

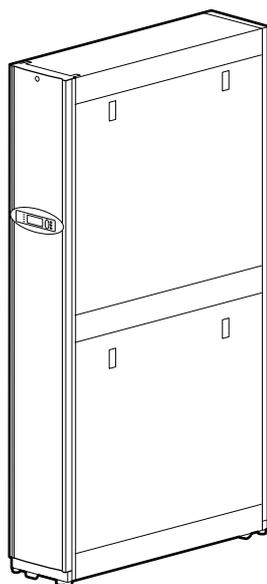
InRow® DX — Fluid-Cooled Air Conditioner

ACRD200, ACRD201

Installation Manual

990-3213E-001

Release Date: November 2021



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This product is for industrial use only. It should only be used for the functions for which it has been designed as set out in this manual. User must evaluate and take adequate precautions to address risks associated with use of this product in environments and/or processes not specifically addressed in this manual (e.g. heavy industry, medical, marine environments, railway, etc.).

This product should be installed, configured, used, serviced, maintained, replaced or have similar work carried out on it only by suitably qualified, trained, experienced and competent personnel who hold any necessary authorizations (e.g. licenses, permits or certifications) to perform such work. User must ensure that all work is carried out in compliance with the manufacturer's instructions (including the product labels/markings, technical specification manual, installation manual, and operation and maintenance manual) and with all applicable laws, regulations, standards and guidance (including standards and guidance applicable to the installation location).

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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 the user 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.

Please Note

Electrical equipment should only be installed, operated, serviced, and maintained by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

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.

Always abide strictly by local laws and regulations in the place of installation.

Safety During Installation

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- This equipment must be installed and serviced by qualified and trained personnel only.
- Turn off all power supplying this equipment before working on or inside the equipment.
- Replace all devices, doors, and covers before turning on power to this equipment.

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

WARNING

HAZARD TO EQUIPMENT OR PERSONNEL

This equipment is not to be operated or installed by persons with reduced physical, sensory, or mental capabilities, or persons lacking experience or knowledge. Children are not to operate or play on or around this equipment.

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

WARNING

HAZARD OF EQUIPMENT FALLING OVER

- Use two or more persons at all times to move or turn this equipment.
- Always push, pull, or turn while facing the front and rear of this equipment. Never push, pull, or turn while facing the sides of this equipment.
- Slowly move this equipment across uneven surfaces or door thresholds.
- Lower leveling feet to floor when this equipment is at rest.
- Lower leveling feet and attach joining brackets to adjacent racks when this equipment is in final position.

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

WARNING

HAZARD FROM MOVING PARTS

Keep hands, clothing, and jewelry away from moving parts. Check the equipment for foreign objects before closing the doors and starting the equipment.

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

WARNING

HAZARD TO EQUIPMENT OR PERSONNEL

All work must be performed by Schneider Electric qualified and trained personnel.

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

General Information

Translation Reference

The original version of this manual has been written in the English language.

Manuals written in other languages have been translated from the original English version.

Save These Instructions

This manual contains important instructions that must be followed during the installation of this equipment.

Manual Updates

Schneider Electric™ policy is one of continuous technological innovation and the company reserves the right to amend any data herein without prior notice. The images shown in this manual are for descriptive purposes only.

NOTE: Unit images and component identification information are examples only.

For any updates to this manual, please contact Schneider Electric™ providing the related part number displayed on the manual back cover.

Cross-Reference Symbol Used in This Manual



See another section of this document or another document for more information on this subject.

Receiving and Inspecting the Equipment

Uniflair InRow air conditioner has been tested and inspected for quality assurance before shipment from Schneider Electric. Carefully inspect both the exterior and interior of the equipment immediately upon receipt to ensure that the equipment has not been damaged during transit.

Verify that all parts ordered were received as specified and that the equipment is the correct type, size, and voltage.

Filing a Claim

If damage is identified on receipt of the equipment, note the damage on the bill of lading and file a damage claim with the shipping company. Contact Schneider Electric Worldwide Customer Support at one of the numbers listed on the Web page on the back page of this manual for information on how to file a claim with the shipping company. The shipping claim must be filed at the receiving end of the delivery.

NOTE: In case of shipping damage, do not operate the equipment. Keep all packaging for inspection by the shipping company and contact Schneider Electric.

Environmental Considerations

Wind

The equipment is not intended for installation in areas of high wind. Consult the sales representative for information on any applicable options for installation in areas of high wind.

Earthquakes

The equipment is not intended for installation in areas at risk of seismic activity. Consult the sales representative for information on any applicable options for installation in areas at risk of seismic activity.

ATEX

The equipment is not intended for use in potentially explosive atmospheres and does not comply with Directive 2014/34 / EU (ATEX).

Dust

The equipment is not intended for use in dusty environments and in environments with conductive dust.

Corrosion

The equipment is not intended for use in a potentially corrosive environment.

Pressurized Equipment

This appliance is subject to Pressure Equipment Directive concerning pressurized equipment. Any and all work performed on the pressure circuit must be expressly authorized by Schneider Electric and personnel must be approved by Schneider Electric. If maintenance is needed (intended as servicing work and/or components

replacement), any of the following components or specific information must be sent to Schneider Electric, otherwise Schneider Electric will not guarantee a warranty coverage on the entire appliance:

- compressors
- liquid tanks
- safety valves
- cooling pressure
- switches which need to be replaced
- immediate notification of the serial number of the new device and of the replaced device

If it is necessary to replace any welded joint on site, Schneider Electric must be notified immediately of which joint needs repairing, and the name of the technician performing the repair work must be also notified.

Radio Frequency Interference

NOTE: This directive applies to units installed in US and in Canada only.

The cooling units comply with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. These devices may not cause harmful interference.
2. These devices must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

California Proposition 65—Warning Statement for California Residents

NOTE: This directive applies to units installed in US and in Canada only.

 **WARNING:** This product can expose the user to chemicals including lead and lead compounds, that are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Storing the Cooling Unit Before Installation

NOTICE

DAMAGE FROM EXPOSURE

Leaving the equipment uncovered and exposed to possible damage from the environment will void the factory warranty.

Failure to follow these instructions can result in equipment damage.

If the cooling unit will not be installed immediately, store it in a safe place, protected from the weather.

Moving the Unit

▲ WARNING

DAMAGE TO EQUIPMENT OR PERSONNEL

- The equipment is heavy. For safety purposes, adequate personnel must be present when moving this item.
- The load must always be solidly anchored to the bearing element of the lifting equipment and means of transport.
- No one should be near the suspended load, nor in the working area of the crane, forklift, truck, or any other lifting equipment or means of transport.

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

Lifting and transporting the units must be carried out by qualified personnel as described in this manual.

Use all relevant safety standards to prevent any possible damage to people or objects.

The recommended tools for moving the equipment **while it is still on the pallet** include the following:

Forklift



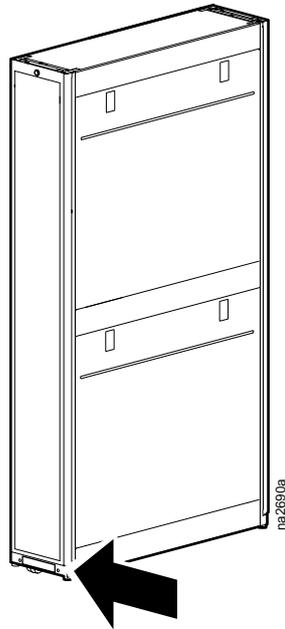
Pallet Jack



Model Identification

The model number can be found on the outside of the shipping crate and on the nameplate located on the rear of the equipment as shown. Use the table below to verify that the equipment is the correct type and voltage.

Model	Configuration	Voltage	Air Pattern
ACRD200	Fluid-cooled	208-240/1~/60 Hz	Back to front
ACRD201	Fluid-cooled	220-240/1~/50 Hz	Back to front

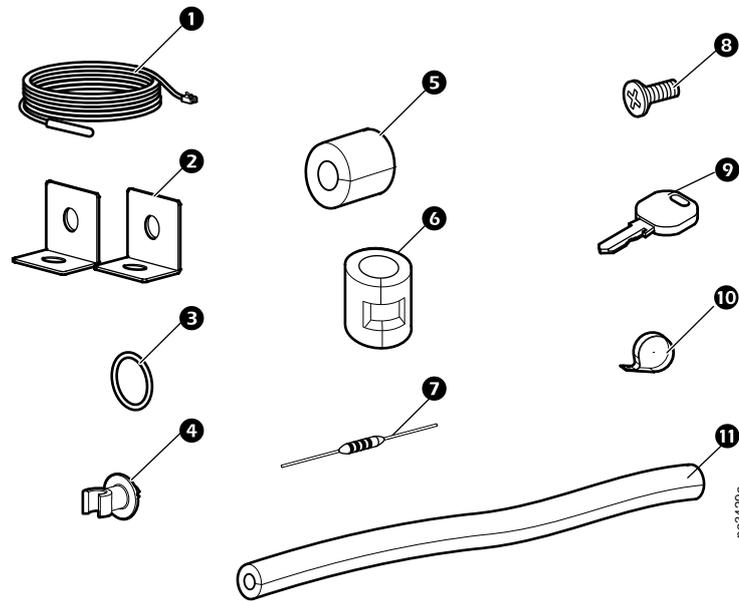


Component Identification

Installing Kit

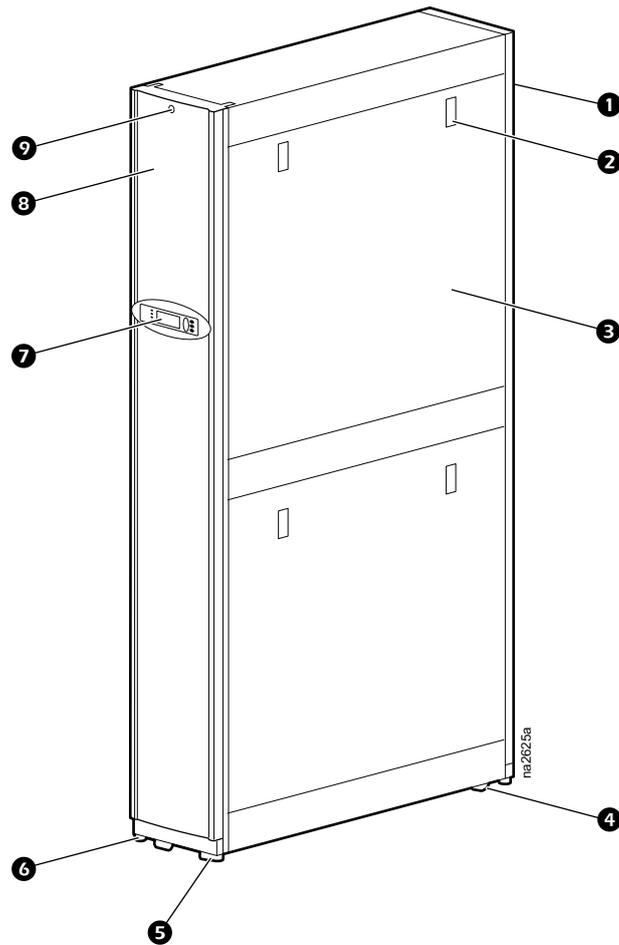
NOTE: Do not discard the install kit.

The install kit contains items that may be necessary to complete the installation of your equipment. Some items are the literature, floor brackets, and hardware to facilitate joining the equipment to enclosures.



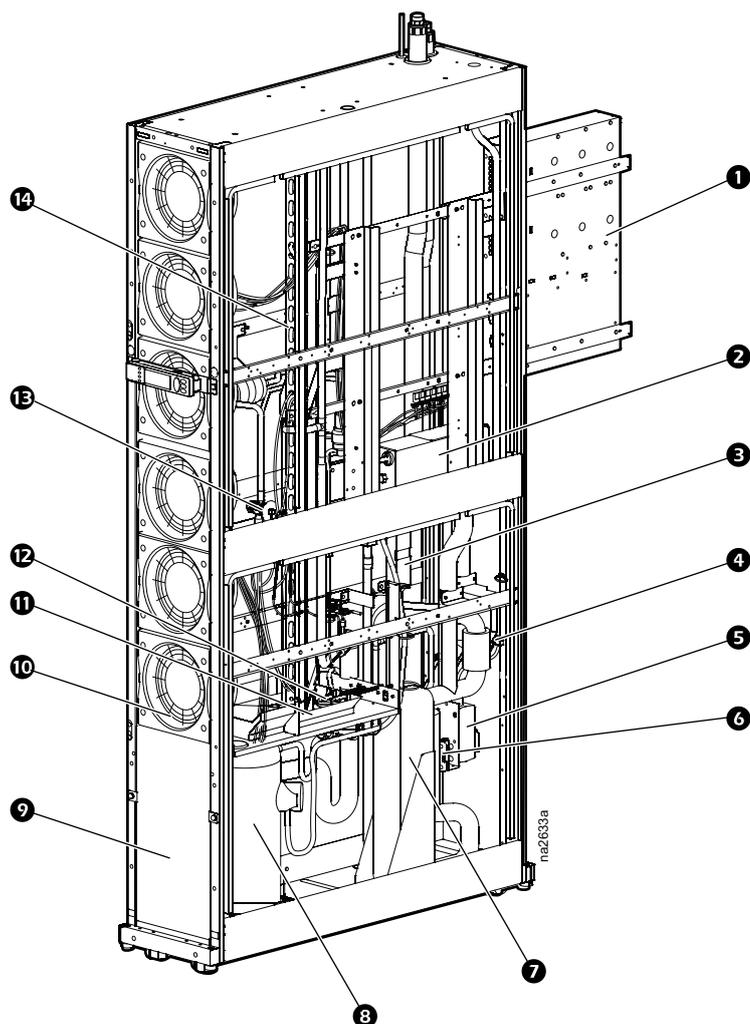
Item	Description	Quantity	Item	Description	Quantity
1	Cable assembly, thermistor/probe	1	7	Resistor, 150 ohm, 1/4 watt	1
2	Netshelter SX bolt-down kit	1	8	Screw, flat head Philips M5 x 12	4
3	Gasket, union - 3/4in	4	9	Key	2
4	Wire clip, thermistor probe	3	10	Nylon push mount, 1-1/4-in. diameter	8
5	Insulation tube - 0.88-in. I.D. x 0.38-in. union cover	4	11	Insulation tube 0.75 I.D. x 0.38 union to clamp (for piping kit liquid lines)	2
6	Pipe clamp boot insulation	2			

External Components (Front)



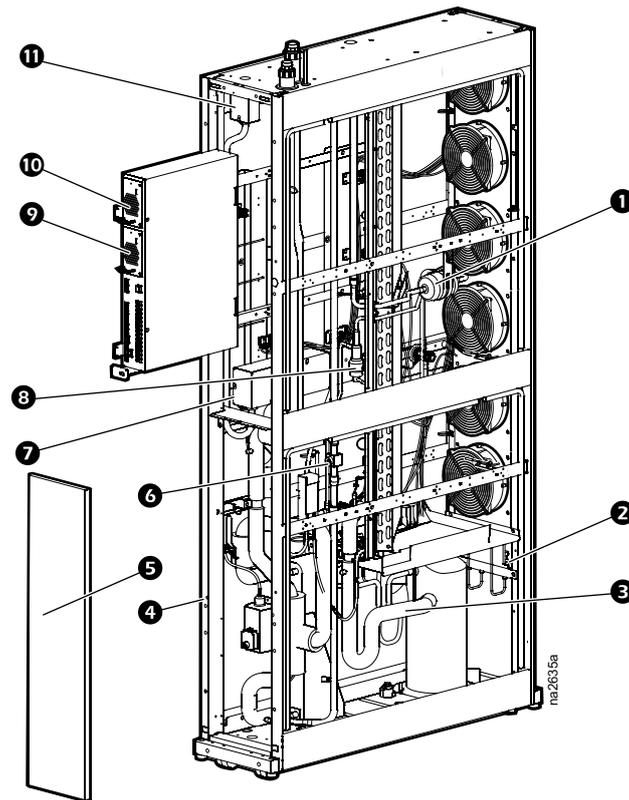
Item	Description	Item	Description
1	Removable rear door	6	Adjustable leveling foot
2	Side panel latch	7	Display interface
3	Removable side panel	8	Removable front door
4	Rear casters (non-swiveling)	9	Door lock
5	Front casters (swiveling)		

Internal Components (Front)



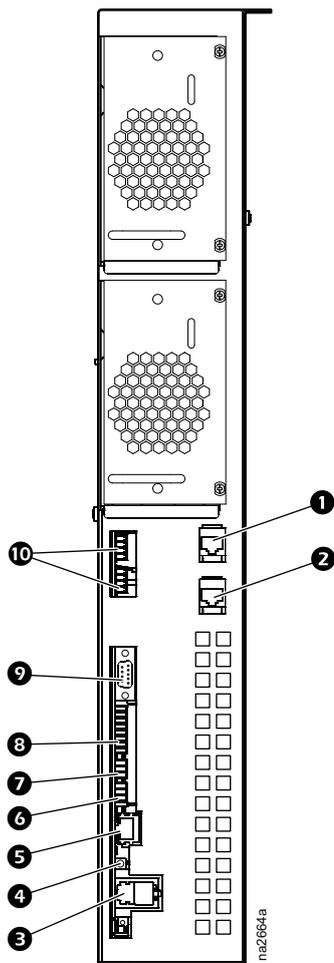
Item	Description	Quantity	Item	Description	Quantity
1	Electrical control box (retractable)	1	8	Compressor	1
2	Electrical control box	2	9	Front air block panel	1
3	Condensate pumps	2	10	Evaporator fans	6
4	Bypass shutoff valve (2-way)	1	11	Condensate pan	1
5	Water control actuator	1	12	Condensate pan floats	2
6	Water regulating valve (3-way)	1	13	Expansion valve	1
7	Brazed plate heat exchanger	1	14	Evaporator coil	1

Internal Components (Rear)



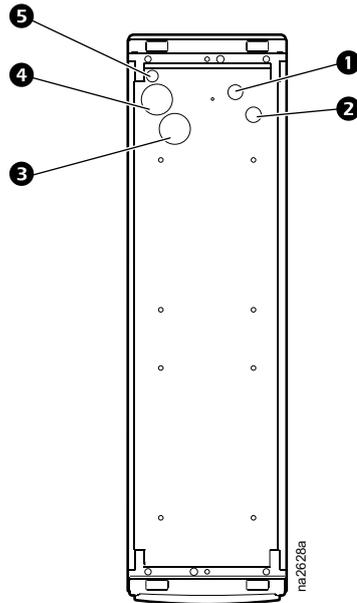
Item	Description	Quantity	Item	Description	Quantity
1	Filter/dryer	1	7	Electrical control box	2
2	Pressure transducer (located behind airblock)	2	8	Hot gas bypass valve	1
3	Suction line	1	9	Power supply unit #2	1
4	Filter differential pressure port	1	10	Power supply unit #1	1
5	Air filter	2	11	Service junction box (top entry)	1
6	Sight glass	1			

Electrical Panel



Item	Description	Item	Description
1	Leak detector port	6	Building management system (BMS) RS-485
2	Remote temperature sensor port	7	Unused
3	A-Link ports	8	Form C and shutdown input
4	Reset button	9	Configuration RS-232 port
5	Network port	10	Outdoor heat exchanger (OHE) ports

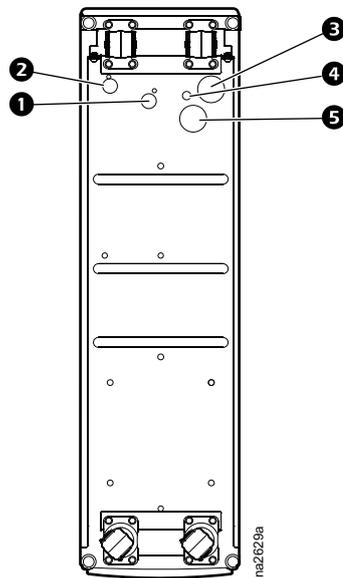
Top Piping and Power Access Locations



Item	Description
1	Electrical power input
2	Low voltage wiring input
3	Liquid out

Item	Description
4	Liquid in
5	Condensate pump outlet

Bottom Piping and Power Access Locations



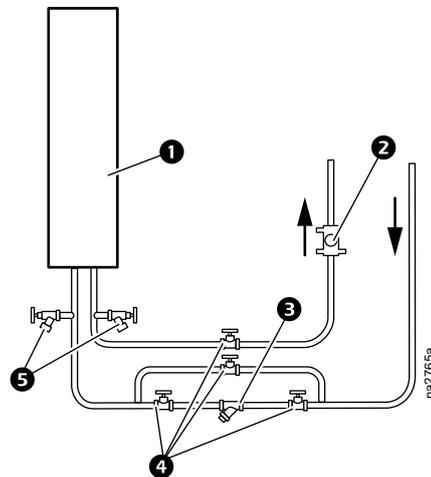
Item	Description
1	Electrical power input
2	Low voltage wiring input
3	Liquid in

Item	Description
4	Condensate pump outlet
5	Liquid out

Piping Diagrams

NOTE: Top or bottom entry can be chosen individually for each type of connection, i.e. power, condensate drain, fluid supply and fluid return. The top piping configuration will have the same valves, fittings, and strainers as the bottom piping configuration.

Water Cooled Piping



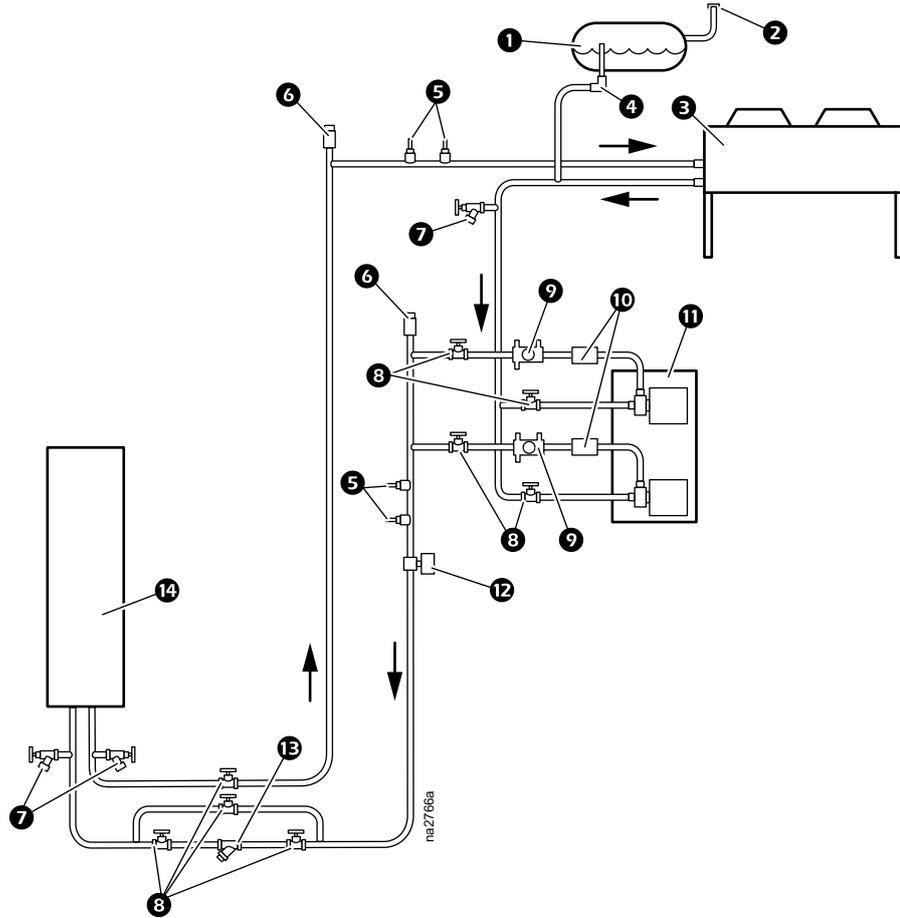
NOTE: Bottom piping shown.

Item	Description	Item	Description
1	InRow DX	4	Gate valve*
2	Balancing valve	5	Hose bib*
3	Strainer*		

* Field supplied and installed

Glycol Cooled Piping

NOTE: Bottom piping shown.



Item	Description
1	Expansion tank*
2	Tank fill*
3	Fluid-cooler
4	Airtrol fitting*
5	Temperature and pressure gauges*
6	Air vent*
7	Hose bibs*

Item	Description
8	Gate valves*
9	Balancing valve *
10	Check valve*
11	Pump package*
12	Flow switch*
13	Strainer*
14	InRow DX

* Field supplied and installed

Connections

All connections to and from the equipment can be made through either the top or the bottom of the equipment. Once the connectors are sweated or soldered into place, the equipment can be connected and disconnected without soldering, welding, or gluing. See the following tables for information about the sizes and types of connectors.

IMPORTANT: Make electrical connections in accordance with all local and national codes.

NOTE: FOR INSTALLATION IN CHINA ONLY: 电源外接导线长度不超过 2m 时其横截面积不得小于 2.5 mm², 超过 2m 按国家和地方规定加大导线规格, 其规格应不轻于 IEC227 的 53 号线。

Power connections

Model	Voltage	Frequency (Hz)	MCA	MOP	FLA	LRA (Compressor)
ACRD200	208-240	60	25	40	N/A	87.5
ACRD201	220-240	50	N/A	N/A	28	N/A

Above data is based on maximum operating conditions.

Consult local and national codes for wire size, conduit requirements and overload protection.

Wiring Cross-Section Ratings

The following table provides the minimum cross-sectional area of the external protective copper conductor for the power supply connections.

Minimum cross-sectional area of copper protective conductors

Cross-Sectional Area of line conductors S mm ²	Minimum Cross-Sectional Area of the corresponding protective conductor (PE) S _p mm ²
$S \leq 16$	S
$16 < S \leq 35$	16
$S > 35$	S/2

NOTE: S = cross-sectional area of power supply cable (L1, L2, L3 and N (if provided));
S_p = cross-sectional area of protective conductor (yellow/green cable) of the power supply cable (PE).

Piping Connections

Connection	Type	ACRD200/201
Fluid input	Brazed*	7/8-in. OD (nominal) copper
Fluid return	Brazed*	7/8-in. OD (nominal) copper
Condensate drain		3/16-in. ID 5/16-in. OD

* Use the provided gaskets to prevent leakage.

Insulation

Apply provided insulation to water lines to protect personnel and to minimize condensation.

NOTE: Using either tape or glue, completely seal the insulation boots covering the unused supply and return connections.

Room Preparation

Air Distribution

The equipment distributes air in a back-to-front discharge pattern, removing hot air from a hot aisle and discharging cooled air into a cold aisle.

NOTE: The equipment is designed for free air discharge or for use with the Rack Air Containment System or Hot Aisle Containment System. The equipment is not intended to be connected to a duct system.

Incoming Power Supply Requirement

WARNING

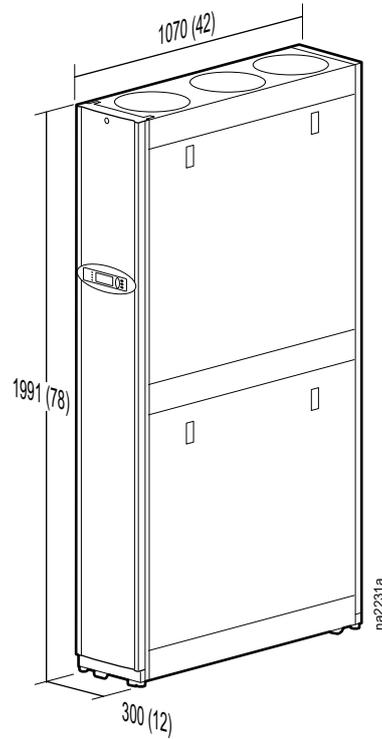
ELECTRICAL HAZARD

- Electrical service must conform to local and national electrical codes and regulations.
- The equipment must be grounded.

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

Weights and Dimensions

Model	Packed Weight	Unpacked Weight
ACRD200, ACRD201	241 kg (532 lb)	199 kg (438.5 lb)



Dimensions are shown in mm (in.).

Installation

Removing Doors and Panels

Doors removal

⚠ WARNING

HAZARD FROM MOVING PARTS

Keep hands, clothing, and jewelry away from moving parts. Check the equipment for foreign objects before closing the doors and starting the equipment.

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

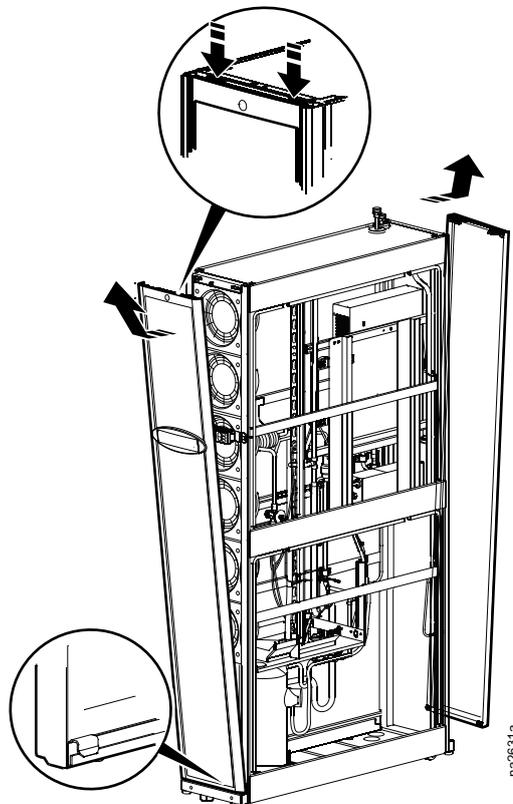
⚠ CAUTION

HAZARD TO EQUIPMENT OR PERSONNEL

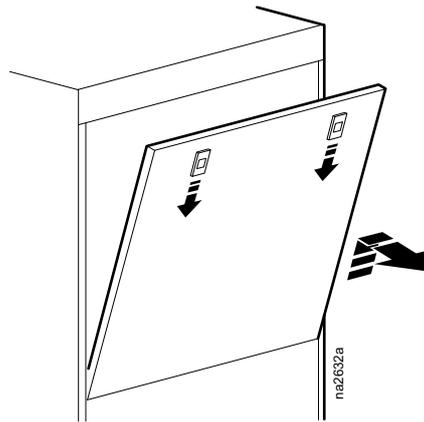
- Use caution when removing the front and rear doors while the equipment is operating.
- Unplug display interface cable.

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

NOTE: Do not lean the doors against a wall with the latches facing the wall. This can deform the latches and prevent them from properly working.



Side Panel Removal



Positioning the Equipment

Remove the Compressor Shipping Bracket

NOTICE

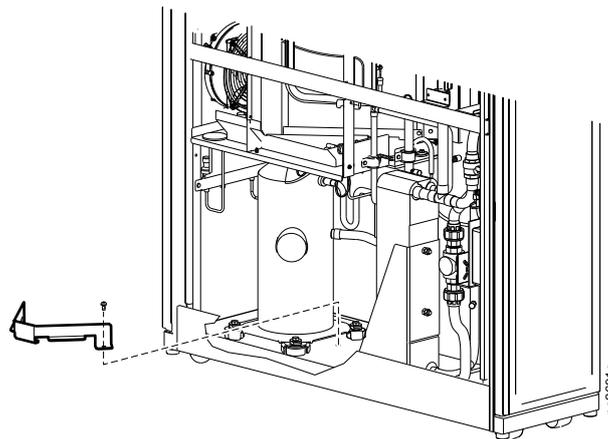
VOIDED WARRANTY

Failure to complete the following steps may result in equipment damage and will void your warranty.

Failure to follow these instructions can result in equipment damage.

The compressor is secured by a bracket to prevent damage during shipping. This bracket must be removed before you apply power to the equipment.

1. Remove two T30 TORX® screws from the bracket as shown. Save the screws for possible future use.
2. Remove the bracket and save for possible future use.



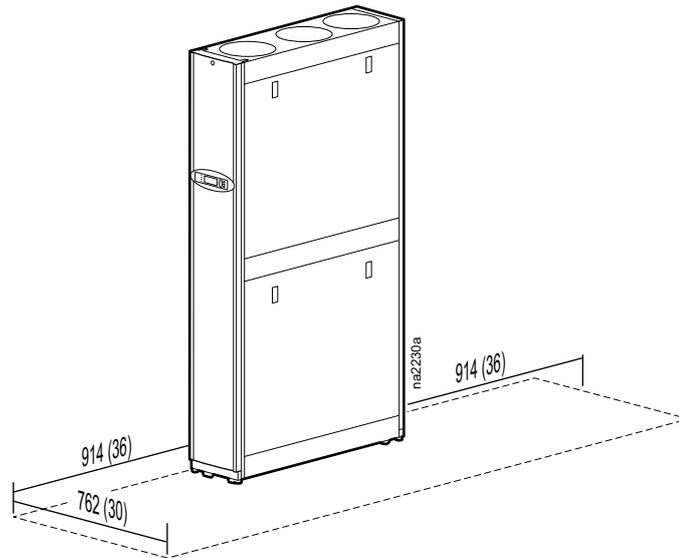
Service Access

A minimum of 900 mm (36 in.) of clear floor space in front of and behind the equipment is recommended for service. All required periodic maintenance can be performed from the front or rear of the equipment.

Most of the cooling components in the equipment (e.g. dry filter, sight glass, solenoid, and expansion valves) must be brazed for repair or replacement. Do not service these components while the equipment is located inside the data center. Use the casters on the equipment to move it outside the data center for service. A

minimum of 914 mm (36 in.) of clear floor space in front of or behind the equipment is recommended to roll out the equipment.

NOTE: Check local and national codes and regulations for additional service access requirements.



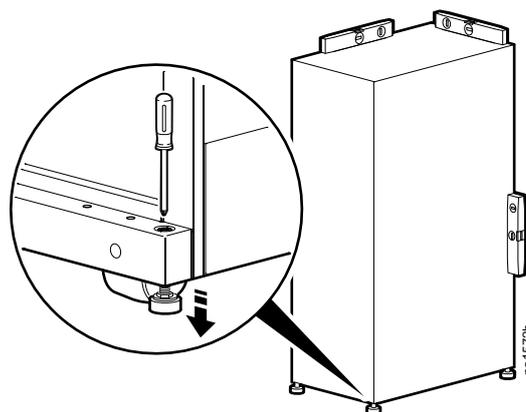
The free space on the rear part of the unit is needed for moving the equipment and the free space on the front part of the unit is needed to grant service access, whenever the equipment is located in a row.

Leveling the Equipment

NOTE: 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.

1. Remove the front and rear doors. See *Removing Doors and Panels*, page 25 section.
2. For each leveling foot, insert a Phillips PH2 or slotted 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.
3. Re-install the front and rear doors.

NOTE: Use a 13-mm open-ended wrench to level the equipment without removing the doors.



Stabilizing the Equipment

Floor Brackets

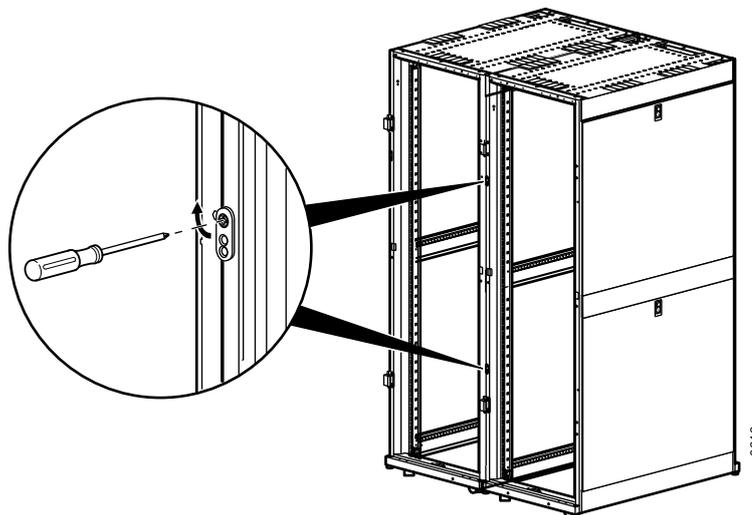
To prevent the equipment from moving from its final location (if it is not joined with an enclosure), use the included bolt-down kit (AR7701). Follow the installation instructions included with the kit.

Joining the Equipment to Enclosures

Joining to NetShelter™ SX enclosures

The equipment comes with four joining brackets (two for the front and two for the rear).

1. Remove the front and rear doors. See *Removing Doors and Panels*, page 25 section.
2. Locate the four joining brackets. Rotate each bracket ninety degrees toward the adjoining enclosure so the bracket is parallel to the floor and install using the screws provided with the enclosure.



For more information, see the *Unpacking, Installation, and Customization* manual for the NetShelter SX Enclosure.

Joining to NetShelter VX and VS enclosures



For information on joining the equipment to NetShelter VX and VS enclosures, see the installation sheet *NetShelter™ SX to VX or VS External Joining Kit—AR7601, AR7602*.

Mechanical Connections

Liquid Piping

NOTE: Install all piping in accordance with applicable industry guidelines as well as local and national codes and regulations.

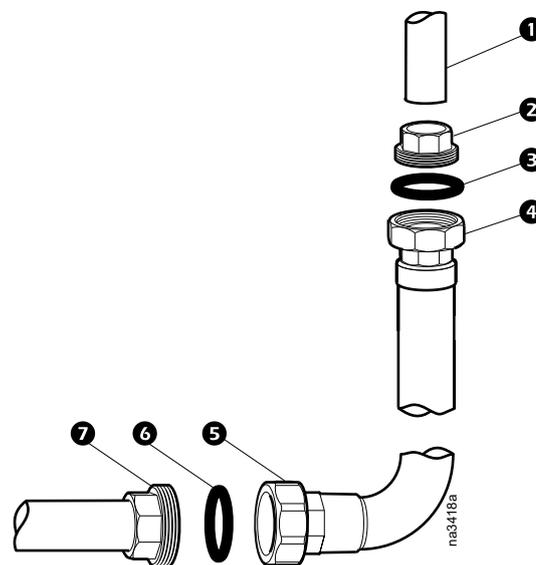
The piping kit for the liquid lines is located in the cabinet. Route the two pipes through either the top or bottom of the cabinet.

For each liquid line: Remove the fitting ④ from the end of the pipe. Braze the fitting ② to the inlet or outlet line ①.

Use the provided gaskets (③ and ⑥ in the illustration) for each connection. The other end of the pipe ⑤ is installed to the InRow RD piping ⑦. Unions are tightened to 2.26 N-m (20 in-lb).

Insulate the liquid lines with the provided insulation.

See Installing Kit, page 13 for more information.



Condensate Pump

NOTICE

DAMAGE TO EQUIPMENT

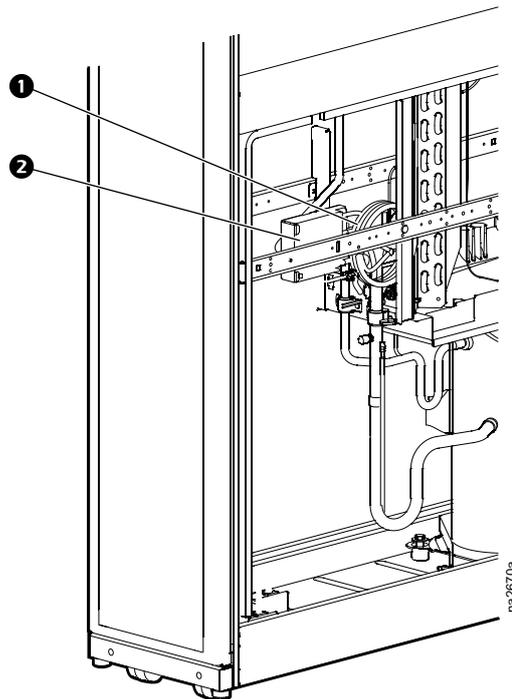
- To prevent equipment damage from condensate, do not leave the condensate drain line coiled inside the unit. Route the condensate line out the top or bottom of the unit as shown on the next page.
- Do not exceed the lift or the run length of the drain system.

Failure to follow these instructions can result in equipment damage.

The condensate pumps ④ (air cooled equipment shown) are factory-wired and piped internally to the condensate pan. The pumps are capable of moving liquid a maximum of 15.2 m (50.0 ft), which may include a maximum lift of 4.9 m (16.0 ft) as measured from floor level. For example, if your lift is 3 m (10 ft), you only have 12.2 m (40.0 ft) of usable run remaining. The pumps also use an on-board condensate high level float switch, which is wired into the alarm input for local and remote alarm capabilities.

Condensate Pump Drain Connection

Sufficient PVC drain line ① is supplied to route the drain to the outside of the equipment. Provide additional drain line at installation to allow routing to a remote drain.



Routing the Condensate Pump Drain Line

Route the condensate drain line through the top or the bottom of the equipment to an appropriate drain.

NOTICE

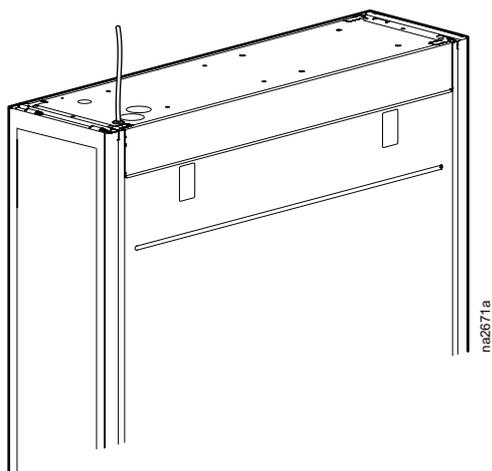
WATER DAMAGE

- Failure to properly route the condensate pump drain line before operation could result in water damage.
- Do not route drain or supply lines above computer equipment, Uninterruptible Power Supply (UPS) units, Power Distribution Units (PDUs), or light fixtures.
- Comply with all local and national codes and regulations when installing the condensate drain line to the proper drain system.

Failure to follow these instructions can result in equipment damage.

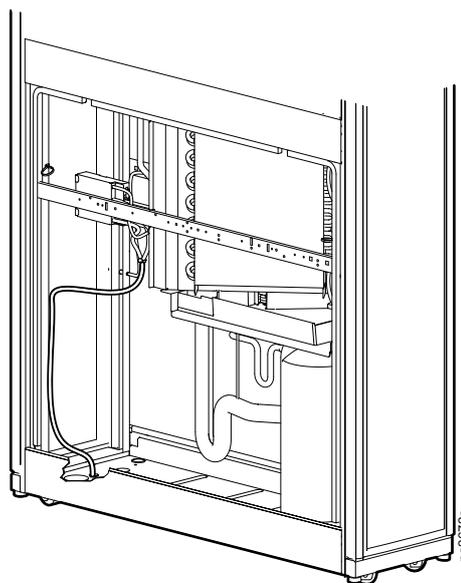
NOTE: Comply with all local codes when installing the condensate drain line to the drain system.

Top Condensate Pump Drain Routing



na2671a

Bottom Condensate Pump Drain Line

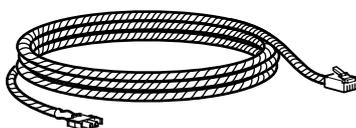


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Leak Sensor (optional)

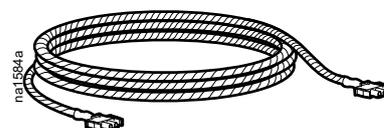
Install one leak sensor (AP9325). To extend the leak sensor length, add up to three additional leak sensors (AP9326).

AP9325



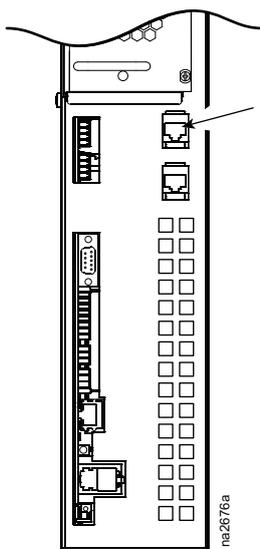
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AP9326



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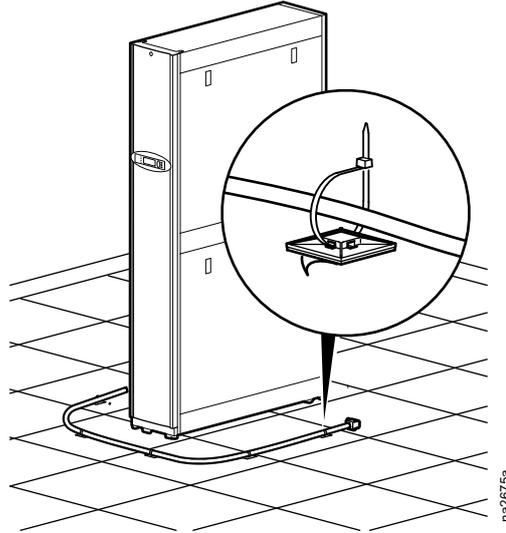
1. Connect the leak sensor to the equipment using the leak detector port as pointed by the arrow.



na2676a

2. Position the leak sensor inside or outside the equipment.
NOTE: Install leak sensors on a clean surface, and do not allow them to touch metal that is in an air stream
3. Route the leak sensor to the outside through either the bottom plate or the door.

4. Secure the leak sensor wire to surfaces using tie wraps and tie wrap holders (provided with the leak detector).



Electrical Connections

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- This equipment must be installed and serviced by qualified and trained personnel only.
- Turn off all power supplying this equipment before working on or inside the equipment.
- Replace all devices, doors, and covers before turning on power to this equipment.

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

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Potentially dangerous and lethal voltages exist within this unit. More than one disconnect switch may be required to energize or de-energize this equipment. Observe all cautions and warnings. Failure to do so could result in serious injury or death. Only qualified service and maintenance personnel may work on this equipment.

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

WARNING

ELECTRICAL HAZARD

- Electrical service must conform to local and national electrical codes and regulations.
- The equipment must be grounded.

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

NOTE: FOR INSTALLATION IN CHINA ONLY - 至少需要一个不小于3mm触点开距的全极断开装置，以便对此设备进行通电和断电。

The following electrical connections are required in the field:

- Controls (display interface, Network Management Card)
- Communication (A-Link, Building Management System)
- Power to InRow RD cooling unit (single phase plus ground)

All electrical connections must be in accordance with applicable industry guidelines as well as national and local codes and regulations.

See the equipment nameplate for voltage and current requirements.

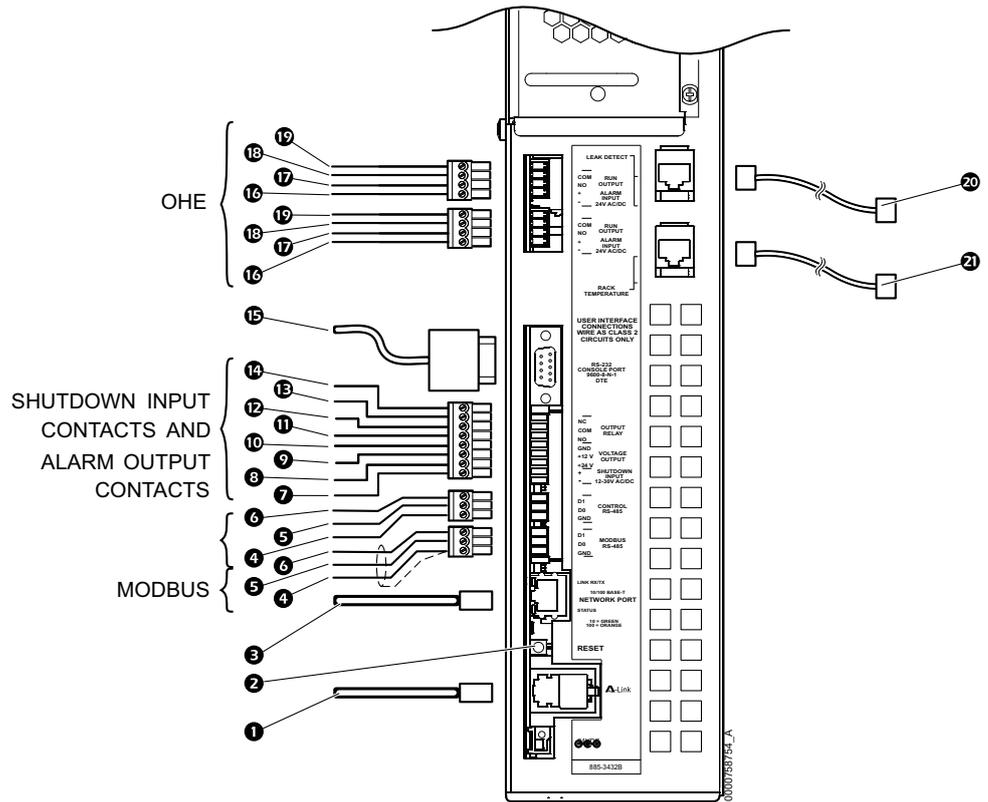
Make all low-voltage connections, including data and control connections, with properly insulated wires. Insulation of low-voltage wiring must be rated for at least the voltage of any adjacent wiring.

Control Connections

NOTE: Wire all low voltage input and output connections as Class 2 circuits.

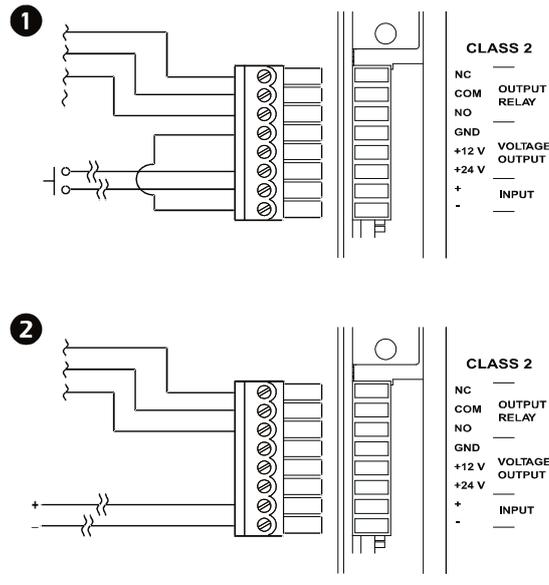
Depending on the configuration, additional control connections may be required for the A-Link remote communications through Network Management Card support or traditional equipment-monitoring software.

User Interface Connections



Item	Description	Item	Description
1	A-Link ports: Pin 1-High; Pin 2-Low; Pins 3, 6-Perf Power; Pins 4, 5-Ground	12	Alarm NO (normally open contact)
2	Reset button	13	Alarm COM (common contact)
3	Network port	14	Alarm NC (normally closed contact)
4	Ground (RS485 Common)	15	RS-232 console port
5	D1+	16	Outdoor heat exchanger (OHE) alarm input -
6	D0-	17	OHE alarm input +
7	Shutdown -	18	OHE COM
8	Shutdown +	19	OHE NO
9	24 Vdc (bias)	20	Remote temperature sensor
10	12 Vdc (bias)	21	Leak detector port (AP9325)
11	Return (bias)		

Form C Alarm Contacts and Shutdown Input



See items 6 through 13 in User Interface Connections, page 34 section. A relay internal to the user interface is controlled by a user-defined alarm (for example, malfunctioning fans). Before an alarm condition, the signal on the COM (common) terminal is routed to the NC (normally closed) terminal. When the alarm is activated, the relay is energized, causing the signal on the COM terminal to be routed to the NO (normally open) terminal. The NO and NC terminals could be connected to remote indicator lights, a warning buzzer, or another device to alert an operator to the presence of an alarm condition.

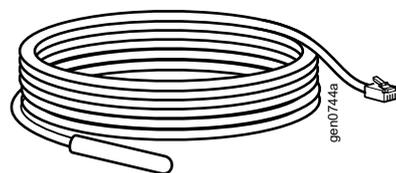
A remote disconnect switch can be connected to the shutdown inputs as shown.

NOTE: Either +12 Vdc or +24 Vdc can be used to provide power to the remote disconnect switch.

Rack Temperature Sensor

The rack temperature sensor monitors and controls the equipment airflow and ensures an adequate supply of cooling air to the server racks in the data center.

The equipment is supplied with an external rack temperature sensor. See Installing Kit, page 13 section. This sensor, along with wire clamps and wire clips, are included in the installation kit shipped with the equipment.



Installing the rack temperature sensor

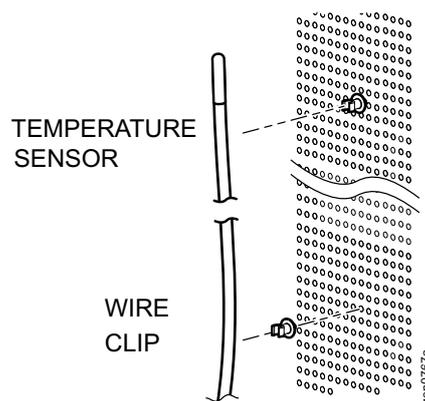
NOTE: Rack temperature sensor installation is not required if the equipment operates in Rack Air Containment System (RACS) or Hot Aisle Containment System (HACS) mode. For more information about those systems, see www.schneider-electric.com. The InRow configuration requires temperature sensor installation.

1. Insert the rack temperature sensor connector in the temperature sensor port at the user interface. See User Interface Connections, page 34 section.

- a. For a top installation, push the rack temperature sensor through the access hole located at the top of the equipment.
 - b. For a bottom installation, route the sensor through the access hole in the bottom of the equipment.
2. Route the sensor through either the top or the bottom of the adjacent server rack.
 3. Secure the temperature sensor cable to the front door of the adjacent server rack at multiple locations using the provided wire clips as shown. See *Installing Kit*, page 13 section.
 4. Install the sensor where lack of sufficient cooling air is most likely. The optimum position of the rack temperature sensor will vary from installation to installation, but must be located in the airflow to allow proper readings.

Servers most likely to have insufficient or inadequately cooled air due to the recirculation of hot air from the hot aisle include:

1. Servers positioned at the top of a rack.
2. Servers positioned at any height in the last rack at an open end of a row.
3. Servers positioned behind flow-impairing obstacles such as building elements.
4. Servers positioned in a bank of high-density racks.
5. Servers positioned next to racks with Air Removal Units (ARU).
6. Servers positioned very far from the equipment.
7. Servers positioned very close to the equipment.

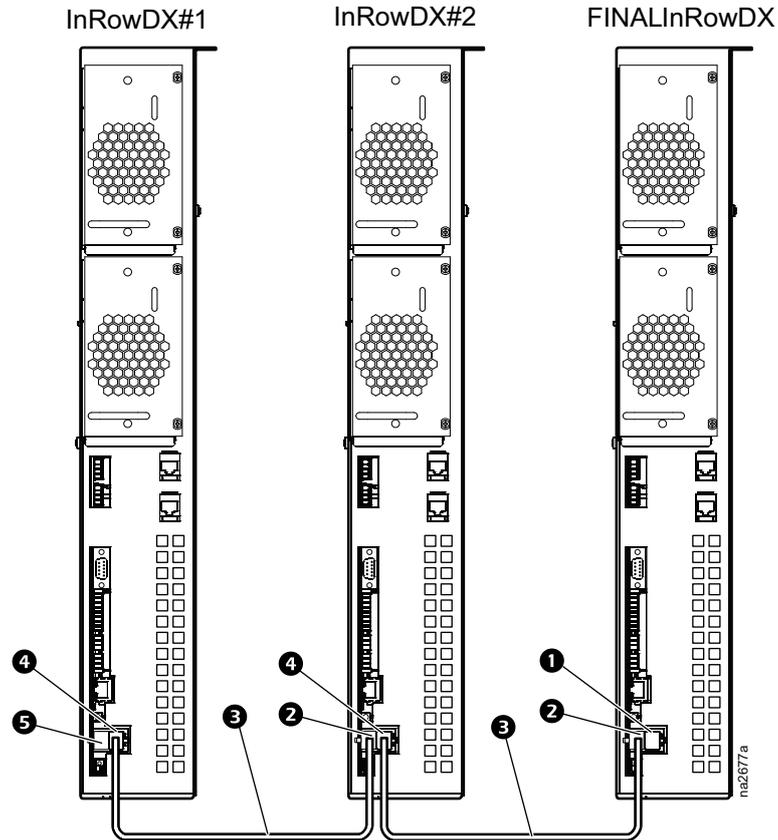


A-Link connections

The A-Link bus connection allows multiple InRow DX cooling units (up to twelve) to communicate with one another. Only one InRow DX cooling unit must be defined through the display interface; other InRow DX cooling units are numbered automatically.

To enable the InRow DX cooling units to work as a group, link them using the supplied cables or CAT-5 cables with RJ-45 connectors. A terminator (150 Ohm, 1/4 W) is installed in the A-Link port, and must remain inserted into the A-Link ports of the first and final InRow DX cooling units only.

The maximum wire length for the entire group may not exceed 1,000 m (3,280 ft).



Item	Description	Item	Description
1	A-Link out port (with provided RJ-45 terminator*)	4	A-Link out port
2	A-Link in port	5	A-Link in port (with provided RJ-45 terminator*)
3	A-Link cable (CAT-5 ethernet cable)		

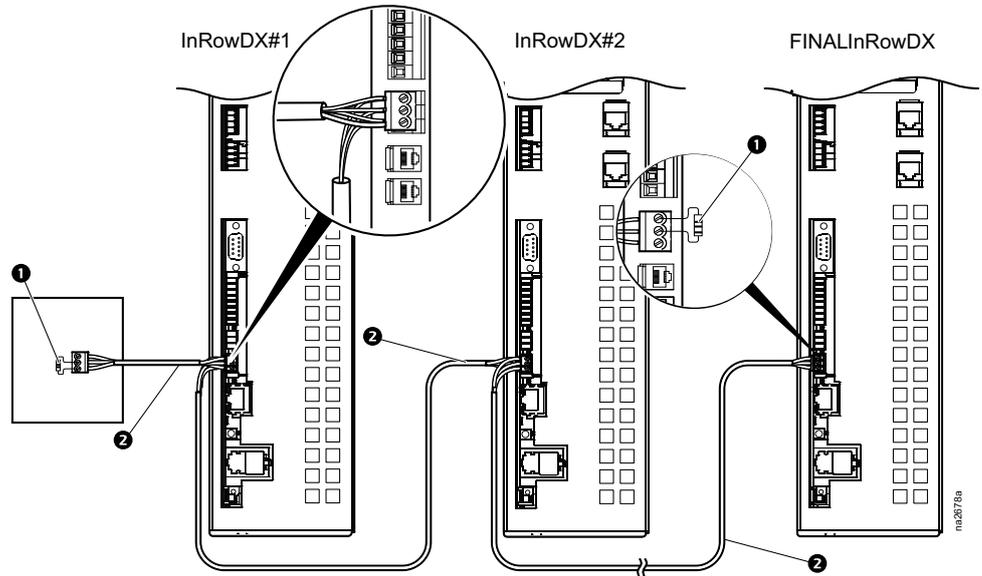
Building Management System (BMS)

The Modbus interface allows each InRow DX cooling unit to communicate with the BMS. Use a three-wire cable to connect each InRow DX cooling unit in turn. Wire a 150-Ohm, 1/4-W terminator resistor (included) into the Modbus master and the final InRow DX cooling unit between Modbus D0 and Modbus D1.

Each InRow DX cooling unit has a three-wire Modbus terminal on the user interface. Use a connector with screw terminals to attach wiring. See *User Interface Connections*, page 34 for a diagram of the user interface.

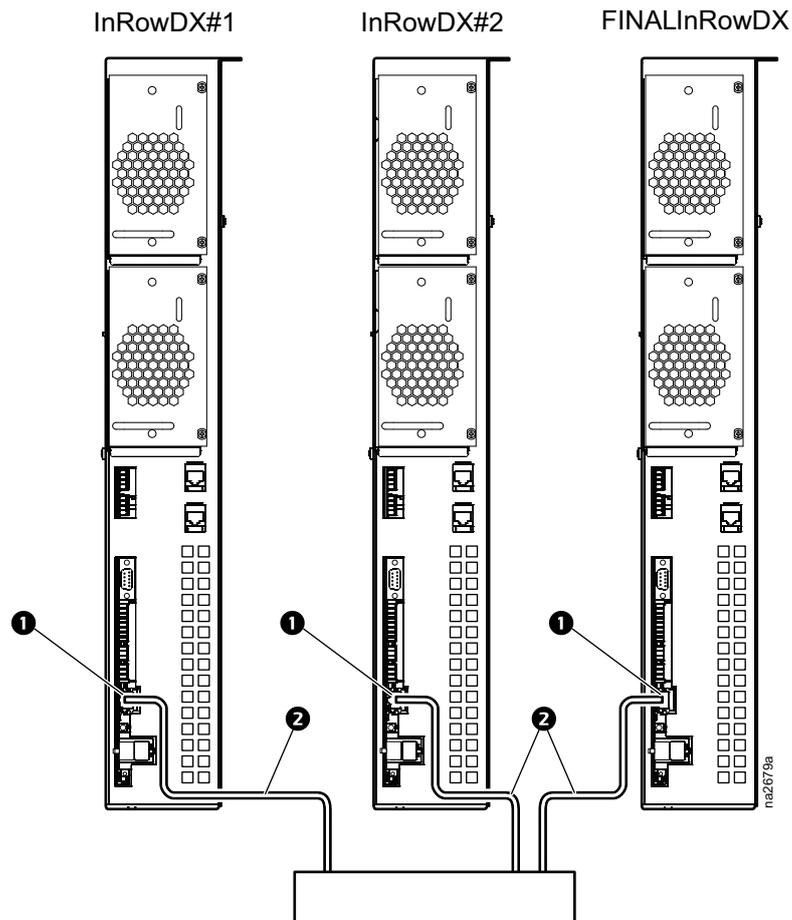


For information on setup of Modbus parameters, see the InRow DX cooling unit *Operation and Maintenance Manual*.



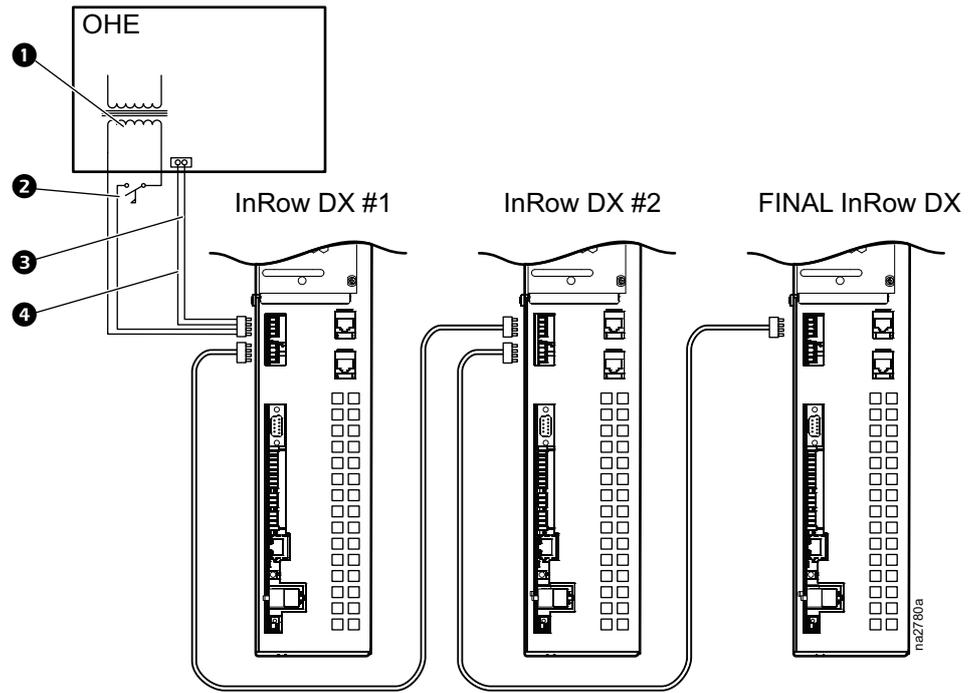
Item	Description
1	Termination resistor (provided)
2	Modbus cable (RS-485)

Network Port



Item	Description
1	Network port
2	LAN cable (10/100 Base-T)

OHE Connections



Item	Description
1	Class 2 transformer - line voltage to 24 vac
2	Fluid flow switch
3	OHE COM
4	OHE NO

Wiring Configurations

⚡ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Apply Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

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

⚡ ⚠ WARNING

ELECTRICAL HAZARD

- Electrical service must conform to local and national electrical codes and regulations.
- The equipment must be grounded.

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

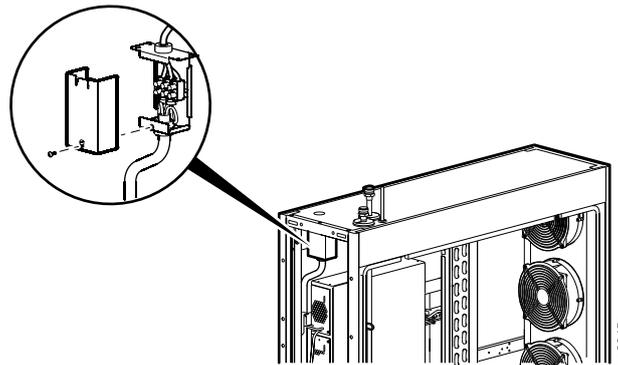
Route incoming power to the electrical junction box located at the top or bottom of the equipment.

NOTE: To ease installation and future removal of the equipment for repairs, use flexible conduit for the power

Routing

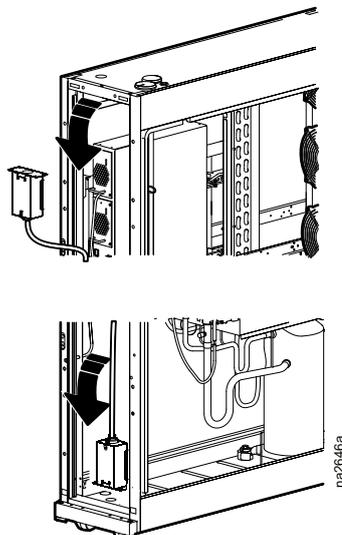
Top Routing

1. Remove the electrical junction box cover.
2. Route electrical cabling into the electrical junction box as shown.
3. Secure the incoming cable with a standard 20 mm (3/4-in.) nominal conduit strain relief (not provided).
4. Connect the power wiring to the terminals as shown and torque the screws to the value shown on the label.
5. Reinstall the electrical junction box cover.



Bottom Routing

1. Carefully clip all the cable clamps that secure the electrical cable to the cabinet frame. Remove the cable clamps from the cabinet and discard.
2. Remove two screws securing the electrical junction box to the underside of the cabinet top.
3. Remove the plug from the cabinet floor and insert it in the cabinet top.
4. Turn the electrical junction box over and secure it to the bottom of the cabinet using the screws removed in step 1. See both **Top Piping and Power Access Locations**, page 18 and **Bottom Piping and Power Access Locations**, page 18 sections.
5. Secure the electrical cable to the cabinet frame using new cable clamps (supplied).
6. To connect electrical power, follow the steps for top routing.



Specifications

Input voltage	ACRD200 - 208-240/1~/60 H ACRD201 - 208-240/1~/50 H
Condensate pump	5 l/h (1.3 GPH), 4.9-m (16-ft) vertical rise, 15-m (50-ft) horizontal run
Physical dimensions W x D x H - mm (in.)	300 x 1070 x 1991 (11.80 x 42.13 x 78.39)
Net weight (InRow DX only) - kg (lb)	199.09 (438.5)
Shipping weight - kg (lb)	241 (532)
Cooling capacity at 29.4° C (85° F) - kW (BTU/hour)	ACRD200: 10.90 (37,225) total ACRD201: 10.98 (37,499) total
Sound pressure - dBA - at 80% fan speed	76.6 dBA at 0.85 m ³ /s (1800 SCFM), 1.0 m in front of the unit (ref 20 µPa)
Nominal fluid flow rate entering the unit - l/s (GPM)	Water: 0.64 (10.0) Glycol: 0.64 (10.0)
Entering fluid temperature range for 0.64 l/s (10 GPM) flow rate into the unit. - °C (°F)	Water: 12.8 - 43.3 (55.0 - 110.0) Glycol: 12.8 - 43.3 (55.0 - 110.0)
Maximum heat rejection - kW(BTU/hour)	Water: 15.2 (52,000) Glycol: 15.2 (52,000)
Maximum glycol percentage - %	Water: 0 Glycol: 40
Pressure drop at 0.64 l/s (10 GPM) - kPa (psi)	Water: 33.1 (4.8) Glycol: 43.4 (6.3)

NOTE: For additional capacity and performance data, consult the InRow RD *Technical Specifications* available online at www.schneider-electric.com.

First Aid

IMPORTANT: The following measures can be carried out by trained and qualified personnel only.

First Aid Measures in Case of Refrigerant Leakage

Direct contact with the refrigerant may lead to dangerous consequences. Follow the guidelines below to provide immediate assistance:

- **In case of inhalation:**
 1. take the victim immediately to the open air, considering that inhaling a significant amount of vapors may lead to difficulty breathing, headaches, nausea, heart disorders, unconsciousness or death
- give oxygen or perform mouth-to-mouth resuscitation if necessary
- **In case of ingestion:**
 1. hospitalize
 2. avoid the administration of drugs
- **Contact with skin:**
 1. wash with plenty of water
 2. frostbites should be treated as thermal burns
- **Contact with eyes:**
 - Wash immediately and for long with plenty of water
- **Instructions for the doctor:**
 - Do not administer catecholamine (due to the cardiac sensitization produced by the product)

In case of persisting irritations or symptoms, contact a doctor.

First Aid Measures in Case of Electrical Shock

In case of electrical shock, follow this procedure:

1. Turn off the electricity source, if possible. If not, remove the same using a dry, non-conducting object made of paperboard, plastic or wood
2. In case of electrical burn, cover any burned areas with a sterile gauze bandage, if available, or a clean cloth. Don't use a blanket or towel, because loose fibers may stick to the burns
3. If necessary, perform mouth-to-mouth resuscitation when the person shows no signs of circulation, such as breathing, coughing or movement

In case of persisting irritations or symptoms, contact the emergency aid.

First Aid Measures in Case of Burn

In case of burn, follow this procedure:

1. Cool the burn: place the burned area under running cool (not cold) water for at least five minutes or apply a clean wet compress to reduce pain and swelling
2. Remove rings or other tight items from the burned area: do this quickly and gently before the area swells
3. Do not break blisters as they prevent infection. If a blister breaks, clean the area with water and apply an antibiotic ointment

4. When a burn is completely cooled, apply a lotion to relieve the area and prevent it from drying
5. Loosely wrap a sterile gauze bandage around the burn
6. If needed, take a pain reliever making sure to carefully read the related information leaflet

In case of severe burn, contact the emergency aid or go to the nearest hospital.

First Aid Measures in Case of Cut from Sharp Edges

In case of deep cuts, follow this procedure:

1. Have the injured person lie down and elevate the site of bleeding. Do not breathe on an open wound. If needed, take out any visible objects in the wound that are easy to remove
2. Remove or cut clothing around the wound. Gently remove rings or other tight items from the injured area, also to allow blood circulation in case of swelling
3. Apply direct pressure and elevate the area for fifteen minutes. If blood soaks through the cloth, apply another one without lifting the first. If there is an object that could not be removed, apply pressure around the object and not directly over it and then seek medical attention
4. Once the bleeding has stopped, clean the wound to reduce the chance of infection: wash the wound for five minutes with cool water
5. Apply a bandage to protect the cut from dirt and prevent infection. Moisture-enhancing bandages are usually available in first-aid kits

If an infection occurs under the bandage, contact a doctor.

If the cut does not stop bleeding, contact the emergency aid.

First Aid Measures in Case of Fall

In case of fall from considerable heights, do not move the person to avoid further injury.

Call for medical help and, if necessary:

1. Stop any bleeding by applying pressure to the wound with a clean cloth
2. Immobilize the injured area. Do not try and realign any bone sticking out
3. Apply ice packs to limit swelling and help relieve the pain. Do not apply ice directly to the skin

Worldwide Customer Support

Customer support for this product is available at no charge in any of the following ways:

- Visit the Schneider Electric Web site to access documents in the Schneider Electric Knowledge Base and to submit customer support requests.
 - www.se.com (Corporate Headquarters)
Connect to localized Schneider Electric websites for specific countries, each of which provides customer support information.
 - www.se.com/support/
Get global support by searching the Schneider Electric Knowledge Base and using esupport.
- Contact the Schneider Electric Customer Support Center by telephone or e-mail.
Go to www.se.com > **Support** > **Contact Support** to find contact information for country-specific centers.

For information on how to obtain local customer support, contact the representative or other distributors from whom you purchased your product.

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