

Site Preparation Guide

110kW NAM IT Module

REV00

06/2013



Notices

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1. Safety Information

All electrical modification and maintenance to and within the IT Module must be performed by a licensed electrician, and must follow all applicable local and national codes.

All refrigerant system modification and maintenance to and within the IT Module must be performed by a certified HVAC technician who is approved to work with refrigerant and refrigerant lines. All work must comply with local and national codes.

Refer to the safety instructions for each component of the IT Module for specific safety requirements of said component. The instructions are provided in the entry room of the IT Module, and can also be found online. The IT Module is not intended for occupancy except for short-duration maintenance access.

No user-serviceable parts are behind panels that require tools to open.

Consult your local planning office for applicable codes and to review necessary permitting and guidelines for your specific site.

2. Transportation

a. Transport Considerations

Contact Schneider Electric for guidance before moving or decommissioning the IT Module. Be sure the following conditions are satisfied:

- All input and output power lines are disconnected.
- Coolant pipes/water lines are disconnected and the coolant/water is completely drained and purged.
- UPS batteries are removed from the IT Module.
- All breakers are turned off (Open circuit).
- Any loose items are secured or removed.
- Outside ground connections are removed.
- Outside tiedowns are removed.
- All doors are secured.
- No other outside attachments remain (i.e. security cameras, cable tray, etc).
- The IT equipment is removed from the IT Module. Schneider Electric does not guarantee that IT equipment can be shipped installed in the IT Module.

b. Load Distribution

The exact load distribution will not be known until the unit is constructed. The overall weight of the fully loaded unit is approximately 25 tons. The weight of an empty IT Module is approximately 12 tons.

c. Local and National Codes

Always adhere to local and national codes. All transport, lifting, and installation operations must be done by certified personnel.

d. Lifting

The IT Module must be lifted using standard load spreading techniques from the lifting attachment points provided.

All lifting equipment must have the necessary capacity to withstand specified loads [including Factors of Safety]. Please note that the center of gravity of the IT Module does not align with the geometric center. One option is to use an “H” style Adjustable Lift Beam. Horizontality must be verified on site and the central lifting cable must be adjusted (in both perpendicular directions) before starting the lifting operation to ensure that no tilting or swinging occurs.

e. Stacking

The IT Module cannot be stacked.

f. Leveling

The IT Module must be placed on a level foundation with continuous support on the perimeter wall.

g. Positioning and Orientation

If the installation is in a hot climate, heat gain on the IT Module can be reduced by orienting the enclosure to present the shortest face to the sun. If orientation to reduce heat gain is not possible, consider using a shading device instead.

3. Site Requirements

a. Site Preparations

A level base shall be supplied at the site to act as a foundation for the IT Module. The base must be capable of supporting the weight of the final unit distributed equally around the perimeter. There should be sufficient foundation extending outward beyond the IT Module to allow the hold-down brackets to bolt into the foundation.

The upstream transformer (if applicable) should be located as close as possible to the IT Module.

An overhead crane is required for unloading and positioning of the IT Module. Sufficient preparations must be made to the site to accommodate the crane.

b. Clearance and Space Restrictions

Place your IT Module away from objects which may impede performance, or damage the equipment. Do not place the IT Module or any support equipment near or under trees or other objects which may become dislodged in a natural event (storm, earthquake, etc).

The site should be laid out in such a way as to diminish or prevent the possibility of a vehicular collision with the IT Module. It is also helpful to design the site so that a forklift or other material handling device can deliver equipment near the entry door. Routing the input conductors and cooling pipes underground, overhead, or all at one end of the module row greatly enhances accessibility.

c. Environmental

The IT Module can be used in a wide range of locations and environmental conditions as outlined below:

- Wind: Maximum Basic Speed of 68 m/s (150mph)
- Snow: Up to 40 lbs/sq-ft of snow load.
- Sun: Up to 10kW of thermal loading from solar radiation.
- Heat: Between -25C and 45C (-13F to 113F)
- Rain: NEMA 4
- Dust: NEMA 4
- Humidity: 0-100%
- Altitude: 0-3000m (0-9840 ft). Higher than 3000m requires derating of equipment.
- Lightning: Protection not included. See "Electrical Grounding and Lightning Protection" section.

d. Water Drainage Requirements

For external installations, care must be taken to place the IT Module in a location that is graded to drain water away from the IT Module, and is unlikely to flood. The foundation should be raised by a minimum of 150mm above the surrounding ground surface level to prevent water ingress. The enclosure carries a NEMA 4 rating and is not suitable for fluid immersion.

4. Base Anchors and Fixtures

There are anchors located on the long sides of the IT Module. Their locations will be based on the Center of Gravity of the unit. Therefore, the location of the anchors will not be known until construction of the IT Module is underway. Contact Schneider Electric for additional information.

5. Electrical Utility Connections

a. Sizing for Copper/Aluminum Conductors, and Conduit Requirements

Input cable sizing must follow all local and national codes for the application. Conductor carriage systems (conduit, overhead ladder, etc) must be designed for the application. Consult a Professional Engineer for the design.

There are three Power Input entrances. There are two critical power entrances that use a male threaded RMC 4-inch interface. There is one noncritical power entrance that uses a male threaded RMC 1-1/2-inch interface. The critical power conductors must be able to withstand 214A of load, and will connect to a 300A circuit breaker. It must be a 3W+GND setup because the Neutral for the system will be derived from the transformer within the included Power Distribution Unit. The noncritical conductors must be able to withstand 11A of load and will connect to a 15A circuit breaker. It must be a 3W+GND setup because the Neutral for the system will be derived from the transformer within the included IT Module.

b. Wiring Information

Breaker	Conduit Scheme	Minimum Breaker Input	Maximum Breaker Input	Conductor Material
Input 1 Main	Single	#1 AWG	600kcmil	Cu or Al
	Parallel	#1 AWG	250kcmil	Cu or Al
Input 2 Main	Single	#1 AWG	600kcmil	Cu or Al
	Parallel	#1 AWG	250kcmil	Cu or Al
Input 3 Non-critical	Single	#14 AWG	3/0 AWG	Cu or Al

Supply conductors must be sized to accommodate at least 125% of the full load current rating.

Prior to final fabrication and IT Module shipment, customer must provide input power configuration (i.e. single or parallel conductors).

Follow the breaker instructions provided with the IT Module for conductor installation.

c. Upstream Breaker Sizing

The upstream breaker should be sized based on the IT Module load, and the input wiring.

d. Top Feed

See the Appendix for input locations.

e. Bottom Feed

Bottom feed is an option and must be selected before construction begins on the IT Module. The location of the inputs can be provided by Schneider Electric when construction of the IT Module begins.

f. Electrical Grounding and Lightning Protection

Ensure the IT Module is properly grounded according to local codes.

6. Ingress and Egress

Stairways, ramps, and access platforms must comply with all local and national codes. They must be suitable for in-service conditions. Stairways, ramps, and access platforms are not included with the IT Module.

7. Cooling Specifications

a. Piping Information

The chilled water pipes are 4-inch Schedule 40 steel. They connect to the IT Module with a 4-inch Class 150 steel pipe flange per ASME B16.5.

See the Appendix for location of the input flanges.

b. Chilled Water Specifications

The Chilled Water system needs to have minimum flow rate of 18.1 m³/hr and a module inlet temperature of 15C. The supply system must be designed to account for an 83kPa pressure drop through the IT Module.

8. Appendix

110kW NAM IT Module external dimensions are shown below:

