

# Guide Specifications

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## InRow Cooling Distribution Units

*THIS GUIDE SPECIFICATION IS WRITTEN IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI) MASTERFORMAT. THIS SECTION MUST BE CAREFULLY REVIEWED AND EDITED BY THE ARCHITECT OR THE ENGINEER TO MEET THE REQUIREMENTS OF THE PROJECT. COORDINATE THIS SECTION WITH OTHER SPECIFICATION SECTIONS IN THE PROJECT MANUAL AND WITH THE DRAWINGS.*

*WHERE REFERENCE IS MADE THROUGHOUT THIS SECTION TO "PROVIDE", "INSTALL", "SUBMIT", ETC., IT SHALL MEAN THAT THE CONTRACTOR, SUBCONTRACTOR, OR CONTRACTOR OF LOWER TIER SHALL "PROVIDE", "INSTALL", "SUBMIT", ETC., UNLESS OTHERWISE INDICATED.*

*THIS SECTION IS WRITTEN TO INCLUDE THE 2004 MASTERFORMAT AND THE 1995 MASTERFORMAT VERSIONS. WHERE APPLICABLE, THESE ITEMS ARE BRACKETED AND, IN EACH CASE, UNLESS OTHERWISE INDICATED, THE FIRST CHOICE APPLIES TO THE 2004 MASTERFORMAT AND THE SECOND CHOICE APPLIES TO THE 1995 MASTERFORMAT.*

### PART 1 — GENERAL

#### 1.1 SUMMARY

- A. These specifications describe requirements for a system designed for cooling distribution to modular InRow RC air conditioners. The system shall be designed to distribute and balance the chilled water / glycol using flexible joint-less piping to the air conditioners. The manufacturer shall design and furnish all the piping and fittings required for cooling distribution from the distribution unit to the InRow RC units.

#### 1.2 DESIGN REQUIREMENTS

- A. The cooling distribution unit, manufactured by Schneider Electric, shall include a supply and return distribution manifold. Each manifold should include 12 pipe branches with shut-off and balancing valves.
- B. The unit shall be as described in the following specification as manufactured by Schneider Electric:
  - 1 . Model number:\_\_\_\_\_.
  - 2 . Total number of InRow RC units:\_\_\_\_\_.
  - 3 . Flow per circuit: \_\_\_\_\_gpm.
  - 4 . Water pressure drop through the CDU:\_\_\_\_\_kPa.
- C. The unit shall be factory-assembled with isolation and balancing valves and shall be designed to be used with joint-less flexible piping.

#### 1.3 SUBMITTALS

- A. Submittals shall be provided with the proposal and shall include: overall dimensions of the unit, total of circuits used, maximum chilled water/glycol flow per circuit, calculated run of flexible piping per circuit, and piping connection drawings at the CDU and at the InRow RC.

#### 1.4 QUALITY ASSURANCE

- A. The unit shall be factory tested prior to shipment. Testing shall include complete pressure and leak testing to ensure system integrity. The system shall be inspected for quality control before shipment.
- B. The unit shall be UL Listed to UL 1995 and CSA C22.2 No. 236.

## 1.5 WARRANTY

- A. The system parts shall be provided with a warranty against defects for a period of 12 months from date of shipment from the factory.

## PART 2 — PRODUCT

### 2.1 STANDARD COMPONENTS

#### A. Cabinet Construction

- 1 . The frame shall be 16 gauge formed steel and bolted together.
- 2 . The front and back exterior panels shall be 18 gauge steel and the side exterior panels shall be 20 gauge steel.
- 3 . All exterior panels and corner posts on the frame shall be powder coated black. The unit shall include front removable panels to allow access for system balancing and service and side removable panels to allow for main piping connections.
- 4 . The front panels shall have provisions to be locked with a key.
- 5 . The unit shall include casters for easy installation and leveling feet at each corner.
- 6 . All piping, including headers and distribution lines, shall be insulated with 1/2 in. (12.7 mm) closed cell insulation.

#### B. Connections

- 1 . The main supply line can be piped from either the top or bottom of the unit. The distribution lines are dependent on the version of the unit: top piped or bottom piped.
- 2 . The dielectric flanges allow the unit to be connected to the building chilled water system using copper or iron piping.

#### C. Valves

- 1 . Each supply branch shall be 1 in. (25.4 mm) I.D. and shall include a balancing and shut-off valve to provide a single point of balancing at the distribution unit.
- 2 . Each return branch shall be 1 in. (25.2 mm) I.D. and shall include a ball valve for isolation.
- 3 . A 1/4 in. (6.35 mm) male flare port with service valve shall be included in each supply and return branch for pressure test and drain.

#### D. Drain Pan

- 1 . A drain pan with a 1/4 in. (6.35 mm) plastic tube connection shall be included at the bottom of the unit.

#### E. Flexible Piping

- 1 . Joint-less flexible piping shall be used for chilled water/glycol distribution from the CDU to the InRow RC units.
- 2 . The piping shall be cross-linked polyethylene/aluminum/cross-linked polyethylene tubing (PEX-AL-PEX) manufactured by PEX-b method.
- 3 . The temperature and pressure ratings of the piping shall be: 200°F (93.3°C) at 100 psi (689.5 kPa), 180°F (82.2°C) at 125 psi (861.8 kPa), and 73°F (22.8°C) at 200 psi (1378.9 kPa).
- 4 . Piping shall conform with ASTM Standard: ASTM E814, ASTM F1281, and NSF Standard: NSF-PW 14 and 61.

- 5 . Piping length shall not exceed 150 ft (45.72 m) from the CDU to the air conditioner and it shall only include fittings at the CDU and at the InRow RC.
- 6 . Pipe connections to the CDU and InRow RC shall be made with pipe fittings that are crimped at each connection to ensure no leakage in the system.
- 7 . All PEX-AL-PEX piping shall be insulated in the field with 1/2 in. (12.7 mm) closed cell insulation.

F. Pipe Clamps

- 1 . Pipe clamps shall be factory provided and field installed at least every 32 in. (812.8 mm) when piping is installed overhead to properly secure the PEX-AL-PEX piping to the ceiling. (Refer to local codes for exact spacing requirements.)
- 2 . The clamps shall include a center hole that permits the use of a 3/8 in. (9.5 mm) threaded rod for anchoring.

- G. Insulation—Insulation shall be 1.38 in. (35.05 mm) in diameter by 1/2 in. (12.7 mm) thick closed cell insulation.

### PART 3 —

#### 3.1 IMPLEMENTATION

A. Installation

- 1 . Installation of the system shall be in accordance to the Guidelines for Installation by the manufacturer.
- 2 . Installation shall be performed by the manufacturer or supervised by the manufacturer service representative.
- 3 . Installation of piping and connections from the Cooling Distribution Unit to the InRow RC units shall be performed by the manufacturer or supervised by the manufacturer service representative.  
**NOTE:** The minimum clearance for overhead piping is 18 in. (457.2 mm) from the top of the CDU to the ceiling. The minimum raised floor height for units configured for bottom piping is 12 in. (304.8 mm).

B. Start-up

- 1 . Start-up of the Cooling Distribution Unit shall be performed by the manufacturer.

## Guidelines for Installation

The CDU provides reliable and flexible fluid distribution to the InRow RC in medium to large data centers (including high density applications). The unit incorporates flexible and joint-less piping to provide you with a scalable fluid distribution system that minimizes the risk of leaks within the data center.

The CDU will provide years of trouble-free service, when installed by technically qualified personnel.

### Service access

The CDU is designed to be a stand-alone unit. It can be placed against a wall or in any open area that is suitable for use. Both side and front panels may be removed during the installation process. An area of 36 in. (915 mm) of clear floor space in front and 24 in. (609.5 mm) at each side of the unit is required for installation. For service, an area of 36 in. (914 mm) of clear floor space in front of the CDU is required. All required maintenance can be performed from the front of the unit.

### Receiving the unit

Your CDU has been completely tested and inspected prior to shipment. To ensure that you have received the unit in excellent condition, perform a careful inspection of the crating and the unit immediately upon receipt. Verify that all parts ordered were received as specified. Report any damage discovered to the freight carrier. If necessary, contact the Schneider Electric field service department for help in repairing or replacing damaged parts. While Schneider Electric is not responsible for damage incurred in transit, we want to make sure that you have no undue delays in your system start-up.

### Rigging

The unit is manufactured with a formed steel frame for maximum strength and unit integrity. However, as with all electrical and mechanical equipment, you must take care with proper rigging of your unit.

When using a forklift to move the unit, use the shipping skid to protect the bottom of the unit. When using chains, cables or rope to lift the unit, use spreader bars to prevent damage to the finished panels.

**NOTE:** Due to the ongoing program dedicated to product improvement, specifications are subject to revisions without notice. Schneider Electric assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.