Installation and Customization Manual

NetShelter[™] SX Colocation Enclosure

AR3200

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Introduction

The NetShelter[™] SX Colocation Enclosure is a high-quality split-level multi-tenant enclosure for storage of industry-standard (EIA-310) 19 in. rack-mount hardware, which includes servers, voice, data, networking, security, and power protection equipment.

For a complete list of accessories and more information, see www.schneider-electric.com.

This manual covers the following:

• NetShelter SX Colocation 2 x 20U (600 mm Wide x 1070 mm Deep) Enclosure (AR3200).

Unpack the Enclosure

Disclaimer

Schneider Electric is not responsible for damage sustained during reshipment of this product.

Inspection

Inspect the packaging and contents for shipping damage. Make sure that all parts are accounted for. Report any damage immediately to the shipping agent. Report missing contents, damage, or other problems immediately to your reseller.

Please Recycle



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

Important Safety Information

Read the instructions carefully to become familiar with the device before trying to install, operate, service or maintain it. The following 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 label 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 that follow this symbol to avoid possible injury or death.

A DANGER

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

WARNING

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

A CAUTION

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

CAUTION

CAUTION, used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, **can result in** equipment damage.

NOTICE

NOTICE addresses practices not related to physical injury including certain environmental hazards, potential damage or loss of data.

Safety Instructions

This manual contains important instructions that must be followed during the installation and customization of the enclosure.

A WARNING

TIP / HEAVY EQUIPMENT HAZARD

• This enclosure is easily tipped. Use extreme caution when unpacking or moving.

• At least two people are required to unpack and move the enclosure.

• Before moving the enclosure on its casters, load 158 kg (350 lb) of equipment into the bottom of the enclosure for extra stability.

 Make sure the leveling feet are up and push the enclosure only from the front or rear when moving the enclosure on its casters. Never push the enclosure from the sides.

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

Labels

Look for additional safety information affixed to the enclosure. See "Labels" on page 8 for more information.

Component Identification

Enclosure



- Accessory channel security cover
- 2 Frame
- Side brace
- Adjustable vertical 0U Accessory Channel
- S Removable rear split doors (AR7103)
- 6 Removable side panels with locks (AR7301)
- Hardware bag (see page 5)

- Adjustable leveling feet
- O Casters
- Removable and reversible front door with combination lock (AR7003)
- Keys for front and rear doors
- We Key for side panel
- Adjustable vertical mounting rails
- Roof

Hardware and tools (provided)











M6 Black Plastic Cup Washer (60)

7 mm Hole Plug (4)

M6 14/16 Cage Nut (60)

M5 x 12 Screw (4)

M6 x 16 Phillips/ Slot Screw (60)



Torx[®] T30/#2 Phillips Wrench (1)



Cage Nut Installation Tool (1)

Tools required (not provided)







10 mm / 13 mm open-ended wrench



Level

Torque wrench

Phillips screwdriver

Security

Security for the Colocation Enclosure includes keyed entry for doors and side panels as well as a combination lock for the front and rear doors.

Door and Side-Panel Keys

The Colocation Enclosure is shipped with a different key for side panels and doors. Door keys are marked with "222" and side panel keys are marked with "333".



You can obtain replacement keys or unique locks with keys and a master key override by contacting EMKA Inc.: http://www.emka.com.

Operating the Combination Lock

NOTES:

- Dials cannot be turned when the doors have been unlocked by using the combination. The combination will be visible until the door is re-locked and the combination is cleared.
- When door is locked with the "222" key, make sure the wing knob cannot rotate to the unlocked position. If the knob rotates, the dials have been set to the combination. Turn the dials to clear the combination.
- When the door has been unlocked with the "222" key, the only way to re-lock the door is with the key. Until the door is locked with the key, the combination dials cannot be used.

Locked

Parts Identification



Unlock using the Dials:

- 1. Dial the combination $\mathbf{0}$ (factory default = "000").
- 2. Turn the wing knob ³ until the arrow ² points up (unlocked position).
- 3. Open door.

Lock using the Dials:

- 1. Turn the wing knob ³ until the arrow ² points down (locked position).
- 2. Turn the dials **1** to clear the combination.

Changing the Combination:

NOTE: To change the combination, you must know the existing one.

- 1. Dial the combination ① (factory default = "000").
- 2. Turn the wing knob ³ until the arrow ² points up (unlocked position). Turn it counterclockwise an additional 15°, and enter your new combination.
- 3. Turn the wing knob clockwise 15° back to the unlocked position. The new combination is set.

Preparation

Move the Enclosure

TIP HAZARD

- This enclosure is easily tipped. Use extreme caution when unpacking or moving.
- Use at least two people to unpack and move the enclosure.
- Before moving the enclosure on its casters, load 158 kg (350 lb) of equipment into the bottom of the enclosure for extra stability.
- Make sure the leveling feet are up and push the enclosure only from the front or rear when moving the enclosure on its casters. Never push the enclosure from the sides.

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



Labels. The following labels can be found on the enclosure, and serve to communicate the following information:

Label 1: Generic Tip Hazard

Label 2: Extend Slide-Mounted Hardware One Piece at a Time

Casters. The enclosure can be moved on its casters with up to 1021 kg (2,250 lb) of equipment installed. Once in place, lower the leveling feet. With the leveling feet lowered, the static enclosure can be loaded to 1364 kg (3,000 lb).



NOTE: Some labels on the enclosure indicate caster related information. See label **3** to right.

Eye bolts. The enclosure can be lifted using eye bolts with up to 567 kg (1,250 lb) of equipment installed. Use M10 eye bolts with a shoulder rated for 181 kg (400 lb).

NOTE: Use appropriate lifting hardware to assure straight-line pull on lifting eye bolts.



Level the Enclosure

NOTES:

- The leveling feet at the corners of the equipment provide a stable base if the floor is uneven, but they cannot compensate for a badly sloped surface.
- With the leveling feet lowered, the static enclosure can be loaded to 1364 kg (3,000 lb).
- 1. Ensure the enclosure is in its intended location. Remove the front and rear doors. See "Front Door Removal" on page 16 for instruction.

NOTES:

- Door removal is not required if using the 13 mm open-ended-wrench.
- Before removing the front door, unplug the ground wires and any other wire connections that may interfere with the removal of the doors.
- 2. Insert a Phillips head screwdriver into the screw above the leveling foot. Turn the screw clockwise to extend the leveling foot until it makes firm contact with the floor.

This method works best with an empty, or near empty enclosure. If loaded with equipment, a 13 mm open ended wrench can also be used to lower the leveling feet.



- 3. Adjust each foot and, using a level, adjust the feet until the enclosure is level and plumb.
- 4. If removed, install the front and rear doors, unless the enclosures are to be joined.

Joining Enclosures

Join enclosures with the provided brackets to provide alignment and some added stability. Enclosures may be joined with or without the side panels installed.

WARNING

TIP HAZARD

Joining enclosures provides limited stability. Make sure the leveling feet are down before joining. Failure to follow these instructions can result in death, serious injury, or equipment damage.

- 1. Remove the front and rear doors, if necessary. See "Front Door Removal" on page 16 for more information.
- Choose between 24 in. centers or 600 mm centers (see detail view).

NOTE: If enclosures are joined on 24 in. centers, Schneider Electric offers baying trim (AR7600), to cover the gap between the enclosures. The trim can be installed after the units are joined together.



- 3. Align the enclosures and join them, using two brackets in the front and two brackets in the rear.
- 4. Enclosures are joined using a M5 x 12 countersunk flat head screw (provided in the hardware bag). Using the Phillips head end of the provided Torx[®] T30/#2 Phillips tool, or a similar tool, insert the screw into the designated hole and tighten.
- 5. Install the doors. See "Front Door Installation" on page 14 and "2" on page 16 for more information.



Secure the Enclosure

A WARNING

TIP HAZARD

Secure the enclosure to the floor before installing equipment.

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

To secure the enclosure to the floor, use fastener locations on the outside or inside of the enclosure, and choose from the accessories shown below.

difization Options	Accessory	SKU	Description	
	Pallet / Bolt-Down Brackets	Provided	Attaches to the enclosure, internally or externally, to secure the enclosure to the floor. This provides additional stability without blocking cable access. With the appropriate mounting hardware, meets IBC/CBC seismic requirements.	
	NetShelter SX Stabilizer Plate	Option (AR7700)	Attaches externally to the enclosure and floor to provide additional stability.	
	Bolt-down Kit	Option (AR7701)	Attaches to enclosure and floor internally or externally to provide additional stability without blocking cable access.	



Grounding the Enclosure

Each enclosure should be bonded directly to a common ground using one of the designated grounding locations (two M6 threaded inserts) at the top or bottom of the enclosure.

- Use a Common Bonding Network Jumper kit (for example, Listed [KDER] Panduit® RGCBNJ660PY or equivalent).
- Use paint-piercing washers between the ground terminal and the enclosure frame, or remove the paint on the frame under the ground terminals, per NEC NFPA 70 Article 250.12.
- Torque the screws to 6.9 N•m (60 lb-in).

Bonding Locations on the Enclosure



A DANGER

HAZARD OF ELECTRIC SHOCK

Connection of the enclosure to building Common Bonding Network (CBN) is required. Failure to follow these instructions will result in death or serious injury.

Enclosure Installation

Side Panels



Roof Installation



Doors

A A DANGER

HAZARD OF ELECTRIC SHOCK

When Installing the doors, remember to reconnect all ground and other connection wires.

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

Front Door Installation.

NOTE: The front doors can be installed on either the left or right side of the frame. When facing the enclosure, this procedure installs doors on the left side, causing the door to open from the right.



NOTE: Install the lower door using the same procedure.







Front Door Removal.





0



Reversing the Front Door.

The front door can be hinged on either side of the enclosure.

NOTE: This procedure installs doors on the right side (when facing the enclosure), causing the door to open from the left.

- 1. Remove the handle from both doors.
- 2. Remove the doors. See "Front Door Removal" on page 16 for more information.





4. Install parts as shown.



5. Reinstall doors.





6. For each door handle, remove and reinstall latch and washer oriented as shown. The washer is rotated 90° from its original orientation.





7. Reinstall handles on both doors.



8. Remove ground wires from door and frame and reinstall as shown. Torque ground wire mounting screw to 8.7 to 9.4 N•m (77 to 83 lb-in).



Rear Door Installation.

NOTE: The following procedure provides installation instructions for the upper rear door. The lower doors install using the same procedure.







Vertical Mounting Rails



Equipment is secured to the vertical mounting rails in the Colocation Enclosure.

Installing some equipment in a NetShelter SX Colocation Enclosure can require changing the position of the vertical mounting rails.

Vertical mounting flanges come factory-installed at 737 mm (29 in.). This position is intended for use with rack-mounted equipment.

The vertical mounting rails can be adjusted to be as close together as 191 mm (7.5 in.) or as far apart as 935 mm (36.8 in.), when the vertical 0U accessory channels have been removed.

WARNING

HAZARD OF FALLING EQUIPMENT

Remove all equipment installed on the vertical mounting flanges before performing any adjustments.

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

Adjust the Vertical Mounting Rails



Vertically align the vertical mounting rail by making sure the middle symbol at the top of the vertical mounting rail matches the symbol at the bottom.

NOTES:

- Vertical mounting rails adjust in 12.7 mm (½ in.) increments.
- Make sure the vertical mounting rails on both sides of the enclosures are adjusted to the same depth. Symbols on each side should match.





Install Rack-Mount Equipment in the Enclosure

WARNING

TIP HAZARD

- This enclosure is easily tipped. Follow the precautions below during and after equipment installation.
- Secure the enclosure to the floor before installing equipment.
- Install the heaviest equipment first toward the bottom of the enclosure to prevent the enclosure from becoming top-heavy.

• Do not extend equipment on sliding rails until you have installed 158 kg (350 lb) of equipment into the bottom of the enclosure for stability or until you have installed the stabilizer plate or bolt-down brackets. Do not extend more than one piece of equipment on sliding rails at a time.

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

Identify one U-space on the vertical mounting rail

Review the equipment manufacturer's installation instructions.

When installing equipment, locate the top and bottom of a U-space on the mounting rails. Every third hole on the mounting rails is numbered to indicate the middle of a U-space. A U-space consists of a numbered hole and the hole directly above and below, as shown.



Installation: Schneider Electric offers a cage nut hardware kit (AR8100) for use with square holes.

WARNING

HAZARD OF FALLING EQUIPMENT

Do NOT install cage nuts vertically with the ears engaging the top and bottom of the square hole. **Failure to follow these instructions can result in injury or equipment damage.**



NOTE: Install cage nuts horizontally, with the ears engaging the sides of the square hole.

From inside of the enclosure, insert the cage nut into the square hole. Hook one ear of the cage nut assembly through the far side of the hole.

NOTE: Install the cage nuts on the interior of the vertical mounting rail.

Place the cage nut tool on the other side of the cage nut and pull to snap into position.

Removal: Remove any attached screw.

Grasp the cage nut and squeeze the sides to release it from the square hole.



1 U



Plug Installation

Install plugs included in the hardware bag as needed.



Cable Routing and Cable Management

Security Covers

Remove security covers in order to route cables. If using cables with large connectors, this is of increased importance



Knock-out Panels

The two knock-out panels on the divider can be removed to provide for additional cable routing.

When changing the position of the vertical 0U accessory channels, removing the two knock-out panels on the divider may be of assistance.



Specifications

Height	1991 mm (78.3 in.)
Width	600 mm (23.6 in.)
Depth	1070 mm (42.1 in.)
Net weight	140.7 kg (309.5 lb)
Total open area (front door)	579 651 mm ² (898.5 in. ²)
Total open area (rear door)	653 582 mm ² (1,013.1 in. ²)
Open area per U (front door)	14 129 mm ² (21.9 in. ²)
Open area per U (rear door)	15 658 mm ² (24.7 in. ²)
Perforation pattern percentage	69%
Percent of perforated area (front)	66%
Percent of perforated area (rear)	74%
Clearance (for wiring) between front door and vertical rail	61.0 mm (2.4 in.)
Weight rating: static load [†]	1361 kg (3,000 lb)
Weight rating: rolling	1021 kg (2,250 lb)

[†] Lower the leveling feet if the static weight is over 1020.58 kg (2,250 lb).

NOTE: Additional packaging is required if the rack is being shipped with equipment installed. See the NetShelter SX product family page at **www.schneider-electric.com** for details on enclosures with shock packaging.

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