

Uniflair™ Direct Expansion InRow® Cooling

ACRD300 and ACCU300 Series

Technical Specifications

Up to 30 kW, CE/UL Certified

990-91356A-001
Release Date: 07/2020



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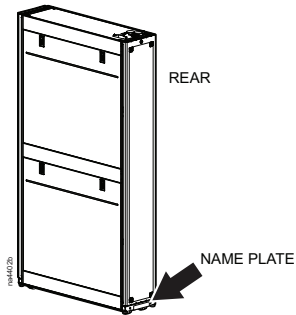
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Technical Data

Model Identification

Indoor Unit



The model number can be found on the outside of the shipping crate and on the name plate located on the unit as shown. Use the table below to verify that the equipment is the right type and voltage.

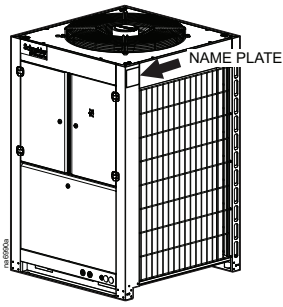
NOTE: The unit is not to be accessed by the general public.

SKU	Voltage	Frequency	65 kAIC	Power Feed	Number of Fan Power Supplies	Drainage System	Humidification/ Reheat
ACRD301S	100–120 V~* / 200–240 V~	50/60 Hz	Yes	Dual feed	1	Condensate pump	No/No
ACRD301P	200–240 V~	50/60 Hz	No	Dual feed	1	Condensate pump	Yes/Yes

*Configure proper voltage before applying power to the cooling unit.

NOTE: All units have a rear-to-front airflow pattern.

Outdoor Unit



The model number can be found on the outside of the shipping crate and on the name plate located on the unit as shown. Use the table below to verify that the equipment is the right type and voltage.

NOTE: The unit is not to be accessed by the general public.

SKU	Voltage	Frequency	Power Feed
ACCU300	200–240 V 3~	50/60 Hz	Single feed
ACCU300D	200–240 V 3~	50/60 Hz	Dual feed
ACCU302	380–415 V 3~	50/60 Hz	Single feed
ACCU302D	380–415 V 3~	50/60 Hz	Dual feed
ACCU301	460–480 V 3~	50/60 Hz	Single feed
ACCU301D	460–480 V 3~	50/60 Hz	Dual feed

NOTE: All units are 65 kAIC-ready.

Overview

The ACRD300 series of indoor units can provide a cooling capacity up to 30 kW based on a half-rack platform (300 mm (12 in.)) with an ACCU300 series outdoor condensing unit. A variable-speed compressor works with EC fans and a fin-tube exchanger to reach the best cooling efficiency.

This modular, row-based computer room cooling system offers efficient, predictable, and economical cooling for a variety of spaces.

Critical environmental requirements now reach far beyond the confines of the traditional data center or computer room to encompass a larger suite of applications, referred to as technology rooms. Critical environment applications include the following:

- Computer rooms
- Telecommunication facilities
- Clean rooms
- Power equipment
- Medical equipment rooms
- LAN/WAN environments
- Edge data centers
- Traditional data centers

A worldwide network by Schneider Electric representatives is fully qualified to provide engineering, sales, installation, and service for our products.

Capacities

Uniflair™ Direct Expansion (DX) InRow® units in the ACRD300 series are available as a 300-mm.

Room Air Distribution

Row-based systems are placed in line with rack enclosures. At least one system is used per hot aisle. Air is drawn in through the rear of the system, cooled, and discharged into the cold aisle, thereby neutralizing the sensible heating effects of the data processing equipment. Uniflair Direct Expansion InRow products deliver high volumes of airflow to eliminate hot spots in densely populated environments.

Configuration:

- Air-cooled

Compliance Approval

Indoor Unit

Model	UL and cUL	RCM	CE	EAC	CCC	CMIM
ACRD301S	X	X	X			X
ACRD301P	X		X			X

Outdoor Unit

Model	UL and cUL	RCM	CE	EAC	CCC	CMIM
ACCU300	X					
ACCU300D	X					
ACCU301	X					
ACCU301D	X					
ACCU302			X			X
ACCU302D			X			X

Working Conditions and Environmental Limits

Uniflair Direct Expansion InRow units have a minimum heat load to ensure proper operation. Failure to operate the unit with at least the minimum load will result in one or more of the following conditions:

- Unstable unit operation
- Decreased operating efficiency
- Equipment on/off cycling
- Inadequate dehumidification
- Increased wear and tear caused by frequent on/off cycles
- Decreased group control effectiveness
- Potential increase in cost of ownership

Limit Working Conditions—Indoor Units (ACRD301P, ACRD301S)	
Refrigerant type	R410A
Voltage input tolerance	±10%
Approximate minimum recommended load	8.0 kW (27,297 BTU/hr)
Outdoor ambient temperature without the low ambient temperature kit installed	Down to -15°C (+5°F) Up to 48°C (118°F)
Outdoor ambient temperature with the low ambient temperature kit installed	Down to -40°C (-40°F) Up to 48°C (118°F)
Ambient %RH	5 to 80%RH
Altitude	3000 m (9843 ft)
Storage Conditions	
Temperature	-25°C to +65°C (-13°F to +149°F)
Humidity	5 to 95%RH

NOTE: ACRD301P and ACRD301S are in accordance with the Electromagnetic Compatibility Standard (EMC): EN 55032, EN55024, EN61000-3-2, EN61000-3-3, EN61000-6-3, EN61000-6-1, EN61000-3-11, EN 61000-3-12. ACRD301P and ACRD301S are in accordance with FCC: ANSI C63.4.

NOTE: The SKUs comply with EN61000-3-12 provided that the short-circuit power SSC is greater than or equal to 350 at the interface point between the user supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power SSC greater than or equal to 350.

Limit Working Conditions—Outdoor Units (ACCU300, ACCU300D, ACCU302, ACCU302D, ACCU301, and ACCU301D)	
Refrigerant type	R410A
Operating outdoor temperature	-40°C to +46°C (-40F to +115°F)
Altitude	3000 m (9843 ft)
Storage Conditions	
Temperature	-25°C to +65°C (-13°F to +149°F)
Humidity	5 to 95%RH

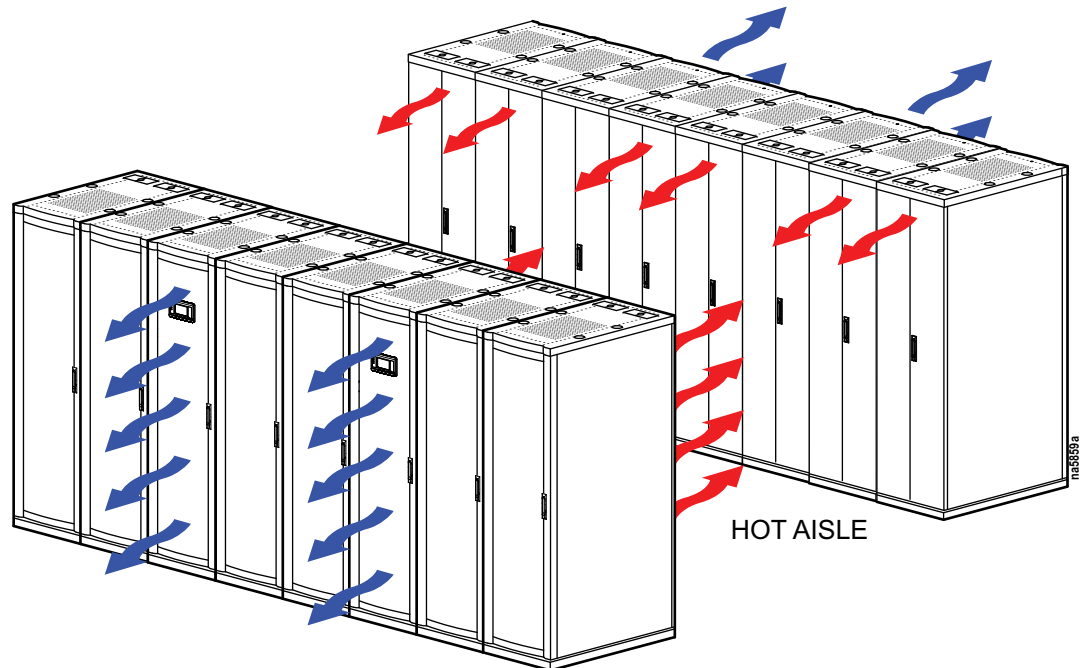
NOTE: ACCU302 and ACCU302D are in accordance with the Electromagnetic Compatibility Standard (EMC): EN 55032, EN55024, EN61000-3-2, EN61000-3-3, EN61000-6-3, EN61000-6-1, EN61000-3-11, EN 61000-3-12. ACCU300, ACCU300D, ACCU301, and ACCU301D are in accordance with FCC: ANSI C63.4.

NOTE: The SKUs comply with EN61000-3-12 provided that the short-circuit power SSC is greater than or equal to 350 at the interface point between the user supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power SSC greater than or equal to 350.

Scalable Solution for Critical Environments

InRow Advantages

The row-based solution improves energy efficiency and cooling ability in a number of ways. First, the Uniflair Direct Expansion InRow unit draws air directly from the hot aisle, allowing the unit to take advantage of higher heat transfer efficiency due to higher temperature differences. It can then discharge room-temperature air directly in front of the servers it is cooling. Placing the unit in the row enables the unit to operate at higher return and supply air temperatures, yielding 100% sensible capacity. This significantly reduces the need for humidification.



Scalable for High Density

The predictable performance of the row-based architecture makes it well-suited for high density applications. The focus on heat removal instead of cold-air delivery is the key to making this approach scalable. The modular design of the Uniflair Direct Expansion InRow unit allows it to be easily added in the row as the demand for cooling increases.

The additional benefit of the row-based architecture is the ability to add hot-aisle containment. Containing the hot aisle further reduces any chance of hot and cold air streams mixing. This provides ultimate predictability and allows the cooling capacity to be matched to the IT heat load.

Standard Features and Options

Standard Features

EcoStruxure™ Ready

The ACRD300 Series is ready to connect to the world-leading DCIM platform.

Cabinet

The frame of the ACRD300 series units is constructed of 16-gauge formed steel for maximum strength. The cabinet is serviceable from the front and rear. All exterior panels and corner posts on the frame are powder coated for durability and an attractive finish. The front and rear exterior panels are constructed of 18 gauge perforated steel with 80% open free area. All panels, which include a key latch for safety and security, allow easy access and removal. The footprint of 300 mm takes up less space in the data center.

Condensate Pump

- **ACRD301S and ACRD301P:** A condensate pump is factory wired and piped internally to the condensate drain pan. Within the condensate pump, there is a dual position float. The first position is used for condensate pump control and the other float generates a condensate pump failure alarm to prevent condensate pan overflow.

Counterflow Cooling Coil/Condensate Pan

Designed for high-sensible heat ratios, the coil is constructed with copper tubes, raised-lance-type aluminum fins, and 18-gauge galvanized steel end plates. Coil headers are equipped with anti-drip shields in the event of condensation. The condensate pan is thermal formed non-ferrous material, and is sloped for positive drainage to provide higher indoor air quality.

Electric Reheat (ACRD301P)

Electric reheat elements are low watt density, wired for single-phase and loaded equally on all three phases, and electrically and thermally protected by both automatic and manual reset thermal cut outs. Reheat elements are stainless steel, fin tubular construction.

Filters

Filtration of conditioned air is extremely vital to maintaining the clean, particle-free environment required by electrical equipment. Filters are easily replaceable from the rear of the unit. ACRD300 series units use greater-than 20% efficiency ASHRAE 52.1, 12.7 mm (1/2 in.) washable filters that meet HF-1 standards for electronics (MERV 1 per ASHRAE 52.2)

Humidifier (ACRD301P only)

The humidifier is a self-contained, steam-generating type, factory piped and wired, with a disposable cylinder and an automatic solid state control circuit. Humidifier canisters are replaceable. The humidifier controller communicates directly to the microprocessor controller and provides complete status and control at the operator interface.

Network Management Card

The Network Management Card (NMC) allows communication with the local area network (LAN). In addition, the NMC permits multi-level access to monitoring, control, and event notification features over the building network.

Remote Temperature Sensors

To control the cooling unit based on rack inlet temperature, remote temperature sensors are provided. The ACRD300 series units come equipped with one temperature sensor. These sensors measure temperature at a point 4 m (13 ft) from the connection inside the Uniflair Direct Expansion InRow unit. These sensors are used for remote placement in the field on an adjacent IT rack.

Shutdown Input/Alarm Output

The unit provides one field connection input for remote shutdown and one field connection alarm output.

Power

- 3.2 rated SCOP (EER)
 - Substantially lower power consumption
- Power by UPS
 - Due to low current draw, connect the indoor unit secondary power feed to the UPS for easy power backup.

Selectable Top or Bottom Piping Connections

The cooling unit includes both top and bottom piping connections. All ACRD300 series connections use threaded ring seals for ease of installation and service.

Variable-Speed Fans

Each unit is equipped with variable speed fans to allow for varying heat loads. In order to provide uniform airflow over the cooling coil, the fans provide a draw-through air pattern. ACRD300 series units are equipped with eight direct-drive fan modules. These fans are easily replaceable while the unit is in operation.

R410A Refrigerant

R410A refrigerant does not harm the ozone layer and has a very low contribution to the global warming impact.

Outdoor Condensing Unit

The outdoor condensing unit has a small footprint of 1 m² (10.8 ft²). Moving the compressor to the outdoor condensing unit improves serviceability for the indoor unit and lowers the sound level in the IT space.

Electronic Expansion Valve

The EEV provides accurate control of the refrigerant superheat in order to ensure an increase in efficiency at low external temperatures because it enables the unit to operate at much lower condensing pressures than would be possible with a traditional mechanical valve.

Display Interface

The standard arrangement of the touch-screen display, RS 485 serial card, and USB connection allows direct connection to BMSs based on serial lines. The USB port allows quick downloads of the unit settings and parameters.

Microprocessor

The control system consists of two sections: the J5 controller containing the regulation software and is installed in the unit electrical panel, and the 4.3-inch, touch-screen display interface on the exterior of the unit.

The control system uses sophisticated algorithms to control the outlet water temperature within a minimal range and to monitor and protect the various unit components. The display interface provides clear information on the unit status and any current alarms.

Low Ambient Kit

The low ambient kit provides the capability to operate in lower temperatures, down to -40°C (-40°F). Contact Schneider Electric for more details.

The kit can be field supplied or purchased from Schneider Electric.

Optional Features

Aisle Containment

This containment solution isolates pods (two rows of Uniflair Direct Expansion InRow cooling units sharing a common aisle) from the whole IT environment, increasing cooling efficiency at any density.

Cable Water Detector

A leak detection cable is placed on the floor or sub-floor around all possible leak sources. If water or other conductive liquids contact the cable anywhere along its length, the microprocessor controller announces the leak visually, audibly, and across the network. The 6.1-m (20-ft) cable may be cascaded to make custom lengths up to 24.4 m (80 ft).

Humidity Monitoring

An optional remote sensor is available to monitor the humidity level of the data center.

Dual Power Circuits

Optional integrated redundant power circuits provide full power redundancy.

Compressor Acoustic Hood

An optional compressor acoustic hood reduces the sound level.

Data Partition

Overhead cable distribution between adjacent NetShelter racks allows for removal of the Uniflair Direct Expansion InRow units without disrupting overhead cabling.

Filters

Electrical equipment requires clean, particle-free air, thus making air filtration extremely important. As an optional feature, higher efficiency filters can be purchased for the Uniflair Direct Expansion InRow units. The ACRD300 series units optionally use an 50.8 mm (2 in.) pleated, deep loading, 30% ASHRAE 52.1 filter (MERV 8 per ASHRAE 52.2).

Height Adapters

To match height of the Uniflair Direct Expansion InRow cooling units to various rack heights, height adapters are available for NetShelter 42-U VX and 48-U SX racks.

Network Cable

Various lengths of network cable are available to ship with your cooling system. The network cable is used to interconnect multiple units in a redundant group, as well as to connect the Network Management Card to your LAN.

Power Trough

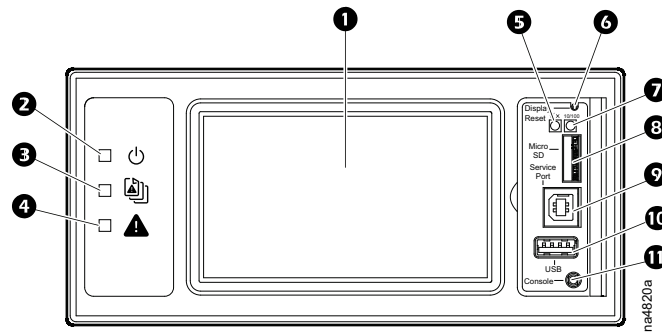
Overhead power distribution between adjacent NetShelter racks allows for removal of the Uniflair Direct Expansion InRow cooling units without disrupting overhead power cabling.

Rack Air Containment

This containment solution isolates the airflow of InRow cooling units from the whole IT environment, increasing efficiency while allowing for high density deployment.

Microprocessor Controller

Display Interface



Item	Description	Function
1	LCD Display	4.3-inch touch-screen color display
2	Power LED	The cooling unit is powered when the LED is illuminated. Unit firmware is updating when LED is blinking.
3	Check Log LED	When this LED is illuminated, a new entry has been made to the event log.
4	Alarm LED	Displays current alarm condition of unit.
5	Status LED	Displays current network management card status.
6	Display Reset button	Resets the display microprocessor. This has no effect on the air conditioner controller.
7	Link-RX/TX (10/100) LED	Displays current network link status.
8	Micro SD card slot	Memory card expansion slot.
9	Service port	USB-B port used only by service personnel.
10	USB-A port	Supports firmware upgrades.
11	Serial Configuration port	Connects the display to a local computer to configure initial network settings or access the command line interface (CLI).

Microprocessor Controller

The microprocessor controller is standard on each system. The easy-to-use touch-screen display allows the operator to select options from the menu-driven interface to control and monitor the connected air conditioning system.

Open Architecture

The Uniflair Direct Expansion InRow cooling protocol is open for integration with all building management systems. Communication interface on the system can be MODBUS RS485 or Ethernet.

Control Type

The controller uses proportional/integral/derivative (PID), a time-proven precision environmental control method. This allows for custom tuning of control variables to achieve desired system response.

Functions

- Supply and return air conditions
- Operational mode control
- Event logging
- Alarms
- Redundant group control
- Fan speed adjustment
- Input/Output module programming

Control

The touch-screen LCD display interface is protected by a configurable password and provides access to information and settings for the unit.

- Supply Temperature Setpoint: 15.0–30.2°C (59.0–86.4°F)
- Cool Setpoint: 18.0–32.2°C (64.4–90.0°F)
- Rack Inlet High Temperature Threshold: 10.0–65.6°C (50.0–150.1°F)
- Supply Air High Temperature Threshold: 10.0–65.6°C (50.0–150.1°F)
- Return Air High Temperature Threshold: 10.0–65.6°C (50.0–150.1°F)

Alarms

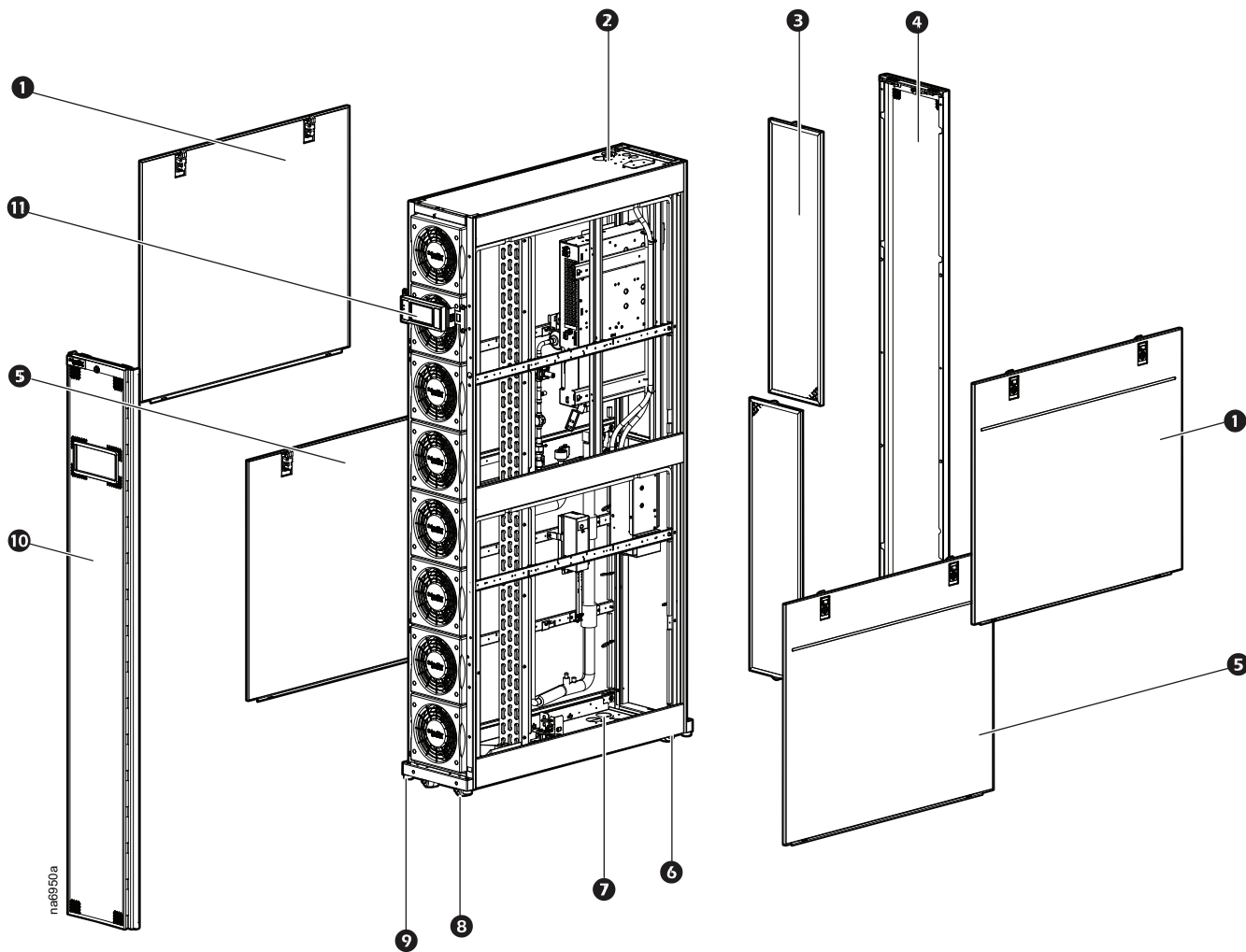
The microprocessor controller shall activate a visible and audible alarm in the following occurrences:

- Cool fail
- Air filter clogged
- Return air sensor fault
- Supply air sensor fault
- Rack temperature sensor fault
- High discharge pressure
- Low suction pressure
- Fan fault
- Water detected (if optional leak detector used)
- Check condensate management system
- Air filter run hours violation
- Group communication fault
- Supply air high temperature violation
- Return air high temperature violation
- Filter DP sensor failure
- Suction pressure sensor failure
- Discharge pressure sensor failure
- Persistent high discharge pressure fault
- Rack inlet temperature high violation
- External communication fault
- Internal communication fault
- On standby input contact fault
- A-link isolation relay fault
- Condensate pan full
- Upper fan power supply fault
- Lower fan power supply fault
- Suction temperature sensor failure
- Persistent low suction pressure fault
- Factory configuration not completed
- Liquid refrigerant sensor failure
- Compressor drive communication fault
- Compressor drive fault
- Compressor run hours violation
- Condensate pump run hours violation
- Fan run hours violation
- Idle mode active
- High pressure switch active
- Compressor high pressure
- Supply humidity sensor fault
- High suction pressure
- Excessive compressor cycling
- VFD inverter overheat
- Compressor drive locked

Component Identification

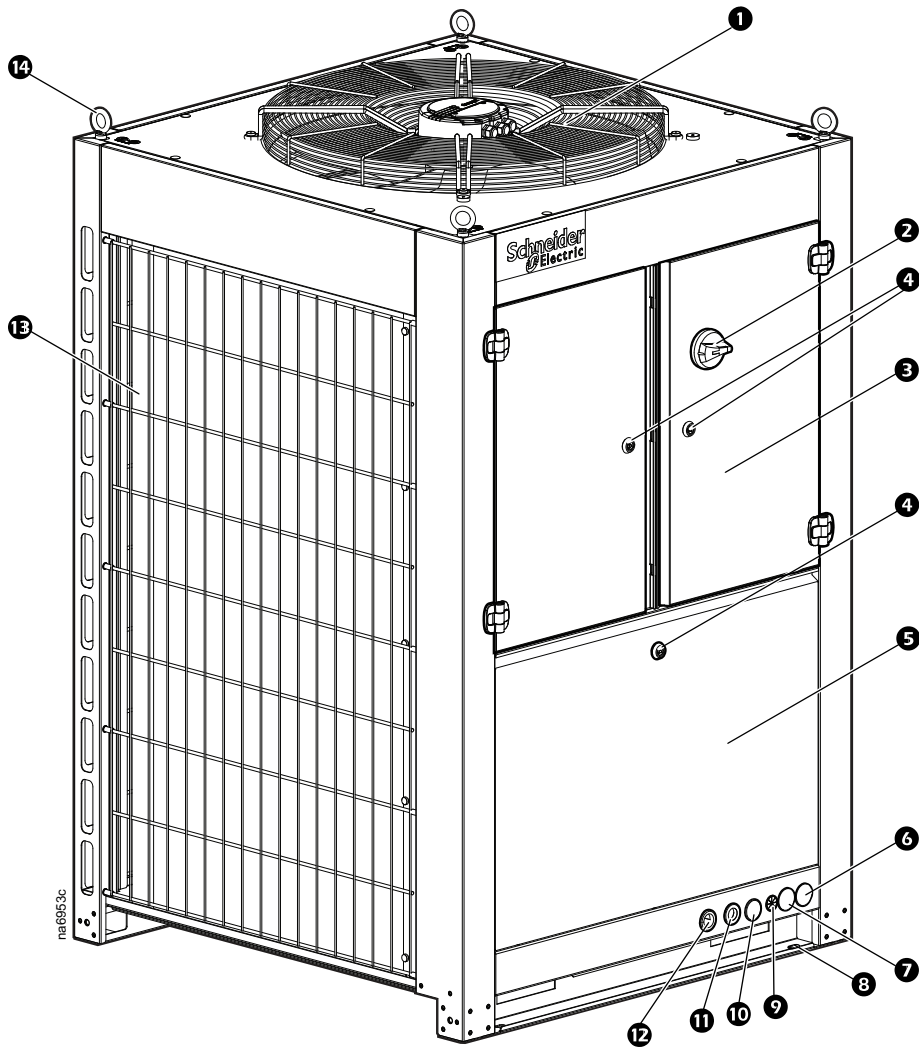
External Components

Indoor Unit—All ACRD30X Units



Item	Description
1	Upper side panel
2	Upper piping connection openings
3	Filters
4	Rear panel
5	Lower side panel
6	Rear casters (non-swiveling)
7	Lower piping connection openings
8	Front casters (swiveling)
9	Leveling feet
10	Front panel
11	Display interface

Outdoor Unit—All ACCU Units

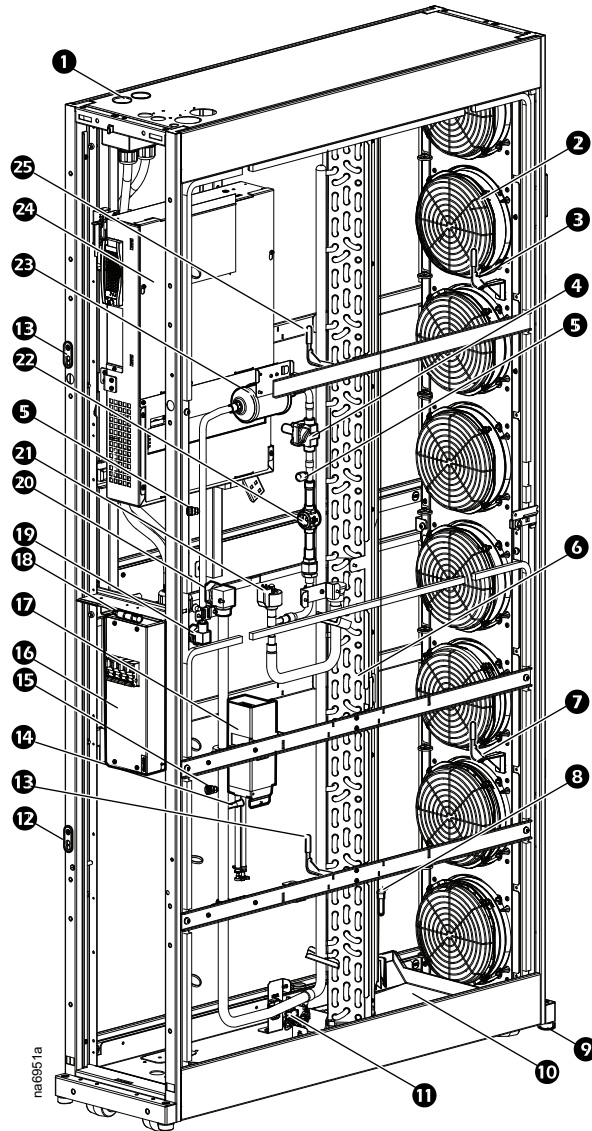


Item	Description	Item	Description
1	Fan	8	Mounting holes
2	Main disconnect switch handle (field installed)	9	Signal cable inlet
3	Electrical panel access doors	10	Liquid receiver outlet
4	Quarter-turn latches	11	Liquid line inlet
5	Service panel	12	Suction line inlet
6	Power feed A inlet	13	Coil grilles
7	Power feed B inlet	14	Lifting eyebolts (field supplied)

Internal Components

Indoor Unit

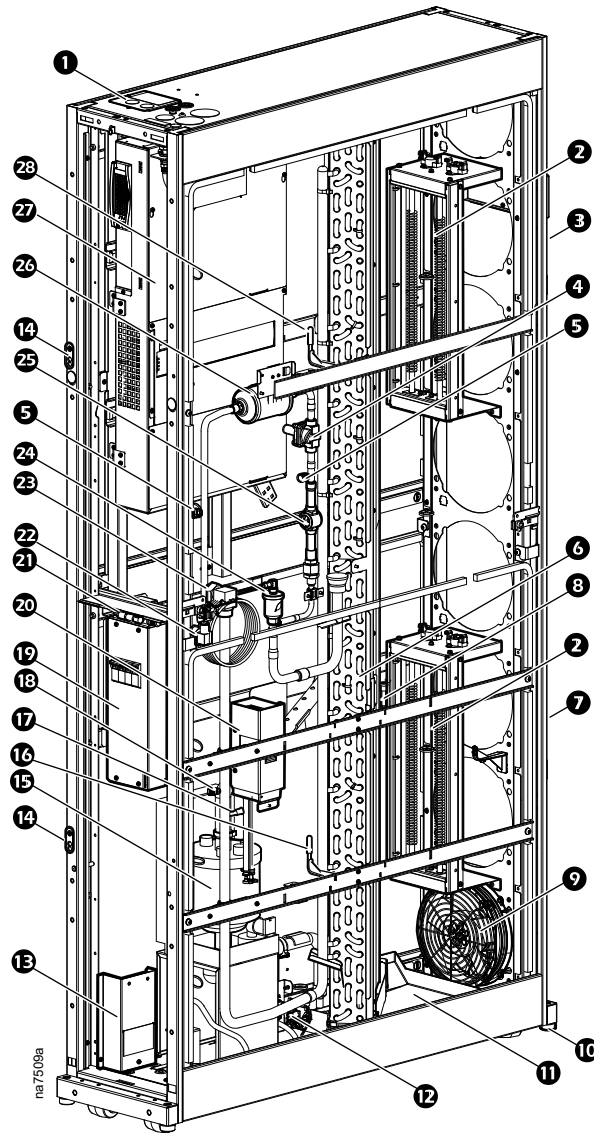
ACRD301S



NOTE: Some components not shown for easier viewing.

Item	Description	Item	Description
1	Power supply connections (top)	14	Temperature sensor (suction)
2	Fans	15	Gas line service port
3	Upper supply air temperature sensor	16	Automatic transfer switch (ATS)
4	Solenoid valve	17	Condensate drain pump
5	Liquid line service port	18	Temperature and humidity sensor (optional)
6	Cooling coil	19	Inlet connection
7	Lower supply air temperature	20	Outlet connection
8	Refrigerant temperature sensor	21	Electronic expansion valve (EEV)
9	Leveling feet	22	Sight glass
10	Condensate drain pan	23	Filter drier
11	Drain pan float switch	24	Electrical box
12	Joining bracket	25	Upper return air temperature sensor
13	Lower return air temperature sensor		

ACRD301P

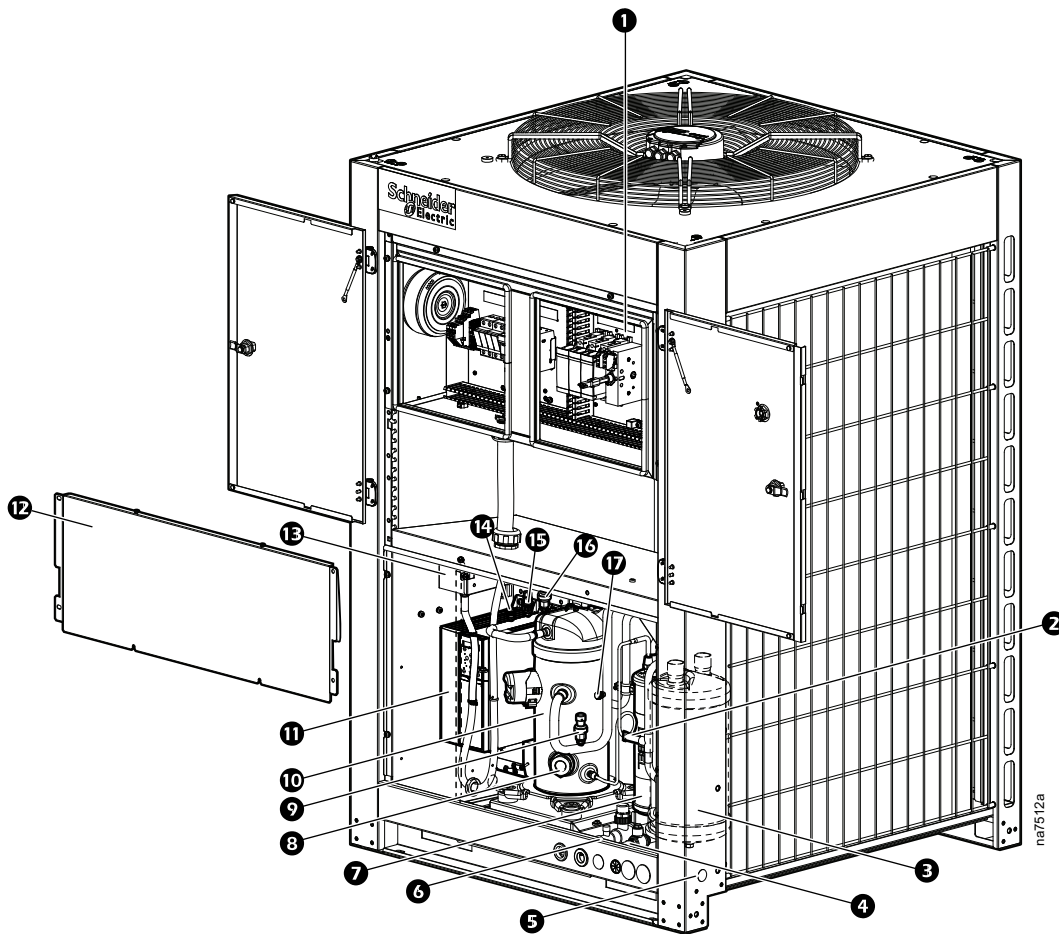


NOTE: Some components not shown for easier viewing.

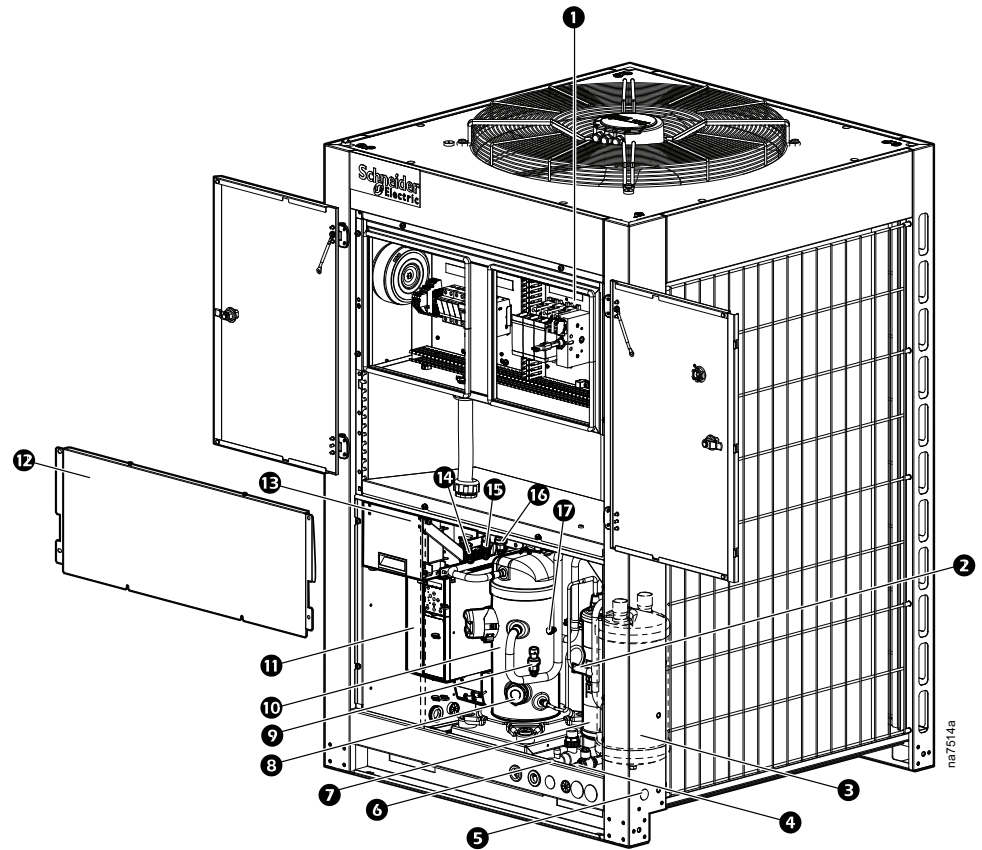
Item	Description	Item	Description
1	Power supply connections (top)	15	Humidifier
2	Electric heaters	16	Lower return air temperature sensor
3	Upper supply air temperature sensor (attached to fan grille)	17	Temperature sensor (suction)
4	Solenoid valve	18	Gas line service port
5	Liquid line service port	19	Automatic transfer switch (ATS)
6	Cooling coil	20	Condensate drain pump
7	Lower supply air temperature (attached to fan grille)	21	Temperature and humidity sensor
8	Refrigerant temperature sensor*	22	Inlet connection
9	Fans	23	Outlet connection
10	Leveling feet	24	Electronic expansion valve (EEV)
11	Condensate drain pan	25	Sight glass
12	Drain pan float switch	26	Filter drier
13	Power supply connection (lower)	27	Electrical box
14	Joining bracket	28	Upper return air temperature sensor

Outdoor Unit

ACCU300, ACCU300D, ACCU301, ACCU301D



Item	Description	Item	Description
1	Electrical panel	10	Variable-speed compressor
2	Pipe stub for connection to liquid receiver	11	Variable frequency drive (VFD)
3	Accumulator	12	Interior protection panel
4	Liquid line connection	13	EMI filter
5	Liquid receiver cable inlet	14	Service port
6	Suction line connection	15	High pressure switch
7	Oil separator	16	High (discharge) pressure sensor
8	Compressor sight glass	17	Service port
9	Low (suction) pressure sensor		

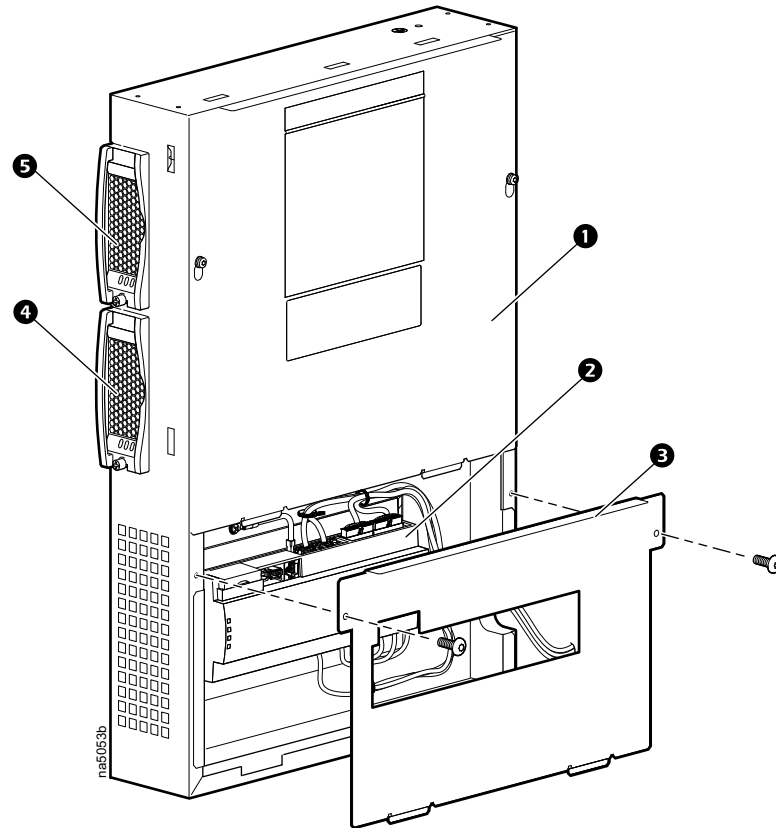
ACCU302, ACCU302D

Item	Description	Item	Description
1	Electrical panel	10	Variable-speed compressor
2	Pipe stub for connection to liquid receiver	11	Variable frequency drive (VFD)
3	Accumulator	12	Interior protection panel
4	Liquid line connection	13	Line reactor and EMI filter
5	Liquid receiver cable inlet	14	Service port
6	Suction line connection	15	High pressure switch
7	Oil separator	16	High (discharge) pressure sensor
8	Compressor sight glass	17	Service port
9	Low (suction) pressure sensor		

Electrical Panels

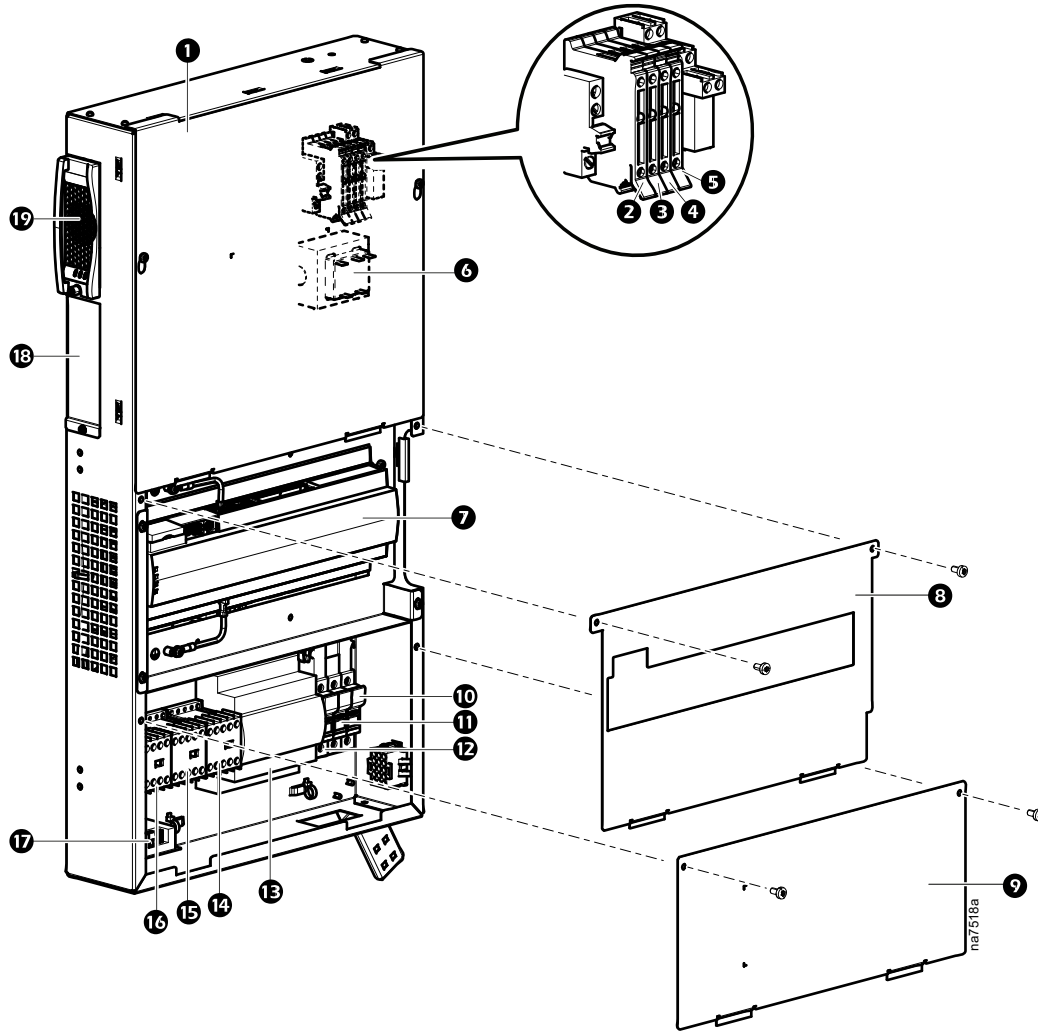
Indoor Unit

ACRD301S



Item	Description
1	Upper electrical box cover
2	J5 controller
3	Controller cover
4	Power supply 2 (Optional field-installed accessory)
5	Power supply 1

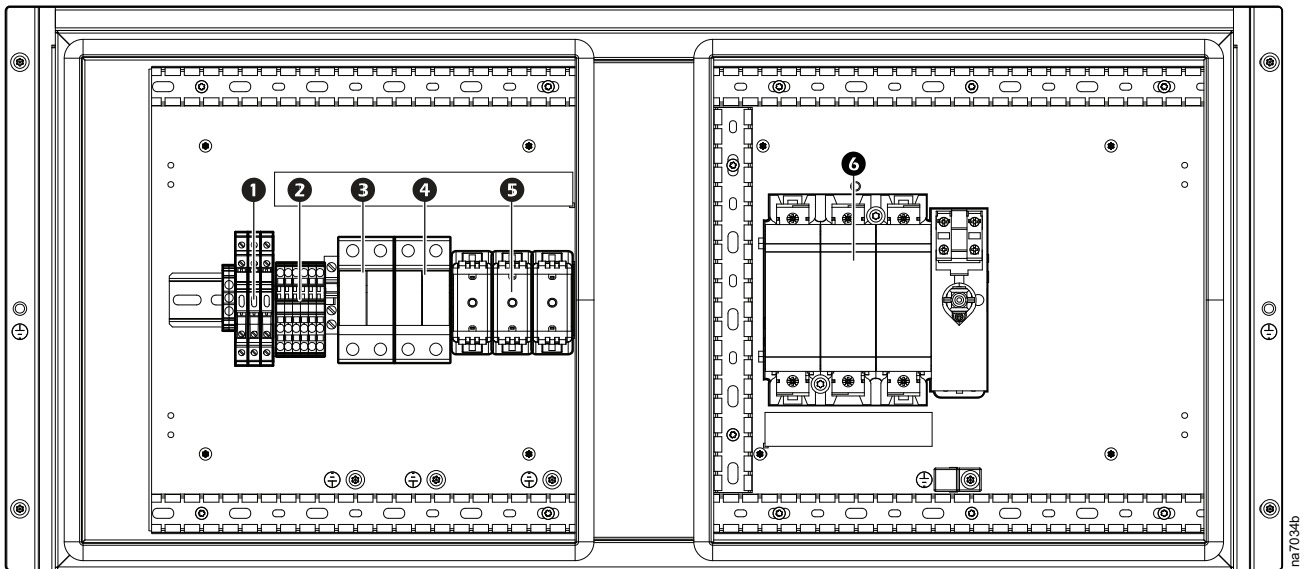
ACRD301P



Item	Description	Item	Description
1	Upper electrical box cover	11	Fuse for heater 2 (bottom heater)
2	Humidifier controller fuse (F4)	12	Fuse for heater 1 (top heater)
3	Liquid line solenoid valve fuse (F3)	13	Humidifier controller (CPY)
4	24-VAC supply transformer fuse (F2)	14	Humidifier electrode contactor
5	Condensate pump fuse (F1)	15	Heater 2 contactor
6	24-V transformer for CPY	16	Heater 1 contactor
7	J5 controller	17	Power supply 1
8	Controller cover	18	Power supply 2 (Optional field-installed accessory)
9	Lower electrical box cover	19	Humidifier electrode current sensor
10	Humidifier electrode fuse		

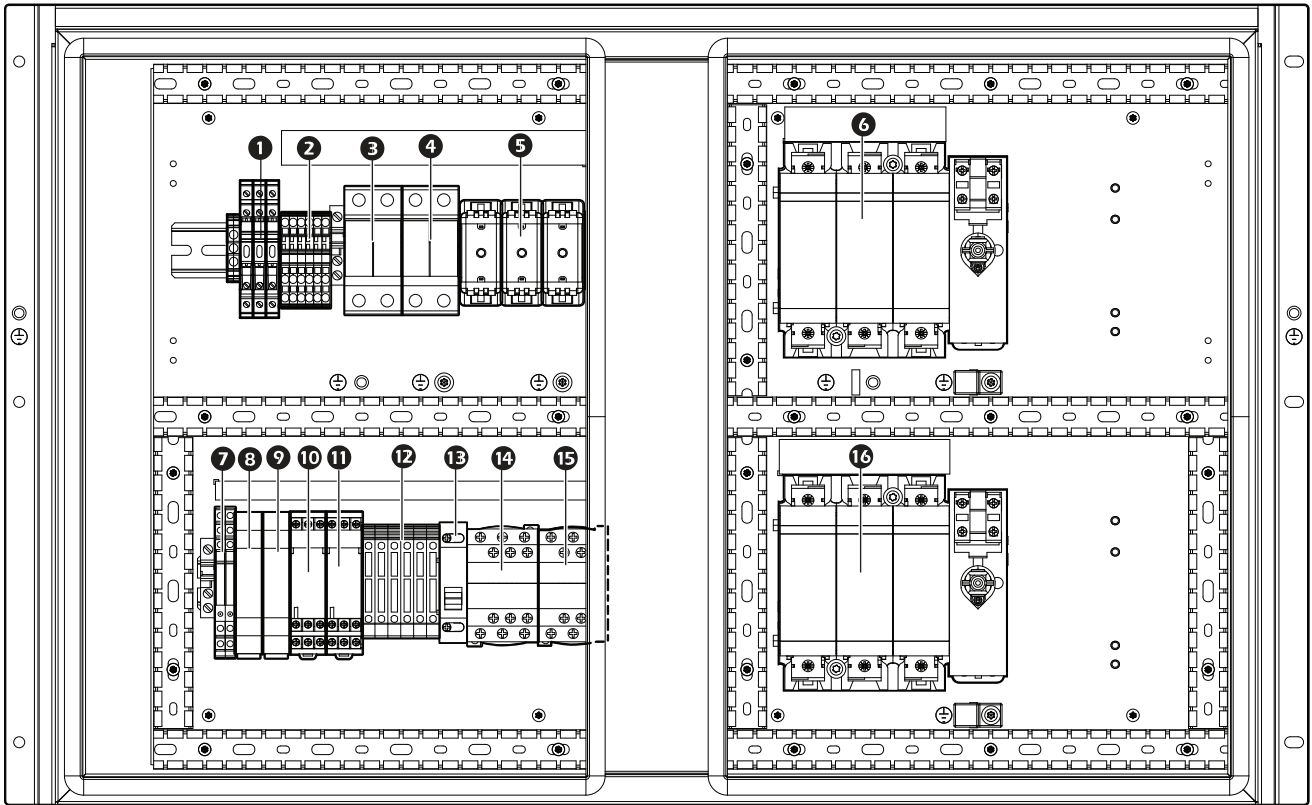
Outdoor Unit

ACCU300



Item	Description	Item	Description
1	Low temperature kit fuse block	4	Fan motor switch
2	Terminal block	5	Compressor variable-speed drive switch
3	Crank case heater switch	6	Main switch

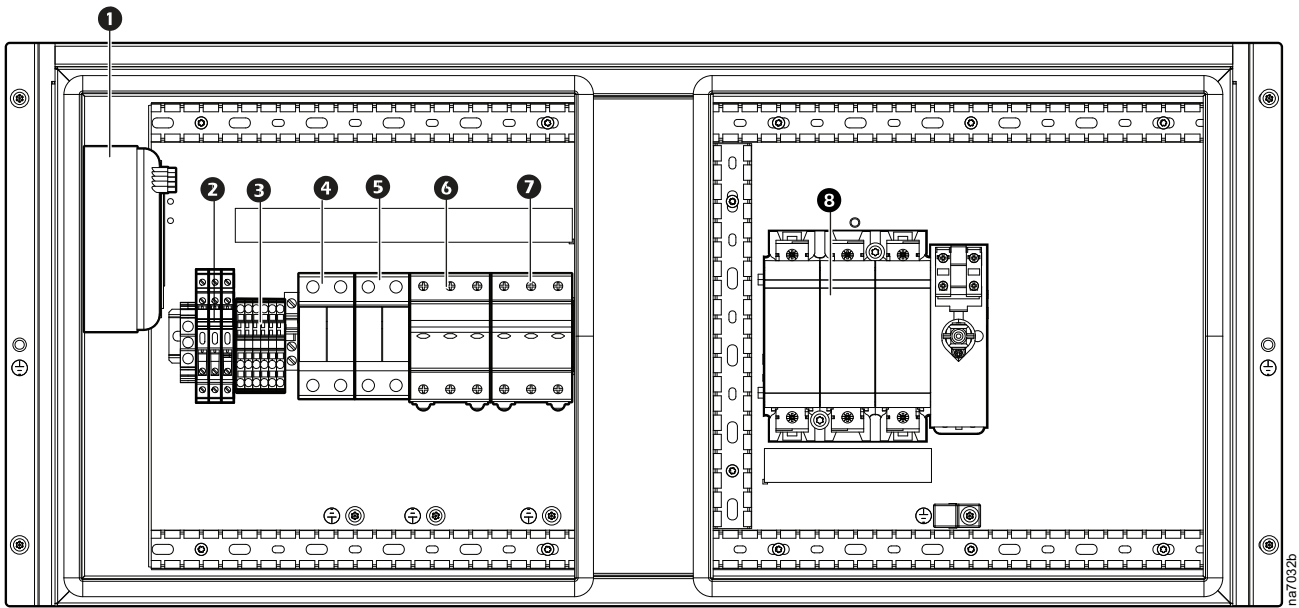
ACCU300D



na7035b

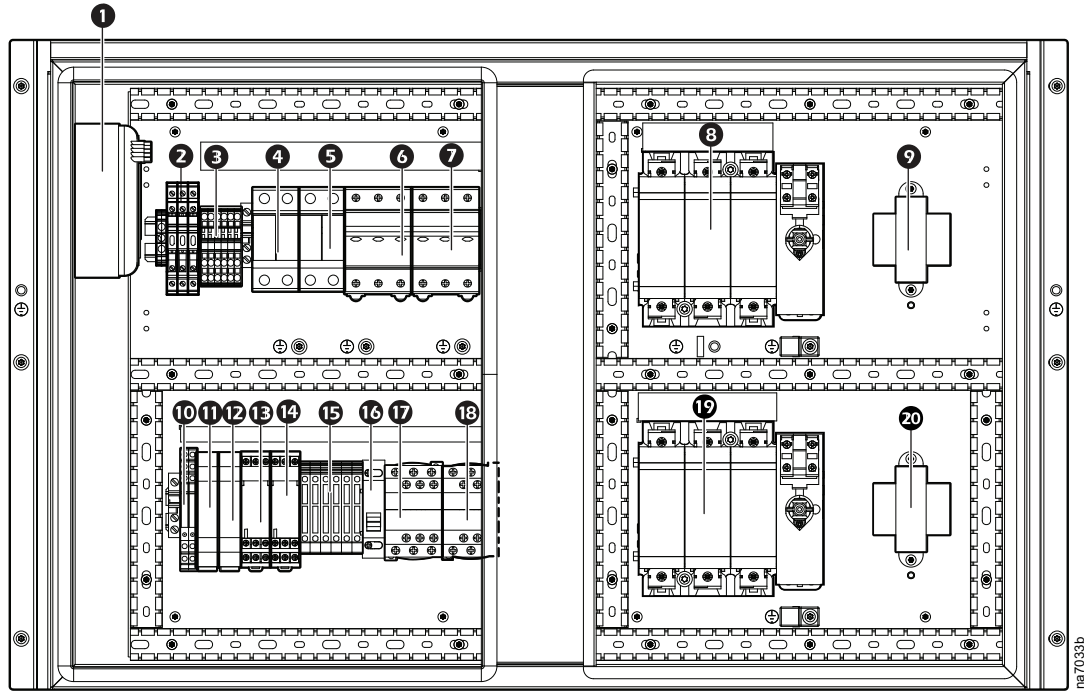
Item	Description	Item	Description
1	Low temperature kit fuse block	9	Supply B line monitor
2	Terminal block	10	Supply A contactor timer
3	Crank case heater switch	11	Supply B contactor timer
4	Fan motor switch	12	ATS circuit fuse
5	Compressor variable-speed drive switch	13	Supply line selector A/B
6	Power supply A main switch	14	Supply A contactor
7	Supply line selector relay	15	Supply B contactor
8	Supply A line monitor	16	Power supply B main switch

ACCU301 and ACCU302



Item	Description	Item	Description
1	Crank case heater power transformer	5	Crank case heater power transformer switch
2	Low temperature kit fuse block	6	Fan motor switch
3	Terminal block	7	Compressor variable-speed drive switch
4	Crank case heater switch	8	Main switch

ACCU301D and ACCU302D



na7033b

Item	Description	Item	Description
1	Crank case heater power transformer	11	Supply A line monitor
2	Low temperature kit fuse block	12	Supply B line monitor
3	Terminal block	13	Supply A contactor timer
4	Crank case heater switch	14	Supply B contactor timer
5	Crank case heater power transformer switch	15	ATS circuit fuse
6	Fan motor switch	16	Supply line selector A/B
7	Compressor variable-speed drive switch	17	Supply A contactor
8	Power supply A main switch	18	Supply B contactor
9	ATS supply A power transformer	19	Power supply B main switch
10	Supply line selector relay	20	ATS supply B power transformer

Performance Specifications

Cooling Capacity

Operating Conditions	Sensible Net Capacity – kW (BTU/h)	Energy Efficiency (W/W)
GB19413	16.3 (55,600)	4.0 AEER
ASHRAE 127 Class 3	25 (85,300)	3.2 SCOP
Maximum at 35°C (95°F) Return Air Temperature	27 (92,100)	—
Maximum at 40°C (104°F) Return Air Temperature	30 (102,400)	—

*If lower than the minimum load, the unit may cycle the compressor.

NOTE: Outdoor air temperature is 35°C (95°F) unless otherwise stated.

NOTE: Data is for evaporator fans, condenser fans, and compressors operating at maximum capacity.

NOTE: Refer to Unicalc for data at other operating conditions.

General Data

Indoor Units

Air System—Fan	
Fan Type	EC
Size – mm (in.)	220 (8.7)
Number of Fans	8
Air Volume – CMH (SCFM)	5440 (3200)
Fan Power – W (total)	850
Emergency Air Volume* – CMH (SCFM)*	6300 (3700)
Cooling Coil	
Face Area – m ² (ft ²)	0.51 (5.49)
Rows Deep	3
Filters—Washable (Standard)	
Quantity	2
Size – mm (in.)	238 x 933 (9.375 x 36.75)
Depth – mm (in.)	12.7 (0.5)
Efficiency	MERV 1
Filters—Pleated (Optional)	
Quantity	2
Size – mm (in.)	238 x 933 (9.375 x 36.75)
Depth – mm (in.)	51 (2)
Efficiency	MERV 8
Physical Data	
Height – mm (in.)	1991 (78.39)
Width – mm (in.)	300 (11.81)
Depth – mm (in.)	1095 (43.11)
Connection Sizes (Not Piping Sizes)	
Suction Piping	1 1/4 in. (12 UNF), 7/8 in. tube
Liquid Piping	1 in. (14 UNS), 1/2 in. tube
Condensate Drain	4.77 mm (3/16 in.) ID 6.35 mm (1/4 in.) OD
Humidifier Water Supply Line	1/4 in.
Humidification (ACRD301P only)	
Flush Cycle	Automatic
Capacity – kg/hr (lb/hr)	3 kg/hr (6.6 lb/hr)
Reheat—Electric (ACRD301P only)	
Capacity – kW (BTU/hr)	3 kW (10,200 BTU/hr) @ 220 V
Refrigerant	

Type	R410A
Standard Charge for ACRD300x and ACRD301x Models – kg (lb)	11.3 (24.9)
Standard Charge for ACRD306x and ACRD307x Models – kg (lb)	18.8 (43.0)
Standard Charge with ACAC75016/ACAC75017 Installed – kg (lb)	29.3 (64.6)

*Emergency air flow is available with dual fan power supplies and a humidity sensor.

Outdoor Units

Air System—Fan	
Fan Type	EC
Size – mm (in.)	710 (28.0)
Number of Fans	1
Cooling Coil	
Face Area – m ² (ft ²)	3.024 (32.55)
Rows Deep	3
Physical Data	
Height – mm (in.)	1555 (61.2)
Width – mm (in.)	1000 (39.4)
Depth – mm (in.)	1000 (39.4)
Connection Sizes (Not Piping Sizes)	
Gas Piping	7/8 in. ODF
Liquid Piping	1/2 in. ODF
Refrigerant Piping*	
Maximum Equivalent Length – m (ft)	120 (393)
Maximum Elevation** – m (ft)	30 (98)

*See the Installation Manual for more information.

**Condensing units may be level with or higher than the indoor unit.



See the *Installation Manual* for more information on refrigerant piping.

Electrical Data

Indoor Units

Model	MCA	MOP	FLA
ACRD301S	20.3* / 9.3**	25.0* / 15.0**	16.5–13.8* / 8.0–6.7**
ACRD301P	41.75	45.0	28.5

*Data for units with 100–120-V~ power supplies.

**Data for units with 200–240-V~ power supplies.

Outdoor Units

Model	MCA	MOP	FLA
ACCU300	50.05	80	n/a
ACCU300D	50.05	80	n/a
ACCU301	23.1	40	n/a
ACCU301D	23.1	40	n/a
ACCU302	n/a	n/a	15.8
ACCU302D	n/a	n/a	15.8

Sound Data

Indoor Units—All Units

Fan Speed %	Airflow – l/s (SCFM)	Weighted Sound Pressure dBA* at Frequency – Hz re: 20µPa							Lp Sound Pressure – dB re: 20µPa
		125	250	500	1000	2000	4000	8000	dBA*
30	430 (900)	36.5	36.1	44.7	46.3	40.3	35.8	22.9	49.8
40	610 (1300)	36.2	42.1	52.6	51.2	47.7	45.9	34.3	56.4
50	780 (1650)	30.2	48.8	54.7	61.5	53.1	52.0	42.8	63.4
60	940 (2000)	32.9	55.2	56.0	62.3	57.7	56.2	48.3	65.4
70	1110 (2350)	33.8	60.3	59.3	65.7	62.1	59.5	52.9	69.2
80	1240 (2700)	34.6	61.8	63.5	71.9	64.1	63.0	56.8	73.9
90	1390 (2950)	35.1	54.3	67.9	72.3	68.1	65.9	60.1	75.4
100	1510 (3200)	43.1	53.8	70.0	73.3	70.1	68.9	62.9	77.1
130**	1750 (3700)	44.8	55.1	77.5	74.4	74.1	70.3	63.6	80.9

*Weighted Sound Pressure (dBA) data is measured in a semi-anechoic room in accordance with ISO 3745, at 1.8-m (6.0-ft) distance from the unit and 1-m (3.3-ft) height.

**130% speed is only for the emergency free-cooling option. When the return temperature rises above the set temperature, the emergency free-cooling will allow the fans to run at 130% and provide more airflow. When it is planned to have a unit operate at 130% speed, the unit must have two power supplies and the humidity sensor.

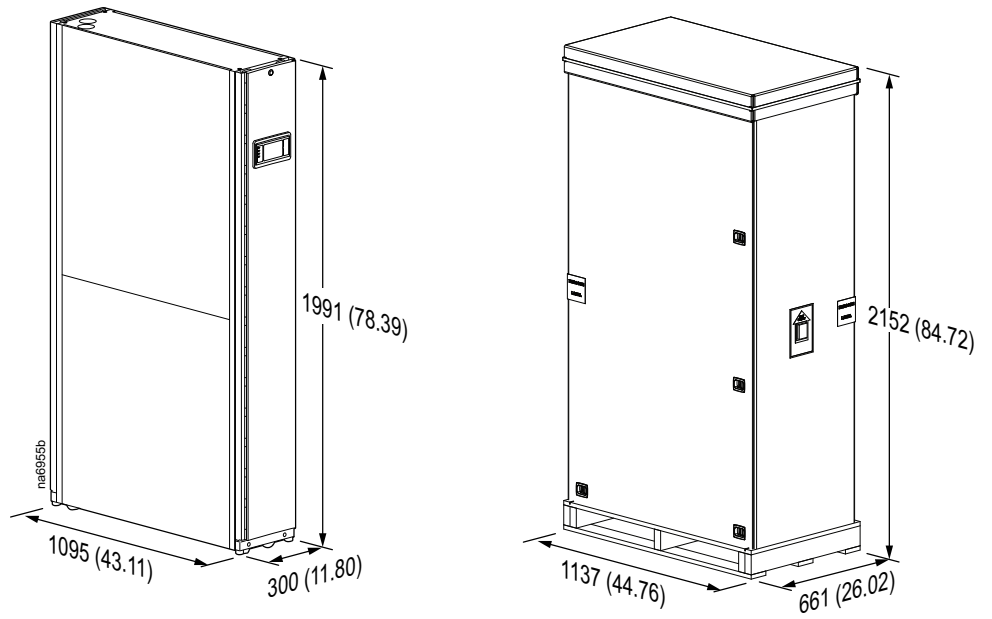
Outdoor Units—All Units

Fan Speed %	Compressor RPM	Acoustic Hood	Weighted Sound Pressure dBA* at Frequency – Hz re: 20µPa							Lp Sound Pressure – dB re: 20µPa
			125	250	500	1000	2000	4000	8000	dBA*
70	5400	Without	39.6	56.3	54.8	56.6	55.8	55.5	47.2	63.0
100	6000	Without	41.7	54.8	55.4	56.5	56.6	57.9	48.4	63.6
70	5400	With	38.3	52.7	52.3	54.3	51.2	50.1	41.1	59.5
100	6000	With	41.4	53.6	54.5	55.8	53.2	53.6	43.3	61.4

*Weighted Sound Pressure (dBA) data is measured in a semi-anechoic room in accordance with ISO 3745, at 2.0-m (6.6-ft) distance from the unit and 1-m (3.3-ft) height.

Dimensions and Weights

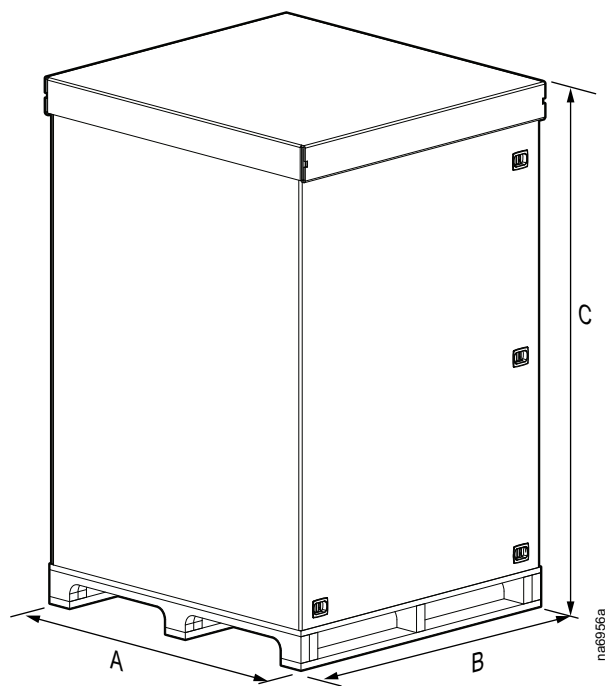
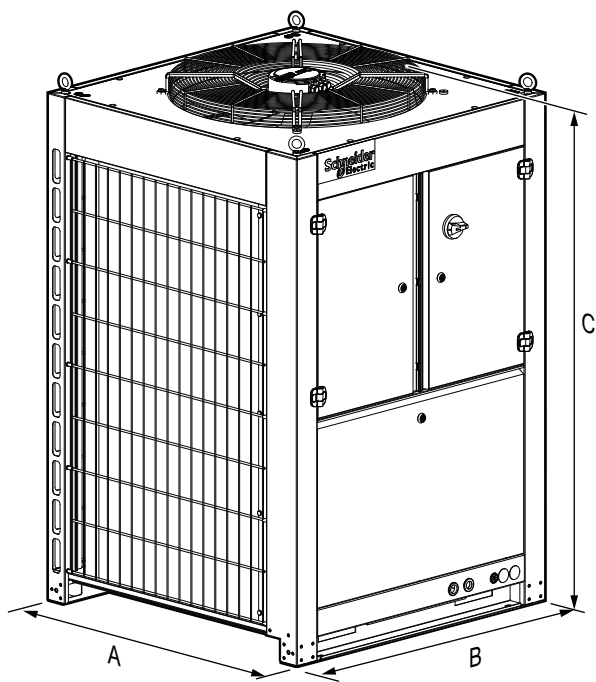
Indoor Unit



NOTE: Image is an example only to show dimensions of unit: your unit may differ.

SKU	Net Weight – kg (lb)	Shipping Weight – kg (lb)
ACRD301S	160.0 (352.7)	200.0 (440.9)
ACRD301P	173.5 (382.5)	213.5 (470.7)

Outdoor Unit



SKU	Unit Dimensions – mm (in.)			Shipping Dimensions – mm (in.)			Net Weight – kg (lb)	Shipping Weight – kg (lb)
	A	B	C	A	B	C		
ACCU300	1000 (39.4)	1000 (39.4)	1555 (61.2)	1136 (44.7)	1085 (42.7)	1745 (68.7)	267 (588.6)	297 (654.8)
ACCU300D	1000 (39.4)	1000 (39.4)	1555 (61.2)	1136 (44.7)	1085 (42.7)	1745 (68.7)	272 (600.0)	305 (672.4)
ACCU301	1000 (39.4)	1000 (39.4)	1555 (61.2)	1136 (44.7)	1085 (42.7)	1745 (68.7)	267 (588.6)	297 (654.8)
ACCU301D	1000 (39.4)	1000 (39.4)	1555 (61.2)	1136 (44.7)	1085 (42.7)	1745 (68.7)	272 (600.0)	305 (672.4)
ACCU302	1000 (39.4)	1000 (39.4)	1555 (61.2)	1136 (44.7)	1085 (42.7)	1745 (68.7)	273 (601.9)	303 (668.0)
ACCU302D	1000 (39.4)	1000 (39.4)	1555 (61.2)	1136 (44.7)	1085 (42.7)	1745 (68.7)	278 (612.9)	308 (679.0)

Service Access

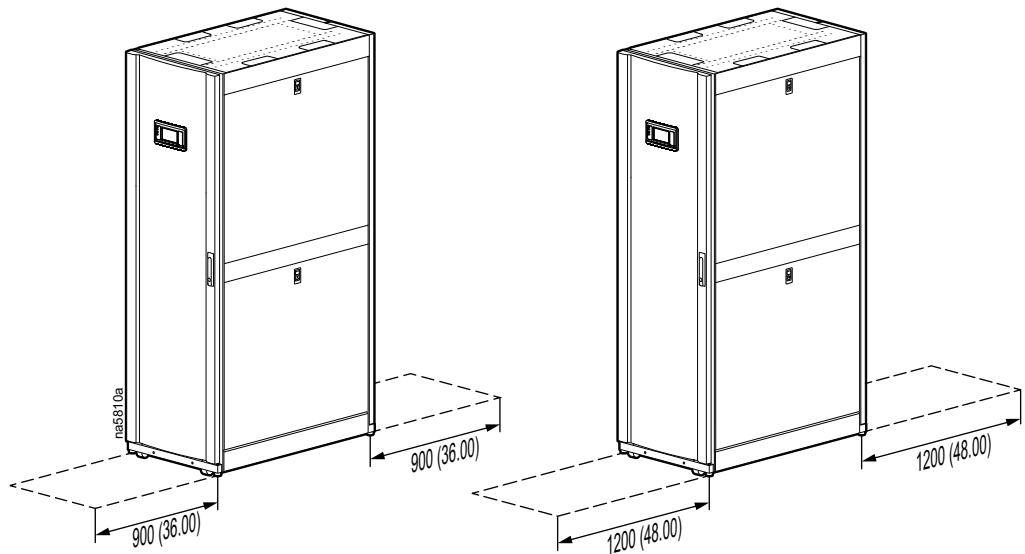
Indoor Unit

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

Most of the cooling components in the equipment can be replaced while the unit is installed in row and without the use of heavy lift equipment or a welding torch. However, if it is necessary to remove the unit for repair, use the casters on the equipment to remove it from the row. An area of minimum 1200 mm (48 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 further service access requirements.

NOTE: Image is an example only: your unit may differ.



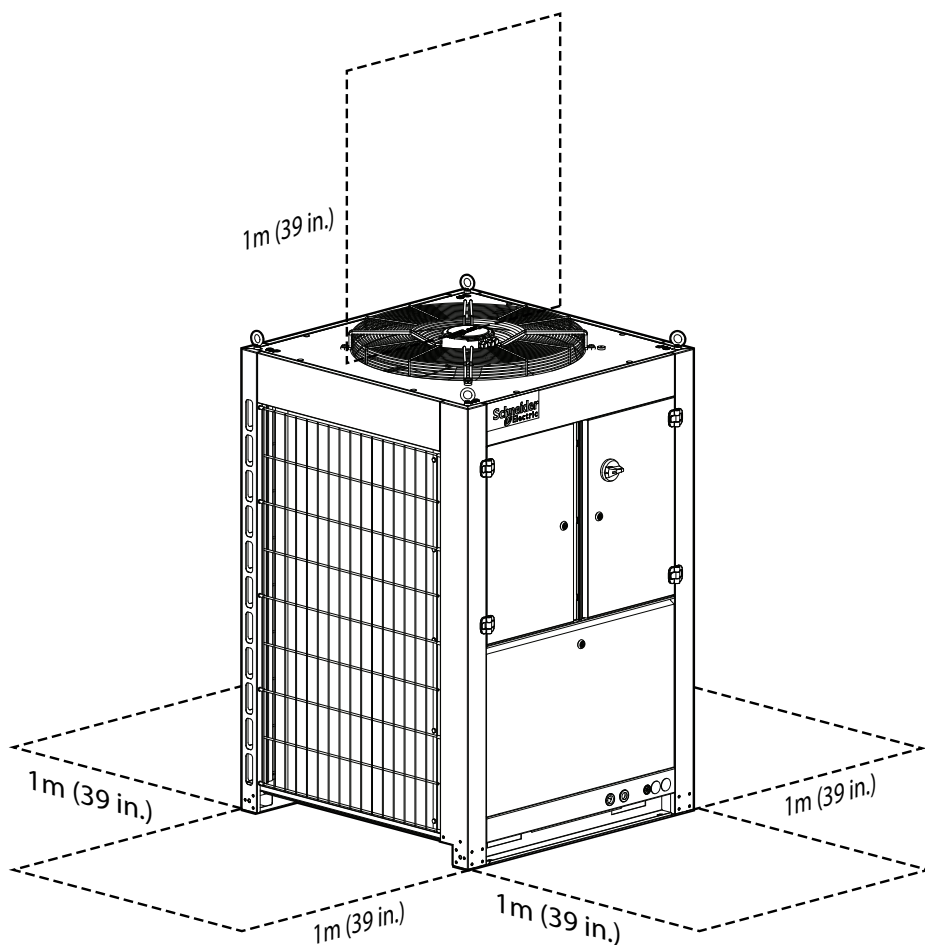
SERVICE ACCESS REQUIRED
WHEN EQUIPMENT IS
INSIDE THE ROW

FREE SPACE NEEDED TO
MOVE EQUIPMENT
OUTSIDE THE ROW

NOTE: Dimensions are shown in mm (in.).

Outdoor Unit

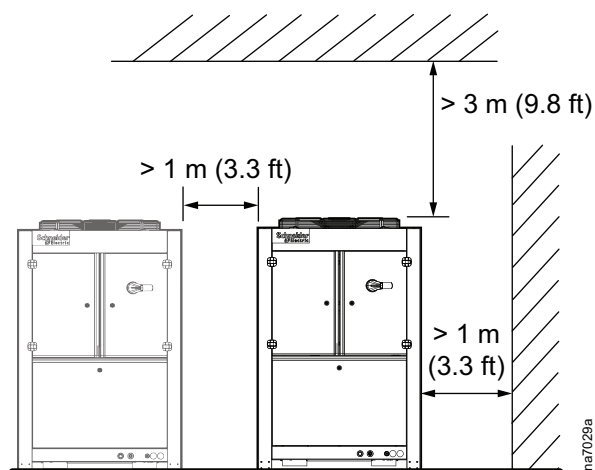
A minimum of 1 m (39 in.) of clear space on all sides of the equipment is recommended for service access.



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Airflow Clearance

The following clearances are required for proper airflow around the outdoor unit.

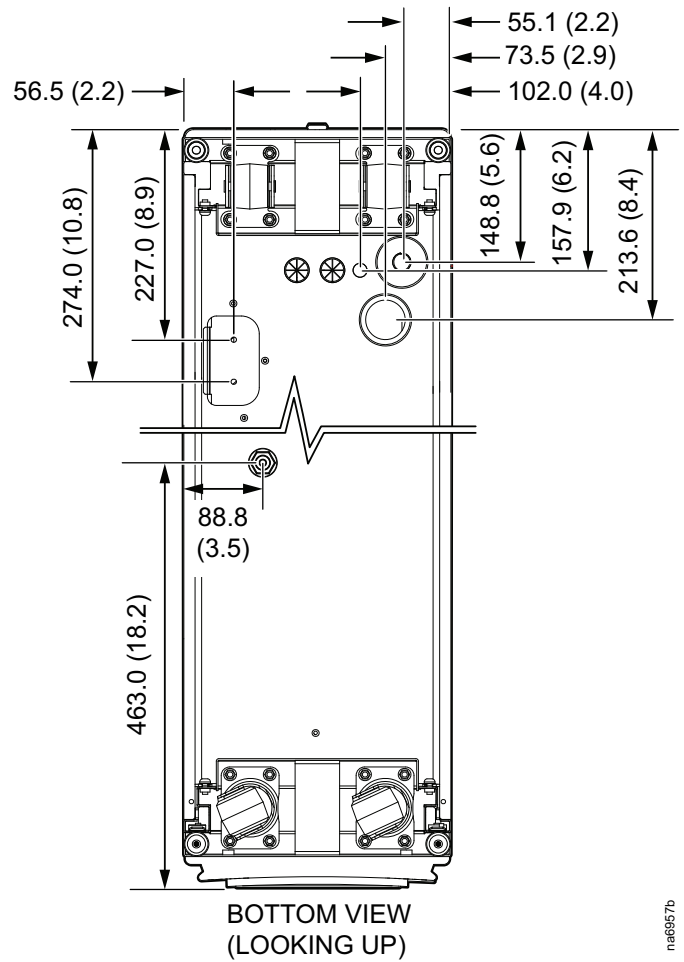
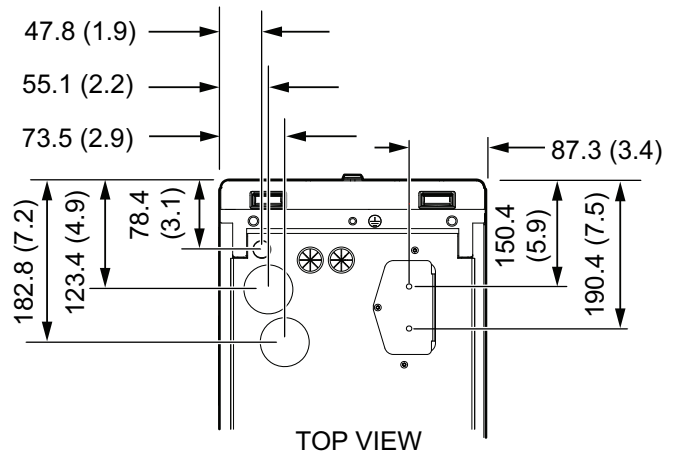
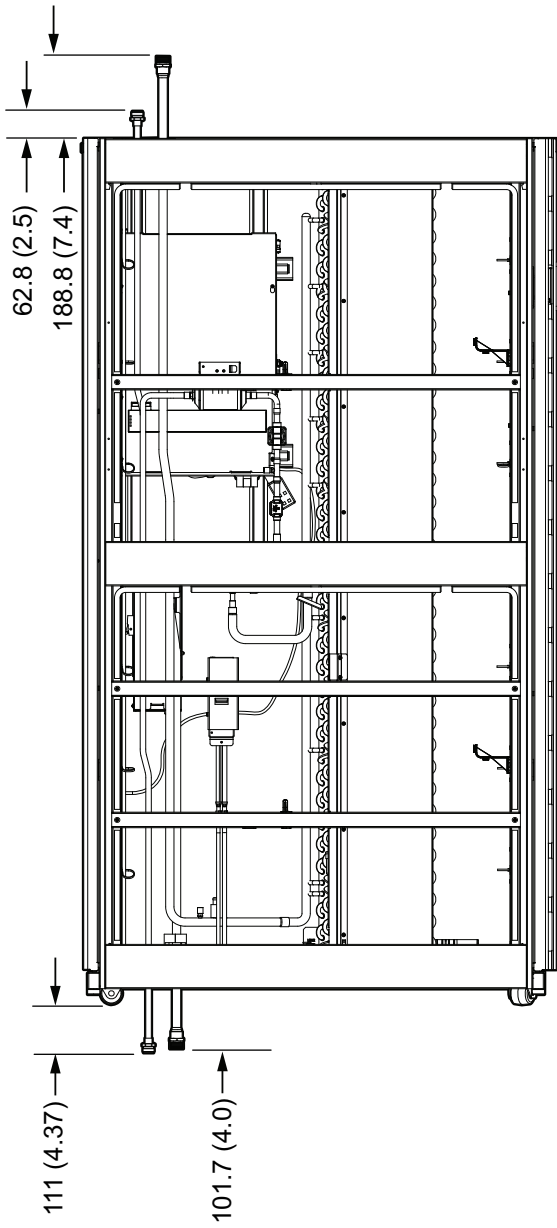


na7029a

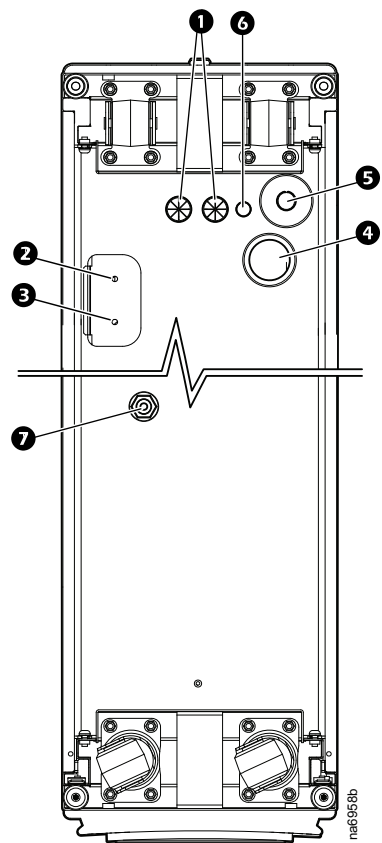
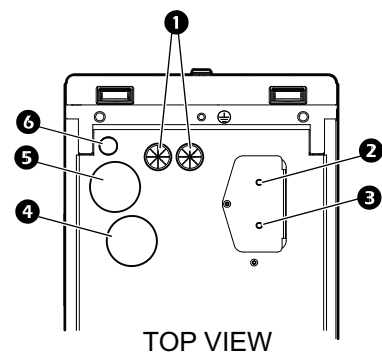
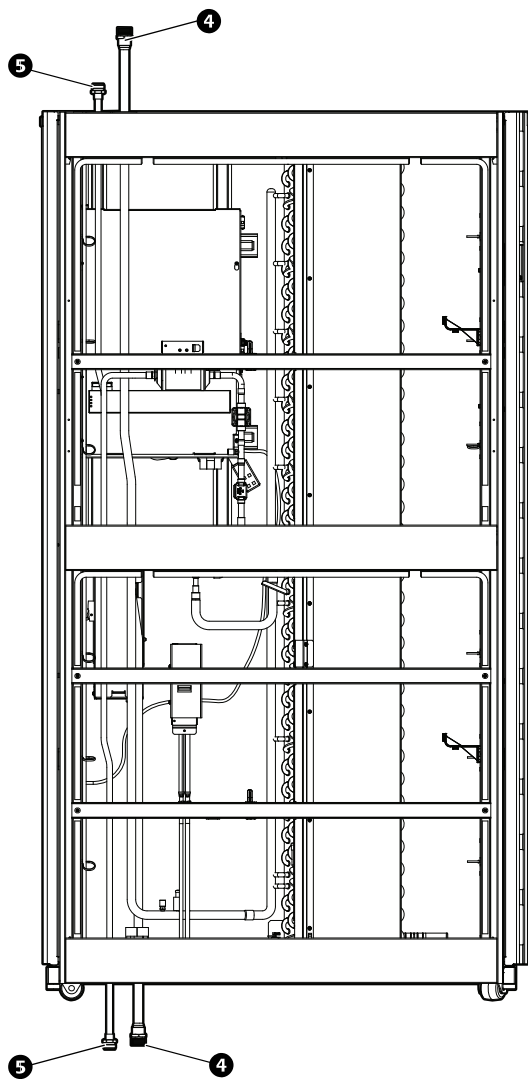
Piping and Electrical Access Locations

Indoor Unit

ACRD301S



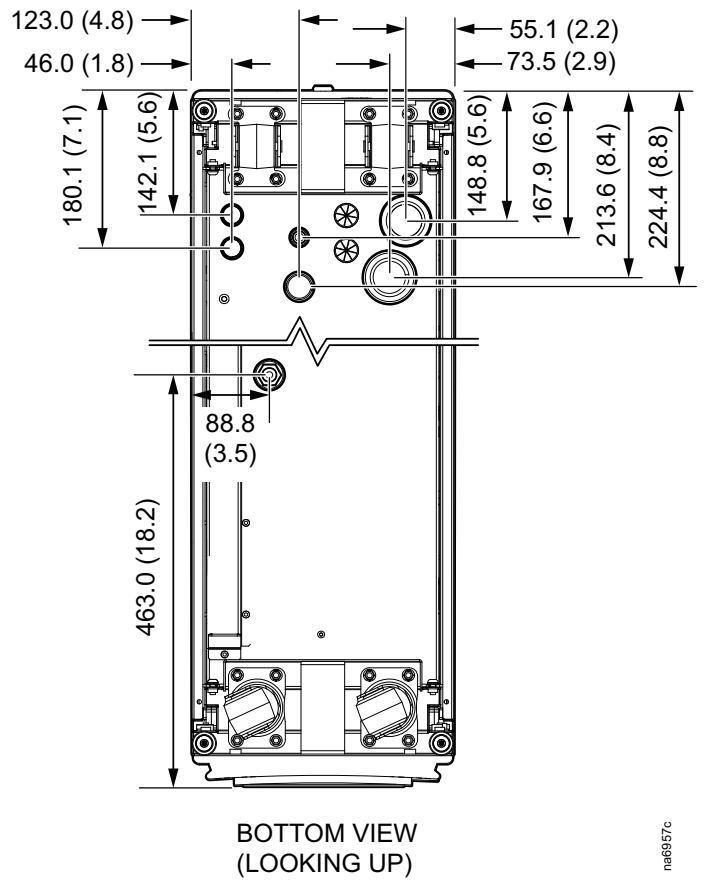
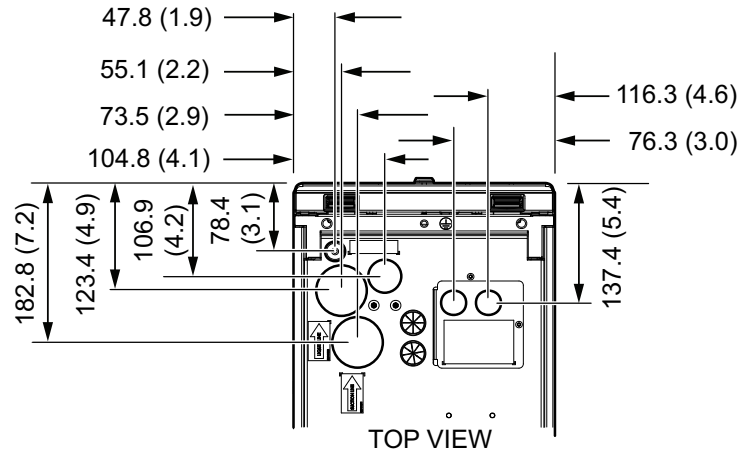
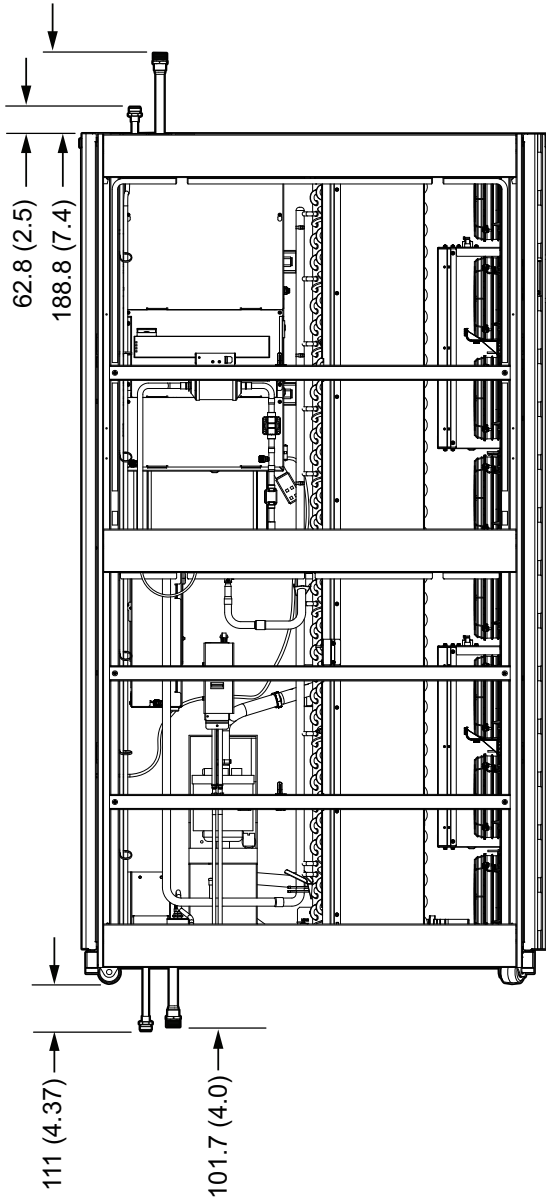
na6957b



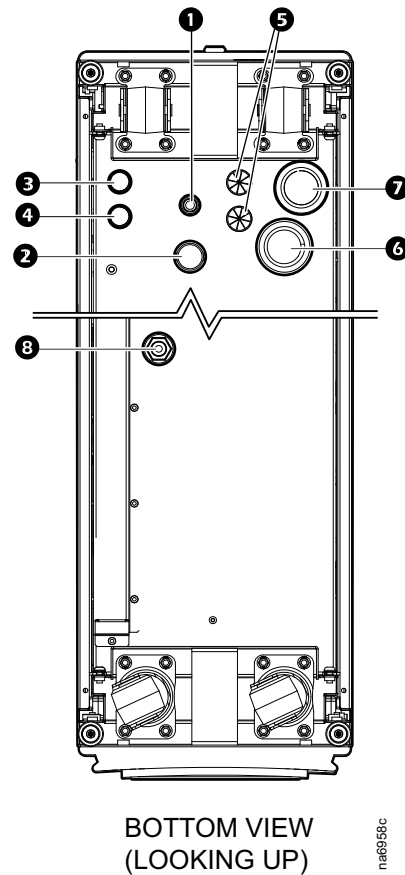
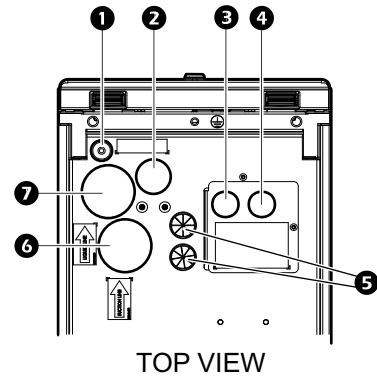
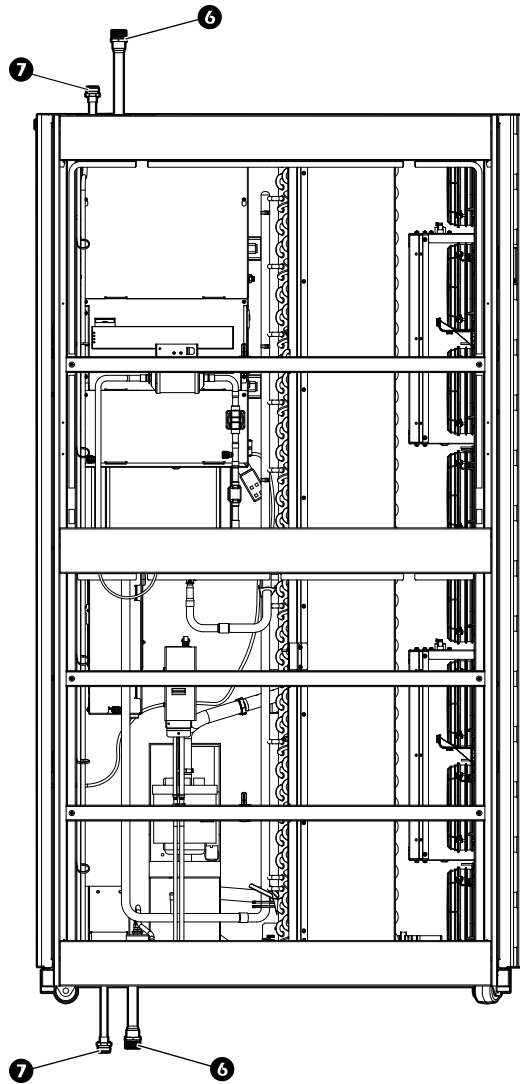
Item Description

- ❶ Low voltage input wiring inlets
- ❷ Power supply 1 inlet
- ❸ Power supply 2 inlet
- ❹ Suction line connection—1 1/4 in. (12 UNF)
- ❺ Liquid line connection—1 in. (14 UNS)
- ❻ Condensate drain line outlet
- ❼ Gravity drain connection

ACRD301P



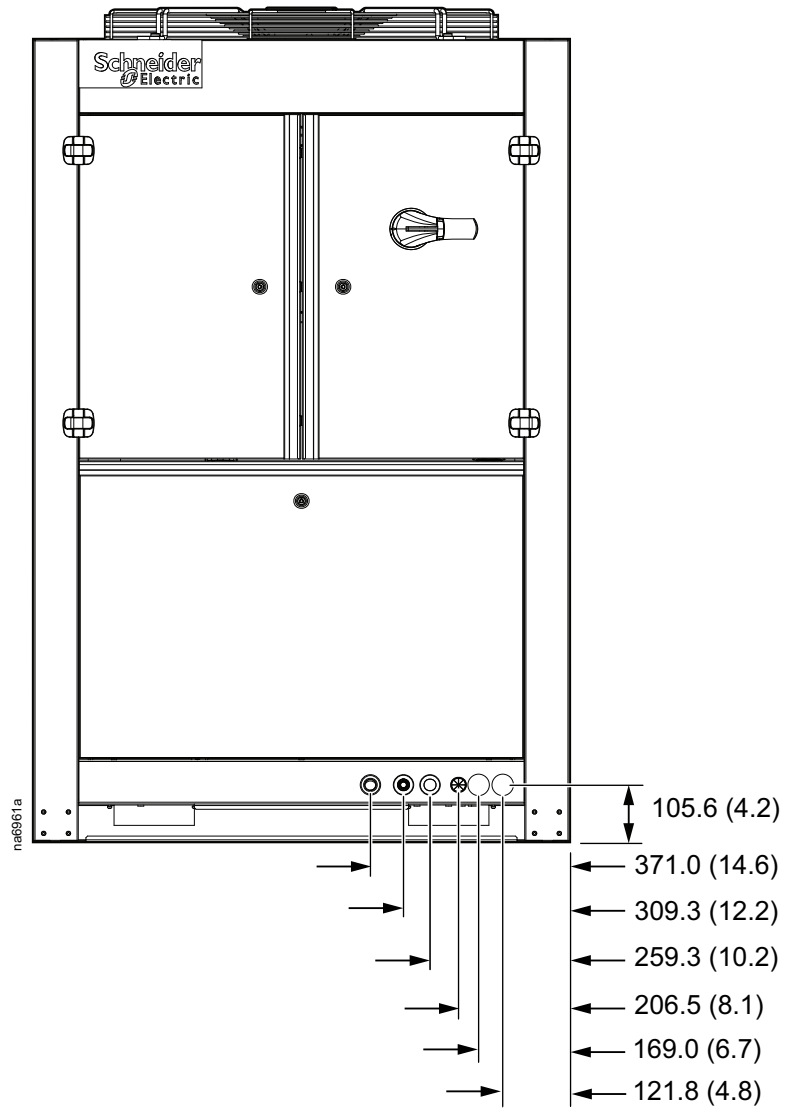
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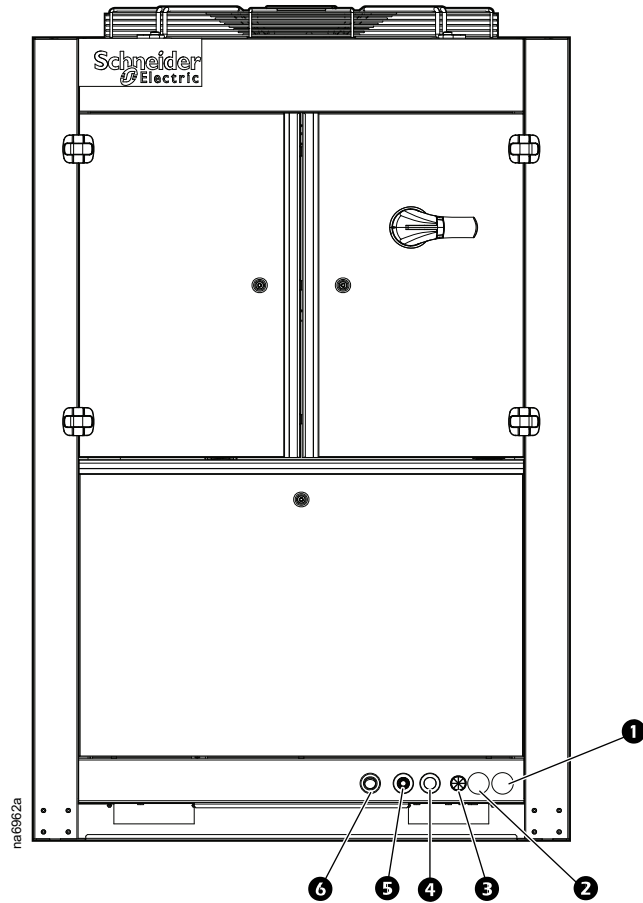


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Item	Description
1	Condensate drain line outlet
2	Humidifier water supply inlet connection—1/4-in. NPT or 1/4-in. BSPT
3	Power supply 1 inlet
4	Power supply 2 inlet
5	Low voltage input wiring inlets
6	Suction line connection—1 1/4 in. (12 UNF)
7	Liquid line connection—1 in. (14 UNS)
8	Gravity drain connection

Outdoor Unit



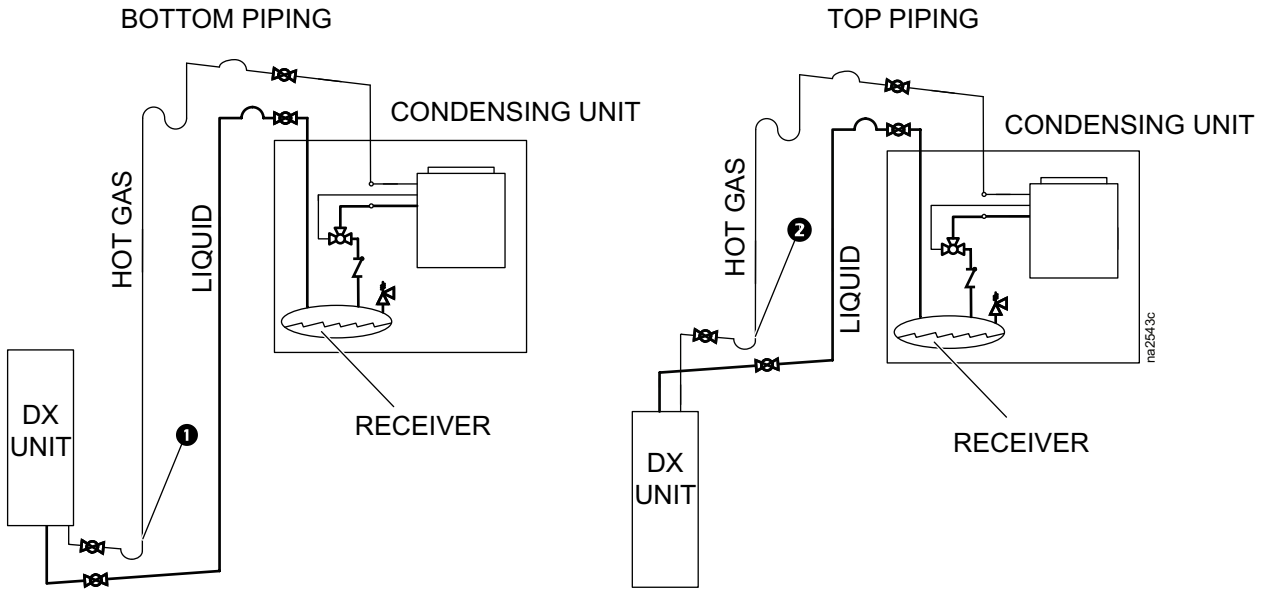





NOTE: Dimensions are shown in mm (in.).





Item	Description
①	Power supply 1 inlet
②	Power supply 2 inlet
③	Communication cable inlet
④	Liquid receiver connection outlet
⑤	Liquid line connection inlet
⑥	Suction line connection inlet

Refrigeration Piping Diagram

ACRD301P, ACRD301S



Item	Description
①	Pitch in direction of refrigerant flow; 4 mm per m (1/2-in. per 10 ft)
②	Reduction of piping diameter for vertical piping run (if necessary)
	Shut-off valve
	Head pressure control valve
	Pressure relief valve

Item	Description
	Check valve
	P-trap
	S-trap
	Inverted P-trap

Facility Planning

Indoor Units

Model	ACRD301S	ACRD301P
Input Voltage	100–120 V / 200–240 V	200–240 V
Phases	1	1
Frequency	50/60 Hz	50/60 Hz
Cabinet Width – mm (in.)	300 (11.81)	300 (11.81)
Cabinet Height – mm (in.)	1991 (78.39)	1991 (78.39)
Cabinet Depth – mm (in.)	1087 (42.80)	1087 (42.80)
Net Weight – kg (lb)	160 (352.7)	173.5 (382.5)
Power Connection Type	Hardwired	Hardwired
Full Load Amps (FLA)*	16.5–13.8 / 8.0–6.7	
Minimum Circuit Ampacity (MCA)*	20.3 / 9.3	N/A
Maximum Overcurrent Protection (MOP)*	25.0 / 15.0	N/A
Features/Options		
Fan Type	Electronically commutated	Electronically commutated
Maximum Airflow – l/s (CFM)	5437 m ³ /h (3200 CFM)	5437 m ³ /h (3200 CFM)
Fan Control	Variable speed	Variable speed
Number of Fans	8	8
Hot Swappable Fans	Yes	Yes
Hot Aisle Containment Compatible	Yes	Yes
Rack Aisle Containment Compatible	Yes	Yes
Refrigerant Type	R410A	R410A
Network Management Card	Included	Included
Standard Filter Type	0.5-in. washable	0.5-in. washable
Standard Filter Efficiency	MERV 1	MERV 1
Optional Filter Type	2-in. pleated	2-in. pleated
Optional Filter Efficiency	MERV 8	MERV 8
Drainage System	Gravity drain / Condensate pump	Gravity drain / Condensate pump
Number of Rack Inlet Temperature Sensors	1	1
Piping Connections	Top or bottom	Top or bottom
Electrical Connections	Top or bottom	Top or bottom
Cable Type Water Detector	Optional	Optional
Electric Reheat	No	
Humidification	No	

*Cells marked N/A indicate that this information is not required because of regional differences in electrical codes.

Outdoor Units

Model	ACCU300	ACCU300D	ACCU301	ACCU301D	ACCU302	ACCU302D
Input Voltage	200–240 V	200–240 V	380–415 V	380–415 V	460–480 V	460–480 V
Phases	3	3	3	3	3	3
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Cabinet Width – mm (in.)	1000 (39.4)	1000 (39.4)	1000 (39.4)	1000 (39.4)	1000 (39.4)	1000 (39.4)
Cabinet Height – mm (in.)	1555 (61.2)	1555 (61.2)	1555 (61.2)	1555 (61.2)	1555 (61.2)	1555 (61.2)
Cabinet Depth – mm (in.)	1000 (39.4)	1000 (39.4)	1000 (39.4)	1000 (39.4)	1000 (39.4)	1000 (39.4)
Net Weight – kg (lb)	297 (654.8)	305 (672.4)	297 (654.8)	305 (672.4)	303 (668.0)	308 (679.0)
Power Connection Type	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired
Full Load Amps (FLA)*	n/a	n/a	n/a	n/a	15.8	15.8
Minimum Circuit Ampacity (MCA)*	50.05	50.05	23.1	23.1	n/a	n/a
Maximum Overcurrent Protection (MOP)*	80	80	40	40	n/a	n/a
Power Connection Quantity	1	2	1	2	1	2
Features/Options						
Fan Type	Electronically commutated	Electronically commutated	Electronically commutated	Electronically commutated	Electronically commutated	Electronically commutated
Fan Control	RS485 Modbus-RTU	RS485 Modbus-RTU	RS485 Modbus-RTU	RS485 Modbus-RTU	RS485 Modbus-RTU	RS485 Modbus-RTU
Number of Fans	1	1	1	1	1	1
Hot Swappable Fans	No	No	No	No	No	No
Refrigerant Type	R410A	R410A	R410A	R410A	R410A	R410A
Compressor Type	Variable speed	Variable speed	Variable speed	Variable speed	Variable speed	Variable speed

*Cells marked N/A indicate that this information is not required because of regional differences in electrical codes.

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