CLIMATEWORX INTERNATIONAL

MISSION CRITICAL Air Conditioning Systems

Series 7, Wall Mount Units

Installation Manual

ClimateWorx International Inc.
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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 7 unit is designed for mounting on a vertical wall. Care should be taken to ensure that the supply and return air-paths are not blocked by equipment.

The room layout should provide 508mm (20”) service clearance in the front of the unit for the routine service and maintenance.

Positioning of Condensing Unit

The condensing unit should be located as close to the indoor unit as possible. From a security and environment standpoint, the condensing units should be installed away from public access and occupied spaces where low ambient sound level is required.

In order to avoid short circuit and inter unit re-circulation, condensing units should be located at least 1m (3.3 ft.) away from any walls, obstructions or adjacent units. To ensure maintenance-free operation, condensing units should be located away from the areas that are continuously exposed to loose dirt and foreign materials that may clog the coil.

The condensing units should be firmly secured on steel supports or concrete plinths.

Positioning of Remote Controller Unit or Thermostat

The remote mounted controller or thermostat should be located in an easily accessible area within reach of operating personnel. Consideration should be given to interconnecting wiring between indoor unit and controller. (Cables supplied pre-made from factory when unit is ordered with M52 controller). The maximum distance between indoor unit and controller should be 15 ft. (4.5 M)

Electrical Installation

Power Feeding

All models are fitted with a 3-terminal connection block, for live, neutral and earth connections, which are located at the lower right corner of the power panel.

The power cables should be sized in accordance with local and national codes. Refer to the unit nameplate for circuit ampacity, and wiring diagrams packed with each unit.

Interconnecting Wiring M52 only

Pre-made control cable sets are supplied with each unit for connecting both the outdoor unit and remote mounted controller to the indoor unit. All connectors are terminated with standard crimp connectors. Each cable will be clearly marked and care should be taken to ensure cables are connected correctly. See drawing No. S7ED500A – Interconnecting Wiring

Pipe Installation

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 (4" above unit bottom), to the bottom of the "U" in the trap. Minimum recommended height is 3.5" to ensure proper drainage.

Refrigerant Piping

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 on the bottom of a vertical riser of the suction line and one every 6m (20ft.) in elevation to collect refrigerant and lubrication oil during off cycle.
- Insulate the suction line. Insulate liquid lines that may be subjected to high heat gains.
- Design and arrange refrigerant piping for the evaporator in such a way that it minimizes pressure drop to 3 psig and allows adequate velocity of refrigerant to prevent oil trapping. Recommended pipe sizes are tabulated as follows:

Recommended Pipe Size for Remote Condenser

Models	**7A1.5**	**7A2.0**	**7A2.5**
Liquid Line			
25 ft. equivalent pipe length	3/8”	3/8”	3/8”
50 ft. equivalent pipe length	3/8”	3/8”	3/8”
Suction Line			
25 ft. equivalent pipe length	5/8”	5/8”	5/8”
50 ft. equivalent pipe length	5/8”	3/4”	3/4”

Consult Factory for additional distances

Evacuation

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

1. Connect a gauge manifold to the compressor suction and liquid service valves.
2. Open all service valves.
3. Charge the system with dry nitrogen to approximately 150 psig.
4. 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.
5. Release all pressure.
6. Connect a vacuum pump to the suction and liquid service 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 liquid 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. Let the system remain in vacuum for 30 minutes. If the vacuum holds, break the vacuum and weigh in the system charge with vapor R22/R407C (see nameplate for operating gas) through the suction side of the compressor. If the vacuum doesn't hold, repeat leak test and continue from the top.
10. Allow the pressure to equalize.

Head Pressure Control System

For condenser or condensing units, possibly subjected to extremely low ambient temperatures, it is recommended that a head pressure control system be installed to avoid starving the evaporator coil resulting in oil logging; short cycling by 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 single valve head pressure control, with a heated receiver for factory ordered condensers. The OROA is located in the liquid drain line between the condenser and the receiver, and has a bypass line from the hot gas line.

During periods of low ambient temperature, the condensing pressure falls until it approaches the setting of the OROA valve. The valve (non-adjustable) 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 is required to heat up the cold liquid being passed by the OROA. 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 valve modulates the flow automatically to maintain proper receiver pressure regardless of outside ambient.

Charging

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 follow these guidelines for charging:

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

2. Connect the gauge manifold to both suction and liquid service valves, with the common connection to the refrigerant drum. Purge the lines and open the refrigerant drum vapor valve.

3. Start the compressor using the test mode to energize the main fan and compressor.

4. Open the suction connection on the gauge manifold. Modulate the rate of charging with the gauge manifold valve. Watch the discharge pressure closely during the charging operation to ensure that the system is not overcharged. It is a good practice to weigh the amount of gas added.

5. Charge the system until the sight glass is clear of bubbles. The system is now correctly charged for operating under head pressure control at the ambient temperature charging is being carried out.

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

7. Read from the following table the percentage of condenser to be flooded at charging and that at expected minimum ambient temperature, then calculate the difference:

Ambient Temperature in °F	Percentage 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

8. The flooded condenser capacity on all Series 7 condensing units is 4.4 lbs.

9. Multiply the value found in Step 8 by the difference in percentages calculated in Step 7; this gives the additional charge needed.

10. Fill in the required charge to the receiver.

Normal Charging

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

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

2. Connect the gauge manifold to both liquid and suction service valves, with a common connection to the refrigerant cylinder. Purge the lines and open the refrigerant cylinder vapor valve.

3. Start the compressor using the test mode to energize the main fan and compressor valve.

4. Open the suction connection on the gauge manifold. Modulate the rate of charging with the gauge manifold valve. Watch the discharge pressure closely during the charging operation to ensure that the system is not overcharged.

5. Charge the system until the sight glass is just clear of bubbles.

6. Compare the temperature of the liquid line leaving the condenser with the saturation temperature equivalent to the condensing temperature. Continue charging until the liquid line temperature is approximately 5°F below the condensing temperature.

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 setpoint 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 7 units with standard options.

For units with a special option or configuration, please consult factory for details.

Model	-15	-20	-25
Indoor Unit	S7DD101	S7DD101	S7DD101
Outdoor Unit	S7DD302	S7DD302	S7DD302

Appendix A: Dimensional Drawings

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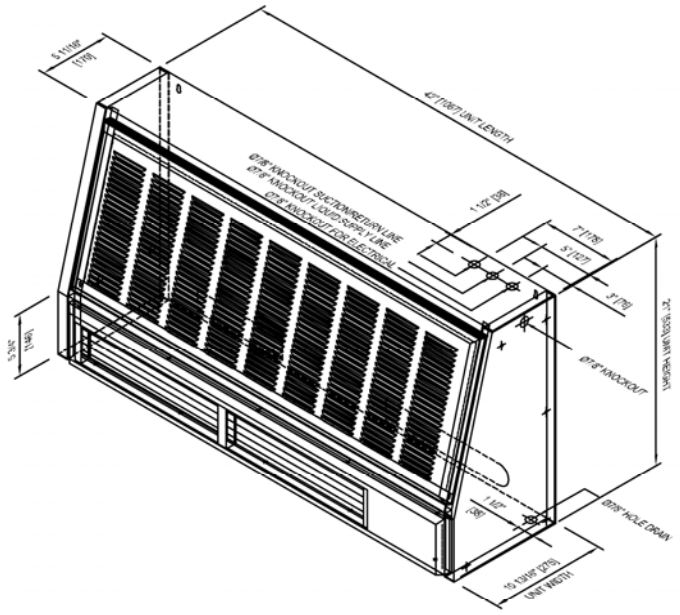
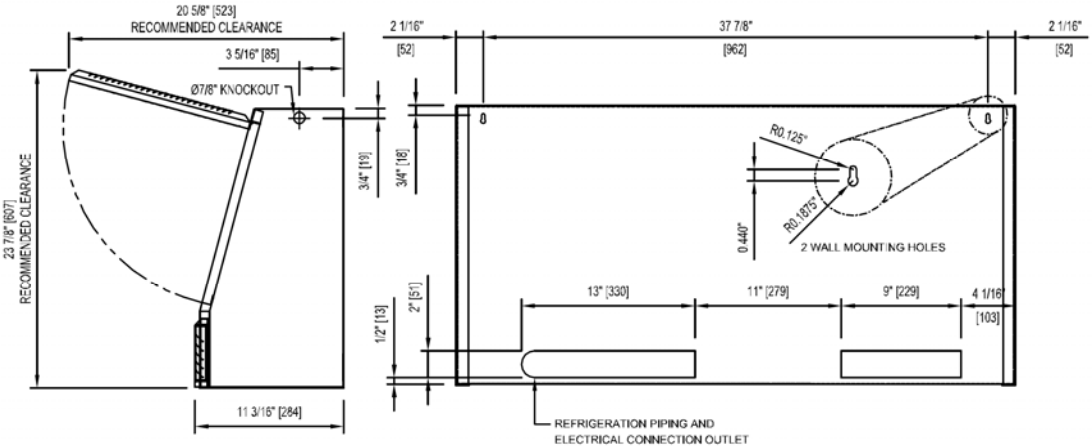
SERIES 7 - DIMENSIONAL DETAIL
WALL MOUNT INDOOR UNIT



ISOMETRIC DETAIL



SIDE PANEL DETAIL

BACK PANEL MOUNTING DETAIL

PIPING C0NNECTI0N SIZE

MODEL N0. SUFFIX		7AH15	7AH20	7AH25	7CW15	7CW20	7CW25
Liquid Line	-0DM in	3/8"	3/8"	3/8"	-	-	-
Suction Line	-0DM in	1/2"	1/2"	1/2"	-	-	-
Humidifier Water	-0DM in	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Condensate Drain	-0DM in	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
Chilled Water	-0DM in	-	-	-	5/8"	5/8"	5/8"

0DM - 0utside Diameter of copper pipe in inches for soldering

S7DD101C 10 JULY 2002 NOT TO SCALE

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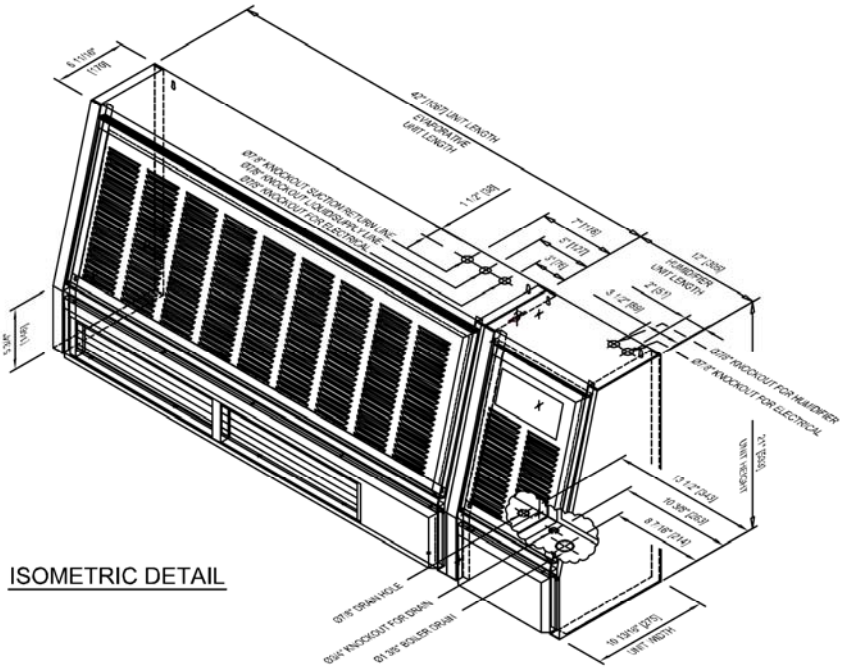
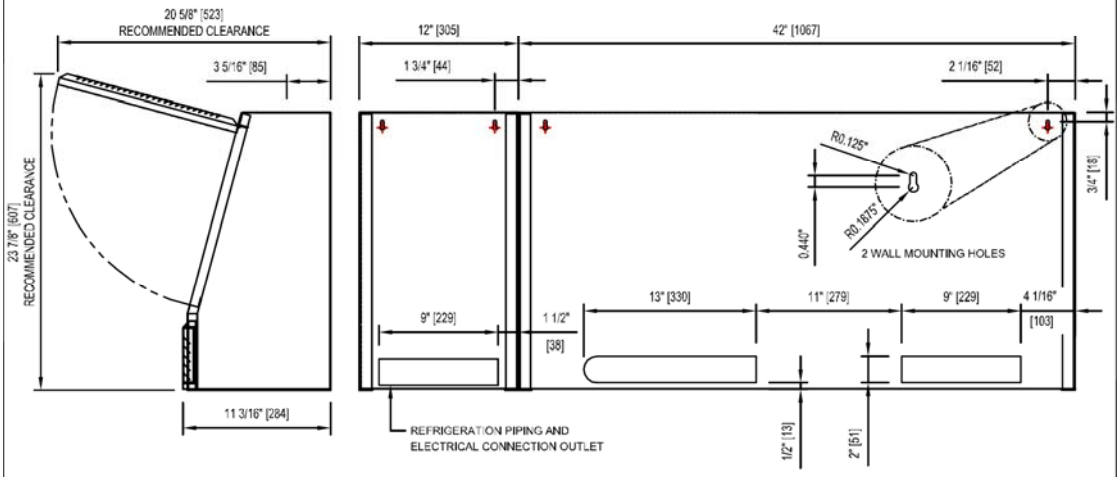
SERIES 7 - DIMENSIONAL DETAIL
WALL MOUNT INDOOR EVAP UNIT W/ HUMIDIFIER



ISOMETRIC DETAIL



SIDE PANEL DETAIL

BACK PANEL MOUNTING DETAIL

PIPING C0NNECTI0N SIZE

MODEL N0. SUFFIX		7AH15	7AH20	7AH25	7CW15	7CW20	7CW25
Liquid Line	-0DM in	3/8"	3/8"	3/8"	-	-	-
Suction Line	-0DM in	1/2"	1/2"	1/2"	-	-	-
Humidifier Water	-0DM in	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Condensate Drain	-0DM in	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
Chilled Water	-0DM in	-	-	-	5/8"	5/8"	5/8"

0DM - 0utside Diameter of copper pipe in inches for soldering

S7DD102C 10 JULY 2002 NOT TO SCALE

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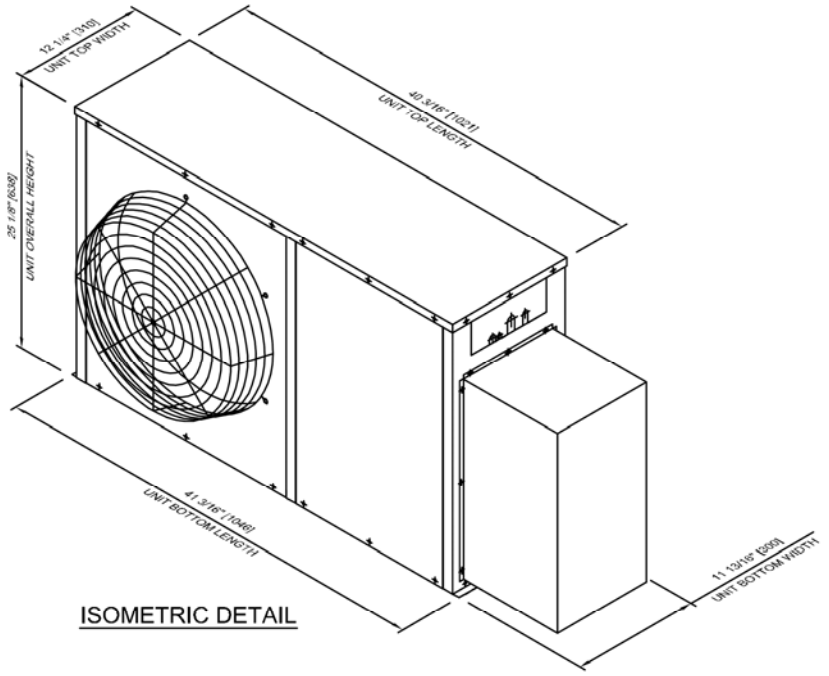
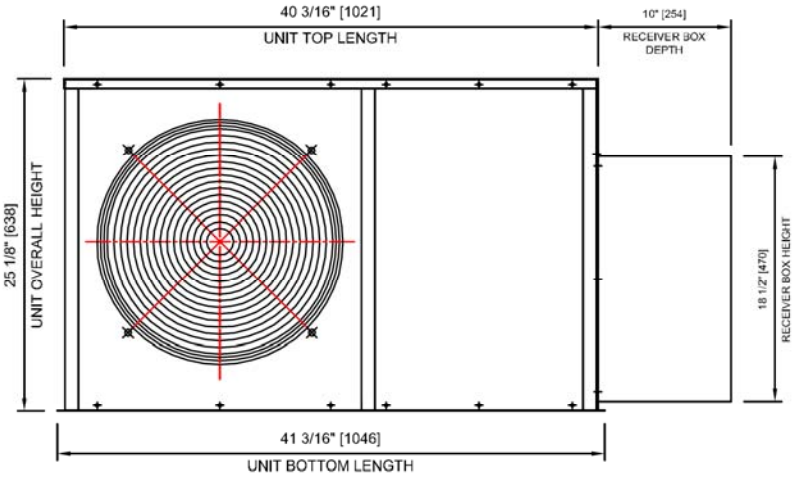
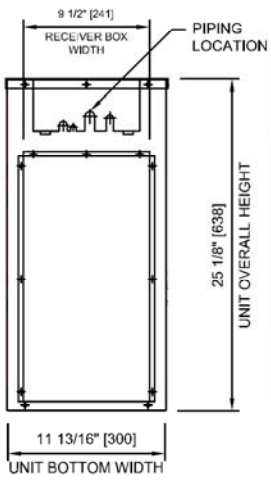
SERIES 7 - DIMENSIONAL DETAIL
OUTDOOR CONDENSING UNIT W/ HEAD PRESS. CTRL.



ISOMETRIC DETAIL



FRONT PANEL DETAIL



SIDE PANEL DETAIL

PIPING CONNECTION SIZE

MODEL NO. SUFFIX		7AC15	7AC20	7AC25
Liquid Line	-ODM in	3/8"	3/8"	3/8"
Suction Line	-ODM in	5/8"	5/8"	5/8"
Condenser Water	-ODM in	-	-	-
Glycol Solution	-ODM in	-	-	-

ODM - Outside Diameter of copper pipe in inches for soldering

S7DD302E 28 NOVEMBER 2002 NOT TO SCALE

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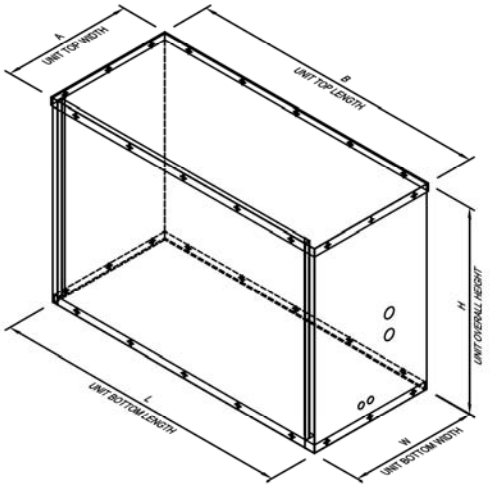
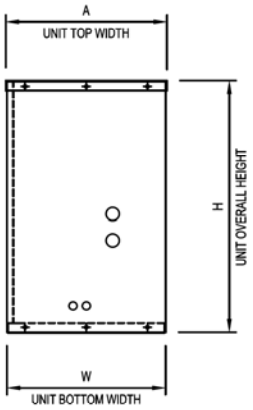
SERIES 7 - DIMENSIONAL DETAIL
WATER/GLYCOL COOLED CONDENSING UNIT



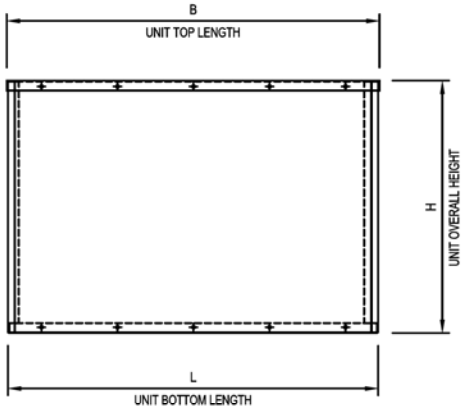
ISOMETRIC DETAIL

CONDENSER DIMENSIONS

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



SIDE PANEL DETAIL



FRONT PANEL DETAIL

PIPING C0NNECTI0N SIZE

MODEL N0. SUFFIX		7WO15	7WO20	7WO25	7GO15	7GO20	7GO25
Liquid Line	-0DM in	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
Suction Line	-0DM in	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Condenser Water	-0DM in	1/2"	1/2"	1/2"	-	-	-
Glycol Solution	-0D in	-	-	-	1/2"	3/4"	3/4"

0DM - 0utside Diameter of copper pipe in inches for soldering

S7DD401B | 13 June 2012 | NOT TO SCALE

Appendix B: Piping Schematic Drawings

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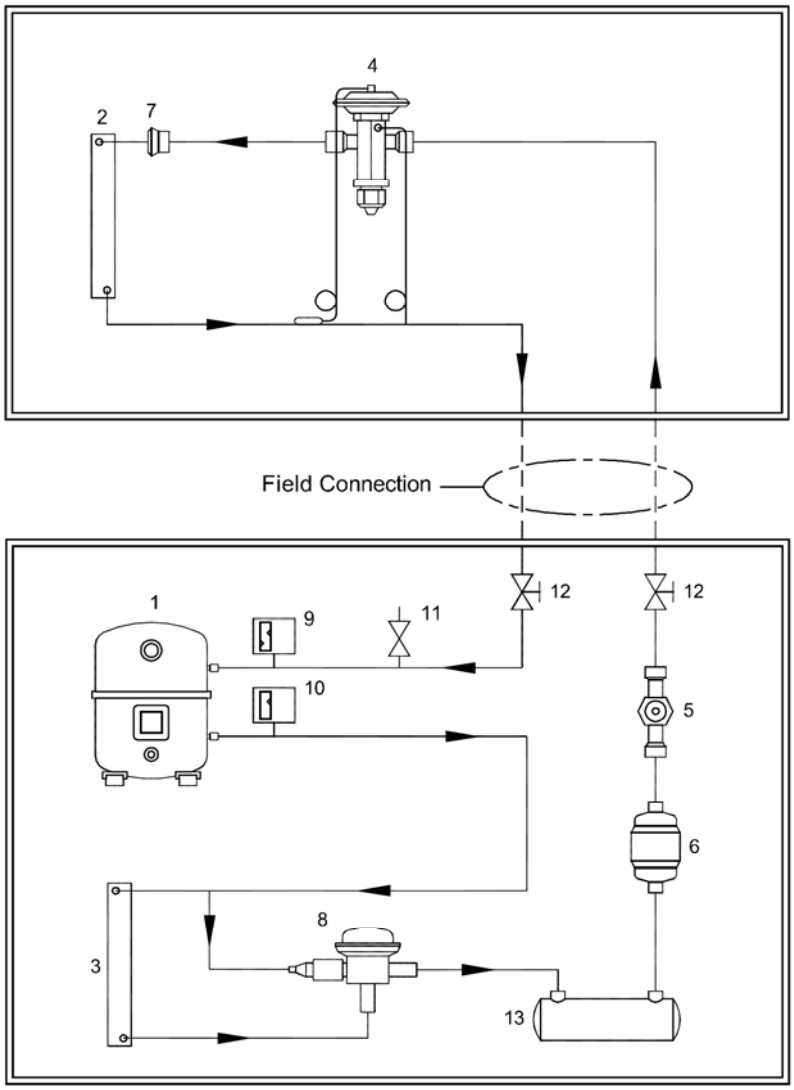
SERIES 7 - PIPING SCHEMATIC DIAGRAM AIR-COOLED SYSTEM WITH HEAD PRESS. CONTROL

WALL MOUNT 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		

S7DS102B 20 AUGUST 2003 NOT TO SCALE

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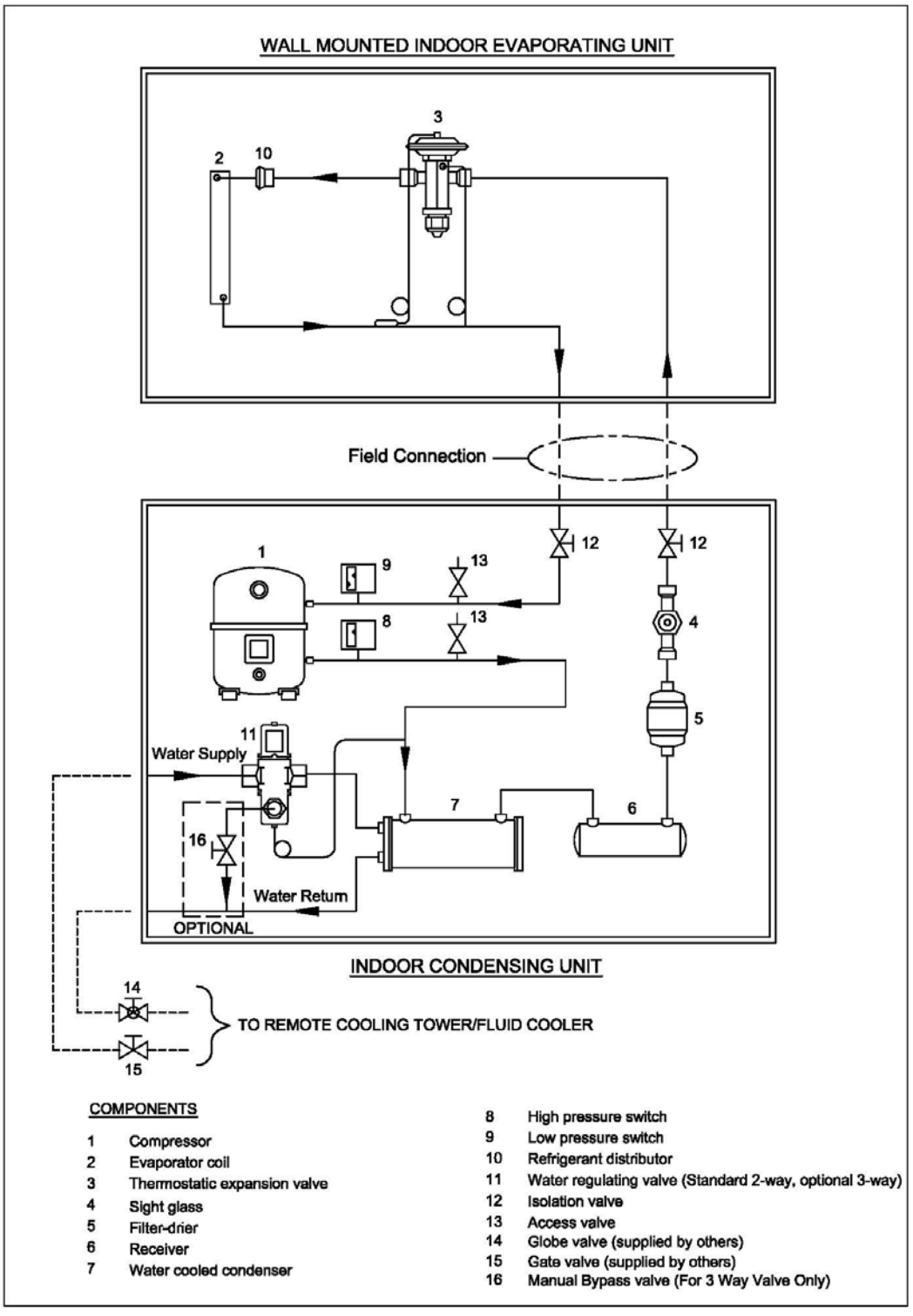
SERIES 7 - PIPING SCHEMATIC DIAGRAM
WATER COOLED SYSTEM W/ 3 WAY VALVE



COMPONENTS

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

S7DS201D 5 JUNE 2013 NOT TO SCALE

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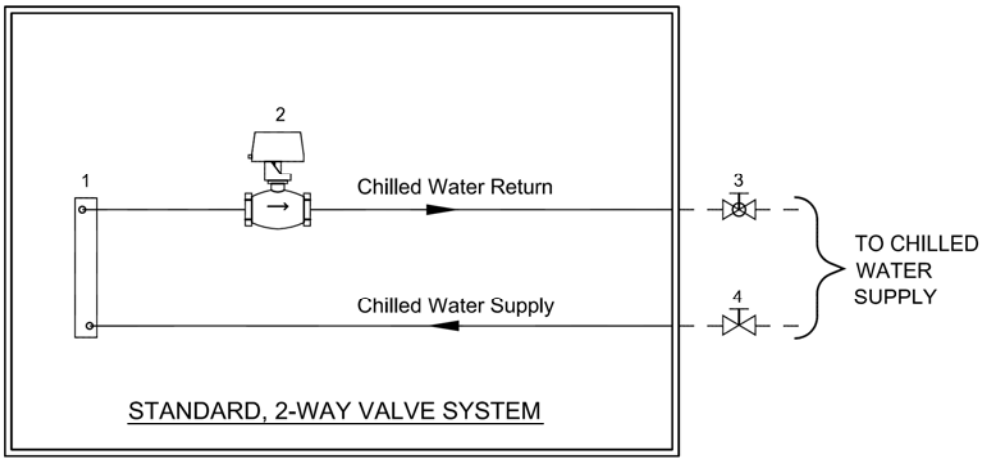
SERIES 7 - PIPING SCHEMATIC DIAGRAM
CHILLED WATER SYSTEM

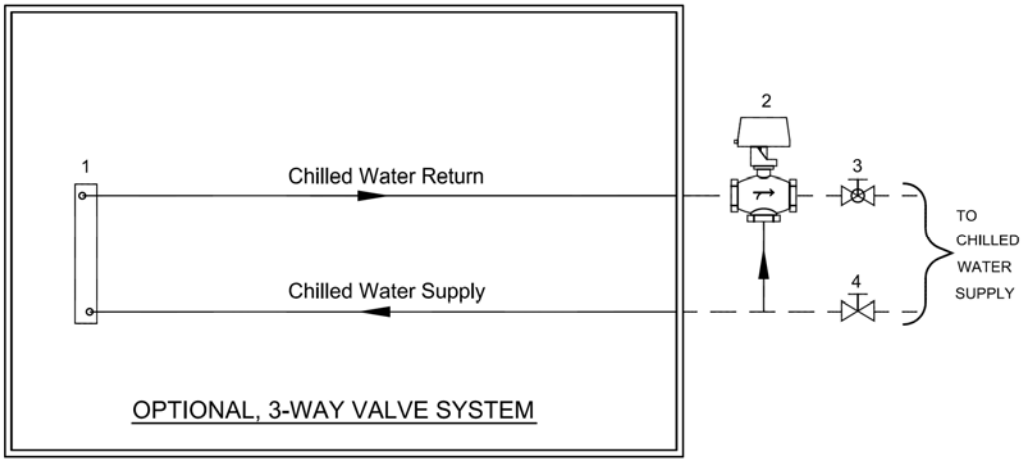
WALL MOUNT INDOOR UNIT



COMPONENTS:

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

WALL MOUNT INDOOR UNIT

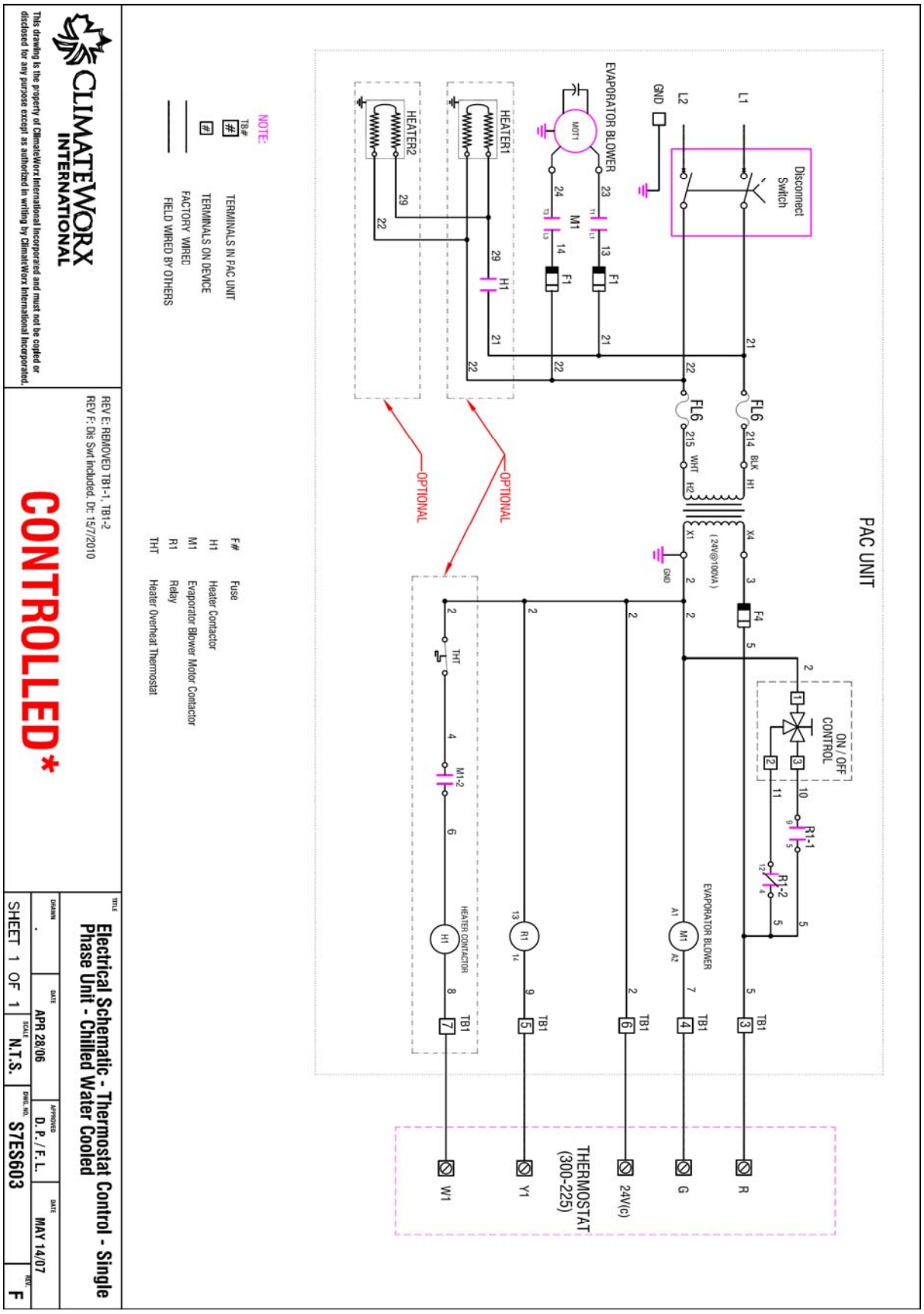


COMPONENTS:

1 Cooling coil
2 3-way valve (factory supplied, shipped loose, field installed)
3 Globe valve (Supplied by others)
4 Gate valve (Supplied by others)

S7DS401C 16 OCTOBER 2003 NOT TO SCALE

Appendix C: Electrical Schematic Drawings



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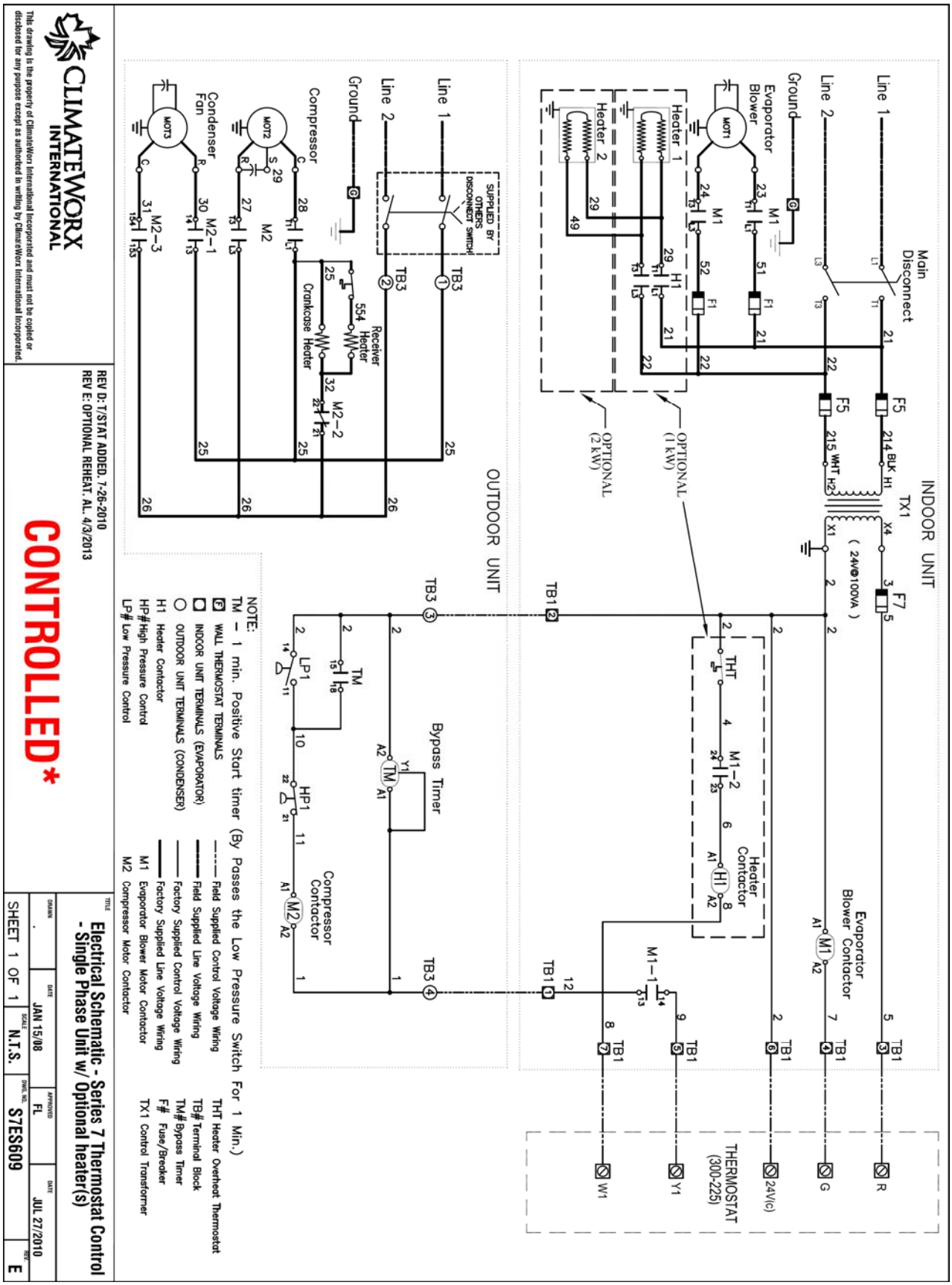
REV E: REMOVED TB1-1, TB1-2
REV F: Dis Swt included, Dt: 15/7/2010

CONTROLLED*

TITLE: **Electrical Schematic - Thermostat Control - Single Phase Unit - Chilled Water Cooled**

DRAWN	DATE	APPROVED	DATE
.	APR 28/06	D. P. / F. L.	MAY 14/07
SHEET 1 OF 1	SCALE N.T.S.	DWG. NO. S7ES603	REV. F



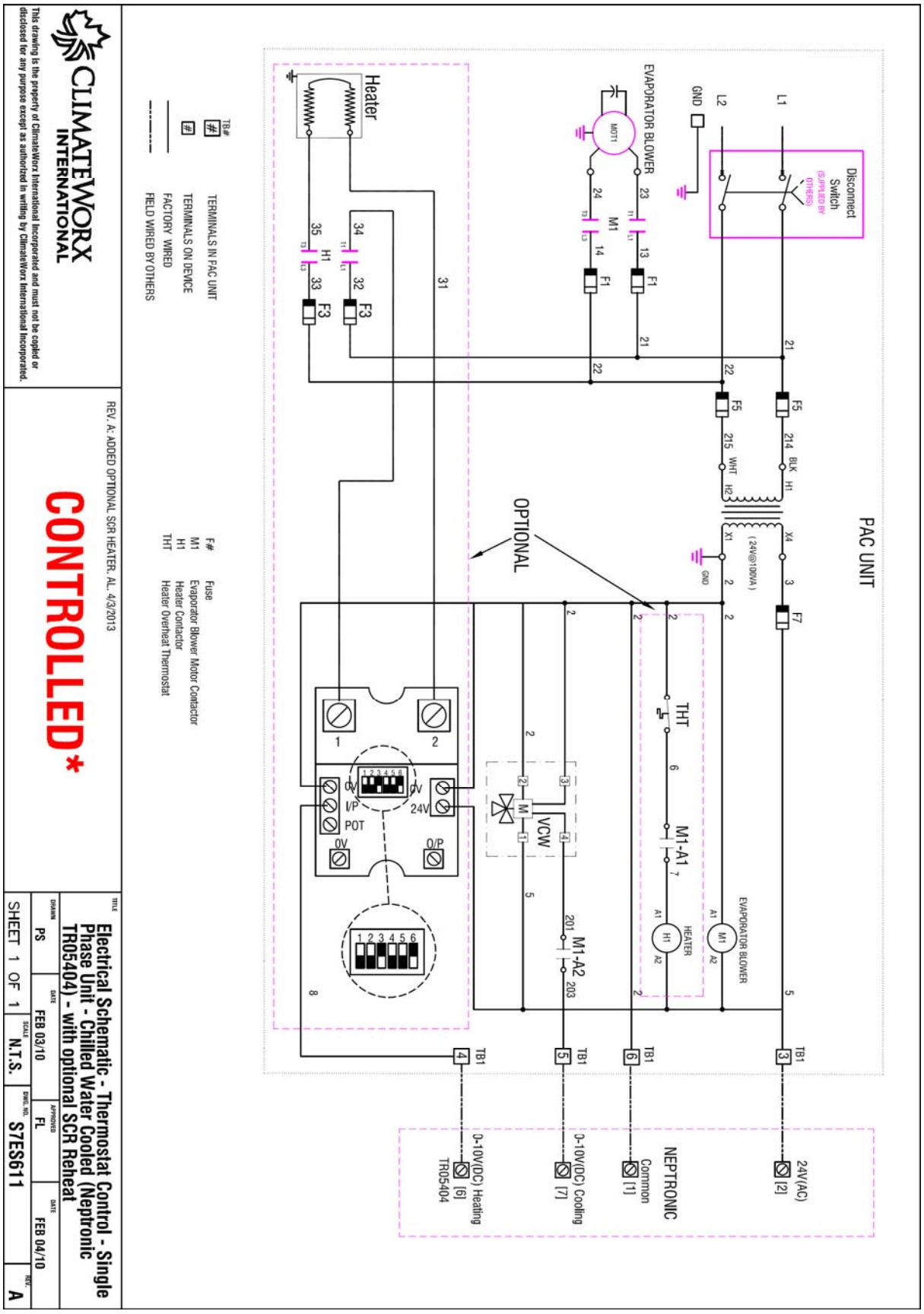
CLIMATEWORX INTERNATIONAL

REV D: T/STAT ADDED. 7-26-2010
REV E: OPTIONAL REHEAT. AL. 4/3/2013

CONTROLLED*

TITLE: **Electrical Schematic - Series 7 Thermostat Control - Single Phase Unit w/ Optional heater(s)**

DRAWN	DATE	APPROVED	DATE
.	JAN 15/08	FL	JUL 27/2010
SHEET 1 OF 1	SCALE N.T.S.	DWG. NO. S7ES609	REV E


PAC UNIT
Disconnect Switch
(SUPPLIED BY OTHERS)
L1
L2
GND
EVAPORATOR BLOWER
M1
F1
F3
F5
F7
Heater
OPTIONAL
THT
M1-A1
M1-A2
VCW
HEATER
EVAPORATOR BLOWER
(24V@100VA)
0V
I/P
POT
24V
O/P
TB1
24V(AC) [2]
NEPTRONIC Common [1]
0-10V(DC) Cooling [7]
0-10V(DC) Heating [6] TR05404
TERMINALS IN FAC UNIT
TERMINALS ON DEVICE
FACTORY WIRED
FIELD WIRED BY OTHERS
F# Fuse
M1 Evaporator Blower Motor Contactor
H1 Heater Contactor
THT Heater Overheat Thermostat
REV. A: ADDED OPTIONAL SCR HEATER. AL. 4/3/2013
CONTROLLED*
CLIMATEWORX INTERNATIONAL
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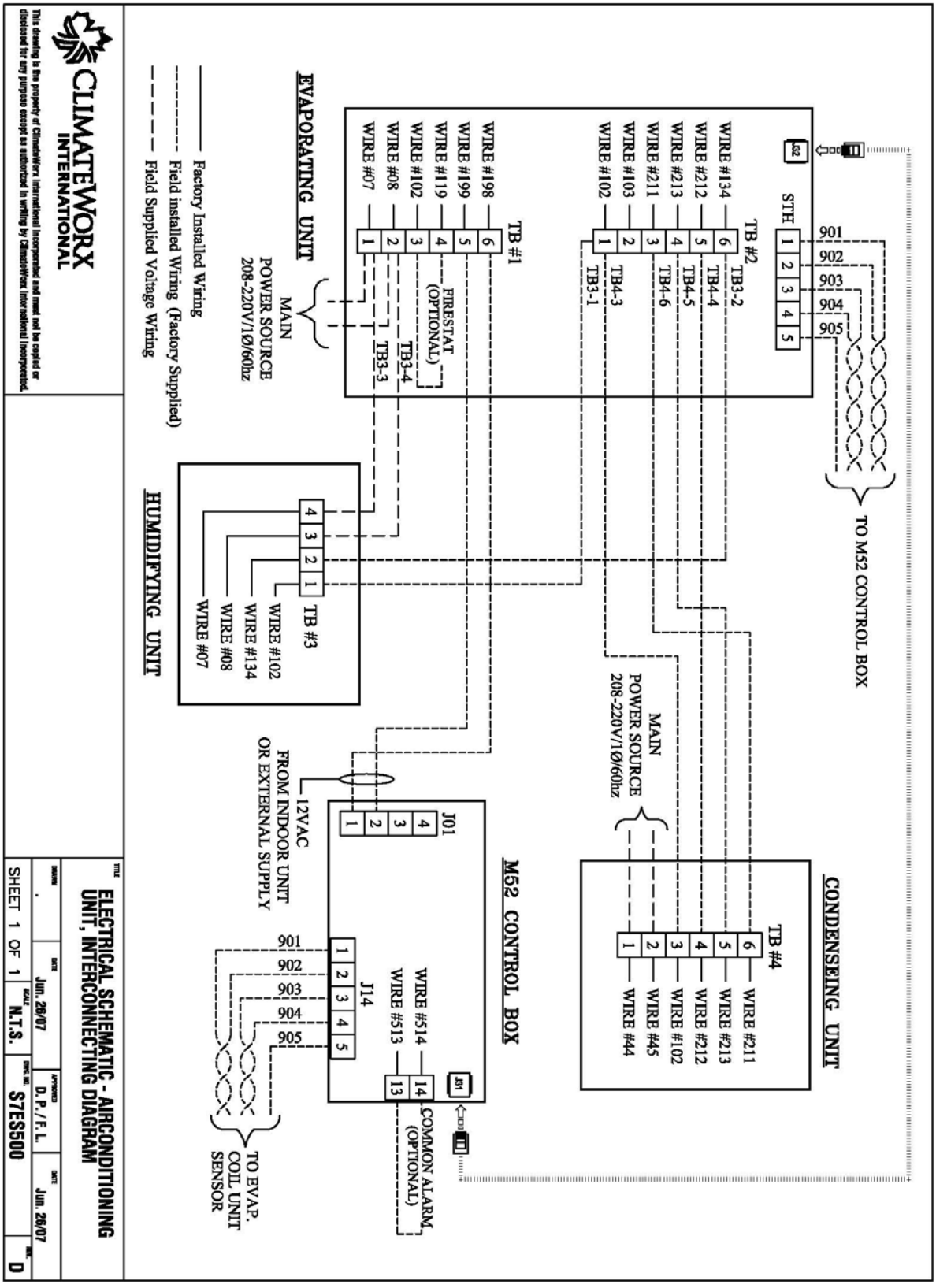
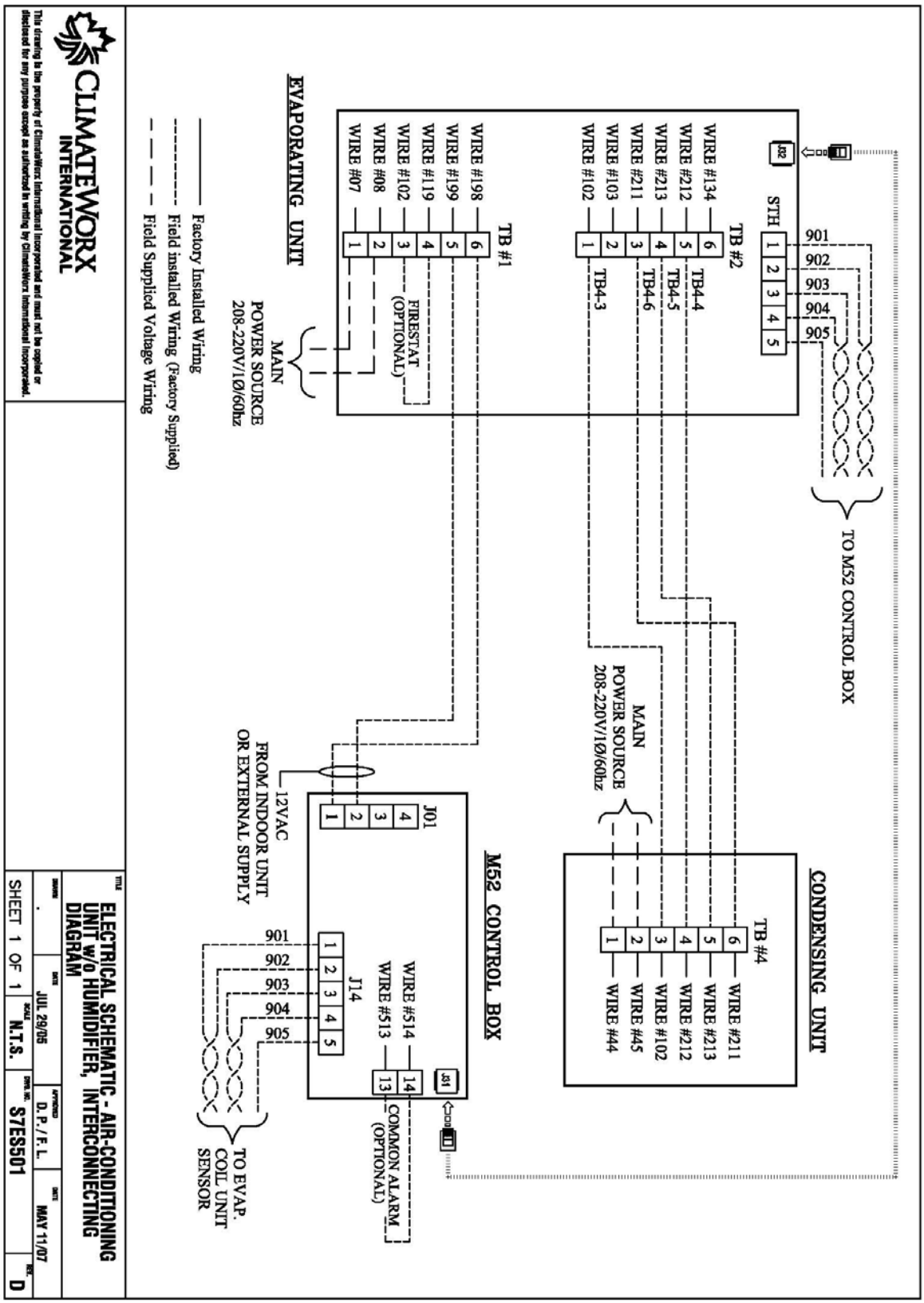
TITLE
Electrical Schematic - Thermostat Control - Single Phase Unit - Chilled Water Cooled (Neptronic TR05404) - with optional SCR Reheat
DRAWN PS
DATE FEB 03/10
APPROVED FL
DATE FEB 04/10
SCALE N.T.S.
DWG. NO. S7ES611
REV. A
SHEET 1 OF 1


CONDENSEING UNIT
TO M52 CONTROL BOX
STH
901
902
903
904
905
TB #2
WIRE #134
WIRE #212
WIRE #213
WIRE #211
WIRE #103
WIRE #102
TB3-2
TB4-4
TB4-5
TB4-6
TB4-3
TB3-1
TB #4
WIRE #211
WIRE #213
WIRE #212
WIRE #102
WIRE #45
WIRE #44
MAIN
POWER SOURCE
208-220V/1Ø/60hz
TB #1
WIRE #198
WIRE #199
WIRE #119
WIRE #102
WIRE #08
WIRE #07
FIRESTAT
(OPTIONAL)
TB3-4
TB3-3
EVAPORATING UNIT
MAIN
POWER SOURCE
208-220V/1Ø/60hz
M52 CONTROL BOX
J01
J14
12VAC
FROM INDOOR UNIT
OR EXTERNAL SUPPLY
WIRE #514
WIRE #513
COMMON ALARM
(OPTIONAL)
TO EVAP.
COIL UNIT
SENSOR
TB #3
WIRE #102
WIRE #134
WIRE #08
WIRE #07
HUMIDIFYING UNIT
Factory Installed Wiring
Field installed Wiring (Factory Supplied)
Field Supplied Voltage Wiring
CLIMATEWORX INTERNATIONAL
This drawing is the property of ClimateWorx International Incorporated and must not be copied or disclosed for any purpose except as authorized in writing by ClimateWorx International Incorporated.
TITLE
ELECTRICAL SCHEMATIC - AIRCONDITIONING UNIT, INTERCONNECTING DIAGRAM
DRAWN
.
DATE
Jun. 26/07
APPROVED
D. P. / F. L.
DATE
Jun. 26/07
SCALE
N.T.S.
DWG. NO.
S7ES500
REV.
D
SHEET 1 OF 1

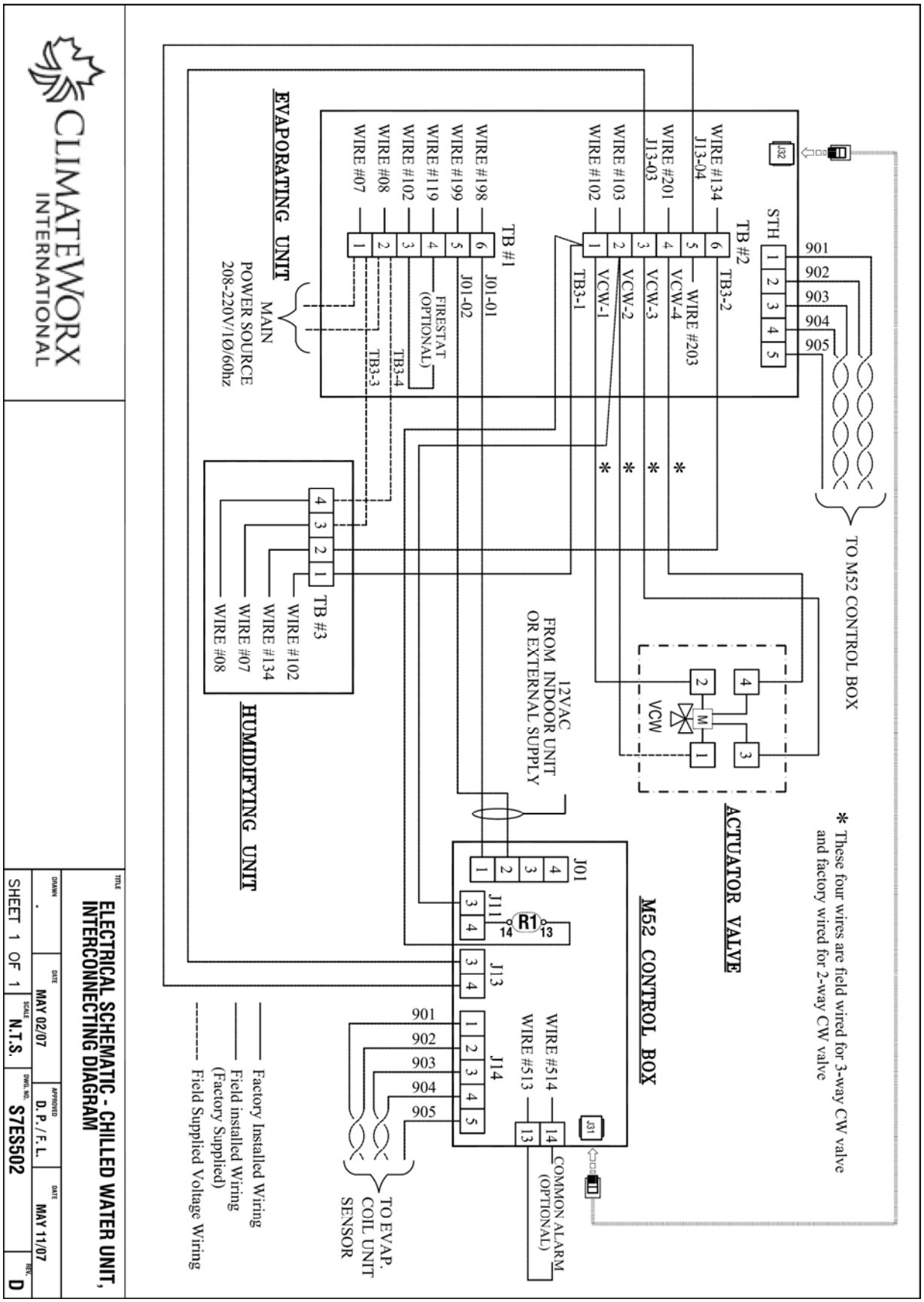


CLIMATEWORX INTERNATIONAL

TITLE: ELECTRICAL SCHEMATIC - AIR-CONDITIONING UNIT w/o HUMIDIFIER, INTERCONNECTING DIAGRAM

DRAWN	DATE	APPROVED	DATE
.	JUL 29/05	D. P. / F. L.	MAY 11/07

SHEET 1 OF 1	SCALE N.T.S.	DWG. NO. S7ES501	REV. D



CLIMATEWORX INTERNATIONAL

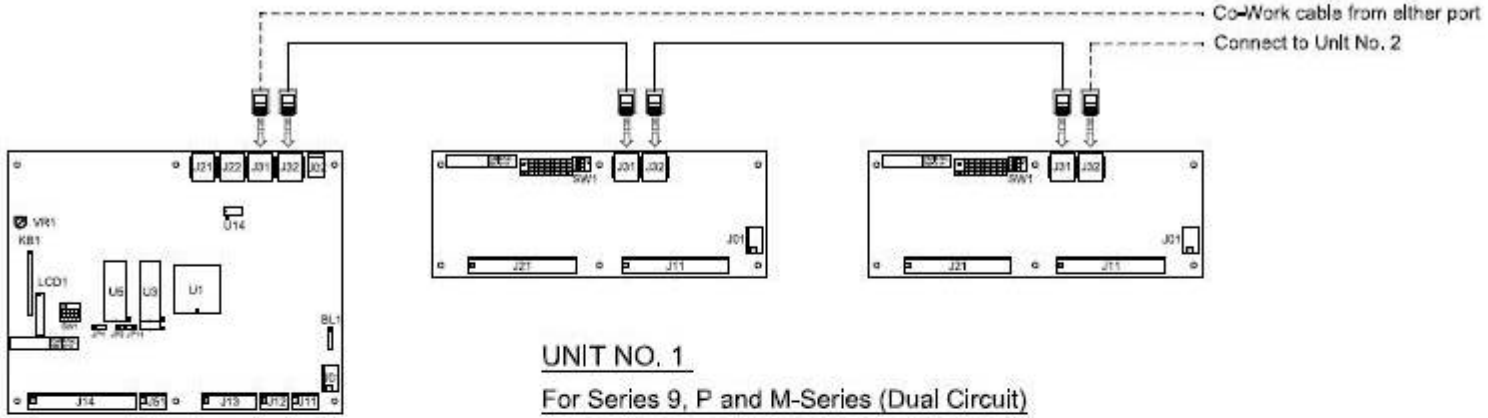
TITLE: **ELECTRICAL SCHEMATIC - CHILLED WATER UNIT, INTERCONNECTING DIAGRAM**

DRAWN	DATE	APPROVED	DATE
.	MAY 02/07	D. P. / F. L.	MAY 11/07

SHEET 1 OF 1	SCALE N.T.S.	DWG. NO. S7ES502	REV. D

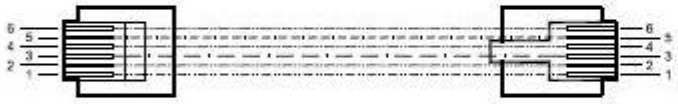
CLIMATEWORX INTERNATIONAL

M52 CONTROL SYSTEM
Co-Work I2C Interconnection Link

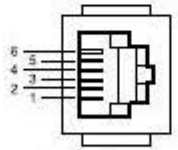


UNIT NO. 1

For Series 9, P and M-Series (Dual Circuit)



J31 and J32 (I2C)	
PIN No.	Signal
1	GRD
2	SDA
3	GRD
4	SCL
5	GRD
6	PWR

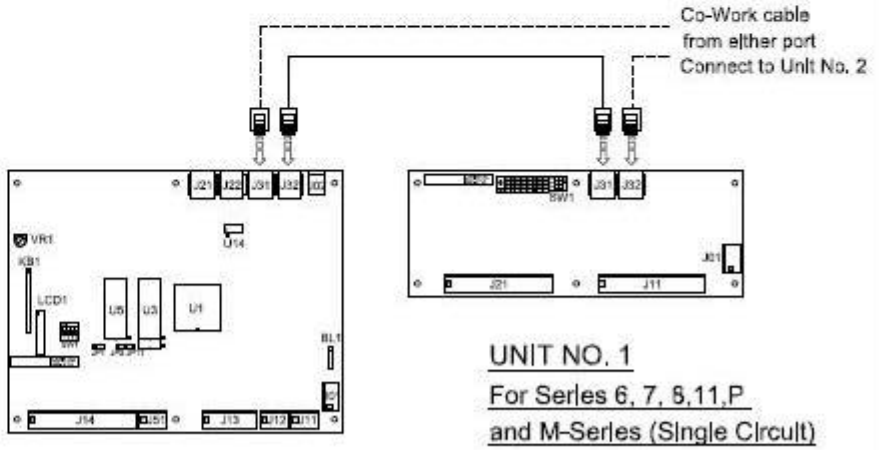


Socket PC Board

Note :
1. J31 and J32 are RJ12 socket.

Communication Cable Specification ClimateWorx P/N 20100196:
Four twisted pair, Category 5, 24 AWG (0.2 m^2) run in dedicated EMT or flexible metal BX conduit which is properly connected to the unit electrical box at both ends. Using approved strain relief.

Note :
The use of an EMI filter such as a broad band EMI Ferrit is recommended for each end of the cable. ClimateWorx P/N 20400990



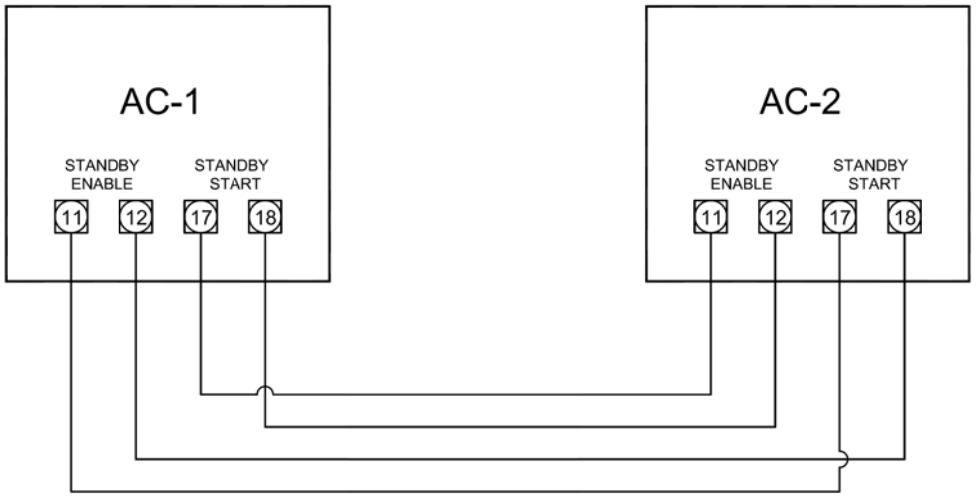
UNIT NO. 1

For Series 6, 7, 8,11,P and M-Series (Single Circuit)

M52ES13E 17 JULY 2013 Dimension: Not to scale

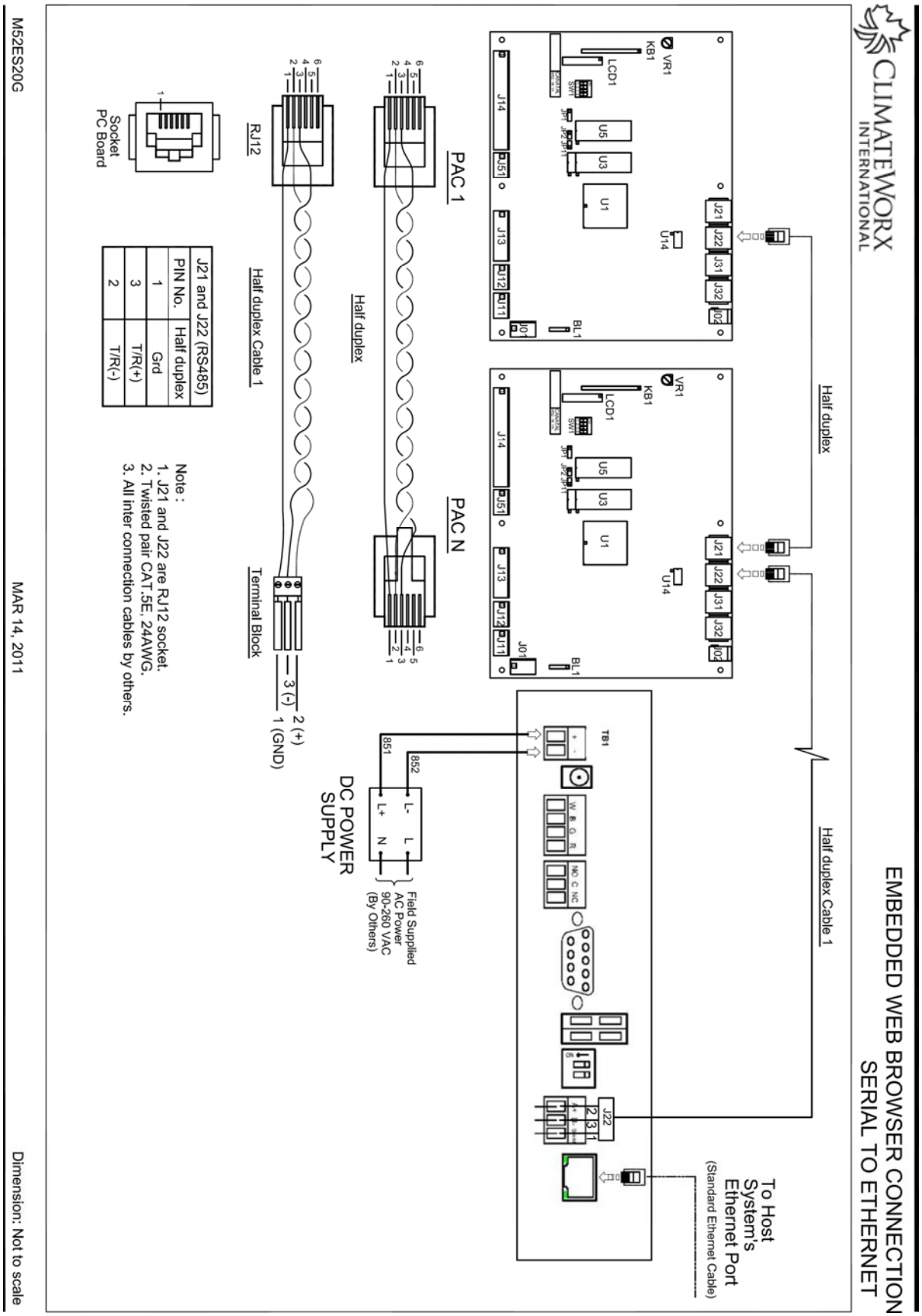
CLIMATEWORX INTERNATIONAL

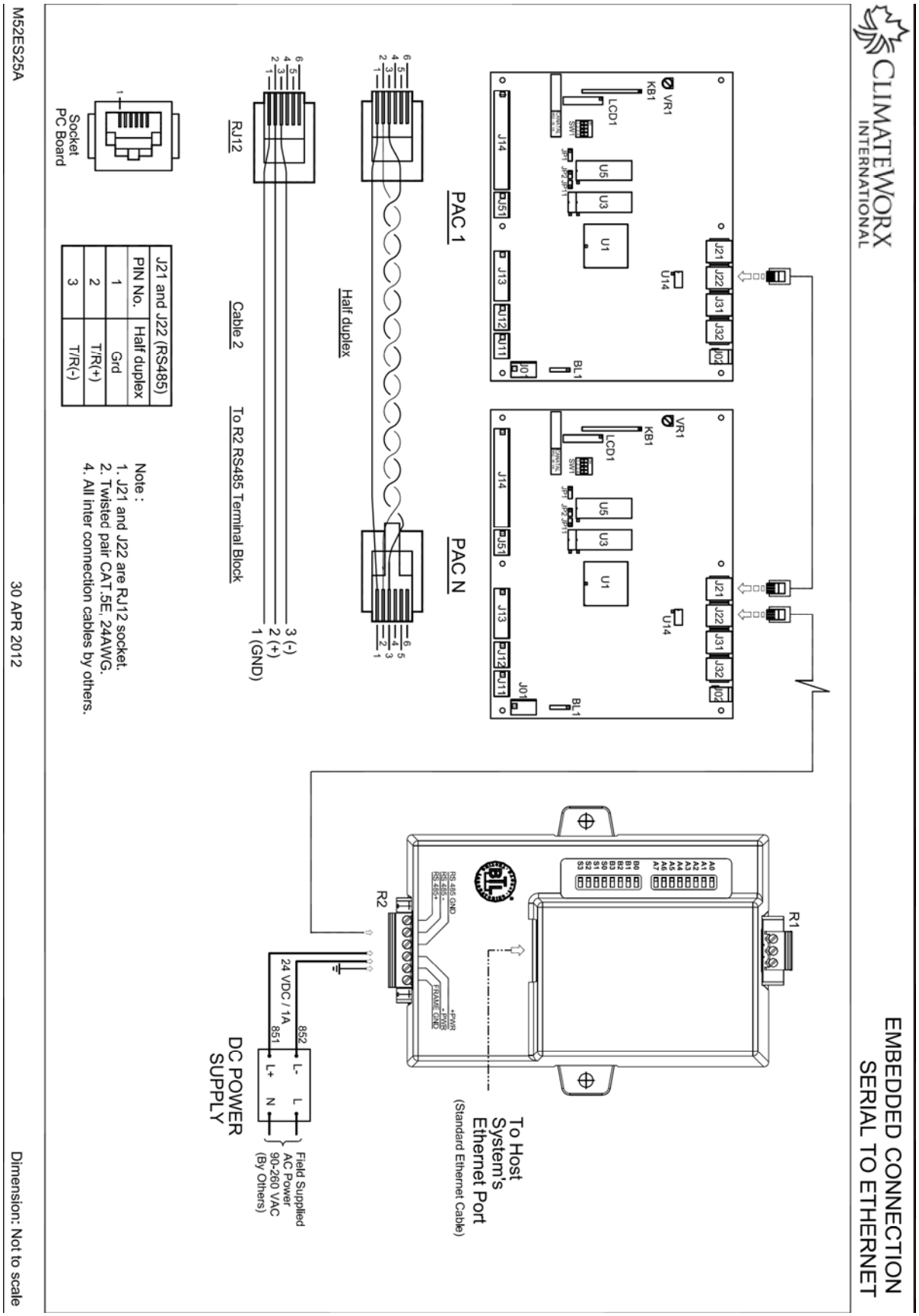
For Automatic Change Over
Field Wiring Standby Start/Standby Enable



LEGEND:

(#) FIELD TERMINAL

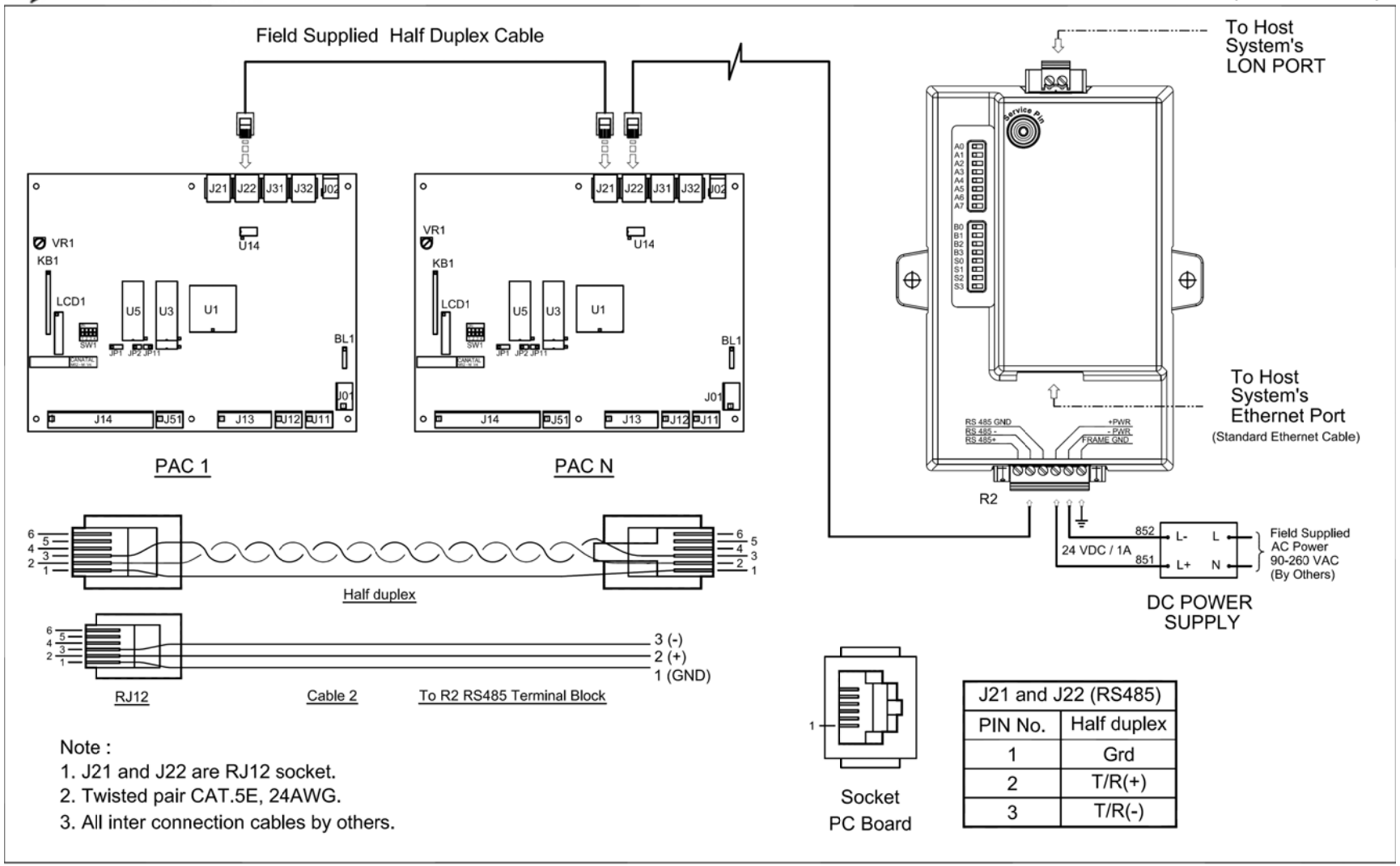

CLIMATEWORX INTERNATIONAL
EMBEDDED WEB BROWSER CONNECTION
SERIAL TO ETHERNET
Half duplex
Half duplex Cable 1
PAC 1
PAC N
Half duplex
Half duplex Cable 1
Terminal Block
RJ12
Socket
PC Board
To Host
System's
Ethernet Port
(Standard Ethernet Cable)
DC POWER
SUPPLY
Field Supplied
AC Power
90-260 VAC
(By Others)
3 (-)
2 (+)
1 (GND)
J21 and J22 (RS485)
PIN No. | Half duplex
1 | Grd
3 | T/R(+)
2 | T/R(-)
Note :
1. J21 and J22 are RJ12 socket.
2. Twisted pair CAT.5E, 24AWG.
3. All inter connection cables by others.
M52ES20G
MAR 14, 2011
Dimension: Not to scale



J21 and J22 (RS485)	
PIN No.	Half duplex
1	Grd
2	T/R(+)
3	T/R(-)

CLIMATEWORX INTERNATIONAL

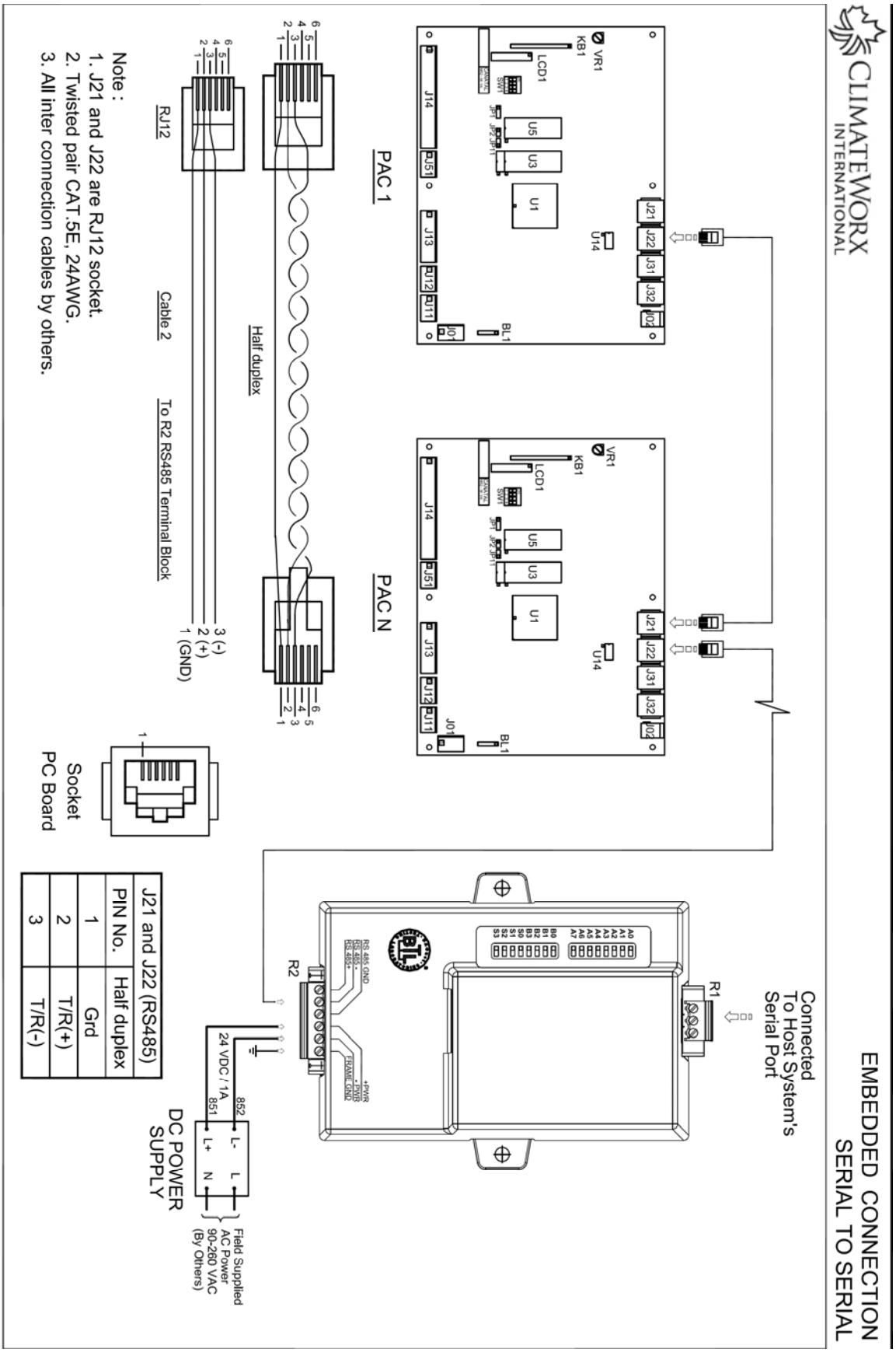
EMBEDDED CONNECTION
SERIAL TO ETHERNET (LONWORKS)



J21 and J22 (RS485)	
PIN No.	Half duplex
1	Grd
2	T/R(+)
3	T/R(-)

Note :
1. J21 and J22 are RJ12 socket.
2. Twisted pair CAT.5E, 24AWG.
3. All inter connection cables by others.

M52ES26B | 30 APR 2012 | Dimension: Not to scale


CLIMATEWORX INTERNATIONAL
EMBEDDED CONNECTION
SERIAL TO SERIAL
PAC 1
PAC N
Connected
To Host System's
Serial Port
R1
R2
Half duplex
Cable 2
To R2 RS485 Terminal Block
RJ12
3 (-)
2 (+)
1 (GND)
Note :
1. J21 and J22 are RJ12 socket.
2. Twisted pair CAT.5E, 24AWG.
3. All inter connection cables by others.
Socket
PC Board
DC POWER
SUPPLY
24 VDC / 1A
852
851
L-
L+
L
N
Field Supplied
AC Power
90-260 VAC
(By Others)
J21 and J22 (RS485)
PIN No.
Half duplex
1
Grd
2
T/R(+)
3
T/R(-)
M52ES27B
30 APR 2012
Dimension: Not to scale