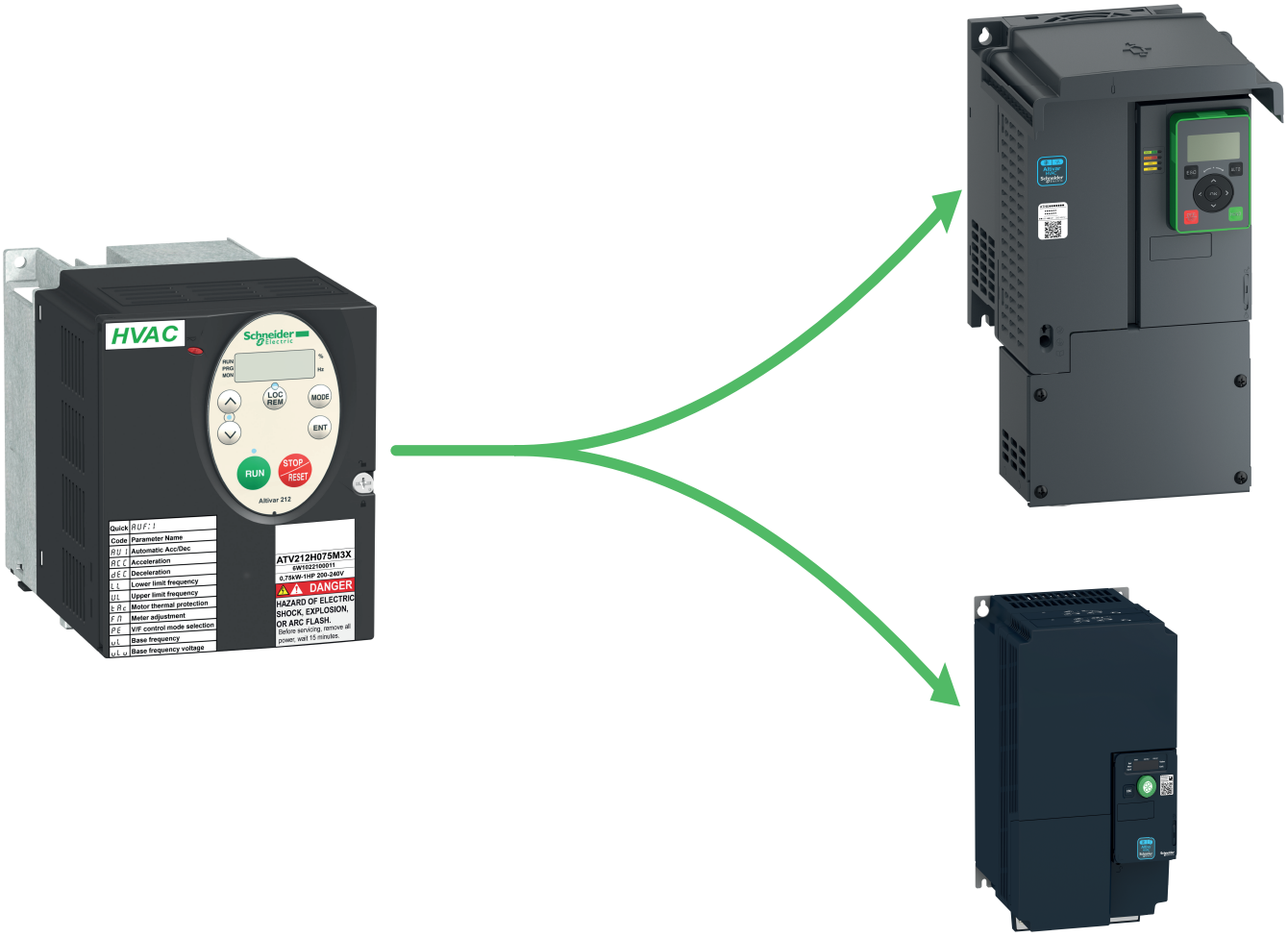
Altivar HVAC ATH600–ATH200

Variable Speed Drives for Asynchronous and Synchronous Motors for HVAC Applications

ATV212 to ATH600–ATH200 Substitution Manual

JPS89284.01

08/2026



www.se.com

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The information provided in this document contains general descriptions, technical characteristics and/or recommendations related to products/solutions.

This document is not intended as a substitute for a detailed study or operational and site-specific development or schematic plan. It is not to be used for determining suitability or reliability of the products/solutions for specific user applications. It is the duty of any such user to perform or have any professional expert of its choice (integrator, specifier or the like) perform the appropriate and comprehensive risk analysis, evaluation and testing of the products/solutions with respect to the relevant specific application or use thereof.

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Safety Information

Important Information

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

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only 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 and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

Qualification of Personnel

Only appropriately trained persons who are familiar with and understand the contents of this manual and all other pertinent product documentation are authorized to work on and with this product. In addition, these persons must have received safety training to recognize and avoid hazards involved. These persons must have sufficient technical training, knowledge and experience and be able to foresee and detect potential hazards that may be caused by using the product, by changing the settings and by the mechanical, electrical and electronic equipment of the entire system in which the product is used. All persons working on and with the product must be fully familiar with all applicable standards, directives, and accident prevention regulations when performing such work.

Intended Use

This product is intended for industrial use according to this manual.

The product may only be used in compliance with all applicable safety standard and local regulations and directives, the specified requirements and the technical data. The product must be installed outside the hazardous ATEX zone. Prior to using the product, you must perform a risk assessment in view of the planned application. Based on the results, the appropriate safety measures must be implemented. Since the product is used as a component in an entire system, you must ensure the safety of persons by means of the design of this entire system (for example, machine design). Any use other than the use explicitly permitted is prohibited and can result in hazards.

About The Document

Document Scope

The document provides information about:

- Substitution of ATV212 by ATH600.
- Substitution of ATV212 by ATH200.

This information ranges from product selection according to the existing installation, mechanical and electrical compatibility, wiring information, parameter migration, to commissioning readiness.

Validity Note

Original instructions and information given in the present document have been written in English (before optional translation).

This documentation is valid for the Altivar HVAC ATH600 drives: ATH630 and ATH650.

The characteristics of the products described in this document are intended to match the characteristics that are available on www.se.com. As part of our corporate strategy for constant improvement, we may revise the content over time to enhance clarity and accuracy. If you see a difference between the characteristics in this document and the characteristics on www.se.com, consider www.se.com to contain the latest information.

Product Related Information

Read and understand these instructions before performing any procedure with this device.

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Only appropriately trained persons who are familiar with and fully understand the contents of the present manual and all other pertinent product documentation and who have received all necessary training to recognize and avoid hazards involved are authorized to work on and with this device system.
- Installation, adjustment, repair and maintenance must be performed by qualified personnel.
- Verify compliance with all local and national electrical code requirements as well as all other applicable regulations with respect to grounding of all equipment.
- Only use properly rated, electrically insulated tools and measuring equipment.
- Do not touch unshielded components or terminals with voltage present.
- Prior to performing any type of work on the device system, block the motor shaft to prevent rotation.
- Insulate both ends of unused conductors of the motor cable.
- Do not short across the DC bus terminals or the DC bus capacitors or the braking resistor terminals.

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

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Before performing work on the device system:

- Disconnect all power, including external control power that may be present. Take into account that the circuit breaker or main switch does not de-energize all circuits.
- Place a “Do Not Turn On” label on all power switches related to the device system.
- Lock all power switches in the open position.
- Wait 15 minutes to allow the DC bus capacitors to discharge.
- Verify the absence of hazardous voltage. (1)

Before applying voltage to the device system:

- Verify that the work has been completed and that the entire installation cannot cause hazards.
- If the mains input terminals and the motor output terminals have been grounded and short-circuited, remove the ground and the short circuits on the mains input terminals and the motor output terminals.
- Verify proper grounding of all equipment.
- Verify that all protective equipment such as covers, doors, grids is installed and/or closed.

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

(1) Refer to the Verify the Absence of Hazardous Voltage section in the installation manual of the product.

Damaged products or accessories may cause electric shock or unanticipated equipment operation.

⚠⚠DANGER

ELECTRIC SHOCK OR UNANTICIPATED EQUIPMENT OPERATION

Do not use damaged products or accessories.

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

Contact your local Schneider Electric sales office if you detect any damage whatsoever.

This equipment has been designed to operate outside of any hazardous location. Only install this equipment in zones known to be free of a hazardous atmosphere.

⚠DANGER

POTENTIAL FOR EXPLOSION

Install and use this equipment in non-hazardous locations only.

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

Your application consists of a whole range of different interrelated mechanical, electrical, and electronic components, the device being just one part of the application. The device by itself is neither intended to nor capable of providing the entire functionality to meet all safety-related requirements that apply to your application. Depending on the application and the corresponding risk assessment to be conducted by you, a whole variety of additional equipment is required such as, but not limited to, external encoders, external brakes, external monitoring devices, guards, etc.
As a designer/manufacturer of machines, you must be familiar with and observe all standards that apply to your machine. You must conduct a risk assessment and determine the appropriate Performance Level (PL) and/or Safety Integrity Level (SIL) and design and build your machine in compliance with all applicable standards. In doing so, you must consider the interrelation of all components of the machine. In addition, you must provide instructions for use that enable the user of your machine to perform any type of work on and with the machine such as operation and maintenance in a safe manner.
The present document assumes that you are fully aware of all normative standards and requirements that apply to your application. Since the device cannot provide all safety-related functionality for your entire application, you must ensure that the required Performance Level and/or Safety Integrity Level is reached by installing all necessary additional equipment.

⚠WARNING

INSUFFICIENT PERFORMANCE LEVEL/SAFETY INTEGRITY LEVEL AND/OR UNINTENDED EQUIPMENT OPERATION

- Conduct a risk assessment according to EN ISO 12100 and all other standards that apply to your application.
- Use redundant components and/or control paths for all critical control functions identified in your risk assessment.
- Implement all monitoring functions required to avoid any type of hazard identified in your risk assessment, for example, slipping or falling loads.
- Verify that the service life of all individual components used in your application is sufficient for the intended service life of your overall application.
- Perform extensive commissioning tests for all potential error situations to verify the effectiveness of the safety-related functions and monitoring functions implemented, for example, but not limited to, speed monitoring by means of encoders, short circuit monitoring for all connected equipment, correct operation of brakes and guards.
- Perform extensive commissioning tests for all potential error situations to verify that the load can be brought to a safe stop under all conditions.

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

Product may perform unexpected movements because of incorrect wiring, incorrect settings, incorrect data or other errors.

⚠WARNING

UNANTICIPATED EQUIPMENT OPERATION

- Carefully install the wiring in accordance with the EMC requirements.
- Do not operate the product with unknown or unsuitable settings or data.
- Perform a comprehensive commissioning test.

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

⚠WARNING

LOSS OF CONTROL

- The designer of any control scheme must consider the potential failure modes of control paths and, for critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop, overtravel stop, power outage and restart.
- Separate or redundant control paths must be provided for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or failures of the link.
- Observe all accident prevention regulations and local safety guidelines (1).
- Each implementation of the product must be individually and thoroughly tested for proper operation before being placed into service.

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

(1) For USA: Additional information, refer to NEMA ICS 1.1 (latest edition), Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control and to NEMA ICS 7.1 (latest edition), Safety Standards for Construction and Guide for Selection, Installation and Operation of Adjustable-Speed Drive Systems.

The temperature of the products described in this manual may exceed 80°C (176°F) during operation.

⚠WARNING

HOT SURFACES

- Ensure that any contact with hot surfaces is avoided.
- Do not allow flammable or heat-sensitive parts in the immediate vicinity of hot surfaces.
- Verify that the product has sufficiently cooled down before handling it.
- Verify that the heat dissipation is sufficient by performing a test run under maximum load conditions.

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

Machines, controllers, and related equipment are usually integrated into networks. Unauthorized persons and malware may gain access to the machine as well as to other devices on the network/fieldbus of the machine and connected networks via insufficiently secure access to software and networks.

⚠WARNING

UNAUTHORIZED ACCESS TO THE MACHINE VIA SOFTWARE AND NETWORKS

- In your hazard and risk analysis, consider all hazards that result from access to and operation on the network/fieldbus and develop an appropriate cybersecurity concept.
- Verify that the hardware infrastructure and the software infrastructure into which the machine is integrated as well as all organizational measures and rules covering access to this infrastructure consider the results of the hazard and risk analysis and are implemented according to best practices and standards covering IT security and cybersecurity (such as: ISO/IEC 27000 series, Common Criteria for Information Technology Security Evaluation, ISO/ IEC 15408, IEC 62351, ISA/IEC 62443, NIST Cybersecurity Framework, Information Security Forum - Standard of Good Practice for Information Security, SE recommended Cybersecurity Best Practices*).
- Verify the effectiveness of your IT security and cybersecurity systems using appropriate, proven methods.

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

(*) : SE Recommended Cybersecurity Best Practices can be downloaded on SE.com.

⚠WARNING

LOSS OF CONTROL

Perform a comprehensive commissioning test to verify that communication monitoring properly detects communication interruptions.

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

NOTICE

DESTRUCTION DUE TO INCORRECT MAINS VOLTAGE

Before switching on and configuring the product, verify that it is approved for the mains voltage.

Failure to follow these instructions can result in equipment damage.

General Cybersecurity Information

In recent years, the growing number of networked machines and production plants has seen a corresponding increase in the potential for cyber threats, such as unauthorized access, data breaches, and operational disruptions. You must, therefore, consider all possible cybersecurity measures to help protect assets and systems against such threats.

To help keep your Schneider Electric products secure and protected, it is in your best interest to implement the cybersecurity best practices as described in the Cybersecurity Best Practices document.

Schneider Electric provides additional information and assistance:

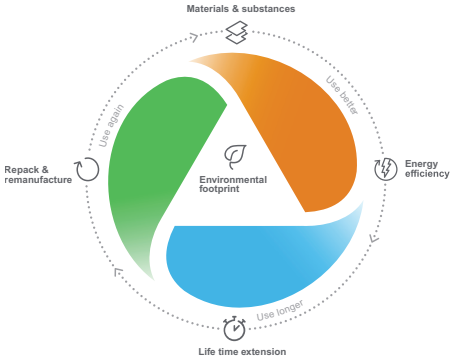
- Subscribe to the Schneider Electric security newsletter.
- Visit the Cybersecurity Support Portal web page to:
  - Find Security Notifications.
  - Report vulnerabilities and incidents.
- Visit the Schneider Electric Cybersecurity and Data Protection Posture web page to:
  - Access the cybersecurity posture.
  - Learn more about cybersecurity in the cybersecurity academy.
  - Explore the cybersecurity services from Schneider Electric.

Environmental Data

The Environmental Data Program is a framework for how we measure, categorize, and compare the environmental attributes and footprint of our products.

Using a rigorous, fact-based methodology, the program provides environmental data from across the product lifecycle.

Five data categories across the product lifecycle



Use Better: How sustainable a product is, including environmental footprint, materials and substances, packaging, and energy efficiency.

Use Longer: How a product's life time can be effectively extended in terms of repairability and updatability.

Use Again: How a product can be reused, from dismantling and remanufacturing to recyclability and manufacturer take back.

With this transparent, verified data, customers and partners are empowered to make conscious environmental choices and accurately evaluate and report on sustainability performance.

All our hardware offers have an associated environmental data available on se.com product pages.

Refer to Environmental Data Program for more information.

Related Documents

Use your tablet or your PC to quickly access detailed and comprehensive information on all our products on www.se.com.

The internet site provides the information you need for products and solutions:

- The whole catalog for detailed characteristics and selection guides,
- The CAD files to help design your installation, available in over 20 different file formats,
- All software and firmware to maintain your installation up to date,
- A large quantity of White Papers, Environment documents, Application solutions, Specifications... to gain a better understanding of our electrical systems and equipment or automation,
- And finally all the User Guides related to your drive, listed below:

To find documents online, visit the Schneider Electric download center (www.se.com/ww/en/download/).

ATH600 Related Documents

Title of Documentation	Reference number	
Catalog: Altivar HVAC ATH600 variable speed drives	DIA2ED2260301EN (English)	DIA2ED2260301FR (French)
ATH600 Getting Started	NAT16141 (English) NAT16142 (French) NAT16143 (German) NAT16144 (Spanish)	NAT16149 (Italian) NAT16151 (Chinese) NAT27844 (Portuguese) NAT27843 (Turkish)
ATH600 Getting Started Annex (SCCR)	NAT16152 (English)	
ATH630, ATH650 Installation Manual	NAT19018 (English) NAT19019 (French) NAT19021 (German) NAT19022 (Spanish)	NAT19020 (Italian) NAT19024 (Chinese) NAT19026 (Portuguese) NAT19025 (Turkish)
ATH600 Programming Manual	NAT19027 (English) NAT19028 (French) NAT19031 (German) NAT19032 (Spanish)	NAT19029 (Italian) NAT19033 (Chinese) NAT19036 (Portuguese) NAT19035 (Turkish)
ATH600 ATEX/IECEx Manual	JPS89265 (English)	
ATH600 Embedded Safety Function Manual	JPS89266 (English)	
ATV212 to ATH600 and ATH200 Substitution Manual	JPS89284 (English)	
ATH600 BACnet Manual	JPS89285 (English)	
ATH600 Modbus Manual	JPS89286 (English)	
ATH600 PROFINET Manual (option)	JPS89287 (English)	
ATH600 EtherNet IP Manual (option)	JPS89288 (English)	
ATH600 communication addresses	JPS89292 (English)	
SoMove: FDT	SoMove_FDT (English, French, German, Spanish, Italian, Chinese)	
ATH600: DTM	ATH600_DTM_Library_EN (English - to be installed first) ATH600_DTM_Lang_FR (French) ATH600_DTM_Lang_DE (German)	ATH600_DTM_Lang_SP (Spanish) ATH600_DTM_Lang_IT (Italian) ATH600_DTM_Lang_CN (Chinese)
ATH600 Application Note – Air handling units	JPS89313 (English)	

ATH600 Related Documents (Continued)

Title of Documentation	Reference number
ATH600 Application Note – Fire modes	JPS89316 (English)
ATH600 latest Firmware	ATH600-Firmware
EcoStruxure Automation Device Maintenance	EcoStruxure Automation Device Maintenance (English)
EcoStruxure Automation Device Maintenance - Altivar User Manual	JYT50472 (English) JYT50482 (German) JYT50474 (French) JYT50476 (Spanish) JYT50478 (Italian) JYT50485 (Portuguese) JYT50484 (Turkish) JYT50483 (Chinese)

ATH200 Related Documents

Title of Documentation	Reference Number	
Catalog: Altivar Building ATH200	DIA2ED2250901EN (English)	DIA2ED2250901FR (French)
ATH200 Getting Started	JPS43191 (English), JPS43192 (French), JPS43193 (German), JPS43194 (Spanish)	JPS43198 (Italian), JPS43199 (Chinese), JPS43197 (Portuguese), JPS43195 (Turkish)
ATH200 Getting Started Annex (SCCR)	JPS43196 (English)	
ATH200 Installation manual	JPS43203 (English), JPS43204 (French), JPS43202 (German), JPS43201 (Spanish),	JPS43200 (Italian), JPS43208 (Chinese), JPS43205 (Portuguese), JPS43209 (Turkish)
ATH200 Programming manual	JPS43207 (English), JPS43206 (French), JPS43212 (German), JPS43211 (Spanish),	JPS43210 (Italian), JPS43213 (Chinese), JPS43214 (Portuguese), JPS43215 (Turkish)
ATH200 ATEX manual	JPS43218 (English)	
ATH200 Modbus manual	JPS43217 (English)	
ATH200 BACnet manual	JPS43216 (English)	
ATH200 Communication Parameters	JPS43219 (English)	
ATH200 Safety Functions manual	JPS43226 (English), JPS43227 (French), JPS43229 (German),	JPS43233 (Spanish), JPS43231 (Italian), JPS43232 (Chinese)
ATH200 - ATV Logic manual	JPS43234 (English), JPS43230 (French), JPS43236 (German),	JPS43238 (Spanish), JPS43237 (Italian), JPS43235 (Chinese)
SoMove: FDT	SoMove_FDT (English, French, German, Spanish, Italian, Chinese)	
ATH200: DTM	ATH200 DTM Library (English, French, Spanish, Italian, German, Chinese)	
Recommended Cybersecurity Best Practices	CS-Best-Practices-2019-340 (English)	

ATV212 Related Documents

Title of Documentation	Reference Number	
ATV212 Catalog	DIA2ED2101102EN (English)	
ATV212 Quick Start Guide	S1A53825 (English), S1A53826 (French), S1A53827 (German), S1A53828 (Spanish)	S1A53830 (Italian), S1A53831 (Chinese)
ATV212 Quick Start Guide Annex	S1A73476 (English)	
ATV212 Installation Manual	S1A53832 (English), S1A53833 (French), S1A53834 (German), S1A53836 (Spanish), S1A53835 (Italian)	SCDOC1563 (Chinese)
ATV212 Programming Manual	S1A53838 (English), S1A53839 (French), S1A53840 (German), S1A53842 (Spanish), S1A53841 (Italian)	SCDOC1564 (Chinese)
ATV212 Modbus Manual	S1A53844 (English)	
ATV212 BACnet Manual	S1A53845 (English)	

ATV212 Related Documents (Continued)

Title of Documentation	Reference Number
ATV212 Metasys N2 Manual	S1A53846 (English)
ATV212 Apogee FLN P1 Manual	S1A53847 (English)
ATV212 LONWORKS Manual	S1A53848 (English)
Multiloader Manual	BBV48778 (English)
SoMove: FDT	SoMove_FDT (English, French, German, Spanish, Italian, Chinese)
Altivar DTM	Altivar_DTM_Library (English, French, German, Spanish, Italian, Chinese)

Information on Non-Inclusive or Insensitive Terminology

As a responsible, inclusive company, Schneider Electric is constantly updating its communications and products that contain non-inclusive or insensitive terminology. However, despite these efforts, our content may still contain terms that are deemed inappropriate by some customers.

Terminology used in this document

The technical terms, terminology, and the corresponding descriptions in this manual normally use the terms or definitions in the relevant standards.

Among others, these standards include:

- ISO 13849: The Foundation of Functional Safety in the Machinery
- IEC/UL 60204-1: Safety of machinery - Electrical equipment of machines – Part 1: General requirements.
- IEC/UL 61010: Safety requirements for electrical equipment for measurement, control, and laboratory use.
- IEC 61158 series: Industrial communication networks - Fieldbus specifications
- IEC/UL 61508 Ed.2 series: Functional safety of electrical/electronic/ programmable electronic safety-related.
- IEC 61784 series: Industrial communication networks - Profiles.
- IEC 61784-5-3: Industrial communication networks - Profiles - Part 5-3: Installation of fieldbuses - Installation profiles for CPF 3
- IEC/UL 61800 series: Adjustable speed electrical power drive systems.
- IEC 61918: Industrial communication networks - Installation of communication networks in industrial premises.
- IEC 62443 /UL 2900: Security for industrial automation and control systems.

In the area of drive systems this includes, but is not limited to, terms such as **error, error message, failure, fault, fault reset, protection, safe state, safety function, warning, warning message**, and so on.

In addition, the term **zone of operation** is used in conjunction with the description of specific hazards, and is defined as it is for a **hazard zone** or **danger zone** in the EC Machinery Directive (2006/42/EC) and in ISO 12100-1.

Also see the Glossary at the end of this manual.

Contact us

Select your country on www.se.com/contact.

Schneider Electric

1884 Boulevard de la Défense

92000 Nanterre

France

ATH200 and ATH600 Overview

Main differences between ATH200 and ATH600

	ATH200	ATH600
Power coverage	0.75 to 22 kW	0.75 to 75 kW
Voltage range	200...240 V single-phase, 200...240 V three-phase, 380...500 V three-phase, and 525...600 V three-phase	380...480 V three-phase
Installation and protection	IP20 cabinet integration	Cabinet and wall-mount formats; available in IP20, IP21/ Type 1, and IP55/Type 12
Communication	Modbus serial and BACnet MS/TP on RJ45; BACnet/IP optional	Modbus and BACnet MS/TP standard; BACnet/IP, Modbus TCP, and PROFINET optional
I/O	6 digital inputs, 3 analog inputs, 1 digital output, 1 analog output, 2 relay outputs, and STO SIL2	6 digital inputs, 3 analog inputs, 2 analog outputs, 3 relay outputs, and STO SIL3
HVAC functions	Fire Mode, Run Permissive, Damper Control, PID Controller, 1 Additional PID, Underload Detection, and ATV Logic	Fire Mode, Run Permissive, Damper Control, multi-PID functions, including PID Summing Feedback and Complementary PID Regulators, Scroll Compressor Functions, AI Threshold Detection.

NOTE: No direct substitution exists for ATV212H●●●M3X. These 200...240 V models require application review before substitution.

Upstream Protection Devices

⚠DANGER

INSUFFICIENT OVERCURRENT PROTECTION CAN CAUSE FIRE OR EXPLOSION

When replacing an ATV212 with an ATH Drive, always ensure that the upstream protective device complies with the specifications applicable to the ATH Drive.

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

The values and protective devices required for IEC compliance are specified in the Installation Manual. Refer to the "Prospective Short-Circuit Current" section.

The values and protective devices required for UL/CSA compliance are specified in the Getting Started Annex supplied with the product.

Inventory of the Existing ATV212

Thorough preparation before the substitution date minimizes downtime and reduces the risk of configuration errors during installation. This section defines the documentation and verification tasks that must be completed while the existing ATV212 is still operational.

1. Identify the ATV212 commercial reference directly from the drive nameplate.



2. Record the supply voltage and power rating of the existing installation.
3. Photograph all control terminal wiring and power connections before disconnecting any cables to ensure an accurate reference for rewiring.
4. Export or manually record all modified parameters using the parameter record checklist provided below.
5. Verify the availability of the appropriate ATH substitution reference using the substitution tables in ATH600 Drive Selection, page 21 and ATH200 Drive Selection, page 38.
6. Order the substitution drive and any required accessories, including communication cards or mounting adapters.

ATV212 Parameter Record

Code	Parameter	Recorded Value
ACC	Acceleration time 1	
CMOd	Command mode selection	
DEC	Deceleration time 1	
F112	LI R selection	
F113	LI RES selection	
F130	RY Relay Function 1	
F201	VIA ref point 1	
F202	VIA freq. point 1	
F203	VIA ref point 2	
F204	VIA freq. point 2	
F210	VIB ref. point 1	
F211	VIB freq. point 1	
F212	VIB ref. point 2	
F213	VIB freq. point 2	
F360	PID control enable	
F362	PID Prop Gain	
F363	PID Integral Gain	
F366	PID Derivative Gain	
F415	Motor rated current	

Code	Parameter	Recorded Value
F417	Motor rated speed	
F800	Mdb RJ45 baud	
F801	Mdb RJ45 parity	
F802	Modbus address	
F803	Com. time out	
FH	Max frequency	
LL	Low limit frequency	
Pt	Motor control mode selection	
Sr1	Preset speed 1	
Sr2	Preset speed 2	
Sr3	Preset speed 3	
Sr4	Preset speed 4	
Sr5	Preset speed 5	
Sr6	Preset speed 6	
Sr7	Preset speed 7	
UL	Upper limit freq	
tHr	Motor thermal prot.	
vL	Motor rated freq.	
vLv	Motor rated voltage	

NOTE: After the installation data has been recorded and the target substitution reference has been confirmed, continue with ATV212 to ATH600 Substitution, page 21 for ATH600 substitution or ATV212 to ATH200 Substitution, page 38 for ATH200 substitution.

ATV212 to ATH600 Substitution

Overview

This chapter describes the ATH600 substitution path for existing ATV212 installations.

The chapter covers reference mapping, physical dimensions, power and control wiring and I/O terminal mapping.

Work through the sections in order to complete the substitution from equipment selection through installation checks and pre-commissioning verification.

ATH600 Drive Selection

Overview

Use the tables in this section to identify the ATH600 reference associated with an installed ATV212 drive.

Reference Mapping (0.75–18.5 kW)

The following table presents the ATH600 replacement for the ATV212 references ranging from 0.75 kW to 18.5 kW.

		Legacy offers		New offers
Power (kW)	**Voltage**	**ATV212 references**		**ATH600 replacement**
0.75	380–480 V	ATV212H075N4	→	ATH630U07N4 ATH630U07N4Z
0.75	380–480 V	ATV212W075N4 ATV212W075N4C	→	ATH650U07N4 ATH650U07N4C
1.5	380–480 V	ATV212HU15N4	→	ATH630U15N4 ATH630U15N4Z
1.5	380–480 V	ATV212WU15N4	→	ATH650U15N4 ATH650U15N4C
2.2	380–480 V	ATV212HU22N4	→	ATH630U22N4 ATH630U22N4Z
2.2	380–480 V	ATV212WU22N4 ATV212WU22N4C	→	ATH650U22N4 ATH650U22N4C
3	380–480 V	ATV212HU30N4	→	ATH630U30N4 ATH630U30N4Z
3	380–480 V	ATV212WU30N4 ATV212WU30N4C	→	ATH650U30N4 ATH650U30N4C
4	380–480 V	ATV212HU40N4	→	ATH630U40N4 ATH630U40N4Z
4	380–480 V	ATV212WU40N4 ATV212WU40N4C	→	ATH650U40N4 ATH650U40N4C
5.5	380–480 V	ATV212HU55N4	→	ATH630U55N4

		Legacy offers	New offers
Power (kW)	Voltage	ATV212 references	ATH600 replacement
			ATH630U55N4Z
5.5	380–480 V	ATV212WU55N4 ATV212WU55N4C	ATH650U55N4 ATH650U55N4C
7.5	380–480 V	ATV212HU75N4	ATH630U75N4 ATH630U75N4Z
7.5	380–480 V	ATV212WU75N4 ATV212WU75N4C	ATH650U75N4 ATH650U75N4C
11	380–480 V	ATV212HD11N4	ATH630D11N4 ATH630D11N4Z
11	380–480 V	ATV212WD11N4 ATV212WD11N4C	ATH650D11N4 ATH650D11N4C
15	380–480 V	ATV212HD15N4	ATH630D15N4 ATH630D15N4Z
15	380–480 V	ATV212WD15N4	ATH650D15N4 ATH650D15N4C
18.5	380–480 V	ATV212HD18N4	ATH630D18N4 ATH630D18N4Z
18.5	380–480 V	ATV212WD18N4 ATV212WD18N4C	ATH650D18N4 ATH650D18N4C

Reference Mapping (22 – 75 kW)

The following table presents the ATH600 replacement for the ATV212 references ranging from 22 kW to 75 kW.

		Legacy offers	New offers
Power (kW)	Voltage	ATV212 references	ATH600 replacement
22	380–480 V	ATV212HD22N4	ATH630D22N4 ATH630D22N4Z
22	380–480 V	ATV212HD22N4S	ATH630D22N4 ATH630D22N4Z
22	380–480 V	ATV212WD22N4	ATH650D22N4 ATH650D22N4U
30	380–480 V	ATV212HD30N4	ATH630D30N4 ATH630D30N4Z
30	380–480 V	ATV212WD30N4	ATH650D30N4
37	380–480 V	ATV212HD37N4	ATH630D37N4 ATH630D37N4Z
37	380–480 V	ATV212WD37N4	ATH650D37N4
45	380–480 V	ATV212HD45N4	ATH630D45N4 ATH630D45N4Z
45	380–480 V	ATV212WD45N4	ATH650D45N4
55	380–480 V	ATV212HD55N4	ATH630D55N4 ATH630D55N4Z

Power (kW)	Voltage	Legacy offers ATV212 references	New offers ATH600 replacement
55	380–480 V	ATV212WD55N4	ATH650D55N4
75	380–480 V	ATV212HD75N4	ATH630D75N4 ATH630D75N4Z
75	380–480 V	ATV212WD75N4	ATH650D75N4

Special Cases

ATH600 doesn’t have any 240 V variants. The following table presents references that don’t have any ATH equivalent.

ATV212 references	Power (kW)	Voltage
ATV212H●●●M3X	0.75 ... 30	240 V

For the references in this last table, perform an application review before selecting a replacement.

Physical Dimensions and Mounting

Overview

The ATH600 has a different physical envelope from the ATV212 across most power ratings. Before ordering or installing the substitution drive, verify that the target enclosure can accommodate the new dimensions without modification.

The tables in this section provide width, height, and depth (W × H × D) for both drive families side by side to support panel space planning and mounting layout verification.

NOTE: Refer to the ATH630, ATH650 Installation Manual, page 13 for frame-size-specific mounting clearance requirements and wall-mount arrangements.

ATH630 (IP20/IP21) — dimensions

The following table compares the ATV212 and ATH630 dimensions (W × H × D) and weights.

Power (kW)	ATV212 reference	ATV212 dimensions (W × H × D)	ATV212 weight	ATH630 reference	ATH630 dimensions (W × H × D)	ATH630 weight
0.75	ATV212H075N4	107 × 143 × 150 mm 4.21 × 5.63 × 5.91 in	2.0 kg 4.4 lbs	ATH630U07N4	134 × 264 × 197 mm 5.28 × 10.39 × 7.76 in	2.3 kg 5.1 lbs
0.75				ATH630U07N4Z	115 × 196 × 158 mm 4.53 × 7.72 × 6.22 in	1.7 kg 3.7 lbs
1.5	ATV212HU15N4	107 × 143 × 150 mm 4.21 × 5.63 × 5.91 in	2.0 kg 4.4 lbs	ATH630U15N4	134 × 264 × 197 mm 5.28 × 10.39 × 7.76 in	2.3 kg 5.1 lbs
1.5				ATH630U15N4Z	115 × 196 × 158 mm 4.53 × 7.72 × 6.22 in	1.7 kg 3.7 lbs
2.2	ATV212HU22N4	107 × 143 × 150 mm 4.21 × 5.63 × 5.91 in	2.0 kg 4.4 lbs	ATH630U22N4	134 × 264 × 197 mm 5.28 × 10.39 × 7.76 in	2.3 kg 5.1 lbs
2.2				ATH630U22N4Z	115 × 196 × 158 mm 4.53 × 7.72 × 6.22 in	1.7 kg 3.7 lbs
3	ATV212HU30N4	142 × 184 × 150 mm 5.59 × 7.24 × 5.91 in	3.35 kg 7.4 lbs	ATH630U30N4	178 × 334 × 230 mm 7.01 × 13.15 × 9.06 in	3.4 kg 7.5 lbs
3				ATH630U30N4Z	145 × 197 × 166 mm 5.71 × 7.76 × 6.54 in	2.4 kg 5.3 lbs
4	ATV212HU40N4	142 × 184 × 150 mm 5.59 × 7.24 × 5.91 in	3.35 kg 7.4 lbs	ATH630U40N4	178 × 334 × 230 mm 7.01 × 13.15 × 9.06 in	3.4 kg 7.5 lbs
4				ATH630U40N4Z	145 × 197 × 166 mm 5.71 × 7.76 × 6.54 in	2.4 kg 5.3 lbs
5.5	ATV212HU55N4	142 × 184 × 150 mm 5.59 × 7.24 × 5.91 in	3.35 kg 7.4 lbs	ATH630U55N4	178 × 334 × 230 mm 7.01 × 13.15 × 9.06 in	3.4 kg 7.5 lbs
5.5				ATH630U55N4Z	145 × 197 × 166 mm 5.71 × 7.76 × 6.54 in	2.4 kg 5.3 lbs
7.5	ATV212HU75N4	180 × 232 × 170 mm 7.09 × 9.13 × 6.69 in	6.45 kg 14.2 lbs	ATH630U75N4	178 × 334 × 230 mm 7.01 × 13.15 × 9.06 in	4.7 kg 10.4 lbs
7.5				ATH630U75N4Z	160 × 232 × 183 mm 6.30 × 9.13 × 7.20 in	3.8 kg 8.4 lbs
11	ATV212HD11N4	180 × 232 × 170 mm	6.45 kg	ATH630D11N4	178 × 334 × 230 mm	4.7 kg

Power (kW)	ATV212 reference	ATV212 dimensions (W × H × D)	ATV212 weight	ATH630 reference	ATH630 dimensions (W × H × D)	ATH630 weight
					7.01 × 13.15 × 9.06 in	10.4 lbs
11		7.09 × 9.13 × 6.69 in	14.2 lbs	ATH630D11N4Z	178 × 334 × 230 mm	3.8 kg
					7.01 × 13.15 × 9.06 in	8.4 lbs
15	ATV212HD15N4	245 × 330 × 190 mm	11.65 kg	ATH630D15N4	208 × 342 × 231 mm	5.7 kg
					8.19 × 13.46 × 9.09 in	12.6 lbs
15		9.65 × 13 × 7.48 in	25.7 lbs	ATH630D15N4Z	190 × 232 × 183 mm	4.6 kg
					7.48 × 9.13 × 7.20 in	10.1 lbs
18.5	ATV212HD18N4	245 × 330 × 190 mm	11.5 kg	ATH630D18N4	208 × 342 × 231 mm	5.7 kg
					8.19 × 13.46 × 9.09 in	12.6 lbs
18.5		9.65 × 13 × 7.48 in	25.4 lbs	ATH630D18N4Z	190 × 232 × 183 mm	4.6 kg
					7.48 × 9.13 × 7.20 in	10.1 lbs
22	ATV212HD22N4	240 × 420 × 214 mm	26.4 kg	ATH630D22N4	195 × 480 × 229 mm	14.3 kg
					7.68 × 18.90 × 9.02 in	31.5 lbs
22		9.45 × 16.54 × 8.43 in	58.2 lbs	ATH630D22N4Z	195 × 480 × 226 mm	13.7 kg
					7.68 × 18.90 × 8.88 in	30.2 lbs
22	ATV212HD22N4S	245 × 329.5 × 190 mm	11.65 kg	ATH630D22N4	195 × 480 × 229 mm	14.3 kg
					7.68 × 18.90 × 9.02 in	31.5 lbs
22		9.65 × 13 × 7.48 in	25.7 lbs	ATH630D22N4Z	195 × 480 × 226 mm	13.7 kg
					7.68 × 18.90 × 8.88 in	30.2 lbs
30	ATV212HD30N4	240 × 420 × 214 mm	26.4 kg	ATH630D30N4	210 × 597 × 265 mm	28.0 kg
					8.27 × 23.50 × 10.43 in	61.7 lbs
30		9.45 × 16.54 × 8.43 in	58.2 lbs	ATH630D30N4Z	210 × 597 × 262 mm	25.8 kg
					8.27 × 23.50 × 10.31 in	56.9 lbs
37	ATV212HD37N4	240 × 550 × 244 mm	23.5 kg	ATH630D37N4	210 × 597 × 265 mm	28.2 kg
					8.27 × 23.50 × 10.43 in	62.2 lbs
37		9.45 × 21.65 × 9.61 in	51.81 lbs	ATH630D37N4Z	210 × 597 × 262 mm	26.0 kg
					8.27 × 23.50 × 10.31 in	57.3 lbs
45	ATV212HD45N4	240 × 550 × 244 mm	23.5 kg	ATH630D45N4	210 × 597 × 265 mm	28.7 kg
					8.27 × 23.50 × 10.43 in	63.3 lbs
45		9.45 × 21.65 × 9.61 in	51.81 lbs	ATH630D45N4Z	210 × 597 × 262 mm	26.5 kg
					8.27 × 23.50 × 10.31 in	58.4 lbs
55	ATV212HD55N4	320 × 630 × 290 mm	39.7 kg	ATH630D55N4	265 × 748 × 310 mm	56.5 kg
					10.43 × 29.45 × 12.20 in	124.6 lbs
55		12.60 × 24.80 × 11.42 in	87.74 lbs	ATH630D55N4Z	265 × 748 × 307 mm	52.6 kg
					10.43 × 29.45 × 12.08 in	116.0 lbs
75	ATV212HD75N4	320 × 630 × 290 mm	39.7 kg	ATH630D75N4	265 × 748 × 310 mm	58.0 kg
					10.43 × 29.45 × 12.20 in	127.9 lbs
75		12.60 × 24.80 × 11.42 in	87.74 lbs	ATH630D75N4Z	265 × 748 × 307 mm	54.1 kg
					10.43 × 29.45 × 12.08 in	119.3 lbs

ATH650 (IP55) — dimensions

The following table compares the ATV212 and ATH650 dimensions (W × H × D) and weights.

ATV212 reference	Power (kW)	ATV212 dimensions (W × H × D)	ATV212 weight	ATH650 reference	ATH650 dimensions (W × H × D)	ATH650 weight
ATV212W075N4	0.75	215 × 297 × 192 mm 8.46 × 11.69 × 7.56 in	7.0 kg 15.4 lbs	ATH650U07N4	189 × 375 × 247 mm 7.44 × 14.76 × 9.72 in	4.5 kg 9.9 lbs
ATV212W075N4C	0.75	215 × 297 × 192 mm 8.46 × 11.69 × 7.56 in	7.5 kg 16.5 lbs	ATH650U07N4C	189 × 375 × 247 mm 7.44 × 14.76 × 9.72 in	5.0 kg 11.0 lbs
ATV212WU15N4	1.5	215 × 297 × 192 mm 8.46 × 11.69 × 7.56 in	7.0 kg 15.4 lbs	ATH650U15N4	189 × 375 × 247 mm 7.44 × 14.76 × 9.72 in	4.5 kg 9.9 lbs
ATV212WU15N4C	1.5	215 × 297 × 192 mm 8.46 × 11.69 × 7.56 in	7.5 kg 16.5 lbs	ATH650U15N4C	189 × 375 × 247 mm 7.44 × 14.76 × 9.72 in	5.0 kg 11.0 lbs
ATV212WU22N4	2.2	215 × 297 × 192 mm 8.46 × 11.69 × 7.56 in	7.0 kg 15.4 lbs	ATH650U22N4	189 × 375 × 247 mm 7.44 × 14.76 × 9.72 in	4.5 kg 9.9 lbs
ATV212WU22N4C	2.2	215 × 297 × 192 mm 8.46 × 11.69 × 7.56 in	7.5 kg 16.5 lbs	ATH650U22N4C	189 × 375 × 247 mm 7.44 × 14.76 × 9.72 in	5.0 kg 11.0 lbs
ATV212WU30N4	3	230 × 340 × 208 mm 9.06 × 13.39 × 8.19 in	9.65 kg 21.3 lbs	ATH650U30N4	189 × 375 × 254 mm 7.44 × 14.76 × 10.00 in	5.1 kg 11.2 lbs
ATV212WU30N4C	3	230 × 340 × 208 mm 9.06 × 13.39 × 8.19 in	10.55 kg 23.3 lbs	ATH650U30N4C	189 × 375 × 254 mm 7.44 × 14.76 × 10.00 in	5.6 kg 12.3 lbs
ATV212WU40N4	4	230 × 340 × 208 mm 9.06 × 13.39 × 8.19 in	9.65 kg 21.3 lbs	ATH650U40N4	189 × 375 × 254 mm 7.44 × 14.76 × 10.00 in	5.1 kg 11.2 lbs
ATV212WU40N4C	4	230 × 340 × 208 mm 9.06 × 13.39 × 8.19 in	10.55 kg 23.3 lbs	ATH650U40N4C	189 × 375 × 254 mm 7.44 × 14.76 × 10.00 in	5.6 kg 12.3 lbs
ATV212WU55N4	5.5	230 × 340 × 208 mm 9.06 × 13.39 × 8.19 in	9.65 kg 21.3 lbs	ATH650U55N4	189 × 375 × 254 mm 7.44 × 14.76 × 10.00 in	5.1 kg 11.2 lbs
ATV212WU55N4C	5.5	230 × 340 × 208 mm 9.06 × 13.39 × 8.19 in	10.55 kg 23.3 lbs	ATH650U55N4C	189 × 375 × 254 mm 7.44 × 14.76 × 10.00 in	5.6 kg 12.3 lbs
ATV212WU75N4	7.5	230 × 340 × 208 mm 9.06 × 13.39 × 8.19 in	10.95 kg 24.1 lbs	ATH650U75N4	234 × 427 × 266 mm 9.21 × 16.81 × 10.47 in	7.3 kg 16.1 lbs
ATV212WU75N4C	7.5	230 × 340 × 208 mm 9.06 × 13.39 × 8.19 in	11.85 kg 26.1 lbs	ATH650U75N4C	234 × 427 × 266 mm 9.21 × 16.81 × 10.47 in	8.1 kg 17.9 lbs
ATV212WD11N4	11	290 × 560 × 315 mm 11.42 × 22.05 × 12.40 in	30.3 kg 66.8 lbs	ATH650D11N4	234 × 427 × 266 mm 9.21 × 16.81 × 10.47 in	7.3 kg 16.1 lbs
ATV212WD11N4C	11	290 × 560 × 315 mm 11.42 × 22.05 × 12.40 in	36.5 kg 80.5 lbs	ATH650D11N4C	234 × 427 × 266 mm 9.21 × 16.81 × 10.47 in	8.1 kg 17.9 lbs
ATV212WD15N4	15	290 × 560 × 315 mm 11.42 × 22.05 × 12.40 in	30.3 kg 66.8 lbs	ATH650D15N4	234 × 427 × 266 mm 9.21 × 16.81 × 10.47 in	7.9 kg 17.4 lbs
ATV212WD15N4C	15	290 × 560 × 315 mm 11.42 × 22.05 × 12.40 in	36.5 kg 80.5 lbs	ATH650D15N4C	234 × 427 × 266 mm 9.21 × 16.81 × 10.47 in	8.7 kg 19.2 lbs
ATV212WD18N4	18.5	310 × 665 × 315 mm 12.20 × 26.18 × 12.40 in	37.4 kg 82.5 lbs	ATH650D18N4	234 × 427 × 266 mm 9.21 × 16.81 × 10.47 in	7.9 kg 17.4 lbs

ATV212 reference	Power (kW)	ATV212 dimensions (W × H × D)	ATV212 weight	ATH650 reference	ATH650 dimensions (W × H × D)	ATH650 weight
ATV212WD18N4C	18.5	310 × 665 × 315 mm 12.20 × 26.18 × 12.40 in	45.0 kg 99.2 lbs	ATH650D18N4C	234 × 427 × 266 mm 9.21 × 16.81 × 10.47 in	8.7 kg 19.2 lbs
ATV212WD22N4	22	284 × 720 × 315 mm 11.18 × 28.35 × 12.40 in	49.5 kg 109.1 lbs	ATH650D22N4	263 × 728 × 301 mm 10.37 × 28.68 × 11.85 in	20.6 kg 45.4 lbs
ATV212WD22N4C	22	284 × 720 × 315 mm 11.18 × 28.35 × 12.40 in	58.5 kg 129.0 lbs			
ATV212WD30N4	30	284 × 720 × 315 mm 11.18 × 28.35 × 12.40 in	49.5 kg 109.1 lbs	ATH650D30N4	307 × 948 × 340 mm 12.09 × 37.34 × 13.39 in	50.0 kg 110.2 lbs
ATV212WD30N4C	30	284 × 720 × 315 mm 11.18 × 28.35 × 12.40 in	58.5 kg 129.0 lbs			
ATV212WD37N4	37	284 × 880 × 343 mm 11.18 × 34.65 × 13.50 in	57.4 kg 126.5 lbs	ATH650D37N4	307 × 948 × 340 mm 12.09 × 37.34 × 13.39 in	50.0 kg 110.2 lbs
ATV212WD37N4C	37	284 × 880 × 343 mm 11.18 × 34.65 × 13.50 in	77.4 kg 171 lbs			
ATV212WD45N4	45	284 × 880 × 343 mm 11.18 × 34.65 × 13.50 in	57.4 kg 126.5 lbs	ATH650D45N4	307 × 948 × 340 mm 12.09 × 37.34 × 13.39 in	50.0 kg 110.2 lbs
ATV212WD45N4C	45	284 × 880 × 343 mm 11.18 × 34.65 × 13.50 in	77.4 kg 171 lbs			
ATV212WD55N4	55	362 × 1000 × 364 mm 14.25 × 39.37 × 14.33 in	61.9 kg 136.5 lbs	ATH650D55N4	362 × 1262 × 375 mm 14.24 × 49.67 × 14.76 in	87.0 kg 191.8 lbs
ATV212WD55N4C	55	362 × 1000 × 364 mm 14.25 × 39.37 × 14.33 in	88.4 kg 195 lbs			
ATV212WD75N4	75	362 × 1000 × 364 mm 14.25 × 39.37 × 14.33 in	61.9 kg 136.5 lbs	ATH650D75N4	362 × 1262 × 375 mm 14.24 × 49.67 × 14.76 in	87.0 kg 191.8 lbs
ATV212WD75N4C	75	362 × 1000 × 364 mm 14.25 × 39.37 × 14.33 in	88.4 kg 195 lbs			

Mounting Types

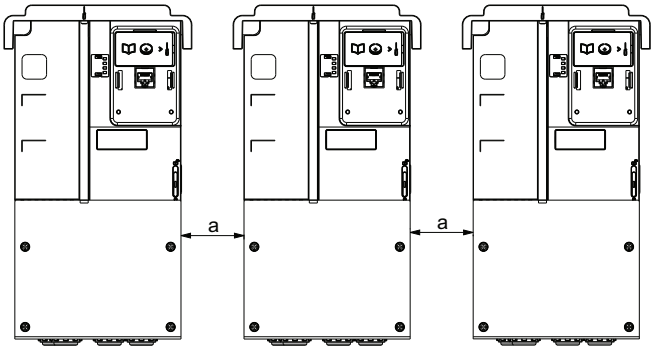
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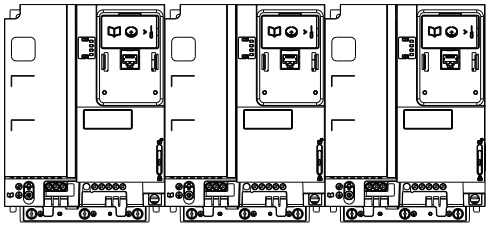
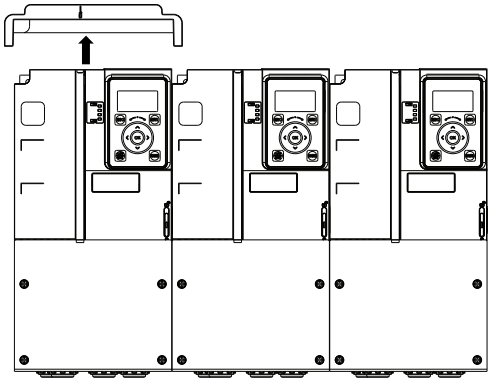
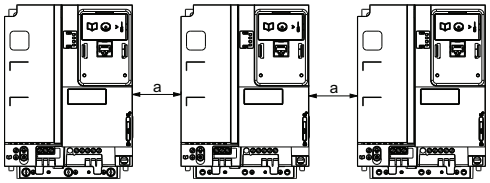
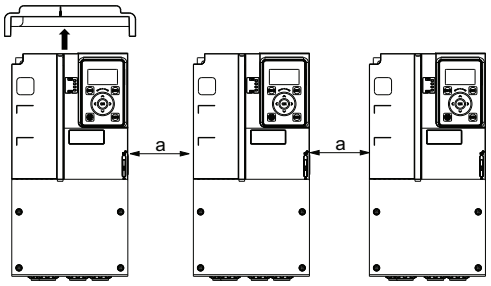
OVERHEATING

Always verify that, after replacing an ATV212 with an ATH Drive, the selected mounting type and the associated derating curves remain compliant with the ATH Drive specifications and installation requirements.

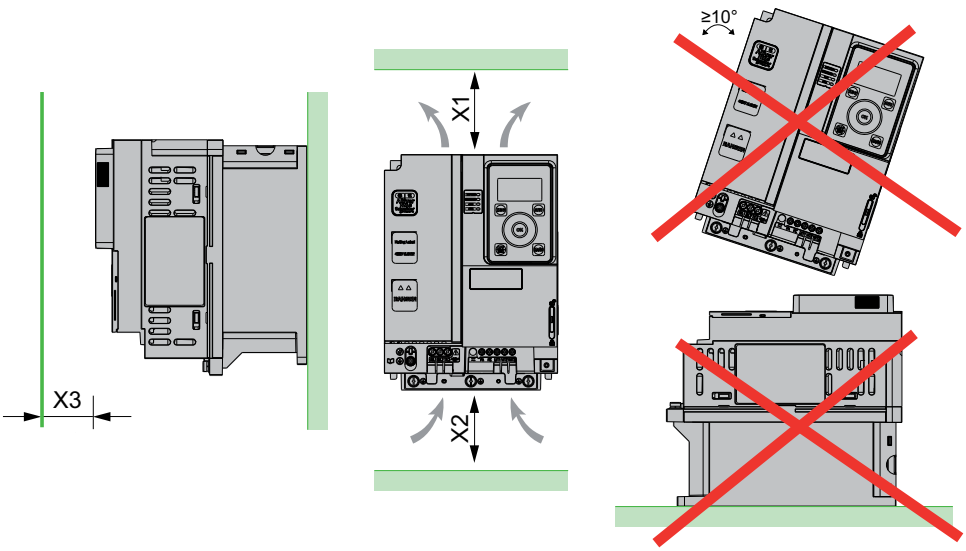
Failure to follow these instructions can result in equipment damage.

Use the following table to select the permitted mounting arrangement for the ATH600. Then use the wall-mount clearance table to verify the minimum clearance distances for the drive frame size.

Type	Description	Installation conditions for ATH600
A	Individual IP21 and IP55	 Frame sizes 0, 1, 2A and 2B: a ≥ 50 mm (2 in.) Frame sizes 3: a ≥ 100 mm (3.9 in.) Frame sizes 4 and 5: a ≥ 110 mm (4.33 in.) **Frame size A, B and C: no restriction of clearance**

<table>
<tr><th>Mount-ing type</th><th>Description</th><th colspan="2">Installation conditions for ATH600</th></tr>
<tr><td rowspan="2">B</td><td rowspan="2">Side by side IP20</td><td>From IP20 or IP00 products
</td><td>From IP21/UL type 1 products
NOTE: Remove the top cover.
</td></tr>
<tr><td colspan="2">Frame sizes 0, 1, 2A, 2B, 3, 7A and 7B: possible, regardless of the number of drives installed side by side
Frame sizes 4 and 5: possible, 2 drives only
Frame size 6: only at ambient temperature lower than 40 °C (104 °F)</td></tr>
<tr><td rowspan="2">C</td><td rowspan="2">Individual IP20</td><td>From IP20 or IP00 products

</td><td>From IP21/UL type 1 products
NOTE: Remove the top cover.

</td></tr>
<tr><td colspan="2">Frame sizes 0, 1, 2A, 2B, 3, 7A and 7B: no restriction of clearance
Frame sizes 4, 5 and 6: a ≥ 110 mm (4.33 in.)</td></tr>
</table>

Clearances and Mounting Position - Wall Mounting



Minimum clearance regarding the drive frame size

Frame Size	Space above (X1)	Space below (X2)	Space in front (X3)
0...5 A...C	≥ 100 mm (3.94 in.)	≥ 100 mm (3.94 in.)	≥ 10 mm (0.39 in.)
6	≥ 250 mm (10 in.)	≥ 250 mm (10 in.)	≥ 100 mm (3.94 in.)
7A, 7B	≥ 200 mm (7.87 in.)	≥ 150 mm (5.90 in.)	≥ 10 mm (0.39 in.)

NOTE: When an option module or display terminal is fitted, a 50 mm minimum front clearance is required. Refer to the ATH630, ATH650 Installation Manual, page 13 for more details on frame-size-specific mounting clearance requirements and wall-mount arrangements.

Power Part Wiring

Overview

The ATH600 uses a different power and control terminal arrangement from the ATV212. Before transferring any conductor, verify the supply connection, motor connection, protective earth connection, EMC plate arrangement, and control wiring method.

Power Cables Comparison

⚠ DANGER

HAZARD OF FIRE AND/OR TERMINALS OVERHEATING

If the cross-section of the wires used on the ATV212 is smaller than the minimum required for the ATH Drive, replace them with wires of an appropriate cross-section in accordance with the specifications for the ATH Drive.

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

	ATV212		ATH600		
Power (kW)	**Maximum wire size mm² (AWG)**	**Tightening torque N.m (lb-in)**	**Maximum wire size mm² (AWG)**	**Minimum wire size mm² (AWG)**	**Tightening torque N.m (lb-in)**
0.75	6 (10)	1.3 (11.5)	6 (10)	0.5 (20)	0.6 (5.3)
1.5	6 (10)	1.3 (11.5)	6 (10)	0.5 (20)	0.6 (5.3)
2.2	6 (10)	1.3 (11.5)	6 (10)	0.5 (20)	0.6 (5.3)
3	6 (10)	1.3 (11.5)	6 (10)	0.5 (20)	0.6 (5.3)
4	6 (10)	1.3 (11.5)	6 (10)	0.5 (20)	0.6 (5.3)
5.5	6 (10)	1.3 (11.5)	6 (10)	0.5 (20)	0.6 (5.3)
7.5	16 (6)	2.5 (22.1)	16 (6)	0.5 (20)	1.4 (12.4)
11	16 (6)	2.5 (22.1)	16 (6)	0.5 (20)	1.4 (12.4)
15	25 (3)	4.5 (39.8)	16 (6)	0.5 (20)	1.4 (12.4)
18.5	25 (3)	4.5 (39.8)	16 (6)	0.5 (20)	1.4 (12.4)
22	25 (3)	4.5 (39.8)	16 (6)	0.5 (20)	3.5 (31)
30	50 (1/0)	24 (212.4)	50 (1/0)	16 (6)	12 (106.2)
37	50 (1/0)	24 (212.4)	50 (1/0)	16 (6)	12 (106.2)
45	50 (1/0)	24 (212.4)	50 (1/0)	16 (6)	12 (106.2)
55	150 (300kcmils)	41 (362.9)	120 (250kcmils)	16 (4)	25 (221.3)
75	150 (300kcmils)	41 (362.9)	120 (250kcmils)	16 (4)	25 (221.3)
xx	Different from a product to another				
xx	Same on both products				

Wiring Procedure

NOTE: Refer to the ATH630, ATH650 Installation Manual, page 13 for power cable sizing, permissible conductor cross-sections, and frame-size-specific tightening torque values. These values depend on the exact drive reference, the installation method, and the applicable local electrical code.

Use the following sequence to wire the ATH600:

1. Connect the protective earth conductor before connecting the supply and motor conductors.
2. Connect the supply conductors to **R/L1**, **S/L2**, and **T/L3**.
3. Connect the motor conductors to **U/T1**, **V/T2**, and **W/T3**.
4. Install the EMC plate and route the shielded motor cable so the shield bonds over a large surface area to the EMC plate.
5. Reinstall the covers and verify the required degree of protection before energizing the drive.

For control wiring, keep control circuits separate from power circuits. Use shielded cables for digital I/O, analog I/O, communication signals, and STO wiring.

NOTE: The STO inputs require shielded cables with a dedicated common P24 line. The STO function does not remove mains voltage or DC bus voltage from the drive.

Protective earth and grounding

Size the protective earth conductor according to the phase-conductor cross-section, following the ATH600 installation manual grounding table. For copper conductors, apply the following rules:

- Phase conductor ≤ 10 mm²: use 10 mm² for the protective earth conductor.
- Phase conductor from 10 mm² to 16 mm²: use the same cross-section as the phase conductor.
- Phase conductor from 16 mm² to 35 mm²: use 16 mm².
- Phase conductor above 35 mm²: use at least half the phase-conductor cross-section.

NOTE: A dedicated protective earth conductor is required even when shielded cables or conduit are used. Do not use the cable shield or the conduit as the only protective earth path. The drive can present leakage current in normal operation.

⚠⚠DANGER

INCORRECT GROUNDING CONDUCTOR SIZE

Confirm that the grounding conductor size used in your current ATV212 installation complies with the specifications provided above.

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

Control Terminal Wiring

Overview

The ATH600 uses different terminal labels and configuration methods from the ATV212. Use the tables in this section to reconnect your existing wiring to the ATH600 terminals and configure the equivalent functions.

NOTE: On the ATV212, analog signal types (voltage or current) were selected using hardware switches SW100 and SW101. On the ATH600, all signal types are configured in software. After rewiring, set the signal type in the ATH600 menus before commissioning.

Digital inputs and relay outputs

The following table shows how to reconnect the ATV212 digital inputs and relay outputs to the ATH600. Verify the function assignment in the ATH600 menus before energizing the drive, because the ATH600 default assignment may differ from the ATV212 function.

ATV212 to ATH600 — digital input and relay output

ATV212 terminal to unwire	Equivalent ATH600 terminal to wire	Action required
F — Run forward	**DI1**	Reconnect to **DI1**. Verify the active control mode and the forward run assignment in the ATH600 I/O menu before commissioning.
R — Preset speed 1	**DI2**	Reconnect to **DI2**. Reassign the required function in the ATH600 I/O configuration.
RES — Fault reset	**DI3**	Reconnect to **DI3**. Assign the ATH600 fault-reset function if the legacy reset input is retained.
VIA — Logic mode only	**DI4**	Reconnect to **DI4** only if **VIA** was used as a logic input on the ATV212. If **VIA** was used as an analog reference, reconnect it to the analog inputs instead.
FL — Fault relay	**R1**	Reconnect to **R1**. Verify the retained relay behavior in the ATH600 relay output assignment.
RY — Frequency level attained	**R2**	Reconnect to **R2**. Reassign the required output state in the ATH600 relay configuration.

The following terminals are available on the ATH600 and have no direct equivalent on the ATV212.

ATH600 additional digital I/O — no ATV212 equivalent

ATH600 terminal	Description
DI5	Additional digital input. Available for assignment and pulse-input functions. Refer to the ATH600 programming manual for the list of assignable functions.
DI6	Additional digital input. Available for assignment. Verify the configured use in the ATH600 menus before wiring, especially if the terminal is reserved for a sensor or protection-related function.
R3	Additional relay output. Available as standard on the ATH600 for assignment to any configurable output function.
DI11–DI16	Available only when the VW3A3203 extended I/O module is installed.
R4–R6	Available only when the VW3A3204 relay output module is installed.

Analog inputs and outputs

The following table shows how to reconnect the ATV212 analog terminals to the ATH600. Replace hardware switch settings with the equivalent software parameter on the ATH600.

ATV212 to ATH600 — analog input and output

ATV212 terminal	ATH600 terminal	Action required
VIA Switch-configurable 0-10 V / 0-20 mA	**AI1** Software-configurable Voltage / Current	Move the wire from **VIA** to **AI1**. Hardware switch SW100 is eliminated. Set the signal type (voltage or current) using software parameter AI1T in the ATH600 menus.
VIB Voltage 0-10 V or PTC	**AI2** Software-configurable Voltage / Current / PTC / PT100 / PT1000 / KTY84	Move the wire from **VIB** to **AI2**. AI2 adds current support and extended thermal sensor compatibility. Set the signal type using software parameter AI2T.
FM Switch-configurable 0-10 V / 0-20 mA	**AQ1** Software-configurable Voltage / Current	Move the wire from **FM** to **AQ1**. Hardware switch SW101 is eliminated. Configure the output signal type in the ATH600 analog output menu.

The following terminals are available on the ATH600 and have no direct equivalent on the ATV212.

ATH600 additional analog I/O — no ATV212 equivalent

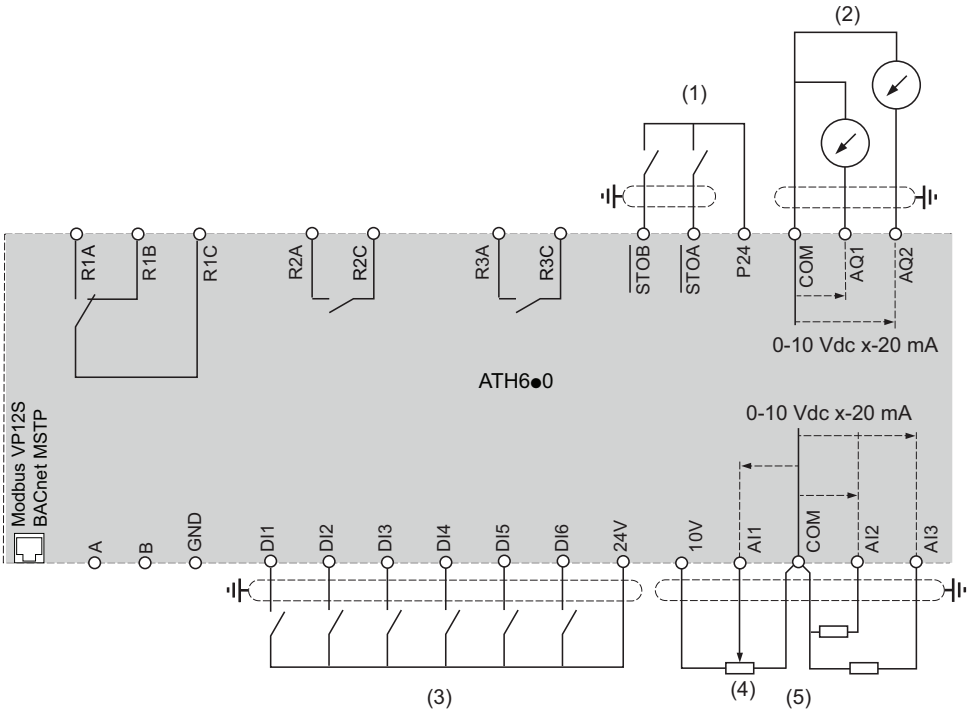
ATH600 terminal	Description
AI3 Software-configurable Voltage / Current / Sensors	Additional standard ATH600 analog input. Available for reference, feedback, or sensor functions.
AQ2 Software-configurable Voltage / Current	Additional standard ATH600 analog output. Configure it in the ATH600 output menu.
AI4 – AI5	Available only when the VW3A3203 extended I/O module is installed.

NOTE: Verify the final ATH600 digital-input assignment, analog-input type, and analog-output type in the ATH600 menus before commissioning. Do not rely on ATV212 switch settings to determine the signal type on the ATH600.

ATH600 control terminal wiring diagram

The following figure shows the standard ATH600 control terminal layout.

ATH600 control terminal block — standard I/O



(1) STO Safe Torque Off, (2) Analog output, (3) Digital input, (4) Reference potentiometer (e.g. SZ1RV1002), (5) Analog input

Check List Before Switching On

The safety function STO (Safe Torque Off) does not remove power from the DC bus. The safety function STO only removes power to the motor. The DC bus voltage and the mains voltage to the drive are still present.

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK

- Do not use the safety function STO for any other purposes than its intended function.
- Use an appropriate switch, that is not part of the circuit of the safety function STO, to disconnect the product from the mains power.

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

Unsuitable settings or unsuitable data or unsuitable wiring may trigger unintended movements, trigger signals, damage parts and disable monitoring functions.

⚠WARNING

UNANTICIPATED EQUIPMENT OPERATION

- Only start the system if there are no persons or obstructions in the zone of operation.
- Verify that a functioning emergency stop push-button is within reach of all persons involved in the operation.
- Do not operate the product with unknown settings or data.
- Verify that the wiring is appropriate for the settings.
- Never modify a parameter unless you fully understand the parameter and all effects of the modification.
- When commissioning, carefully run tests for all operating states, operating conditions and potential error situations.
- Anticipate movements in unintended directions or oscillation of the motor.

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

If the power stage is disabled unintentionally, for example as a result of power outage, errors or functions, there is a possibility that the motor is no longer decelerated in a controlled way.

⚠WARNING

UNANTICIPATED EQUIPMENT OPERATION

Verify that movements without braking effect does not result in unsafe conditions.

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

Mechanical Installation

Verify the mechanical installation of the entire drive system:

Step	Action	✓
1	Does the installation meet the specified distance requirements?	
2	Did you tighten all fastening screws to the specified tightening torque?	

Electrical installation

Verify the electrical connections and the cabling:

Step	Action	✓
1	Did you connect all protective ground conductors?	
2	The correct tightening of the screws may be altered during assembly and wiring phases of the drive. Verify and adjust the tightening of all terminal screws to the specified nominal torque.	
3	Do all fuses and circuit breaker have the correct rating; are the fuses of the specified type? Refer to the information provided in the Altivar Building ATH600 Getting Started Annex (SCCR), catalog number NAT16152 for UL/CSA compliance and also in the catalog DIA2ED2260301EN for IEC compliance.	
4	Did you connect or insulate all wires at the cable ends?	
5	Did you properly separate and insulate the control and power wiring?	
6	Did you properly connect and install all cables and connectors?	
7	Do all plug-in terminals colors and markings correspond to the colors and marking of the control block?	
8	Did you properly connect the signal wires?	
9	Are the required shield connections EMC-compliant?	
10	Did you take all measures for EMC compliance?	

Covers And Seals

Verify that all devices, doors and covers of cabinet are properly installed to meet the required degree of protection.

ATV212 to ATH200 Substitution

Overview

This chapter describes the ATH200 substitution path for existing ATV212 installations.

The chapter covers reference selection, physical dimensions, power and control wiring and I/O terminal mapping.

Work through the sections in order to complete the substitution from equipment selection through installation checks and pre-commissioning verification.

ATH200 Drive Selection

Overview

Use the tables in this section to identify the ATH200 reference associated with an installed ATV212 drive.

Reference Mapping (240 V)

The following table presents the ATH200 replacement for the 240 V ATV212 references.

		Legacy offers		New offers
Power (kW)	**Voltage**	**ATV212 references**	→	**ATH200 replacement**
0.75	240 V	ATV212H075M3X		ATH230U07M3
1.5	240 V	ATV212HU15M3X		ATH230U15M3
2.2	240 V	ATV212HU22M3X		ATH230U22M3
3	240 V	ATV212HU30M3X		ATH230U30M3
4	240 V	ATV212HU40M3X	→	ATH230U40M3
5.5	240 V	ATV212HU55M3X		ATH230U55M3
7.5	240 V	ATV212HU75M3X		ATH230U75M3
11	240 V	ATV212HD11M3X		ATH230D11M3
15	240 V	ATV212HD15M3X		ATH230D15M3

Reference Mapping (380–480 V)

The following table presents the ATH200 replacement for the 380–480 V ATV212 references.

		Legacy offers		New offers
Power (kW)	**Voltage**	**ATV212 references**	→	**ATH200 replacement**
0.75	380–480 V	ATV212H075N4		ATH230U07N4
1.5	380–480 V	ATV212HU15N4		ATH230U15N4
2.2	380–480 V	ATV212HU22N4	→	ATH230U22N4
3	380–480 V	ATV212HU30N4		ATH230U30N4
4	380–480 V	ATV212HU40N4		ATH230U40N4

		Legacy offers	New offers
Power (kW)	**Voltage**	**ATV212 references**	**ATH200 replacement**
5.5	380–480 V	ATV212HU55N4	ATH230U55N4
7.5	380–480 V	ATV212HU75N4	ATH230U75N4
11	380–480 V	ATV212HD11N4	ATH230D11N4
15	380–480 V	ATV212HD15N4	ATH230D15N4
18.5	380–480 V	ATV212HD18N4	ATH230D18N4
22	380–480 V	ATV212HD22N4	ATH230D22N4
22	380–480 V	ATV212HD22N4S	ATH230D22N4

Special Cases

ATV212 references	Power (kW)	Voltage
ATV212H●●●M3X	> 15	240 V

For the references in this last table, perform an application review before selecting a replacement.

Physical Dimensions and Mounting

Overview

The ATH200 has a different physical envelope than the ATV212 across most power ratings. Before installation, confirm that the target enclosure accommodates the replacement drive without modification.

The tables in this section provide width, height, and depth (W × H × D) for both drive families side by side to support panel space planning and mounting layout verification.

NOTE: Refer to the ATH200 Installation Manual, page 14 for frame-size-specific mounting clearance requirements and wall-mount arrangements.

ATH230 (IP20) — dimensions

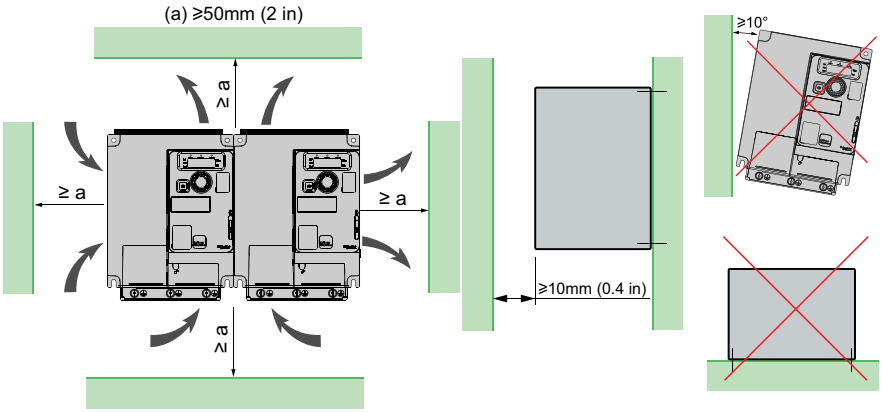
The following table compares the ATV212 and ATH230 dimensions (W × H × D) and weights.

Power (kW)	ATV212 Reference	ATV212 Dimensions (W × H × D)	ATV212 Weight	ATH230 Reference	ATH230 Dimensions (W × H × D)	ATH230 Weight
0.75	ATV212H075M3X	107 × 143 × 150 mm 4.21 × 5.63 × 5.91 in	1.8 kg 4.0 lbs	ATH230U07M3	72 × 143 × 138 mm 2.83 × 5.63 × 5.43 in	1.0 kg 2.2 lbs
0.75	ATV212H075N4	107 × 143 × 150 mm 4.21 × 5.63 × 5.91 in	2.0 kg 4.4 lbs	ATH230U07N4	105 × 142 × 158 mm 4.13 × 5.59 × 6.22 in	1.2 kg 2.6 lbs
1.5	ATV212HU15M3X	107 × 143 × 150 mm 4.21 × 5.63 × 5.91 in	1.8 kg 4.0 lbs	ATH230U15M3	105 × 143 × 138 mm 4.13 × 5.63 × 5.43 in	1.4 kg 3.1 lbs
1.5	ATV212HU15N4	107 × 143 × 150 mm 4.21 × 5.63 × 5.91 in	2.0 kg 4.4 lbs	ATH230U15N4	105 × 142 × 158 mm 4.13 × 5.59 × 6.22 in	1.3 kg 2.9 lbs
2.2	ATV212HU22M3X	107 × 143 × 150 mm 4.21 × 5.63 × 5.91 in	1.8 kg 4.0 lbs	ATH230U22M3	105 × 143 × 138 mm 4.13 × 5.63 × 5.43 in	1.4 kg 3.1 lbs
2.2	ATV212HU22N4	107 × 143 × 150 mm 4.21 × 5.63 × 5.91 in	2.0 kg 4.4 lbs	ATH230U22N4	140 × 184 × 158 mm 5.51 × 7.24 × 6.22 in	2.1 kg 4.6 lbs
3.0	ATV212HU30M3X	142 × 184 × 150 mm 5.59 × 7.24 × 5.91 in	3.05 kg 6.7 lbs	ATH230U30M3	140 × 184 × 158 mm 5.51 × 7.24 × 6.22 in	2.2 kg 4.9 lbs
3.0	ATV212HU30N4	142 × 184 × 150 mm 5.59 × 7.24 × 5.91 in	3.35 kg 7.4 lbs	ATH230U30N4	140 × 184 × 158 mm 5.51 × 7.24 × 6.22 in	2.1 kg 4.6 lbs
4.0	ATV212HU40M3X	142 × 184 × 150 mm 5.59 × 7.24 × 5.91 in	3.05 kg 6.7 lbs	ATH230U40M3	140 × 184 × 158 mm 5.51 × 7.24 × 6.22 in	2.2 kg 4.9 lbs
4.0	ATV212HU40N4	142 × 184 × 150 mm 5.59 × 7.24 × 5.91 in	3.35 kg 7.4 lbs	ATH230U40N4	140 × 184 × 158 mm 5.51 × 7.24 × 6.22 in	2.2 kg 4.9 lbs
5.5	ATV212HU55M3X	180 × 232 × 170 mm 7.09 × 9.13 × 6.69 in	6.1 kg 13.4 lbs	ATH230U55M3	150 × 232 × 178 mm 5.91 × 9.13 × 7.01 in	3.5 kg 7.7 lbs
5.5	ATV212HU55N4	142 × 184 × 150 mm 5.59 × 7.24 × 5.91 in	3.35 kg 7.4 lbs	ATH230U55N4	150 × 232 × 178 mm 5.91 × 9.13 × 7.01 in	3.5 kg 7.7 lbs
7.5	ATV212HU75M3X	180 × 232 × 170 mm 7.09 × 9.13 × 6.69 in	6.1 kg 13.4 lbs	ATH230U75M3	150 × 232 × 178 mm 5.91 × 9.13 × 7.01 in	3.6 kg 7.9 lbs
7.5	ATV212HU75N4	180 × 232 × 170 mm 7.09 × 9.13 × 6.69 in	6.45 kg 14.2 lbs	ATH230U75N4	150 × 232 × 178 mm 5.91 × 9.13 × 7.01 in	3.6 kg 7.9 lbs
11.0	ATV212HD11M3X	245 × 330 × 190 mm	11.55 kg	ATH230D11M3	180 × 330 × 198 mm	6.8 kg

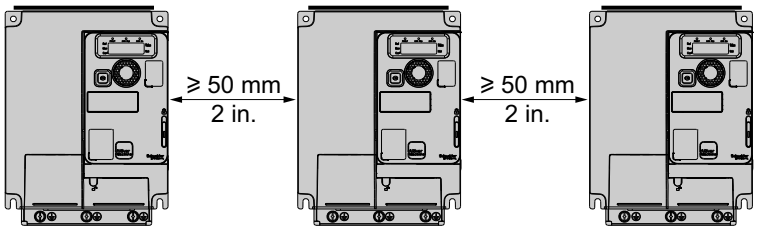
Power (kW)	ATV212 Reference	ATV212 Dimensions (W × H × D)	ATV212 Weight	ATH230 Reference	ATH230 Dimensions (W × H × D)	ATH230 Weight
		9.65 × 12.99 × 7.48 in	25.5 lbs		7.09 × 12.99 × 7.80 in	15.0 lbs
11.0	ATV212HD11N4	180 × 232 × 170 mm 7.09 × 9.13 × 6.69 in	6.45 kg 14.2 lbs	ATH230D11N4	180 × 330 × 198 mm 7.09 × 12.99 × 7.80 in	6.8 kg 15.0 lbs
11.0	ATV212WD11N4	290 × 560 × 315 mm 11.42 × 22.05 × 12.40 in	30.3 kg 66.8 lbs	ATH230D11N4	180 × 330 × 198 mm 7.09 × 12.99 × 7.80 in	6.8 kg 15.0 lbs
11.0	ATV212WD11N4C	290 × 560 × 315 mm 11.42 × 22.05 × 12.40 in	36.5 kg 80.5 lbs	ATH230D11N4	180 × 330 × 198 mm 7.09 × 12.99 × 7.80 in	6.8 kg 15.0 lbs
15.0	ATV212HD15M3X	245 × 330 × 190 mm 9.65 × 12.99 × 7.48 in	11.55 kg 25.5 lbs	ATH230D15M3	180 × 330 × 198 mm 7.09 × 12.99 × 7.80 in	6.9 kg 15.2 lbs
15.0	ATV212HD15N4	245 × 330 × 190 mm 9.65 × 12.99 × 7.48 in	11.65 kg 25.7 lbs	ATH230D15N4	180 × 330 × 198 mm 7.09 × 12.99 × 7.80 in	6.9 kg 15.2 lbs
15.0	ATV212WD15N4	290 × 560 × 315 mm 11.42 × 22.05 × 12.40 in	30.3 kg 66.8 lbs	ATH230D15N4	180 × 330 × 198 mm 7.09 × 12.99 × 7.80 in	6.9 kg 15.2 lbs
15.0	ATV212WD15N4C	290 × 560 × 315 mm 11.42 × 22.05 × 12.40 in	36.5 kg 80.5 lbs	ATH230D15N4	180 × 330 × 198 mm 7.09 × 12.99 × 7.80 in	6.9 kg 15.2 lbs
18.5	ATV212HD18N4	245 × 330 × 190 mm 9.65 × 12.99 × 7.48 in	11.5 kg 25.4 lbs	ATH230D18N4	180 × 390 × 229 mm 7.09 × 15.35 × 9.02 in	9.5 kg 20.9 lbs
18.5	ATV212WD18N4	310 × 665 × 315 mm 12.20 × 26.18 × 12.40 in	37.4 kg 82.5 lbs	ATH230D18N4	180 × 390 × 229 mm 7.09 × 15.35 × 9.02 in	9.5 kg 20.9 lbs
18.5	ATV212WD18N4C	310 × 665 × 315 mm 12.20 × 26.18 × 12.40 in	45.0 kg 99.2 lbs	ATH230D18N4	180 × 390 × 229 mm 7.09 × 15.35 × 9.02 in	9.5 kg 20.9 lbs
22.0	ATV212HD22N4	240 × 420 × 214 mm 9.45 × 16.54 × 8.43 in	26.4 kg 58.2 lbs	ATH230D22N4	180 × 390 × 229 mm 7.09 × 15.35 × 9.02 in	9.5 kg 20.9 lbs
22.0	ATV212HD22N4S	245 × 330 × 190 mm 9.65 × 12.99 × 7.48 in	11.65 kg 25.7 lbs	ATH230D22N4	180 × 390 × 229 mm 7.09 × 15.35 × 9.02 in	9.5 kg 20.9 lbs
22.0	ATV212WD22N4	284 × 720 × 315 mm 11.18 × 28.35 × 12.40 in	49.5 kg 109.1 lbs	ATH230D22N4	180 × 390 × 229 mm 7.09 × 15.35 × 9.02 in	9.5 kg 20.9 lbs
22.0	ATV212WD22N4C	284 × 720 × 315 mm 11.18 × 28.35 × 12.40 in	58.5 kg 129.0 lbs	ATH230D22N4	180 × 390 × 229 mm 7.09 × 15.35 × 9.02 in	9.5 kg 20.9 lbs

Clearances and Mounting Position

NOTICE
OVERHEATING Always verify that, after replacing an ATV212 with an ATH Drive, the selected mounting type and the associated derating curves remain compliant with the ATH Drive specifications and installation requirements. **Failure to follow these instructions can result in equipment damage.**



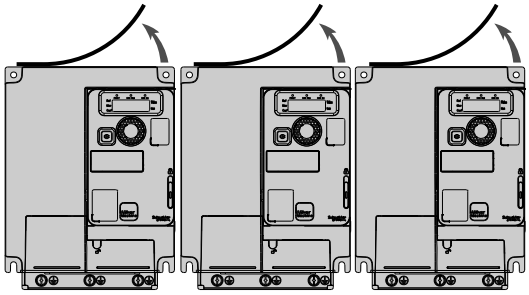
Mounting Type A for ATH230 drives



Free space ≥ 50 mm (2 in.) on each side, with vent cover fitted.

Mounting type A is suitable for drive operation at a specific surrounding air temperature. For more information, refer to Derating Curves in ATH200 Installation Manual, page 14.

Mounting Type B for ATH230 drives

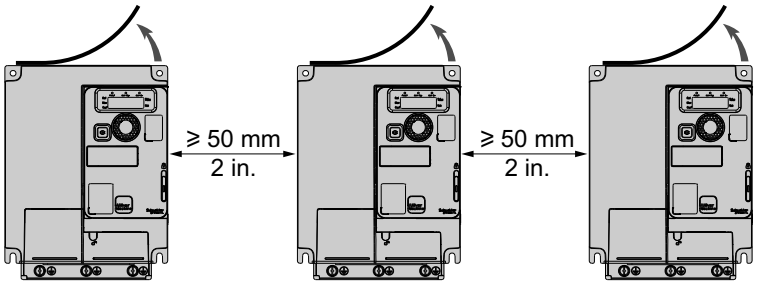


Drives mounted side-by-side, vent cover should be removed. The degree of protection still IP20.

Mounting type B is suitable for drive operation at a specific surrounding air temperature. For more information, refer to Derating Curves in ATH200 Installation Manual, page 14.

NOTE: Use a tool to peel off the top label.

Mounting Type C for ATH230 drives



The degree of protection still IP20. Free space ≥ 50 mm (2 in.) on each side. Vent cover should be removed for operation at a specific surrounding air temperature. For more information, refer to Derating Curves in ATH200 Installation Manual, page 14.

NOTE: Use a tool to peel off the top label.

Power Part Wiring

Overview

The ATH200 uses a different power and control terminal arrangement from the ATV212. During substitution, verify the supply connection, motor connection, protective earth connection, EMC plate arrangement, and control wiring method before reconnecting existing conductors.

Power Cables Comparison

⚠ DANGER

HAZARD OF FIRE AND/OR TERMINALS OVERHEATING

If the cross-section of the wires used on the ATV212 is smaller than the minimum required for the ATH Drive, replace them with wires of an appropriate cross-section in accordance with the specifications for the ATH Drive.

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

	ATV212		ATH200		
Power (kW)	Maximum wire size mm² (AWG)	Tightening torque N.m (lb-in)	Maximum wire size mm² (AWG)	Minimum wire size mm² (AWG)	Tightening torque N.m (lb-in)
0.75	6 (10)	1.3 (11.5)	6 (10)	0.5 (22)	1.4 (12.4)
1.5	6 (10)	1.3 (11.5)	6 (10)	0.5 (22)	1.4 (12.4)
2.2	6 (10)	1.3 (11.5)	6 (10)	0.5 (22)	1.4 (12.4)
3	6 (10)	1.3 (11.5)	6 (10)	0.5 (22)	1.4 (12.4)
4	6 (10)	1.3 (11.5)	6 (10)	0.5 (22)	1.4 (12.4)
5.5	6 (10)	1.3 (11.5)	16 (6)	1.5 (14)	2.4 (20.8)
7.5	16 (6)	2.5 (22.1)	16 (6)	1.5 (14)	2.4 (20.8)
11	16 (6)	2.5 (22.1)	16 (6)	1.5 (14)	2.4 (20.8)
15	25 (3)	4.5 (39.8)	16 (6)	1.5 (14)	2.4 (20.8)
18.5	25 (3)	4.5 (39.8)	35 (2)	2 (12)	4.5 (40)
22	25 (3)	4.5 (39.8)	35 (2)	2 (12)	4.5 (40)
xx	Different from a product to another				
xx	Same on both products				

Wiring Procedure

NOTE: Refer to ATH200 Installation Manual, page 14 for power cable sizing, permissible conductor cross-sections, and frame-size-specific tightening torque values. These values depend on the exact drive reference, the installation method, and the applicable local code requirements.

1. Connect the protective earth conductor before connecting the supply and motor conductors.
2. Connect the supply conductors to the input terminals shown for the selected ATH200 supply arrangement.
3. Connect the motor conductors to **U/T1**, **V/T2**, and **W/T3**.

4. Install the EMC plate and route the shielded motor cable so the shield bonds over a large surface area to the EMC plate.
5. Reinstall the covers and verify the required degree of protection before energizing the drive.

For control wiring, keep the control circuits separate from the power circuits. Use shielded cables for digital I/O, analog I/O, communication, and STO wiring.

NOTE: The STO inputs require shielded cables with a dedicated common P24 line. The STO function does not remove mains voltage or DC bus voltage from the drive.

Protective earth and grounding

Size the protective earth conductor according to the phase-conductor cross-section, following the ATH200 Installation Manual, page 14 grounding table. For copper conductors, apply the following rules:

- Phase conductor ≤ 10 mm²: use 10 mm² for the protective earth conductor.
- Phase conductor from 10 mm² to 16 mm²: use the same cross-section as the phase conductor.
- Phase conductor from 16 mm² to 35 mm²: use 16 mm².
- Phase conductor above 35 mm²: use at least half the phase-conductor cross-section.

NOTE: A dedicated protective earth conductor is required even when shielded cables or conduit are used. Do not use the cable shield or the conduit as the only protective earth path. The drive can present leakage current in normal operation.

⚠⚠DANGER

INCORRECT GROUNDING CONDUCTOR SIZE

Confirm that the grounding conductor size used in your current ATV212 installation complies with the specifications provided above.

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

Control Terminal Wiring

Overview

The ATH200 uses different terminal labels and configuration methods from the ATV212. Use the tables in this section to reconnect your existing wiring to the ATH200 terminals and configure the equivalent functions.

NOTE:

- On the ATV212, analog signal types (voltage or current) were selected using hardware switches SW100 and SW101. On the ATH200, all signal types are configured in software. After rewiring, set the signal type in the ATH200 menus before commissioning.
- ATH200 **AQ1** is a current-only analog output (0/4–20 mA). If the ATV212 **FM** terminal was configured for voltage output (0–10 V) and the BMS receiver cannot be updated, install an external 500 Ω resistor across **AQ1** and **COM** to convert the current signal to a 0–10 V voltage signal.

Digital inputs and relay outputs

The following table shows how to reconnect the ATV212 digital inputs and relay outputs to the ATH200. Verify the function assignment in the ATH200 menus before energizing the drive, because the ATH200 default assignment may differ from the ATV212 function.

ATV212 to ATH200 — digital input and relay output

ATV212 terminal to unwire	Equivalent ATH200 terminal to wire	Action required
F — Forward run	**DI1**	Reconnect to **DI1**. Verify the active control mode and the forward run assignment in the ATH200 I/O menu before commissioning.
R — Preset speed 1	**DI2**	Reconnect to **DI2**. Reassign the required function in the ATH200 I/O configuration.
RES — Fault reset	**DI3**	Reconnect to **DI3**. Assign the ATH200 fault-reset function if the legacy reset input is retained.
VIA — Logic mode only	**DI4**	Reconnect to **DI4** only if **VIA** was used as a logic input on the ATV212. If **VIA** was used as an analog reference, reconnect it to the analog inputs instead.
FL — Fault relay	**R1**	Reconnect to **R1**. Verify the retained relay behavior in the ATH200 relay output assignment.
RY — Frequency level attained	**R2**	Reconnect to **R2**. Reassign the required output state in the ATH200 relay configuration.

The following terminals are available on the ATH200 and have no direct equivalent on the ATV212.

ATH200 additional digital I/O — no ATV212 equivalent

ATH200 terminal	Description
DI5	Additional digital input. Available for assignment and pulse-input functions. Refer to the ATH200 programming manual for the list of assignable functions.
DI6	Additional digital input. Available for assignment. Also supports PTC probe use when the hardware switch is set accordingly. Verify the configured use in the ATH200 menus before wiring.

Analog inputs and outputs

The following table shows how to reconnect the ATV212 analog terminals to the ATH200. Replace hardware switch settings with the equivalent software parameter on the ATH200.

ATV212 to ATH200 — analog input and output

ATV212 terminal	ATH200 terminal	Action required
VIA Switch-configurable 0–10 V / 0–20 mA	**AI1** Configurable Voltage / Current	Move the wire from **VIA** to **AI1**. Hardware switch SW100 is eliminated. Verify that the configured signal type matches the ATV212 installation.
VIB Voltage 0–10 V or PTC	**AI2** Voltage 0–10 V or ±10 V	Reconnect to **AI2** when the legacy **VIB** terminal was used for secondary reference or feedback. Verify the final ATH200 use before energizing the drive.
FM Switch-configurable 0–10 V / 0–20 mA	**AQ1** Current only 0/4–20 mA	Move the wire from **FM** to **AQ1**. Hardware switch SW101 is eliminated. Configure the output signal type in the ATH200 analog output menu.

NOTE: AQ1 is current-only. If the ATV212 **FM** terminal was configured for voltage output (0–10 V) and the BMS receiver cannot be updated, install an external 500 Ω resistor across the ATH200 **AQ1** and **COM** terminals to convert the 0–20 mA current signal to a 0–10 V voltage signal.

The following terminal is available on the ATH200 and has no direct equivalent on the ATV212.

ATH200 additional analog I/O — no ATV212 equivalent

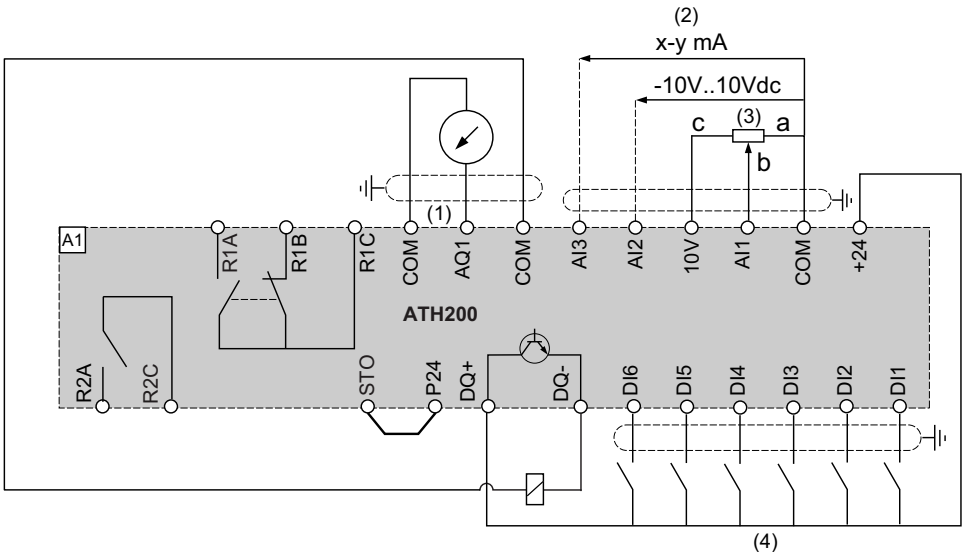
ATH200 terminal	Description
AI3 Current 0/4–20 mA	Additional ATH200 analog input. Available for extra feedback or reference use when required by the application.

NOTE: Verify the final ATH200 digital-input assignment, analog-input type, and the current-only behavior of **AQ1** in the ATH200 menus before commissioning. Do not rely on ATV212 switch settings to determine the signal type on the ATH200.

ATH200 control terminal wiring diagram

The following figure shows the standard ATH200 control terminal layout.

ATH200 control terminal block — I/O and safety



(1) Analog output, (2) Analog inputs, (3) Potentiometer SZ1RV1202 (2.2 kΩ) or similar (10 kΩ maximum), (4) Digital inputs — shielding instructions are given in the Electromagnetic Compatibility section

Checking Installation

Before Switching On

The safety function STO (Safe Torque Off) does not remove power from the DC bus. The safety function STO only removes power to the motor. The DC bus voltage and the mains voltage to the drive are still present.

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK

- Do not use the safety function STO for any other purposes than its intended function.
- Use an appropriate switch, that is not part of the circuit of the safety function STO, to disconnect the product from the mains power.

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

Unsuitable settings or unsuitable data or unsuitable wiring may trigger unintended movements, trigger signals, damage parts and disable monitoring functions.

⚠WARNING

UNANTICIPATED EQUIPMENT OPERATION

- Only start the system if there are no persons or obstructions in the zone of operation.
- Verify that a functioning emergency stop push-button is within reach of all persons involved in the operation.
- Do not operate the product with unknown settings or data.
- Verify that the wiring is appropriate for the settings.
- Never modify a parameter unless you fully understand the parameter and all effects of the modification.
- When commissioning, carefully run tests for all operating states, operating conditions and potential error situations.
- Anticipate movements in unintended directions or oscillation of the motor.

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

If the power stage is disabled unintentionally, for example as a result of power outage, errors or functions, there is a possibility that the motor is no longer decelerated in a controlled way.

⚠WARNING

UNANTICIPATED EQUIPMENT OPERATION

Verify that movements without braking effect does not result in unsafe conditions.

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

Mechanical Installation

Verify the mechanical installation of the entire drive system:

Step	Action	✓
1	Is the device mounted in a vertical position at ±10°?	
2	Does the installation meet the specified distance requirements? **NOTE:** Adhere to the minimum installation distances for required cooling.	
3	Is the device mounted on a flat, solid and vibration-free surface?	
4	Is the device installed indoors, away from heat sources and away from flammable materials.? **NOTE:** Avoid environmental effects like high temperatures and high humidity as well as dust, dirt and conductive gases.	
5	Is the device attached to the mounting surface using screws and washers according to the tables shown within the ?	
6	Are the fastening screws tightened to the torque specified in the .	

Electrical installation

Verify the electrical connections and the cabling:

Step	Action	✓
1	Did you connect all protective ground conductors?	
2	Do all fuses and circuit breaker have the correct rating; are the fuses of the specified type? The values and products for IEC compliance are specified in the present manual. The values and products for UL/CSA compliance are specified in the ATH200 Getting Started Annex	
3	Did you connect or insulate all wires at the cable ends?	
4	Did you properly connect and install all cables and connectors?	
5	Did you properly connect the signal wires?	
6	Are the required shield connections EMC-compliant?	
7	Did you take all measures for EMC compliance?	

Covers And Seals

Verify that all devices, doors and covers of cabinet are properly installed to meet the required degree of protection.

Schneider Electric
1884 Boulevard de la Défense
92000 Nanterre
France

www.se.com

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