



Series 6, Vertical Floor-Mount 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.
- All cables and piping should be carefully routed to lower resistance to the distribution of conditioned air and to avoid the blockage of air-paths to any portion of the room. As a good practice, all cables and piping running under the raised floor should be mounted horizontally and whenever possible, routed to run in parallel with the air-path.
- In order to obtain the most effective air distribution, units should not be located too close together. Attention should be taken to avoid locating the units in an alcove or an extreme end of a long narrow room.

Location Consideration

Positioning of Indoor units

The Series 6 units are designed to be free standing on an accessible raised flooring system provided with sufficient pedestal supports underneath. A minimum raised floor height of 12" (300mm) is required. However, it is highly recommended to use a separate floor stand as a support, which is independent of the raised floor system. This allows the unit to be installed prior to erecting the raised flooring system thus providing much easier access to piping and electrical connections. The floor stand or unit should be isolated using a suitable isolation method. ClimateWorx OEM floor stands use a two-nut system for the floor stand feet. Use both nuts, the top nut for leveling and the bottom nut to lock the leveling nut in place.

The room layout should provide 27-1/2" (700mm) service clearance in the front of the unit for the routine service and maintenance. Right-side access increases serviceability.

Note: Packaged air cooled units must be positioned with back of unit facing the outside wall with opening in the outside wall to match the opening in the unit. This opening should be covered on the outside with a grille to meet local safety and building codes but must not restrict discharge or intake air flow.

Positioning of Outdoor Heat Rejection Devices

The outdoor heat rejection devices such as air-cooled condensers and glycol coolers should be located as close to the indoor unit as possible. From a security and environment standpoint, the outdoor heat rejection devices should be installed away from public access and occupied spaces where low ambient sound level is required.

In order to avoid short circuiting and inter unit re-circulation, outdoor heat rejection devices should be located at least 1.2m (4 ft.) away from any walls or obstructions or 2.4m (8ft), from adjacent units. To ensure maintenance-free operation, outdoor heat rejection devices should be located away from the areas that are continuously exposed to loose dirt and foreign materials that may clog the coil.

The outdoor heat rejection devices should be firmly secured on steel supports or concrete plinths.

Dimensional Details

The following tables summarize the dimensional detail drawing number for Series 6 units with standard options. Please refer to Appendix “A” for the dimensional detail drawings.

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

- Upflow/ Downflow Systems

Model	-02	-03	-04	-05
6AU	S6DD101	S6DD101	S6DD101	S6DD101
6AD	S6DD102	S6DD102	S6DD102	S6DD102
6CU	S6DD101	S6DD101	S6DD101	S6DD101
6CD	S6DD102	S6DD102	S6DD102	S6DD102
6WU	S6DD101	S6DD101	S6DD101	S6DD101
6WD	S6DD102	S6DD102	S6DD102	S6DD102
6GU	S6DD101	S6DD101	S6DD101	S6DD101
6GD	S6DD102	S6DD102	S6DD102	S6DD102

- Air Cooled Packaged Systems

Model	-02	-03	-04	-05
6AD/U	S6DAXP500	S6DAXP500	S6DAXP500	S6DAXP500

- Ducted Return Air Systems

Model	-02	-03	-04	-05
6AU	S6DD103	S6DD103	S6DD103	S6DD103
6AD	S6DD104	S6DD104	S6DD104	S6DD104
6CU	S6DD103	S6DD103	S6DD103	S6DD103
6CD	S6DD104	S6DD104	S6DD104	S6DD104
6WU	S6DD103	S6DD103	S6DD103	S6DD103
6WD	S6DD104	S6DD104	S6DD104	S6DD104
6GU	S6DD103	S6DD103	S6DD103	S6DD103
6GD	S6DD104	S6DD104	S6DD104	S6DD104

Electrical Installation

Power Feeding

All models are fitted with a 3-pole main isolator, neutral and earth terminal, which are located at the lower right corner of the power panel.

The isolator and terminals will accept cables up to AWG #2 (35mm²) gauge. The power cables should be sized in accordance with local and national codes. Refer to the "Electrical Data" section in the Technical Data Manual for current requirements.

Interconnecting Wiring

Internal wiring for all Series 6 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:

<u>Terminal</u>	<u>Function</u>	<u>Requirement</u>
11-12	Standby enable	25VA max. normally open triac output
13-14	Common Alarm	25VA max. normally open dry contact output (NA only) or triac
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
23-24-25	Condenser interlock	10A max. normally open contact output

Refrigerant Pipework Installation

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) be 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 the vertical riser of a hot gas line and a trap for every 20 ft. (6m) in elevation to collect refrigerant and lubrication oil during off cycle.
- 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. Recommended pipe sizes are tabulated as follows:

Recommended Pipe Size for Remote Condenser

Hot Gas Line

Model - 6AD / 6AU		-02	-03	-04	-05
50 ft. equivalent pipe length	in.	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$
100 ft. equivalent pipe length	in.	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$
150 ft. equivalent pipe length	in.	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$
200 ft. equivalent pipe length	in.	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$

Liquid Line

Model - 6AD / 6AU		-02	-03	-04	-05
50 ft. equivalent pipe length	in.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
100 ft. equivalent pipe length	in.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
150 ft. equivalent pipe length	in.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
200 ft. equivalent pipe length	in.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$

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. Using the test mode, energize fan and all solenoid valves. (See M52 User's Guide) Open liquid line hand valve.
2. Connect a gauge manifold to the compressor suction and discharge rotalock 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.
7. Connect a vacuum pump to the compressor suction and discharge rotalock valves with refrigerant or high vacuum hoses. Provide an isolating valve and a pressure gauge for pressure checking.
8. 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.

9. 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.
10. Stop the vacuum pump. Break the vacuum and weigh in the system charge with vapor R22/R407C (see nameplate for operating gas) through the discharge side of the compressor.
11. 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

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 and open the refrigerant cylinder vapor valve.
4. Start the compressor using the test mode to energize the main fan and compressor.
5. 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.
6. Charge the system until the sight glass is just clear of bubbles.
7. Compare the temperature of the liquid line leaving the condenser with the saturation temperature equivalent to the condensing pressure. Continue charging until the liquid line temperature is approximately 5°F below the condensing temperature.

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 which signals a Variable Frequency Drive (VFD) to maintain a constant head pressure. This is factory set to perform at peak performance and doesn't 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.

Canatal 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

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 the common connection to the refrigerant drum. Purge the lines and open the refrigerant drum vapor valve.
4. Start the compressor using the test mode to energize the main fan and compressor.
5. 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.
6. Charge the system until the sight glass is just clear of bubbles. 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 gas added.
7. If the system is designed to operate at ambient below the ambient that exists during charging, additional charge will have to be added now.
8. Read from the following table the percentage of condenser to be flooded at charging and that at the expected minimum ambient temperature, then calculated 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

9. Read the charge required for flooding the complete condenser to the required minimum ambient temperature from the condenser technical data manual.
10. Multiply the value found in Step 9 by the difference in percentages calculated in Step 8; this gives the additional charge required.
11. Fill in the required charge to the receiver.

Chilled-water / Water / Glycol Pipework Installation

The Chilled-water / Water / Glycol pipework should be installed in accordance with the following recommendations:

- A manual shut-off valve should be installed at the supply and return pipes of each indoor unit for routine service and emergency isolation of the unit.
- Joints installed inside the room must be kept to a minimum. The system drain discharge point should be installed outside the room.
- Piping inside the building should be insulated to eliminate the possibility of condensation under low ambient conditions.
- Always use the reverse return system when two or more indoor units are served by the same source.
- For condensing water supplied from a cooling tower, adequate filtration and an inhibitor should be added in correct quantities to prevent the formation of scale and corrosion.
- Only ethylene glycol containing a corrosion inhibitor should be used. Automotive anti-freeze is unacceptable and must not be used in the Glycol system.
- Concentration of glycol required depends on the minimum ambient temperature. The following glycol concentration is recommended:

% of ethylene glycol by weight	Minimum operating temperature °C (°F)
10	0 (32)
20	-5 (23)
30	-11.6 (11)
40	-20 (-4)
50	-32.2 (-26)

Piping Connection Size:

Model no. suffix		02	03	04	05
Liquid line	-odm	1/2	1/2	1/2	1/2
Hot gas line	-odm	5/8	5/8	5/8	7/8
Humidifier drain	-odm	3/4	3/4	3/4	3/4
Humidifier water in	-odm	1/4	1/4	1/4	1/4
Cooling coil condensate	-odm	3/4	3/4	3/4	3/4
Chilled water (when req'd)	-odm	1-1/8	1-1/8	1-1/8	1-1/8
Condenser water (when req'd)	-odm	1-1/8	1-1/8	1-1/8	1-1/8
Glycol solution (when req'd)	-odm	1-5/8	1-5/8	1-5/8	1-5/8

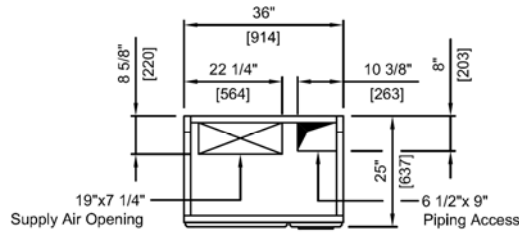
Odm – Outside diameter of copper pipe in inches for soldering

Appendix A: Dimensional Drawings

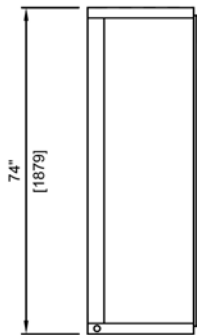
<u>Drawing Title</u>	<u>Drawing No.</u>
SERIES 6 - Upflow Dimensional Detail	S6DD101
SERIES 6 - Downflow Dimensional Detail	S6DD102
SERIES 6 – Upflow System with Ducted Return Plenum Dimensional Detail	S6DD103
SERIES 6 - Downflow System with Ducted Return Plenum Dimensional Detail	S6DD104
SERIES 6 - Upflow or Downflow System with Packaged Air cooled condenser	S6DXAP500



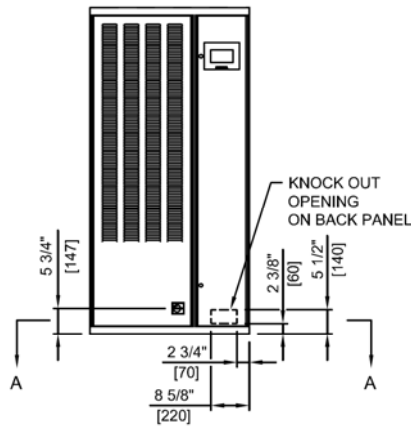
SERIES 6 - VERTICAL FLOOR MOUNT UPFLOW UNIT
DIMENSIONAL DETAIL



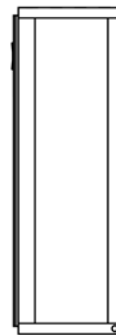
Plan



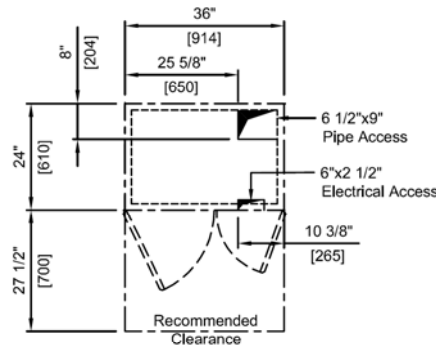
Left End View



Front Elevation



Right End View



Base Frame Outline Detail - Section 'AA'

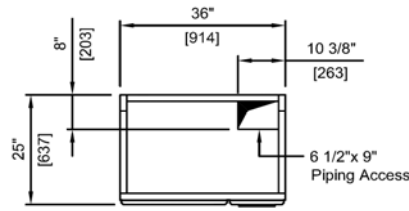
<u>PIPING CONNECTION SIZE</u>		02	03	04	05
MODEL NO. SUFFIX					
Liquid Line	-ODM in	1/2	1/2	1/2	1/2
Hot Gas Line	-ODM in	5/8	5/8	5/8	5/8
Humidifier Drain	-ODM in	3/4	3/4	3/4	3/4
Humidifier Water In	-ODM in	1/4	1/4	1/4	1/4
Cooling Coil Condensate	-ODM in	3/4	3/4	3/4	3/4
Chilled Water (when req'd)	-ODM in	1-1/8	1-1/8	1-1/8	1-1/8
Condenser Water (when req'd)	-ODM in	1-1/8	1-1/8	1-1/8	1-1/8
Glycol Solution (when req'd)	-ODM in	1-5/8	1-5/8	1-5/8	1-5/8

ODM - Outside Diameter of copper pipe in inches for soldering

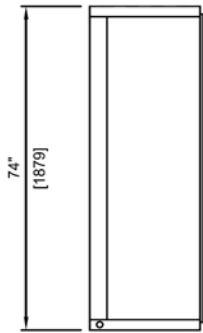


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INTERNATIONAL

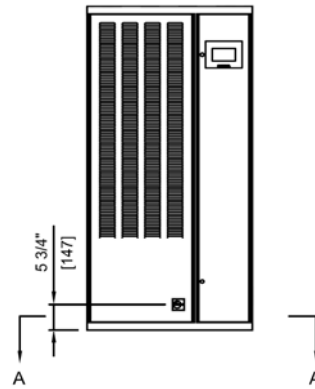
SERIES 6 - VERT. FLOOR MOUNT DOWNFLOW UNIT
DIMENSIONAL DETAIL



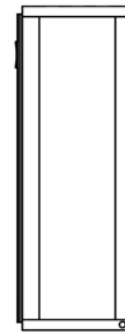
Plan



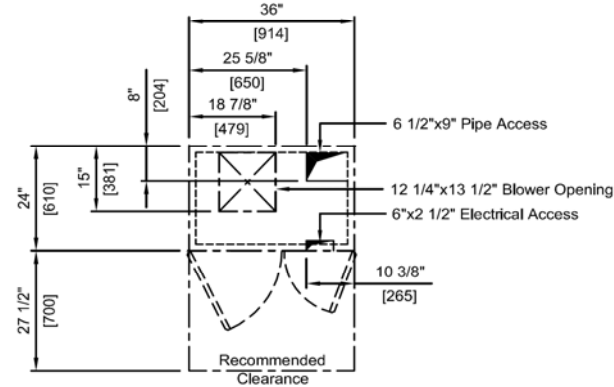
Left End View



Front Elevation



Right End View



Base Frame Outline Detail - Section 'AA'

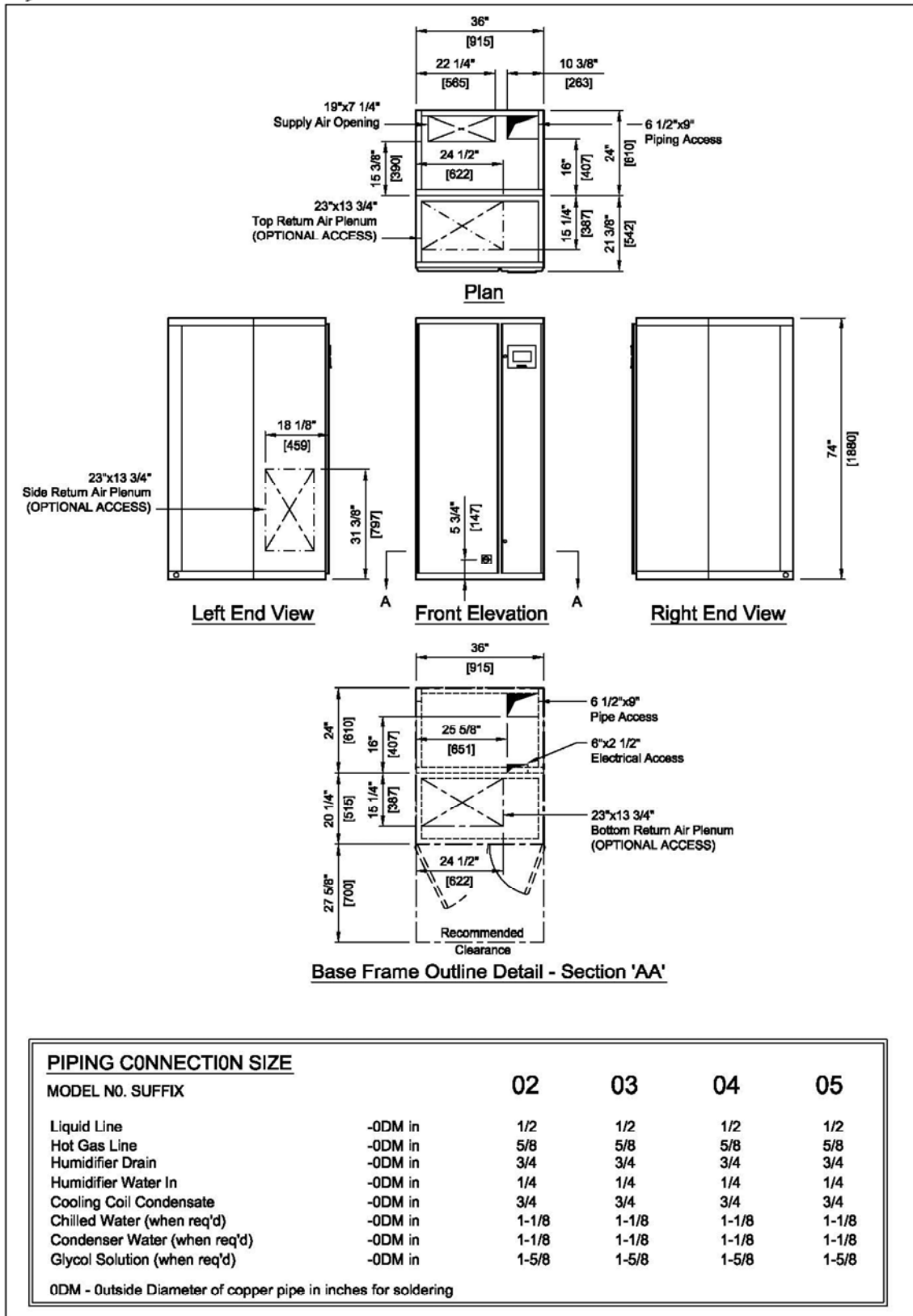
PIPING CONNECTION SIZE

MODEL NO. SUFFIX		02	03	04	05
Liquid Line	-ODM in	1/2	1/2	1/2	1/2
Hot Gas Line	-ODM in	5/8	5/8	5/8	5/8
Humidifier Drain	-ODM in	3/4	3/4	3/4	3/4
Humidifier Water In	-ODM in	1/4	1/4	1/4	1/4
Cooling Coil Condensate	-ODM in	3/4	3/4	3/4	3/4
Chilled Water (when req'd)	-ODM in	1-1/8	1-1/8	1-1/8	1-1/8
Condenser Water (when req'd)	-ODM in	1-1/8	1-1/8	1-1/8	1-1/8
Glycol Solution (when req'd)	-ODM in	1-5/8	1-5/8	1-5/8	1-5/8

ODM - Outside Diameter of copper pipe in inches for soldering



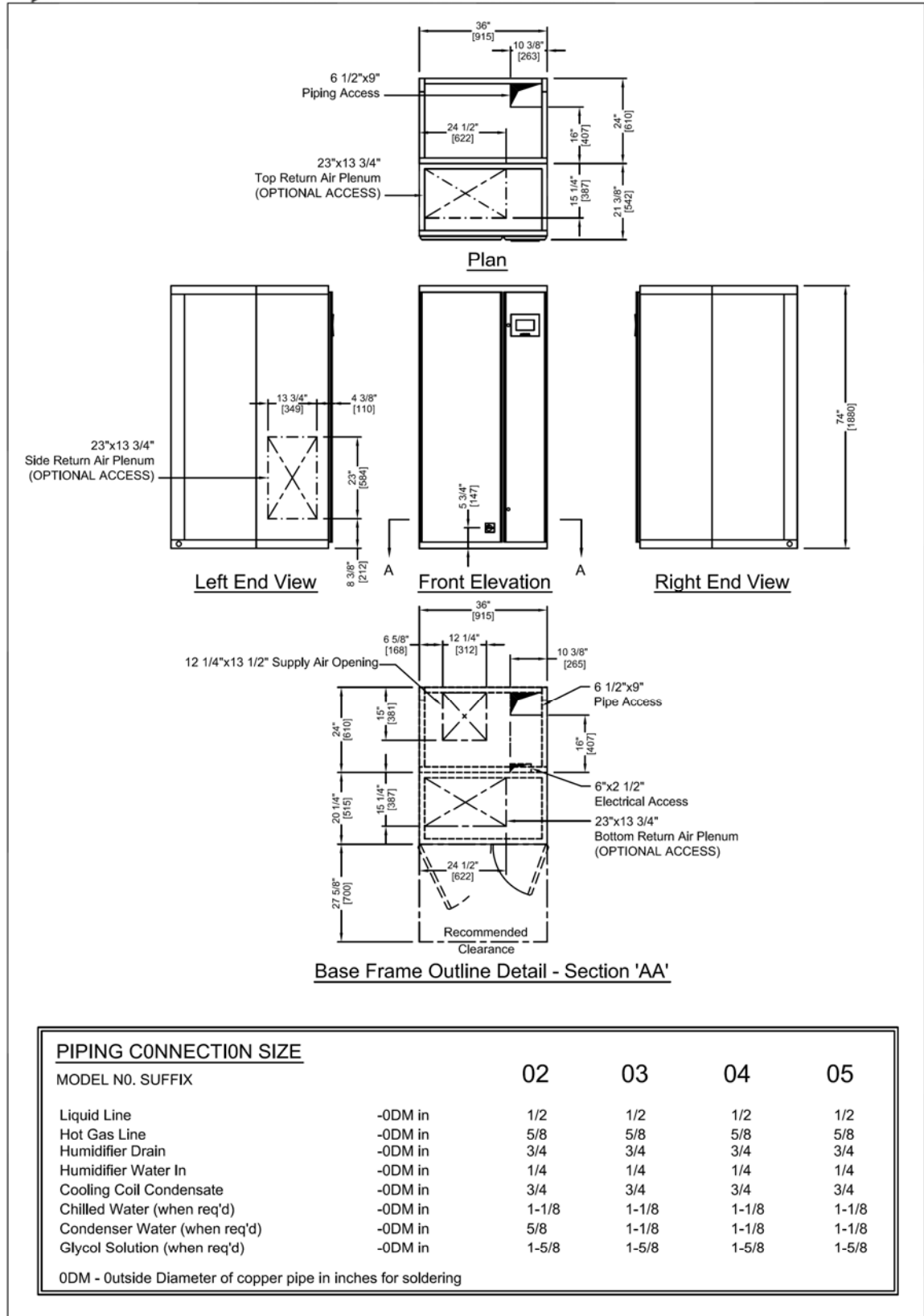
SERIES 6 - VERT. FLOOR MOUNT UPFLOW UNIT DUCTED RETURN PLENUM DIMENSIONAL DETAIL





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INTERNATIONAL

SERIES 6 - VERTICAL FLOOR MOUNT DOWNFLOW UNIT
DUCTED RETURN PLENUM DIMENSIONAL DETAIL



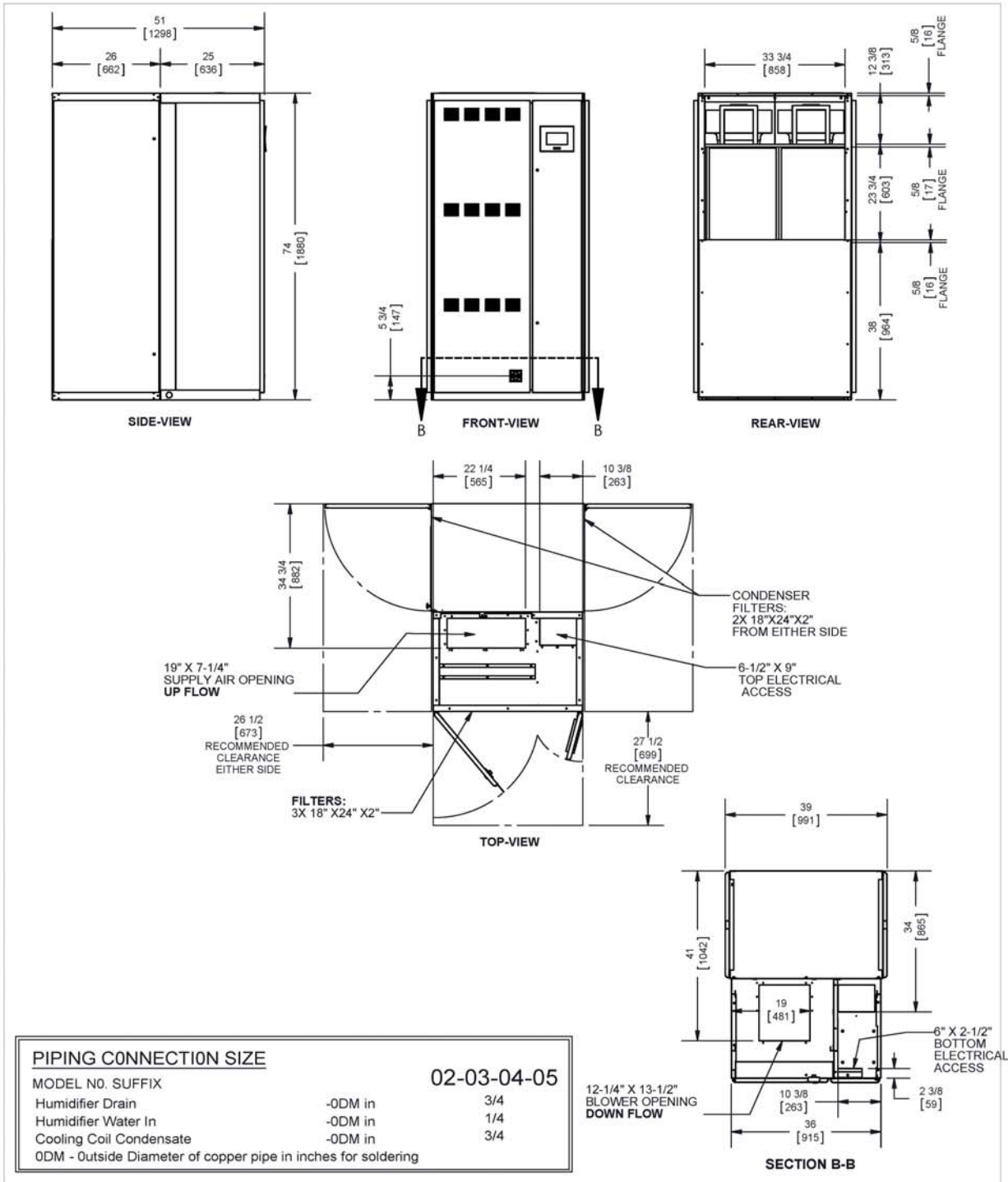
PIPING CONNECTION SIZE

MODEL NO. SUFFIX		02	03	04	05
Liquid Line	-ODM in	1/2	1/2	1/2	1/2
Hot Gas Line	-ODM in	5/8	5/8	5/8	5/8
Humidifier Drain	-ODM in	3/4	3/4	3/4	3/4
Humidifier Water In	-ODM in	1/4	1/4	1/4	1/4
Cooling Coil Condensate	-ODM in	3/4	3/4	3/4	3/4
Chilled Water (when req'd)	-ODM in	1-1/8	1-1/8	1-1/8	1-1/8
Condenser Water (when req'd)	-ODM in	5/8	1-1/8	1-1/8	1-1/8
Glycol Solution (when req'd)	-ODM in	1-5/8	1-5/8	1-5/8	1-5/8

ODM - Outside Diameter of copper pipe in inches for soldering



**SERIES 6 - VERT. FLOOR MOUNT
PACKAGED AIR COOLED - DIMENSIONAL DETAIL**



PIPING CONNECTION SIZE		
MODEL NO. SUFFIX		02-03-04-05
Humidifier Drain	-ODM in	3/4
Humidifier Water In	-ODM in	1/4
Cooling Coil Condensate	-ODM in	3/4
ODM - Outside Diameter of copper pipe in inches for soldering		

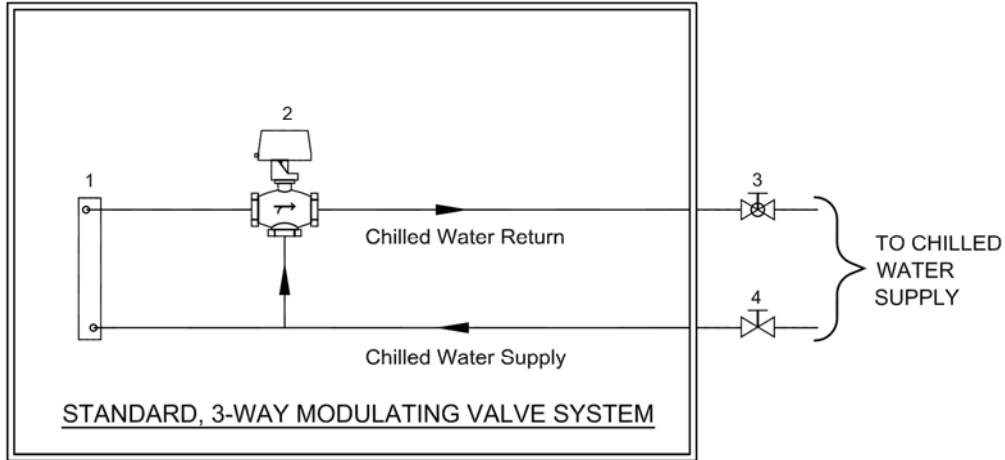
Appendix B: Piping Schematic Diagrams

<u>Drawing Title</u>	<u>Drawing No.</u>
SERIES 6 – Chilled Water System Schematic	S6DS401
SERIES 6 – Air Cooled System Schematic	S6DS101
SERIES 6 – Air Cooled System Schematic with Hot Gas Bypass	S6DS102
SERIES 6 – Water Cooled System Schematic	S6DS201
SERIES 6 – Water Cooled System Schematic with Hot Gas Bypass	S6DS202
SERIES 6 – Glycol Cooled System Schematic	S6DS301
SERIES 6 – Glycol Cooled System Schematic with Hot Gas Bypass	S6DS302
SERIES 6 – Air Cooled Packaged System Schematic	S6DS103



SERIES 6 - PIPING SCHEMATIC DIAGRAM
CHILLED WATER SYSTEM

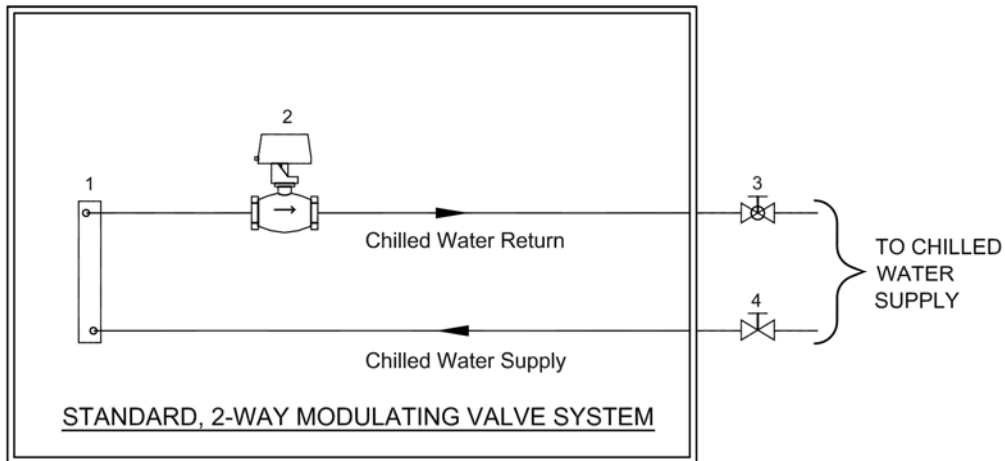
VERTICAL FLOOR MOUNT UNIT



COMPONENTS:

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

VERTICAL FLOOR MOUNT UNIT

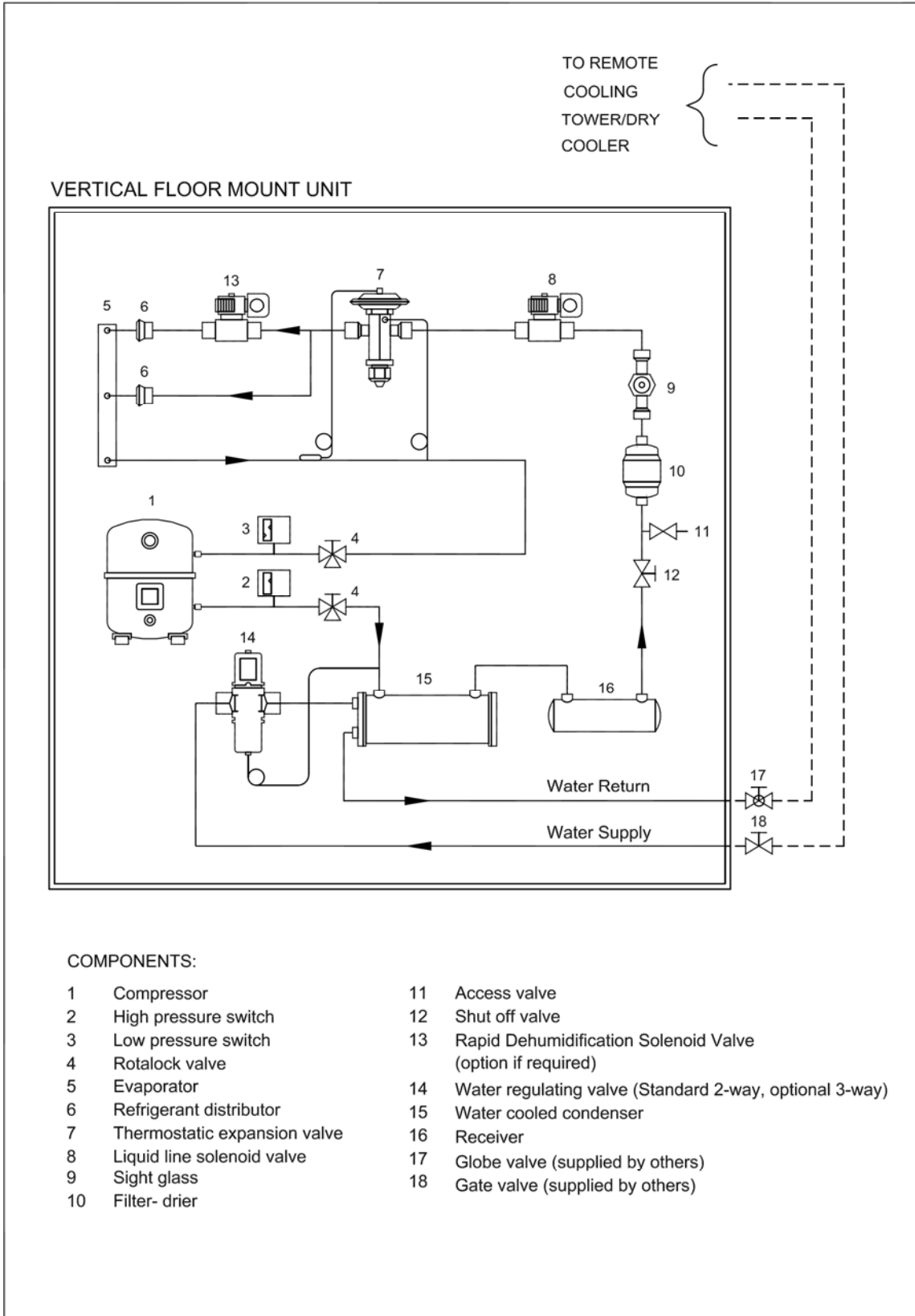


COMPONENTS:

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

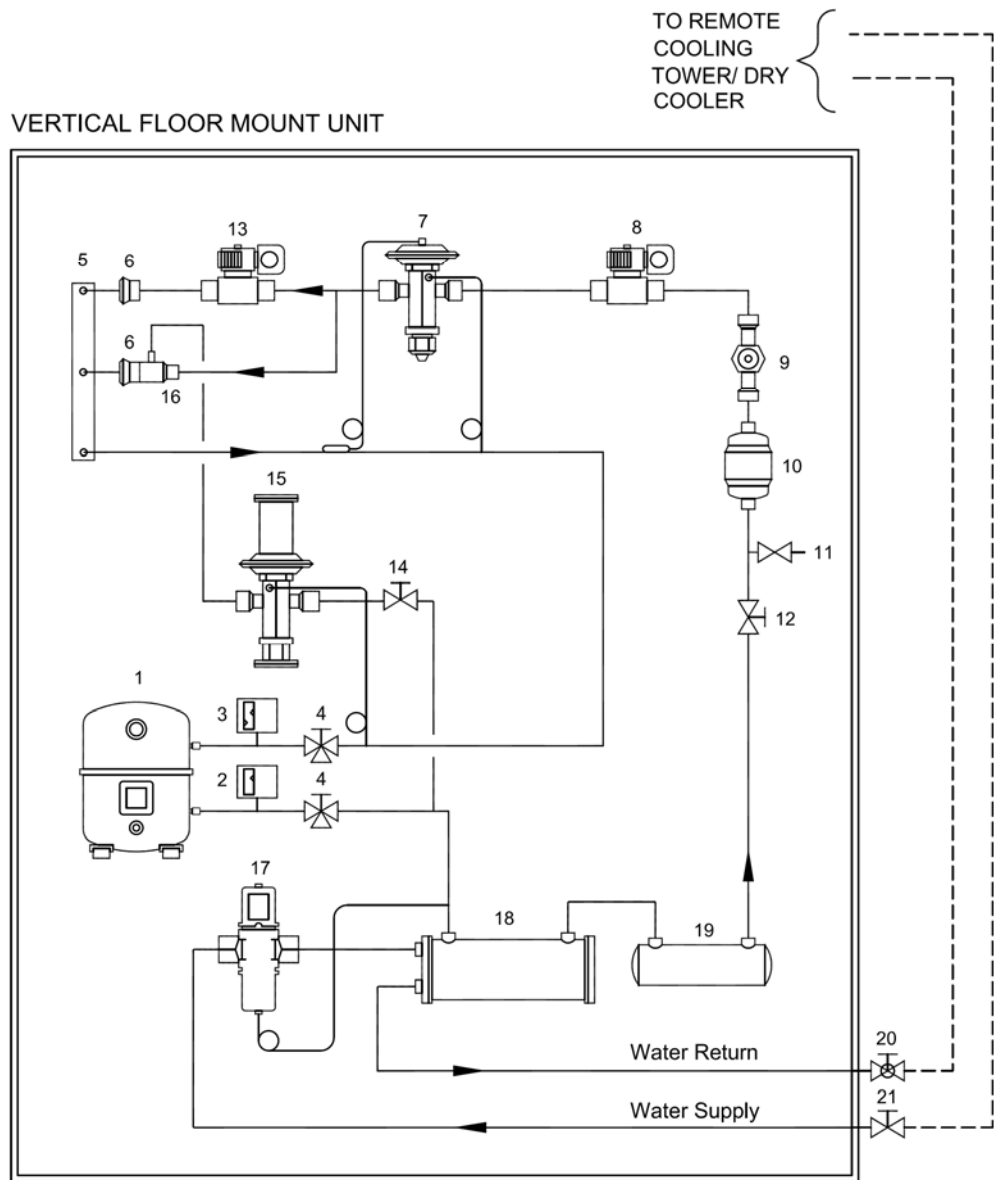


SERIES 6 - PIPING SCHEMATIC DIAGRAM
WATER COOLED SYSTEM (2-WAY VALVE)





SERIES 6 - PIPING SCHEMATIC DIAGRAM
INTERNATIONAL WATER COOLED SYSTEM WITH HOTGAS BYPASS (2-WAY VALVE)

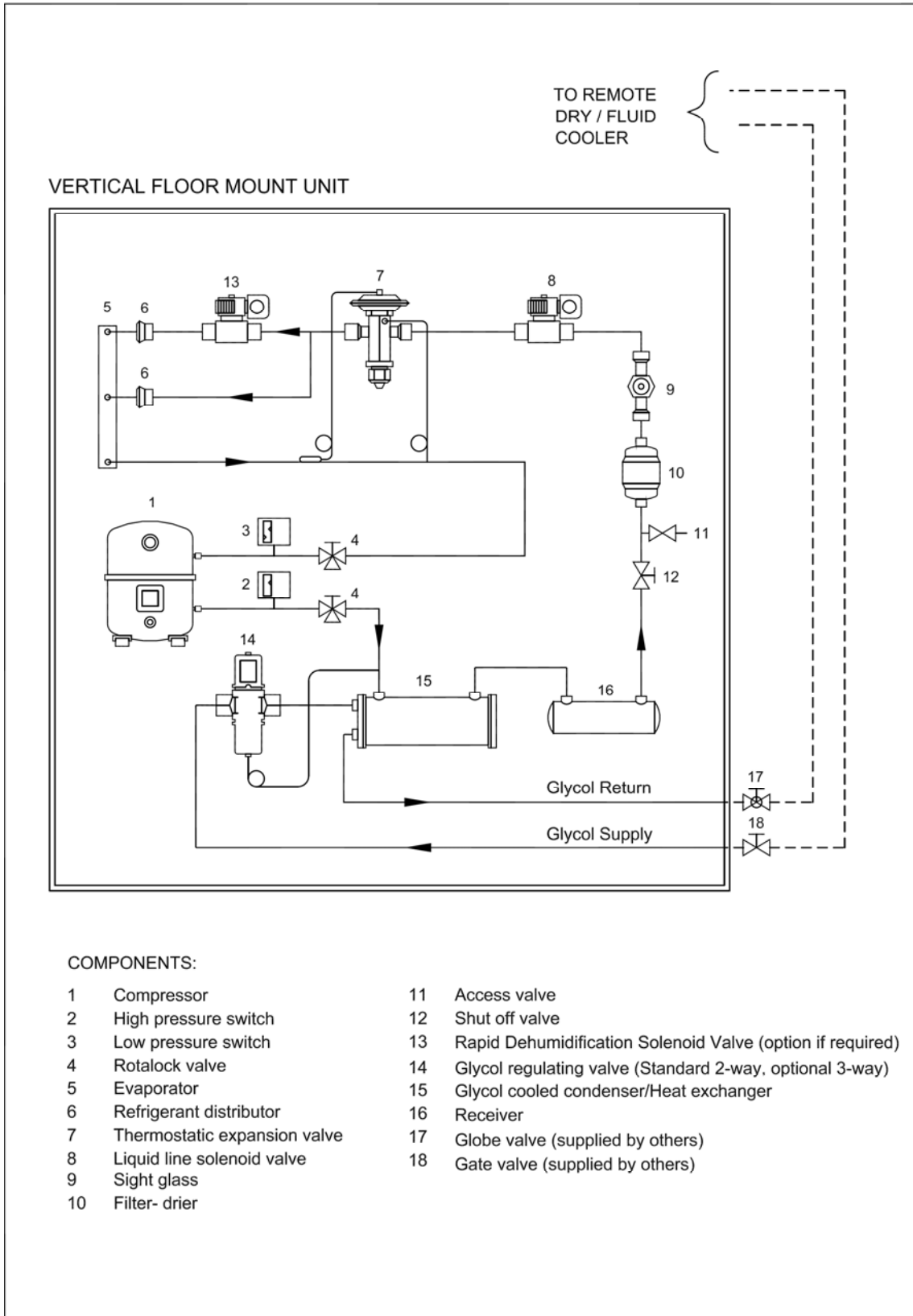


COMPONENTS:

- | | | | |
|----|------------------------------|----|--|
| 1 | Compressor | 11 | Access valve |
| 2 | High pressure switch | 12 | Shut off valve |
| 3 | Low pressure switch | 13 | Rapid Dehumidification Solenoid Valve (option if required) |
| 4 | Rotalock valve | 14 | Hotgas bypass manual shut-off valve |
| 5 | Evaporator | 15 | Hotgas bypass valve |
| 6 | Refrigerant distributor | 16 | Side connection distributor |
| 7 | Thermostatic expansion valve | 17 | Water regulating valve (Standard 2-way, optional 3-way) |
| 8 | Liquid line solenoid valve | 18 | Water cooled condenser |
| 9 | Sight glass | 19 | Receiver |
| 10 | Filter- drier | 20 | Globe valve (supplied by others) |
| | | 21 | Gate valve (supplied by others) |



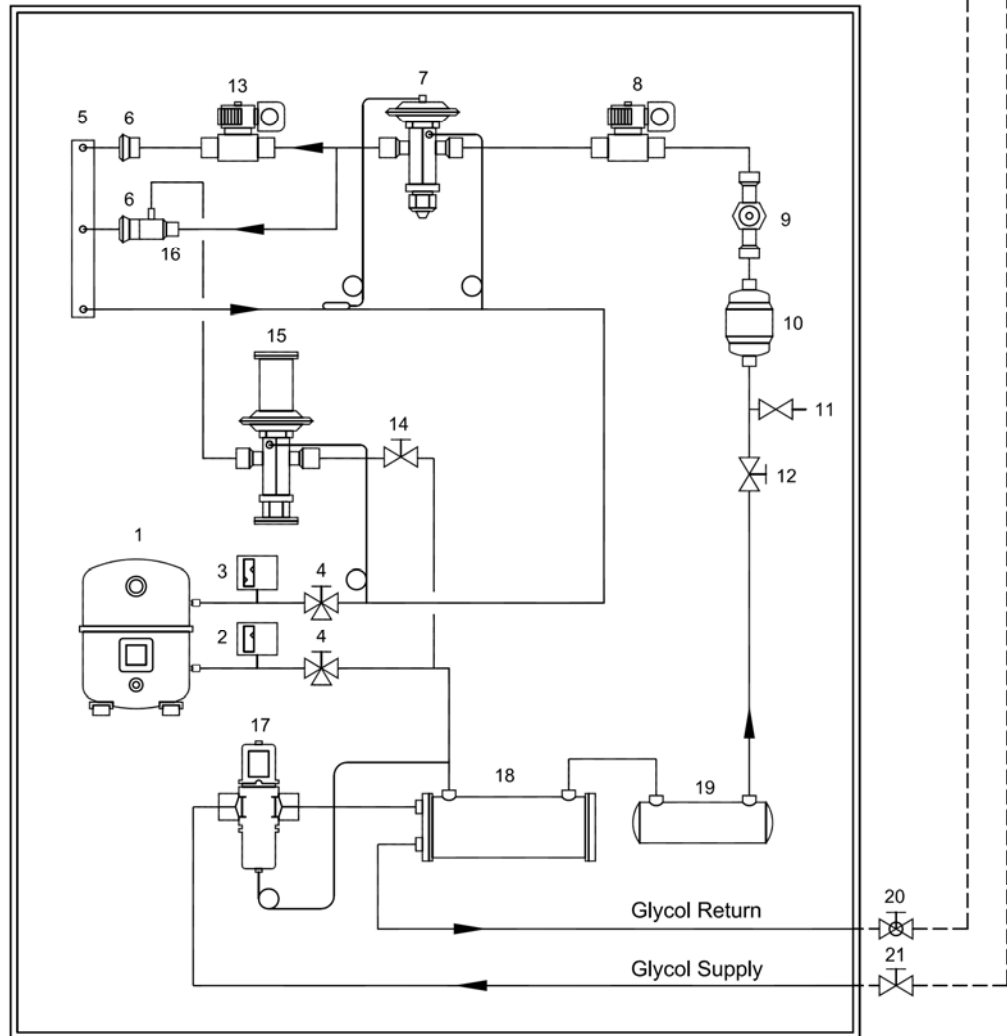
SERIES 6 - PIPING SCHEMATIC DIAGRAM
GLYCOL COOLED SYSTEM (2-WAY VALVE)





SERIES 6 - PIPING SCHEMATIC DIAGRAM
 GLYCOL COOLED SYSTEM WITH HOTGAS BYPASS (2-WAY VALVE)

VERTICAL FLOOR MOUNT UNIT



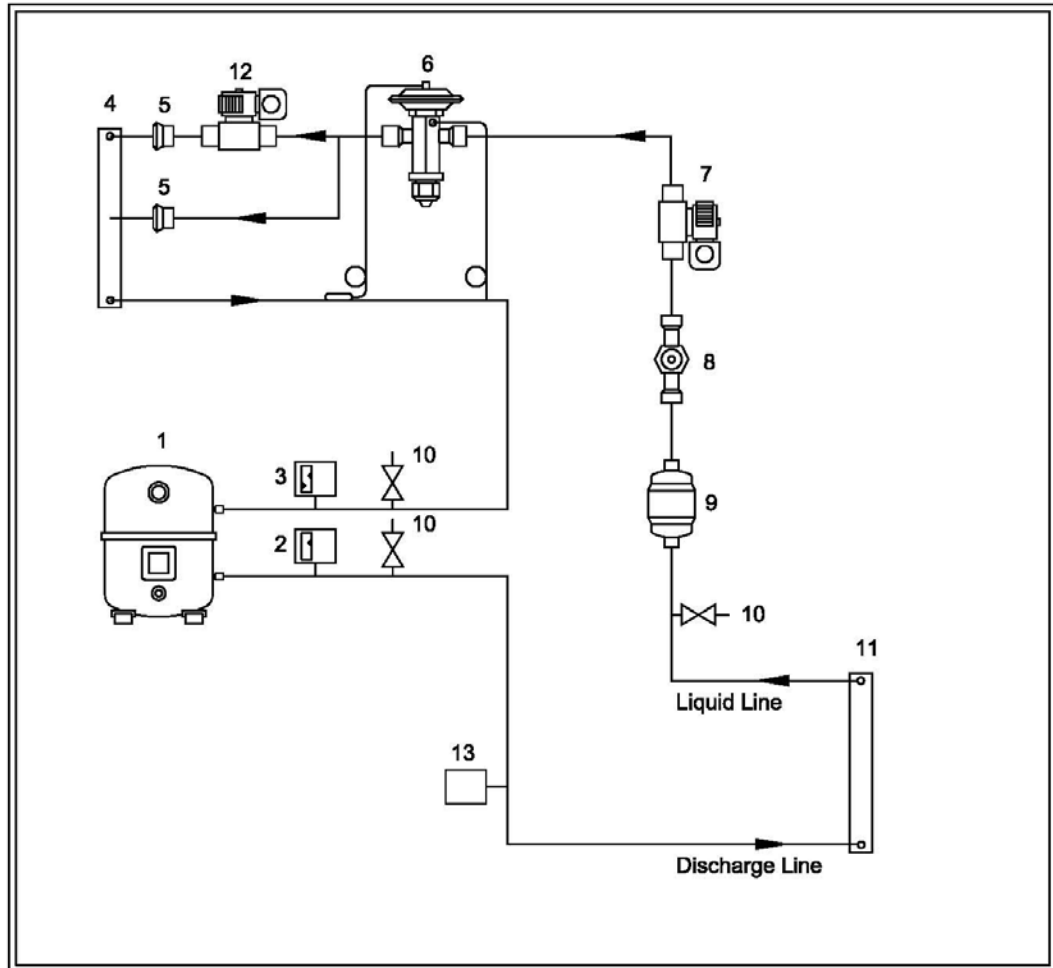
COMPONENTS:

- | | |
|--------------------------------|---|
| 1 Compressor | 11 Access valve |
| 2 High pressure switch | 12 Shut off valve |
| 3 Low pressure switch | 13 Rapid Dehumidification Solenoid Valve (option if required) |
| 4 Rotalock valve | 14 Hotgas bypass manual shut-off valve |
| 5 Evaporator | 15 Hotgas bypass valve |
| 6 Refrigerant distributor | 16 Side connection distributor |
| 7 Thermostatic expansion valve | 17 Glycol regulating valve (Standard 2-way, optional 3-way) |
| 8 Liquid line solenoid valve | 18 Glycol cooled condenser/Heat exchanger |
| 9 Sight glass | 19 Receiver |
| 10 Filter- drier | 20 Globe valve (supplied by others) |
| | 21 Gate valve (supplied by others) |



**SERIES 6 - PIPING SCHEMATIC DIAGRAM
AIR-COOLED SYSTEM (W/ CONDENSER)**

PACKAGED EVAPORATING AND CONDENSING UNIT

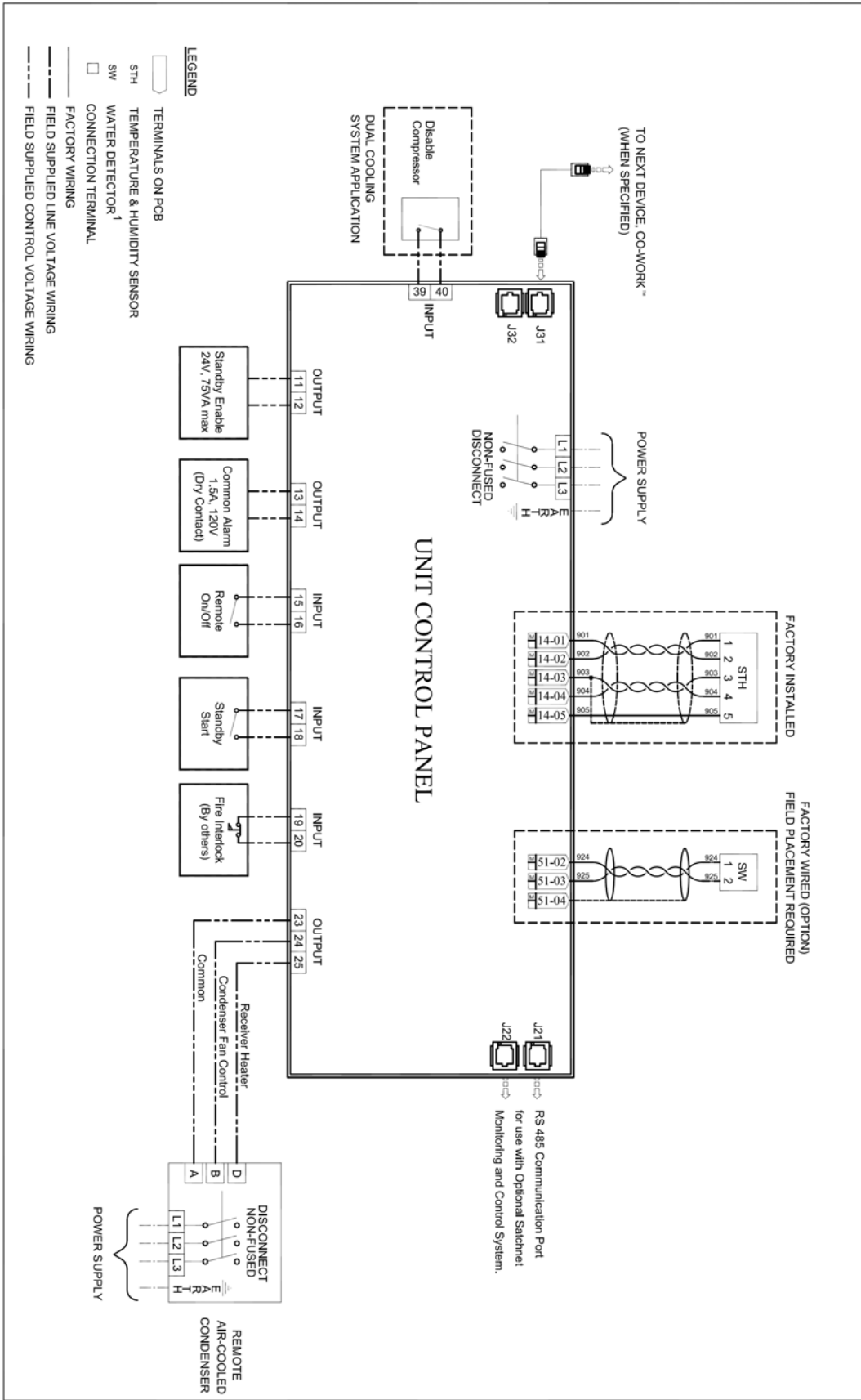


COMPONENTS:

- | | | | |
|----|------------------------------|----|----------------------------|
| 1 | Compressor | 12 | Liquid line solenoid valve |
| 2 | High pressure switch | 13 | Fan Control Pressure tap |
| 3 | Low pressure switch | | |
| 4 | Evaporator | | |
| 5 | Refrigerant distributor | | |
| 6 | Thermostatic expansion valve | | |
| 7 | Liquid line solenoid valve | | |
| 8 | Sight glass | | |
| 9 | Filter-drier | | |
| 10 | Access valve | | |
| 11 | Condenser | | |

Appendix C: Electrical Schematic Diagrams

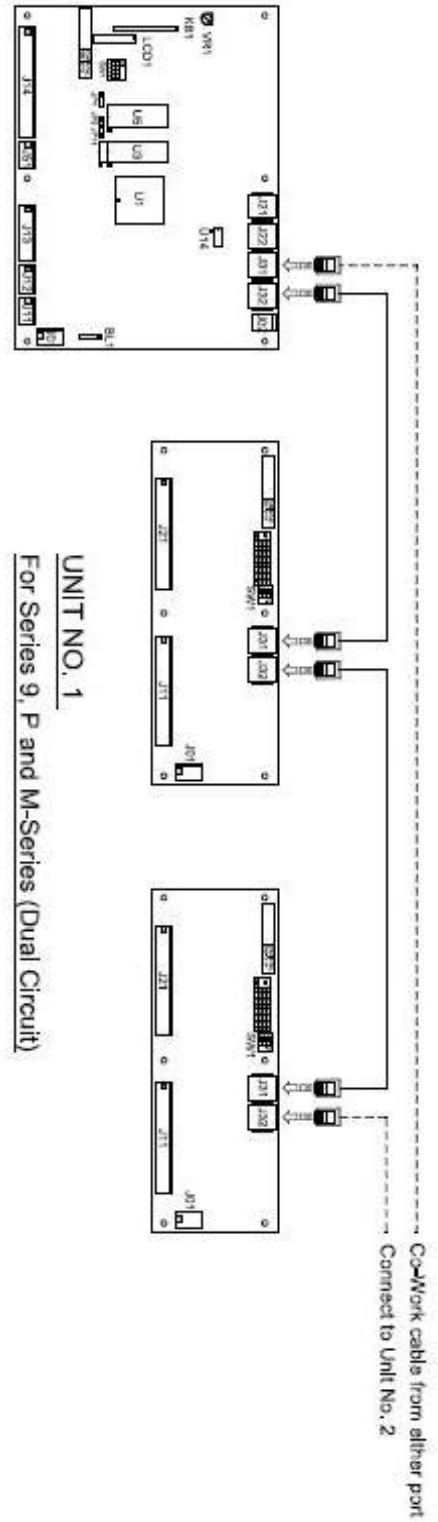
<u>Drawing Title</u>	<u>Drawing No.</u>
SERIES 6 - Electric Schematic Air-Cooled – General, Master	S6EDN101
SERIES 6 - Electric Schematic – Co-Work I2C Interconnection Link	M52ES13
SERIES 6 – Electric Schematic – Field Wiring Standby Start/ Standby Enable, For automatic change over	M52ES05
SERIES 6 - Electric Schematic – Embedded Web Browser Connection, Serial to Ethernet Communication Link	M52ES20
SERIES 6 - Electric Schematic – Embedded Connection, Serial to Ethernet Communication Link	M52ES25
SERIES 6 - Electric Schematic – Embedded Connection, Serial to Ethernet (Lonworks) Communication Link	M52ES26
SERIES 6 - Electric Schematic – Embedded Connection, Serial to Serial Communication	M52ES27



S6EDN101C

3 MARCH 2011

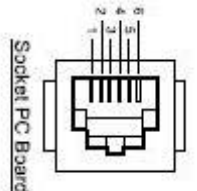
NORTH AMERICA



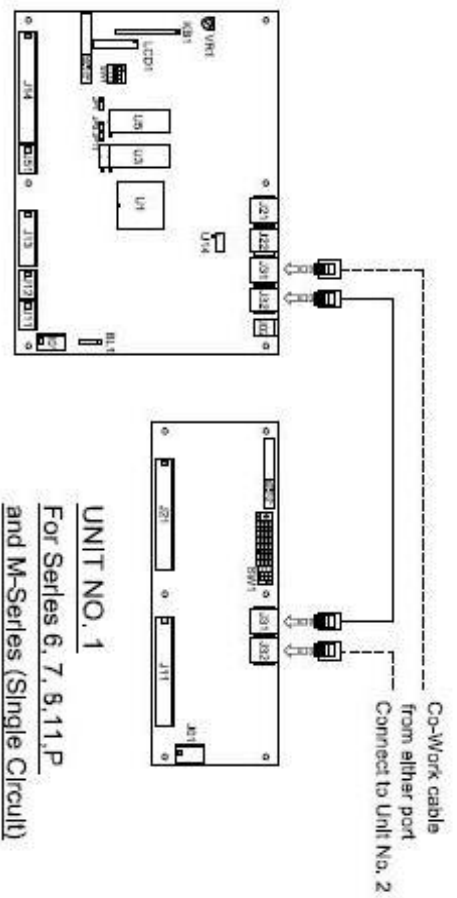
UNIT NO. 1
For Series 9, P and M-Series (Dual Circuit)

J31 and J32 (12C)	Signal
1	GRD
2	SDA
3	GRD
4	SCL
5	GRD
6	PW/R

Note :
1. J31 and J32 are RJ12 socket.

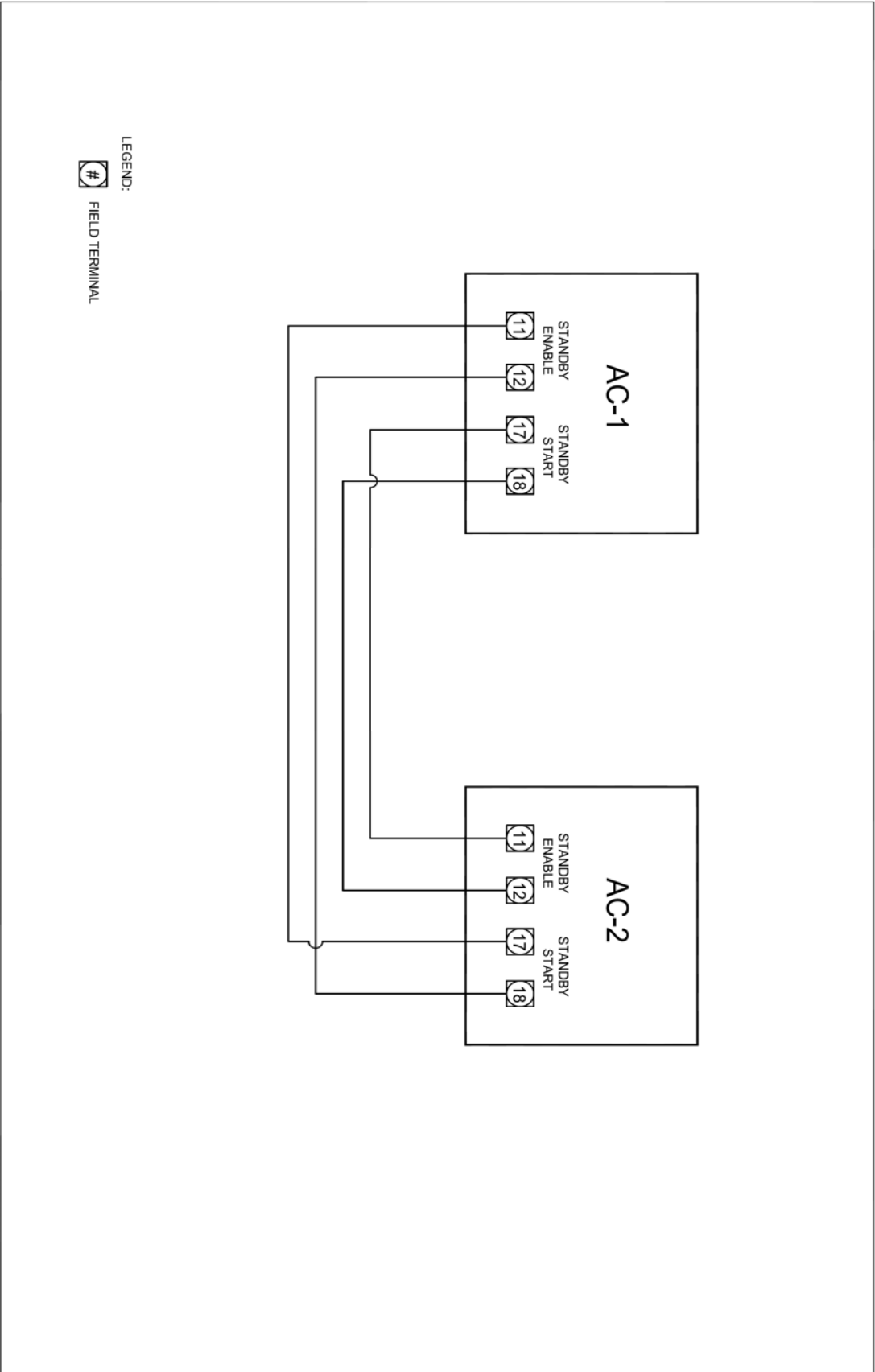


Communication Cable Specification ClimateWork P/N 20100196:
Four twisted pair, Category 5, 24 AWG (0.2 mm²) run in dedicated EMT or flexible metal BX conduit which is properly connected to the unit electrical box at both ends. Using approved strain relief.
Note :
The use of an EMI filter such as a broad band EMI Ferrite is recommended for each end of the cable. ClimateWork P/N 20400990



UNIT NO. 1
For Series 6, 7, 8, 11, P
and M-Series (Single Circuit)

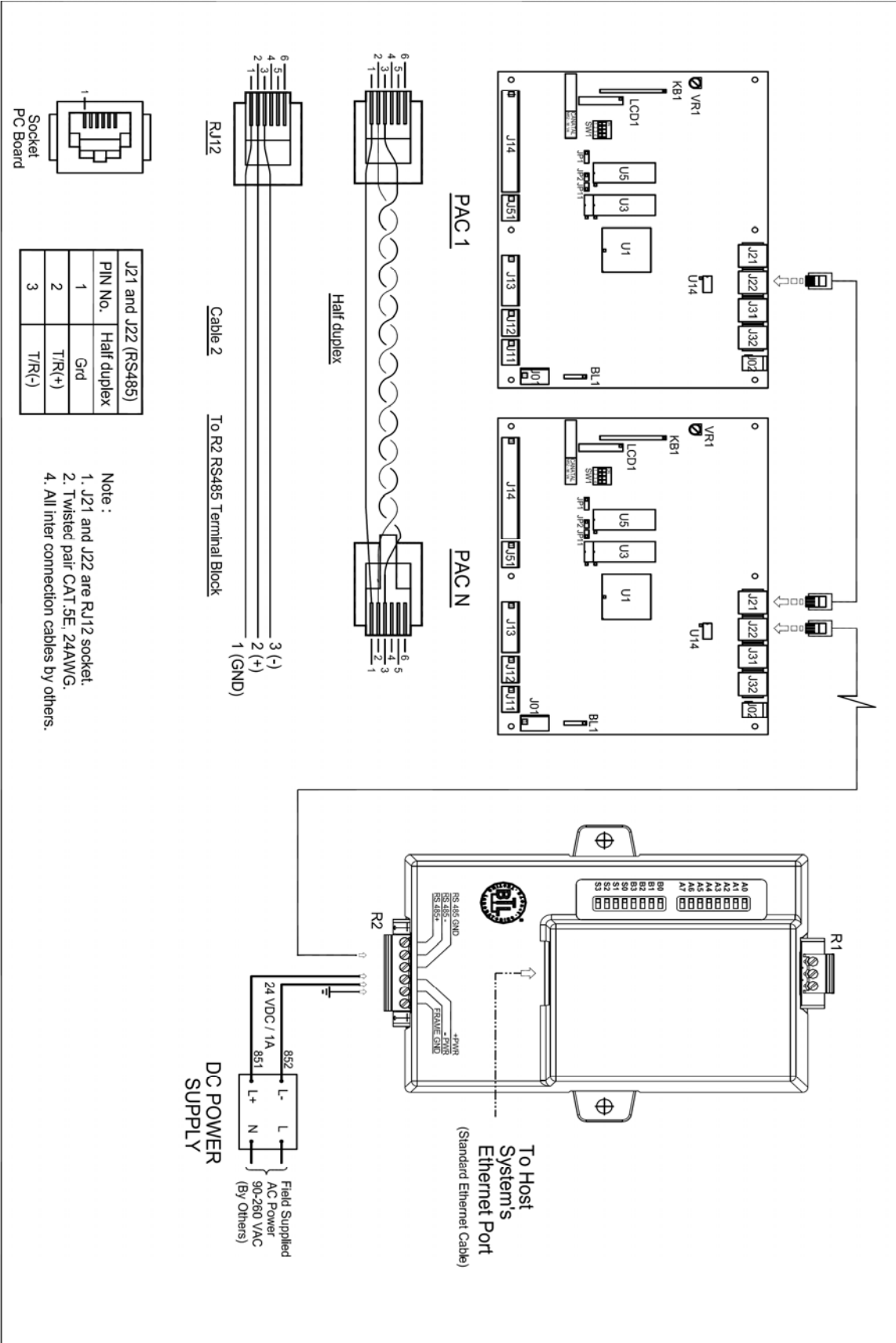
For Automatic Change Over
Field Wiring Standby Start/Standby Enable



LEGEND:
FIELD TERMINAL

M52ES05C

29 MAY 2002

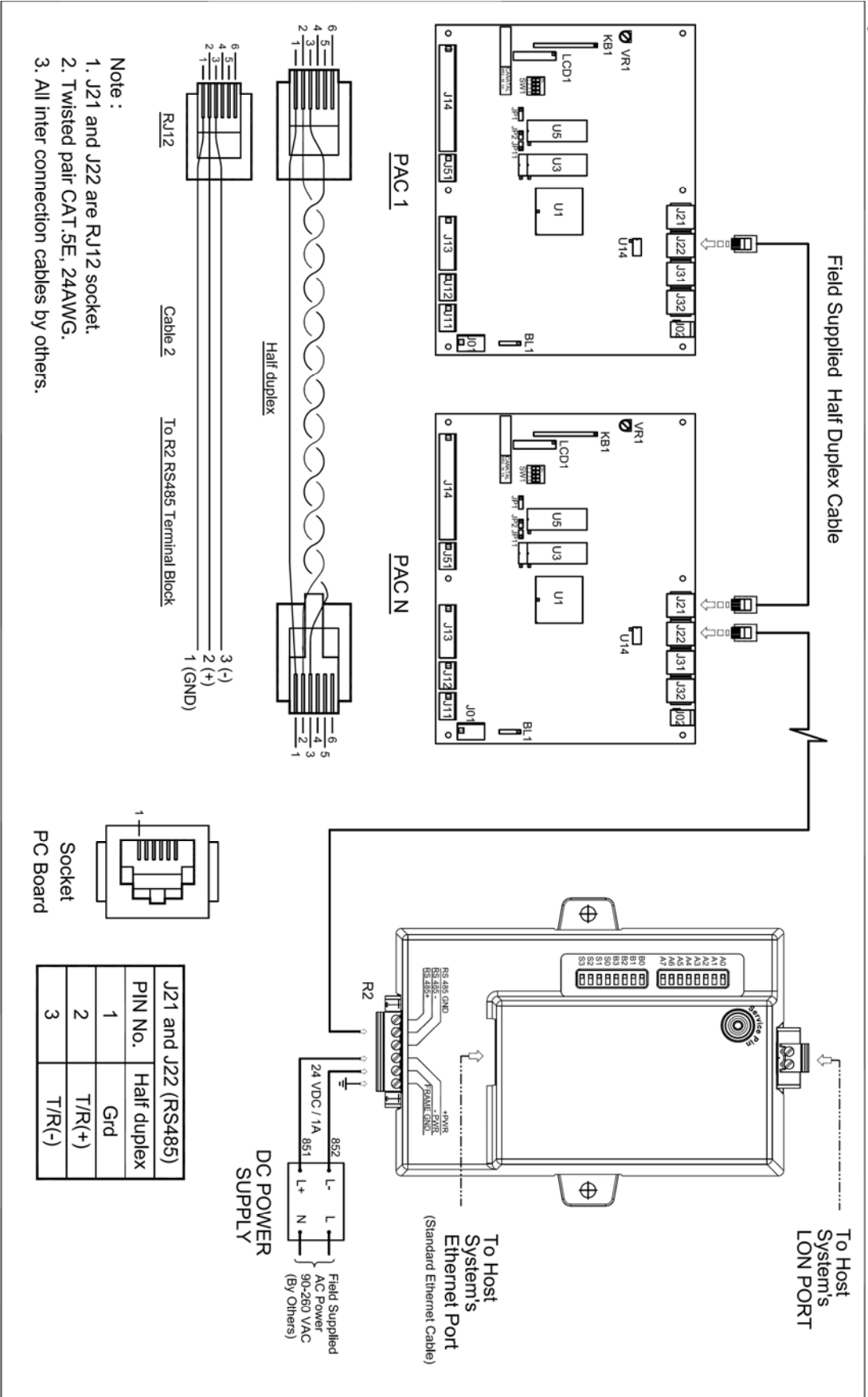


M52ES25FA

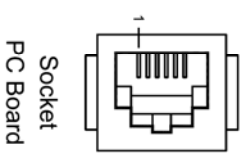
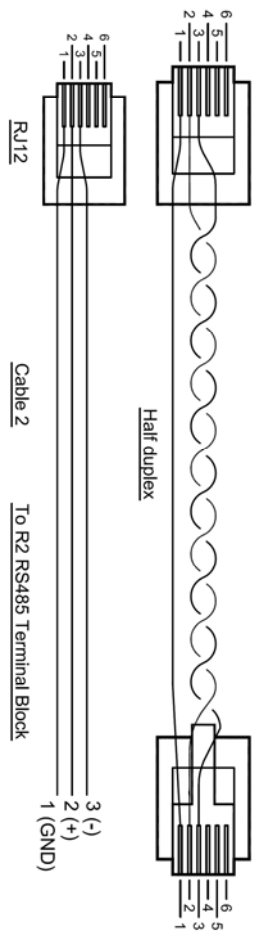
30 APR 2012

Dimension: Not to scale

**EMBEDDED CONNECTION
SERIAL TO ETHERNET (LONWORKS)**



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

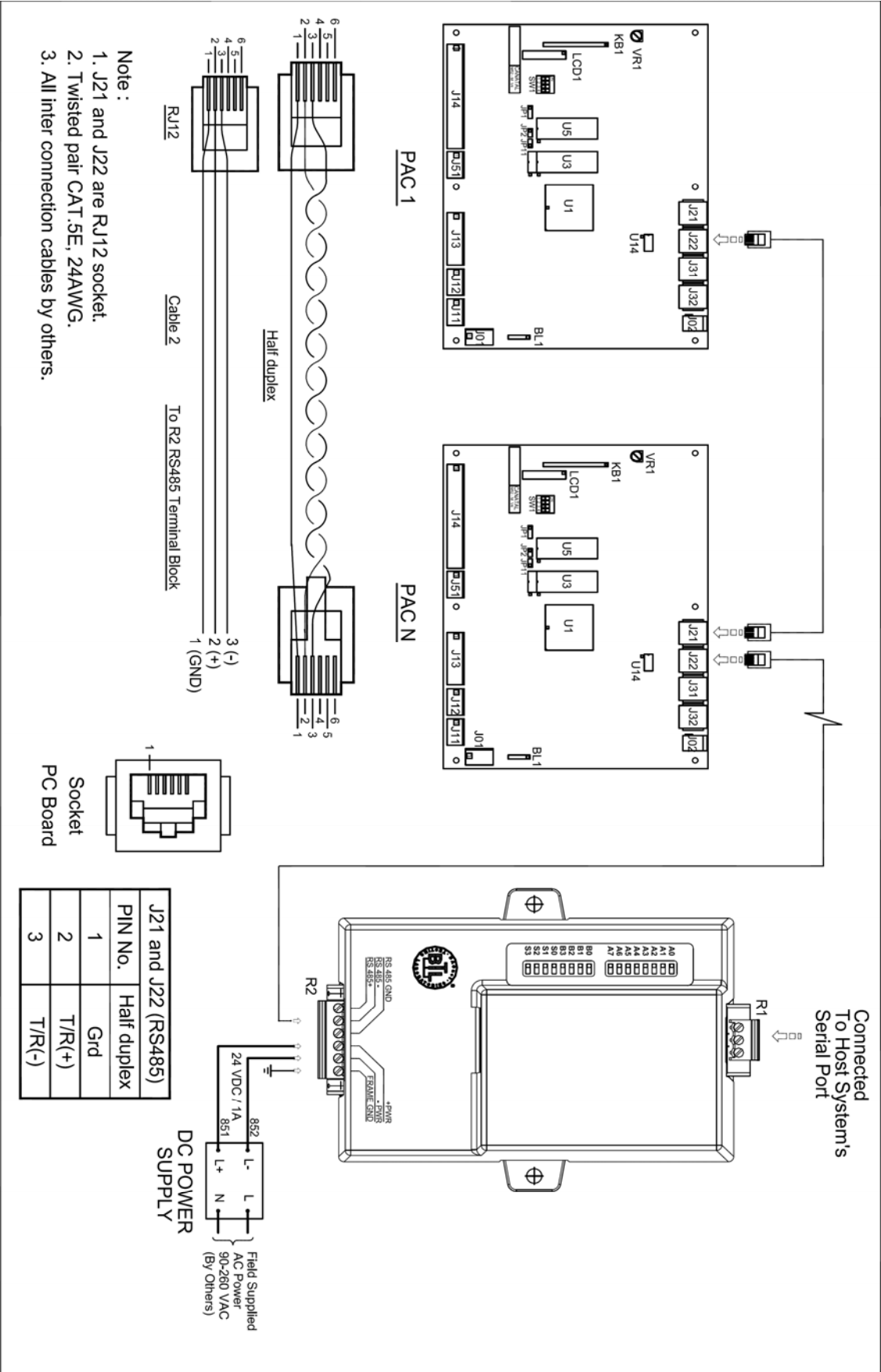


J21 and J22 (RS485)	Half duplex
1	Grd
2	T/R(+)
3	T/R(-)

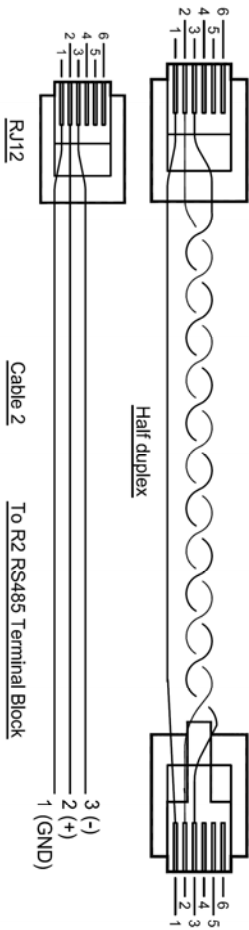
M5ES26B

30 APR 2012

Dimension: Not to scale



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



M52ES27B

30 APR 2012

Dimension: Not to scale