# EcoStruxure™ Micro Data Center

## 42U R-Series

## Installation and Operation

**MDC42USRSI, MDC42UARSI**

**Release date: 1/2023**

www.apc.com

Schneider Electric

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# General Information

| | MDC42USRSI | MDC42UARSI |
|---|---|---|
| Enclosure | NetShelter RX 42U<br>• 800W x 1200D<br>• 19 in. Rails (905kg/2000 lb Load)<br>• Heavy Duty Casters | NetShelter RX 42U<br>• 800W x 1200D<br>• 19 in. Rails (905kg/2000 lb Load)<br>• Filter and Fans<br>• Heavy Duty Casters |
| UPS | SmartUPS 5kVA | SmartUPS 5kVA |
| Rack PDU | Metered PDU (Qty 2) | Metered PDU (Qty 2) |
| Cooling | 3.5kW, Uniflair Rack Mount<br>• Split System with Condensing Unit<br>• Condensate Pump<br>• Low Ambient Kit | 3.5kW, Uniflair Rack Mount<br>• Split System with Condensing Unit<br>• Condensate Pump<br>• Low Ambient Kit<br>• Emergency Fan Ventilation |
| Security | NetBotz 250 NBRK0250<br>• Standard Keylock<br>• Temperature and Humidity Sensor AP9335TH<br>• Door Contacts NBES0303<br>• Leak Sensor NBES0306 | NetBotz 750 NBRK0750<br>• Standard Keylock<br>• Temperature and Humidity Sensor AP9335TH<br>• Door Contacts NBES0303<br>• Leak Sensor NBES0306<br>• Camera NBPD0165 |
| Accessories | • Interior Lighting<br>• Cable Manager | • Interior Lighting<br>• Cable Manager<br>• Rack Mount Fire Suppression |
| Service and Monitoring | 2 Year Factory Warranty | 2 Year Factory Warranty |

# Documents included with your Micro Data Center Enclosure

The documentation for each component in the EcoStruxure Micro Data Center is either shipped with the equipment or available online at **www.apc.com** and **www.se.com**. You can search for the product SKU or the part number of the document. Documents can be viewed or downloaded from the applicable product page on either website.

### Cabinets and Pre-installed Accessories

| SKU | Component | Document Type | Document Part Number |
|---|---|---|---|
| MDC42UARSI<br>MDC42USRSI | NetBotz Spot Fluid Sensor (NBES0301) | Installation | 990–3294A |
| MDC42UARSI<br>MDC42USRSI | NetBotz Door Switch Sensor (NBES0303) | Installation | 990–3375 |
| MDC42UARSI | APC Temperature and Humidity Sensor (AP9335TH) | Installation | 990–3506 |
| MDC42UARSI | NetBotz Rack Monitor 750 (NBRK0750) | Installation and Quick Configuration | 990–91106G-XXX |
| MDC42USRSI | NetBotz Rack Monitor 250 (NBRK0250) | Installation and Quick Configuration | 990–9814G-XXX |

### Cooling and Accessories

| SKU | Component | Document Type | Document Part Number |
|---|---|---|---|
| MDC42UARSI<br>MDC42USRSI | 3.5 kW Rack mount Air Conditioning, Split system, Indoor unit with gravity drain, 50Hz (ACRMD4KI-1) | User Manual | 990–6186–XXX |
| MDC42UARSI<br>MDC42USRSI | 3.5 kW Rack mount Air Conditioning, Split system, Outdoor unit without pre-charged refrigerant (ACRMD4KI-3) | | |

### Rack PDU

| SKU | Component | Document Type | Document Part Number |
|---|---|---|---|
| MDC42UARSI<br>MDC42USRSI | Rack PDU 2G, Metered, 0U, 16A, 230V, (18) 13 & (2) C19 IEC309 Cord (AP8858) | Installation | 990–3940D |

### UPS and Accessories

| SKU | Component | Document Type | Document Part Number |
|---|---|---|---|
| MDC42UARSI<br>MDC42USRSI | APC Smart-UPS SRT 5000VA RM 230V (SRT5KRMXLI) | Installation<br>Operation Manual | 990–91117<br>990–91120 |

## Other Equipment

| SKU | Component | Document Type | Document Part Number |
|---|---|---|---|
| MDC42UARSI<br>MDC42USRSI | Low Temp Kit (-35C°) (ACAC10040) | Installation | 990–91280B-001 |
| MDC42UARSI<br>MDC42USRSI | Toolless Cable Management Rings (AP7540) | Installation | 990–5003A |
| MDC42UARSI | NetBotz Camera Pod 165 (NBPD0165) | Installation and Quick Start | 990–5974A-XXX |
| MDC42USRSI<br>MDC42UARSI | Condensate Pump | Installation | Blue Diamond Pumps S30–195/5 |
| MDC42UARSI | Redetec Fire Suppression (ARFS600IP) | Installation and Operation | Redetec |
| MDC42USRSI<br>MDC42UARSI | Interior Light Kit | Installation | QGH2632101–00 |
| MDC42USRSI<br>MDC42UARSI | Roxtec Gland Cable Seal | Installation | Roxtec |
| MDC42USRSI<br>MDC42UARSI | EcoStruxure IT Gateway | Installation, Operation, FAQ, Troubleshooting | Available online at ecostruxureit.com |
| MDC42USRSI<br>MDC42UARSI | Micro Data Switch | Installation | N/A |

# Safety

## Important Safety Instructions

## SAVE THESE INSTRUCTIONS

Read these instructions carefully and look at the equipment to become familiar with it before trying to install, operate, service or maintain it. The following safety messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a “Danger” or “Warning” safety message indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages with this symbol to avoid possible injury or death.

**⚠DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

**Failure to follow these instructions will result in death or serious injury.**

**⚠WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

**⚠CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

**Failure to follow these instructions can result in injury or equipment damage.**

***NOTICE***

**NOTICE** is used to address practices not related to physical injury. The safety alert symbol shall not be used with this type of safety message.

**Failure to follow these instructions can result in equipment damage.**

# Qualified Personnel

Electrical equipment should only be installed, operated, serviced, and maintained by qualified personnel.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

# General Safety

This manual contains important instructions that should be closely followed during installation, maintenance, and operation of the EcoStruxure Micro Data Center. Read all safety and operating instructions before attempting to operate the EcoStruxure Micro Data Center

Adhere to all Warning labels on the unit, in this manual and in the attendant manuals for each device within the system. Follow all operating and user instructions.

This product is not intended for use with life support or other designated “critical” devices. The maximum load must not exceed that shown on the rating label.

Operate this product in an indoor environment at an ambient temperature of 10°C to 40°C (50°F to 105°F)

Keep the doors closed to minimize room air intrusion into the cabinet.

**⚠⚠DANGER**

**HAZARD OF ARC FLASH AND ELECTRICAL SHOCK**

- Electrical equipment must be installed, operated, serviced, and maintained only by qualified personnel.
- The Micro Data Center is intended to be installed and operated by a skilled person in a controlled location with restricted access.
- The Micro Data Center must be installed in accordance with the National Electrical Code and all applicable local codes.
- Perform appropriate Lock Out/Tag Out procedures during equipment installation and maintenance.
- Remove incoming power to the Micro Data Center before performing any work. Because of the UPS, live power exists within the equipment when power is turned off. always use a properly rated voltage sensing device to confirm there is no voltage in the system.
- Wear appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E and follow all local codes and regulations.
- Do not insert anything into the fan grill.

**Failure to follow these instructions will result in death or serious injury.**

***NOTICE***

**IMPROPER AIRFLOW**

- Improper airflow can damage installed components. Verify that the system provides airflow needed by your equipment.
- Check the air filter regularly. Replace the filter when needed to prevent reduced airflow.
- Do not obstruct airflow by covering the fans.

**Failure to follow these instructions can result in equipment damage.**

**NOTICE**

**EQUIPMENT DAMAGE**

- Only make equipment connections as directed in this manual.
- Do not use caustic detergents or abrasive materials to clean the sheet metal. A damp, soft cloth is usually sufficient to remove dust or debris.

**Failure to follow these instructions can result in equipment damage.**

ASHRAE has published guidelines for owners of Edge computing equipment such as your Micro Data Center. (Edge equipment performs computing outside of a commercial data center with strict environmental controls.) It is recommended that you follow these guidelines to help prevent equipment damage and extend the life of your Micro Data Center. You can download the guidelines from www.ashrae.org/technical-resources/bookstore/datacomseries.

## NetBotz Safety

**NOTICE**

**EQUIPMENT DAMAGE RISK**

- Connect only approved devices to ports on the appliance as directed in this manual. Plugging in other devices may result in equipment damage.
- Do not use crossover cables.

**Failure to follow these instructions can result in equipment damage.**

## Cabinet Safety

The following are important instructions that must be followed during installation.

**⚠WARNING**

**TIP/HEAVY EQUIPMENT HAZARD**

- Use at least two people to unpack and move the cabinet.
- Do not load any additional equipment in the cabinet before moving the cabinet on its casters.
- When moving the cabinet on its casters, ensure the path of the cabinet is free of obstacles and debris.
- When moving the cabinet on its casters, make sure the leveling feet are raised and push the cabinet from the front or rear. Never push the cabinet from the sides.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

**⚠CAUTION**

**HEAD IMPACT HAZARD**

The fan box location may interfere with your working space. Sharp corners exist on the fan box. Exercise care to avoid impact.

**Failure to follow these instructions can result in injury or equipment damage.**

## Labels

Safety and informational labels are affixed to the Micro Data Center. Read and follow the instructions on the labels.
Tip Hazard and Weight limit labels are attached to the frame of the MDC. See the label illustrations in the Installation section of this manual for more details.

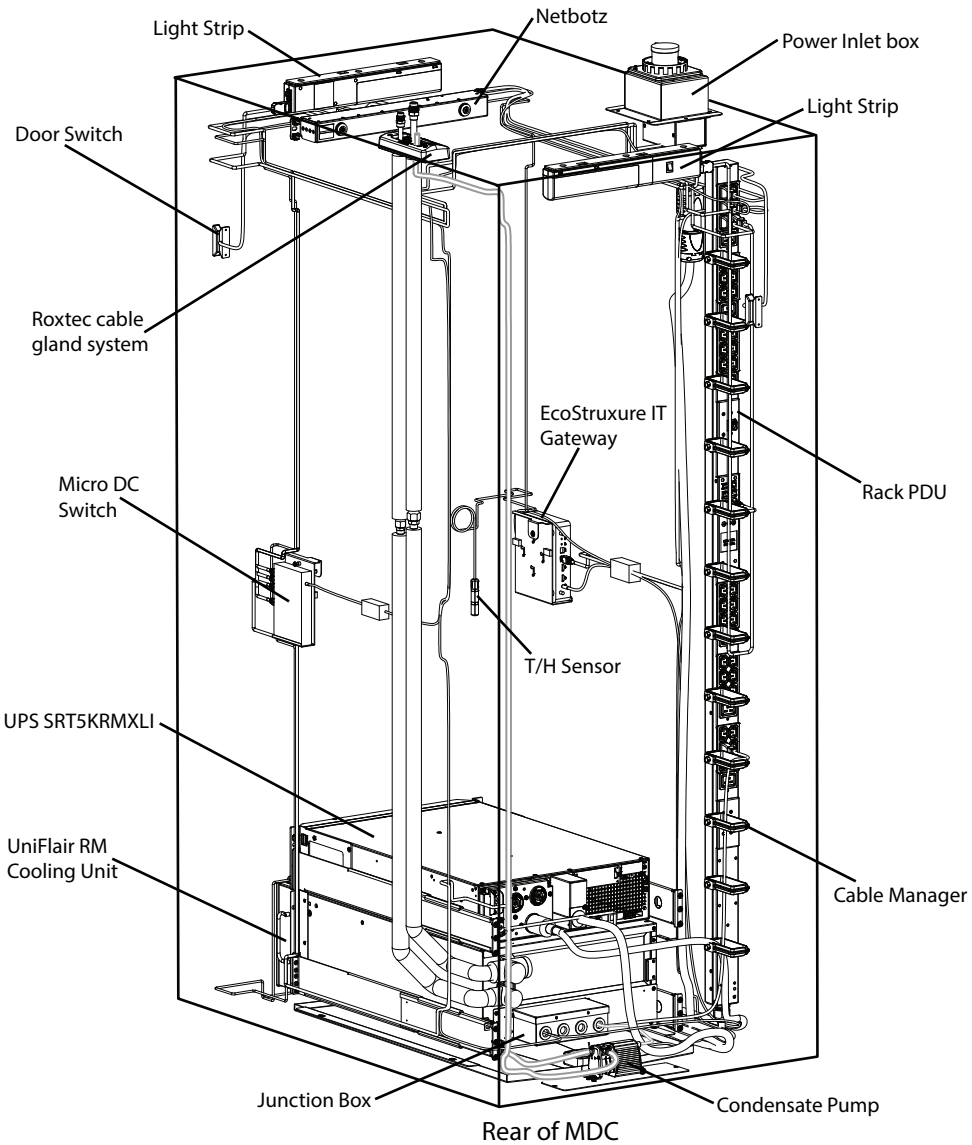
# Inventory

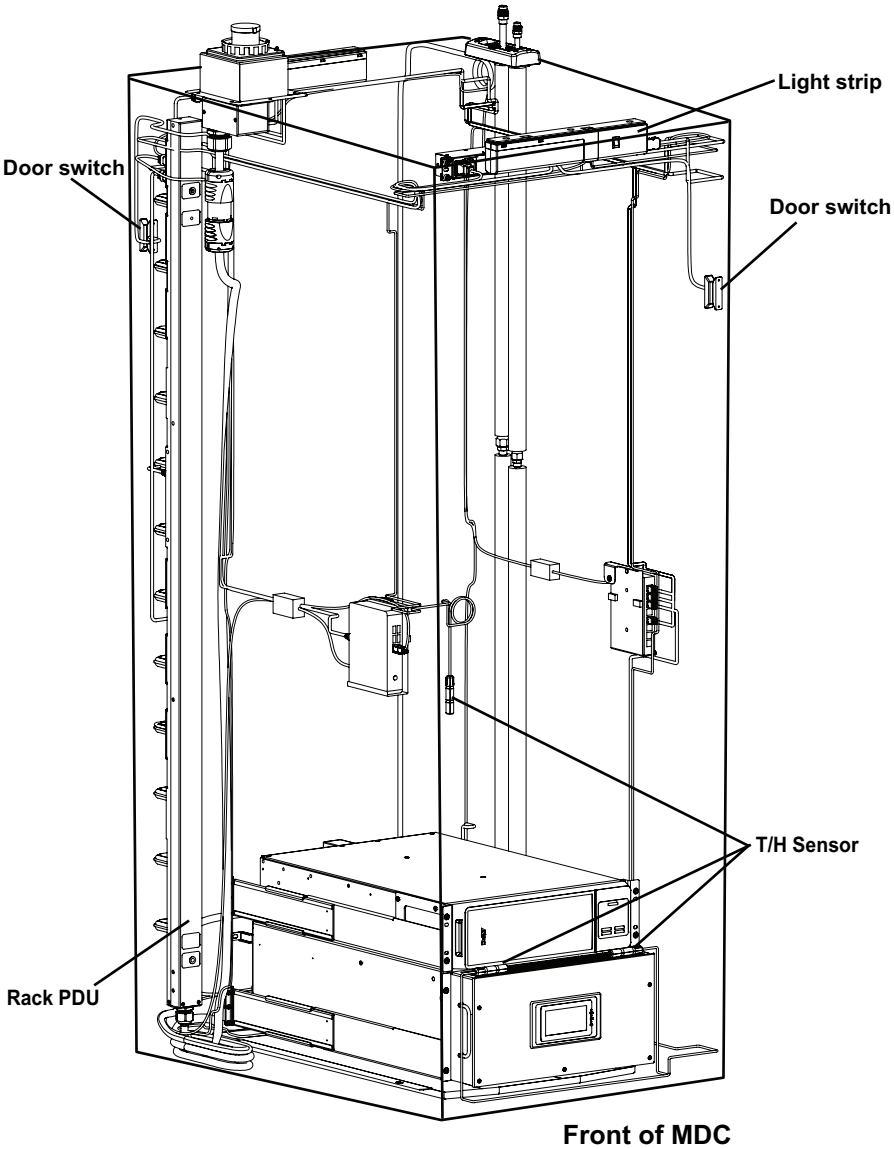
Upon receipt of the equipment, inspect for damage and notify the shipping carrier and APC immediately if any damage is found. There will be several boxes containing various parts and accessory items. After opening a box, check the contents. Report missing or damaged components to: **http://www.apc.com/support**.

The shipping materials are recyclable. Save them for later use or dispose of them appropriately.

# Equipment and Accessory locations

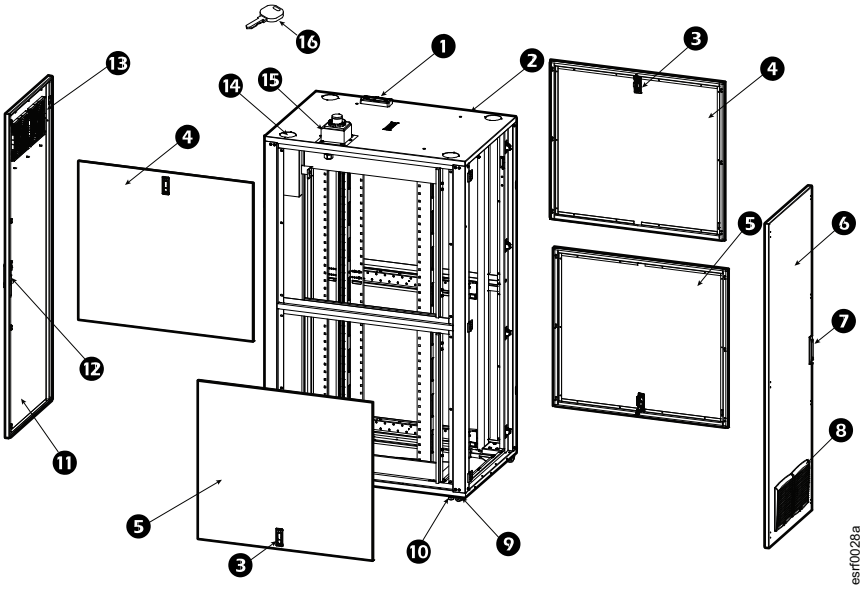
MDC42USRSI configuration shown.






**Front of MDC**

# Cabinet Features




| Item | Description | Item | Description |
|---|---|---|---|
| 1 | Roxtec cable entry (provided for MDCs with cooling units only) | 9 | Caster |
| 2 | Roof | 10 | Leveling foot |
| 3 | Side panel lock | 11 | Rear door |
| 4 | Locking top side panel | 12 | Locking rear door handle |
| 5 | Locking bottom side panel | 13 | Ventilation louvers |
| 6 | Front door | 14 | Cable gland knockouts (4) |
| 7 | Locking front door panel | 15 | Entry point for mains power |
| 8 | Ventilation louvers | 16 | Keys |

# Pre-installed Equipment

| | MDC42USRSI | MDC42UARSI |
|---|---|---|
| Enclosure | 42U | 42U |
| UPS | SmartUPS 5kVA | SmartUPS 5kVA |
| Rack PDU | Metered PDU (Qty 2) | Metered PDU (Qty 2) |
| Cooling | 3.5kW, Uniflair Rack Mount<br>Condensate pump | 3.5kW, Uniflair Rack Mount<br>Condensate pump<br>Emergency Fan Ventilation |
| Security | NetBotz 250 NBRK0250<br>• Standard Keylock<br>• Temperature and Humidity Sensor AP9335TH<br>• Door Contacts NBES0303<br>• Leak Sensor NBES0306 | NetBotz 750 NBRK0750<br>• Standard Keylock<br>• Temperature and Humidity Sensor AP9335TH<br>• Door Contacts NBES0303<br>• Leak Sensor NBES0306 |
| Network | EcoStruxure IT Gateway<br>Micro DC Switch Kit | EcoStruxure IT Gateway<br>Micro DC Switch Kit |
| Accessories | N/A | Rack Mount Fire Suppression |
| Supplementary Equipment | Ethernet cables<br>Power Cables | Ethernet cables<br>Power Cables |

# Supplemental Equipment Box Contents

**NOTE:** Box contents are dependent on your MDC configuration. Your MDC may not require all of the contents listed below.

| |
|---|
| Ethernet cables (for UPS, NetBotz, Rack PDU, EIT Gateway, Fire suppression system) |
| Power cables |
| Power inlet box |
| Roxtec sealing gland system |
| Magnetic Interior lights |
| Camera (provided for MDC42UARSI only) |
| Cable Manager |
| Hardware bag |
| Cable ties |

**NOTE:** Refrigerant piping is shipped inside the MDC cabinet.

# Equipment Shipped Separately

| MDC42USRSI | MDC42UARSI |
|---|---|
| Outdoor refrigerant unit | Outdoor refrigerant unit |

# Hardware Bag

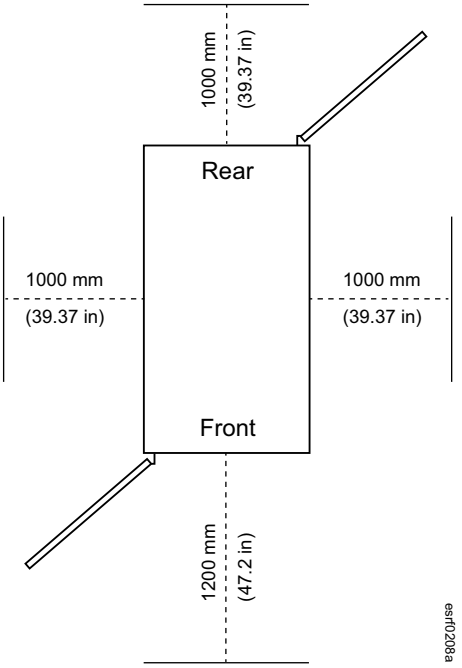
Contents of hardware bag:

| |
|---|
| Plastic cup washer (60) |
| Torx T30 / #2 Phillips tool (1) |
| M6 x 16 Phillips slot screw (60) |
| Cage nut (60) |
| Cage nut tool (1) |

# Installation

## Location Requirements

The final location for the MDC should include sufficient space to allow for installation and service. There should be enough space to open the front and rear doors and to remove the side panels without obstruction. Ensure there is adequate overhead space above the MDC in order to complete the tasks required to install coolant piping, power, and network cables.



# Move the EcoStruxure Micro Data Center to its Final Location

**⚠WARNING**

**TIP/HEAVY EQUIPMENT HAZARD**

- Use at least two people to unpack and move the MDC.
- Do not load any additional equipment in the MDC before moving it on its casters.
- When moving the MDC on its casters, ensure the path is free of obstacles and debris.
- When moving the MDC on its casters, make sure the leveling feet are fully raised and push the MDC from the front or rear. Never push the MDC from the sides.

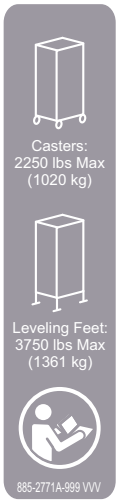
**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

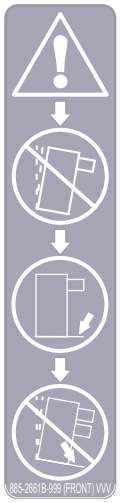
**Labels:** The labels below can be found on the exterior of the MDC and serve to communicate the following information:

1. With the leveling feet lowered, the static MDC can be loaded with up to 1361 kg (3750 lb) of additional equipment.

2. Tip Hazard warning icons

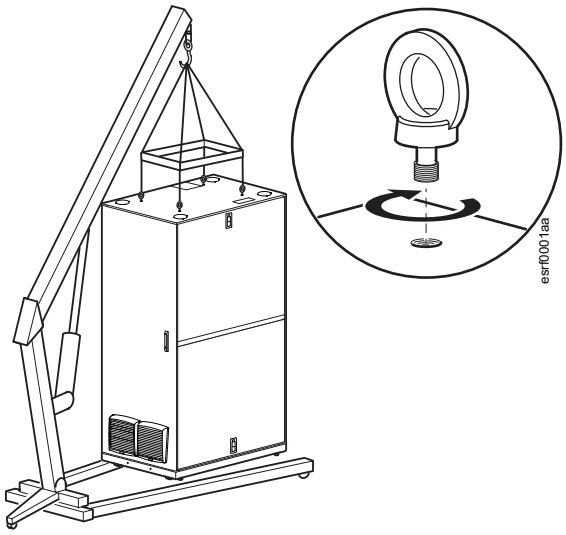
3. Read the Instructions icons



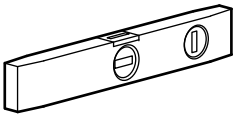
**Eye bolts:** Remove the hole plugs and attach eye bolts in each corner of the top of the MDC frame. Use M12 eye bolts with a lift rating of 435 lbs.

**NOTE:** Use appropriate lifting hardware to ensure a straight-line pull on the eye bolts.

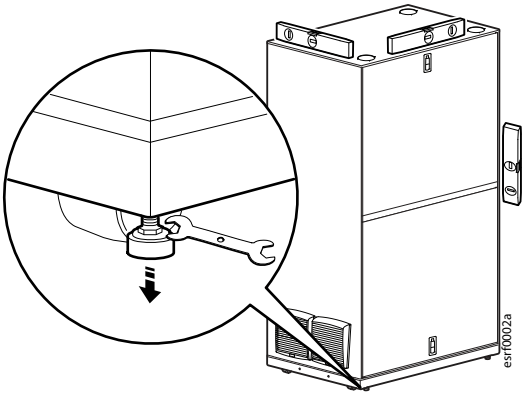



## Leveling Feet

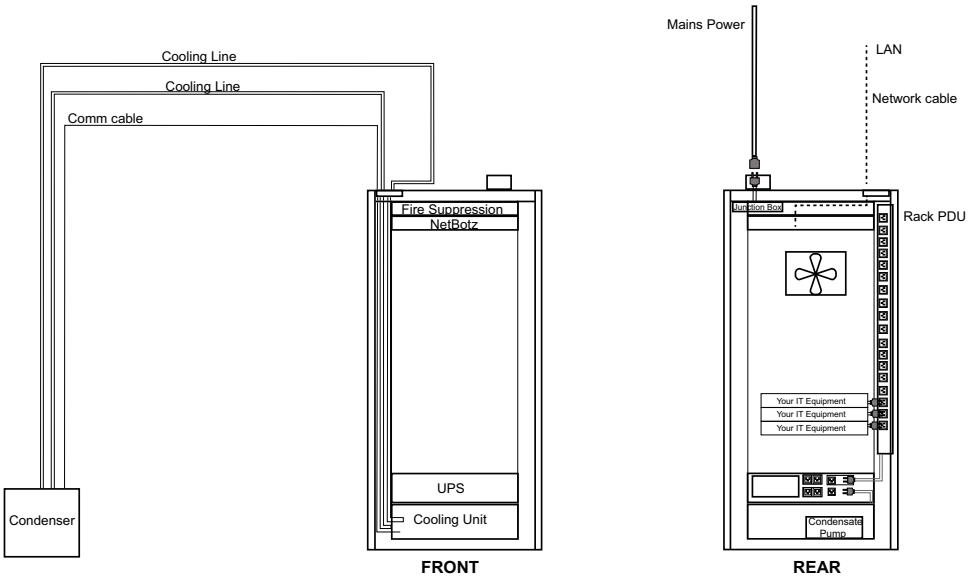
**Tools Required (not provided)**

| | |
|---|---|
| |  |
| 13–mm Open-ended wrench | Level |

When the MDC has been moved to the location where it will be installed, lower the leveling feet. Use a 13–mm open-ended wrench (not provided) to lower the leveling feet. Use a level (not provided) to ensure the MDC is level and plumb while lowering the leveling feet.



# Equipment Connections in the EcoStruxure Micro Data Center




## NOTICE

Low Ambient configuration not shown. Refer to the manuals for the Low Ambient Kit and Cooling Unit for proper placement of the Low Ambient components.

**Failure to follow these instructions can result in equipment damage.**

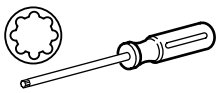
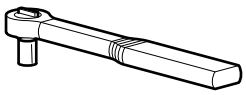
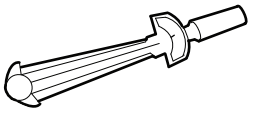
## NOTICE

- It is important to check that all connections are secure before applying power to the MDC.
- Check that the power cable for the fan is connected.
- For units with fire suppression systems, check that a cable from the fire suppression system has been connected to the fan.

**Failure to follow these instructions can result in equipment damage.**

# Side Panel Removal and Installation

## Tools Required (not provided)

| | | |
|---|---|---|
|  |  |  |
| T-25 Torx driver | 10mm socket wrench | Torque wrench |

## Remove the Side Panels

It may be easier to install some of the piping and cables if one or more side panels are removed to improve access. Since your MDC is a sealed unit, care must be used when removing and installing the side panels in order to ensure the gasket material will not be damaged.

**⚠CAUTION**

**HEAVY EQUIPMENT HAZARD**

The side panels are heavy. Two people should remove or install side panels.

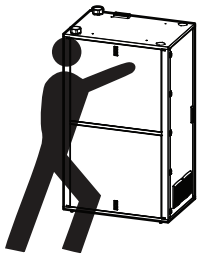
**Failure to follow these instructions can result in injury or equipment damage.**

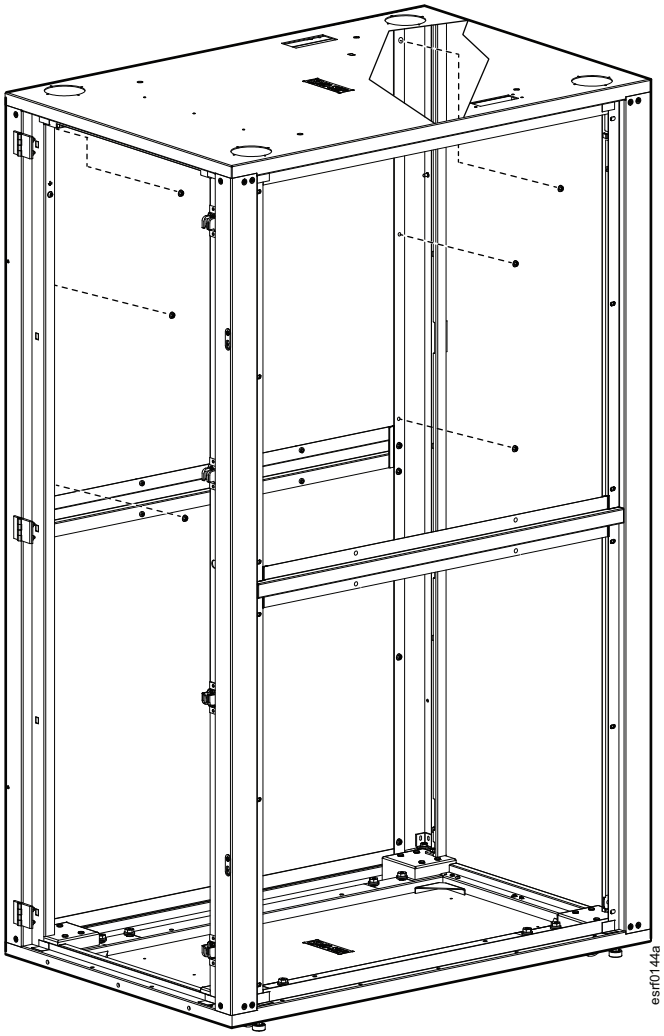
***NOTICE***

Use care when removing or installing the side panels. Avoid crushing or tearing the gasket material.

**Failure to follow these instructions can result in equipment damage.**

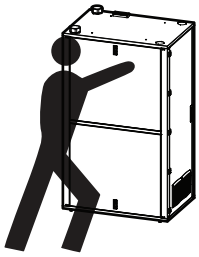
The side panels are secured to the frame with three (3) M6 nuts at the front and three (3) M6 nuts at the rear of the frame on the interior of the unit.
One person should hold the panel in place from the outside while the M6 nuts are removed.

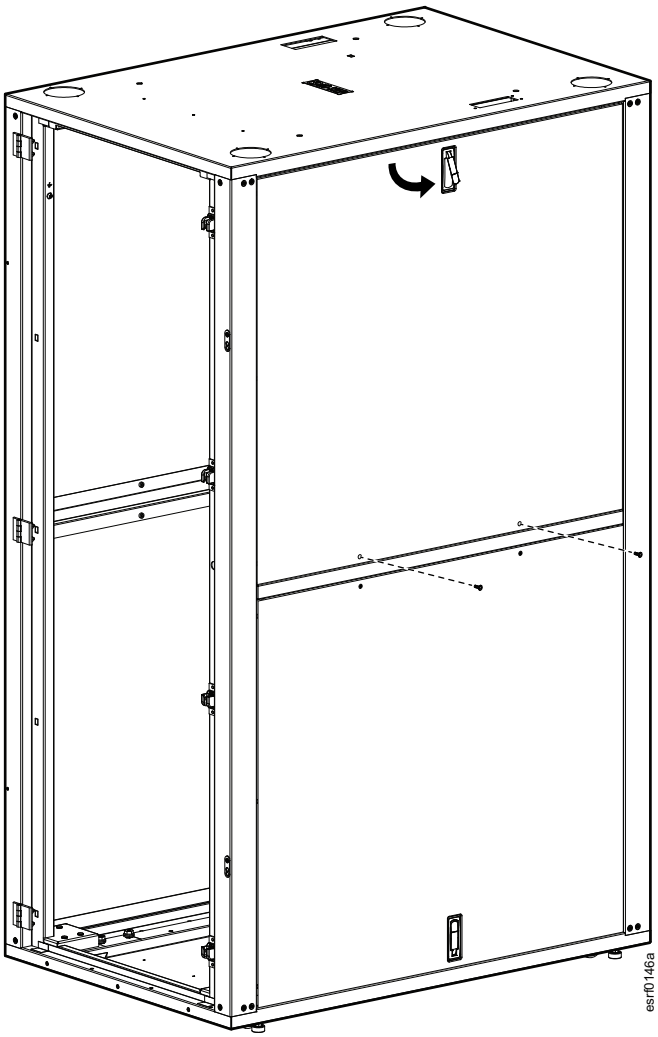





MDC enclosure is shown without components for clarity.

With one person holding the panel in place, remove the two (2) T25 screws holding the panels to the cross brace support. Lift the latch to release the side panel. Use care when removing the side panels.

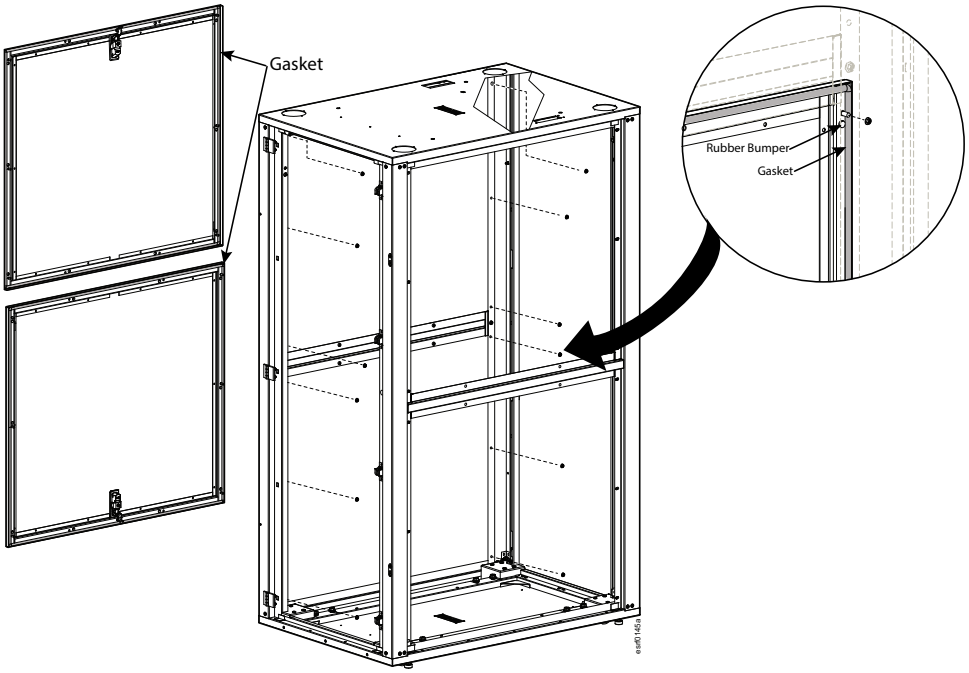




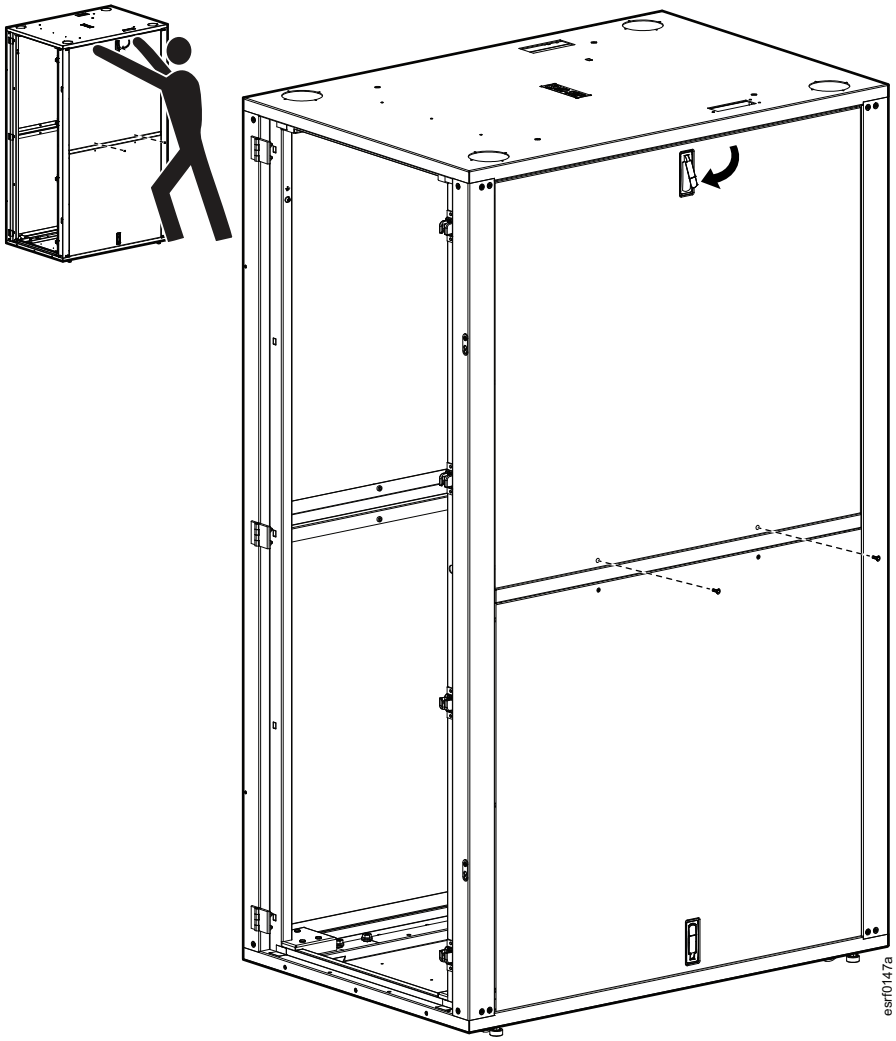
# Install the Side Panels

| NOTICE |
| --- |
| **DAMAGE HAZARD**<br>• To avoid damaging the gasket, do not use an electric screwdriver or drill to secure the hardware.<br>• Refer to the torque specifications to avoid overtightening the fasteners. Overtightening the fasteners may permanently damage the gasket and compromise the seal.<br>**Failure to follow these instructions can result in equipment damage.** |

Fit the six (6) threaded studs on the side panel through the holes in the frame. Have one person hold the side panel in position while a second person secures the six (6) M6 nuts. Torque: 8 – 12 in lbs (0.9 – 1.4 Nm)
Rubber bumpers installed near the studs on the side panels help prevent over compression of the gasket. Observe the torque requirements and use care to prevent damage to the gaskets.



Install the two (2) T25 screws to the support. Torque: 8 – 12 in lbs (0.9 – 1.4Nm)
Press the side panel at the top to compress the gasket while securing the latch. Use care not to damage the gasket. Check to make sure the latch is secured in the locked position.



# Bringing Power to the Micro Data Center

**⚠⚠DANGER**

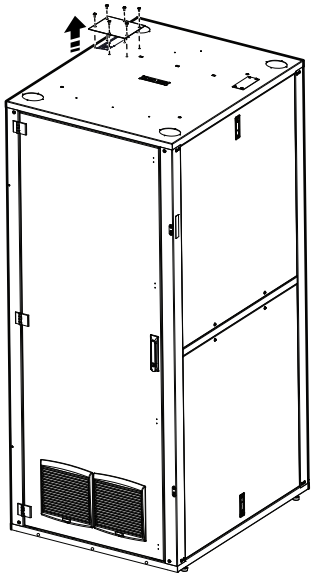
**HAZARD OF ARC FLASH AND ELECTRICAL SHOCK**

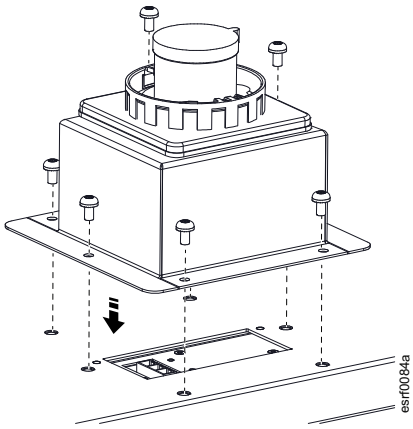
- Adhere to all national and local electrical codes when bringing mains power to the system.
- Mains power must be installed and serviced by qualified electricians only.
- Follow safe electrical work practices and wear appropriate personal protective equipment (PPE) See NFPA 70E.
- This system does not have any user-serviceable parts. Repairs are to be performed by factory-trained service personnel only.
- The system does not incorporate a main power disconnect. Due to the use of the UPS, live power exists within the system when power is turned off at the input circuit breaker.

**Failure to follow these instructions will result in death or serious injury.**

Building power is brought to the Micro Data Center at the top of the enclosure.

1. Remove the sealing plate on top of the Micro Data Center. Save the screws for use when installing the power inlet box.
2. The power inlet box is located in the supplemental equipment box shipped inside the enclosure. There is a connector under the sealing plate. There is a black quick connect connector hanging from the power inlet box that connects to a black connector below the removed sealing plate. Those connectors should be pushed together until they make an audible click. Use the screws removed with the sealing plate to secure the power inlet box to the roof of the enclosure .



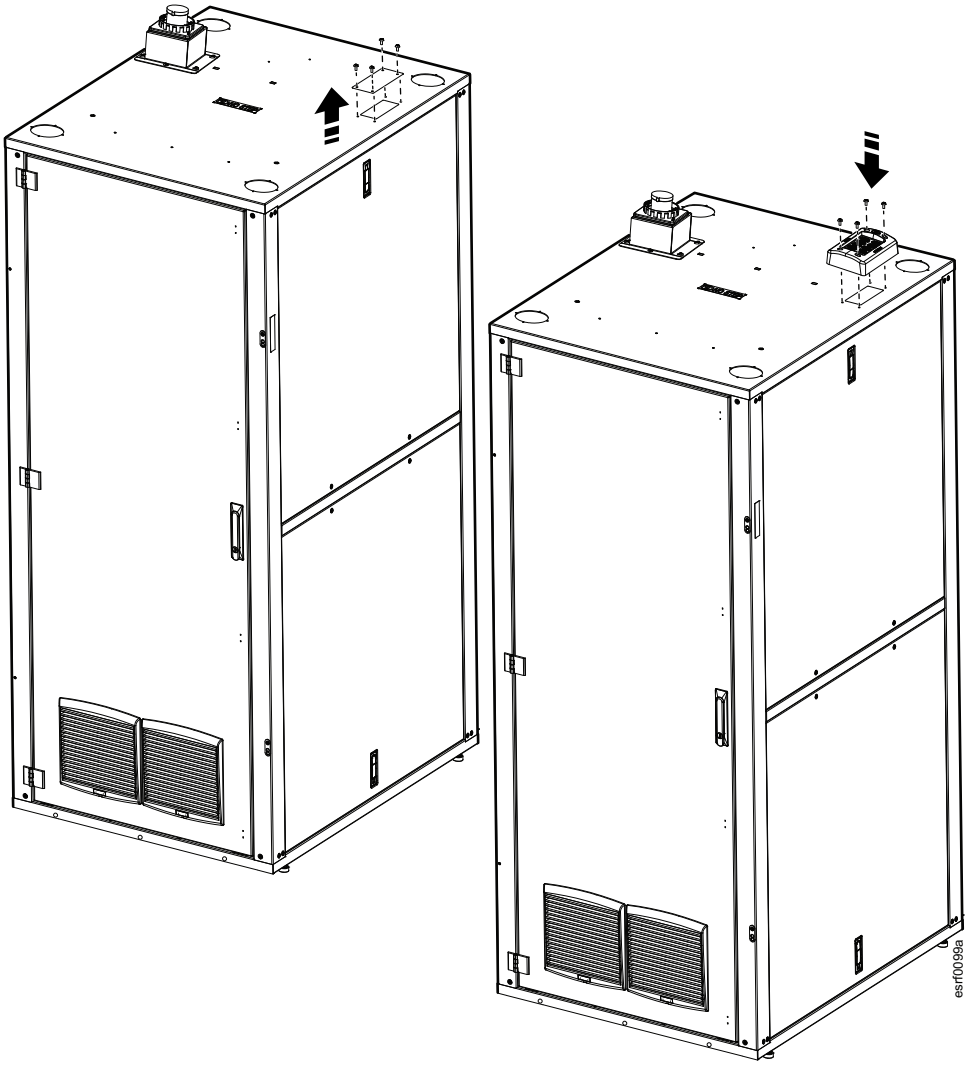


3. Bring mains power to the Micro Data Center using flexible cable and a receptacle compatible with the IEC309 IP67 connector in the power inlet box. Make sure the connector is the same voltage and current rating as required for the Micro Data Center.
   For 5kVA UPS: 250V, 30A inlet connector

   **NOTE:** The power cable inside the MDC enclosure has been installed at the factory. The power cable is hardwired into the 5K UPS.

# Install the Roxtec Gasket

Remove the sealing plate and install the Roxtec cable entry system (provided in the supplemental equipment box) using the four (4) hex head screws included.



# Install the Cooling Equipment

The cooling unit is installed in your EcoStruxure MDC but the refrigerant piping must be installed. The piping (with insulation) for installation in the interior of the cabinet is shipped inside the cabinet. Piping from the cooling unit to the outside condenser is not provided.

**⚠WARNING**

**EQUIPMENT DAMAGE HAZARD**

Cooling equipment shall be installed and serviced only by qualified persons.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

**NOTES:**

- Refer to the Installation Manual for your cooling unit for installation instructions.
- Perform all commissioning checks, leak detection, and vacuum pumping procedures as directed in your cooling installation manual.

The cooling unit is installed at the bottom of the cabinet.

Locate and remove the refrigerant pipes secured to the inside of the Micro Data Center cabinet. Connect the suction line valve and liquid line valve on your cooling unit.

The condensate drain line is coiled below the sealing plate where the Roxtec cable entry system will be installed.

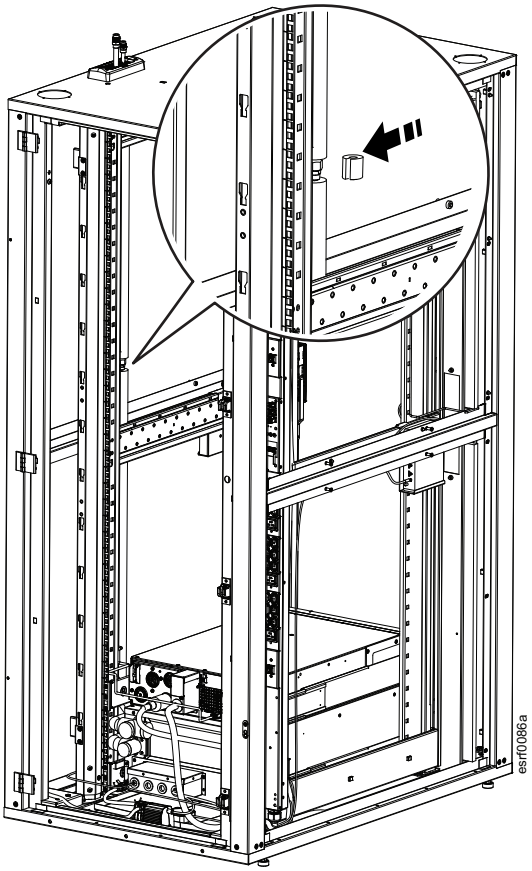
Ensure the condensate drain hose is properly installed so that condensate can drain properly. Refer to the Installation instructions for your condensate pump.

Follow the instructions in the manual for your cooling unit to install the outdoor condenser. Connect the suction line valve and the liquid line valve from the condenser to the appropriate refrigerant lines in the cabinet. If your MDC includes a low ambient kit, refer to the installation instructions provided with the kit.

**NOTES:**

- Do not apply power to the outdoor cooling unit until the Micro Data Center is receiving power.
- Do not remove the covers of the line valves before connecting the pipes.
- Ensure the connections between the valves and the pipes are tight.

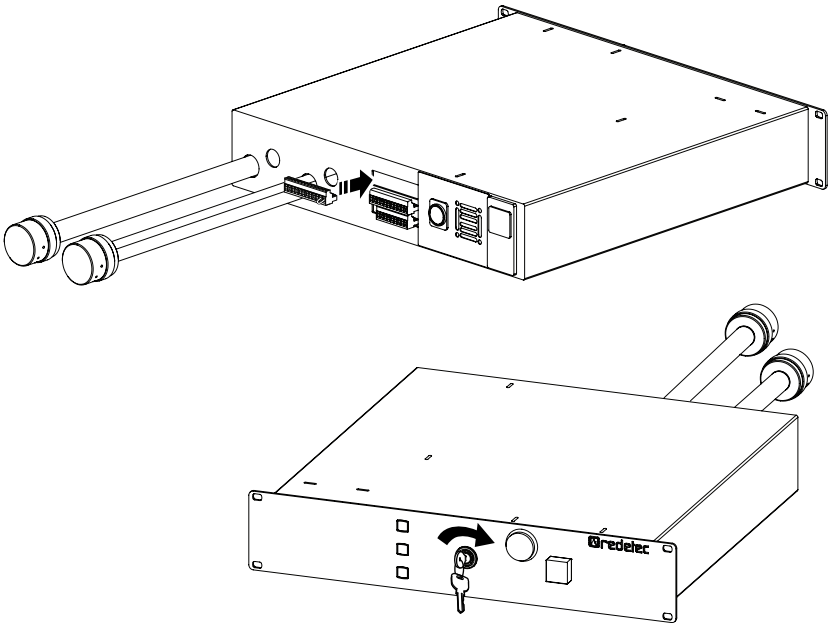
Ensure that any areas of exposed piping on the interior of the MDC are covered with insulation (not provided).



# Fire Suppression

The Fire Suppression system requires the installation of the green connector (provided in the Accessory Box) to the top receptacle on the back of the unit. The green connector has a red jumper wire to activate the internal battery backup.

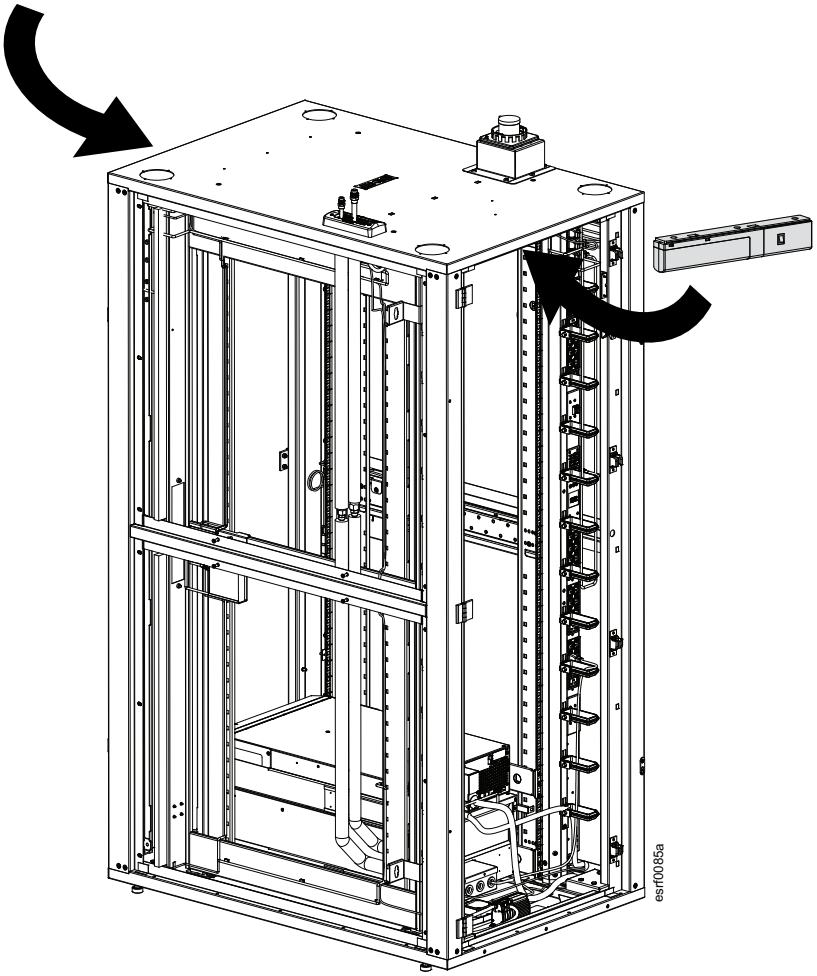
The key (provided in the Accessory Box) is necessary to change the setting from **Isolate** to **Normal**.



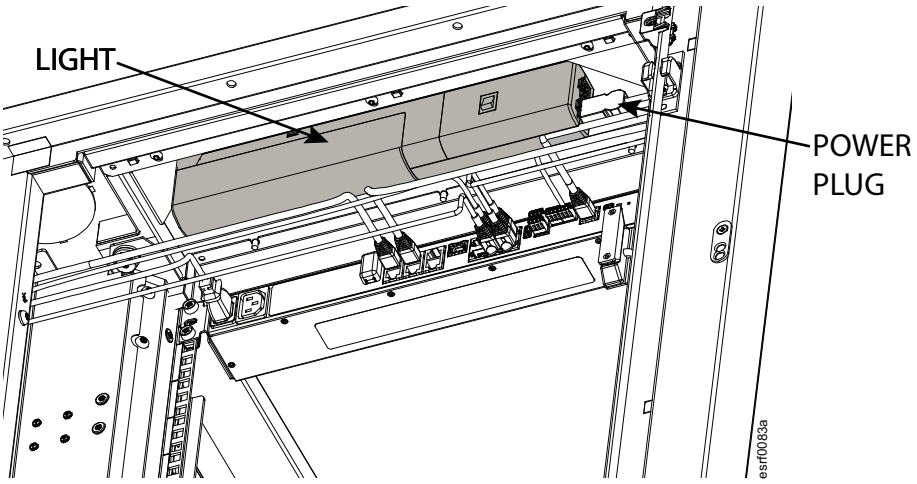

Refer to the Fire Suppression system Quick Start manual for start-up instructions.

# Lighting Installation

The two LED lighting strips are packed inside the accessory box. Remove them from the shipping box. The light strips are magnetic and are installed to the inside of the roof at the front and rear of the enclosure.




Plug the light strips into the pre-installed power cables.
The lights should be positioned towards the front and rear rack opening and doors so they do not interfere with cables and power cords.



# The UPS

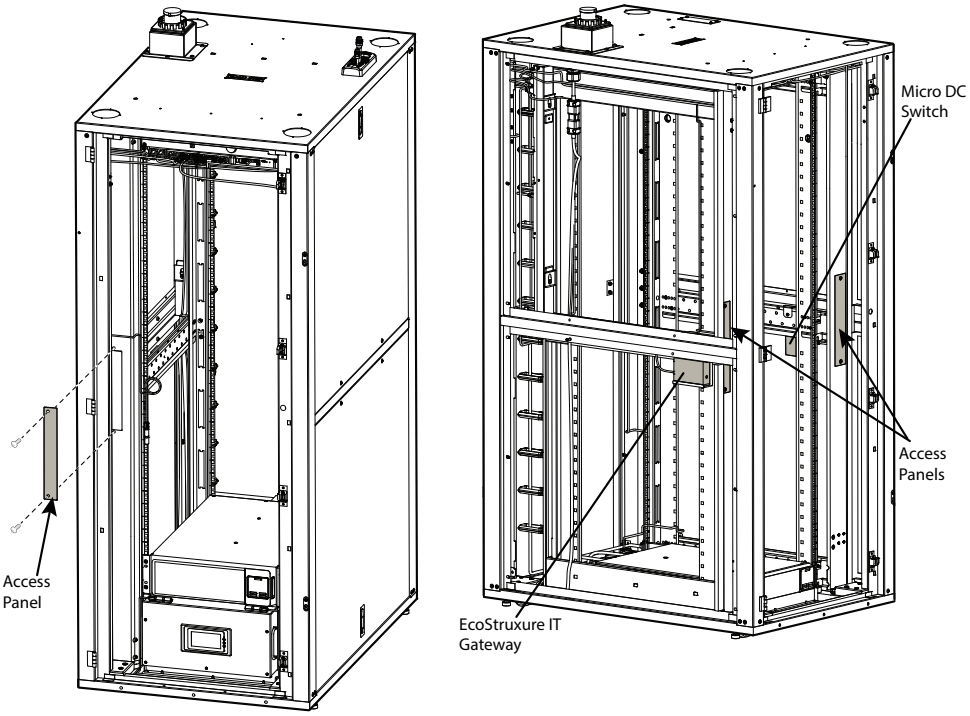
**NOTE:** Refer to the UPS manual included with your Micro Data Center for complete installation instructions.

Complete the setup of the UPS as described in the UPS Operation manual.

# Access the Micro DC Switch and EcoStruxure Gateway Appliance

Remove the cover plates to obtain access to the Micro DC switch and EcoStruxure Gateway appliance.

There are two (2) cover plates covering access points on the frame. Remove two (2) Phillips head screws securing each plate to the frame.




**NOTE:** Replace the panels after cables have been secured to the Micro DC switch and EcoStruxure Gateway appliance.

# Start-Up

**NOTE:** Check each cable and power cord to be sure the connection is secure. A loose cable or power cord will cause delays in configuring your Micro Data Center.

**Checklist for Initial Start-up**

1. Mains power is connected to the unit.
2. UPS batteries are secured.
3. The UPS powered ON. The UPS network cable is connected to the Micro DC Switch
   - Check the display on the UPS for status.
   - The Rack PDU(s) power cable(s) are connected to the UPS, and are powered ON. The Rack PDU(s) network cables are connected to the Micro DC Switch. Check the operation status on the Rack PDU display.
4. Determine which NetBotz model is installed in your MDC (NB250 or NB750). The Netbotz power cable is connected to the Rack PDU. The NetBotz appliance network cable is connected to the Relay Output port on NB250 and to the Relay 1 port on NB750. This network cable is connected at the other end to the Micro DC Switch. MDCs with cooling units and fans have an additional cable attached to the relay output on the NetBotz appliance.
5. Sensors are positioned and cables connected to the NetBotz device.
   - Temperature/Humidity sensors: MDCs with cooling units have three (3) temp/humidity sensors. One (1) temp/humidity sensor will be secured to the side of the U-space. After the customer equipment is installed, move this sensor and secure it to the approximate center (left-to-right) to ensure that the sensor is located in the active airflow of the equipment. The other two (2) temp/humidity sensors are factory installed to the air conditioning unit.
   - Spot leak sensor (only on MDCs with cooling units)
   - Door contact sensors
   - Camera

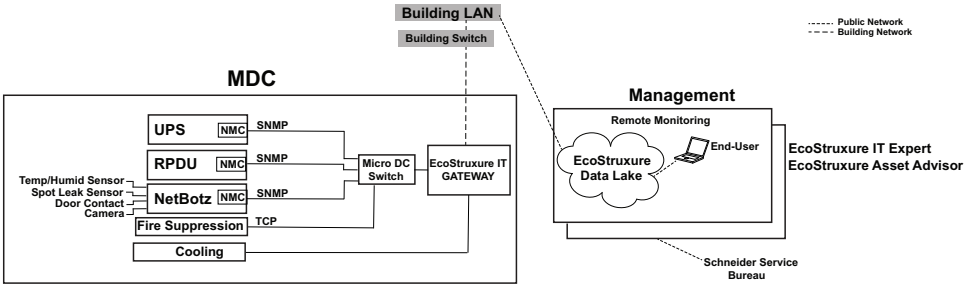
   Refer to the NetBotz User Guide for more complete instructions.
6. The cooling unit power cord is connected to the Rack PDU. A USB communication cable connects the cooling unit to the EcoStruxure IT Gateway.
7. The fire suppression system power cord is plugged into the Rack PDU and its network cable is connected to the Micro DC Switch. The smoke detection sensors are in place. An additional power cord is plugged into the fire suppression system at one end and the fan box at the other end.
8. The Micro DC Switch power cord is plugged into the Rack PDU and powered ON.
9. The fan power cord is plugged into the Rack PDU on MDCs with fan-only ventilation. The fan is plugged into the NetBotz appliance on MDCs with both a cooling unit and fan.
10. The EcoStruxure IT Gateway appliance: The EcoStruxure IT Gateway power cable is plugged into the Rack PDU. Review the previous steps in this section to make sure all connections are correct before initiating the Gateway appliance. Go online to https://helpcenter.ecostruxureit.com. Information is available here to help you log in and set up accounts. Follow the instructions on the EcoStruxure IT Help Center pages.

# EcoStruxure IT Gateway

## Sign Up and Create an EcoStruxure IT Account

Open a browser window on your computer and navigate to https://ecostruxureit.com/ and sign up for an EcoStruxure IT account.

## Connections to the EcoStruxure Gateway




The EcoStruxure Micro Data Center is configured at the factory with the EcoStruxure IT Gateway appliance and the Micro DC switch installed along with a complement of power, cooling, and sensing devices, depending on the model. The communication cables from the devices installed in the MDC are connected to the Micro DC switch or directly to the EcoStruxure IT Gateway appliance as required. See the illustration above.

Software versions on the EcoStruxure IT Gateway appliance may vary. Instructions are available at https://helpcenter.ecostruxureit.com/ to explain how to configure your Gateway appliance.

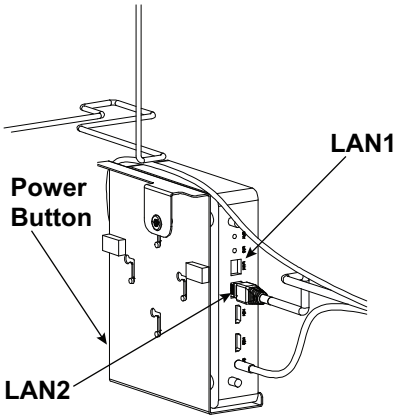
- Software versions 1.9.0 and older use Webmin to configure the network. Instructions for software versions 1.9.0 and older are available on the helpcenter Web pages.
- Software versions 1.10 and newer configure the network from EcoStruxure Web pages. Instructions for software versions 1.10 and newer are also available on the helpcenter Web pages.

# Connect Your Computer to the Gateway Appliance

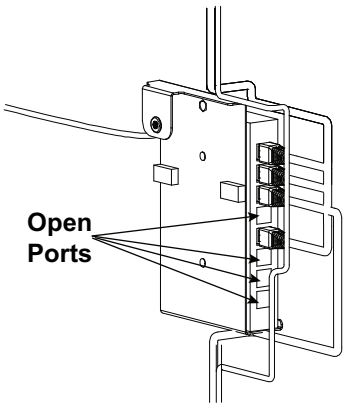
**NOTE:** Remove the cover plates to obtain access to the Micro DC switch and EcoStruxure Gateway appliance.

The EcoStruxure IT Gateway appliance has two network connection ports, LAN1 and LAN2.

The LAN1 port connects the Gateway appliance to the Public network. This is the port that the Gateway appliance uses to communicate with your building network. Connect your building's network to the LAN1 port with a communication cable (not provided).
The LAN2 port connects you to the Private network of the Gateway appliance. Connect your computer with a communication cable (not provided) to the LAN2 port to set up the Gateway appliance or, because the LAN2 port already has a cable connected to the Micro DC Switch at the factory, you can make your connection to LAN2 from an empty port on the Micro DC Switch.




**View of Gateway from rear of MDC**




**View of Micro DC Switch from front of MDC**

**NOTE:** Check that the power cables are securely connected to the Gateway appliance and the Micro DC switch.

Check that the Gateway appliance is powered on. If the Gateway appliance is not on, press the power button to turn it on.

Wait ten minutes to allow the Gateway appliance to fully initialize.

Open a browser window on your computer. Enter the IP address 192.168.0.1.
If the EcoStruxure login page opens, your software version is 1.10 or newer.
If the attempt does not succeed, enter the IP address 192.168.0.1:10000 to connect to Webmin. If you succeed in connecting to Webmin, your software version is 1.9 or older.

Continue setup using the instructions for your software version available in the helpcenter.

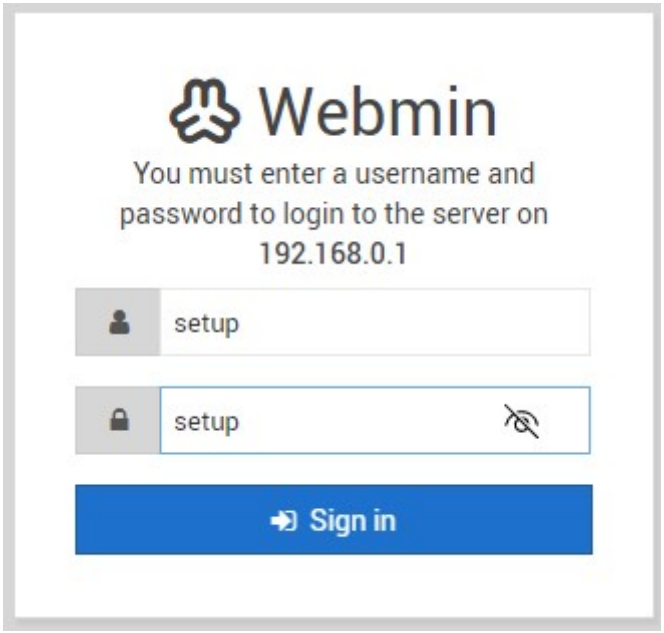
| ***NOTICE*** |
| --- |
| Following configuration of your EcoStruxure IT Gateway, you must then allow the Gateway to discover the devices and sensors connected. Any devices or sensors you add after the initial setup will require you to run Discover Devices again so the new devices can be discovered by the EcoStruxure IT Gateway. |

# Gateway Version 1.9 and Older

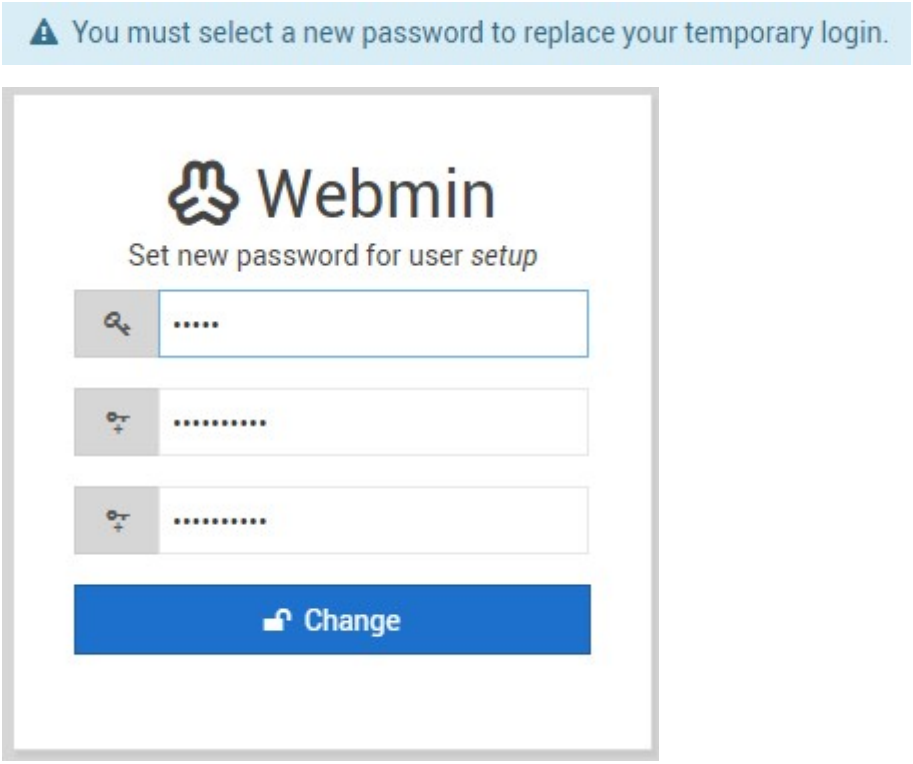
**Prerequisite:** Your computer is connected to the building network and to the LAN 2 port (Private side) of the Gateway.

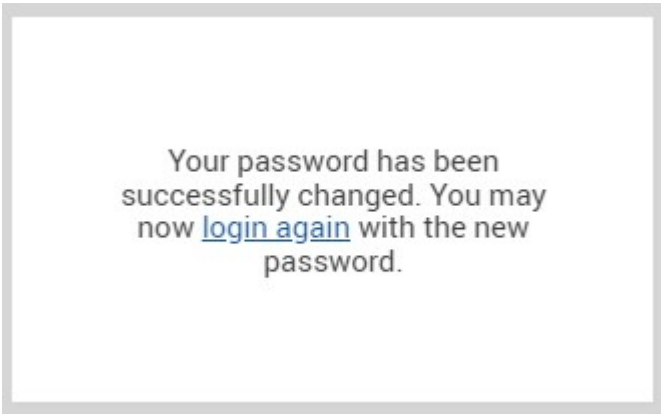
1. On your computer, open a browser window and enter the IP Address of Webmin (192.168.0.1:10000).

Login at the Webmin prompt. The credentials for user and password are both **setup**.

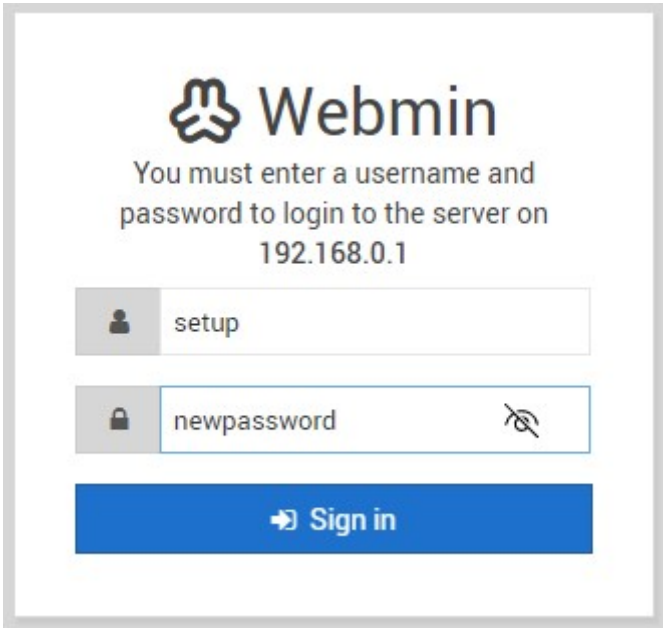


You will be prompted to change your password. You must change the default password before you will be allowed to continue.



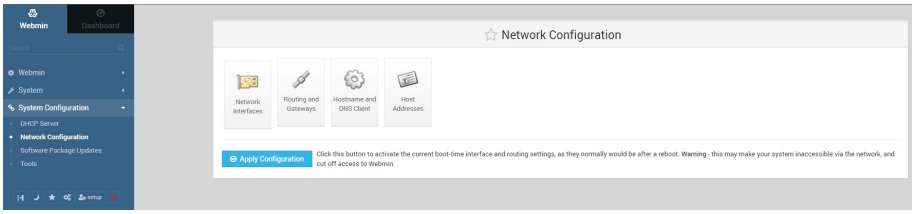



2. Log in with your new password.
.

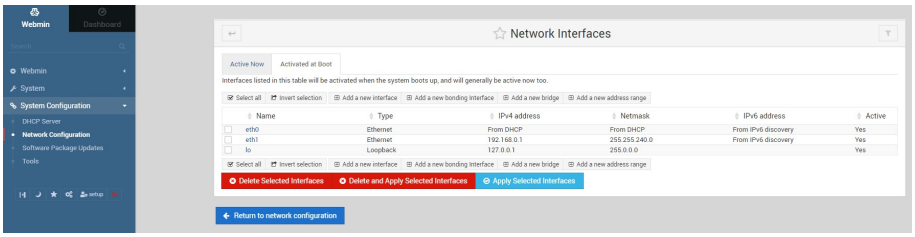



Navigate to: **System Configuration > Network Configuration > Network Interfaces**
On the page that opens, in the Navigation pane on the left side of the page:

- Click on the arrow next to **System Configuration** to open the dropdown menu.
- Select **Network Configuration** from the dropdown menu to open the Network Configuration page.
- Click the **Network Interfaces** icon on the page.

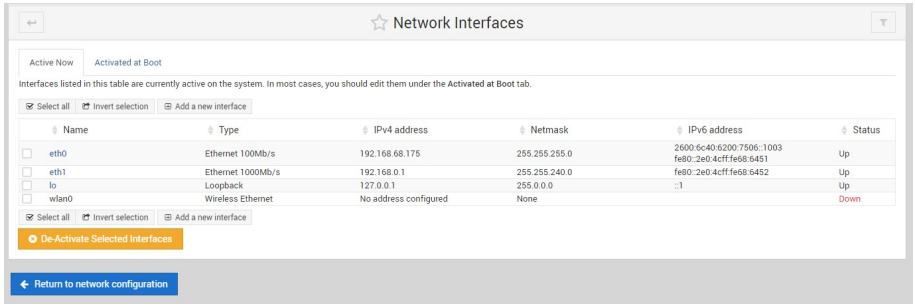



- The **Network Interfaces** page will open.
- The Network Interfaces page shows the interfaces list in the Activated at Boot tab by default. Select the **Active Now** tab to open the list of available Active Network Interfaces.



- The **Active Now** list of Network Interfaces will show the interfaces that are currently active on the system.
- **eth0** is the name of the interface for the LAN1 port of the EcoStruxure IT Gateway appliance. This is the Gateway Public network.
  Make a note of the IP address of **eth0**. You will need this IP address to access the Gateway Public network.

  **NOTE:** eth1 is the interface for LAN2, the Gateway Private network.




3. Close Webmin and disconnect your computer from the LAN2 port (or the port on the Micro DC switch).
4. With your computer connected to the building network, open a browser window and enter the **Public IP address** of your Gateway appliance (eth0): *https://<Public_IP_Address>/*
5. When the Web page opens, enter the EcoStruxure IT Gateway initial credentials: Username: **admin** and Password: **admin**

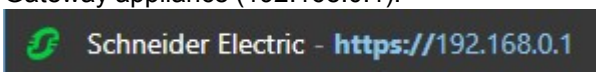
6. You will be prompted to change your password. You must change your password in order to continue.

To continue setup, go to Configure Credentials in this manual.

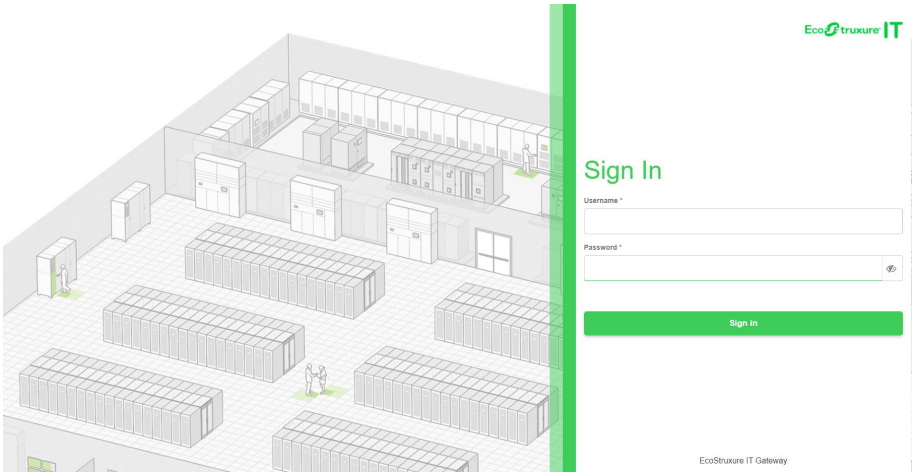
# Gateway Version 1.10 and Newer

**Prerequisite:** Your computer is connected to the building network and to the LAN 2 port (Private side) of the Gateway.

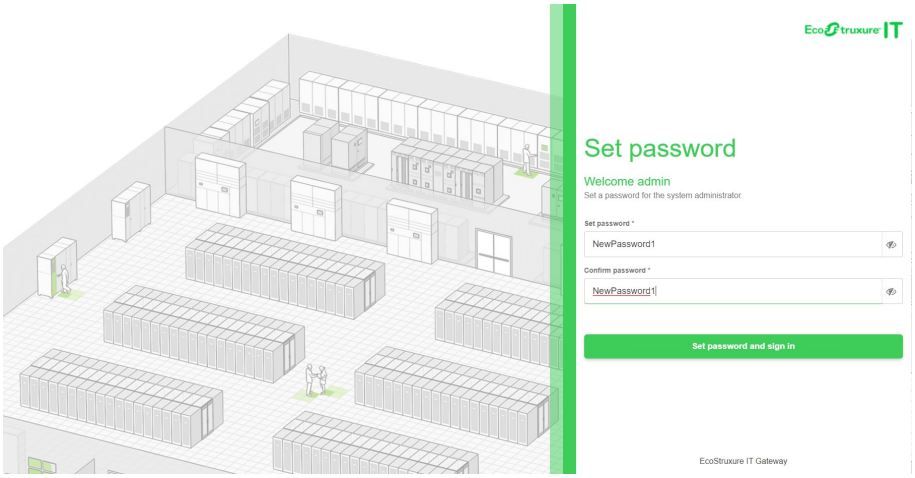
1. On your computer, open a browser window and enter the IP Address of the Gateway appliance (192.168.0.1).



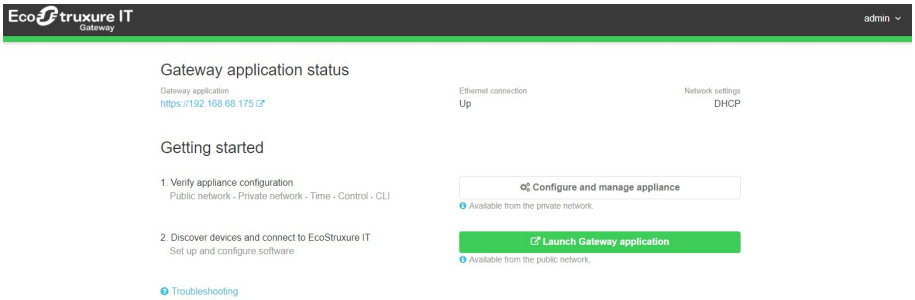

2. The Initial Login page will open.
Enter the EcoStruxure IT Gateway initial credentials: Username - **admin** and Password - **setup**.




3. You will be prompted to change your password. You must change your password before you can continue.

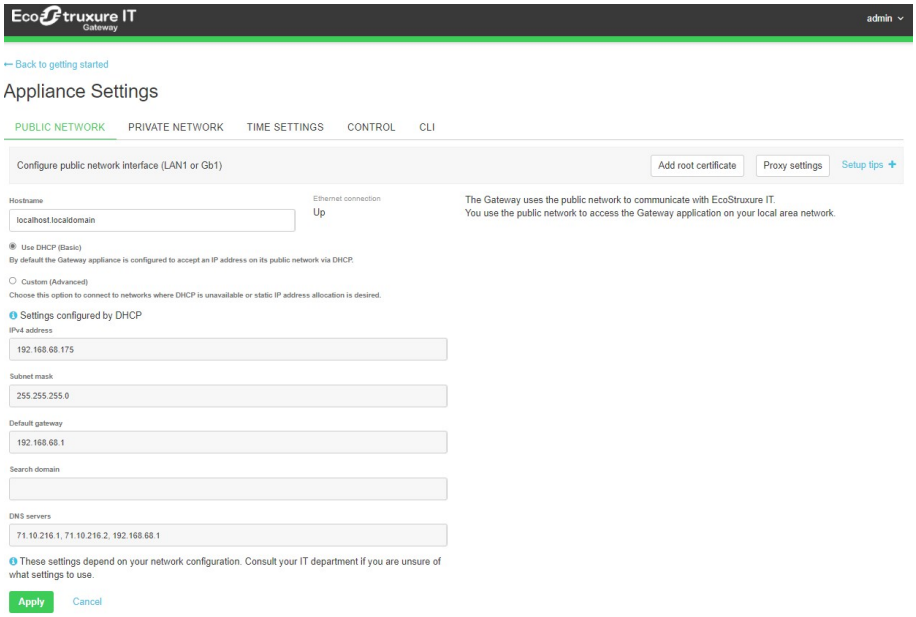



4. On the page that opens, you can verify the Gateway appliance configuration. Click on the **Configure and manage appliance** bar to view or modify the settings.



5. The **Appliance Settings** page will open. On the **Public Network** tab, the IP Address and other information related to the public network interface (LAN1 on the Gateway) is shown. Make a note of the IP Address and the other information.
   On the Private Network tab, the information related to the private network can be viewed or modified.
   Make sure the information on both the Public Network tab and Private Network tab is correct before proceeding to discover the devices connected to your Gateway appliance. These settings depend on your network configuration.

| ***NOTICE*** |
| --- |
| Your network administrator can provide a root certificate and proxy settings as necessary. |




6. Disconnect from the Private network. From the Public Network, continue with the setup procedure. Go to Configure Credentials on the next page.

# Configure Credentials

**NOTICE**

- A firewall on your building network could prohibit the connection to the EcoStruxure IT cloud. See your network administrator for the necessary root certificate if required.
- Before configuring credentials for the devices connected to the Gateway appliance, update the EcoStruxure software version to the latest version available. See the instructions on the EcoStruxure Help Center website.

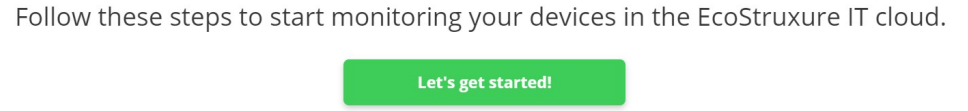
**Prerequisite:** Your computer must be connected to the building network. Open a browser window and enter the IP address you obtained from the Private Network.

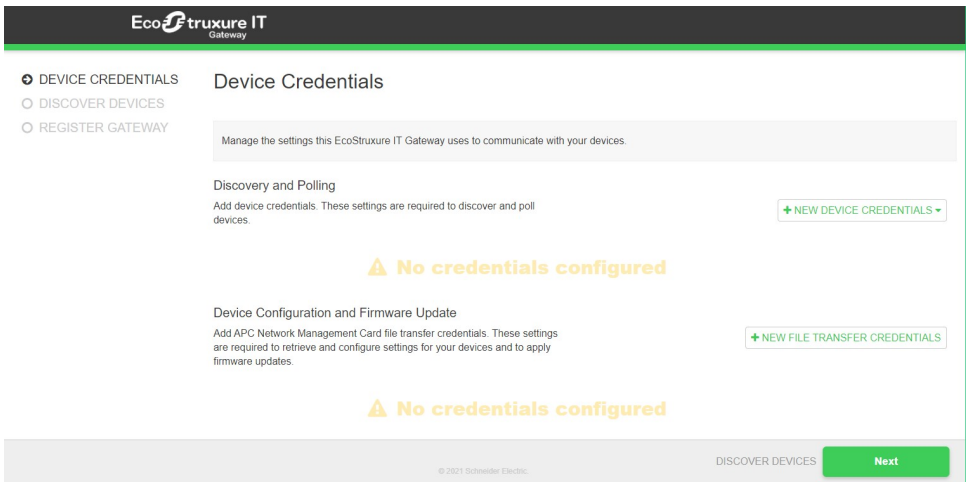
**NOTICE**

- The devices connected to your Gateway appliance were configured to use SNMPv3 at the factory. If you configure your Gateway appliance using different SNMPv3 settings or credentials or if SNMPv1 will be used, the connected devices will need to be re-configured to match. For security reasons, SNMPv3 is recommended.
- It is recommended that you login to all the devices connected to the Gateway and change the default passwords to enhance your cybersecurity.

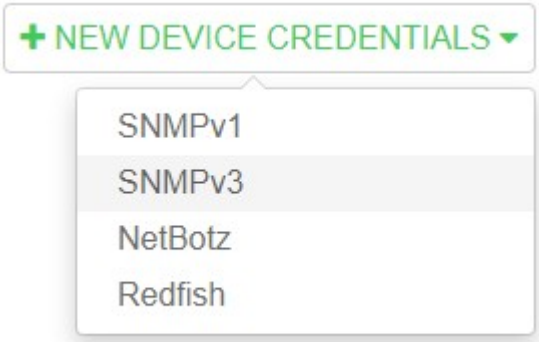
## Configure SNMPv3 Credentials

Instructions for setting up SNMPv1 and SNMPv3 credentials are available online. The EcoStruxure IT Gateway installed in the MDC, requires you to configure SNMPv3 because the devices attached have been configured to use SNMPv3. From the EcoStruxure IT Gateway's opening page, click on the **Lets get started** button to open the Device Credentials page.



Click on **New Device Credentials** to open the dropdown menu. Select **SNMPv3**.



Complete the Credentials form for SNMPv3.

Label: SNMPv3

Username: SEMDC1

Authentication type: SHA

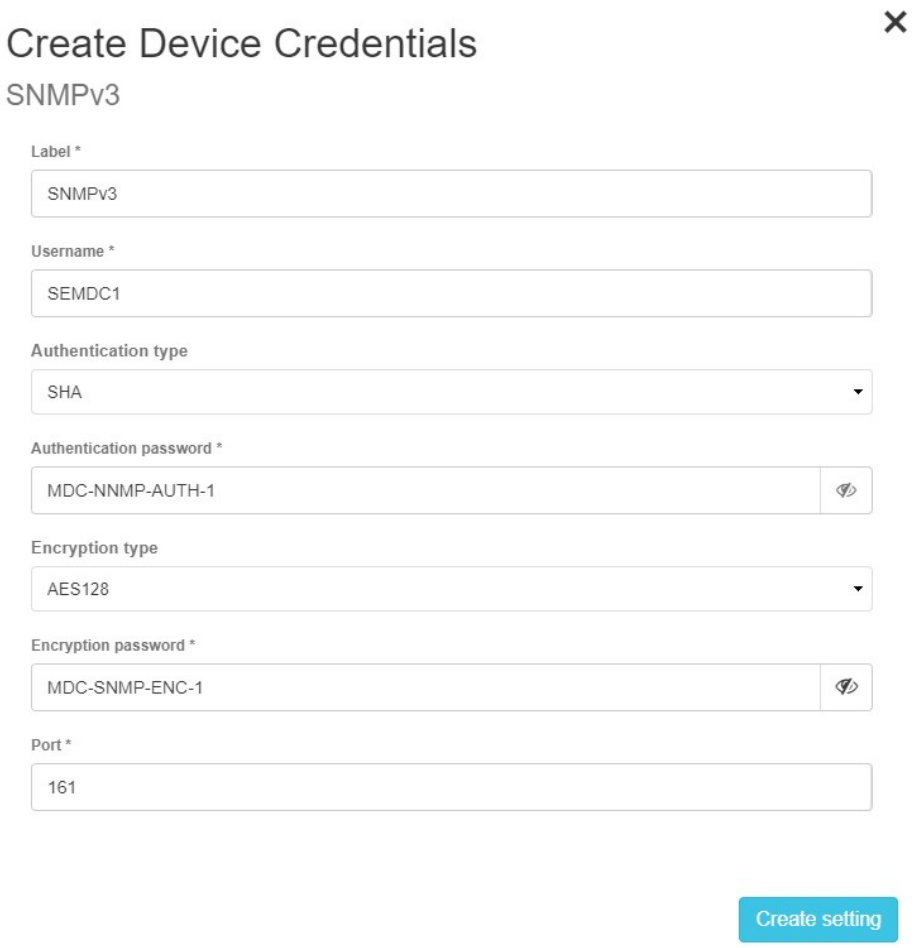
Authentication password: MDC-NNMP-AUTH-1

Encryption type: AES128

Encryption password: MDC-SNMP-ENC-1

Port: 161

Click on the **Create Setting** button at the bottom of the page to save your settings.

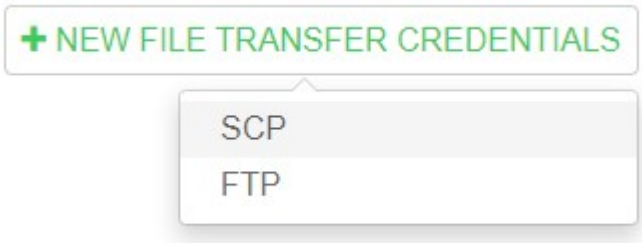


# Configure SCP File Transfer Credentials

1. **Configure SCP-apc credentials:**
   On the EcoStruxure IT Gateway, SCP (Secure Copy Protocol) is the protocol used to upgrade the firmware of the NMC-based devices in your MDC. When updated firmware is available, you can push the latest firmware to all of the connected devices with a click of a button.

| ***NOTICE*** |
| --- |
| NMC-based devices (Rack PDUs, UPS, and NetBotz 250) use the username **apc** for configuring SCP credentials. |

   - Click on **New File Transfer Credentials** to see the dropdown menu. Select **SCP**.




   - The **Create Device Credentials for SCP** dialog box will open. Enter the required information for SCP-apc in the form.

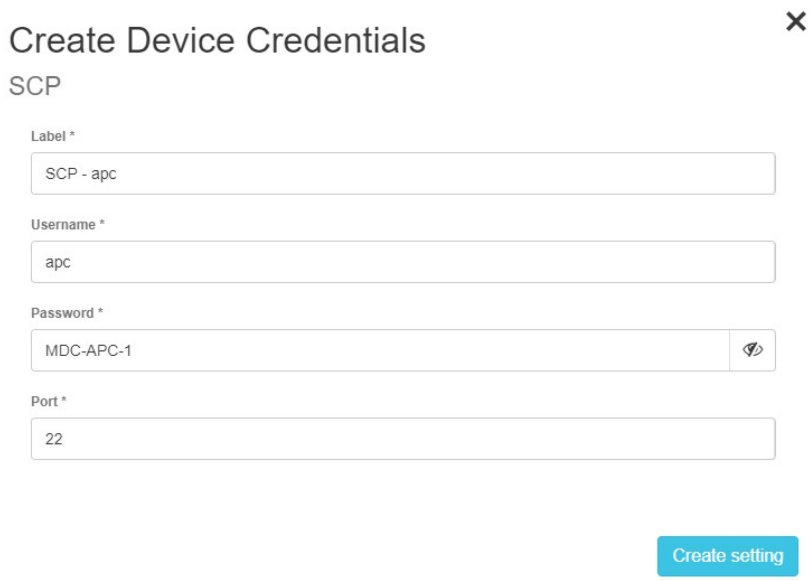
     Label: SCP-apc

     Username: apc

     Password: MDC-APC-1

     Port: 22

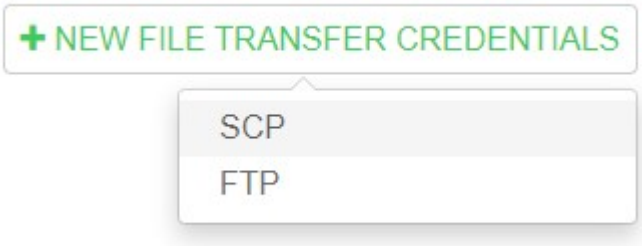
     Click on the **Create Setting** button at the bottom of the dialog box to save your information.



2. **Configure SCP-root credentials: (for MDCs with NetBotz 750 only)**

| NOTICE |
| --- |
| • The NetBotz 750 is not an NMC-based device. The NetBotz 750 uses Linux. With Linux, **root** is the only way to access SCP for firmware upgrades.<br>• Currently, NetBotz 750 does **not** support SCP to update its firmware through the EcoStruxure IT Gateway.<br>• Configure the SCP-root credentials for the NetBotz 750 to avoid an error message from the EcoStruxure IT Gateway that it is unable to communicate over SCP with the NetBotz 750. |

- Click on **New File Transfer Credentials** to see the dropdown menu. Select **SCP**.




- The **Create Device Credentials for SCP** dialog box will open. Enter the required information for SCP-root in the form.

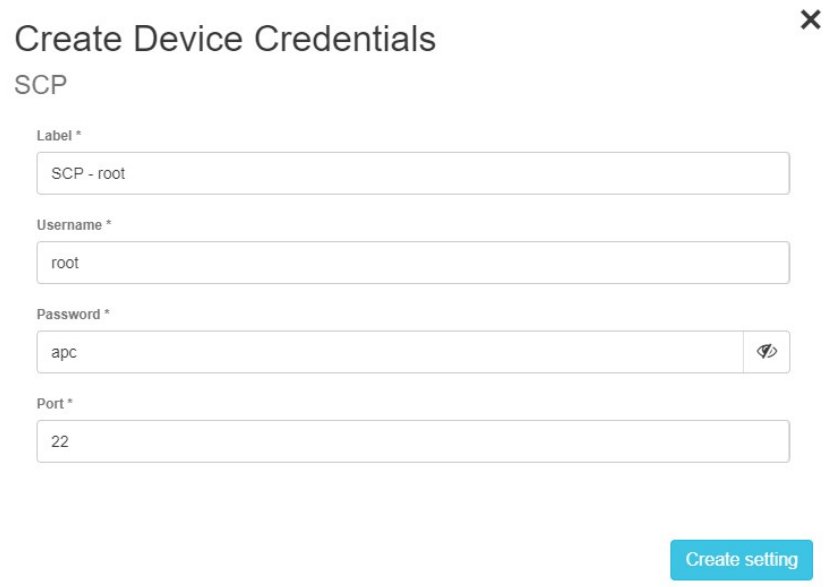
  Label: SCP-root

  Username: root

  Password: apc

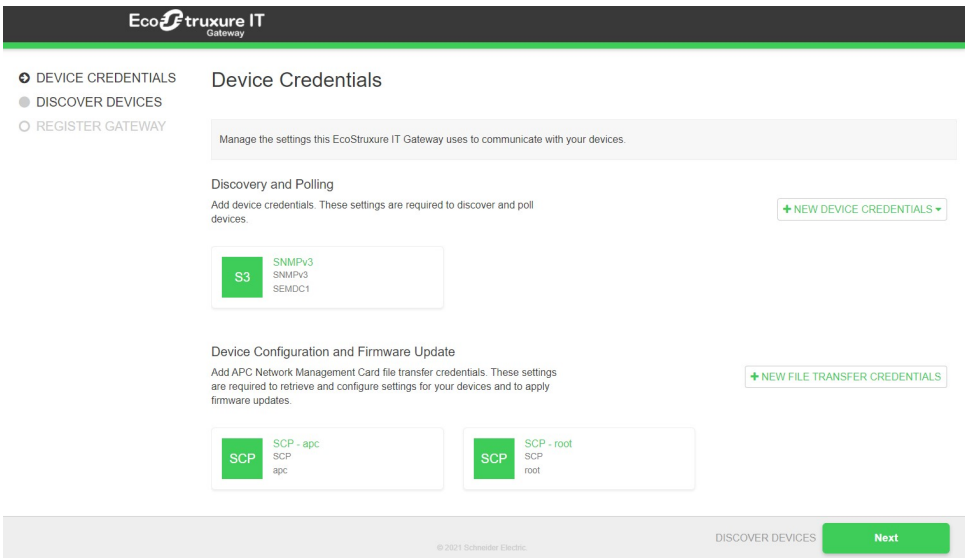
  Port: 22

  Click on the **Create Setting** button at the bottom of the dialog box to save your information.



# Confirm Settings

The Device Credentials page should now show that the Device Credentials have been set to SNMPv3 and the File Transfer Credentials have been set to SCP-apc and SCP-root.

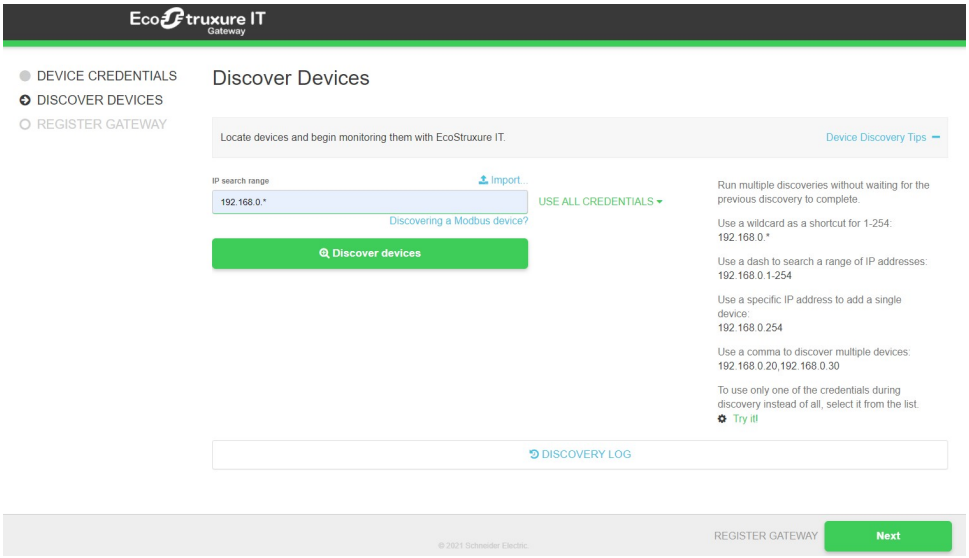



**NOTE:** Discovery of device credentials using SCP-root is only required if your MDC contains a **NetBotz 750** appliance.

# Discover Devices

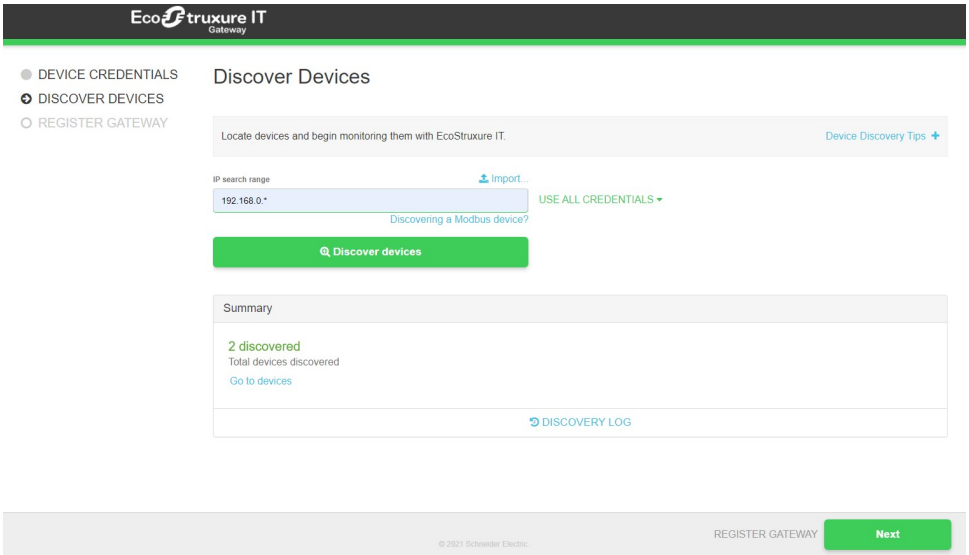
Discover all devices connected to the EIT Gateway.
**Prerequisite:** Your computer is connected to the building network (the same network as the Gateway appliance), you are logged in to the Gateway (with the same password you created while on the private network) and have navigated to the Discover Devices page.
On the Discover Devices page, enter the IP search range: **192.168.0.*** at the **IP search range** bar.
Click the **Discover Devices** button to initiate the search.

Go to the helpcenter online for more information:
https://helpcenter.ecostruxureit.com/hc/en-us/articles/360021184553-Discover-devices




The devices are shown in the Summary section of the page when the search is complete. The number of devices will vary depending upon the configuration of your MDC.

> **NOTE:** Any devices that are discovered but have configuration issues will be noted in red in the Summary.

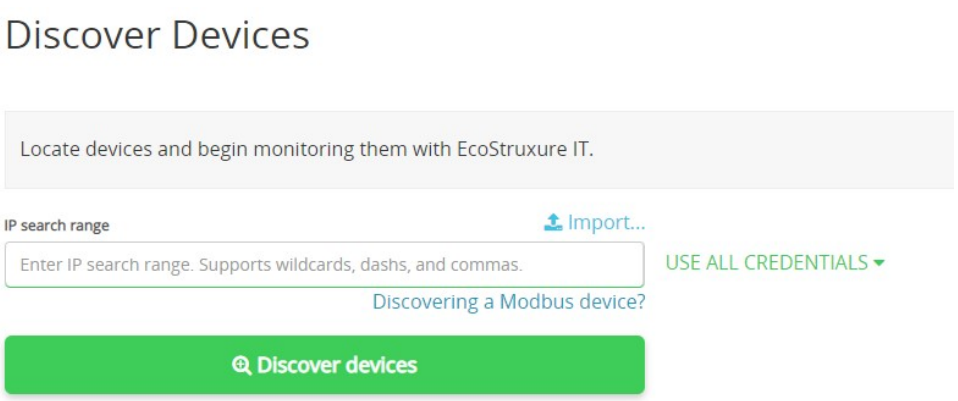


## Discover the Cooling Unit

| NOTICE |
| --- |
| Due to a current unresolved issue, EcoStruxure IT cannot discover the cooling unit. The issue is under investigation. The cooling unit will operate normally. EcoStruxure IT will not display the cooling unit settings at this time. |

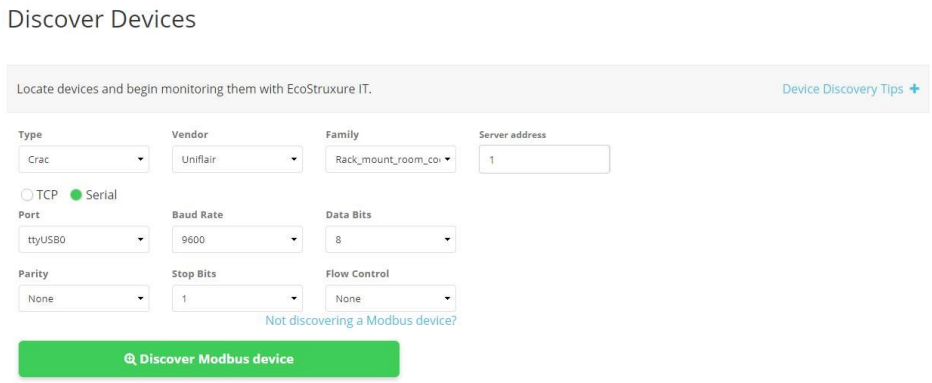
**NOTE:** The Cooling Unit may not be discovered until you register your EcoStruxure IT Gateway appliance and update the firmware (if necessary) to the most recent version. If you previously discovered your devices, you may need to re-discover your devices after updating to the latest Gateway firmware revision.

1. From your laptop connected to the same building network as the Gateway appliance, login to the Gateway.
2. Navigate to the **Discover Devices** page
3. Click on **Discovering a Modbus device?**



Set the following on the Discover Devices page and click on **Discover Modbus device** when the form has been completed.
Serial (radio button)
Type: Crac
Vendor: Uniflair
Family: Rack_mount_room_cooling
Server address: 1

Default settings for Serial:
Port: ttyUSB0
Baud Rate: 9600
Data Bits: 8
Parity: None
Stop Bits: 1
Flow Control: None



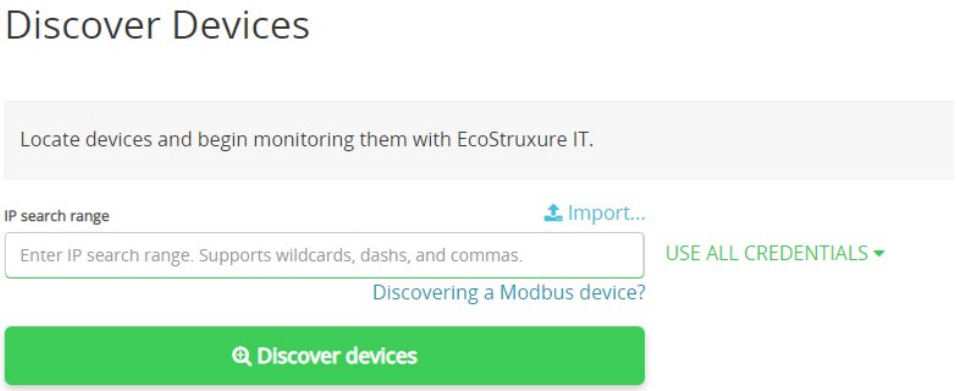

Confirm the values shown on the page with the values specified in your cooling unit manual.

| ***NOTICE*** |
| --- |
| To confirm that the Cooling Unit (and other devices) are connected, navigate to the Devices page and check that they are all connected and reporting data. The data updates every 5 minutes. |

# Discover Fire Suppression

**NOTE:** The Fire Suppression system may not be discovered until you register your EcoStruxure IT Gateway appliance and update the firmware (if necessary) to the most recent version. If you previously discovered your devices, you may need to re-discover your devices after updating to the latest Gateway firmware revision.

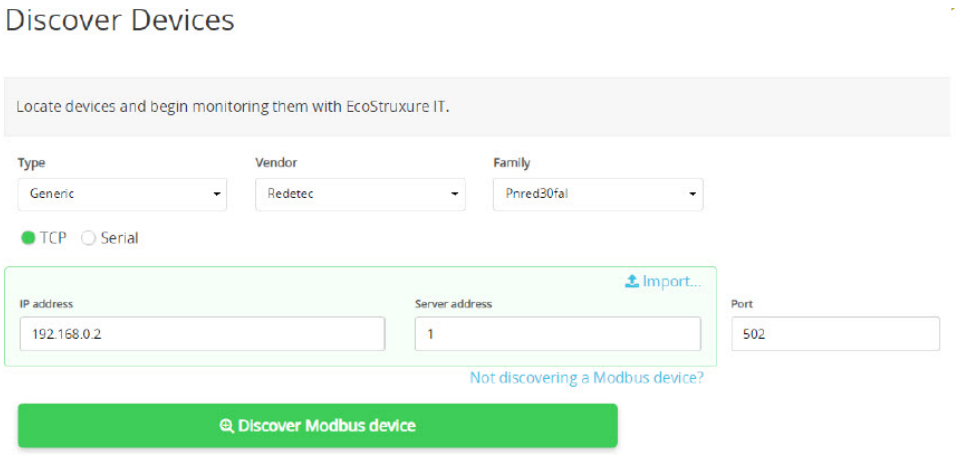
1. From your laptop connected to the same building network as the Gateway appliance, login to the Gateway.
2. Navigate to the **Discover Devices** page
3. Click on **Discovering a Modbus device?**




Set Type, Vendor, and Family as shown below. Set the IP Address to 192.168.0.2 and the Server Address to 1.

Click on “Discover Modbus Device.

If the Redetec Fire Suppression unit is not discovered, change the IP Address to 192.168.0.3 and try to discover again. If not discovered, repeat the process incrementing the IP Address by 1 each time until the Redetec unit is discovered.



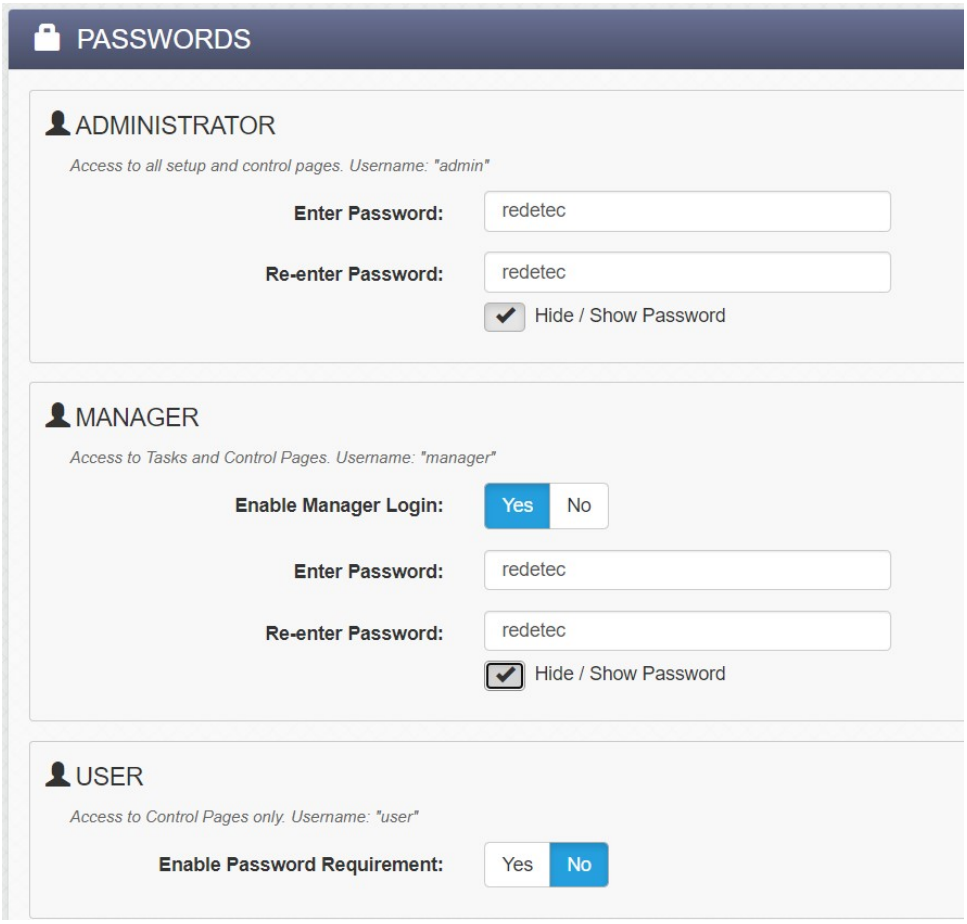
# Optional Setup Information

## Redetec Default Passwords

To change the SNMP credentials from default:

From the private network of the gateway, go to http://<ip_address_of_Redetec>/setup.html

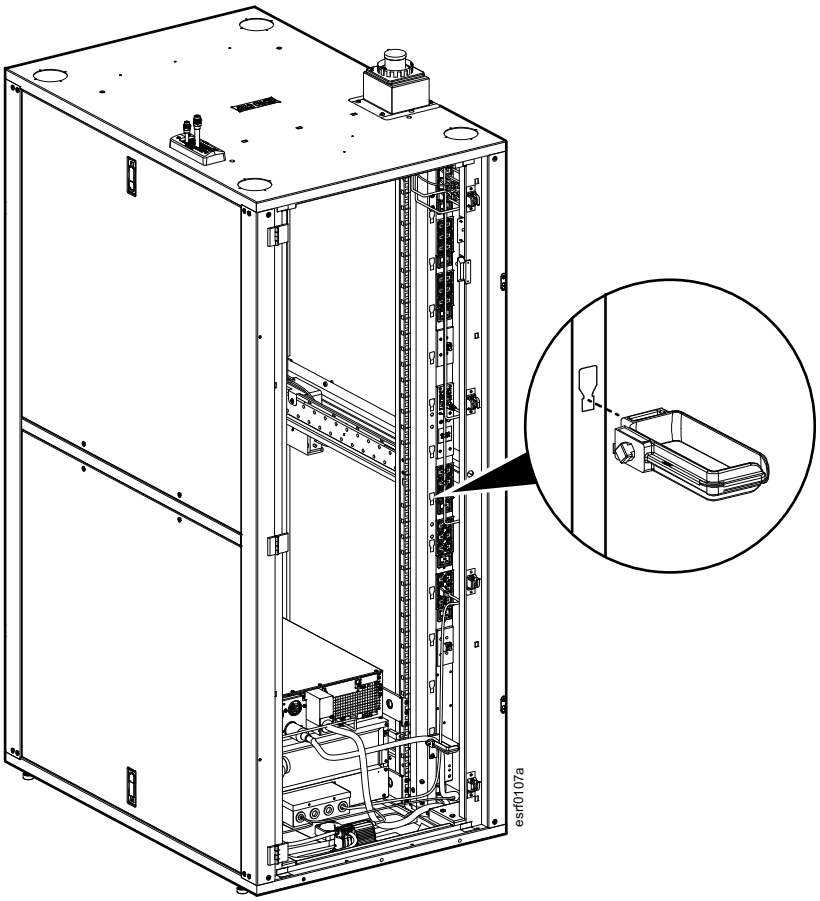
The administrator username is admin.



# Install Accessories and Your Equipment

## Install the Cable Managers

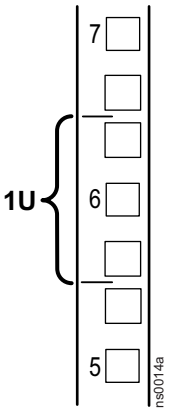
Cable managers are included in the accessory box. There are installation posts on the side and rear of the cable manager. The cable managers can be installed from either post. The posts of the cable manager are installed to the rear of the MDC as shown in the illustration below.



# Cage Nuts

**Proper location in the rack for the cage nuts:**

1. Locate the top and bottom U space on the vertical mounting rails. Every third hole on the mounting rails is numbered to indicate the middle of a U space.
2. Install the cage nuts on the interior of the vertical mounting rail; then install the shelf.



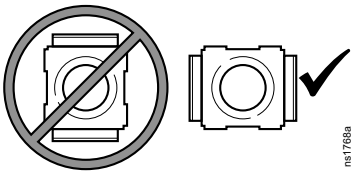

## ⚠CAUTION

**FALLING EQUIPMENT HAZARD**

Do NOT install cage nuts vertically with the tabs engaging the top and bottom of the square hole.

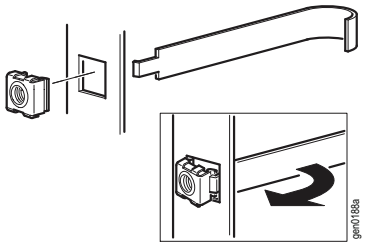
**Failure to follow these instructions can result in injury or equipment damage.**

- Install cage nuts horizontally, with the tabs engaging the sides of the square hole.
- Install the cage nuts on the interior of the vertical mounting rail.




**Install the cage nut:**

1. From the inside of the rack, insert the cage nut into the square hole.
2. Hook one tab of the cage nut assembly through the far side of the hole.
3. Place the cage nut tool on the other side of the cage nut and pull to snap into position.

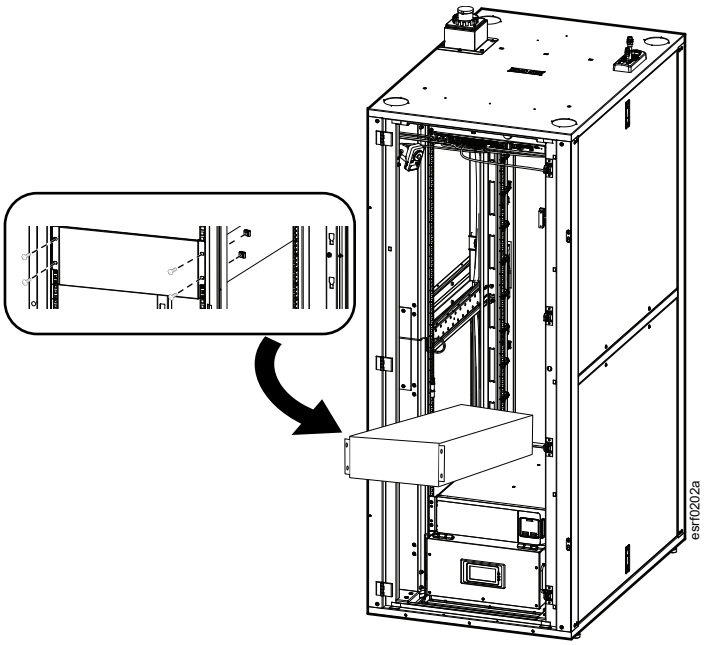



**Remove the cage nut:**

1. Remove any attached screw.
2. Grasp the cage nut, squeeze the tabs on the sides, and push to release it from the square hole.

# Install Your Equipment

If possible, install your equipment starting from the bottom of the MDC and working your way up. Use the cage nuts and M6 screws supplied in the hardware bag to secure the equipment in the MDC.



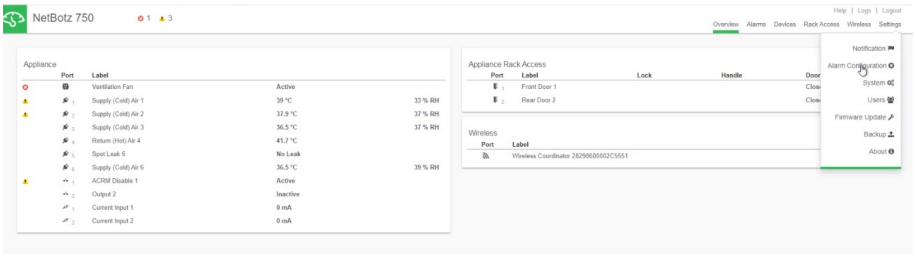
# Troubleshooting

## Reset NetBotz after Cooling Unit Powered Off

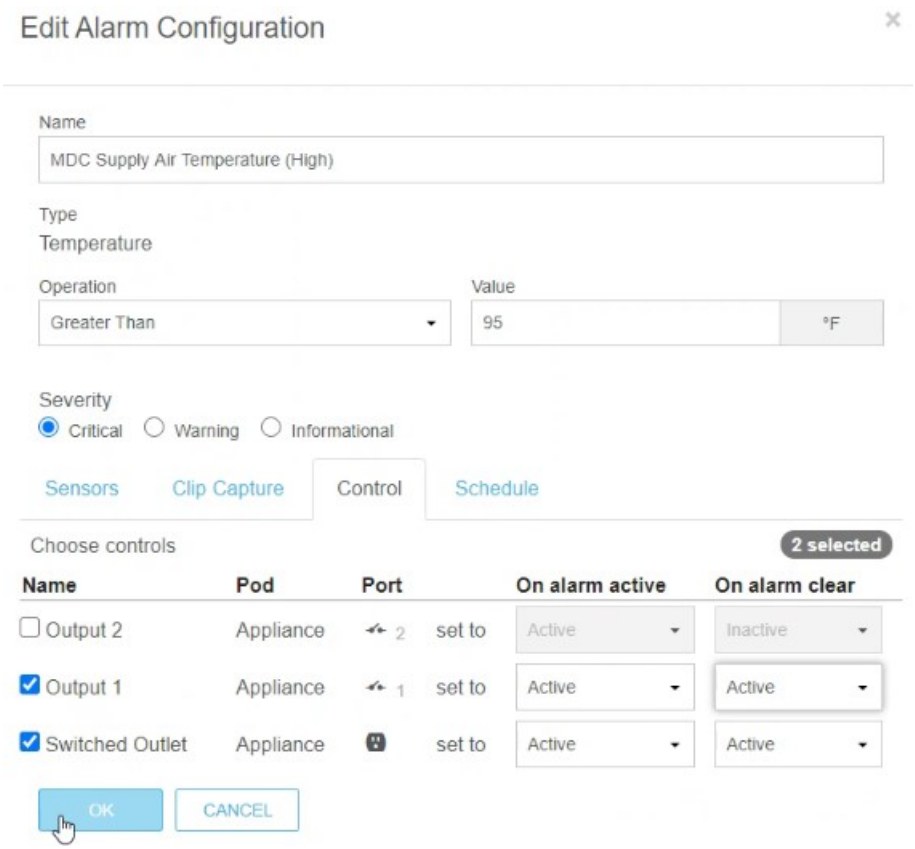
Perform this task if the in-rack cooling unit has shut down and the ventilation fan has been enabled by your NetBotz appliance.

## NetBotz 750

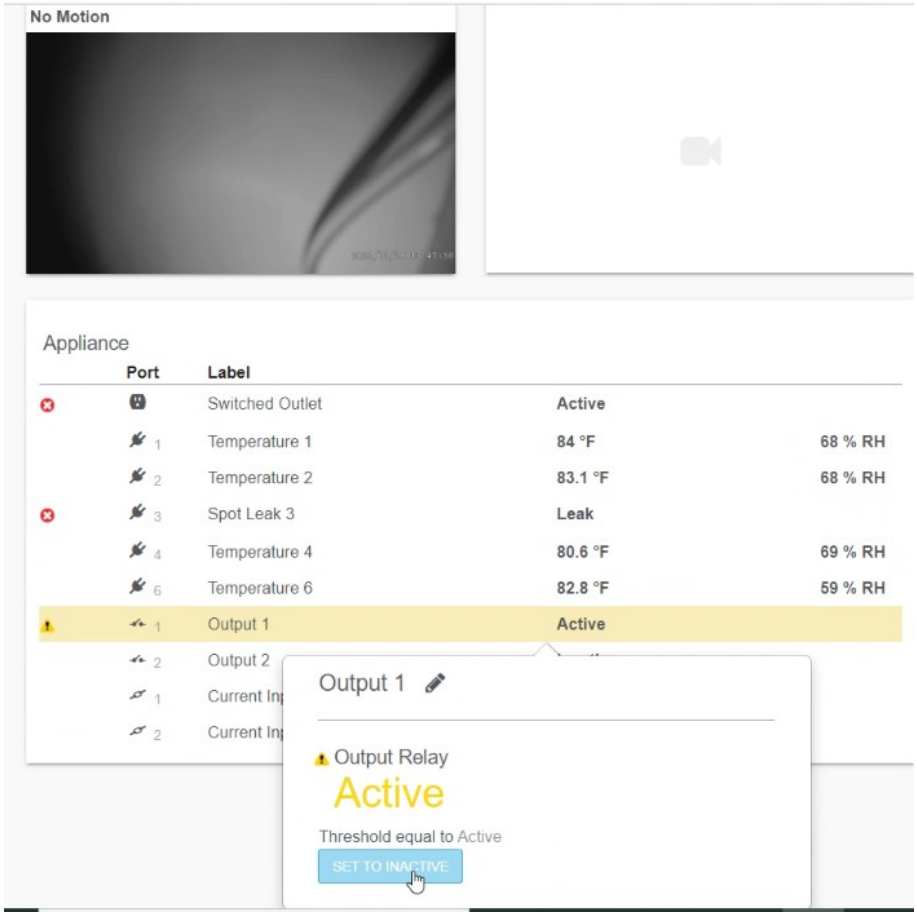
1. Log in to the NetBotz appliance. Go to: **Setting > Alarm Configuration**




2. Navigate to the Edit Alarm Configuration page and choose the MDC Supply Air Temperature (High) alarm configuration.
Click on the **Output 1** (ACRM Disable) box to remove the check mark then, click OK at the bottom of the page.



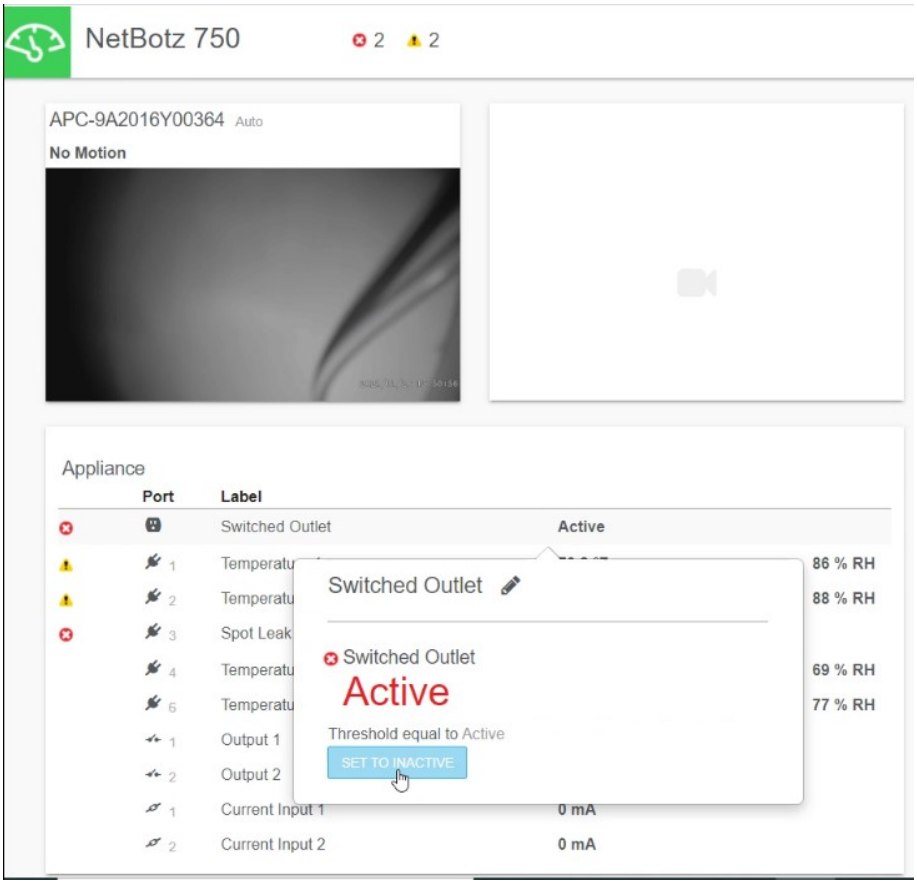
3. Change the state of **Output 1** from Active to Inactive



4. When the cooling unit is operating, the settings can be returned to their original state.

   Navigate to the **MDC Supply Air Temperature (High)** page.
   Click on the **Output 1** (ACRM Disable) box to insert the check mark then, click OK at the bottom of the page.

   Go to **NetBotz > Overview**
   Change the state of the **Switched Outlet** from Active to Inactive.




5. If the ventilation fan comes back on, the temperature is above 35°C. This is the temperature setting at which the ventilation fan is set to come on. You will need to repeat the task again starting at Step 1.

6. Edit the Alarm Configuration:

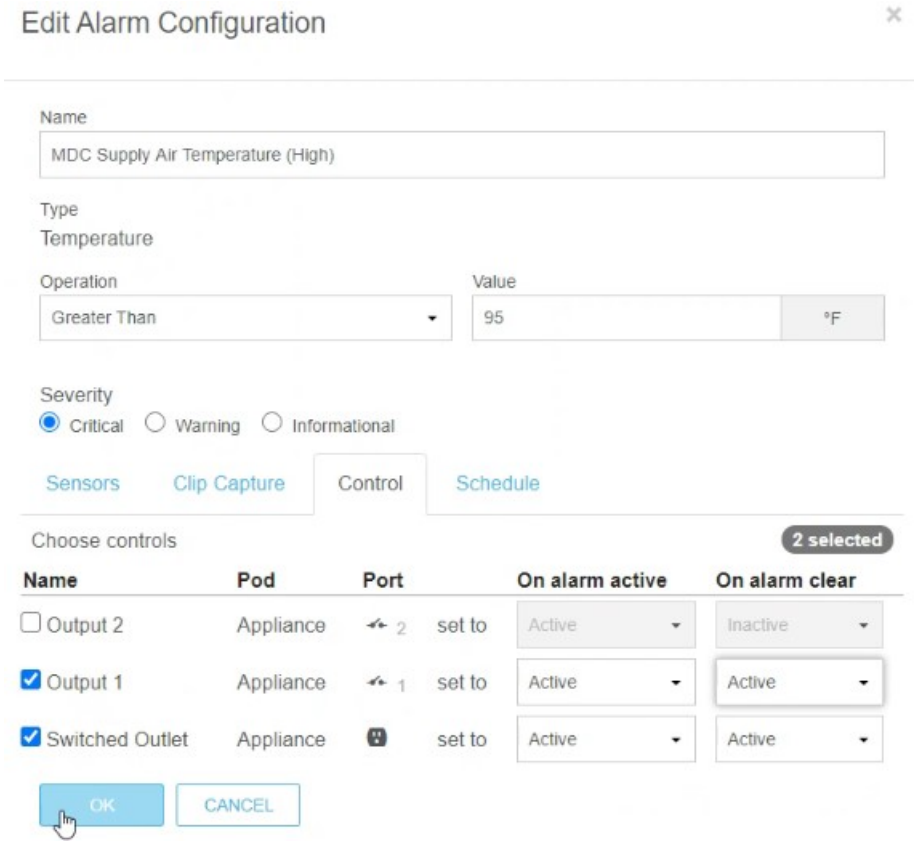
| NOTICE |
| --- |
| **HAZARD OF EQUIPMENT DAMAGE**<br>Failure to reset to the original settings as defined in this step may damage equipment.<br>**Failure to follow these instructions can result in equipment damage.** |

Ensure you have completed all of the following steps on the Alarm Configuration page:

- Edit the settings for the **MDC Supply Air Temperature (High)** alarm.
- Under the **Control** tab, select Output 1

  Confirm that the box is checked

  Confirm that the state on the **On alarm clear** column is set to Active.
- Click OK to save your settings.



# Specifications

| | MDC42USRSI | MDC42UARSI |
|---|---|---|
| **Electrical** | | |
| Rated Input Voltage | 230 VAC 50Hz | |
| Rated Input Current | 30A | |
| Power Inlet | IEC 309 250 V IP 67<br>2P 3W | |
| Power Connector (Customer Provided) | IEC 309 250 V IP67 2P 3W<br>30A (IEC)/32A (UL) | IEC 309 250 V IP67 2P 3W<br>30A (IEC)/32A (UL) |
| Load Rating | 3.5 kW | |
| UPS Input | 5 kVA | |
| Rack PDUs (Quantity 2) | AP8858 — 16A, 230V, IEC-320–C20 Inlet<br>IEC-320 C-13 outlets, (18) and IEC-320 C-19 outlets (2) | |
| **Security** | Standard Keylock<br>Door Contacts | Standard Keylock<br>Door Contacts<br>Camera |
| **Sensors** | Temp and Humidity,<br>Leak | |
| **Cooling** | 3.5 kW Uniflair Rack Mount | 3.5 kW Uniflair Rack Mount<br><br>Emergency Fan Ventilation |
| Total Cooling Capacity | 3.5 kW (11,900 BTU/hr) | |
| Rated Air Volume | 700 m³/h (410 SCFM) | |
| **Environmental** | | |
| Operating Temperature<br><br>Storage Temperature | Fan only: 10–35°C (50–95°F)<br>ACRM only: 10–40°C (50–104°F)<br>ACRM and Fan: 10–35°C (50–95°F)<br><br>-5°C to 45°C (23°F to 115°F) | |
| Humidity Range | <95% RH | |
| Altitude | 0 – 3000 m (0 – 100000 ft) / 0 — 15000 m (0 — 50000 ft) | |
| Noise Rating | 64 dBA | 62.5 dBA<br>72 dBA (Emergency Ventilation) |

| | MDC42USRSI | MDC42UARSI |
|---|---|---|
| **Physical** | | |
| Dimensions 42U MDC only<br><br>As shipped :<br>H x W x D<br>mm (in)<br><br>With Power Inlet Installed:<br>H x W x D<br>mm (in) | <br><br><br>2006 x 800 x 1212<br>(79 x 31.5 x 47.7)<br><br><br>2146 x 800 x 1212<br>(84.5 x 31.5 x 47.7) | <br><br><br>2006 x 800 x 1220<br>(79 x 31.5 x 48)<br><br><br>2146 x 800 x 1220<br>(84.5 x 31.5 x 48) |
| Packaged 42U MDC on pallet<br>H x W x D<br>mm (in) | 2170 x 1105 x 1321<br>(85.4 x 43.5 x 52) | |
| Load Ratings:<br>kg (lb)<br>Static:<br>Dynamic:<br>Shipped: | 1361 kg (3750 lb) Maximum load with leveling feet lowered<br>1022 kg (2250 lb) Maximum load while rolling the unit on its casters<br>909 kg (2000 lb) Maximum weight as shipped on pallet with the required brackets | |
| Clearance Requirements: | 1 m (3 ft) front and rear | |
| **Compliance** | | |
| EMC verification | EN 55032, EN 55035, EN 61000-3-2, EN 61000-3-3, BS EN 55032, BS EN 55035 | |
| IT Earthing system | Yes | |

# Enclosure Warranty

The warranty below extends to the enclosure only. Components included in the MDC enclosure are covered by warranties specific to the component.

# 2 Year Parts Only Factory Warranty

The limited warranty provided by Schneider Electric in this Statement of Limited Factory Warranty applies only to products you purchase for your commercial or industrial use in the ordinary course of your business.

## Terms of Warranty

Schneider Electric warrants its products to be free from defects in materials and workmanship for a period of three years from the date of purchase. The obligation of Schneider Electric under this warranty is limited to repairing or replacing, at its sole discretion, any such defective products. This warranty does not apply to equipment that has been damaged by accident, negligence or misapplication or has been altered or modified in any way. Repair or replacement of a defective product or part thereof does not extend the original warranty period. Any parts furnished under this warranty may be new or factory-remanufactured.

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## Warranty claims

Customers with warranty claims issues may access the Schneider Electric customer support network through the Support page of the Schneider Electric website, www.se.com/support. Select your country from the country selection pull-down menu at the top of the Web page. Select the Support tab to obtain contact information for customer support in your region.

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990–6350A-001