.D.)		DESCRIPTION
	INCHES	MILLIMETERS	
1	3/8	10	Liquid Line
2	1/2	13	Discharge Line
	5/8	16	Suction Line
3	1	25	Electrical Power Supply

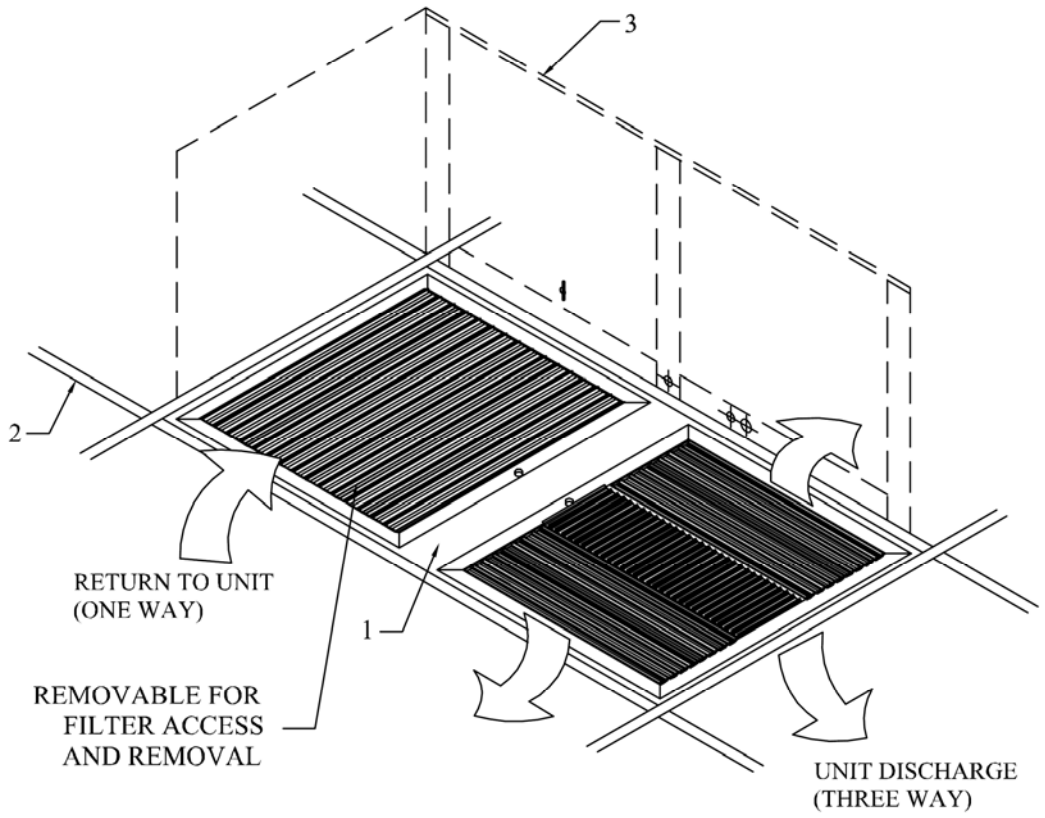
MODELS

11RC10 Through 11RC25
11RU10 Through 11RU25

S11DD161B 21 NOVEMBER 2002 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11- CEILING MOUNTED UNIT GRILLE AIR DISTRIBUTION



FRONT VIEW

ITEM	DESCRIPTION
1	Grille
2	Suspension T- Bar
3	Main Unit

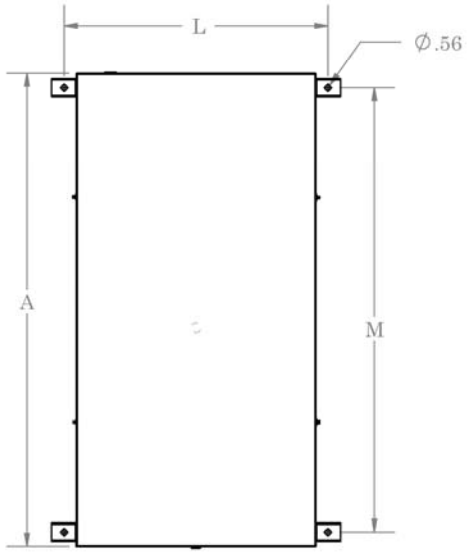
MODELS

Avaliable for all Series 11 units, Size 10 through 25

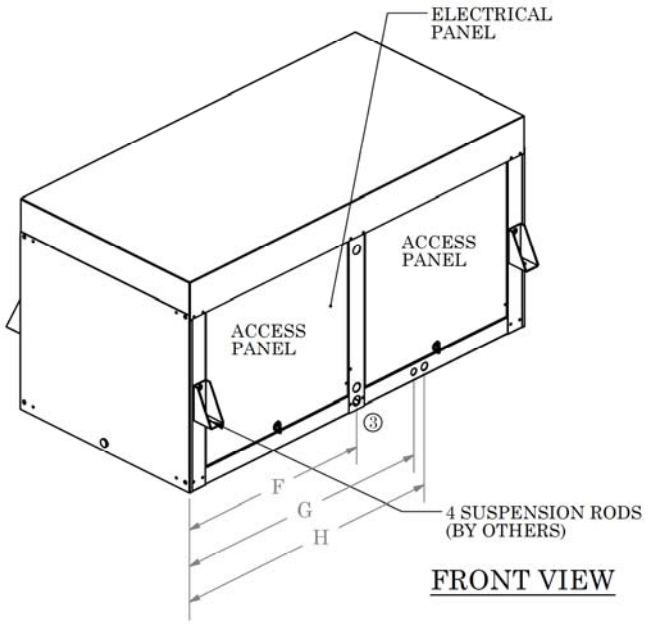
S11DD171B 07 FEBRUARY 2003 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

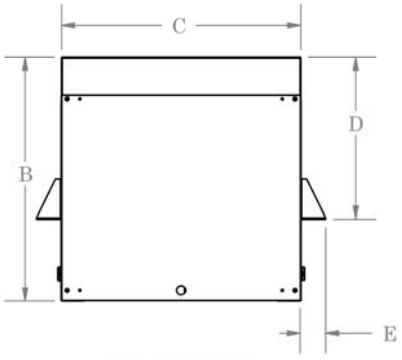
SERIES 11, 3 TONS - CEILING MOUNTED UNIT
BOTTOM SUPPLY - BOTTOM RETURN



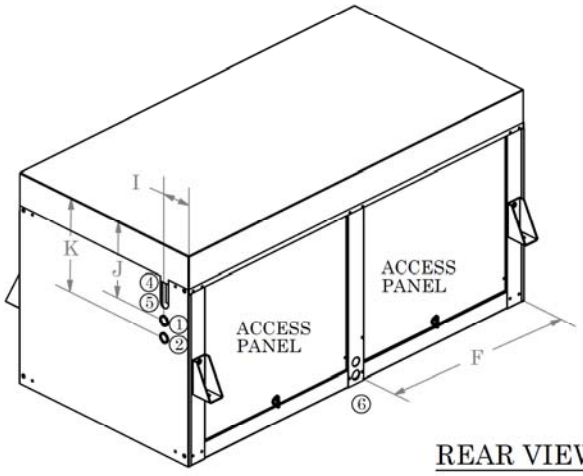
TOP VIEW



FRONT VIEW



SIDE VIEW



REAR VIEW

ITEM	DIMENSION	
	INCHES	MILLIMETERS
A	46 3/4	1187
B	24	610
C	23 3/4	603
D	16	406
E	2 1/2	64
F	23 1/2	597
G	31 1/2	800
H	33	838
I	3 1/4	83
J	8 3/4	222
K	10 3/4	273
L	26	660
M	44	1118

MODELS

11DX30, 11WX30
11CW30, 11GX30
11AH30

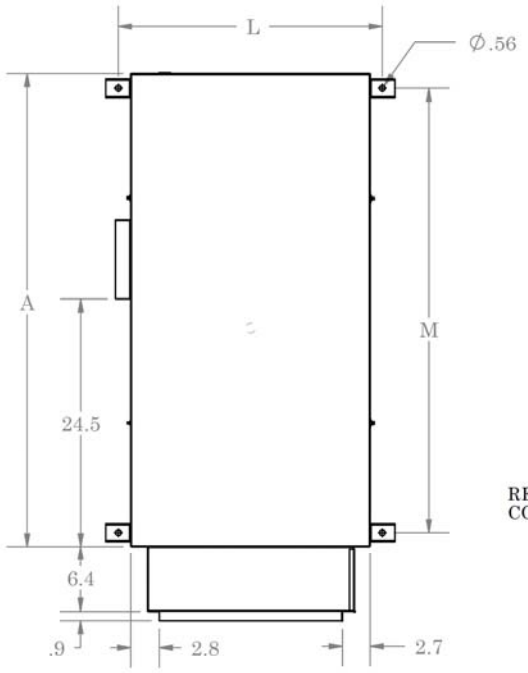
ITEM	DIAMETER (OD)		DESCRIPTION
	INCHES	MILLIMETERS	
1	1/2 - 3/4	12 - 19	Electrical Power Supply
2	1/2 - 3/4	12 - 19	Electrical Control Wiring
3	3/4	19	Drain Outlet Bottom
4	7/8 DIA	22	Condenser Water/Glycol Supply
	1/2 DIA	12	Liquid line
	7/8 DIA	22	Chilled Water Supply
5	7/8 DIA	22	Condenser Water/Glycol Return
	7/8 DIA	22	Suction line
	5/8 DIA	16	Hot gas line
	7/8 DIA	22	Chilled Water Return
6	1/4 SUPPLY LINE	6	Humidifier Water Supply

File Location: V:\CANATAL\Series 11 BMP drawings\SUBMITTAL DRAWINGS\

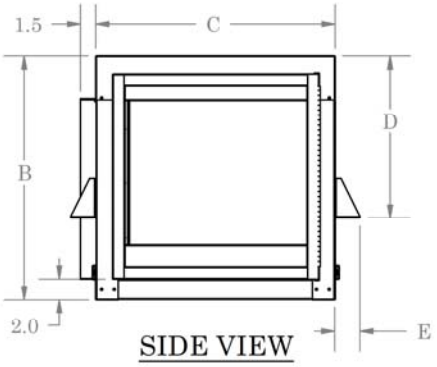
S11D-BB-300 **25 JUNE 2010** **NOT TO SCALE**

CLIMATEWORX INTERNATIONAL

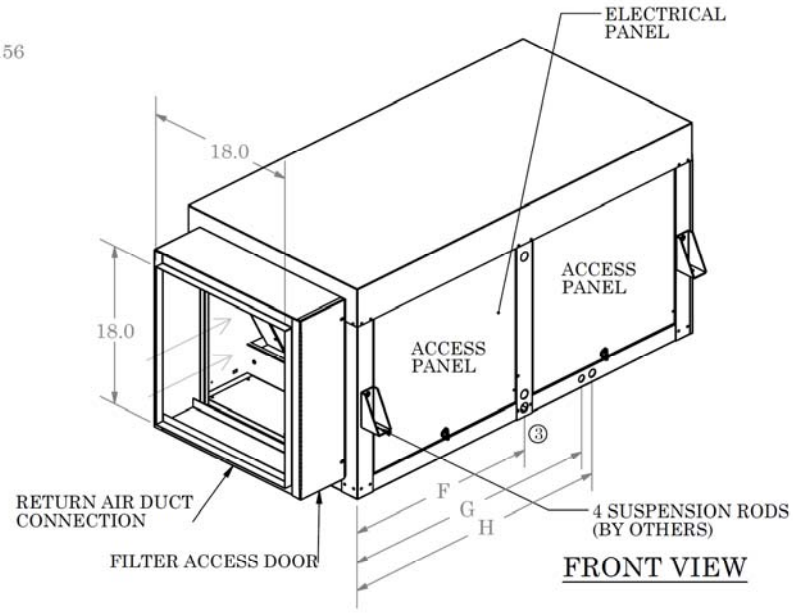
SERIES 11, 3 TONS - CEILING MOUNTED UNIT
DUCTED SUPPLY - DUCTED RETURN



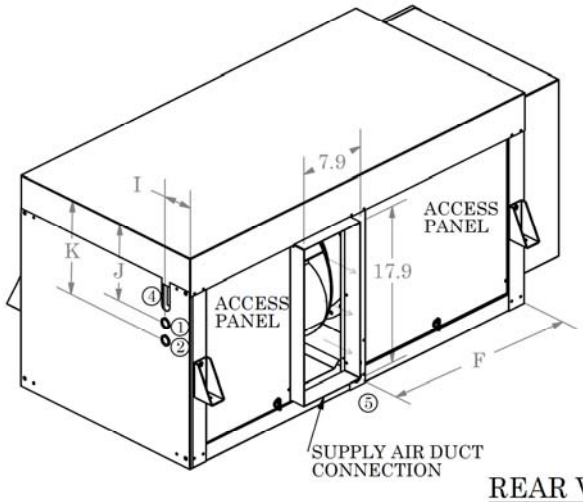
TOP VIEW



SIDE VIEW



FRONT VIEW



REAR VIEW

ITEM	DIMENSION	
	INCHES	MILLIMETERS
A	46 3/4	1187
B	24	610
C	23 3/4	603
D	16	406
E	2 1/2	64
F	23 1/2	597
G	31 1/2	800
H	33	838
I	3 1/4	83
J	8 3/4	222
K	10 3/4	273
L	26	660
M	44	1118

MODELS

11DX30, 11WX30
11CW30, 11GX30
11AH30

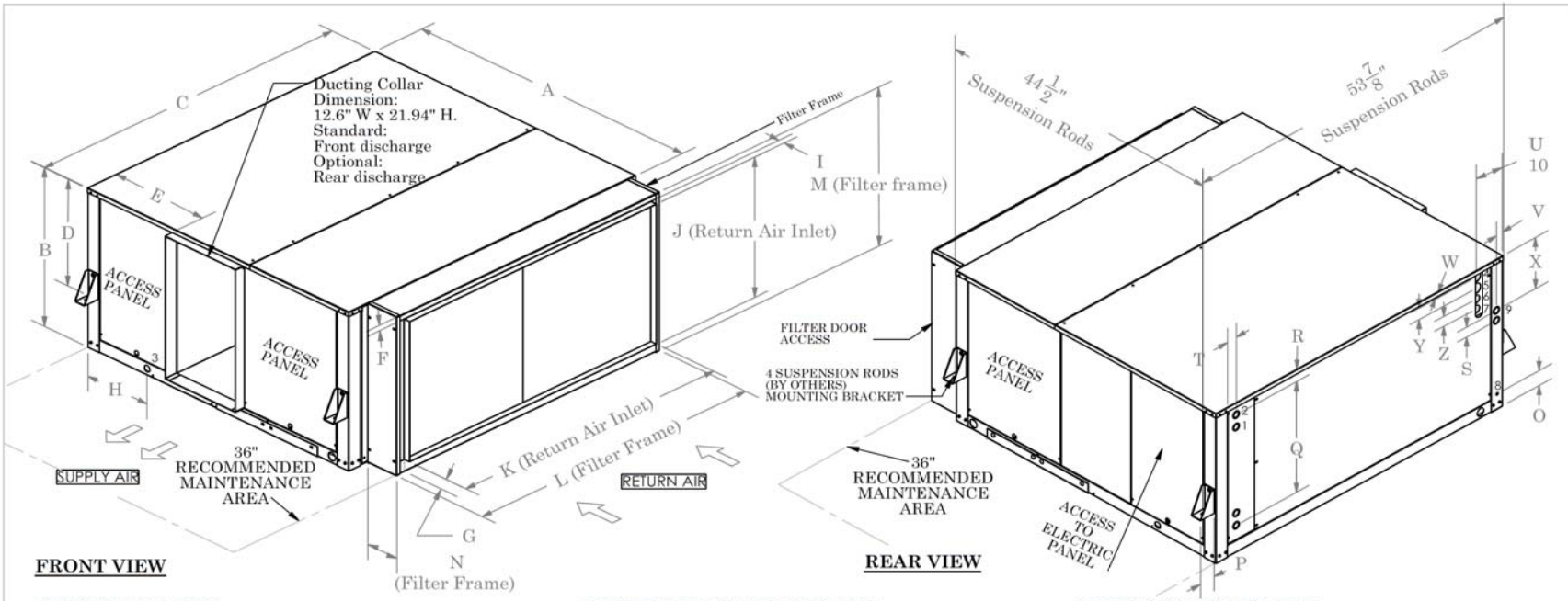
ITEM	DIAMETER (OD)		DESCRIPTION
	INCHES	MILLIMETERS	
1	1/2 - 3/4	12 - 19	Electrical Power Supply
2	1/2 - 3/4	12 - 19	Electrical Control Wiring
3	3/4	19	Drain Outlet Bottom
4	7/8 DIA	22	Condenser Water/Glycol Supply
	1/2 DIA	12	Liquid line
	7/8 DIA	22	Chilled Water Supply
	7/8 DIA	22	Condenser Water/Glycol Return
	7/8 DIA	22	Suction line
	5/8 DIA	16	Hot gas line
	7/8 DIA	22	Chilled Water Return
5	1/4 SUPPLY LINE	6	Humidifier Water Supply

File Location: V:\CANATAL\Series 11 BMP drawings\SUBMITTAL DRAWINGS\

S11D-DD-300 **26 MAY 2010** **NOT TO SCALE**

CLIMATEWORX INTERNATIONAL

SERIES 11 - CEILING MOUNT UNIT
4 & 5 TON



DIMENSIONAL DATA

ITEM	DIMENSION		ITEM	DIMENSION	
	INCHES	MILLIMETERS		INCHES	MILLIMETERS
A	46 3/4	1187	N	5 3/8	137
B	24 1/2	622	O	2 1/2	64
C	51 1/2	1308	P	2 1/2	64
D	16 3/8	416	Q	18	457
E	15 3/8	391	R	2	51
F	7/8	22	S	1 5/8	41
G	2	51	T	1 1/2	38
H	10 1/2	267	U	4 3/8	111
I	1	25	V	1 1/8	29
J	21 1/2	546	W	1 5/8	41
K	44 1/8	1121	X	8 1/4	210
L	47	1194	Y	1 7/8	48
M	24 3/8	619	Z	1 5/8	41

ELECTRICAL CONNECTION DATA

ITEM	DIAMETER (O.D.)		DESCRIPTION
	INCHES	MILLIMETERS	
1	1/2 - 3/4	12 - 25	Electrical Power Supply
2	1/2 - 3/4	12 - 25	Electrical Control Wiring

MODELS

11AH40	11AH50
11WX40	11WX50
11GX40	11GX50
11DX40	11DX50
11FX40	11FX50
11CW40	11CW50
11AD40	11AD50
11WD40	11WD50
11GD40	11GD50

PIPING CONNECTION DATA

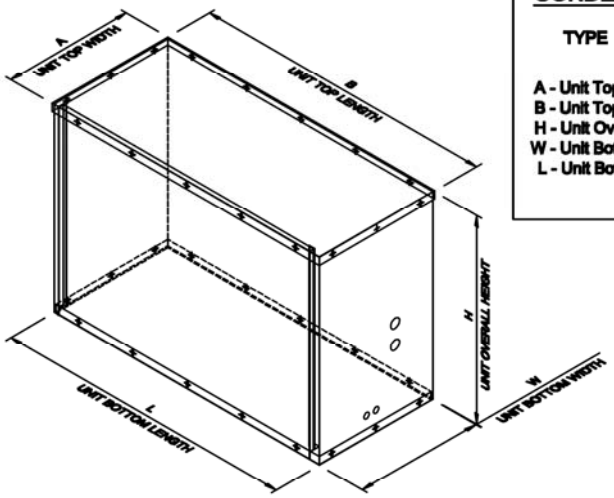
ITEM	DIAMETER (O.D.)		DESCRIPTION
	INCHES	MILLIMETERS	
3	3/4	19	Humidifier & Condesate Drain Outlet*
4	1/2	13	Liquid Line
	1 1/8	29	Condenser Water Supply
	1 1/8	29	Condenser Glycol Supply
5	5/8	16	Hot Gas Line
	1 1/8	29	Condenser Water Return
	1 1/8	29	Condenser Glycol Return
6	1 1/8	29	Chilled Water Supply
7	1 1/8	29	Chilled Water Return
8	1/4	6	Humidifier Supply Line
9	5/8	16	Reheat Coil Water Supply
10	5/8	16	Reheat Coil Water Return

* UNITS WITH HIGH TEMPERATURE, HIGH LIFT CONDENSATE PUMP HAS 3/8" OD.

S11DD501A | 30 SEPTEMBER 2009 | NOT TO SCALE

CLIMATEWORX INTERNATIONAL

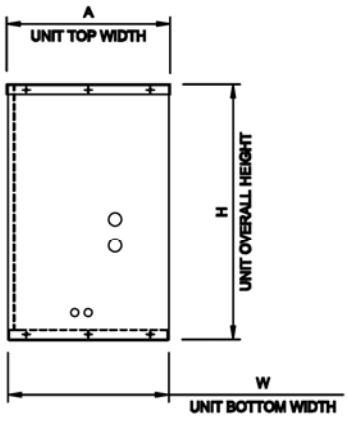
SERIES 11 - DIMENSIONAL DETAIL
WATER/GLYCOL COOLED CONDENSING UNIT



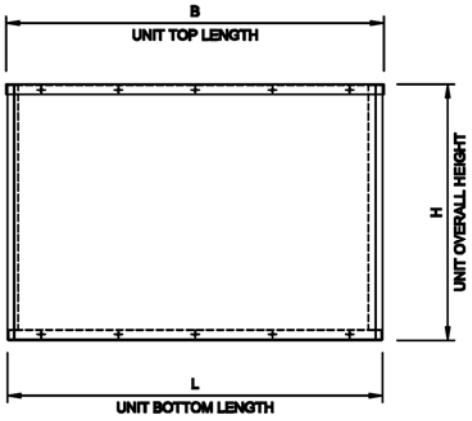
CONDENSER DIMENSIONS

TYPE	WATER COOLED	GLYCOL COOLED	4 & 5 TON WATER/GLYCOL COOLED
A - Unit Top Width	13-3/4"	13-3/4"	13-3/4"
B - Unit Top Length	25-1/4"	28-1/4"	34-1/4"
H - Unit Overall Height	16"	19"	22"
W - Unit Bottom Width	12"	12"	12"
L - Unit Bottom Length	25"	28"	34"

ISOMETRIC DETAIL



SIDE PANEL DETAIL



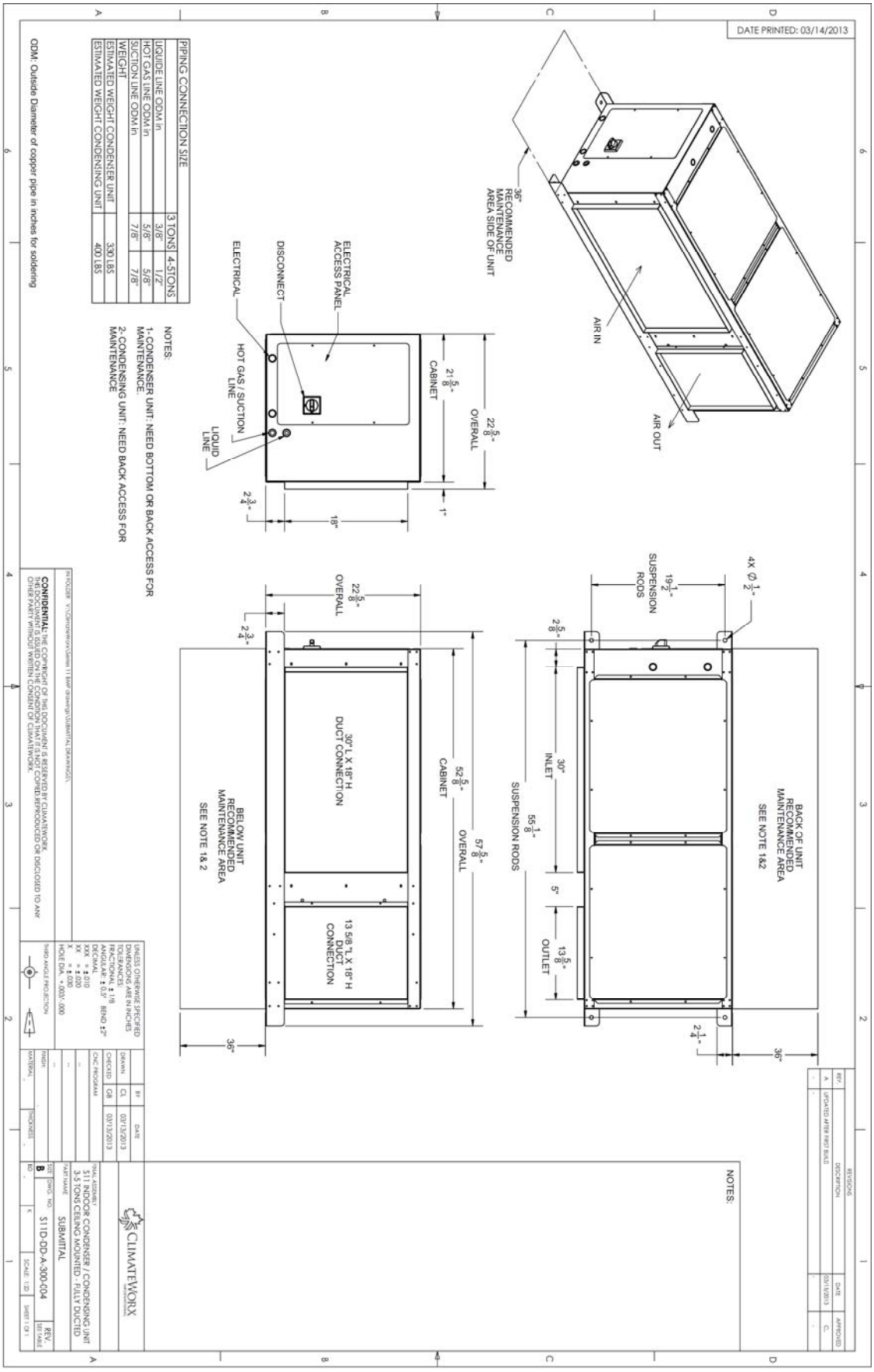
FRONT PANEL DETAIL

PIPING CONNECTION SIZE

MODEL NO. SUFFIX		11WC10-25	11WC40-50	11GC10-25	11GC40-50
Liquid Line	-ODM in	3/8"	1/2"	3/8"	1/2"
Suction Line	-ODM in	5/8"	3/4"	5/8"	3/4"
Condenser Water	-ODM in	7/8"	1 1/8"	-	-
Glycol Solution	-ODM in	-	-	7/8"	1 5/8"

ODM - Outside Diameter of copper pipe in inches for soldering

S11DD301B | 9 DECEMBER 2009 | NOT TO SCALE



PIPING CONNECTION SIZE		
	3 TONS	4-5TONS
LIQUIDE LINE ODM in	3/8"	1/2"
HOT GAS LINE ODM in	5/8"	5/8"
SUCTION LINE ODM in	7/8"	7/8"
WEIGHT		
ESTIMATED WEIGHT CONDENSER UNIT	330 LBS	
ESTIMATED WEIGHT CONDENSING UNIT	400 LBS	

NOTES:

1- CONDENSER UNIT: NEED BOTTOM OR BACK ACCESS FOR MAINTENANCE.

2- CONDENSING UNIT: NEED BACK ACCESS FOR MAINTENANCE

ODM: Outside Diameter of copper pipe in inches for soldering

REV	DESCRIPTION	DATE	APPROVED
A	UPDATED AFTER FIRST BUILD	03/13/2013	CL

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	BY	DATE
DRAWN	CL	03/13/2013
CHECKED	GB	03/13/2013
CNC PROGRAM		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ± 1/8
ANGULAR: ± 0.5° BEND ± 2°
DECIMAL
X ± .010
XX ± .005
XXX ± .030
HOLE DIA. +.003/-.000

THIRD ANGLE PROJECTION

MATERIAL
FINISH
THICKNESS

CLIMATEWORX

FINAL ASSEMBLY
S11 INDOOR CONDENSER / CONDENSING UNIT
3-5 TONS CEILING MOUNTED - FULLY DUCTED

PART NAME
SUBMITTAL

SIZE B | DWG. NO. S11D-DD-A-300-004 | REV. SEE TABLE

SCALE: 1:20 | SHEET 1 OF 1

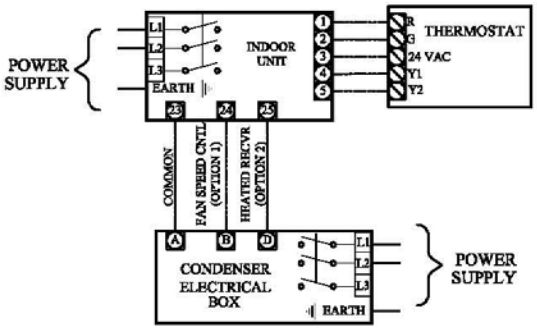
Appendix B: Electrical Schematic Drawings

Drawing Title	Drawing No.
Electrical Schematic with standard thermostat	S11EDN105
Electric Schematic Packaged Air-Cooled – General,	ES9005
Electric Schematic Air-Cooled Condensing Unit – General,	ES9020
Electric Schematic Air-Cooled Condenser– General,	ES9030
Electric Schematic Water/ Glycol-Cooled – General,	ES9065
Electric Schematic Chilled Water – General,	ES9050
Electric Schematic Dual Cooling Air – General,	ES9030
Electric Schematic Dual Cooling Water or Glycol – General,	ES9040
Electric Schematic Free Cooling – General,	ES9070
Electric Schematic – Field Wiring Standby Start/ Standby Enable, For automatic change over	M52ES05
Electric Schematic – Co-Work I2C Interconnection Link	M52ES1003
Electric Schematic – RS485 ModBus RTU Connection, Serial Communication Link	M52ES1004
Electric Schematic – Embedded Connection, Serial to Serial or Ethernet Communication Link remote power	M52ES1005
Electric Schematic – Embedded Connection, Serial to Serial or Ethernet Communication Link factory power	M52ES1006

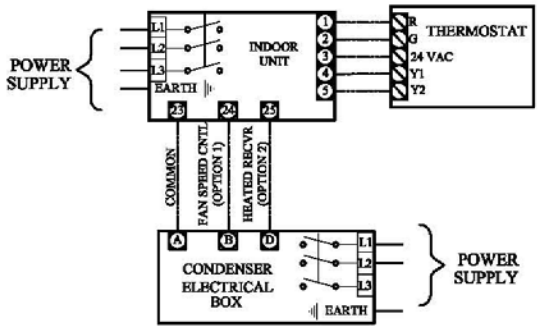
CLIMATEWORX INTERNATIONAL

SERIES 11 - GENERAL ELECTRICAL CONTROL PANEL DIAGRAM
MASTER - THERMOSTAT INDOOR UNIT WITH CONDENSER/CONDENSING UNIT

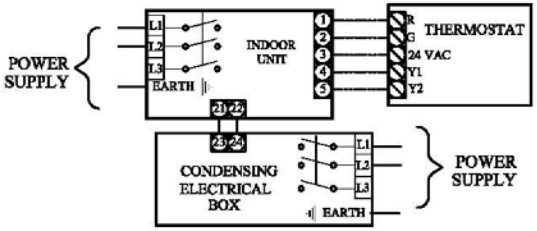
SINGLE PHASE WITH KS11 CONDENSER



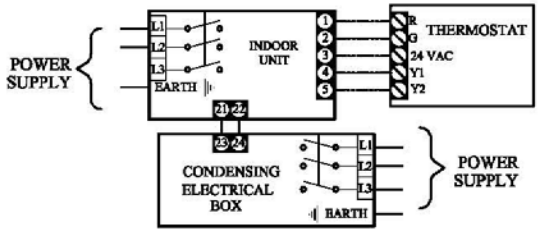
THREE PHASE WITH KS11 CONDENSER



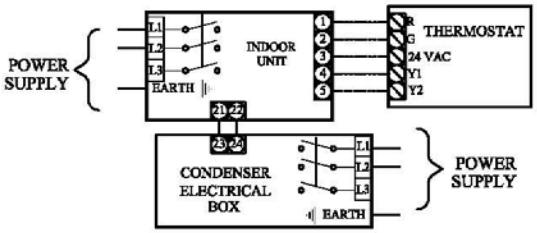
SINGLE PHASE WITH CONDENSING UNIT



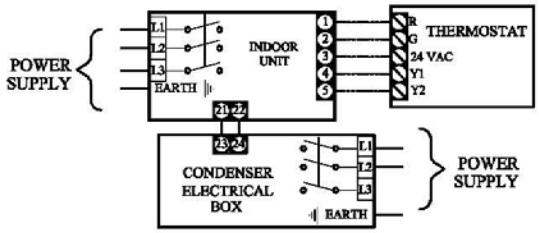
SINGLE PHASE WITH THREE PHASE CONDENSING UNIT



SINGLE PHASE WITH CONDENSER (RC/RU/AC/AR)



THREE PHASE WITH CONDENSER (RC/RU/AC/AR)



LEGEND

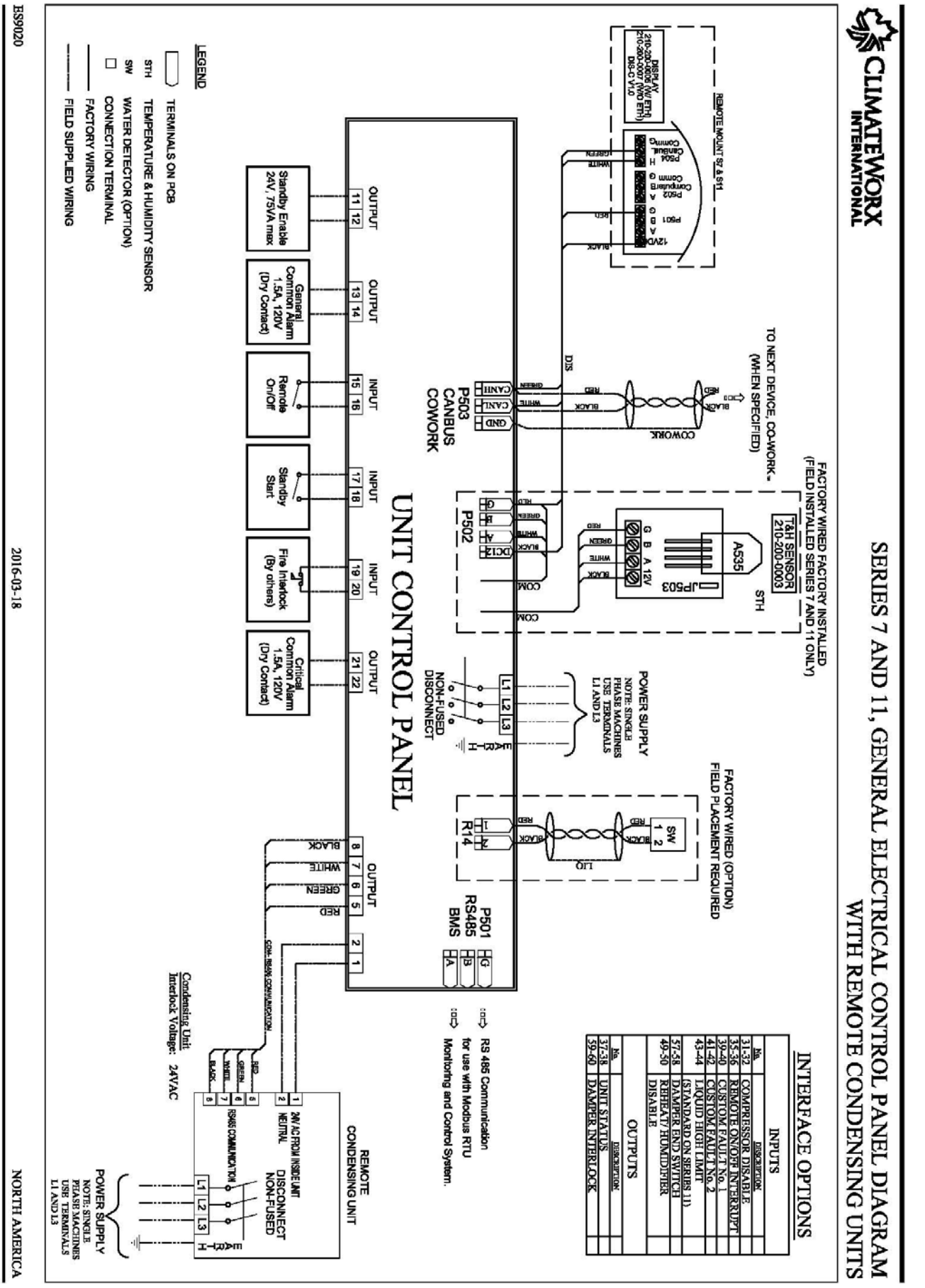
□ CONNECTION TERMINAL

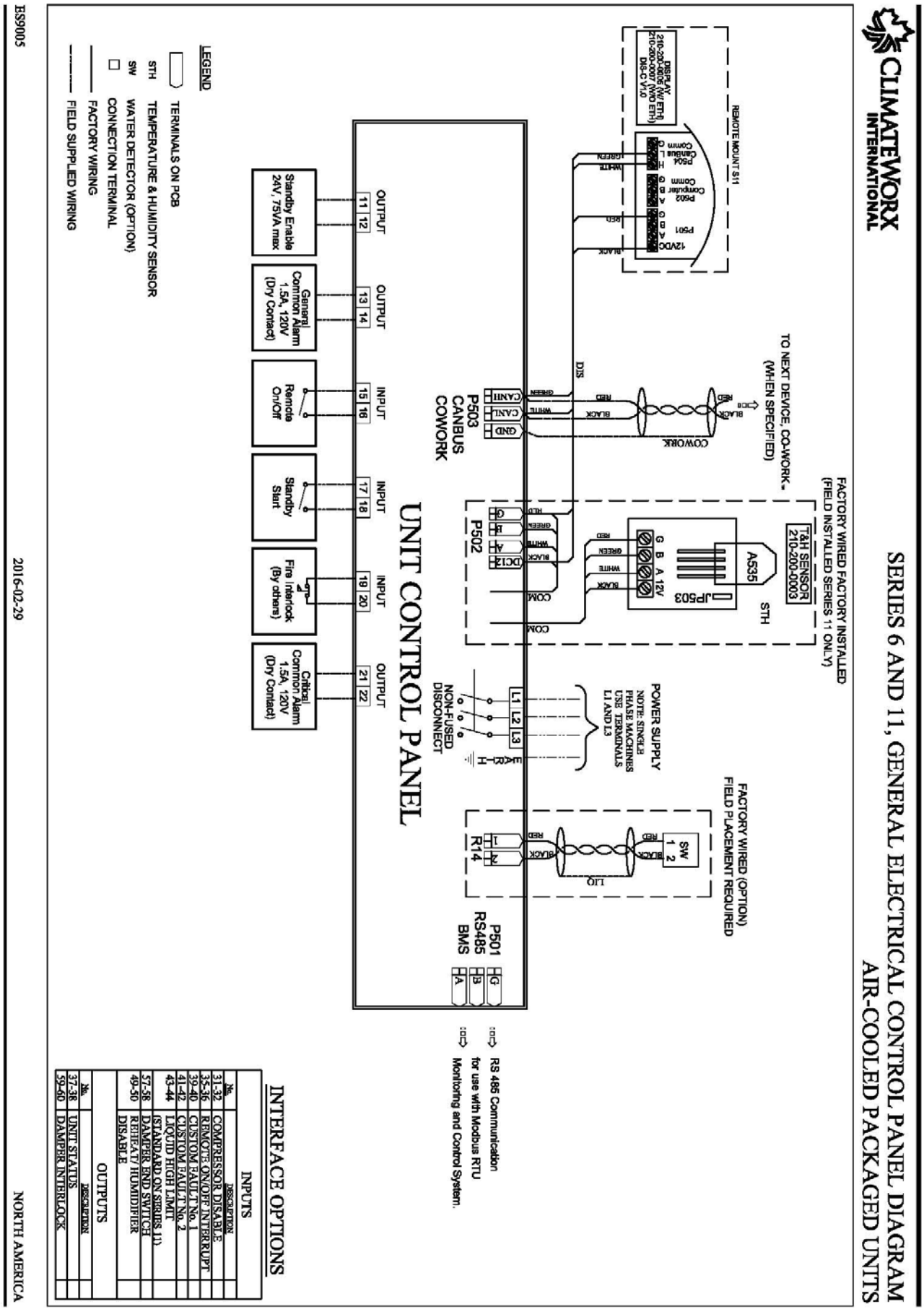
---------- FIELD SUPPLIED LINE VOLTAGE WIRING

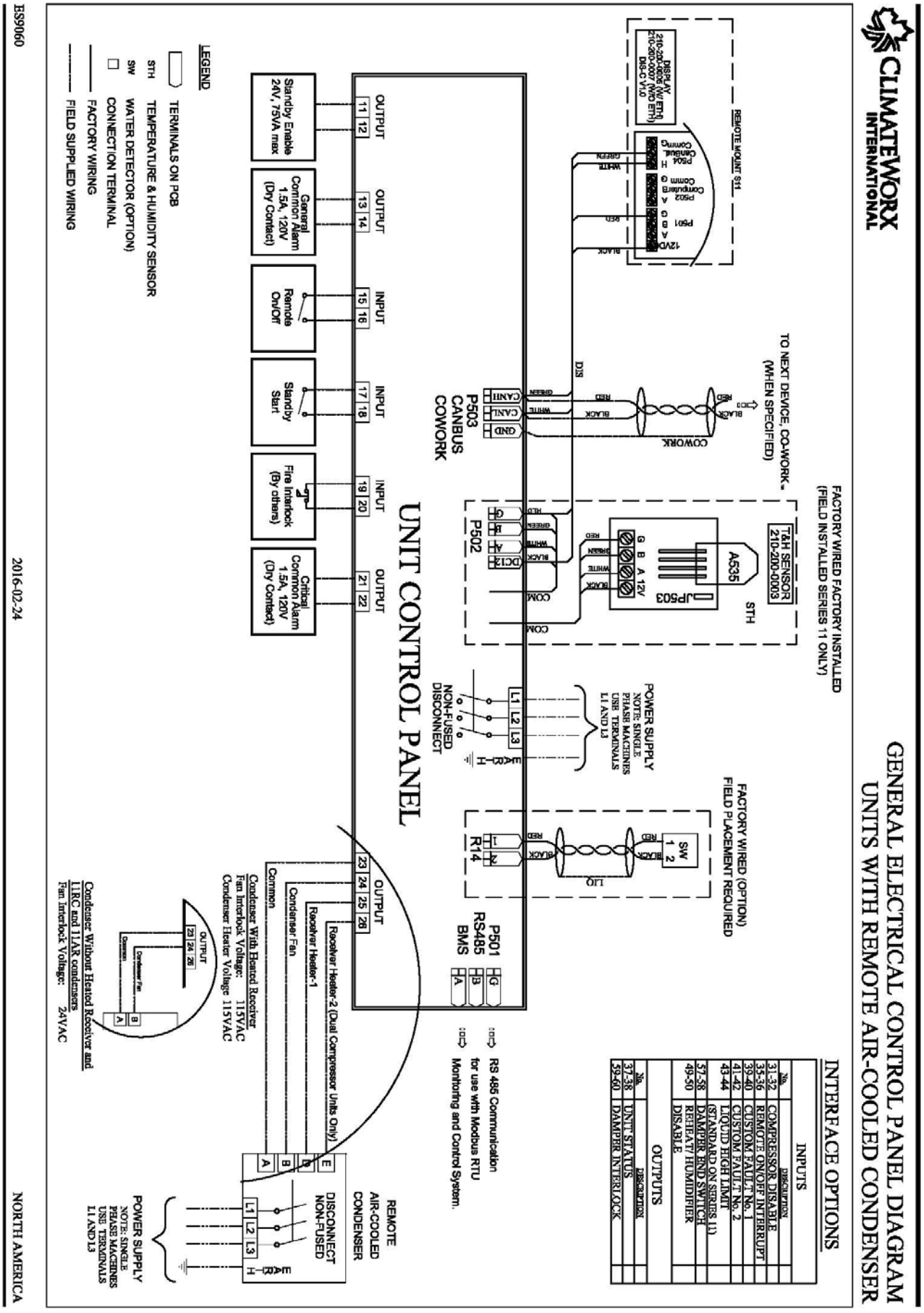
INTERCONNECTING WIRES	
THERMOSTAT	24VAC
FAN SPEED CONTROL	24 VAC
HEATED RECEIVER KS11	115 VAC
HEATED RECEIVER RU/AC/RC/AR	24 VAC

S11EDN105

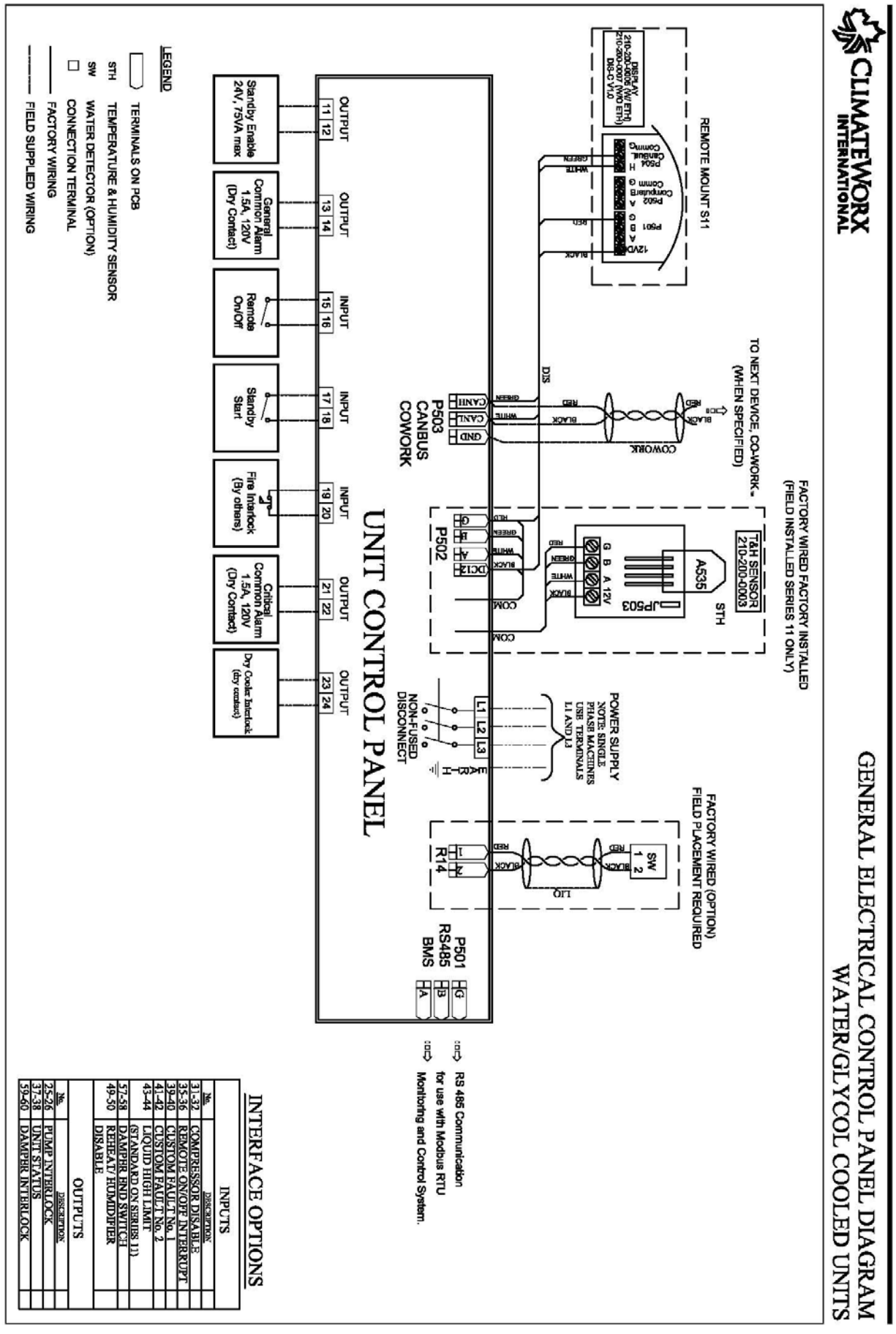
2015-04-17

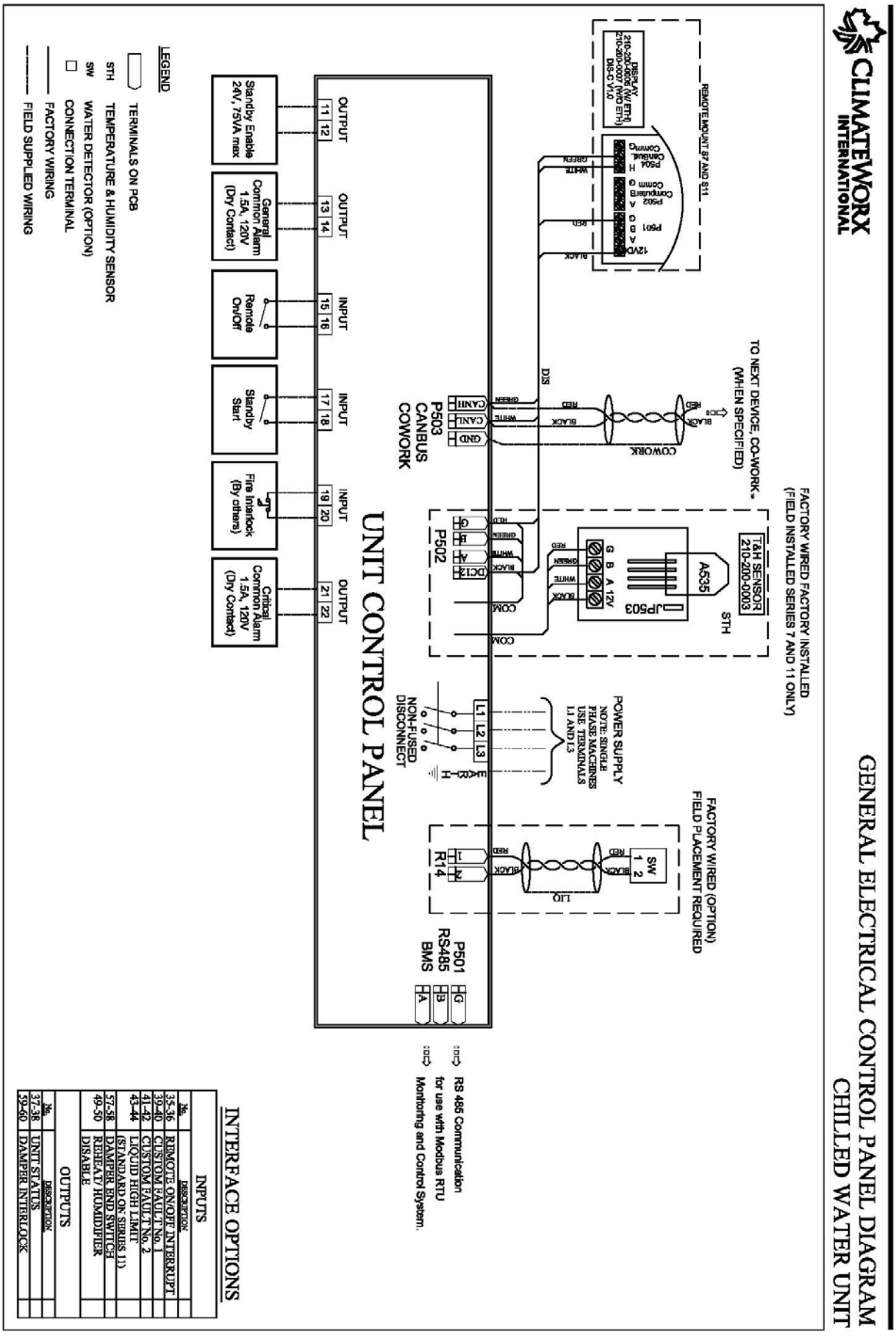

CLIMATEWORX INTERNATIONAL
SERIES 7 AND 11, GENERAL ELECTRICAL CONTROL PANEL DIAGRAM
WITH REMOTE CONDENSING UNITS
UNIT CONTROL PANEL
FACTORY WIRED FACTORY INSTALLED
(FIELD INSTALLED SERIES 7 AND 11 ONLY)
TO NEXT DEVICE, CO-WORK -
(WHEN SPECIFIED)
REMOTE MOUNT S7 & S11
DISPLAY
210-200-0006 (W/ ETH)
210-200-0007 (W/O ETH)
DIS-C V1.0
P504 CANbus Comm
P502 CompuBus Comm
P501
12VDC
T&H SENSOR
210-200-0003
STH
A535
JP503
P502
P503
CANBUS
COWORK
CANH
CANL
GND
COWORK
COM
DC12
FACTORY WIRED (OPTION)
FIELD PLACEMENT REQUIRED
SW
R14
LIQ
POWER SUPPLY
NOTE: SINGLE PHASE MACHINES USE TERMINALS L1 AND L3
NON-FUSED DISCONNECT
L1
L2
L3
P501
RS485
BMS
RS 485 Communication for use with Modbus RTU Monitoring and Control System.
OUTPUT
INPUT
Standby Enable 24V, 75VA max
General Common Alarm 1.5A, 120V (Dry Contact)
Remote On/Off
Standby Start
Fire Interlock (By others)
Critical Common Alarm 1.5A, 120V (Dry Contact)
BLACK
WHITE
GREEN
RED
COM- REMOTE COMMUNICATION
Condensing Unit
Interlock Voltage: 24VAC
24V AC FROM INSIDE UNIT
NEUTRAL
DISCONNECT
NON-FUSED
RS485 COMMUNICATION
REMOTE
CONDENSING UNIT
POWER SUPPLY
NOTE: SINGLE PHASE MACHINES USE TERMINALS L1 AND L3
INTERFACE OPTIONS
INPUTS
No.
DESCRIPTION
31-32 COMPRESSOR DISABLE
33-36 REMOTE ON/OFF INTERRUPT
39-40 CUSTOM FAULT No. 1
41-42 CUSTOM FAULT No. 2
43-44 LIQUID HIGH LIMIT (STANDARD ON SERIES 11)
57-58 DAMPER END SWITCH
49-50 REHEAT/ HUMIDIFIER DISABLE
OUTPUTS
No.
DESCRIPTION
37-38 UNIT STATUS
59-60 DAMPER INTERLOCK
LEGEND
TERMINALS ON PCB
STH TEMPERATURE & HUMIDITY SENSOR
SW WATER DETECTOR (OPTION)
CONNECTION TERMINAL
FACTORY WIRING
FIELD SUPPLIED WIRING
ES9020
2016-03-18
NORTH AMERICA

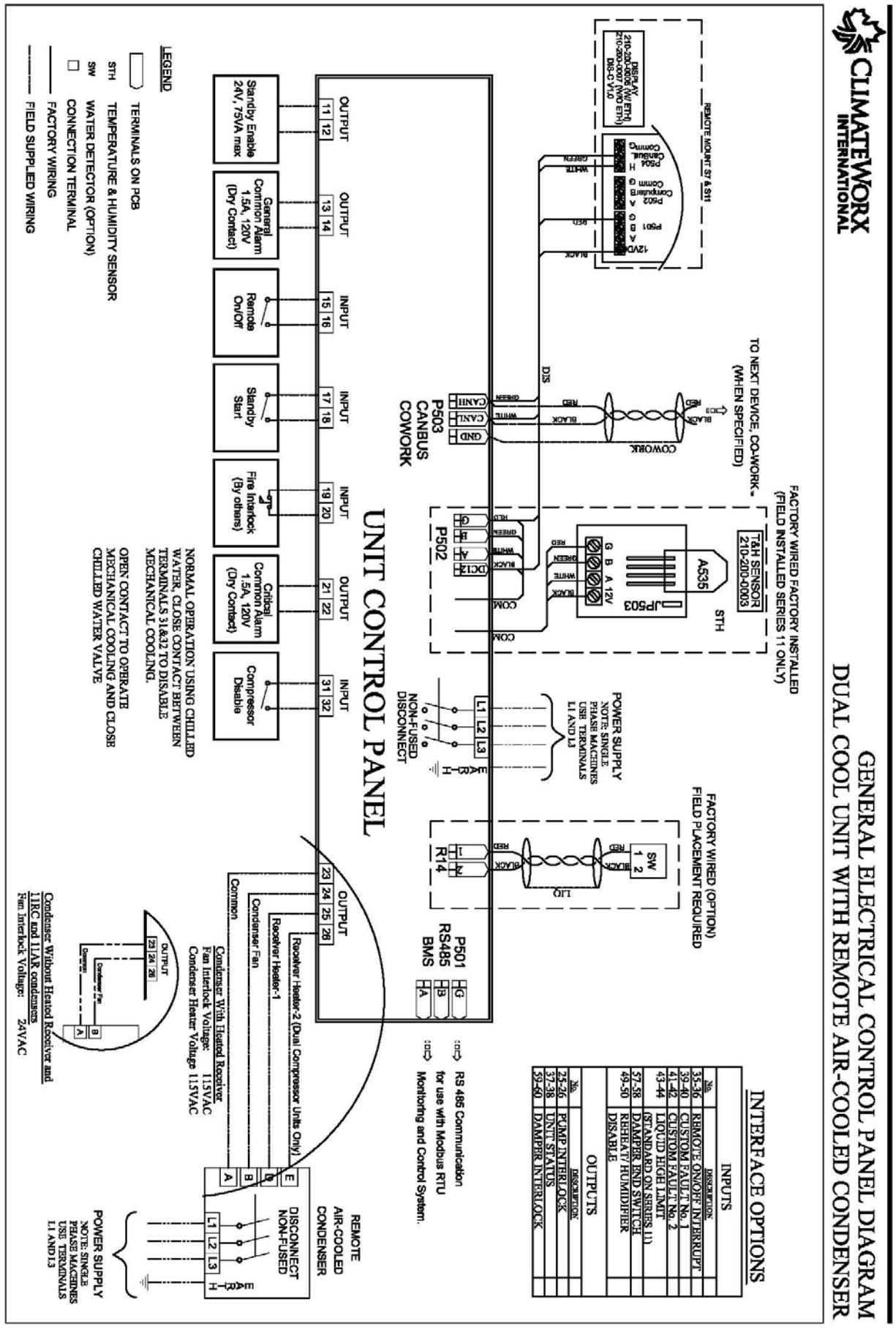

CLIMATEWORX INTERNATIONAL
SERIES 6 AND 11, GENERAL ELECTRICAL CONTROL PANEL DIAGRAM
AIR-COOLED PACKAGED UNITS
FACTORY WIRED FACTORY INSTALLED
(FIELD INSTALLED SERIES 11 ONLY)
TO NEXT DEVICE, CO-WORK
(WHEN SPECIFIED)
REMOTE MOUNT S11
DISPLAY 210-200-0006 (W/ ETH) 210-200-0007 (W/O ETH) DIS-C V1.0
P504 Comm
P502 Computer Comm
P501 12VDC
T&H SENSOR 210-200-0003
A535
STH
JP503
G B A 12V
P502
P503 CANBUS COWORK
CANH
CANL
GND
COWORK
DIS
UNIT CONTROL PANEL
POWER SUPPLY
NOTE: SINGLE PHASE MACHINES USE TERMINALS L1 AND L3
L1 L2 L3
NON-FUSED DISCONNECT
FACTORY WIRED (OPTION)
FIELD PLACEMENT REQUIRED
SW 1 2
LIQ
R14
P501 RS485 BMS
G
B
A
RS 485 Communication for use with Modbus RTU Monitoring and Control System.
OUTPUT 11 12 Standby Enable 24V, 75VA max
OUTPUT 13 14 General Common Alarm 1.5A, 120V (Dry Contact)
INPUT 15 16 Remote On/Off
INPUT 17 18 Standby Start
INPUT 19 20 Fire Interlock (By others)
OUTPUT 21 22 Critical Common Alarm 1.5A, 120V (Dry Contact)
LEGEND
TERMINALS ON PCB
STH TEMPERATURE & HUMIDITY SENSOR
SW WATER DETECTOR (OPTION)
CONNECTION TERMINAL
FACTORY WIRING
FIELD SUPPLIED WIRING
INTERFACE OPTIONS
INPUTS
No. DESCRIPTION
31-32 COMPRESSOR DISABLE
35-36 REMOTE ON/OFF INTERRUPT
39-40 CUSTOM FAULT No. 1
41-42 CUSTOM FAULT No. 2
43-44 LIQUID HIGH LIMIT (STANDARD ON SERIES 11)
57-58 DAMPER END SWITCH
49-50 REHEAT/ HUMIDIFIER DISABLE
OUTPUTS
No. DESCRIPTION
37-38 UNIT STATUS
59-60 DAMPER INTERLOCK
ES9005
2016-02-29
NORTH AMERICA



ES9060 2016-02-24 NORTH AMERICA

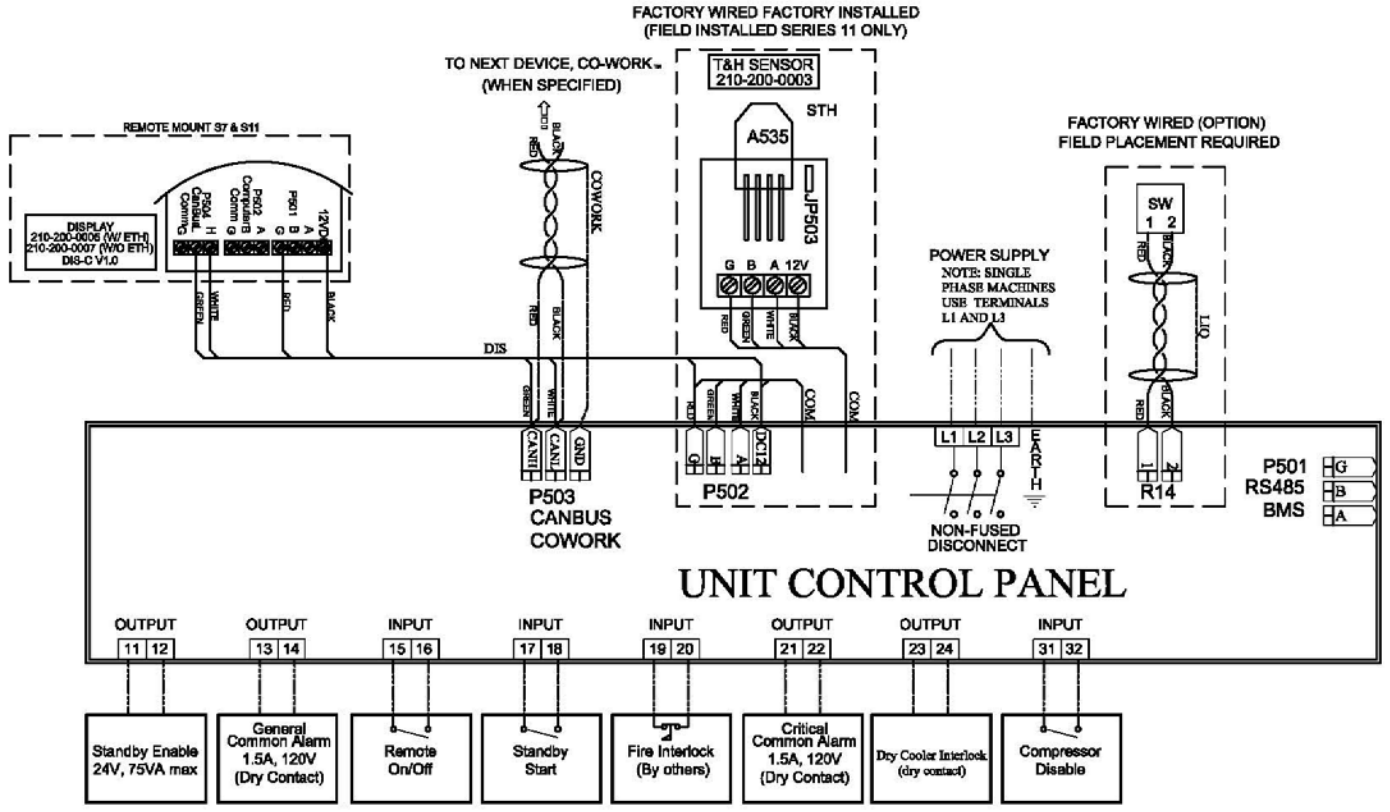

CLIMATEWORX INTERNATIONAL
GENERAL ELECTRICAL CONTROL PANEL DIAGRAM
WATER/GLYCOL COOLED UNITS
FACTORY WIRED FACTORY INSTALLED
(FIELD INSTALLED SERIES 11 ONLY)
REMOTE MOUNT S11
DISPLAY 210-200-0006 (W/ ETH) 210-200-0007 (W/O ETH) DI8-C V1.0
P504 Compuls Comm H
P502 Compuls Comm G
P501 12VDC
GREEN
WHITE
RED
BLACK
TO NEXT DEVICE, CO-WORK-
(WHEN SPECIFIED)
T&H SENSOR 210-200-0003
STH
A535
JP503
G B A 12V
COWORK
DIS
P503 CANBUS COWORK
CANH
CANL
GND
P502
G
B
A
LC12
COM
POWER SUPPLY
NOTE: SINGLE PHASE MACHINES USE TERMINALS L1 AND L3
L1 L2 L3
NON-FUSED DISCONNECT
FACTORY WIRED (OPTION)
FIELD PLACEMENT REQUIRED
SW 1 2
LIQ
R14
P501 RS485 BMS
RS 485 Communication for use with Modbus RTU Monitoring and Control System.
UNIT CONTROL PANEL
OUTPUT 11 12
Standby Enable 24V, 75VA max
OUTPUT 13 14
General Common Alarm 1.5A, 120V (Dry Contact)
INPUT 15 16
Remote On/Off
INPUT 17 18
Standby Start
INPUT 19 20
Fire Interlock (By others)
OUTPUT 21 22
Critical Common Alarm 1.5A, 120V (Dry Contact)
OUTPUT 23 24
Dry Cooler Interlock (dry contact)
LEGEND
TERMINALS ON PCB
STH TEMPERATURE & HUMIDITY SENSOR
SW WATER DETECTOR (OPTION)
CONNECTION TERMINAL
FACTORY WIRING
FIELD SUPPLIED WIRING
INTERFACE OPTIONS
INPUTS
No. DESCRIPTION
31-32 COMPRESSOR DISABLE
35-36 REMOTE ON/OFF INTERRUPT
39-40 CUSTOM FAULT No. 1
41-42 CUSTOM FAULT No. 2
43-44 LIQUID HIGH LIMIT (STANDARD ON SERIES 11)
57-58 DAMPER END SWITCH
49-50 REHEAT/ HUMIDIFIER DISABLE
OUTPUTS
No. DESCRIPTION
25-26 PUMP INTERLOCK
37-38 UNIT STATUS
59-60 DAMPER INTERLOCK
ES9065
2016-03-01
NORTH AMERICA


CLIMATEWORX INTERNATIONAL
GENERAL ELECTRICAL CONTROL PANEL DIAGRAM
CHILLED WATER UNIT
FACTORY WIRED FACTORY INSTALLED
(FIELD INSTALLED SERIES 7 AND 11 ONLY)
REMOTE MOUNT S7 AND S11
DISPLAY
210-200-0006 (W/ ETH)
210-200-0007 (W/O ETH)
DIS-C V1.0
P504 Comm'd
P502 Comm'd
P501
12VDC
GREEN
WHITE
RED
BLACK
DIS
TO NEXT DEVICE, CO-WORK
(WHEN SPECIFIED)
COWORK
T&H SENSOR
210-200-0003
A535
STH
JP503
G B A 12V
P502
DC12
COM
P503
CANBUS
COWORK
CANH
CANL
GND
UNIT CONTROL PANEL
POWER SUPPLY
NOTE: SINGLE PHASE MACHINES USE TERMINALS L1 AND L3
L1 L2 L3
NON-FUSED DISCONNECT
FACTORY WIRED (OPTION)
FIELD PLACEMENT REQUIRED
SW
1 2
LIQ
R14
P501
RS485
BMS
G
B
A
RS 485 Communication
for use with Modbus RTU
Monitoring and Control System.
OUTPUT
11 12
Standby Enable
24V, 75VA max
OUTPUT
13 14
General
Common Alarm
1.5A, 120V
(Dry Contact)
INPUT
15 16
Remote
On/Off
INPUT
17 18
Standby
Start
INPUT
19 20
Fire Interlock
(By others)
OUTPUT
21 22
Critical
Common Alarm
1.5A, 120V
(Dry Contact)
LEGEND
TERMINALS ON PCB
STH TEMPERATURE & HUMIDITY SENSOR
SW WATER DETECTOR (OPTION)
CONNECTION TERMINAL
FACTORY WIRING
FIELD SUPPLIED WIRING
INTERFACE OPTIONS
INPUTS
No. DESCRIPTION
35-36 REMOTE ON/OFF INTERRUPT
39-40 CUSTOM FAULT No. 1
41-42 CUSTOM FAULT No. 2
43-44 LIQUID HIGH LIMIT (STANDARD ON SERIES 11)
57-58 DAMPER END SWITCH
49-50 REHEAT/ HUMIDIFIER DISABLE
OUTPUTS
No. DESCRIPTION
37-38 UNIT STATUS
59-60 DAMPER INTERLOCK
ES9050
2016-02-29
NORTH AMERICA


CLIMATEWORX INTERNATIONAL
GENERAL ELECTRICAL CONTROL PANEL DIAGRAM
DUAL COOL UNIT WITH REMOTE AIR-COOLED CONDENSER
UNIT CONTROL PANEL
FACTORY WIRED FACTORY INSTALLED (FIELD INSTALLED SERIES 11 ONLY)
TO NEXT DEVICE, CO-WORK- (WHEN SPECIFIED)
T&H SENSOR 210-200-0003
STH
A535
JP503
P503 CANBUS COWORK
P502
P501 RS485 BMS
FACTORY WIRED (OPTION) FIELD PLACEMENT REQUIRED
SW 1 2
LIQ
POWER SUPPLY NOTE: SINGLE PHASE MACHINES USE TERMINALS L1 AND L3
NON-FUSED DISCONNECT
L1 L2 L3
GND
REMOTE MOUNT S7 & S11
DISPLAY 210-200-0006 (W/ ETH) 210-200-0007 (W/O ETH) DIS-C V1.0
P504 Optional Comm
P502 Compulsera Comm
P501 12VDC
WHITE GREEN RED BLACK
DIS
COWORK
RED BLACK WHITE GREEN
CAN H CAN L GND
COM
INTERFACE OPTIONS
INPUTS
No. DESCRIPTION
33-36 REMOTE ON/OFF INTERRUPT
39-40 CUSTOM FAULT No. 1
41-42 CUSTOM FAULT No. 2
43-44 LIQUID HIGH LIMIT (STANDARD ON SERIES 11)
57-58 DAMPER END SWITCH
49-50 REHEAT/ HUMIDIFIER DISABLE
OUTPUTS
No. DESCRIPTION
24-26 PUMP INTERLOCK
37-38 UNIT STATUS
59-60 DAMPER INTERLOCK
OUTPUT 11 12 Standby Enable 24V, 75VA max
OUTPUT 13 14 General Common Alarm 1.5A, 120V (Dry Contact)
INPUT 15 16 Remote On/Off
INPUT 17 18 Standby Start
INPUT 19 20 Fire Interlock (By others)
OUTPUT 21 22 Critical Common Alarm 1.5A, 120V (Dry Contact)
INPUT 31 32 Compressor Disable
NORMAL OPERATION USING CHILLED WATER, CLOSE CONTACT BETWEEN TERMINALS 31&32 TO DISABLE MECHANICAL COOLING.
OPEN CONTACT TO OPERATE MECHANICAL COOLING AND CLOSE CHILLED WATER VALVE
OUTPUT 23 24 25 26
Receiver Heater-2 (Dual Compressor Units Only)
Receiver Heater-1
Condenser Fan
Common
Condenser With Heated Receiver Fan Interlock Voltage: 115VAC Condenser Heater Voltage 115VAC
Condenser Without Heated Receiver and 11RC and 11AR condensers Fan Interlock Voltage: 24VAC
REMOTE AIR-COOLED CONDENSER
DISCONNECT NON-FUSED
POWER SUPPLY NOTE: SINGLE PHASE MACHINES USE TERMINALS L1 AND L3
RS 485 Communication for use with Modbus RTU
Monitoring and Control System.
LEGEND
TERMINALS ON PCB
STH TEMPERATURE & HUMIDITY SENSOR
SW WATER DETECTOR (OPTION)
CONNECTION TERMINAL
FACTORY WIRING
FIELD SUPPLIED WIRING
ES9030
2016-03-18
NORTH AMERICA

CLIMATEWORX INTERNATIONAL

GENERAL ELECTRICAL CONTROL PANEL DIAGRAM
DUAL COOLED UNIT WITH WATER/GLYCOL COOLED CONDENSER



LEGEND

- TERMINALS ON PCB
- STH TEMPERATURE & HUMIDITY SENSOR
- SW WATER DETECTOR (OPTION)
- CONNECTION TERMINAL
- FACTORY WIRING
- FIELD SUPPLIED WIRING

NORMAL OPERATION USING CHILLED WATER, CLOSE CONTACT BETWEEN TERMINALS 31&32 TO DISABLE MECHANICAL COOLING.

OPEN CONTACT TO OPERATE MECHANICAL COOLING AND CLOSE CHILLED WATER VALVE

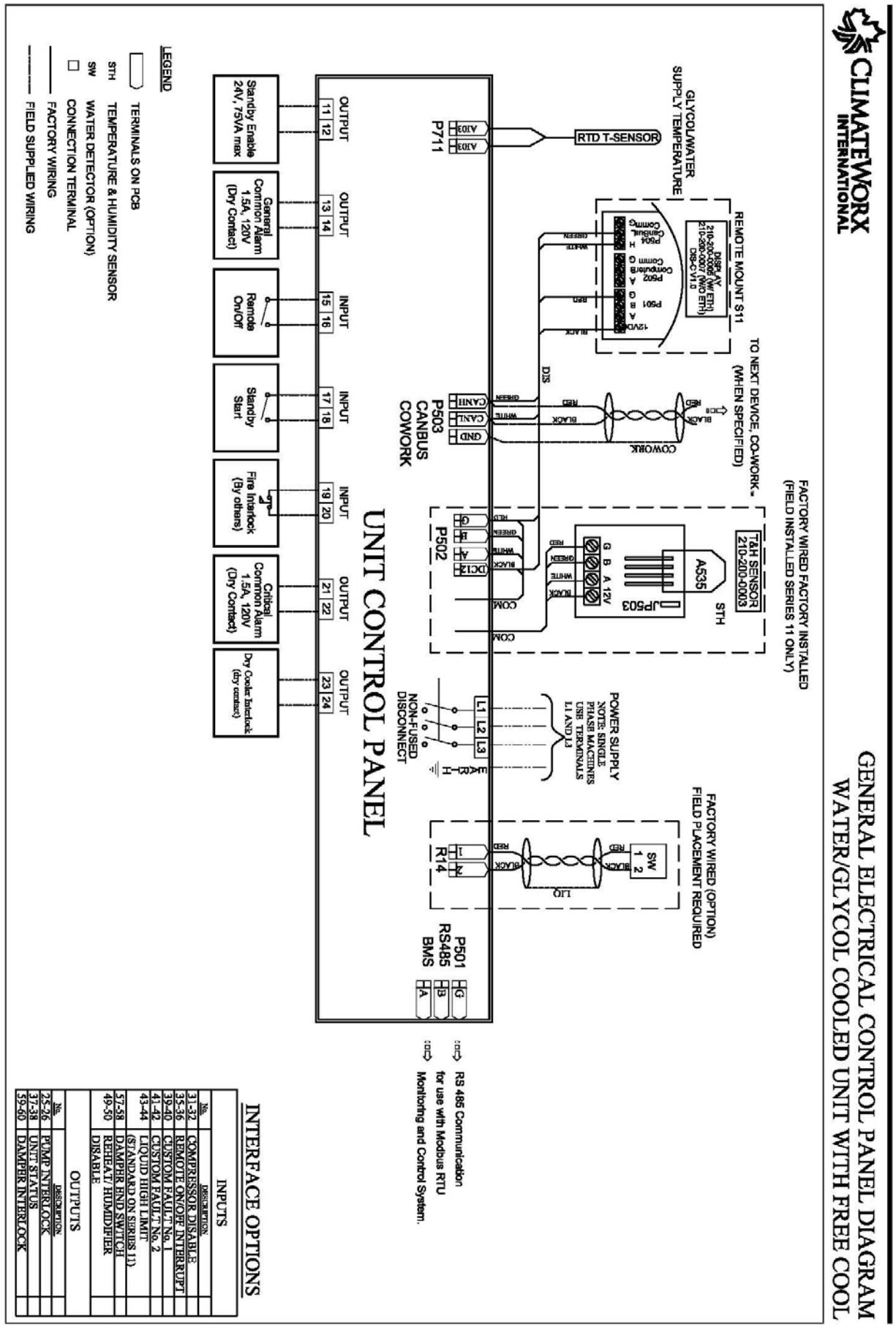
INTERFACE OPTIONS

INPUTS

No.	DESCRIPTION	
35-36	REMOTE ON/OFF INTERRUPT	
39-40	CUSTOM FAULT No. 1	
41-42	CUSTOM FAULT No. 2	
43-44	LIQUID HIGH LIMIT (STANDARD ON SERIES 11)	
57-58	DAMPER END SWITCH	
49-50	REHEAT/ HUMIDIFIER DISABLE	

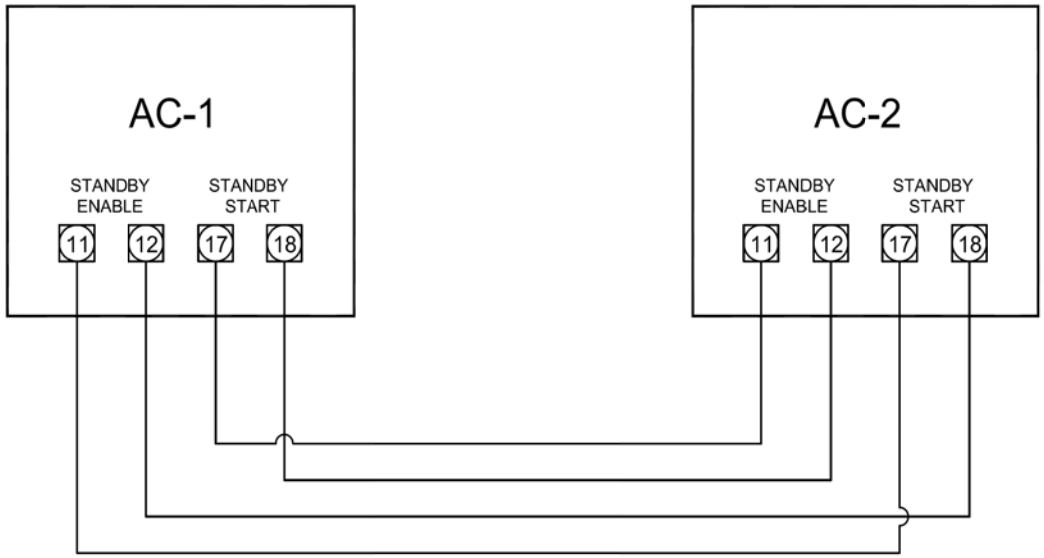
OUTPUTS

No.	DESCRIPTION	
25-26	PUMP INTERLOCK	
37-38	UNIT STATUS	
59-60	DAMPER INTERLOCK	


CLIMATEWORX INTERNATIONAL
GENERAL ELECTRICAL CONTROL PANEL DIAGRAM
WATER/GLYCOL COOLED UNIT WITH FREE COOL
FACTORY WIRED FACTORY INSTALLED
(FIELD INSTALLED SERIES 11 ONLY)
REMOTE MOUNT S11
DISPLAY 210-200-0006 (W/ ETH) 210-200-0007 (W/O ETH) DSI-C-V1.0
P504 CanBus Comm
P502 Comm
P501
12VDC
GREEN
WHITE
RED
BLACK
GLYCOL/WATER SUPPLY TEMPERATURE
RTD T-SENSOR
TO NEXT DEVICE, CO-WORK
(WHEN SPECIFIED)
T&H SENSOR 210-200-0003
STH
A535
JP503
G B A 12V
P711
A103
P503 CANBUS COWORK
CANH
CANL
GND
COWORK
DIS
P502
COM
UNIT CONTROL PANEL
POWER SUPPLY
NOTE: SINGLE PHASE MACHINES USE TERMINALS L1 AND L3
L1 L2 L3
NON-FUSED DISCONNECT
FACTORY WIRED (OPTION)
FIELD PLACEMENT REQUIRED
SW 1 2
LIQ
P501 RS485 BMS
G
B
A
RS 485 Communication for use with Modbus RTU Monitoring and Control System.
OUTPUT 11 12 Standby Enable 24V, 75VA max
OUTPUT 13 14 General Common Alarm 1.5A, 120V (Dry Contact)
INPUT 15 16 Remote On/Off
INPUT 17 18 Standby Start
INPUT 19 20 Fire Interlock (By others)
OUTPUT 21 22 Critical Common Alarm 1.5A, 120V (Dry Contact)
OUTPUT 23 24 Dry Cooler Interlock (dry contact)
LEGEND
TERMINALS ON PCB
STH TEMPERATURE & HUMIDITY SENSOR
SW WATER DETECTOR (OPTION)
CONNECTION TERMINAL
FACTORY WIRING
FIELD SUPPLIED WIRING
INTERFACE OPTIONS
INPUTS
No. DESCRIPTION
31-32 COMPRESSOR DISABLE
35-36 REMOTE ON/OFF INTERRUPT
39-40 CUSTOM FAULT No. 1
41-42 CUSTOM FAULT No. 2
43-44 LIQUID HIGH LIMIT (STANDARD ON SERIES 11)
57-58 DAMPER END SWITCH
49-50 REHEAT/ HUMIDIFIER DISABLE
OUTPUTS
No. DESCRIPTION
25-26 PUMP INTERLOCK
37-38 UNIT STATUS
59-60 DAMPER INTERLOCK
ES9070
2016-03-18
NORTH AMERICA

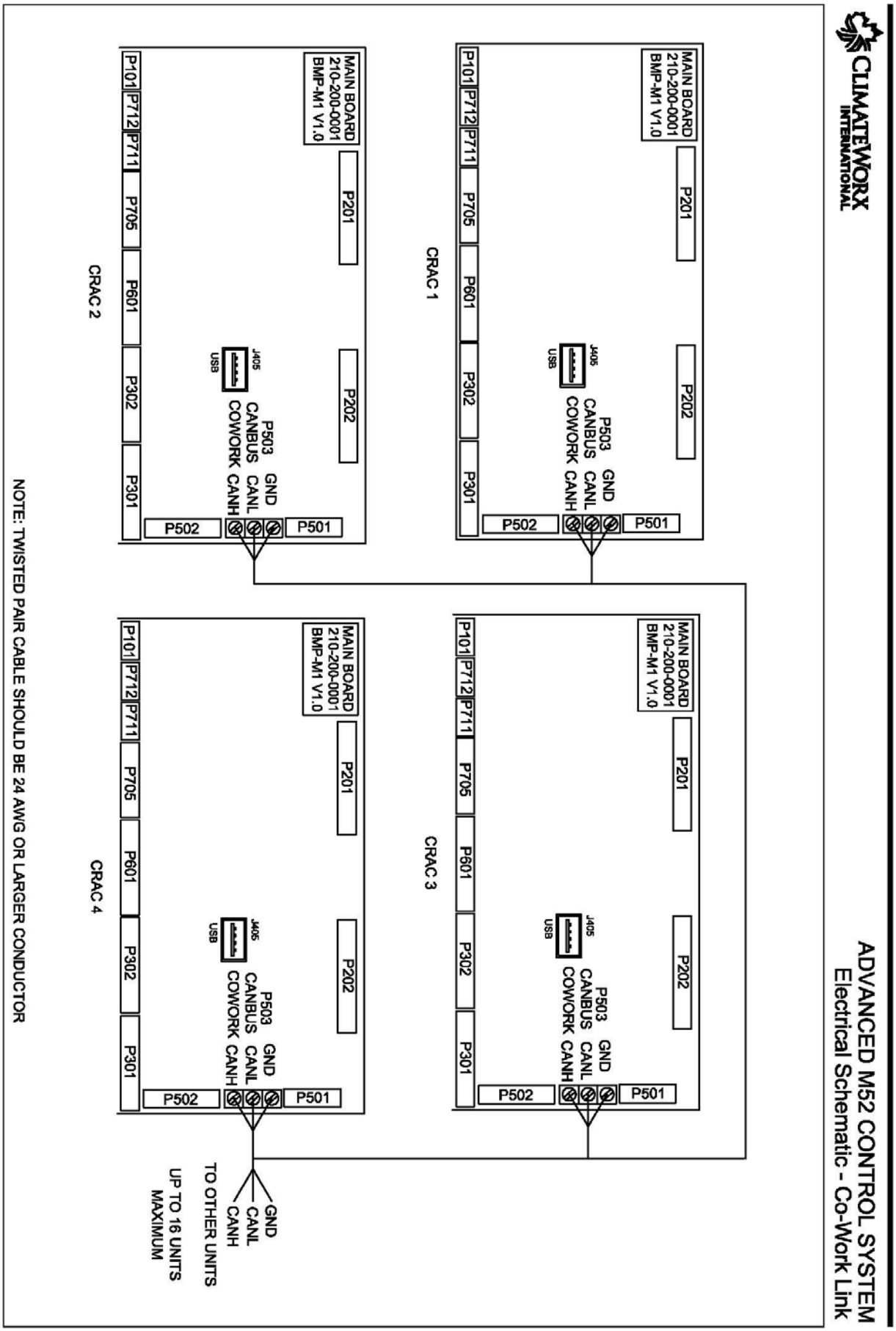
CLIMATEWORX INTERNATIONAL

For Automatic Change Over
Field Wiring Standby Start/Standby Enable

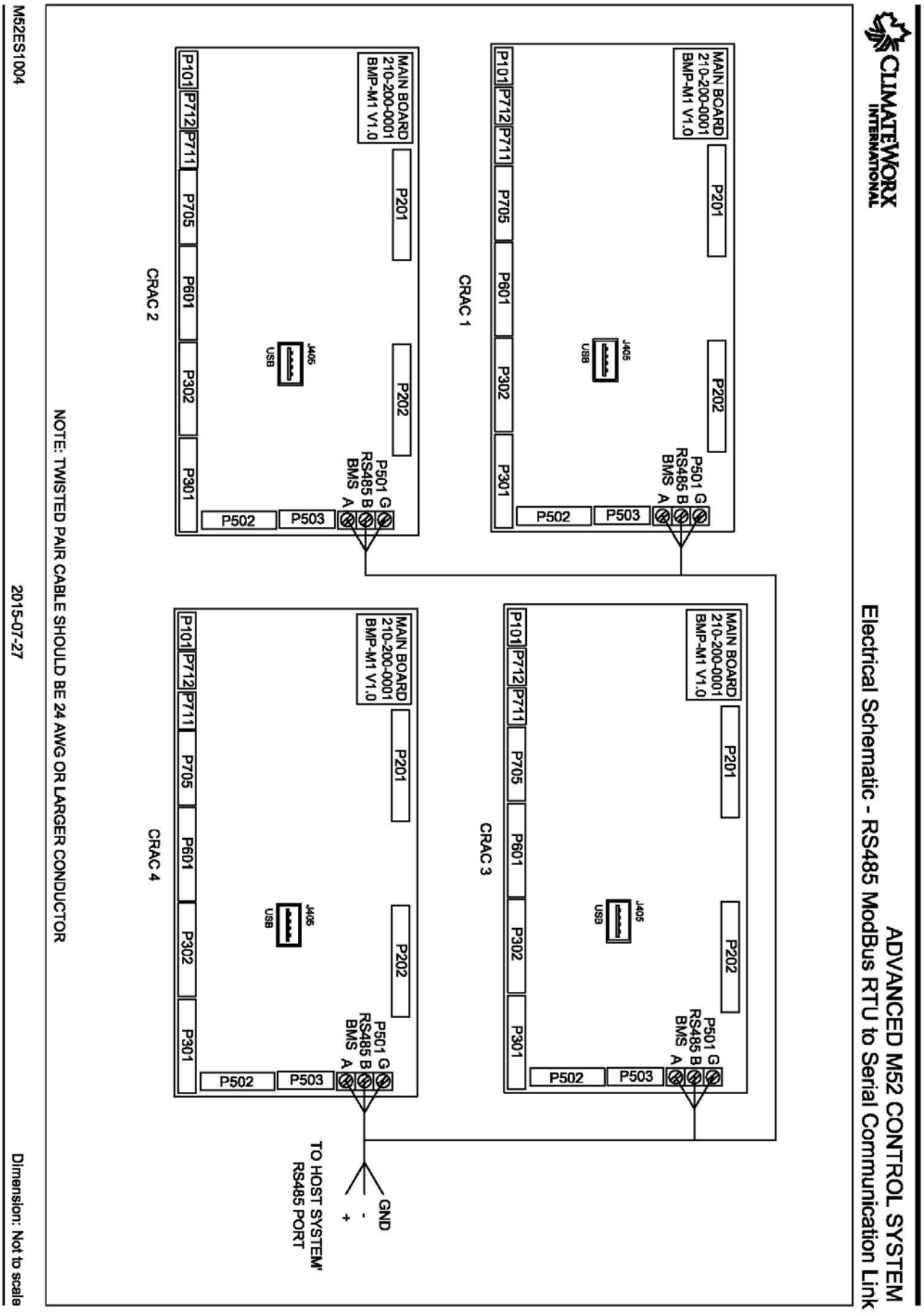


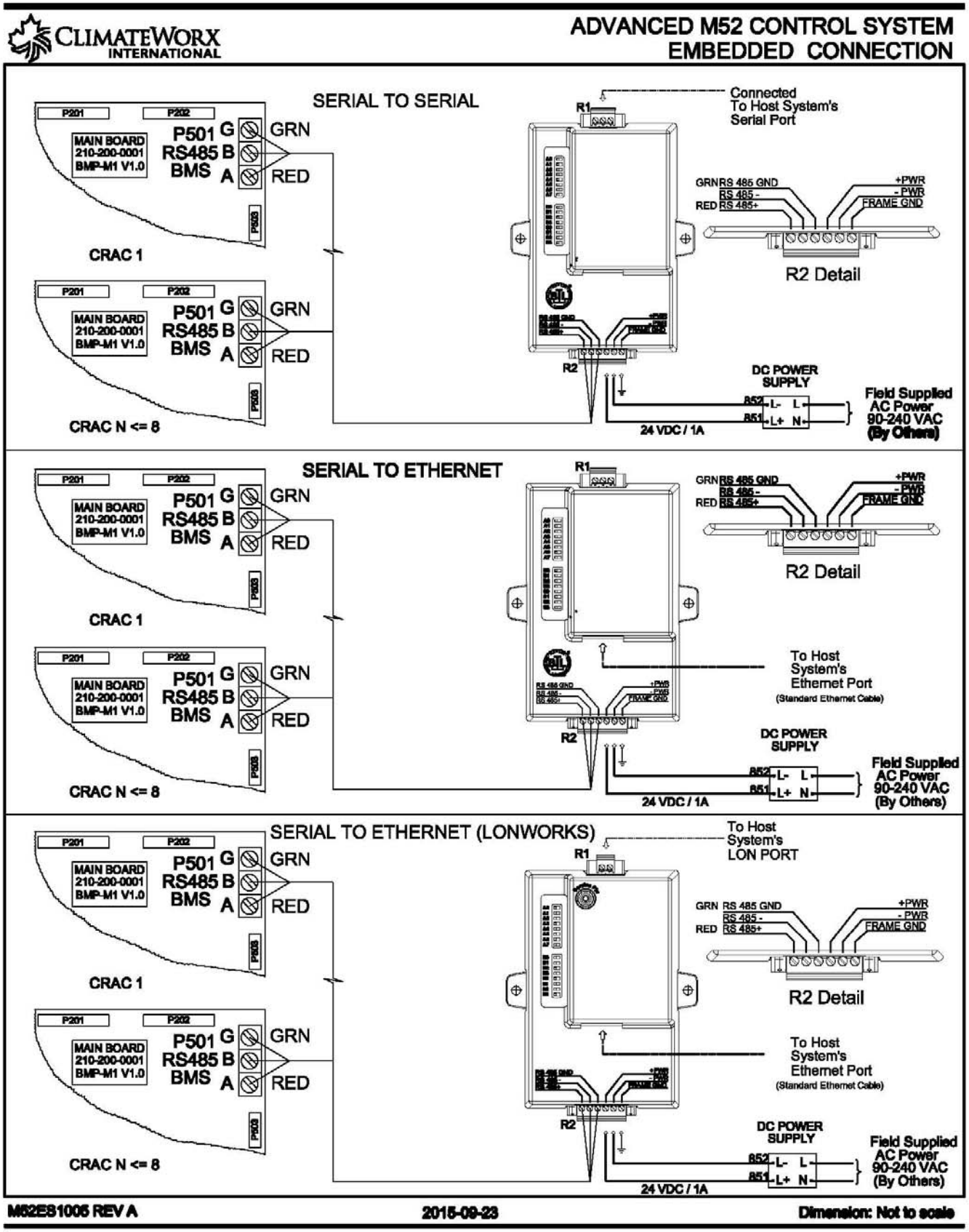
LEGEND:

(#) FIELD TERMINAL



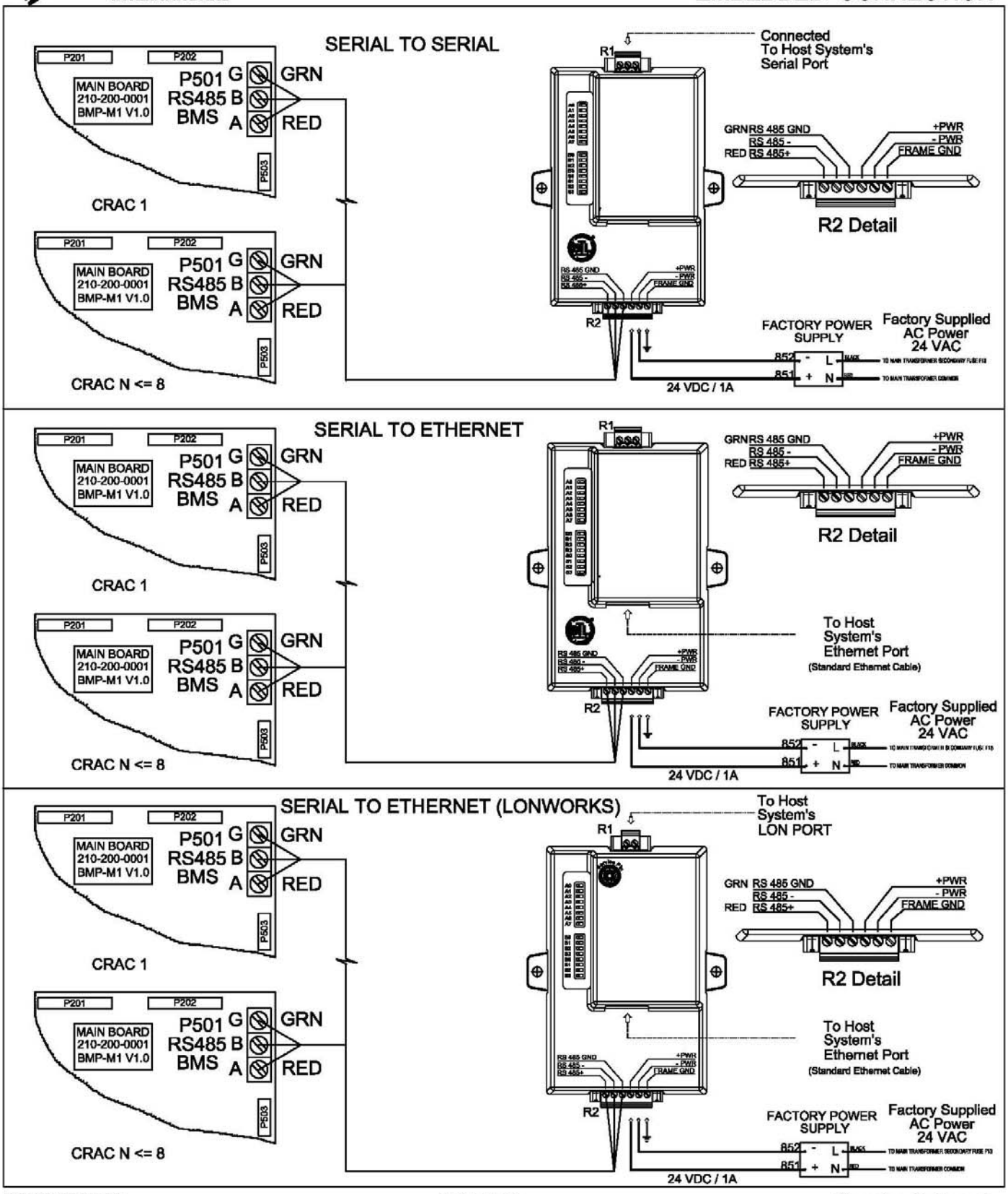
M52ES1003 2015-07-27 Dimension: Not to scale


CLIMATEWORX INTERNATIONAL
ADVANCED M52 CONTROL SYSTEM
Electrical Schematic - RS485 ModBus RTU to Serial Communication Link
MAIN BOARD
210-200-0001
BMP-M1 V1.0
P201
P202
P101
P712
P711
P705
P601
P302
P301
P502
P503
J405
USB
P501 G
RS485 B
BMS A
CRAC 1
CRAC 2
CRAC 3
CRAC 4
NOTE: TWISTED PAIR CABLE SHOULD BE 24 AWG OR LARGER CONDUCTOR
TO HOST SYSTEM'
RS485 PORT
GND
-
+
M52ES1004
2015-07-27
Dimension: Not to scale


CLIMATEWORX INTERNATIONAL
ADVANCED M52 CONTROL SYSTEM
EMBEDDED CONNECTION
SERIAL TO SERIAL
P201
P202
MAIN BOARD
210-200-0001
BMP-M1 V1.0
P501
RS485
BMS
G
B
A
GRN
RED
P503
CRAC 1
CRAC N <= 8
R1
R2
Connected
To Host System's
Serial Port
GRN RS 485 GND
RS 485 -
RED RS 485+
+PWR
- PWR
FRAME GND
R2 Detail
DC POWER
SUPPLY
J52
J51
L-
L+
L
N
24 VDC / 1A
Field Supplied
AC Power
90-240 VAC
(By Others)
SERIAL TO ETHERNET
To Host
System's
Ethernet Port
(Standard Ethernet Cable)
SERIAL TO ETHERNET (LONWORKS)
To Host
System's
LON PORT
M52ES1006 REV A
2015-09-23
Dimension: Not to scale

CLIMATEWORX INTERNATIONAL

ADVANCED M52 CONTROL SYSTEM EMBEDDED CONNECTION



M52ES1006 REV -

2015-12-10

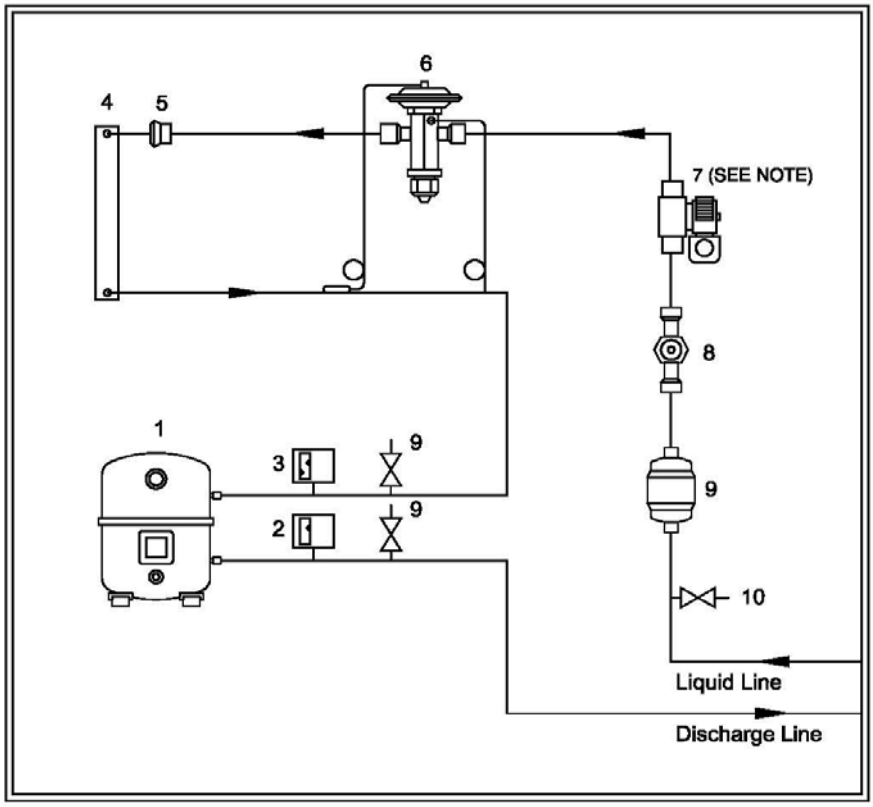
Dimension: Not to scale

Appendix C: Piping Schematic Drawings

CLIMATEWORX INTERNATIONAL

SERIES 11 - PIPING SCHEMATIC DIAGRAM
AIR-COOLED SYSTEM (W/ CONDENSER)

CEILING MOUNTED INDOOR EVAPORATING UNIT



COMPONENTS:

1 Compressor
2 High pressure switch
3 Low pressure switch
4 Evaporator
5 Refrigerator distributor
6 Thermostatic expansion valve
7 Liquid line solenoid valve (4-5 TON ONLY)
8 Sight glass
9 Filter-drier
10 Access valve

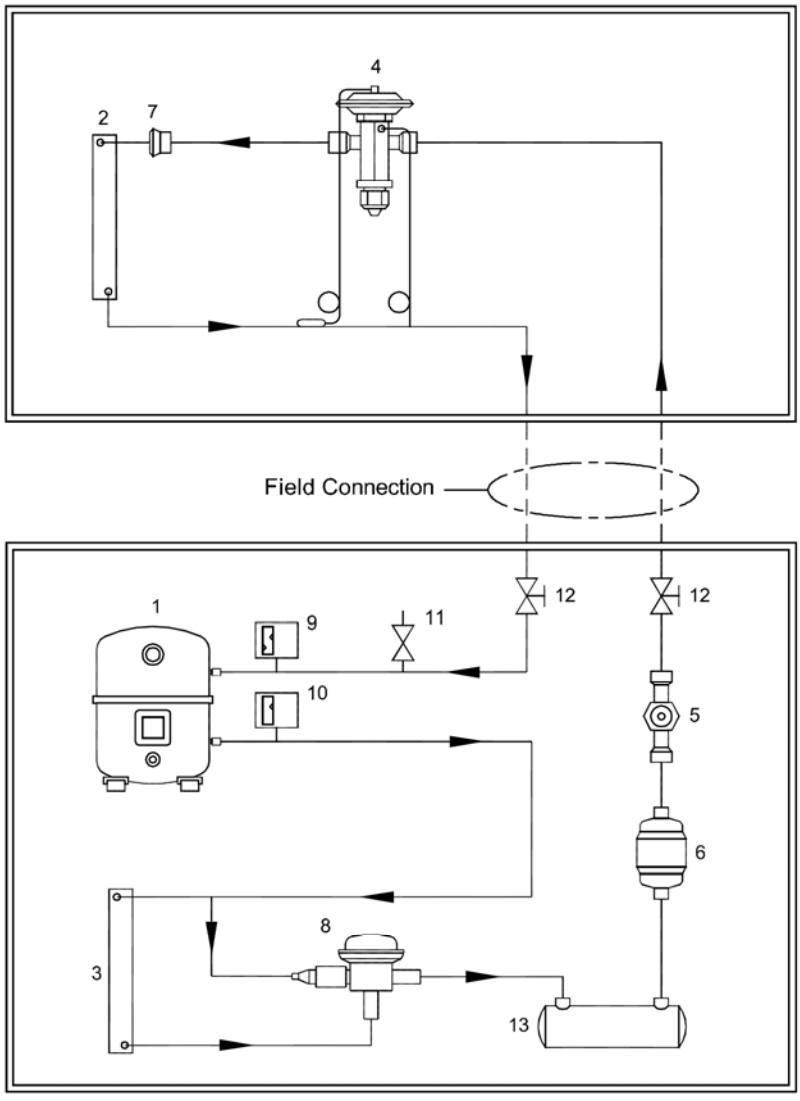
S11DS100B 16 AUGUST 2013 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11 - PIPING SCHEMATIC DIAGRAM

AIR-COOLED SYSTEM WITH HEAD PRESS. CONTROL (W/ CONDENSING UNIT)

CEILING MOUNTED INDOOR EVAPORATING UNIT



OUTDOOR CONDENSING UNIT

COMPONENTS

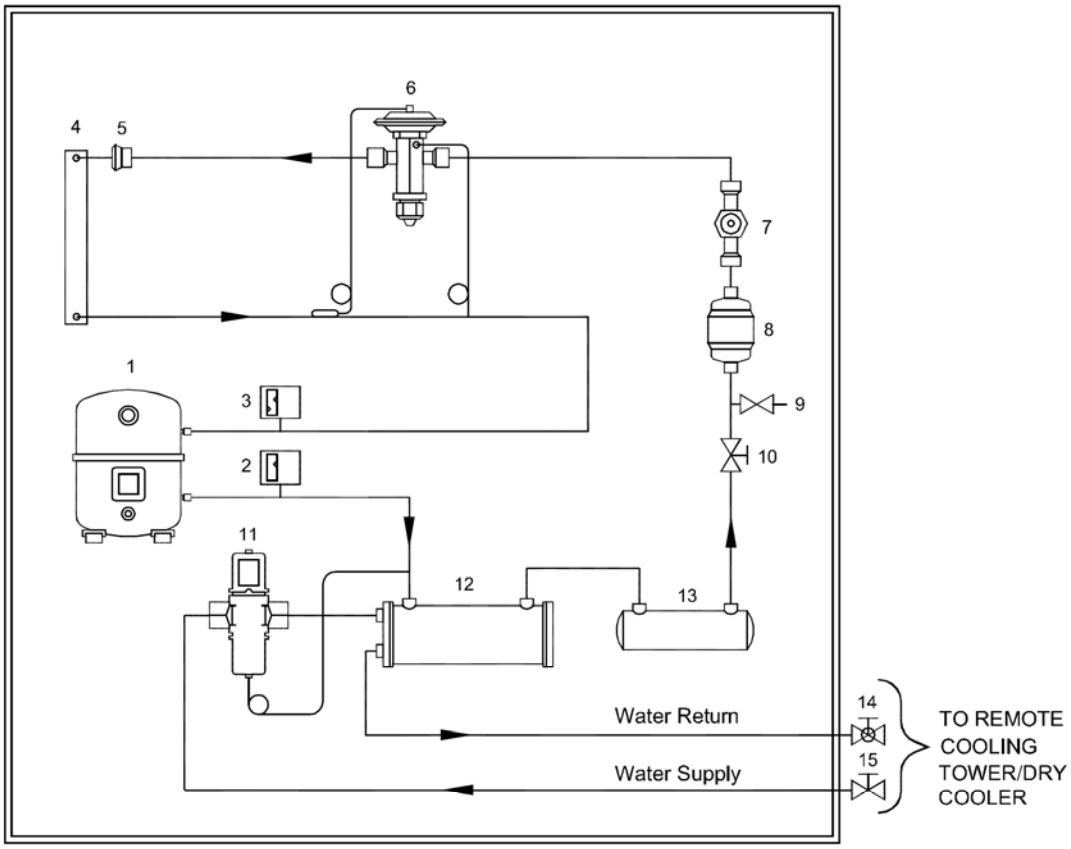
1	Compressor	8	Head Pressure Control Valve (OROA)
2	Evaporator Coil	9	Low Pressure Switch
3	Condenser Coil	10	High Pressure Switch
4	Thermostatic Expansion Valve	11	Access Valve
5	Sight Glass	12	Isolation Valve
6	Filter-Drier	13	Receiver
7	Refrigerant Distributor		

S11DS102A 20 AUGUST 2003 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11 - PIPING SCHEMATIC DIAGRAM
WATER COOLED SELF-CONTAINED SYSTEM

CEILING MOUNTED INDOOR EVAPORATING UNIT



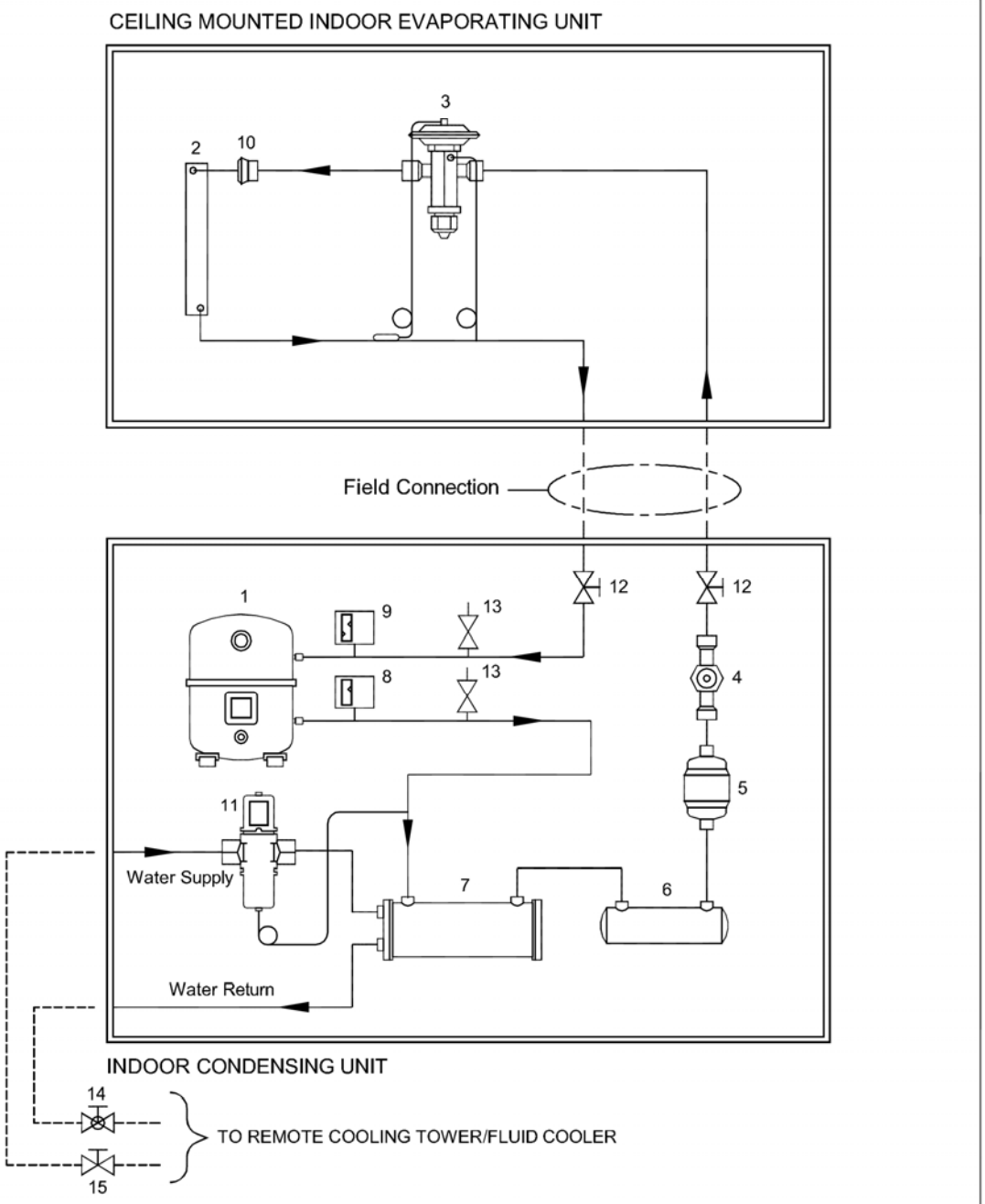
COMPONENTS:

1	Compressor	11	Water regulating valve (Standard 2-way, optional 3-way)
2	High pressure switch	12	Water cooled condenser
3	Low pressure switch	13	Receiver
4	Evaporator	14	Globe valve (supplied by others)
5	Refrigerator distributor	15	Gate valve (supplied by others)
6	Thermostatic expansion valve		
7	Sight glass		
8	Filter-drier		
9	Access valve		
10	Shut off valve		

S11DS200A 20 AUGUST 2003 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11 - PIPING SCHEMATIC DIAGRAM
WATER COOLED SYSTEM (W/ CONDENSING UNIT)



COMPONENTS

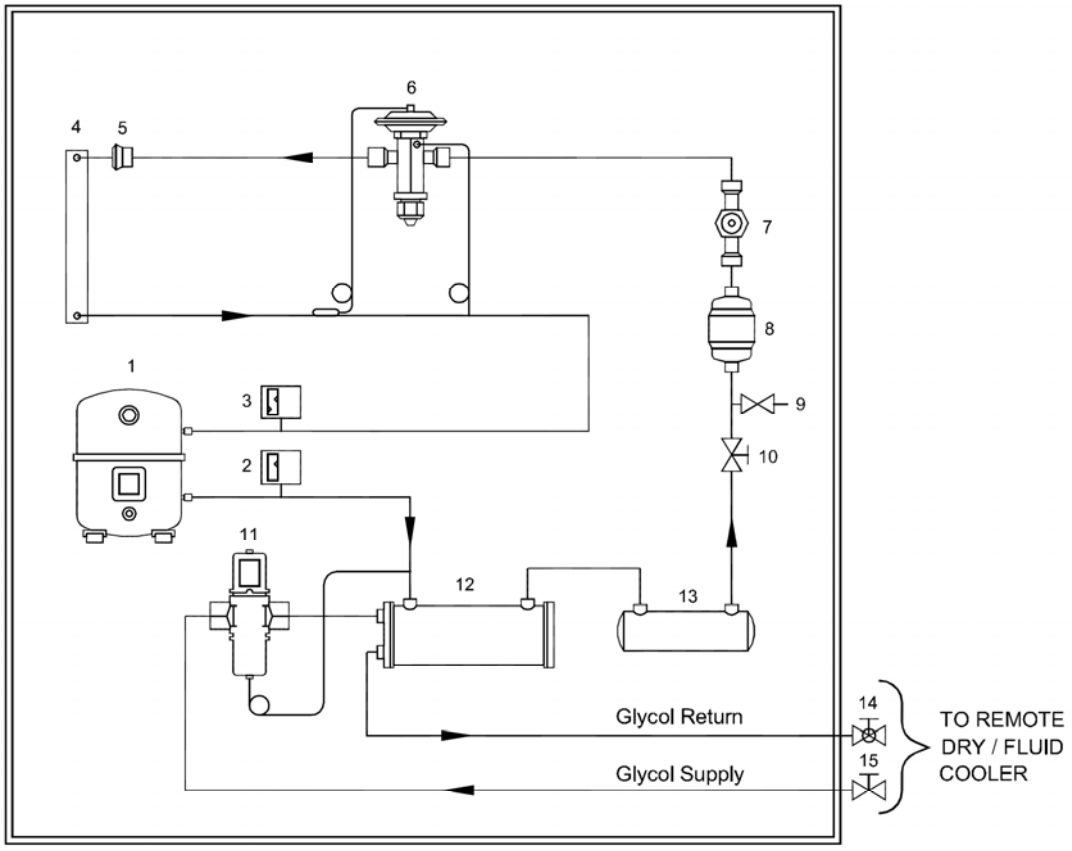
1	Compressor	8	High pressure switch
2	Evaporator coil	9	Low pressure switch
3	Thermostatic expansion valve	10	Refrigerant distributor
4	Sight glass	11	Water regulating valve (Standard 2-way, optional 3-way)
5	Filter-drier	12	Isolation valve
6	Receiver	13	Access valve
7	Water cooled condenser	14	Globe valve (supplied by others)
		15	Gate valve (supplied by others)

S11DS201A 20 AUGUST 2003 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11 - PIPING SCHEMATIC DIAGRAM
GLYCOL COOLED SELF-CONTAINED SYSTEM

CEILING MOUNTED INDOOR EVAPORATING UNIT



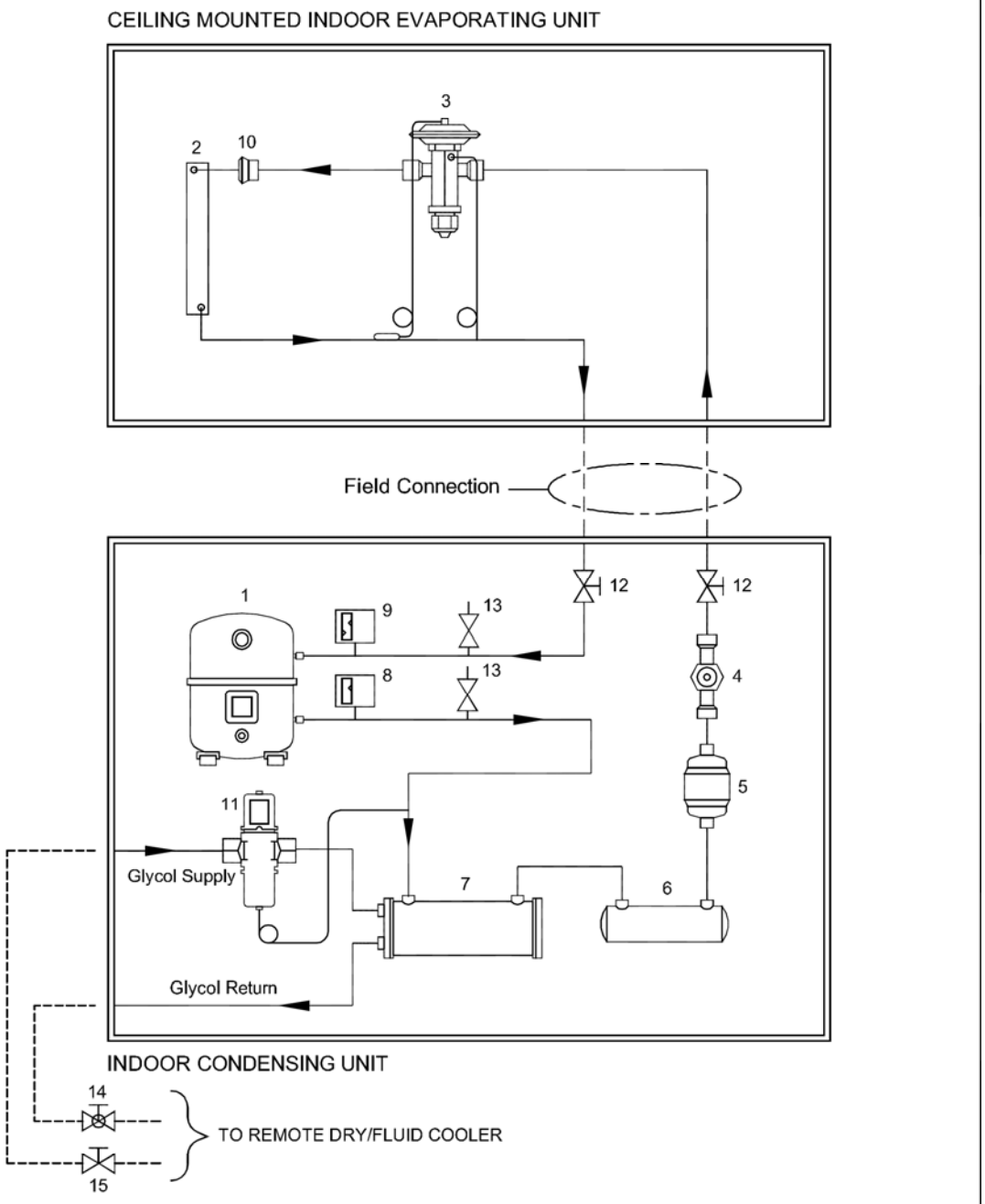
COMPONENTS:

1	Compressor	11	Glycol regulating valve (Standard 2-way, optional 3-way)
2	High pressure switch	12	Glycol cooled condenser
3	Low pressure switch	13	Receiver
4	Evaporator	14	Globe valve (supplied by others)
5	Refrigerator distributor	15	Gate valve (supplied by others)
6	Thermostatic expansion valve		
7	Sight glass		
8	Filter-drier		
9	Access valve		
10	Shut off valve		

S11DS300A 20 AUGUST 2003 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11 - PIPING SCHEMATIC DIAGRAM
GLYCOL COOLED SYSTEM (W/ CONDENSING UNIT)



COMPONENTS

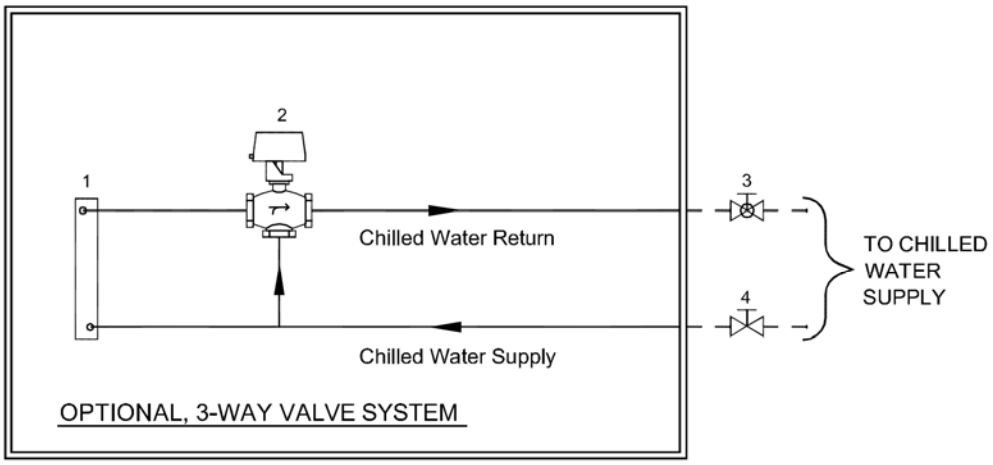
1	Compressor	8	High pressure switch
2	Evaporator coil	9	Low pressure switch
3	Thermostatic expansion valve	10	Refrigerant distributor
4	Sight glass	11	Glycol regulating valve (Standard 2-way, optional 3-way)
5	Filter-drier	12	Isolation valve
6	Receiver	13	Access valve
7	Glycol cooled condenser	14	Globe valve (supplied by others)
		15	Gate valve (supplied by others)

S11DS301B 20 AUGUST 2003 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11 - PIPING SCHEMATIC DIAGRAM
CHILLED WATER SYSTEM

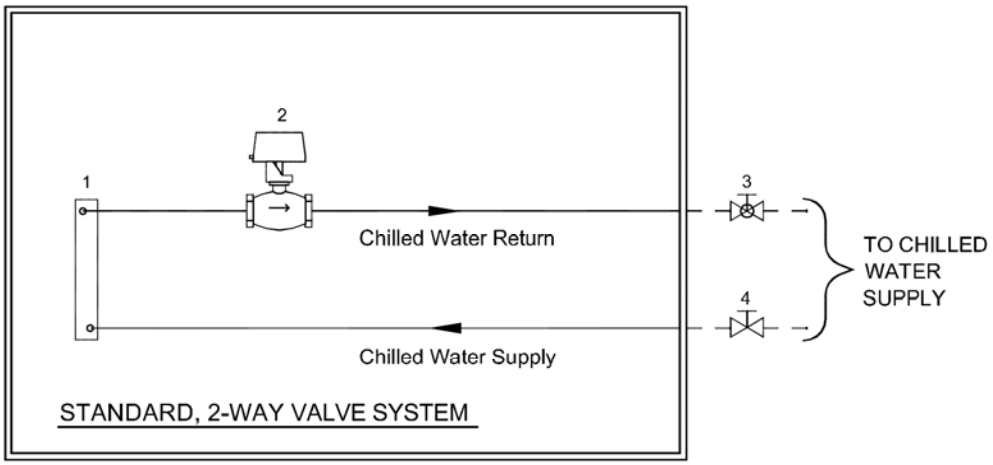
CEILING MOUNTED UNIT



COMPONENTS:

1 Cooling coil
2 3-way mixing valve
3 Globe valve (Supplied by others)
4 Gate valve (Supplied by others)

CEILING MOUNTED UNIT



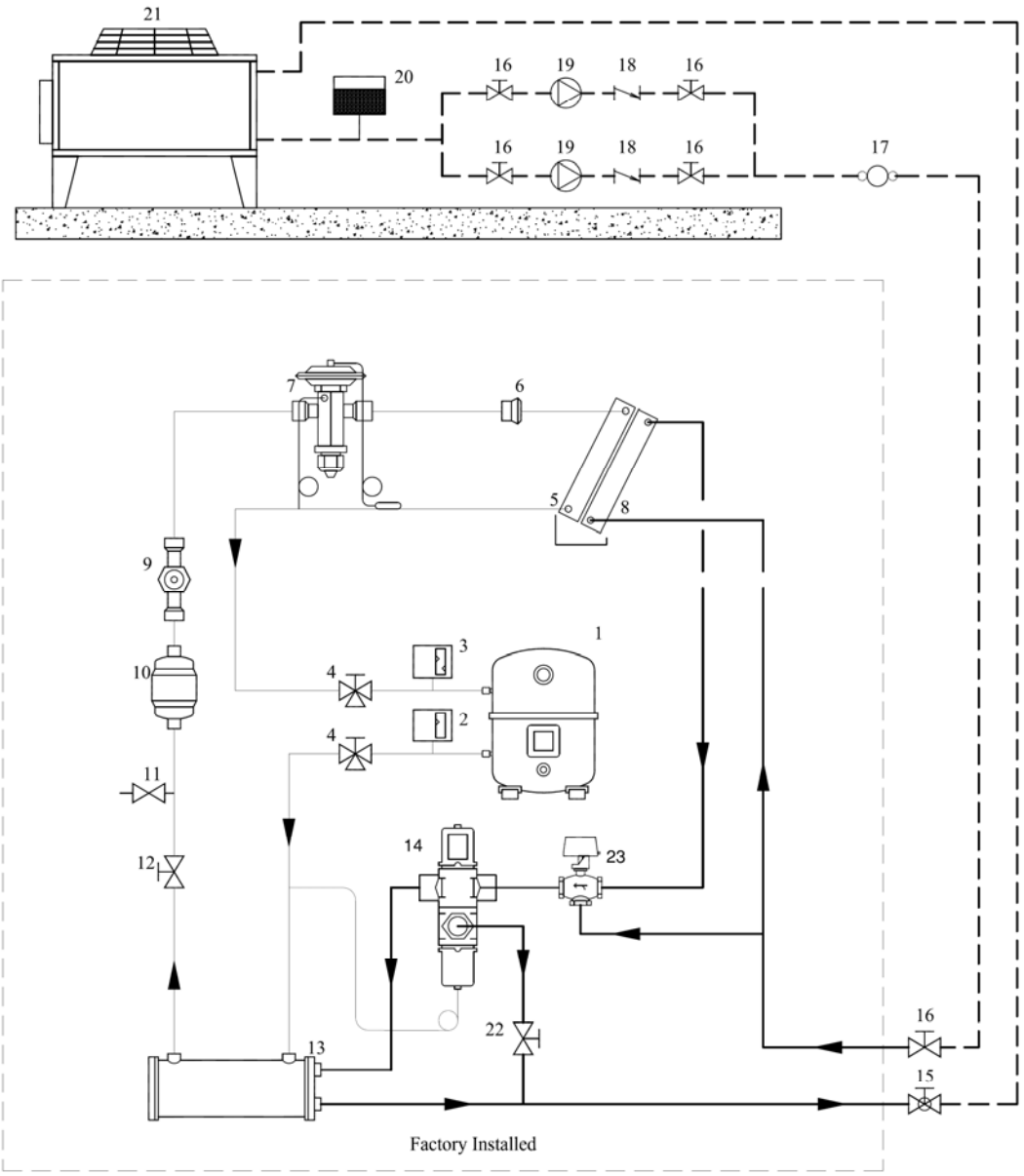
COMPONENTS:

1 Cooling coil
2 2-way mixing valve
3 Globe valve (Supplied by others)
4 Gate valve (Supplied by others)

S11DS401A 20 AUGUST 2003 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11
Glycol Free Cooled System Schematic



1	Compressor	11	Access valve	21	Glycol Cooler *
2	High pressure switch	12	Shut off valve	22	Manual Bypass Valve
3	Low pressure switch	13	Glycol cooled condenser	23	Three-way Modulating Valve
4	Rotalock valve	14	Glycol regulating valve **		Factory Installed Refrigerant Line
5	Evaporator	15	Globe valve *		Factory Installed Glycol Line
6	Refrigerant distributor	16	Gate valve *		Field Installed Glycol Line
7	Thermostatic expansion valve	17	Orifice valve *		
8	Free-cooling coil	18	Check valve *		
9	Sight glass	19	Pump *		
10	Filter- drier	20	Expansion Tank *		

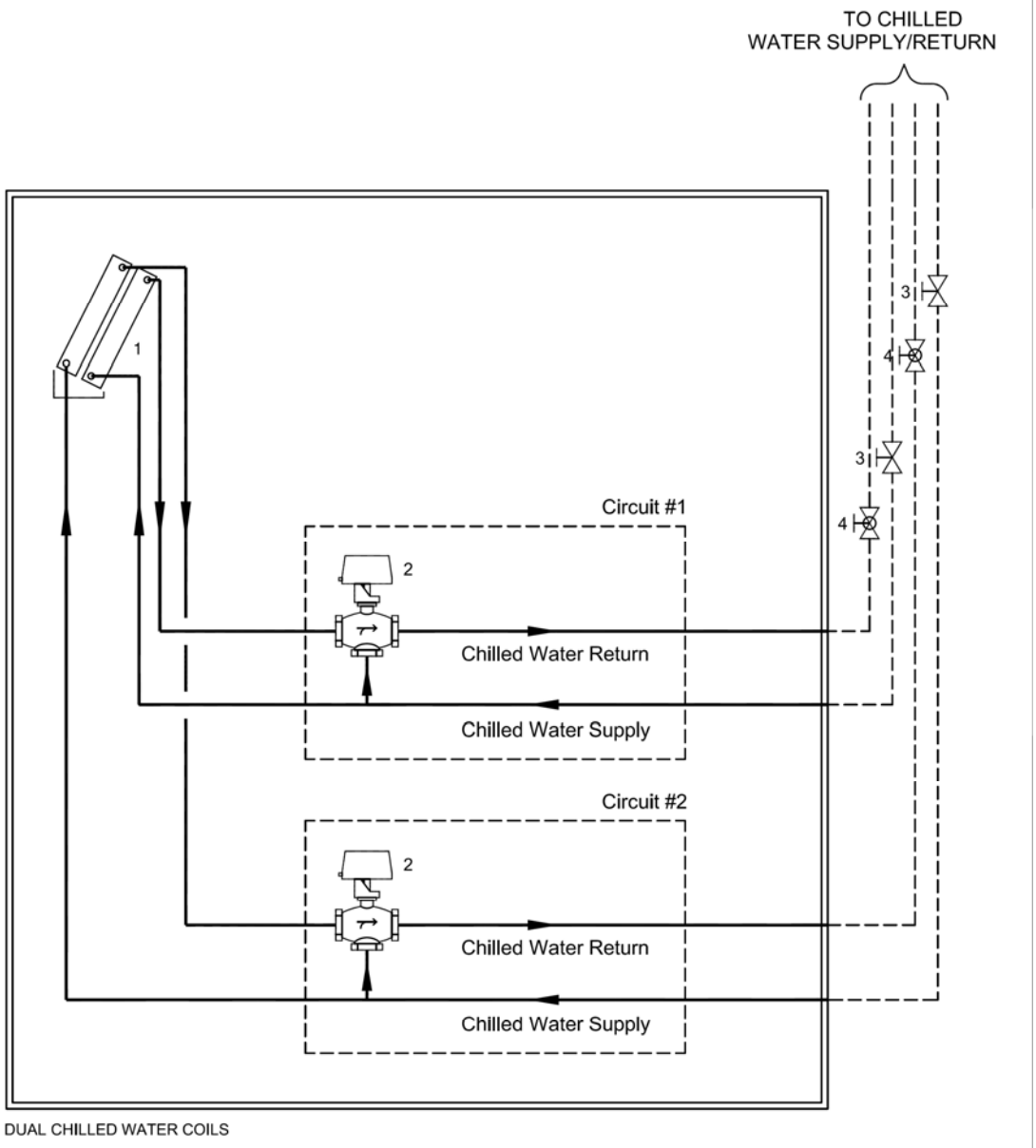
* Supplied by others

** Standard two way water regulating valve. Optional three way water regulating valve available.

S11DS501 | 11 July 2011 | Dimension: Not to scale

CLIMATEWORX INTERNATIONAL

SERIES 11 - PIPING SCHEMATIC DIAGRAM
DUAL CHILLED WATER COOLED SYSTEM



COMPONENTS:

1 Chilled water cooling coil
2 2-way modulating valve (optional 3-way valve)
3 Gate valve (Supplied by others)
4 Globe valve (Supplied by others)

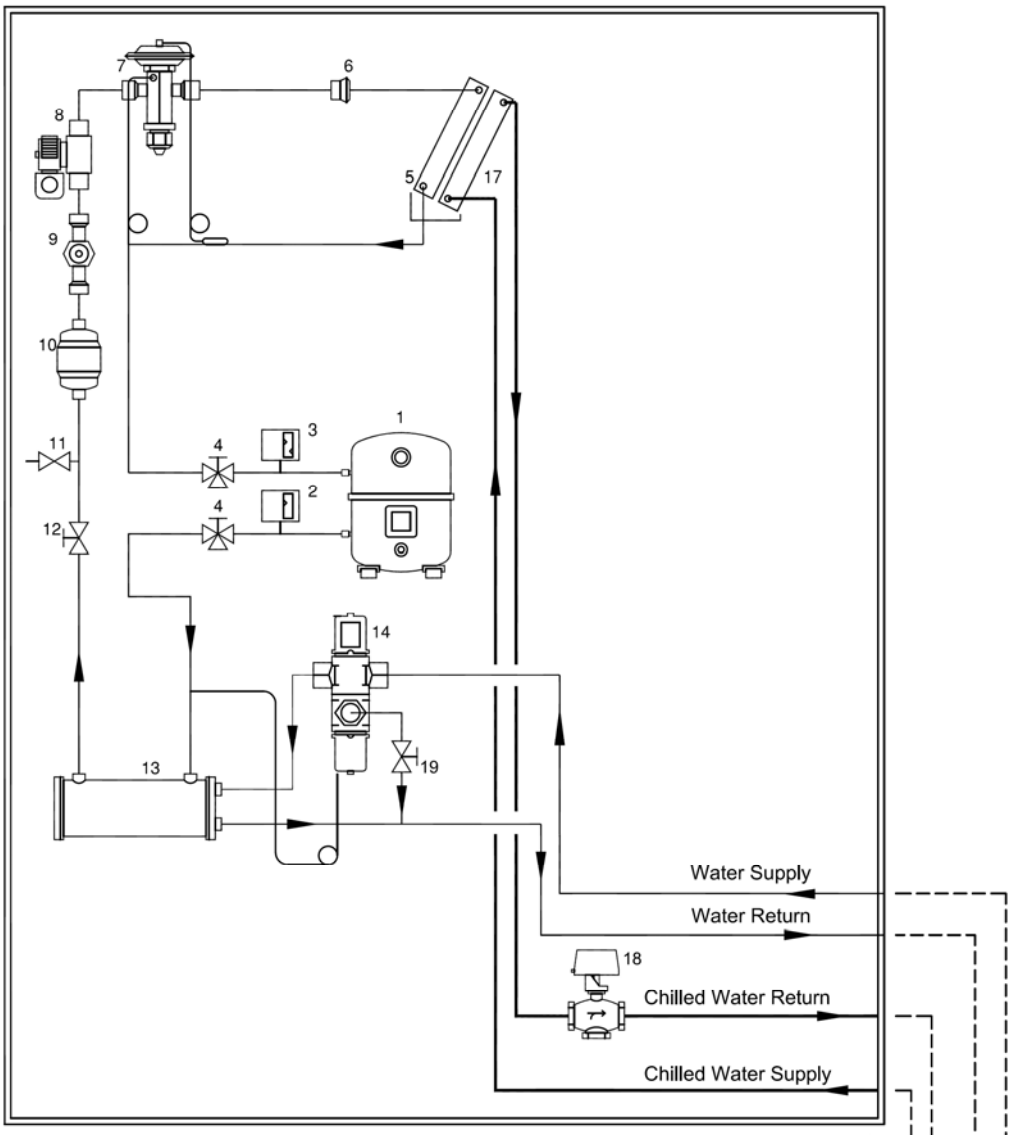
S11DS502 07 DECEMBER 2011 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11 - PIPING SCHEMATIC DIAGRAM

WATER DUAL COOLED SYSTEM (2-WAY REG VALVE)

CEILING MOUNTED INDOOR UNIT



COMPONENTS:

1 Compressor
2 High pressure switch
3 Low pressure switch
4 Rotalock valve
5 Evaporator
6 Refrigerant distributor
7 Thermostatic expansion valve
8 Liquid line solenoid valve
9 Sight glass
10 Filter-Drier
11 Access valve
12 Shut off valve
13 Water cooled condenser/heat exchanger
14 Water regulating valve (Standard 2-way, optional 3-way)
15 Gate valve (supplied by others)
16 Globe valve (supplied by others)
17 Chilled water cooling coil
18 2-way modulating valve (optional 3-way valve)
19 Manual Bypass Valve

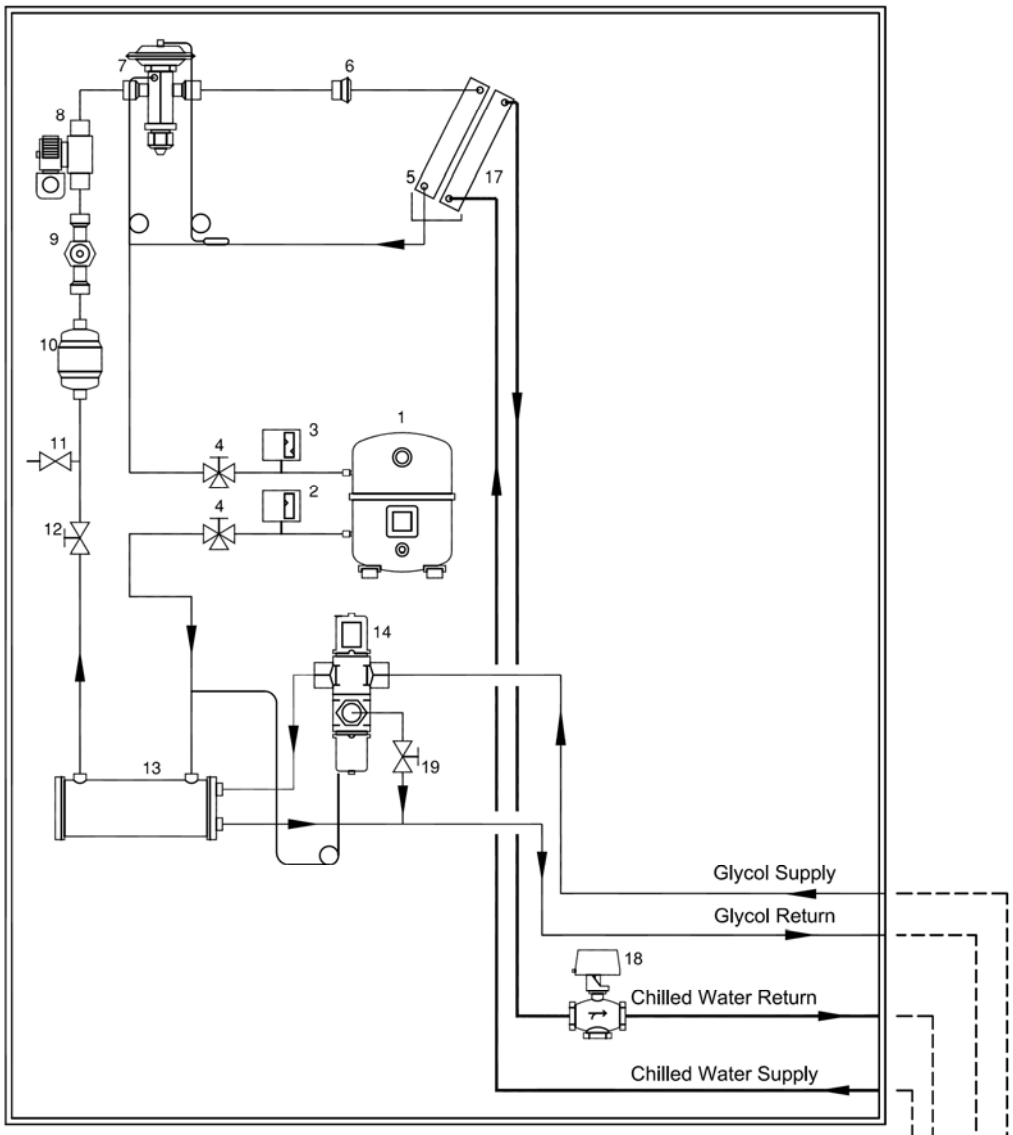
S11DS503 07 DECEMBER 2011 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11 - PIPING SCHEMATIC DIAGRAM

GLYCOL DUAL COOLED SYSTEM (2-WAY REG VALVE)

CEILING MOUNTED INDOOR UNIT



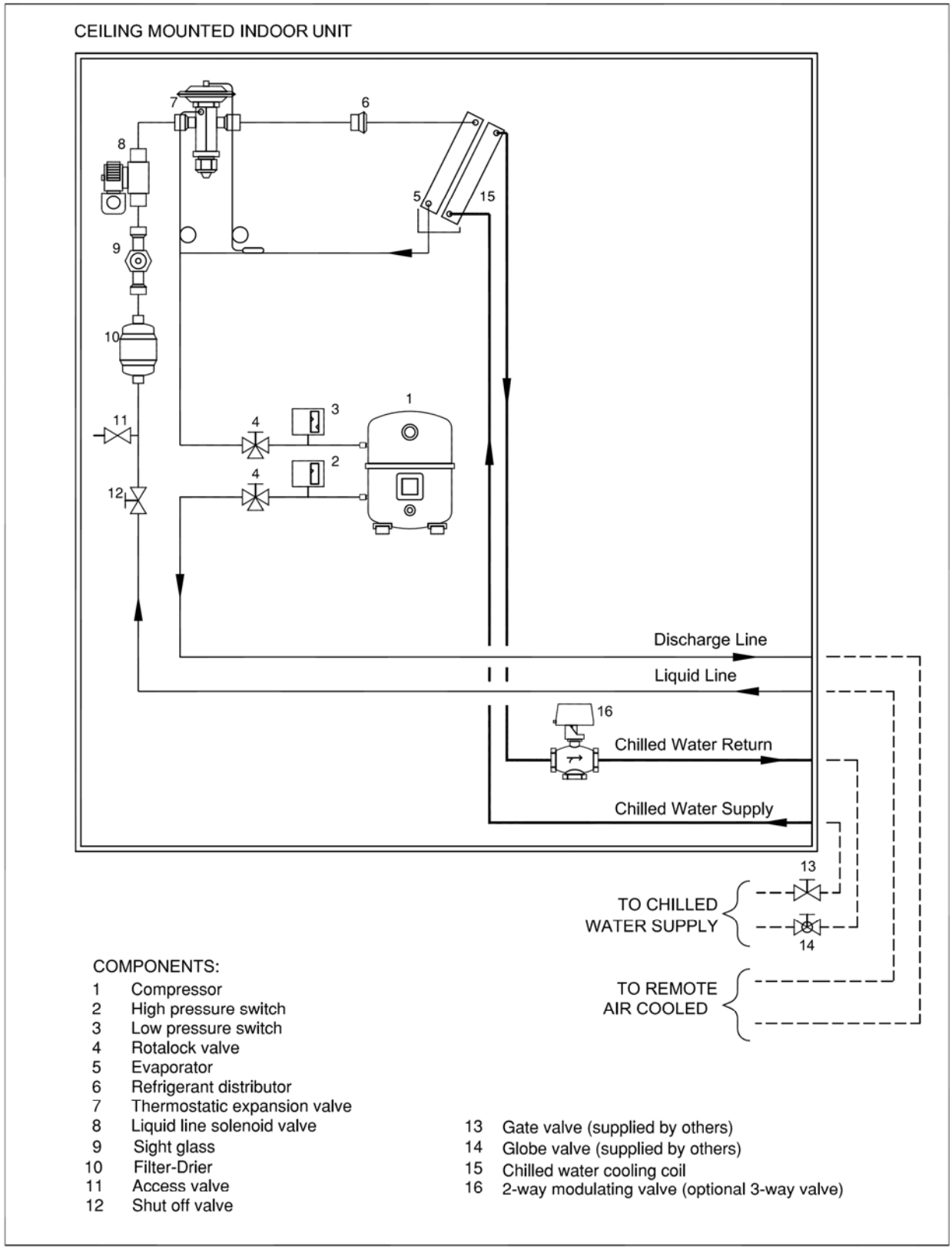
COMPONENTS:

1 Compressor
2 High pressure switch
3 Low pressure switch
4 Rotalock valve
5 Evaporator
6 Refrigerant distributor
7 Thermostatic expansion valve
8 Liquid line solenoid valve
9 Sight glass
10 Filter-Drier
11 Access valve
12 Shut off valve
13 Glycol cooled condenser/heat exchanger
14 Glycol regulating valve (Standard 2-way, optional 3-way)
15 Gate valve (supplied by others)
16 Globe valve (supplied by others)
17 Chilled water cooling coil
18 2-way modulating valve (optional 3-way valve)
19 Manual Bypass Valve

S11DS504 07 DECEMBER 2011 NOT TO SCALE

CLIMATEWORX INTERNATIONAL

SERIES 11 - PIPING SCHEMATIC DIAGRAM
AIR DUAL COOLED SYSTEM



COMPONENTS:

1 Compressor
2 High pressure switch
3 Low pressure switch
4 Rotalock valve
5 Evaporator
6 Refrigerant distributor
7 Thermostatic expansion valve
8 Liquid line solenoid valve
9 Sight glass
10 Filter-Drier
11 Access valve
12 Shut off valve
13 Gate valve (supplied by others)
14 Globe valve (supplied by others)
15 Chilled water cooling coil
16 2-way modulating valve (optional 3-way valve)

S11DS505 07 DECEMBER 2011 NOT TO SCALE