

# Altivar Process ATV6000 UL

## Variable Speed Drives

### Handbook Manual

09/2020



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The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

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All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

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# Table of Contents



	<b>Safety Information</b> .....	<b>5</b>
	<b>About the Book</b> .....	<b>9</b>
<b>Chapter 1</b>	<b>Drive System</b> .....	<b>11</b>
1.1	Overview .....	<b>12</b>
1.2	Presentation .....	<b>15</b>
	ATV6000 UL - Your smart connected drive .....	<b>16</b>
	Benefits .....	<b>17</b>
	Application .....	<b>20</b>
	Standards and regulations .....	<b>23</b>
	Drive topology .....	<b>24</b>
	Device basic information .....	<b>25</b>
	Control features .....	<b>28</b>
	Key functions .....	<b>28</b>
<b>Chapter 2</b>	<b>Selection and ordering data</b> .....	<b>29</b>
	Type designation .....	<b>30</b>
	Selection and ordering data .....	<b>31</b>
<b>Chapter 3</b>	<b>General Specification</b> .....	<b>35</b>
	General Technical Data .....	<b>35</b>
<b>Chapter 4</b>	<b>ATV6000 Drive System I/O Interface Diagram (Standard Configuration)</b> ..	<b>37</b>
	I/O Interface Diagram (Standard Configuration) .....	<b>37</b>
<b>Chapter 5</b>	<b>Technical Data</b> .....	<b>39</b>
5.1	Output Voltage 2.4 kV .....	<b>40</b>
	F1_2424 ATV6000D200A2424...ATV6000D430A2424 .....	<b>41</b>
	F2_2424 ATV6000D570A2424...ATV6000D650A2424 .....	<b>43</b>
	F3_2424 ATV6000D790A2424...ATV6000D950A2424 .....	<b>44</b>
	F4_2424 ATV6000C122A2424 .....	<b>45</b>
	F5_2424 ATV6000C139A2424...ATV6000C178A2424 .....	<b>46</b>
	F6_2424 ATV6000C200A2424...ATV6000C213A2424 .....	<b>47</b>
	Layout Drawing and Dimensions .....	<b>48</b>
5.2	Output Voltage 4.16 kV .....	<b>51</b>
	F1_4242 ATV6000D350A4242...ATV6000D750A4242 .....	<b>52</b>
	Frame Size 1: Drawings .....	<b>54</b>
	F2_4242 ATV6000D890A4242 .....	<b>55</b>
	Frame Size 2: Drawings .....	<b>56</b>
	F3_4242 ATV6000C100A4242...ATV6000C113A4242 .....	<b>57</b>
	Frame Size 3: Drawings .....	<b>58</b>
	F4_4242 ATV6000C125A4242...ATV6000C165A4242 .....	<b>59</b>
	Frame Size 4: Drawings .....	<b>60</b>
	F5_4242 ATV6000C188A4242...ATV6000C210A4242 .....	<b>61</b>
	Frame Size 5: Drawings .....	<b>62</b>
	F6_4242 ATV6000C240A4242...ATV6000C275A4242 .....	<b>63</b>
	Frame Size 6: Drawings .....	<b>64</b>
	F7_4242 ATV6000C308A4242 .....	<b>65</b>
	Frame Size 7: Drawings .....	<b>66</b>
	F8_4242 ATV6000C338A4242...ATV6000C369A4242 .....	<b>67</b>
	Frame Size 8: Drawings .....	<b>68</b>
	Layout Drawing and Dimensions .....	<b>69</b>
5.3	Output Voltage 6.6 kV .....	<b>72</b>
	F1_6666 ATV6000D450A6666...ATV6000D890A6666 .....	<b>73</b>
	F2_6666 ATV6000C100A6666 .....	<b>75</b>
	F3_6666 ATV6000C119A6666 .....	<b>76</b>

F4_6666 ATV6000C138A6666 .....	77
F5_6666 ATV6000C163A6666 .....	78
F6_6666 ATV6000C179A6666 .....	79
F7_6666 ATV6000C200A6666...ATV6000C225A6666 .....	80
F8_6666 ATV6000C263A6666...ATV6000C288A6666 .....	81
F9_6666 ATV6000C334A6666 .....	82
F10_6666 ATV6000C382A6666 .....	83
F11_6666 ATV6000C425A6666 .....	84
F12_6666 ATV6000C489A6666...ATV6000C538A6666 .....	85
F13_6666 ATV6000C585A6666 .....	86
Layout Drawing and Dimensions .....	87
<b>Chapter 6 Options and Spare parts .....</b>	<b>91</b>
Overview .....	92
Spares and Repairs .....	94
Communication Buses and Networks .....	96
I/O Extension Modules .....	98
Encoder Interface Modules .....	99
Output Filters .....	100
Power Supply .....	101
Wiring .....	102
Harsh Environment .....	103
Guarding Options .....	104
Customization .....	106



## Important Information

### NOTICE

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.



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



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

### **DANGER**

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

### **WARNING**

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

### **CAUTION**

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

### **NOTICE**

**NOTICE** is used to address practices not related to physical injury.

### 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 a drive for three-phase synchronous, asynchronous motors and 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.

## Product Related Information

### DANGER

#### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Only appropriately trained persons who are familiar with and understand the contents of this manual and all other pertinent product documentation and who have received safety training to recognize and avoid hazards involved are authorized to work on and with this drive system.  
Installation, adjustment, repair and maintenance must be performed by qualified personnel.
- Before performing work on the drive system, follow the instructions given in the section "Complete drive system power Off procedure" described in the installation manual:
- Before applying voltage to the drive system:
  - Verify that the work has been completed and that the entire installation cannot cause hazards.
  - 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.**

Many components of the equipment, including the printed circuit board, operate with mains voltage, or present transformed high currents, and/or high voltages.

The motor itself generates voltage when the motor shaft is rotated.

AC voltage can couple voltage to unused conductors in the motor cable.

### DANGER

#### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Verify compliance with all safety information, different electrical requirements, and standards that apply to your machine or process in the use of this equipment.
- Verify compliance with all applicable standards and 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 drive system, block the motor shaft to prevent rotation.
- Do not create short circuits across the DC bus terminals or the DC bus capacitors or the braking resistor terminals, if present.

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

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 drive being just one part of the application. The drive 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 drive 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.
- If moving loads can result in hazards, for example, slipping or falling loads, operate the drive in closed loop mode.
- 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.**

Drive systems 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.**

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**⚠ 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.

**⚠ 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.**





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## At a Glance

### Document Scope

This document gives you an overview of the available Altivar Process Drive Systems.

Furthermore, you can select from the options described in detail in order to adapt the Altivar Process Drive System to the actual requirements of your system.

### Validity Note

The information in this manual is merely informative and maybe subject to modification.

Original instructions and information given in this manual have been written in English (before optional translation).

This documentation is valid for the Altivar Process ATV6000 Medium Voltage Drives.

The asterisks (\*) available to this document is linked to the following information: Based on previous data. This is not a guarantee of future performance or performance in your particular circumstances.

The technical characteristics of the devices described in the present document also appear online. To access the information online:

Step	Action
1	Go to the Schneider Electric home page <a href="http://www.schneider-electric.com">www.schneider-electric.com</a> .
2	In the <b>Search</b> box type the reference of a product or the name of a product range. <ul style="list-style-type: none"><li>• Do not include blank spaces in the reference or product range.</li><li>• To get information on grouping similar modules, use asterisks (*).</li></ul>
3	If you entered a reference, go to the <b>Product Datasheets</b> search results and click on the reference that interests you. If you entered the name of a product range, go to the <b>Product Ranges</b> search results and click on the product range that interests you.
4	If more than one reference appears in the <b>Products</b> search results, click on the reference that interests you.
5	Depending on the size of your screen, you may need to scroll down to see the datasheet.
6	To save or print a datasheet as a .pdf file, click <b>Download XXX product datasheet</b> .

The characteristics that are described in the present document should be the same as those characteristics that appear online. In line with our policy of constant improvement, we may revise content over time to improve clarity and accuracy. If you see a difference between the document and online information, use the online information as your reference.

## Related Documents

Use your tablet or your PC to quickly access detailed and comprehensive information on all our products on [www.schneider-electric.com](http://www.schneider-electric.com).

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

- The Handbook for detailed characteristics and selection guides,
- The CAD files to help design your installation,
- All software and firmware to maintain your installation up to date,
- Additional documents for better understanding of drive systems and applications
- And finally all the User Guides related to your drive, listed below:

(Other option manuals and Instruction sheets are available on [www.schneider-electric.com](http://www.schneider-electric.com))

Title of Documentation	Catalog Number
Digital Catalog for Industrial Automation	<a href="#">Digit-Cat</a>
Altivar Process range brochure	<a href="#">998-20307132</a> (English)
ATV6000 UL Handbook	<a href="#">GDE99017</a> (English), <a href="#">NNZ67544</a> (Spanish)
ATV6000 UL Installation Manual	<a href="#">GDE99019</a> (English), <a href="#">NNZ67545</a> (Spanish)
ATV6000 Programming Manual for Operator and Advanced Operator	<a href="#">QGH83265</a> (English), <a href="#">QGH83266</a> (French), <a href="#">QGH83268</a> (German), <a href="#">QGH83267</a> (Spanish), <a href="#">GDE94088</a> (Italian)
ATV6000 Embedded Ethernet Manual	<a href="#">PHA30472</a> (English)
ATV6000 Modbus SL Manual	<a href="#">MFR24213</a> (English)
ATV6000 PROFIBUS Manual	<a href="#">PHA30474</a> (English)
ATV6000 DeviceNet Manual	<a href="#">PHA30471</a> (English)
ATV6000 EtherCat Manual	<a href="#">PHA30473</a> (English)
ATV6000 Profinet Manual	<a href="#">PHA30475</a> (English)
SoMove: FDT	<a href="#">SoMove FDT</a> (English, French, German, Spanish, Italian, Chinese)
Altivar Process ATV6000: DTM	
Recommended Cybersecurity Best Practices	<a href="#">CS-Best-Practices-2019-340</a> (English)

You can download these technical publications and other technical information from our website at [www.se.com/en/download](http://www.se.com/en/download)

## Terminology

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

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.

Among others, these standards include:

- IEC 61800 series: Adjustable speed electrical power drive systems
- IEC 61508 Ed.2 series: Functional safety of electrical/electronic/programmable electronic safety-related
- EN 954-1 Safety of machinery - safety-related parts of control systems
- ISO 13849-1 & 2 Safety of machinery - safety related parts of control systems
- IEC 61158 series: Industrial communication networks - Fieldbus specifications
- IEC 61784 series: Industrial communication networks - Profiles
- IEC 60204-1: Safety of machinery - Electrical equipment of machines – Part 1: General requirements

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.

## Contact Us

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# Chapter 1

## Drive System

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### What Is in This Chapter?

This chapter contains the following sections:

Section	Topic	Page
1.1	Overview	12
1.2	Presentation	15

# Section 1.1

## Overview

### Overview

#### Altivar Process - ATV6000 UL

**Marketing segment**

- Mining, Mineral & Metals
- Water & Wastewater
- Oil & Gas
- Power Generation

**Product Picture**



**Type**

ATV6000 UL

**Brief description**

Medium Voltage Drive System with multi-pulse transformer and low voltage inverter cascade provides a sinusoidal sine wave at both input and output with low THD(i).

**Protection degree**

UL Type 1  
 IP31 enclosure design  
 IP41 enclosure design optional available  
 IP42 enclosure design optional available

**Power range**

160...20,000 kW / 200...6,300 HP

**Voltage ranges**

2.4 kV, 4,16 kV, 6,6 kV

**Mains frequency**

50/60 Hz ± 5 %

**Output frequency**

0.1 to 120 Hz

**Controlled motors**

- Asynchronous motor
- Synchronous motor
  - PM motor
  - PM motor with starter winding DOL

**Application types**

- Constant torque
- Variable torque
- Multi motor applications

**Control features**

- Vector control mode
- Energy efficiency mode
- With or without encoder

**Interfaces**

10 inch LCD touch screen as operating panel in the enclosure door,  
 I/O terminals for digital and analog signals,  
 Ethernet dual port connector, supporting Ethernet IP and Modbus TCP,  
 Modbus SL connector  
 Fieldbus options for Profibus, Profinet, EtherCAT, DeviceNet, CANopen

**Further reading**

You will find detailed information in this document.

**Altivar Process - ATV6xx**

**Marketing segment**

- Water and waste water
- Oil & gas
- Mining, minerals & metals
- Food & beverage

**Product Picture**



**Type**

ATV660

ATV680

**Brief description**

Enclosure unit, alternatively in the standard design, with additionally installed options or as a customized solution (Engineered To Order ETO)

Enclosure unit ready for regeneration, alternatively in the standard design, with predefined customizations or as individual customer solution

**Protection degree**

IP23 standard design of the enclosure IP54 optional design of the enclosure

**Power range**

1HP-900HP Normal Duty

125HP-900HP Normal Duty

**Voltage ranges**

3AC 480V ± 10% (other voltages possible - ETO)

**Mains frequency**

50/60 Hz ± 5 %

**Output frequency**

0.1...500 Hz

**Control method**

Asynchronous motor:

- Constant load torque standard, variable load torque standard, load-dependent mode

Synchronous motor:

- PM (permanent magnet) motor

**Interfaces**

Operating panel in the enclosure door, control terminals inside the enclosure, control terminals can be extended, fieldbus connection via Ethernet or Modbus, reading of the parameters via USB interface at the keypad

**Further reading**

You can find information about project planning and order in the "Configuration guide Altivar Process ATV660" and on [www.schneider-electric.com](http://www.schneider-electric.com).

You can find information about project planning and order in the "Configuration guide Altivar Process ATV680" and on [www.schneider-electric.com](http://www.schneider-electric.com).

**Altivar Process - ATV9xx**

**Marketing segment**

- Water and waste water
- Oil & gas
- Mining, minerals & metals
- Food & beverage

**Product Picture**



**Type**

ATV960

ATV980

**Brief description**

Enclosure unit, alternatively in the standard design, with predefined customizations or as individual customer solution

Enclosure unit ready for regeneration, alternatively in the standard design, with predefined customizations or as individual customer solution

**Protection degree**

IP23 standard design of the enclosure IP54 optional design of the enclosure

**Power range**

1HP-900HP Normal Duty

125HP-900HP Normal Duty

**Voltage ranges**

3AC 480V ± 10% (other voltages possible - ETO)

**Mains frequency**

50/60 Hz ± 5 %

**Output frequency**

0.1...500 Hz

**Control method**

Asynchronous motor:

- Constant load torque standard, variable load torque standard, load-dependent mode, energy saving mode

Synchronous motor:

- PM (permanent magnet) motor

**Interfaces**

Operating panel in the enclosure door, control terminals inside the enclosure, control terminals can be extended, fieldbus connection via Ethernet or Modbus, saving the parameters via USB interface at the keypad

**Further reading**

You can find detailed information in the "Altivar Process ATV960 Handbook" and on [www.schneider-electric.com](http://www.schneider-electric.com).

You can find detailed information in the "Altivar Process ATV980 Handbook" and on [www.schneider-electric.com](http://www.schneider-electric.com).

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## Section 1.2

### Presentation

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#### What Is in This Section?

This section contains the following topics:

Topic	Page
ATV6000 UL - Your smart connected drive	16
Benefits	17
Application	20
Standards and regulations	23
Drive topology	24
Device basic information	25
Control features	28
Key functions	28

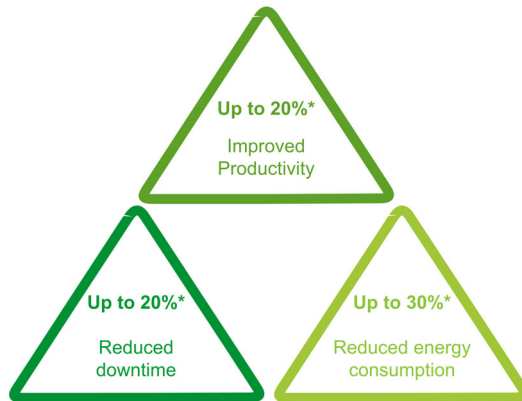
## ATV6000 UL - Your smart connected drive

The **Altivar™ Process** ATV6000 UL services-oriented drive completes the Altivar Process line-up with a solution to address your medium voltage operation and maintenance challenges.



ATV6000 UL is a smart, connected product which help optimize your business by:

- Enabling **process optimization**
- Improving **energy management**
- Enhancing **asset management**
- Providing a tailored **engineering solution**



The ATV6000 UL improves your process performance and asset management capability by transforming data into valuable and actionable business insight.

As a result, you get increased overall equipment effectiveness (OEE) and optimized total cost of ownership (TCO).

- Services-oriented drives for 0 to 20 MW
- Real-time intelligence
- Easy integration in process automation systems
- Intuitive and easy to use
- Optimized performance of applications such as fans, pumps, compressors, and conveyors
- EcoStruxure™-ready

**NOTE:** \*) Based on previous data. This is not a guarantee of future performance or performance in your particular circumstances.



## Benefits

### Services-oriented drives

**Increase availability and reduce Downtime for service continuity by 20%\***



#### Improved operator efficiency

- Generation of robust, actionable, and relevant information
- Advanced communication and predictive maintenance capabilities
- Functionalities for remote intervention and online support
- Easy troubleshooting with QR code
- Comfortable usability with the connected 10" Magelis HMI screen
- Key performance indicators

#### Fast and easy on-site maintenance operation

- Quicker intervention
- Optimized management of spare parts stock with modular architecture
- Easy front access design

### Digital services

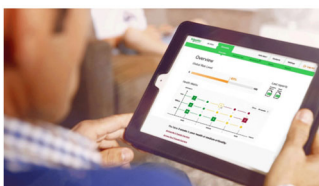
**More uptime & shorter recovery time with predictive maintenance and reduce TCO by 20%\***



- Predictive maintenance, including continuous monitoring, risk assessment, and mitigation plan, with EcoStruxure™ Asset Advisor
- Identification of energy saving potential
- Optimized maintenance budgeting
- 360° diagnostics, with report and analysis
- Records of your crucial assets
- Access to 24/7 Schneider Electric service assistance

### EcoStruxure Asset Advisor

**Preventive analytics to increase operational performance of your drives systems**



ATV6000 UL provides a unique solution to optimize the operation and maintenance of your installation. It allows you to manage maintenance tasks on your assets with preventive and predictive management based on real-time assessments and predictive analytics. All thanks to the combination of smart connected device technologies and powerful cloud-based risk prediction capabilities.

The ATV6000 UL with EcoStruxure Asset Advisor transforms data into insight to help run your operations more efficiently and safer, with more availability, and increased profits.

#### Continuous health monitoring

The operator gets a complete health monitoring view of its assets and conditions of usage (drive, transformer, MCB, motor) and the assets are seen as super-sensors providing relevant data and KPIs.

#### Risk evaluation

The operator knows in real-time where and what risks are on the installation. Predictive analytics constantly evaluates the level and criticality of risk by looking at an asset, the process duty cycle, and the condition of usage. This enables the ability to predict, in advance, a potential failure or dysfunction of the installation.

#### Risk mitigation

The operator receives notification of the necessary maintenance task required at the right time to secure the asset and production at minimal cost, mitigating the risks of downtime.

**QR code interface**

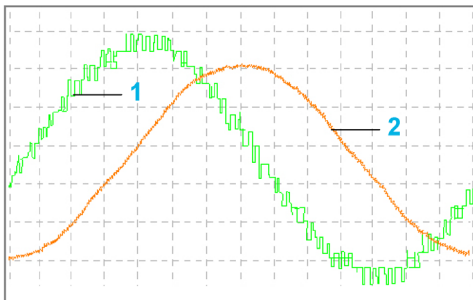
**Empowered operator to improve efficiency**



The ATV6000 UL provides a smart and easy to use QR-code interface to provide the operator with relevant drive information. With just one scan of the QR-code with a mobile device (as tablet or smartphone) on the name plate or the HMI screen you get easy access to technical documentation or technical online support for easy error management.

**Energy management**

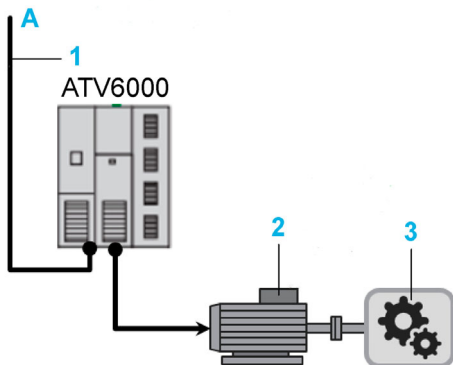
**Optimize usage of energy and reduce consumption by up to 30%\***



- 1 Voltage on motor side
- 2 Current on motor side

**Better usage of energy**

- Embedded power management with < 5% measurement error
- Key performance indicators and service life monitoring on energy usage
- Smart data collection and access to real-time information



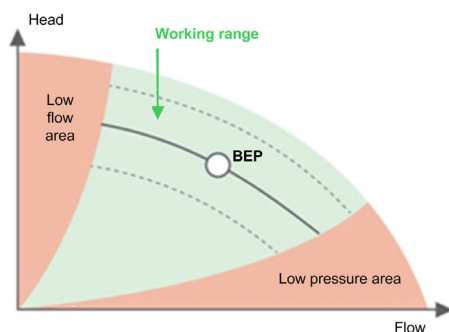
**Use of clean power**

- Designed for seamless integration into installation
- No need to add harmonic mitigation on mains side
- Minimized energy waste
- Reduced motor losses, vibrations, and torque pulses with advanced harmonic-free technology

- A Mains
- 1 Drive input voltage, Drive input current, Drive input power
- 2 Motor current, Motor voltage, Motor speed, Motor winding & bearing temperature, Consumption kWh
- 3 Over-/Underload, Stall, Cavitation, Flow, Pressure, BEP

## Process optimization

Improve productivity and availability by up to 20%\*



### Error tolerant operations

Equipped with level inverter bypass features, ATV6000 UL help to reduce process interruption.

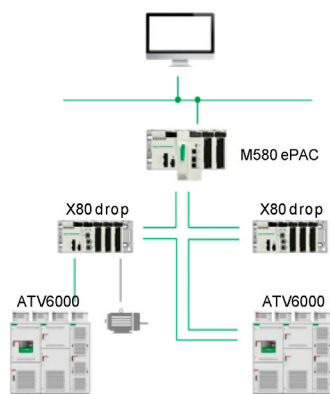
### Proactive maintenance approach

With improved warning functions in case of unusual conditions, and sophisticated measures to help protect equipment against damage. The ATV6000 UL is also highly modular, enabling fast maintenance operation.

### Maximized performance and production output

Ensuring sustainable operation efficiency through making necessary adjustment in case of best efficiency point (BEP) deviation.

## BEP Best Efficiency Point Function



### Our IIoT-enabled EcoStruxure solution

Provides compatibility with Process Expert System (PES) architectures, Modicon M580 controllers, and Foxboro EVO DCS systems.

The ATV6000's smart drive capabilities offer innovative features based on IIoT, mobility, detecting, analysing, and recommending solutions to boost your operation and maintenance activities.

The drive is EcoStruxure-ready, providing a complete integrated solution for overall equipment effectiveness.

It allows you to save time and exploit the full range of capabilities of your equipment on a single platform.

- EcoStruxure PES and Modicon™ M580-compatible, enabling use of dedicated libraries for quicker product implementation and commissioning
- DTM library and application function blocks provide full programming and diagnostic functions
- EcoStruxure Asset Advisor uses the drive as a super sensor for predictive maintenance

## Tailored solutions

Deliver solutions to optimize your operation efficiency and investment (time & expenditure)

- Delivers a highly versatile platform to meet demanding customer requirements beyond those of standard drives
- Provides a high level of customization to fit specific purposes
- Offers flexibility with electrical or mechanical modifications and extensions easily delivered
- Utilizes a simplified design process and shortened system implementation time

## Application



### Mining, Mineral & Metals

- Long Distance Conveyor
- Single/Multi Flat Conveyor
- Belt Conveyor
- Sintering/Dedusting / ID Fan/Mill Fan
- Blast Furnace
- Slurry Pump/Cyclone
- HPGR
- SAG Mill / Ball Mill / Vertical Mill



### Oil & Gas

- ESP (Electrical Submersible Pump)
- Crude Oil Transfer Pump
- Distribution Pipeline Compressor
- Pipeline Pumps
- Load Commutated Inverter Retrofit
- LNG Compressor
- Fans/Pumps/Compressors/Mixer (Refining)
- Petrochemical Fan/Pump/Extruder
- FPSO



### Water & Wastewater

- Natural Spring/Well
- Electrical Submersible Pump
- Raw Water Intake Pump
- Booster Pump
- Multi-pump Station
- Distribution Pump
- Desalination Pumps
- Wastewater Treatment Pumps
- Water Purification Pumps



### Power Plant

- GT Starters, Fuel Gas Booster Compressors, Boiler (HRSG)
- Feed-water Pumps/Cooling Water Pumps
- Circulation water pump
- Primary/Secondary Draft Fan/ID fans
- Coal belt conveyor
- Coal vertical mill

Typical Control Functions Used for Applications

Function	MMM					WWW					O&G					Power Plant					
	Long-distance conveyor	Slurry pump	SAG/ball mill	HPGR	ID/FD fans	Raw water pump	Lifting station	Blower/compressor	Booster pump	High-pressure pumps	ESP	Crude oil transfer pump	Pipeline compressor	ID/FD fans	Extruder	Mixer	Feed water pump	ID/FD fans	Coal mill	Cooling water circulation pump	Fuel gas compressor
Soft start function, incl. synchronization, and bypass	✓		✓			✓	✓	✓	✓	✓	✓	✓				✓				✓	✓
Speed and torque control mode	✓		✓	✓											✓	✓					
Master slave up to 10 drives	✓		✓	✓											✓	✓					
Torque regulation	✓		✓	✓											✓	✓					
Gliding current control		✓				✓				✓		✓					✓			✓	
Mechanical Backlash compensation			✓	✓											✓		✓				
Master/Slave management	✓		✓	✓											✓	✓			✓		
Master/Slave on rigid coupling	✓		✓												✓	✓					
Master/Slave on elastic coupling	✓			✓																	
Load sharing (drop control)	✓		✓	✓																	
Pump characteristics setting		✓				✓	✓		✓	✓	✓	✓					✓			✓	

Typical Monitoring Functions Used for Applications

Function	MMM					WWW					O&G					Power Plant					
	Long-distance conveyor	Slurry pump	SAG/ball mill	HPGR	ID/FD fans	Raw water pump	Lifting station	Blower/compressor	Booster pump	High-pressure pumps	ESP	Crude oil transfer pump	Pipeline compressor	ID/FD fans	Extruder	Mixer	Feed water pump	ID/FD fans	Coal mill	Cooling water circulation pump	Fuel gas compressor
External error	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
External error processing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Catch on the fly				✓	✓			✓			✓		✓					✓			
Torque limitation	✓		✓	✓			✓			✓	✓				✓	✓			✓		
Current limitation	✓		✓	✓						✓	✓				✓	✓			✓		
2nd current limitation	✓			✓							✓				✓	✓			✓		
Encoder check	✓		✓												✓	✓					
Reverse disable		✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Under/Overload detection	✓	✓	✓	✓						✓	✓		✓		✓	✓			✓		
Mechanical resonance rejection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stall monitoring	✓	✓	✓	✓			✓				✓		✓		✓	✓		✓	✓		
Ramp tracking	✓		✓	✓				✓					✓		✓	✓			✓		✓
Pump monitoring functions		✓				✓	✓		✓	✓	✓	✓					✓			✓	

Function	MMM					WWW					O&G					Power Plant					
	Long-distance conveyor	Slurry pump	SAG/ball mill	HPGR	ID/FD fans	Raw water pump	Lifting station	Blower/compressor	Booster pump	High-pressure pumps	ESP	Crude oil transfer pump	Pipeline compressor	ID/FD fans	Extruder	Mixer	Feed water pump	ID/FD fans	Coal mill	Cooling water circulation pump	Fuel gas compressor
Sensorless pump flow calculation		✓				✓	✓		✓	✓	✓	✓					✓			✓	
Energy measurement and savings calculation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oscilloscope function	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operating time	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1-year Trend recording	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Error storage and history with actual values	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Configuration Management Used for Applications

Function	MMM					WWW					O&G					Power Plant					
	Long-distance conveyor	Slurry pump	SAG/ball mill	HPGR	ID/FD fans	Raw water pump	Lifting station	Blower/compressor	Booster pump	High-pressure pumps	ESP	Crude oil transfer pump	Pipeline compressor	ID/FD fans	Extruder	Mixer	Feed water pump	ID/FD fans	Coal mill	Cooling water circulation pump	Fuel gas compressor
Motor-/Configuration switching and	✓	✓	✓	✓			✓		✓						✓	✓			✓		
Threshold value reached (current, frequency...)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Output phase rotation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Automatic Fault Reset	✓				✓		✓							✓				✓			
Parameter customization	✓										✓										
Pulse input configuration	✓		✓		✓									✓				✓	✓		
Dual rating	✓		✓	✓				✓		✓				✓	✓				✓		✓
Skip frequencies selection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor auto tuning function	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Preset speeds setting	✓		✓					✓					✓		✓				✓		✓
Ramp type setting	✓			✓							✓										✓
Ramp switching	✓		✓	✓			✓				✓							✓	✓		✓
Motor potentiometer function			✓	✓											✓						

## Standards and regulations

The entire ATV6000 range conforms to international requirements in order to provide efficient and appropriate usage of products by the end user, machine manufacturer or system integrator.



### Low voltage directive (LVD)

As declared by the CE mark, the mechanical and electrical design of the Low voltage cabinet (control cabinet) meets the European Directive LVD 2014/35/EU with regards to the harmonized standard EN/IEC 61800-5-1.

As described on the technical construction file, the mechanical and electrical design of Medium voltage parts meets the harmonized standard EN/IEC 61800-5-1.

### Electromagnetic compatibility directive (EMC)

As declared by the CE mark, ATV6000 fulfills the requirements of the European Directive EMC 2014/30/EU with regards to the harmonized standard EN/IEC 61800-3.

### Machine directive

The ATV6000 drive is to be installed as a part of a machine, system or plant. The responsibility of the machine manufacturer or system integrator is involved as it refers to the method of installation. An appropriate usage of products helps to ensure the compliance to the machine directive with regards to the IEC standards 61800-5-1. Drive operation remains totally prohibited without prior establishment of conformity by the machine manufacturer or integrator.

## Drive topology

Its simple two level power cell design takes away the complexity of multilevel architecture and makes it into a clear and easy understandable technology. This reduces your maintenance cost because the crew will easily understand Altivar 6000.

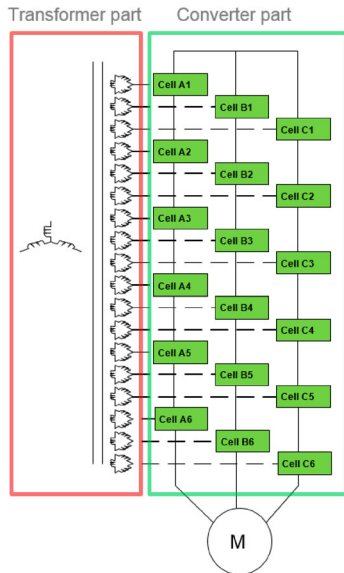


Fig. ATV6000 multilevel architecture

One of the core component of ATV6000 is the “Power cell”. This “Power cell” is a single phase, two level output switching device, supplied by a 700/720 V low voltage winding of a transformer.

The big advantage of this is, that the switching elements are state-of-the-art LV components. By putting this AC - supplies in series, higher voltages are achieved. The number of “Power cells” determines the output voltage. Every cell provides a small step of motor supply, resulting in a smooth waveform. Phase shifting can be done on the secondary windings of transformer, allowing an elimination of harmonics of input.

The cells create the right part of the drive and the transformer the left section of the drive. The drives regulation system and control system are installed at front of the drive to provide an optimized footprint. The transformer and cell section can be separated for easy installation. Adequate cooling fans on top of the cabinet are supplied by auxiliary power supply or by an additional secondary winding of the integrated transformer as an option

Schneider Electric offers this transformer (aluminum and copper) in a standard efficiency as well as in increased high efficiency.

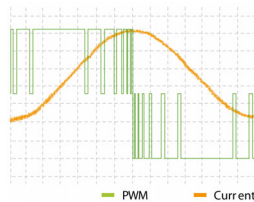


Fig. Typical output waveform of a single power cell

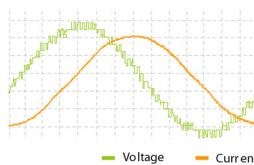


Fig. Output waveform

### Benefits

- Easy understandable multilevel architecture saves money in case of maintenance
- Less spare parts because only one power cell design is needed for the whole drive
- Smooth output voltage because each power cell provides only a small step of the voltage
- Smooth output voltage because each power cell provides only a small step
- Typical dv/dt: Approx. 2100V/μS<sup>(1)</sup>
- Typical THDI down to 1.5%<sup>(1)</sup> (grid side)
- Typical THDU <2%<sup>(1)</sup> (motor side)
- Typical Power Cell Carrier Frequency: 610 Hz

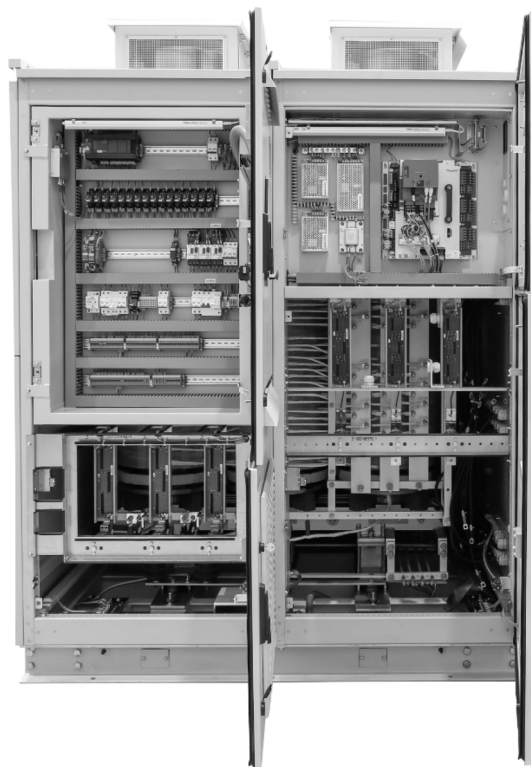
(1) Value may slightly change depending on drive's rating.



## Device basic information

### Control and Transformer cabinet

Clever and modular arrangement of control section in front of transformer. This section with independent access allows the integration of additional components according to your personal needs.

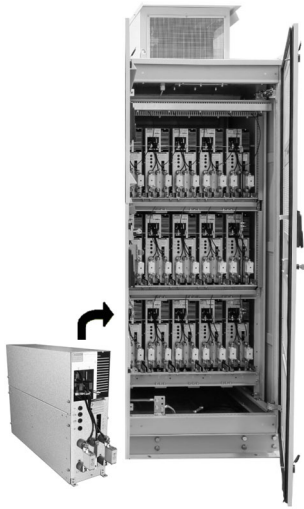


#### Benefits

- Space optimized dimensions without squeezing components in small compartments, granting you a very long lifetime avoiding any hot spot inside the system.
- The integrated transformer and multilevel structure helps to avoid bearing currents in existing motors. This results in a capability to run your very old motor on a very new MV drive, leading to a drastic reduction of energy costs where your damper controlled fan or throttle controlled pump is concerned.

## Power cells cabinet

The power cells cabinet contains the inverter function of the ATV6000. It is a modular cabinet that can be used with the transformer cabinet according to the implementation requirements. The power cells are placed onto a fast-track system providing a convenient access to it.



### Benefits

- Clear arrangement of components helping your team in maintenance and service
- Compact and low weight cell design saving maintenance shutdown time
- Easier installation to save time

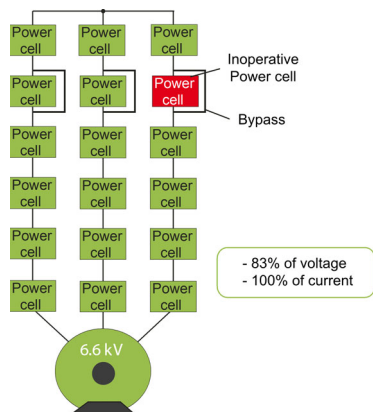
## Degree of Protection: IP41& IP42

The enclosure design exists in three optimized variations, according to particular requirements or preferences. Each solution contains a clearly specified and tested cooling system which provides high reliability. The standard design of the ATV6000 enclosure unit complies with protection degree IP31. If a higher protection degree is desired or required, there are two alternative solutions available, IP41 and IP42.

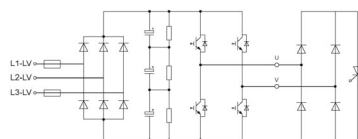
The degree of protection provided by the enclosure of the electrical equipment aims to:

- Protect person against access to hazardous parts inside the enclosure;
- Protect equipment inside the enclosure against ingress of solid foreign objects;
- Protect equipment inside the enclosure against harmful effects due to the ingress of water.

## Power Cell Bypass



Bypass principle



Power cell bypass circuit schematic

It is advisable to have a power cell bypass option for crucial processes, in which case a reduction in capacity is preferable to a complete shutdown.

When a power cell breaks down, it will automatically bypass the same position power cell in each phase from the main circuit, and the VSD system will maintain running by keeping voltage/speed up to 90% and 100% of current capacity.

It helps to prevent production downtime or unplanned interruption. Replacement of the inoperative power cell shall be arranged at the next scheduled maintenance. It is a contactless system which is fully integrated into the power cell, and this makes the power cell entirely modular even with a bypass function.

Power cell Bypass function is available up to 490A output current.

### Benefits

- The contactless automatic power cell bypass provides operation by avoiding contact damage due to environmental influence like dust or humidity.
- Increases process availability as the drive will keep on running with negligible load capacity reduction. In most of cases, the optimum load control performance of the pump, fan, or compressor are not affected, as their typical process operation range does not exceed 30 Hz and 45 Hz to generate energy savings.
- Provides crucial process availability until the next scheduled maintenance.

## Control features

Friendly and easy-to-use interface with 10" Magelis touch-screen. Windows arrangement to guide you in few touches to the required result.

- Motor control mode
  - Vector control mode
  - Energy efficiency mode
  - With or without encoder
- Application control mode
  - Speed control
  - Torque control
- Number of quadrant
  - 2Q
- Steady operation
  - Speed precision in steady state:  $\pm 0.5\%$
  - Closed-loop speed precision:  $\pm 0.1\%$
- Monitoring (Monitoring functions which help to protect)
  - Overcurrent, overvoltage, undervoltage, controller shutdown, cooling fan stop, overload, overtemperature, communication interruption, ground fault, phase loss, etc.
- Communication
  - Ethernet dual port connector, sporting Ethernet IP and Modbus TCP
  - Modbus SL connector
  - Fieldbus options for Profibus, Profinet, EtherCAT, DeviceNet, CANopen
- PID function
  - Integrated PID controller, and parameters can be set.
- I/O function
  - Variety different analog and digital I/Os, extendable on customer request.
- Operation mode
  - Local/remote/panel (As an option)
- Human-Machine interface display
  - 10 inch large color LCD touch screen with graphic user surface.
  - Drive status pilot lights for ready, run, warning and error.
  - Output frequency, voltage, current, power and input voltage, current, power, power factor, parameter settings, voltage and current waveform, transformer temperature, drive status and records.
  - Comprehensive display for monitoring and maintenance data.
- Multi language for HMI: English, French, German, Spanish, Italian, Chinese, Russian.

## Key functions

- Soft start function, incl. synchronization and bypass
- Speed and torque control mode
- Master slave up to 10 drives
- Load sharing (droop control)
- Mechanical Backlash compensation
- Stall monitoring
- Pump characteristics setting
- Pump monitoring functions
- Sensor less pump flow calculation
- Energy measurement and savings calculation
- Oscilloscope function
- 1 year Trend recording
- Catch on the fly a spinning motor
- Skip frequencies selection
- Motor auto tuning function
- Error/warning messages history with actual values
- Preset speeds setting
- Ramp type setting
- Motor potentiometer function
- Parameter set switching

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# Chapter 2

## Selection and ordering data

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### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Type designation	30
Selection and ordering data	31

## Type designation

The product designation of the ATV6000 UL consists of several points of reference (characters and figures). The meaning of each point is illustrated in the following example.

For **ATV6000 UL**

	ATV6000	C	470	A	66	66	N	D	3
<b>Product Range</b>	ATV 6000								
<b>Factor for power rating</b>									
D	x 1 kVA								
C	x 10 kVA								
M	x 100 kVA								
<b>Transformer rating</b>									
470	470								
...	...								
<b>Cooling type</b>									
A	Air cooled								
<b>Input voltage</b>									
24	2.4 kV								
42	4.16 kV								
66	6.6 kV								
<b>Output voltage</b>									
24	2.4 kV								
42	4.16 kV								
66	6.6 kV								
<b>Style</b>									
N	No bypass								
B	Powercell bypass								
C	Powercell bypass n+1								
D	Powercell bypass n+2								
<b>Standard</b>									
D	cULus Standard efficiency								
E	cULus High efficiency								
F	cULus Optimized efficiency								
<b>IP rating</b>									
3	UL type 1 / IP31								
4	IP41								
5	IP42								

## Selection and ordering data

### Voltage class 2.4 kV

Power specifications for output voltage 2.4 kV, 9 power cells, 18 input pulses											
Model	Transformer rating (1)	Normal duty				Heavy duty				Individual power cell rating	Max overload 3 sec/10 mins
		Maximum motor shaft power (2)		Nominal continuous current	120% overload 1 min/10 mins	Maximum motor shaft power (2)		Nominal continuous current	150% overload 1 min/10 mins		
	kVA	kW	HP	A	A	kW	HP	A	A	A	A
<b>Voltage class: 2.4 kV (3)</b>											
ATV6000D200A2424●●●	200	160	214	46	55.2	150	201	44	66	65	97.5
ATV6000D280A2424●●●	280	220	295	65	78	180	241	52	78	65	97.5
ATV6000D350A2424●●●	350	280	375	80.6	96.7	260	348	77	116	100	150
ATV6000D430A2424●●●	430	340	455	100	120	270	362	80	120	100	150
ATV6000D570A2424●●●	570	450	603	130	155	410	549	120	180	150	225
ATV6000D650A2424●●●	650	520	697	150	180	410	549	120	180	150	225
ATV6000D790A2424●●●	790	630	844	181	218	550	737	160	240	200	300
ATV6000D950A2424●●●	950	760	1019	220	264	610	818	176	264	220	330
ATV6000C122A2424●●●	1220	970	1300	280	336	770	1032	224	336	280	420
ATV6000C139A2424●●●	1390	1100	1475	320	384	880	1180	256	384	320	480
ATV6000C163A2424●●●	1630	1300	1743	374	449	1130	1515	328	492	410	615
ATV6000C178A2424●●●	1780	1420	1904	410	492	1130	1515	328	492	410	615
ATV6000C200A2424●●●	2000	1600	2145	460	552	1360	1823	392	588	490	735
ATV6000C213A2424●●●	2130	1700	2279	490	588	1360	1823	392	588	490	735

(1) For higher drive power please contact Schneider Electric.

(2) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%, and power factor 0.88.

(3) Please contact Schneider Electric for other combinations of input and output voltage.

**NOTE:** For dimensions and outline drawings please refer to chapter Technical data (*see page 39*).

Voltage class 4.16 kV

Power specifications for output voltage 4.16 kV, 12 power cells, 24 input pulses											
Model	Transformer rating (1)	Normal duty				Heavy duty				Individual power cell rating	Max overload 3 sec/10 mins
		Maximum motor shaft power (2)		Nominal continuous current	120% overload 1 min/10 mins	Maximum motor shaft power (2)		Nominal continuous current	150% overload 1 min/10 mins		
	kVA	kW	HP	A	A	kW	HP	A	A	A	A
<b>Voltage class: 4.16 kV (3)</b>											
ATV6000D350A4242●●●	350	280	375	46.5	55.8	260	348	44	66	65	97.5
ATV6000D490A4242●●●	490	390	522	65	78	310	415	52	78	65	97.5
ATV6000D570A4242●●●	570	450	603	74.7	89.6	420	563	71	107	100	150
ATV6000D630A4242●●●	630	500	670	83	99.6	470	630	79	119	100	150
ATV6000D750A4242●●●	750	600	804	100	120	480	643	80	120	100	150
ATV6000D890A4242●●●	890	710	952	118	141	680	911	113	170	150	225
ATV6000C100A4242●●●	1000	800	1072	133	159	720	965	120	180	150	225
ATV6000C113A4242●●●	1130	900	1206	150	180	720	965	120	180	150	225
ATV6000C125A4242●●●	1250	1000	1341	166	199	950	1273	159	239	200	300
ATV6000C150A4242●●●	1500	1200	1609	199	239	960	1287	160	240	200	300
ATV6000C165A4242●●●	1650	1320	1770	220	264	1060	1421	176	264	220	330
ATV6000C188A4242●●●	1880	1500	2011	249	299	1340	1796	224	336	280	420
ATV6000C210A4242●●●	2100	1680	2252	280	336	1340	1796	224	336	280	420
ATV6000C240A4242●●●	2400	1920	2574	320	384	1540	2065	256	384	320	480
ATV6000C275A4242●●●	2750	2200	2950	365	438	1970	2641	328	492	410	615
ATV6000C308A4242●●●	3080	2460	3298	410	492	1970	2641	328	492	410	615
ATV6000C338A4242●●●	3380	2700	3620	448	538	2360	3164	392	588	490	735
ATV6000C369A4242●●●	3690	2950	3956	490	588	2360	3164	392	588	490	735

(1) For higher drive power please contact Schneider Electric.  
 (2) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%, and power factor 0.88.  
 (3) Please contact Schneider Electric for other combinations of input and output voltage.  
**NOTE:** For dimensions and outline drawings please refer to chapter Technical data (see page 39).



## Voltage class 6.6 kV

Power specifications for output voltage 6.6 kV, 15 (18) power cells, 30 (36) input pulses											
Model	Transformer rating (1)	Normal duty				Heavy duty				Individual power cell rating	Max overload 3 sec/10 mins
		Maximum motor shaft power (2)		Nominal continuous current	120% overload 1 min/10 mins	Maximum motor shaft power (2)		Nominal continuous current	150% overload 1 min/10 mins		
	kVA	kW	HP	A	A	kW	HP	A	A	A	A
<b>Voltage class: 6.6 kV (3)</b>											
ATV6000D450A6666●●●●	450	355	476	37.1	44.5	330	442	35	52.5	65	97.5
ATV6000D570A6666●●●●	570	450	603	47.1	56.5	430	576	45	67.5	65	97.5
ATV6000D630A6666●●●●	630	500	670	52.3	62.7	470	630	50	75	65	97.5
ATV6000D780A6666●●●●	780	620	831	65	78	590	791	62	93	100	150
ATV6000D890A6666●●●●	890	710	952	74.3	89.1	670	898	71	107	100	150
ATV6000C100A6666●●●●	1000	800	1072	83.7	100	760	1019	80	120	100	150
ATV6000C119A6666●●●●	1190	950	1273	100	120	760	1019	80	120	100	150
ATV6000C138A6666●●●●	1380	1100	1475	115	138	1050	1408	110	165	150	225
ATV6000C163A6666●●●●	1630	1300	1743	136	163	1140	1528	120	180	150	225
ATV6000C179A6666●●●●	1790	1430	1917	150	180	1140	1528	120	180	150	225
ATV6000C200A6666●●●●	2000	1600	2145	167	201	1520	2038	160	240	200	300
ATV6000C225A6666●●●●	2250	1800	2413	188	226	1520	2038	160	240	200	300
ATV6000C263A6666●●●●	2630	2100	2816	220	264	2010	2695	211	317	280	420
ATV6000C288A6666●●●●	2880	2300	3084	241	289	2140	2869	224	336	280	420
ATV6000C334A6666●●●●	3340	2670	3580	280	336	2140	2869	224	336	280	420
ATV6000C382A6666●●●●	3820	3050	4090	320	384	2930	3929	307	461	410	615
ATV6000C425A6666●●●●	4250	3400	4559	356	427	3130	4197	328	492	410	615
ATV6000C489A6666●●●●	4890	3910	5243	410	492	3740	5015	392	588	490	735
ATV6000C538A6666●●●●	5380	4300	5766	450	540	3740	5015	392	588	490	735
ATV6000C585A6666●●●●	5850	4680	6275	490	588	3740	5015	392	588	490	735

(1) For higher drive power please contact Schneider Electric.

(2) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%, and power factor 0.88.

(3) Please contact Schneider Electric for other combinations of input and output voltage.

**NOTE:** For dimensions and outline drawings please refer to chapter Technical data ([see page 39](#)).



# Chapter 3

## General Specification

### General Technical Data

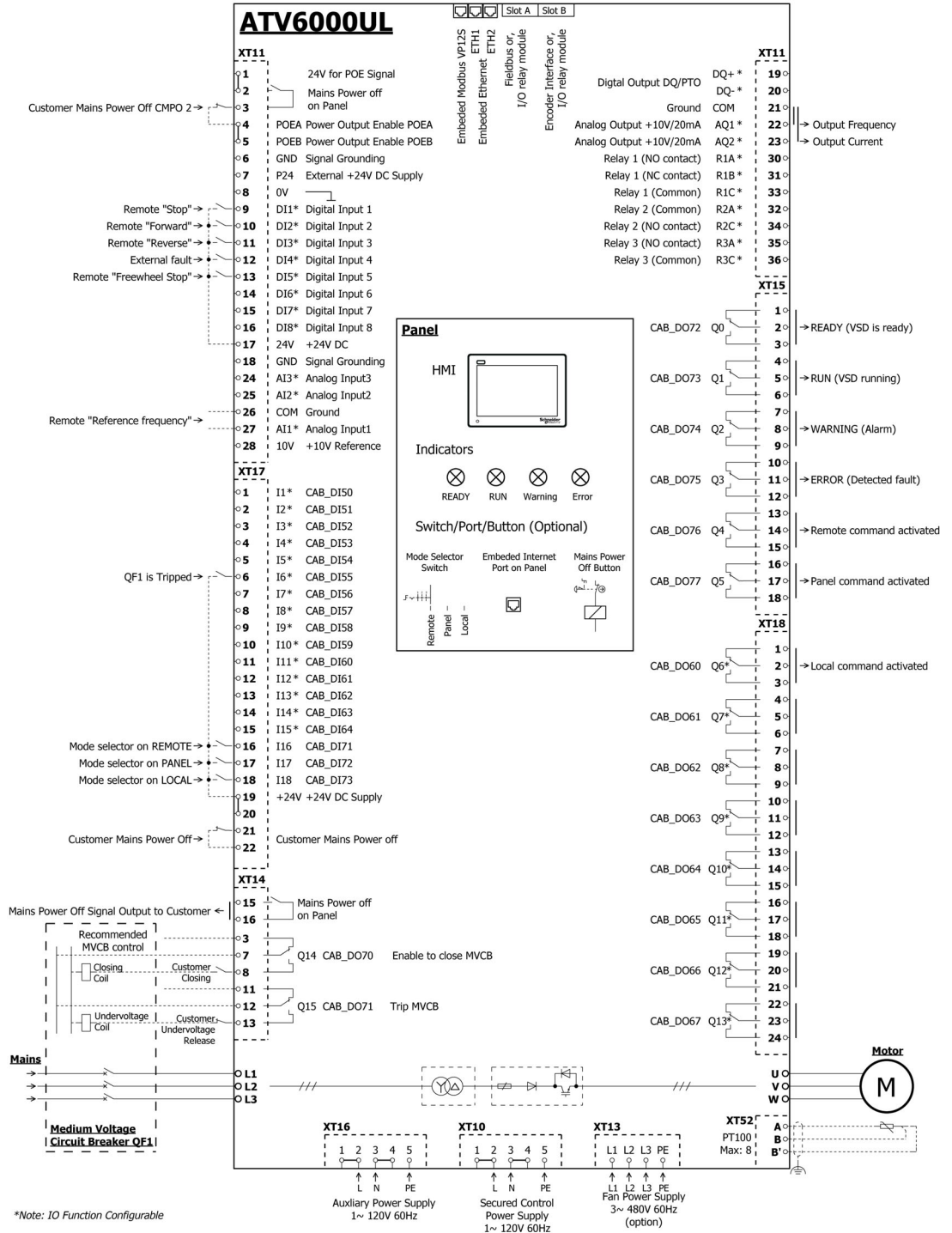
<b>Input</b>	18-66 pulse diode rectifier bridge
<b>Output</b>	Multilevel PWM with 2 level low-voltage IGBT inverter cells
<b>Input voltage</b>	<ul style="list-style-type: none"> <li>● 2.4 kV, 4.16 kV, 6.6 kV</li> <li>● Variation: standard <math>\pm 10\%</math></li> </ul>
<b>Allowable voltage fluctuation</b>	The drive is subject to derating operation when the voltage drop of power supply is within $-25\%$ .
<b>Input frequency</b>	50/60 Hz $\pm 5\%$
<b>Incoming short circuit withstand</b>	31.5 kA for 150 ms
<b>Overload capability</b>	<ul style="list-style-type: none"> <li>● Normal duty: 120 % 60 s/10 min and 150 % 3 s/10 min</li> <li>● Heavy duty: 150 % 60 s/10 min, 185 % 3 s/10 min</li> </ul>
<b>Total harmonics THD(i)</b>	Comply with the requirements of power quality standard of IEEE519-2014
<b>Input power factor</b>	$\geq 0.96$ from 20 % to 100 % of load
<b>Cable entry</b>	Bottom (on request for others)
<b>Frequency resolution</b>	0.01 Hz
<b>Power cells command signals transmission</b>	Fiber optic transmission
<b>Efficiency at rated power</b>	Inverter efficiency is 98.5 %. Drive efficiency including input transformer is 96 % to 96.5 % depending on product.
<b>Type of motor</b>	Asynchronous motor, synchronous motor, permanent magnet motor (Surface / Interior magnet).
<b>Three-phase output voltage for motor connection</b>	0 to respective output voltage.
<b>Output frequency</b>	0.1 to 120 Hz
<b>Input transformer</b>	Indoor type integrated in the frequency variable device, the dry phase-shifting transformer can be supplied for 18-66 pulse rectifier
<b>Control power supply</b>	100...240 Vac $\pm 10\%$ (47...63 Hz), 1 kVA capacity. Power supply must be secured (uninterrupted) or UPS to be selected. Other AC and DC voltage on request.
<b>Auxiliary power supply</b>	120 Vac $\pm 10\%$ , single phase, 60 Hz, 1kVA capacity for standard configuration, actual capacity depending on auxiliary options used.
<b>Cooling fan power supply</b>	480 VAC $\pm 10\%$ , 3-phase, 60Hz, actual capacity depending on drive reference. Other voltage on request
<b>Communication protocols</b>	Modbus TCP, EtherNet/IP, Modbus serial
<b>HMI</b>	10 inch, color graphic, touch screen, multi-languages
<b>Control interface</b>	8 DI, 3AI, 2AO, 3 relay output (more on request)
<b>Protection class</b>	UL type 1
<b>Paint</b>	RAL 7035
<b>Cooling</b>	Forced air ventilation
<b>EMC</b>	EN/IEC 61800-3 environment 2 category C4 for power, C3 for control
<b>Reference standard</b>	IEC EN 61800-3, IEC EN 61800-4, IEC EN 61800-5-1, IEC EN 60529, IEEE 519 and other optional ones
<b>Product certification</b>	CE, EAC, cULus

<b>Environment features</b>	
<b>Storage temperature</b>	0 °C to 50 °C
<b>Transportation temperature</b>	-25 °C to 70 °C
<b>Working temperature</b>	0 to 40 °C, up to 50°C possible with derating <sup>(1)</sup> .
<b>Relative humidity</b>	Up to 90% (without condensation) Optional: maximum up to 95% (without condensation)
<b>Altitude</b>	≤1000 m, up to 2000m possible with derating <sup>(1)</sup> .
<b>Noise level</b>	80/83/85 dB (A)
<b>Over Voltage Category</b>	IEC61800 (Adjustable speed electrical power drive systems - Part 5-1: Safety requirements - Electrical, thermal and energy)
<ul style="list-style-type: none"> <li>● Drive line side</li> <li>● Drive motor side</li> <li>● Secures Control power supply</li> <li>● Auxiliary and fan power supply</li> </ul>	Category III Category II Category II Category III
<b>Pollution in accordance with IEC 61800-5-1</b>	Pollution degree 2
<b>Environmental parameters (operation)</b>	Refer to IEC60721-3-3
<ul style="list-style-type: none"> <li>● Climatic conditions</li> <li>● Mechanical conditions</li> <li>● Biological conditions</li> <li>● Chemical conditions</li> <li>● Mechanically active substances</li> </ul>	3K3 3M1 3B1 3C2 3S1
<b>(1): Derating must be applied on the drive system and the value of the derating is defined by Schneider Services depending on the customer application and the local environment conditions</b>	

# Chapter 4

## ATV6000 Drive System I/O Interface Diagram (Standard Configuration)

### I/O Interface Diagram (Standard Configuration)





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# Chapter 5

## Technical Data

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### What Is in This Chapter?

This chapter contains the following sections:

Section	Topic	Page
5.1	Output Voltage 2.4 kV	40
5.2	Output Voltage 4.16 kV	51
5.3	Output Voltage 6.6 kV	72

# Section 5.1

## Output Voltage 2.4 kV

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### What Is in This Section?

This section contains the following topics:

Topic	Page
F1_2424 ATV6000D200A2424...ATV6000D430A2424	41
F2_2424 ATV6000D570A2424...ATV6000D650A2424	43
F3_2424 ATV6000D790A2424...ATV6000D950A2424	44
F4_2424 ATV6000C122A2424	45
F5_2424 ATV6000C139A2424...ATV6000C178A2424	46
F6_2424 ATV6000C200A2424...ATV6000C213A2424	47
Layout Drawing and Dimensions	48



## F1\_2424 ATV6000D200A2424...ATV6000D430A2424

## Technical Data

ATV6000	ATV6000D200 A2424NA•		ATV6000D280 A2424NA•	
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
<b>Nominal data</b>				
Type rating [kVA]	200		280	
Max. Motor power [kW] / [HP] <b>1)</b>	160 / 214	150 / 201	220 / 295	180 / 241
Nominal Continuous output current [A] <b>1)</b>	46	44	65	52
Max. output current with 120 %overload 1 min / 10 min [A]	55.2	/	78	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	66	/	78
<b>Power cells</b>				
Number of cells per phase	3		3	
Power cell rated current [A]	65		65	
Power cell current with 120 %overload 1 min / 10 min [A]	78		78	
Max. output current for 3 sec [A]	97.5		97.5	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	7	6.7	9.7	7.9
Air flow [m <sup>3</sup> /h]	7139		7139	
Noise level [dB (A)] @ 60 Hz	80		80	
Weight [kg / lb]	3551 / 7829		3751 / 8270	
Dimension [mm / inch] W*D*H <b>2)</b>	2460*1400 *2724/ 97*55*107		2460*1400 *2724/ 97*55*107	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	35 / 2		35 / 2	
Motor cable Max. length <b>4)</b>	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) <b>5)</b>	4		4	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry <b>6)</b>	Bottom in /Bottom out			

ATV6000	ATV6000D350 A2424NA•		ATV6000D430 A2424NA•	
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
<b>Nominal data</b>				
Type rating [kVA]	350		430	
Max. Motor power [kW] / [HP] <b>1)</b>	280 / 375	260 / 348	340 / 455	270 / 362
Nominal Continuous output current [A] <b>1)</b>	80.6	77	100	80
Max. output current with 120 %overload 1 min / 10 min [A]	96.7	/	120	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	116	/	120
<b>Power cells</b>				
Number of cells per phase	3		3	
Power cell rated current [A]	100		100	
Power cell current with 120 %overload 1 min / 10 min [A]	120		120	
Max. output current for 3 sec [A]	150		150	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	12.2	11.4	14.9	11.8
Air flow [m <sup>3</sup> /h]	7139		7139	
Noise level [dB (A)] @ 60 Hz	80		80	
Weight [kg / lb]	3851 / 8491		3951 / 8711	
Dimension [mm / inch] W*D*H <b>2)</b>	2460*1400*2724 / 97*55*107		2460*1400*2724 / 97*55*107	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	35 / 2		35 / 2	
Motor cable Max. length <b>4)</b>	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) <b>5)</b>	4		4	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry <b>6)</b>	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

## F2\_2424 ATV6000D570A2424...ATV6000D650A2424

## Technical Data

ATV6000	ATV6000D570 A2424NA●		ATV6000D650 A2424NA●	
Nominal data	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
Type rating [kVA]	570		650	
Max. Motor power [kW] / [HP] 1)	450 / 603	410 / 549	520 / 697	410 / 549
Nominal Continuous output current [A] 1)	130	120	150	120
Max. output current with 120 %overload 1 min / 10 min [A]	155	/	180	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	180	/	180
<b>Power cells</b>				
Number of cells per phase	3		3	
Power cell rated current [A]	150		150	
Power cell current with 120 %overload 1 min / 10 min [A]	180		180	
Max. output current for 3 sec [A]	225		225	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	19.7	17.9	22.7	17.9
Air flow [m <sup>3</sup> /h]	10934		10934	
Noise level [dB (A)] @ 60 Hz	80		80	
Weight [kg / lb]	4486 / 9891		4586 / 10111	
Dimension [mm / inch] W*D*H 2)	2760*1400*2829 / 109*55*111		2760*1400*2829 / 109*55*111	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) 3)	95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) 3)	35 / 2		50 / 2	
Motor cable Max. length 4)	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) 5)	7		7	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry 6)	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

F3\_2424 ATV6000D790A2424...ATV6000D950A2424

Technical Data

ATV6000	ATV6000D790 A2424NA●		ATV6000D950 A2424NA●	
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
<b>Nominal data</b>				
Type rating [kVA]	790		950	
Max. Motor power [kW] / [HP] <b>1)</b>	630 / 844	550 / 737	760 / 1019	610 / 818
Nominal Continuous output current [A] <b>1)</b>	181	160	220	176
Max. output current with 120 %overload 1 min / 10 min [A]	218	/	264	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	240	/	264
<b>Power cells</b>				
Number of cells per phase	3		3	
Power cell rated current [A]	200		220	
Power cell current with 120 %overload 1 min / 10 min [A]	240		264	
Max. output current for 3 sec [A]	300		330	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	27.4	24	33.1	26.6
Air flow [m <sup>3</sup> /h]	12679		12679	
Noise level [dB (A)] @ 60 Hz	80		80	
Weight [kg / lb]	5338 / 11768		5588 / 12319	
Dimension [mm / inch] W*D*H <b>2)</b>	3560*1400*2754 / 140*55*108		3560*1400*2754 / 140*55*108	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	50 / 0		95 / 000	
Motor cable Max. length <b>4)</b>	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) <b>5)</b>	5		5	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry <b>6)</b>	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

## F4\_2424 ATV6000C122A2424

### Technical Data

ATV6000	ATV6000C122 A2424NA•	
Nominal data	Normal Duty	Heavy Duty
Type rating [kVA]	1220	
Max. Motor power [kW] / [HP] <b>1)</b>	970 / 1300	770 / 1032
Nominal Continuous output current [A] <b>1)</b>	280	224
Max. output current with 120 %overload 1 min / 10 min [A]	336	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	336
<b>Power cells</b>		
Number of cells per phase	3	
Power cell rated current [A]	280	
Power cell current with 120 %overload 1 min / 10 min [A]	336	
Max. output current for 3 sec [A]	420	
<b>Characteristics with standard efficiency</b>		
Efficiency at 100 % load (incl. Transformer) [%]	96%	
Total losses at 100 % load [kW]	42.2	33.5
Air flow [m <sup>3</sup> /h]	16620	
Noise level [dB (A)] @ 60 Hz	83	
Weight [kg / lb]	6130 / 13514	
Dimension [mm / inch] W*D*H <b>2)</b>	3560*1500*2829 / 140*59*111	
<b>Connection</b>		
Incoming cable type	Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000	
Motor cable Max. length <b>4)</b>	1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0	
Control power supply	Single phase 120 Vac, 60Hz	
Capacity of control power supply w/o options	1 KVA	
Capacity of control power supply with options	Depending on options to be used	
Fan power supply	3-phase 480 Vac, 60Hz	
Capacity of fan power supply (kVA) <b>5)</b>	10	
<b>Maintenance</b>		
Maintenance access	Front	
Cable entry <b>6)</b>	Bottom in /Bottom out	

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

**F5\_2424 ATV6000C139A2424...ATV6000C178A2424**

**Technical Data**

ATV6000	ATV6000C139 A2424NA●		ATV6000C163 A2424NA●		ATV6000C178 A2424NA●	
Nominal data	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
Type rating [kVA]	1390		1630		1780	
Max. Motor power [kW] / [HP] 1)	1100 / 1475	880 / 1180	1300 / 1743	1130 / 1515	1420 / 1904	1130 / 1515
Nominal Continuous output current [A] 1)	320	256	374	328	410	328
Max. output current with 120 %overload 1 min / 10 min [A]	384	/	449	/	492	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	384	/	492	/	492
<b>Power cells</b>						
Number of cells per phase	3		3		3	
Power cell rated current [A]	320		410		410	
Power cell current with 120 %overload 1 min / 10 min [A]	384		492		492	
Max. output current for 3 sec [A]	480		615		615	
<b>Characteristics with standard efficiency</b>						
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%		96%	
Total losses at 100 % load [kW]	47.9	38.4	56.6	49.2	61.8	49.2
Air flow [m <sup>3</sup> /h]	15564		15564		15564	
Noise level [dB (A)] @ 60 Hz	80		80		80	
Weight [kg / lb]	7794 / 17182		8244 / 18174		8594 / 18946	
Dimension [mm / inch] W*D*H 2)	4460*1500*2874 / 176*59*113		4460*1500*2874 / 176*59*113		4460*1500*2874 / 176*59*113	
<b>Connection</b>						
Incoming cable type	Symmetrical three-phase					
Typical cable size (mm <sup>2</sup> / AWG) 3)	185 / 350MCM		185 / 350MCM		240 / 500MCM	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)					
Typical cable size (mm <sup>2</sup> / AWG) 3)	185 / 350MCM		185 / 350MCM		240 / 500MCM	
Motor cable Max. length 4)	1000 m		1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	95 / 3/0		95 / 3/0		120 / 300	
Control power supply	Single phase 120 Vac, 60Hz					
Capacity of control power supply w/o options	1 KVA		1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used					
Fan power supply	3-phase 480 Vac, 60Hz					
Capacity of fan power supply (kVA) 5)	7		7		7	
<b>Maintenance</b>						
Maintenance access	Front		Front		Front	
Cable entry 6)	Bottom in /Bottom out					

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

## F6\_2424 ATV6000C200A2424...ATV6000C213A2424

## Technical Data

ATV6000	ATV6000C200 A2424NA●		ATV6000C213 A2424NA●	
Nominal data	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
Type rating [kVA]	2000		2130	
Max. Motor power [kW] / [HP] 1)	1600 / 2145	1360 / 1823	1700 / 2279	1360 / 1823
Nominal Continuous output current [A] 1)	460	392	490	392
Max. output current with 120 %overload 1 min / 10 min [A]	552	/	588	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	588	/	588
<b>Power cells</b>				
Number of cells per phase	3		3	
Power cell rated current [A]	490		490	
Power cell current with 120 %overload 1 min / 10 min [A]	588		588	
Max. output current for 3 sec [A]	735		735	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	69.6	59.2	73.9	59.2
Air flow [m <sup>3</sup> /h]	18120		18120	
Noise level [dB (A)] @ 60 Hz	80		80	
Weight [kg / lb]	9195 / 20271		9345 / 20602	
Dimension [mm / inch] W*D*H 2)	4460*1600*2952 / 176*63*116		4460*1600*2952 / 176*63*116	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) 3)	240 / 500MCM		240 / 500MCM	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) 3)	240 / 500MCM		240 / 500MCM	
Motor cable Max. length 4)	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	120 / 300		120 / 300	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) 5)	9		9	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry 6)	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

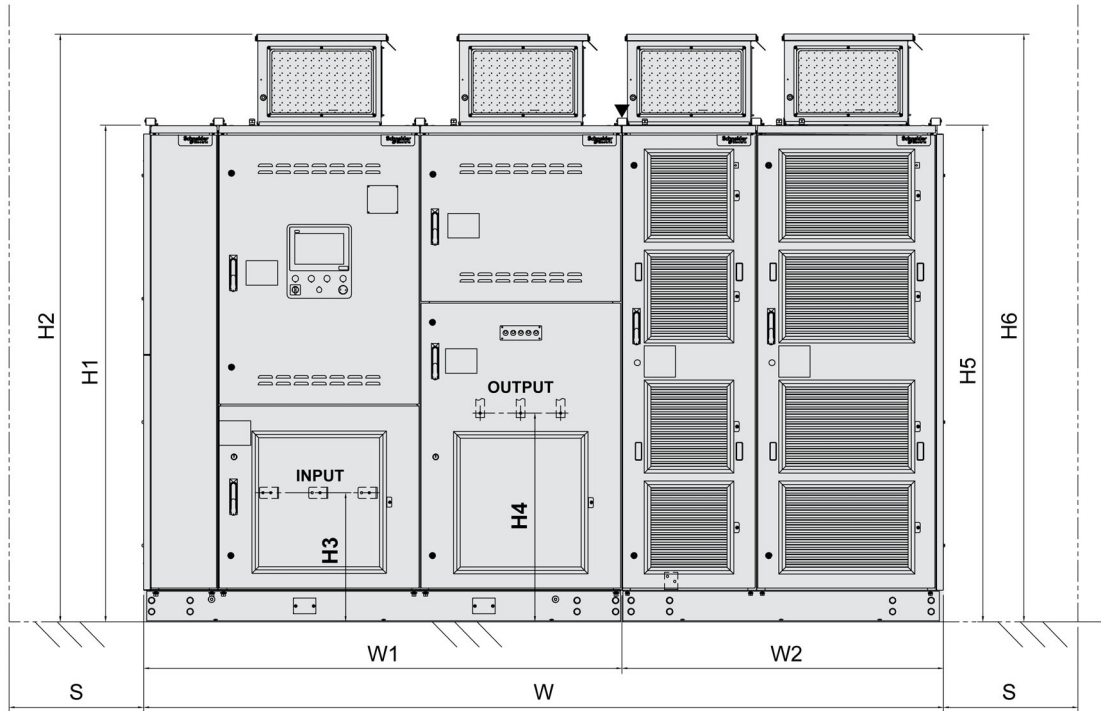
4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

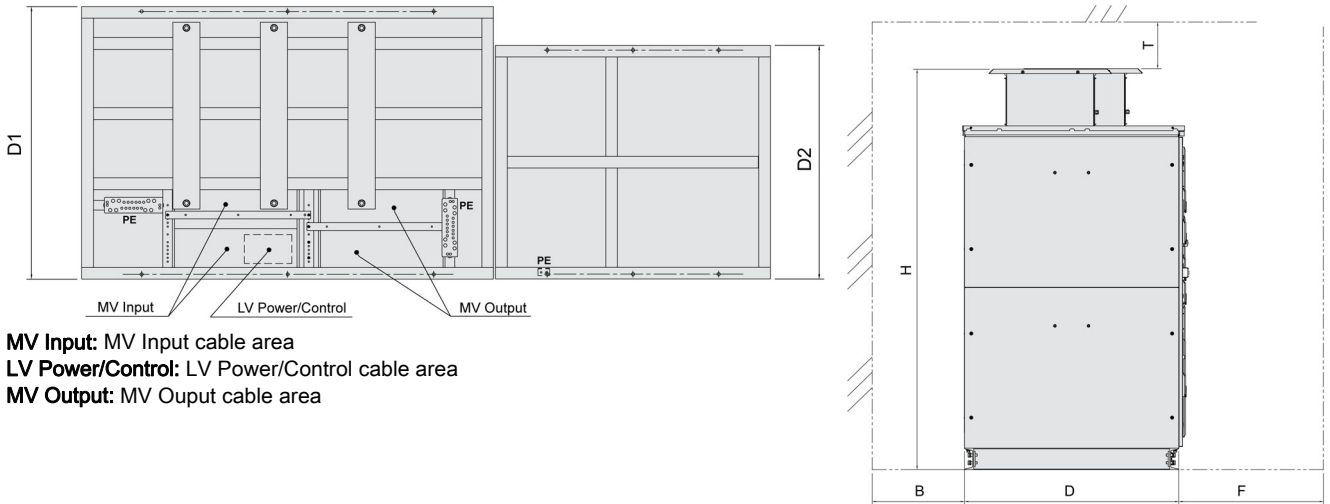
6) For other combination contact Schneider Electric.

## Layout Drawing and Dimensions

### Layout Drawing



**INPUT:** Input terminal  
**OUTPUT:** Output terminal



**MV Input:** MV Input cable area  
**LV Power/Control:** LV Power/Control cable area  
**MV Output:** MV Output cable area

**NOTE:** Sketch is representing outline dimensions only, real cabinet arrangement is depending on power size.

**NOTE:** Refer to your local Schneider representative for further information.



## Main dimensions - Output Voltage 2.4 kV

Product reference	Outer dimensions (mm / in)			Transformer cabinet		Powercell cabinet	
	W	H <sup>(a)</sup>	D	Fan Type	Fan Number	Fan Type	Fan number
F1_2424 ATV6000D200A2424...	2460 97	2724 107	1400 55	400	2	400	1
F1_2424 ATV6000D280A2424...	2460 97	2724 107	1400 55	400	2	400	1
F1_2424 ATV6000D350A2424...	2460 97	2724 107	1400 55	400	2	400	1
F1_2424 ATV6000D430A2424...	2460 97	2724 107	1400 55	400	2	400	1
F2_2424 ATV6000D570A2424...	2760 109	2829 111	1400 55	400	2	500	1
F2_2424 ATV6000D650A2424...	2760 109	2829 111	1400 55	400	2	500	1
F3_2424 ATV6000D790A2424...	3560 140	2754 108	1400 55	450	2	400	1
F3_2424 ATV6000D950A2424...	3560 140	2754 108	1400 55	450	2	400	1
F4_2424 ATV6000C122A2424...	3560 140	2829 111	1500 59	450	2	560	1
F5_2424 ATV6000C139A2424...	4460 176	2874 113	1500 59	400	3	400	2
F5_2424 ATV6000C163A2424...	4460 176	2874 113	1500 59	400	3	400	2
F5_2424 ATV6000C178A2424...	4460 176	2874 113	1500 59	400	3	400	2
F6_2424 ATV6000C200A2424...	4460 176	2952 116	1600 63	450	3	500	2
F6_2424 ATV6000C213A2424...	4460 176	2952 116	1600 63	450	3	500	2

a) "H" is linked to higher size of transformer cabinet (H2) or transformer cabinet (H6).

**Additional Dimensions - Output Voltage 2.4 kV**

Product reference	Transformer Cabinet (mm / in)						Power cell Cabinet (mm / in)				Space Maintenance (mm / in)			
	H1	H2	H3	H4	W1	D1	H5	H6	W2	D2	T	B <sup>(a)</sup>	F <sup>(b)</sup>	S <sup>(c)</sup>
ATV6000D200A2424...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2724 107	630 25	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D280A2424...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2724 107	630 25	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D350A2424...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2724 107	630 25	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D430A2424...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2724 107	630 25	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D570A2424...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2829 111	930 37	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D650A2424...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2829 111	930 37	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D790A2424...	2360 93	2754 108	500 20	930 37	2130 84	1400 55	2210 87	2724 107	1430 56	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D950A2424...	2360 93	2754 108	500 20	930 37	2130 84	1400 55	2210 87	2724 107	1430 56	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C122A2424...	2360 93	2754 108	500 20	930 37	2130 84	1500 59	2210 87	2829 111	1430 56	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C139A2424...	2360 93	2690 106	500 20	930 37	2430 96	1500 59	2360 93	2874 113	2030 80	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C163A2424...	2360 93	2690 106	500 20	930 37	2430 96	1500 59	2360 93	2874 113	2030 80	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C178A2424...	2360 93	2690 106	500 20	930 37	2430 96	1500 59	2360 93	2874 113	2030 80	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C200A2424...	2360 93	2754 108	500 20	930 37	2430 96	1600 63	2360 93	2952 116	2030 80	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C213A2424...	2360 93	2754 108	500 20	930 37	2430 96	1600 63	2360 93	2952 116	2030 80	1200 47	≥500 ≥20	0	1500 59	0

- a) Space could be required for installation and lifting lugs.
- b) For easy handling with power cell exchange to 2000mm (78.7 in) are recommended.
- c) Space (600mm) could be required for maintenance of the front & rear access drive.

## Section 5.2

### Output Voltage 4.16 kV

#### What Is in This Section?

This section contains the following topics:

Topic	Page
F1_4242 ATV6000D350A4242...ATV6000D750A4242	52
Frame Size 1: Drawings	54
F2_4242 ATV6000D890A4242	55
Frame Size 2: Drawings	56
F3_4242 ATV6000C100A4242...ATV6000C113A4242	57
Frame Size 3: Drawings	58
F4_4242 ATV6000C125A4242...ATV6000C165A4242	59
Frame Size 4: Drawings	60
F5_4242 ATV6000C188A4242...ATV6000C210A4242	61
Frame Size 5: Drawings	62
F6_4242 ATV6000C240A4242...ATV6000C275A4242	63
Frame Size 6: Drawings	64
F7_4242 ATV6000C308A4242	65
Frame Size 7: Drawings	66
F8_4242 ATV6000C338A4242...ATV6000C369A4242	67
Frame Size 8: Drawings	68
Layout Drawing and Dimensions	69

F1\_4242 ATV6000D350A4242...ATV6000D750A4242

Technical Data

ATV6000	ATV6000D350 A4242NA●		ATV6000D490 A4242NA●		ATV6000D570 A4242NA●	
Nominal data	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
Type rating [kVA]	350		490		570	
Max. Motor power [kW] / [HP] 1)	280 / 375	260 / 348	390 / 522	310 / 415	450 / 603	420 / 563
Nominal Continuous output current [A] 1)	46.5	44	65	52	74.7	71
Max. output current with 120 %overload 1 min / 10 min [A]	55.8	/	78	/	89.6	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	66	/	78	/	107
<b>Power cells</b>						
Number of cells per phase	4		4		4	
Power cell rated current [A]	65		65		100	
Power cell current with 120 %overload 1 min / 10 min [A]	78		78		120	
Max. output current for 3 sec [A]	97.5		97.5		150	
<b>Characteristics with standard efficiency</b>						
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%		96%	
Total losses at 100 % load [kW]	12.2	11.4	17	13.5	19.7	18.4
Air flow [m <sup>3</sup> /h]	7374		7374		7374	
Noise level [dB (A)] @ 60 Hz	80		80		80	
Weight [kg / lb]	4253 / 9377		4303 / 9487		4353 / 9597	
Dimension [mm / inch] W*D*H 2)	2660*1400*2724 / 105*55*107		2660*1400*2724 / 105*55*107		2660*1400*2724 / 105*55*107	
<b>Connection</b>						
Incoming cable type	Symmetrical three-phase					
Typical cable size (mm <sup>2</sup> / AWG) 3)	95 / 000		95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)					
Typical cable size (mm <sup>2</sup> / AWG) 3)	35 / 2		35 / 2		35 / 2	
Motor cable Max. length 4)	1000 m		1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz					
Capacity of control power supply w/o options	1 KVA		1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used					
Fan power supply	3-phase 480 Vac, 60Hz					
Capacity of fan power supply (kVA) 5)	4		4		4	
<b>Maintenance</b>						
Maintenance access	Front		Front		Front	
Cable entry 6)	Bottom in /Bottom out					

ATV6000	ATV6000D630 A4242NA•		ATV6000D750 A4242NA•	
Nominal data	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
Type rating [kVA]	630		750	
Max. Motor power [kW] / [HP] <b>1)</b>	500 / 670	470 / 630	600 / 804	480 / 643
Nominal Continuous output current [A] <b>1)</b>	83	79	100	80
Max. output current with 120 %overload 1 min / 10 min [A]	99.6	/	120	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	119	/	120
<b>Power cells</b>				
Number of cells per phase	4		4	
Power cell rated current [A]	100		100	
Power cell current with 120 %overload 1 min / 10 min [A]	120		120	
Max. output current for 3 sec [A]	150		150	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	21.9	20.5	26.2	20.9
Air flow [m <sup>3</sup> /h]	7374		7374	
Noise level [dB (A)] @ 60 Hz	80		80	
Weight [kg / lb]	4403 / 9708		4453 / 9818	
Dimension [mm / inch] W*D*H <b>2)</b>	2660*1400*2724 / 105*55*107		2660*1400*2724 / 105*55*107	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	35 / 2		35 / 2	
Motor cable Max. length <b>4)</b>	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) <b>5)</b>	4		4	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry <b>6)</b>	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

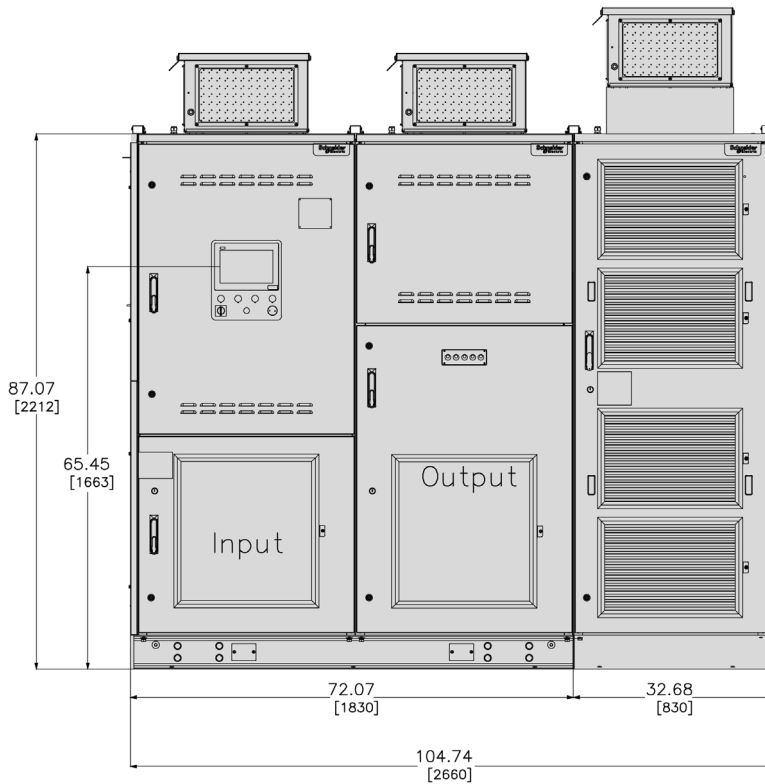
4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

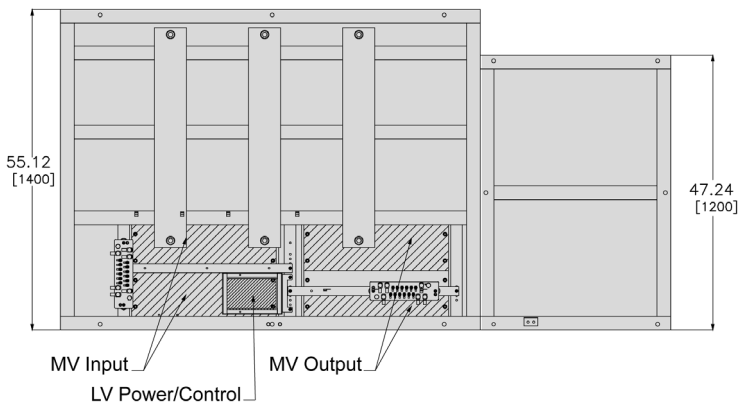
6) For other combination contact Schneider Electric.

## Frame Size 1: Drawings

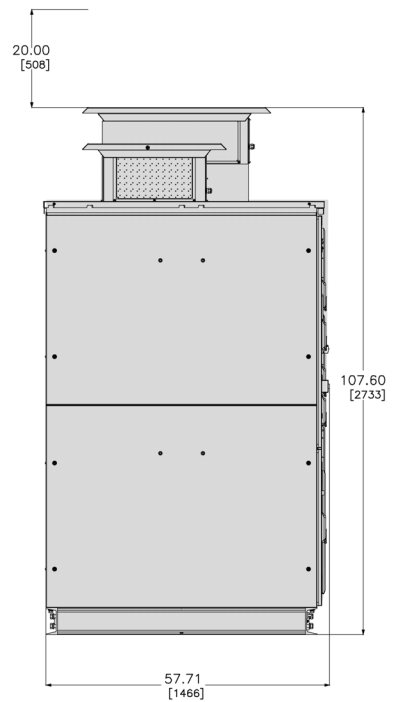
### Layout Drawing (inch/mm)



**INPUT:** Input terminal  
**OUTPUT:** Output terminal



**MV Input:** MV Input cable area  
**LV Power/Control:** LV Power/Control cable area  
**MV Output:** MV Output cable area



## F2\_4242 ATV6000D890A4242

## Technical Data

ATV6000	ATV6000D890 A4242NA•	
Nominal data	Normal Duty	Heavy Duty
Type rating [kVA]	890	
Max. Motor power [kW] / [HP] <b>1)</b>	710 / 952	680 / 911
Nominal Continuous output current [A] <b>1)</b>	118	113
Max. output current with 120 %overload 1 min / 10 min [A]	141	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	170
<b>Power cells</b>		
Number of cells per phase	4	
Power cell rated current [A]	150	
Power cell current with 120 %overload 1 min / 10 min [A]	180	
Max. output current for 3 sec [A]	225	
<b>Characteristics with standard efficiency</b>		
Efficiency at 100 % load (incl. Transformer) [%]	96%	
Total losses at 100 % load [kW]	30.9	29.7
Air flow [m <sup>3</sup> /h]	12049	
Noise level [dB (A)] @ 60 Hz	80	
Weight [kg / lb]	5243 / 11559	
Dimension [mm / inch] W*D*H <b>2)</b>	3260*1400*2788 / 128*55*110	
<b>Connection</b>		
Incoming cable type	Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	35 / 2	
Motor cable Max. length <b>4)</b>	1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0	
Control power supply	Single phase 120 Vac, 60Hz	
Capacity of control power supply w/o options	1 KVA	
Capacity of control power supply with options	Depending on options to be used	
Fan power supply	3-phase 480 Vac, 60Hz	
Capacity of fan power supply (kVA) <b>5)</b>	5	
<b>Maintenance</b>		
Maintenance access	Front	
Cable entry <b>6)</b>	Bottom in /Bottom out	

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

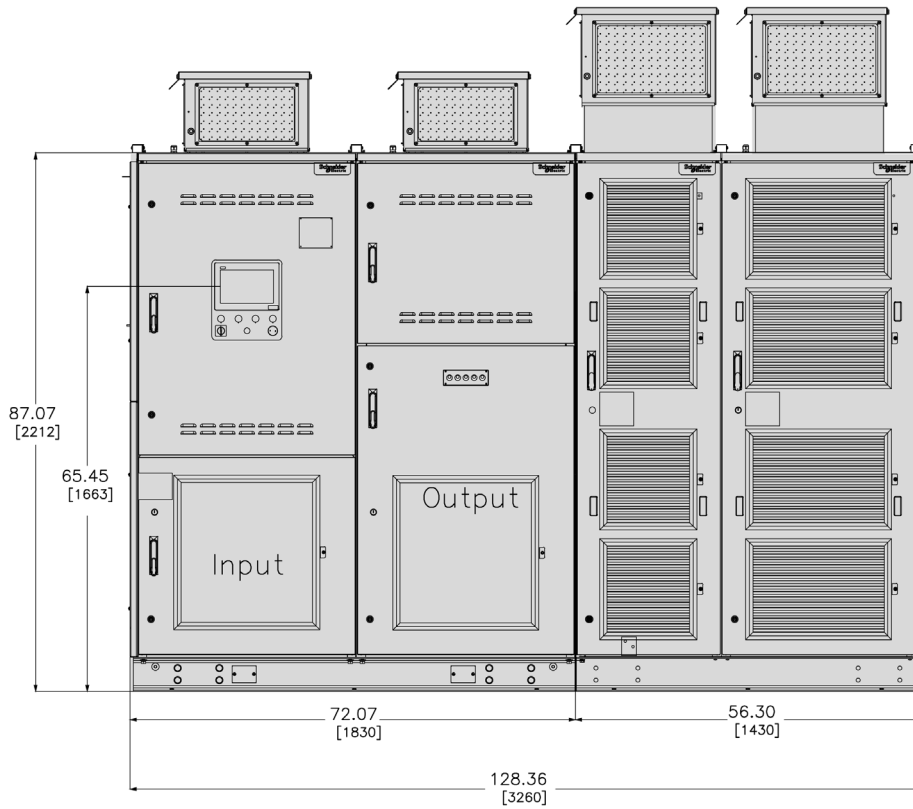
4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

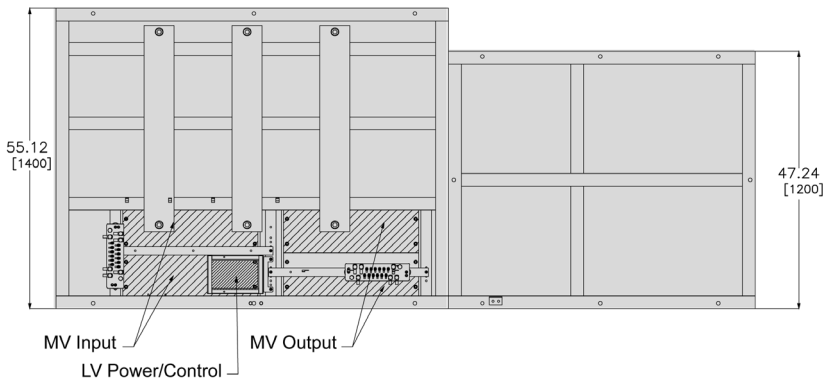
6) For other combination contact Schneider Electric.

## Frame Size 2: Drawings

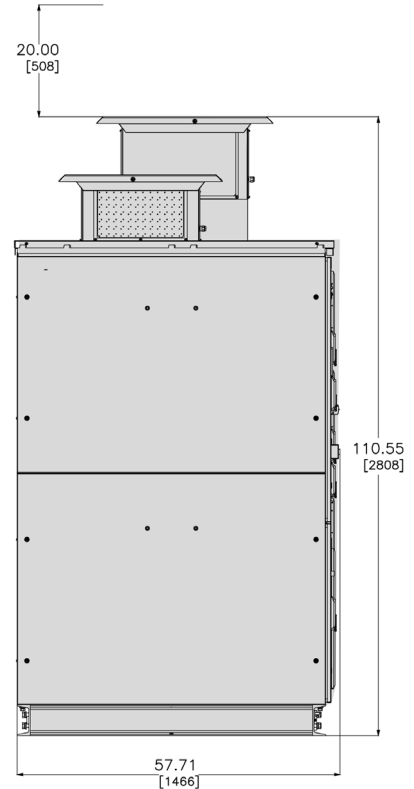
### Layout Drawing (inch/mm)



**INPUT:** Input terminal  
**OUTPUT:** Output terminal



**MV Input:** MV Input cable area  
**LV Power/Control:** LV Power/Control cable area  
**MV Output:** MV Output cable area





## F3\_4242 ATV6000C100A4242...ATV6000C113A4242

## Technical Data

ATV6000	ATV6000C100A A4242NA●		ATV6000C113 A4242NA●	
Nominal data	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
Type rating [kVA]	1000		1130	
Max. Motor power [kW] / [HP] 1)	800 / 1072	720 / 965	900 / 1206	720 / 965
Nominal Continuous output current [A] 1)	133	120	150	120
Max. output current with 120 %overload 1 min / 10 min [A]	159	/	180	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	180	/	180
<b>Power cells</b>				
Number of cells per phase	4		4	
Power cell rated current [A]	150		150	
Power cell current with 120 %overload 1 min / 10 min [A]	180		180	
Max. output current for 3 sec [A]	225		225	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	34.9	31.4	39.2	31.4
Air flow [m <sup>3</sup> /h]	14100		14100	
Noise level [dB (A)] @ 60 Hz	80		80	
Weight [kg / lb]	5631 / 12414		5681 / 12524	
Dimension [mm / inch] W*D*H 2)	3560*1400*2788 / 140*55*110		3560*1400*2788 / 140*55*110	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) 3)	95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) 3)	35 / 2		50 / 0	
Motor cable Max. length 4)	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) 5)	6		6	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry 6)	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

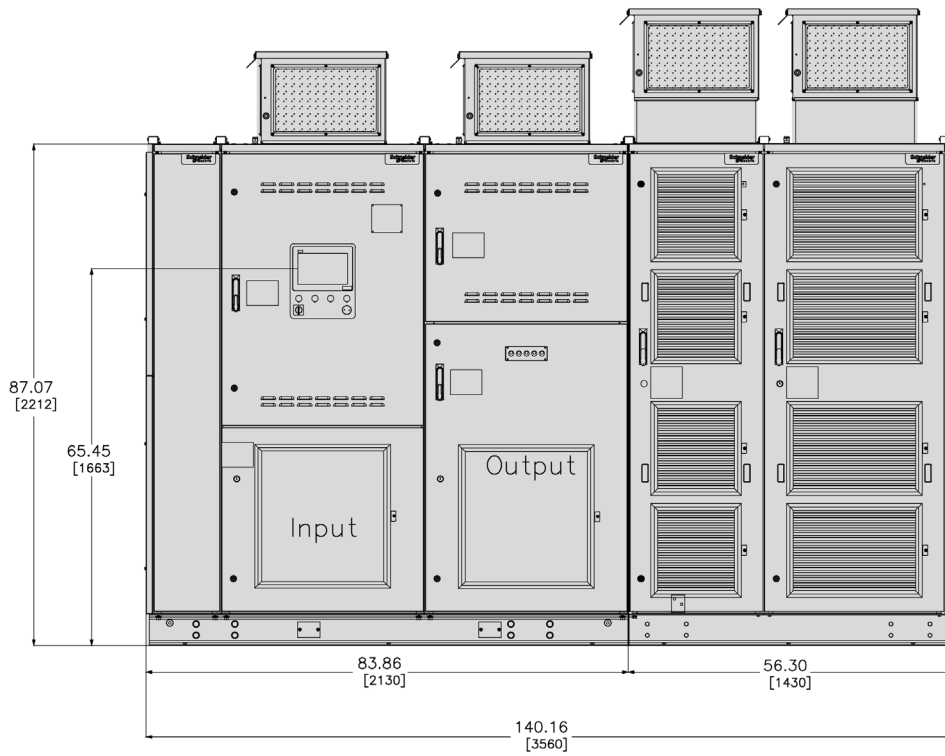
4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

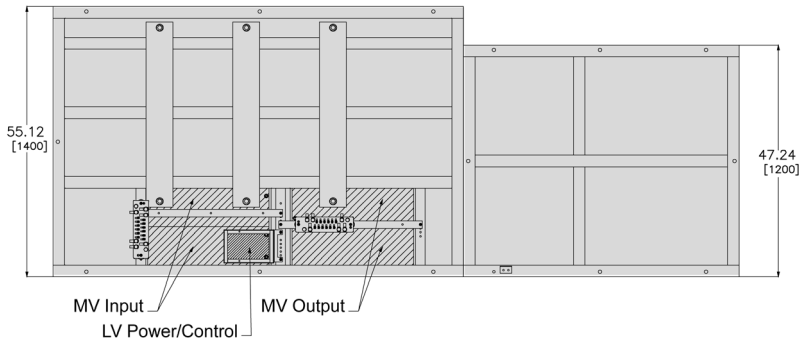
6) For other combination contact Schneider Electric.

## Frame Size 3: Drawings

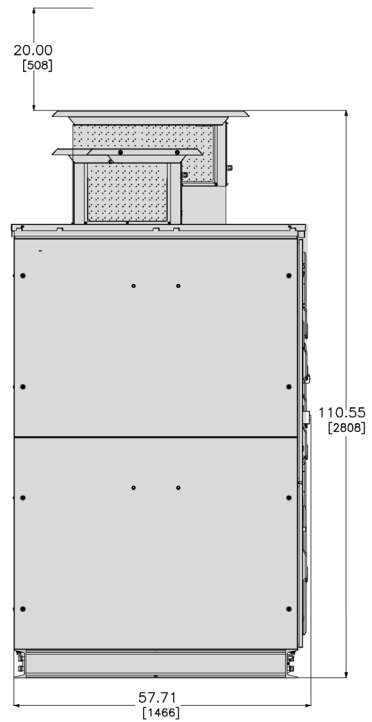
### Layout Drawing (inch/mm)



**INPUT:** Input terminal  
**OUTPUT:** Output terminal



**MV Input:** MV Input cable area  
**LV Power/Control:** LV Power/Control cable area  
**MV Output:** MV Output cable area



## F4\_4242 ATV6000C125A4242...ATV6000C165A4242

## Technical Data

ATV6000	ATV6000C125 A4242NA●		ATV6000C150 A4242NA●		ATV6000C165 A4242NA●	
Nominal data	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
Type rating [kVA]	1250		1500		1650	
Max. Motor power [kW] / [HP] 1)	1000 / 1341	950 / 1273	1200 / 1609	960 / 1287	1320 / 1770	1060 / 1421
Nominal Continuous output current [A] 1)	166	159	199	160	220	176
Max. output current with 120 %overload 1 min / 10 min [A]	199	/	239	/	264	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	239	/	240	/	264
<b>Power cells</b>						
Number of cells per phase	4		4		4	
Power cell rated current [A]	200		200		220	
Power cell current with 120 %overload 1 min / 10 min [A]	240		240		264	
Max. output current for 3 sec [A]	300		300		330	
<b>Characteristics with standard efficiency</b>						
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%		96%	
Total losses at 100 % load [kW]	43.6	41.4	52.2	41.8	57.4	46.1
Air flow [m <sup>3</sup> /h]	13538		13538		13538	
Noise level [dB (A)] @ 60 Hz	80		80		80	
Weight [kg / lb]	5950 / 13117		6440 / 14197		6690 / 14748	
Dimension [mm / inch] W*D*H 2)	3760*1400*2754 / 148*55*108		3760*1400*2754 / 148*55*108		3760*1400*2754 / 148*55*108	
<b>Connection</b>						
Incoming cable type	Symmetrical three-phase					
Typical cable size (mm <sup>2</sup> / AWG) 3)	95 / 000		95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)					
Typical cable size (mm <sup>2</sup> / AWG) 3)	50 / 0		70 / 00		95 / 000	
Motor cable Max. length 4)	1000 m		1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz					
Capacity of control power supply w/o options	1 KVA		1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used					
Fan power supply	3-phase 480 Vac, 60Hz					
Capacity of fan power supply (kVA) 5)	5		5		5	
<b>Maintenance</b>						
Maintenance access	Front		Front		Front	
Cable entry 6)	Bottom in /Bottom out					

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

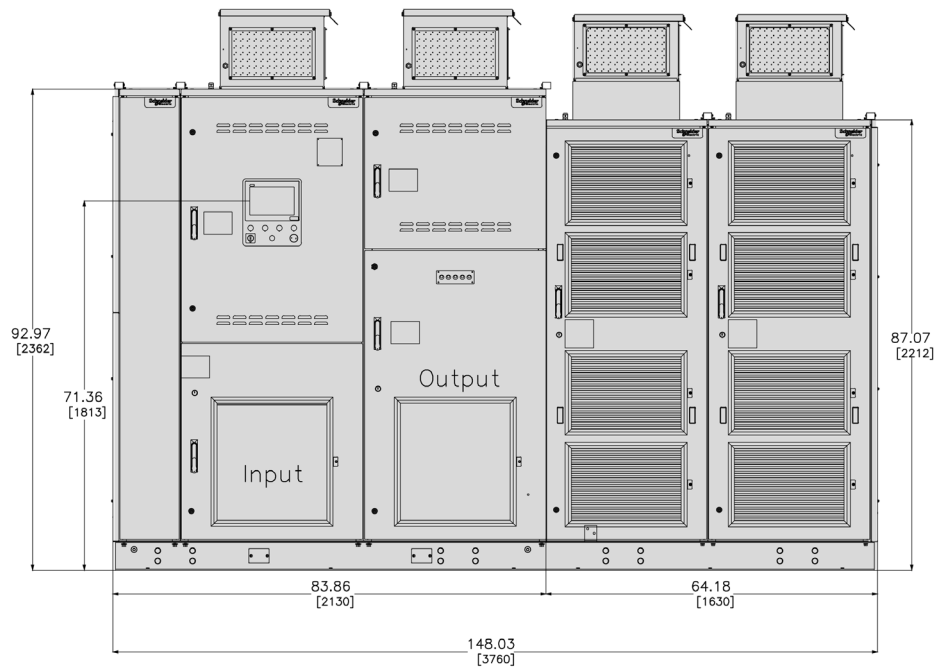
4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

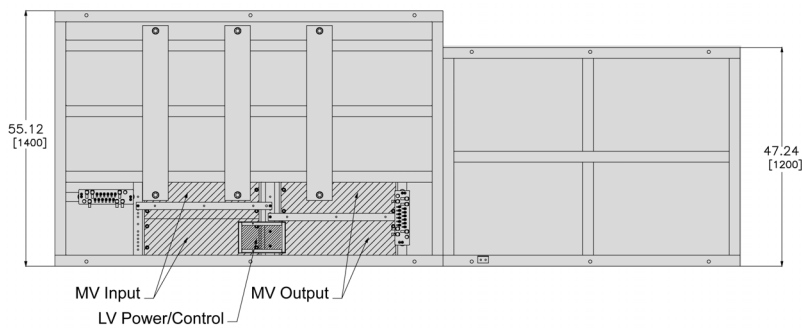
6) For other combination contact Schneider Electric.

## Frame Size 4: Drawings

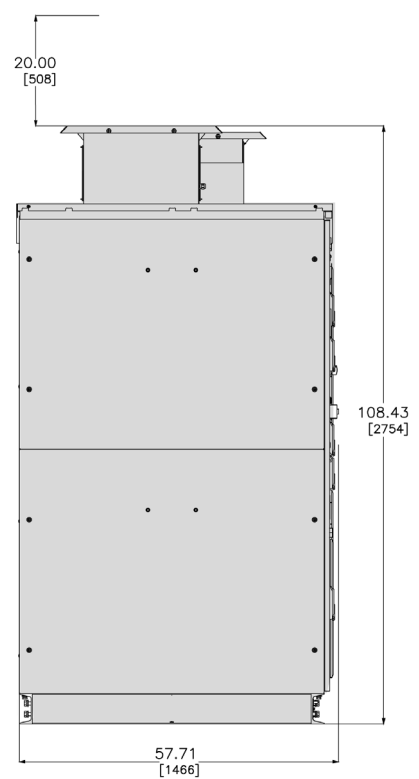
### Layout Drawing (inch/mm)



**INPUT:** Input terminal  
**OUTPUT:** Output terminal



**MV Input:** MV Input cable area  
**LV Power/Control:** LV Power/Control cable area  
**MV Output:** MV Output cable area



## F5\_4242 ATV6000C188A4242...ATV6000C210A4242

## Technical Data

ATV6000	ATV6000C188 A4242NA●		ATV6000C210 A4242NA●	
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
<b>Nominal data</b>				
Type rating [kVA]	1880		2100	
Max. Motor power [kW] / [HP] 1)	1500 / 2011	1340 / 1796	1680 / 2252	1340 / 1796
Nominal Continuous output current [A] 1)	249	224	280	224
Max. output current with 120 %overload 1 min / 10 min [A]	299	/	336	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	336	/	336
<b>Power cells</b>				
Number of cells per phase	4		4	
Power cell rated current [A]	280		280	
Power cell current with 120 %overload 1 min / 10 min [A]	336		336	
Max. output current for 3 sec [A]	420		420	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	65.3	58.3	73.1	58.3
Air flow [m <sup>3</sup> /h]	21542		21542	
Noise level [dB (A)] @ 60 Hz	83		83	
Weight [kg / lb]	7186 / 15842		7386 / 16283	
Dimension [mm / inch] W*D*H 2)	4060*1500*2829 / 160*59*111		4060*1500*2829 / 160*59*111	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) 3)	95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) 3)	95 / 000		95 / 000	
Motor cable Max. length 4)	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) 5)	14		14	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry 6)	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

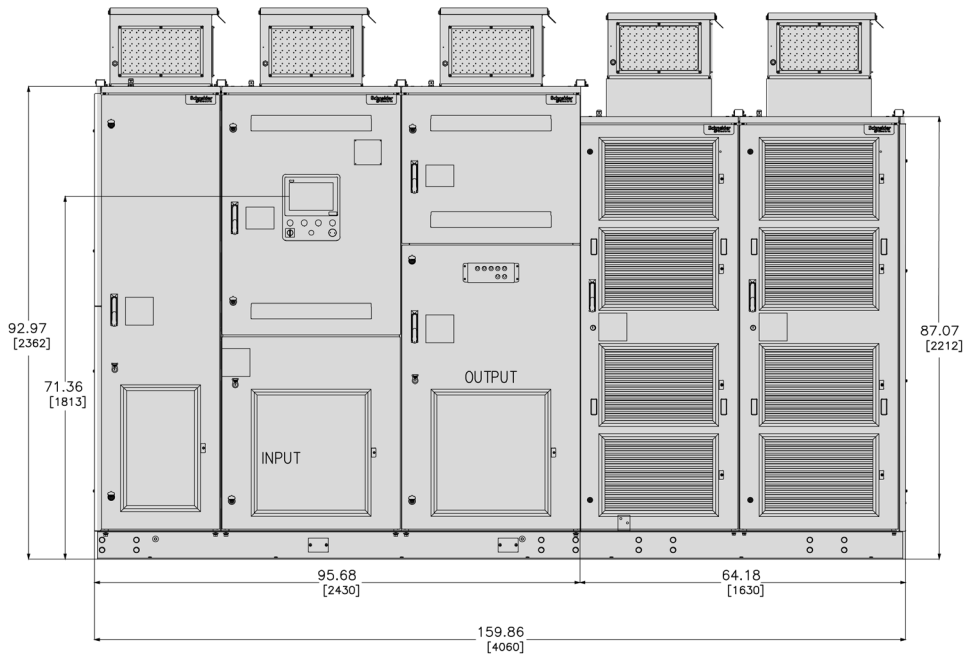
4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

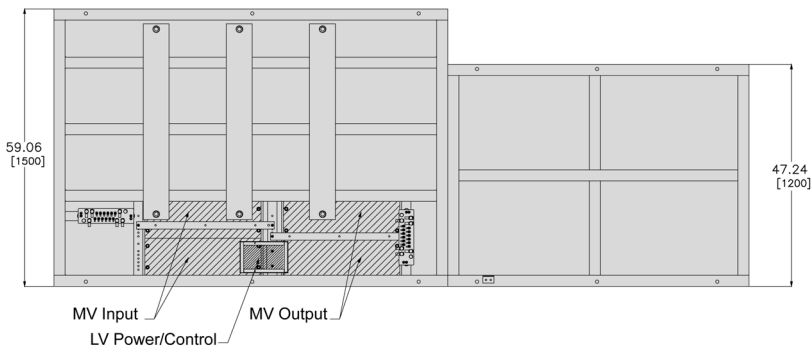
6) For other combination contact Schneider Electric.

## Frame Size 5: Drawings

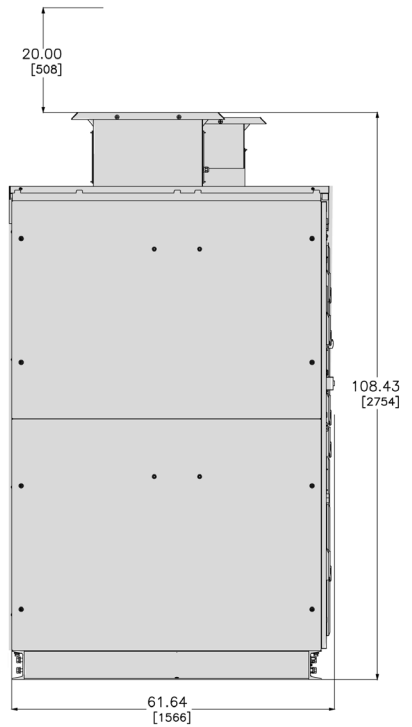
### Layout Drawing (inch/mm)



**INPUT:** Input terminal  
**OUTPUT:** Output terminal



**MV Input:** MV Input cable area  
**LV Power/Control:** LV Power/Control cable area  
**MV Output:** MV Output cable area



## F6\_4242 ATV6000C240A4242...ATV6000C275A4242

## Technical Data

ATV6000	ATV6000C240 A4242NA●		ATV6000C275 A4242NA●	
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
<b>Nominal data</b>				
Type rating [kVA]	2400		2750	
Max. Motor power [kW] / [HP] 1)	1920 / 2574	1540 / 2065	2200 / 2950	1970 / 2641
Nominal Continuous output current [A] 1)	320	256	365	328
Max. output current with 120 %overload 1 min / 10 min [A]	384	/	438	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	384	/	492
<b>Power cells</b>				
Number of cells per phase	4		4	
Power cell rated current [A]	320		410	
Power cell current with 120 %overload 1 min / 10 min [A]	384		492	
Max. output current for 3 sec [A]	480		615	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	83.5	66.9	95.6	85.6
Air flow [m <sup>3</sup> /h]	19267		19267	
Noise level [dB (A)] @ 60 Hz	80		80	
Weight [kg / lb]	9047 / 19945		9247 / 20386	
Dimension [mm / inch] W*D*H 2)	5060*1500*2874 / 199*59*113		5060*1500*2874 / 199*59*113	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) 3)	185 / 350MCM		185 / 350MCM	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) 3)	185 / 350MCM		185 / 350MCM	
Motor cable Max. length 4)	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	95 / 3/0		95 / 3/0	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) 5)	9		9	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry 6)	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

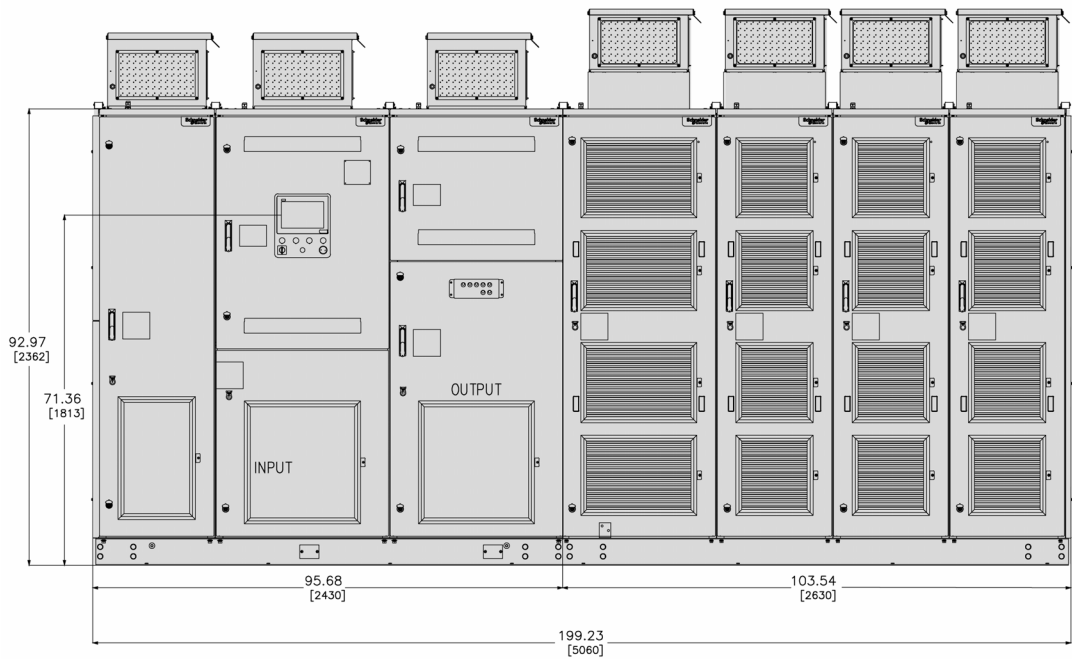
4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

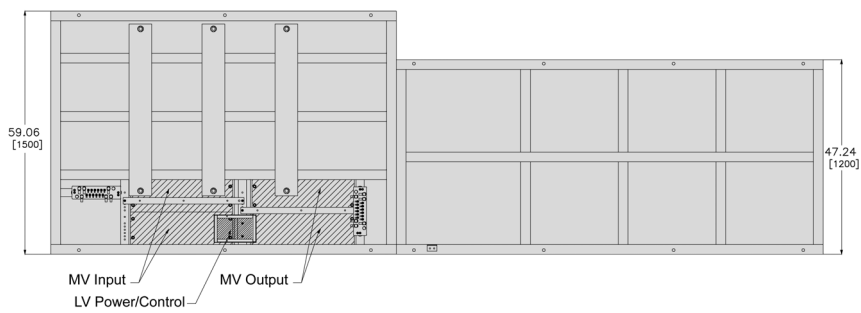
6) For other combination contact Schneider Electric.

## Frame Size 6: Drawings

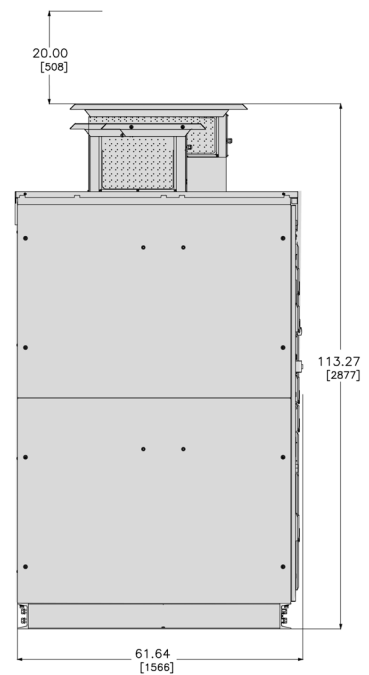
### Layout Drawing (inch/mm)



**INPUT:** Input terminal  
**OUTPUT:** Output terminal



**MV Input:** MV Input cable area  
**LV Power/Control:** LV Power/Control cable area  
**MV Output:** MV Output cable area





## F7\_4242 ATV6000C308A4242

## Technical Data

ATV6000	ATV6000C308 A4242NA●	
Nominal data	Normal Duty	Heavy Duty
Type rating [kVA]	3080	
Max. Motor power [kW] / [HP] 1)	2460 / 3298	1970 / 2641
Nominal Continuous output current [A] 1)	410	328
Max. output current with 120 %overload 1 min / 10 min [A]	492	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	492
<b>Power cells</b>		
Number of cells per phase	4	
Power cell rated current [A]	410	
Power cell current with 120 %overload 1 min / 10 min [A]	492	
Max. output current for 3 sec [A]	615	
<b>Characteristics with standard efficiency</b>		
Efficiency at 100 % load (incl. Transformer) [%]	96%	
Total losses at 100 % load [kW]	107	85.6
Air flow [m <sup>3</sup> /h]	19267	
Noise level [dB (A)] @ 60 Hz	80	
Weight [kg / lb]	10397 / 22921	
Dimension [mm / inch] W*D*H 2)	5060*1600*2874 / 199*63*113	
<b>Connection</b>		
Incoming cable type	Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) 3)	240 / 500MCM	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)	
Typical cable size (mm <sup>2</sup> / AWG) 3)	240 / 500MCM	
Motor cable Max. length 4)	10000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	120 / 300	
Control power supply	Single phase 120 Vac, 60Hz	
Capacity of control power supply w/o options	1 KVA	
Capacity of control power supply with options	Depending on options to be used	
Fan power supply	3-phase 480 Vac, 60Hz	
Capacity of fan power supply (kVA) 5)	9	
<b>Maintenance</b>		
Maintenance access	Front	
Cable entry 6)	Bottom in /Bottom out	

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

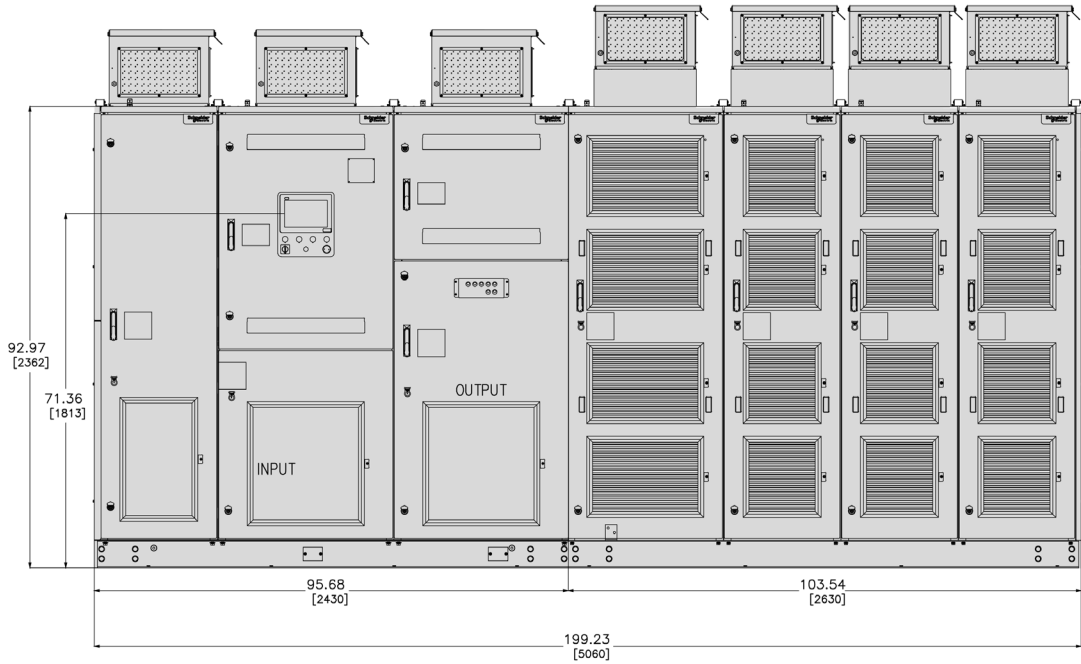
4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

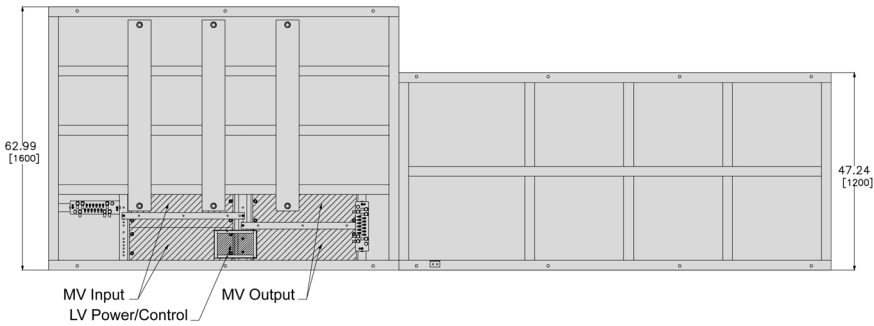
6) For other combination contact Schneider Electric.

## Frame Size 7: Drawings

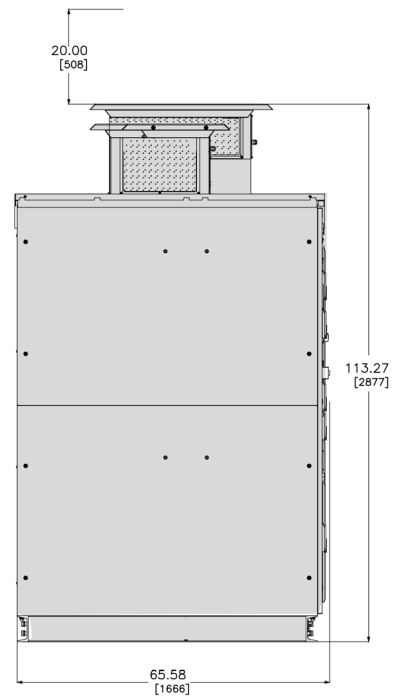
### Layout Drawing (inch/mm)



**INPUT:** Input terminal  
**OUTPUT:** Output terminal



**MV Input:** MV Input cable area  
**LV Power/Control:** LV Power/Control cable area  
**MV Output:** MV Output cable area



## F8\_4242 ATV6000C338A4242...ATV6000C369A4242

## Technical Data

ATV6000	ATV6000C338 A4242NA●		ATV6000C369 A4242NA●	
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
<b>Nominal data</b>				
Type rating [kVA]	3380		3690	
Max. Motor power [kW] / [HP] 1)	2700 / 3620	2360 / 3164	2950 / 3956	2360 / 3164
Nominal Continuous output current [A] 1)	448	392	490	392
Max. output current with 120 %overload 1 min / 10 min [A]	538	/	588	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	588	/	588
<b>Power cells</b>				
Number of cells per phase	4		4	
Power cell rated current [A]	490		490	
Power cell current with 120 %overload 1 min / 10 min [A]	588		588	
Max. output current for 3 sec [A]	735		735	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	117	103	128	103
Air flow [m <sup>3</sup> /h]	22080		22080	
Noise level [dB (A)] @ 60 Hz	83		83	
Weight [kg / lb]	11095 / 24460		11265 / 24835	
Dimension [mm / inch] W*D*H 2)	5360*1700*2952 / 211*67*116		5360*1700*2952 / 211*67*116	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) 3)	240 / 500MCM		240 / 500MCM	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) 3)	240 / 500MCM		240 / 500MCM	
Motor cable Max. length 4)	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	120 / 300		120 / 300	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) 5)	10		10	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry 6)	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

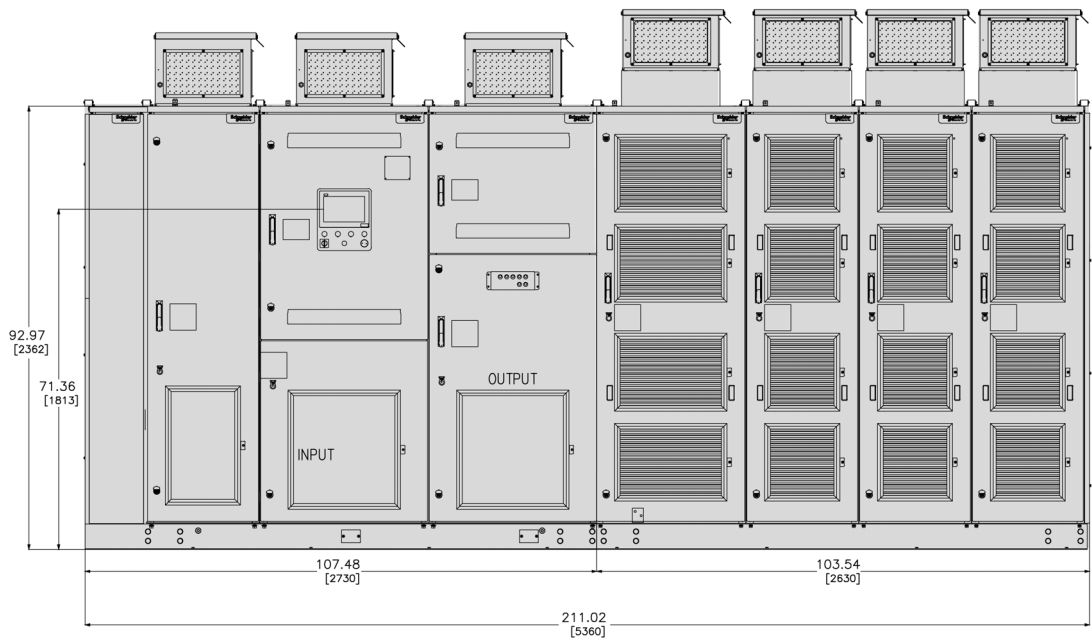
4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

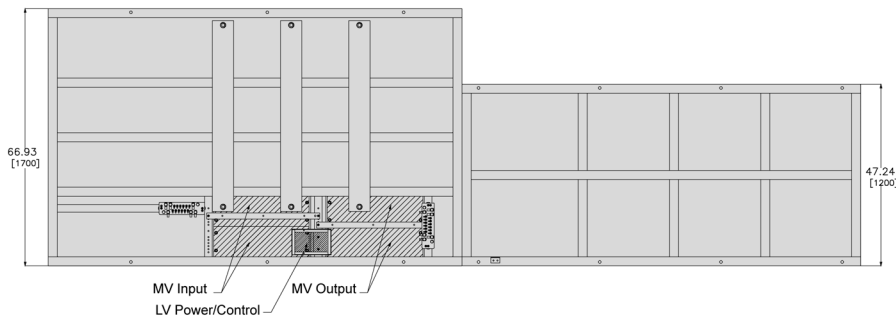
6) For other combination contact Schneider Electric.

## Frame Size 8: Drawings

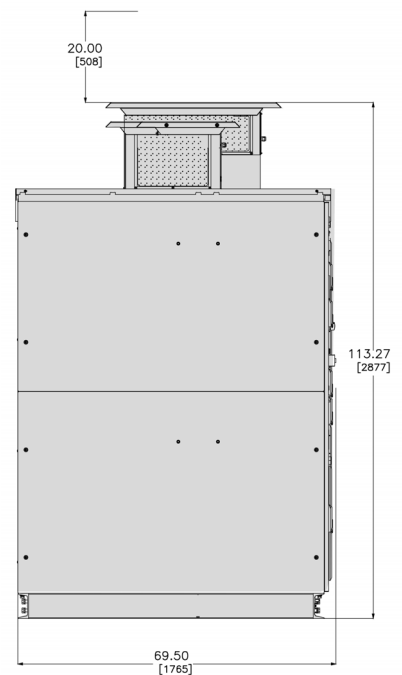
### Layout Drawing (inch/mm)



**INPUT:** Input terminal  
**OUTPUT:** Output terminal

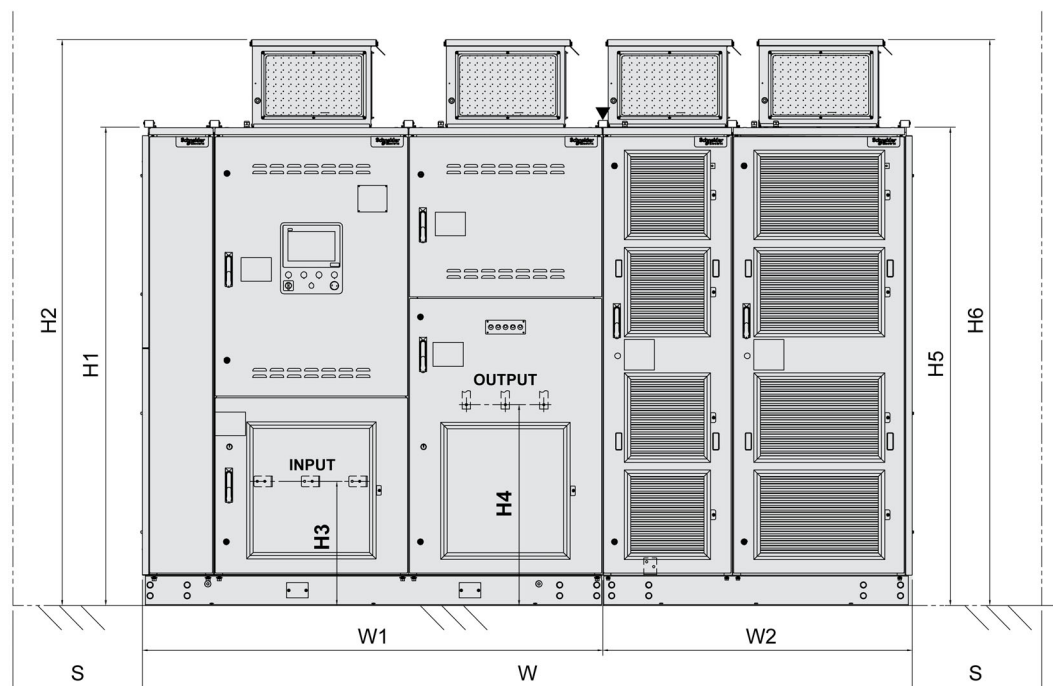


**MV Input:** MV Input cable area  
**LV Power/Control:** LV Power/Control cable area  
**MV Output:** MV Output cable area

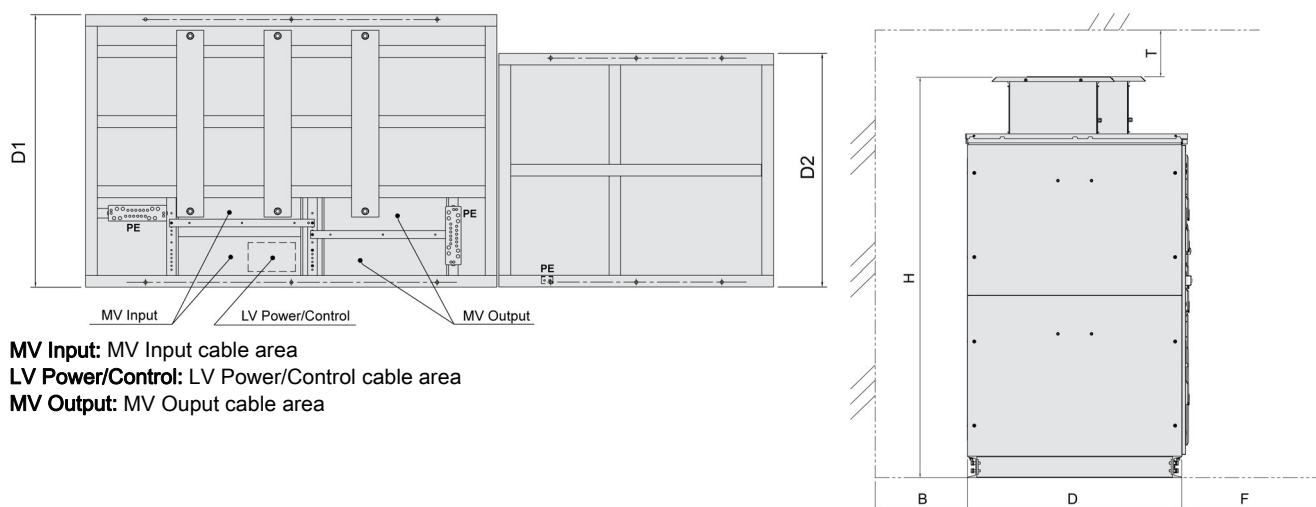


## Layout Drawing and Dimensions

### Layout Drawing



**INPUT:** Input terminal  
**OUTPUT:** Output terminal



**MV Input:** MV Input cable area  
**LV Power/Control:** LV Power/Control cable area  
**MV Output:** MV Output cable area

**NOTE:** Sketch is representing outline dimensions only, real cabinet arrangement is depending on power size.

Main dimensions - Output Voltage 4.2 kV

Product reference	Outer dimensions (mm / in)			Transformer cabinet		Powercell cabinet	
	W	H <sup>(a)</sup>	D	Fan Type	Fan Number	Fan Type	Fan number
F1_4242 ATV6000D350A4242...	2660 105	2724 107	1400 55	400	2	400	1
F1_4242 ATV6000D490A4242...	2660 105	2724 107	1400 55	400	2	400	1
F1_4242 ATV6000D570A4242...	2660 105	2724 107	1400 55	400	2	400	1
F1_4242 ATV6000D630A4242...	2660 105	2724 107	1400 55	400	2	400	1
F1_4242 ATV6000D750A4242...	2660 105	2724 107	1400 55	400	2	400	1
F2_4242 ATV6000D890A4242...	3260 128	2788 110	1400 55	400	2	450	2
F3_4242 ATV6000C100A4242...	3560 140	2788 110	1400 55	450	2	450	2
F3_4242 ATV6000C113A4242...	3560 140	2788 110	1400 55	450	2	450	2
F4_4242 ATV6000C125A4242...	3760 148	2754 108	1400 55	450	2	400	2
F4_4242 ATV6000C150A4242...	3760 148	2754 108	1400 55	450	2	400	2
F4_4242 ATV6000C165A4242...	3760 148	2754 108	1400 55	450	2	400	2
F5_4242 ATV6000C188A4242...	4060 160	2829 111	1500 59	450	3	560	2
F5_4242 ATV6000C210A4242...	4060 160	2829 111	1500 59	450	3	560	2
F6_4242 ATV6000C240A4242...	5060 199	2874 113	1500 59	450	3	400	4
F6_4242 ATV6000C275A4242...	5060 199	2874 113	1500 59	450	3	400	4
F7_4242 ATV6000C308A4242...	5060 199	2874 113	1600 63	450	3	400	4
F8_4242 ATV6000C338A4242...	5360 211	2952 116	1700 67	450	3	500	4
F8_4242 ATV6000C369A4242...	5360 211	2952 116	1700 67	450	3	500	4

a) "H" is linked to higher size of transformer cabinet (H2) or transformer cabinet (H6).

**Additional Dimensions - Output Voltage 4.2 kV**

Product reference	Transformer Cabinet (mm / in)						Power cell Cabinet (mm / in)				Space Maintenance (mm / in)			
	H1	H2	H3	H4	W1	D1	H5	H6	W2	D2	T	B (a)	F <sup>(b)</sup>	S <sup>(c)</sup>
ATV6000D350A4242...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2724 107	830 33	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D490A4242...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2724 107	830 33	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D570A4242...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2724 107	830 33	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D630A4242...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2724 107	830 33	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D750A4242...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2724 107	830 33	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D890A4242...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2788 110	1430 56	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C100A4242...	2210 87	2604 103	500 20	780 31	2130 84	1400 55	2210 87	2788 110	1430 56	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C113A4242...	2210 87	2604 103	500 20	780 31	2130 84	1400 55	2210 87	2788 110	1430 56	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C125A4242...	2360 93	2754 108	500 20	930 37	2130 84	1400 55	2210 87	2724 107	1630 64	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C150A4242...	2360 93	2754 108	500 20	930 37	2130 84	1400 55	2210 87	2724 107	1630 64	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C165A4242...	2360 93	2754 108	500 20	930 37	2130 84	1400 55	2210 87	2724 107	1630 64	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C188A4242...	2360 93	2754 108	500 20	930 37	2430 96	1500 59	2210 87	2829 111	1630 64	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C210A4242...	2360 93	2754 108	500 20	930 37	2430 96	1500 59	2210 87	2829 111	1630 64	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C240A4242...	2360 93	2754 108	500 20	930 37	2430 96	1500 59	2360 93	2874 113	2630 104	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C275A4242...	2360 93	2754 108	500 20	930 37	2430 96	1500 59	2360 93	2874 113	2630 104	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C308A4242...	2360 93	2754 108	500 20	930 37	2430 96	1600 63	2360 93	2874 113	2630 104	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C338A4242...	2360 93	2754 108	500 20	930 37	2730 107	1700 67	2360 93	2952 116	2630 104	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C369A4242...	2360 93	2754 108	500 20	930 37	2730 107	1700 67	2360 93	2952 116	2630 104	1200 47	≥500 ≥20	0	1500 59	0

a) Space could be required for installation and lifting lugs.

b) For easy handling with power cell exchange to 2000mm (78.7 in) are recommended.

c) Space (600mm) could be required for maintenance of the front & rear access drive.

## Section 5.3

### Output Voltage 6.6 kV

#### What Is in This Section?

This section contains the following topics:

Topic	Page
F1_6666 ATV6000D450A6666...ATV6000D890A6666	73
F2_6666 ATV6000C100A6666	75
F3_6666 ATV6000C119A6666	76
F4_6666 ATV6000C138A6666	77
F5_6666 ATV6000C163A6666	78
F6_6666 ATV6000C179A6666	79
F7_6666 ATV6000C200A6666...ATV6000C225A6666	80
F8_6666 ATV6000C263A6666...ATV6000C288A6666	81
F9_6666 ATV6000C334A6666	82
F10_6666 ATV6000C382A6666	83
F11_6666 ATV6000C425A6666	84
F12_6666 ATV6000C489A6666...ATV6000C538A6666	85
F13_6666 ATV6000C585A6666	86
Layout Drawing and Dimensions	87



**F1\_6666 ATV6000D450A6666...ATV6000D890A6666**
**Technical Data**

ATV6000	ATV6000D450 A6666NA•		ATV6000D570 A6666NA•		ATV6000D630 A6666NA•	
Nominal data	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
Type rating [kVA]	450		570		630	
Max. Motor power [kW] / [HP] <b>1)</b>	355 / 476	330 / 442	450 / 603	430 / 576	500 / 670	470 / 630
Nominal Continuous output current [A] <b>1)</b>	37.1	35	47.1	45	52.3	50
Max. output current with 120 %overload 1 min / 10 min [A]	44.5	/	56.5	/	62.7	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	52.5	/	67.5	/	75
<b>Power cells</b>						
Number of cells per phase	5		5		5	
Power cell rated current [A]	65		65		65	
Power cell current with 120 %overload 1 min / 10 min [A]	78		78		78	
Max. output current for 3 sec [A]	97.5		97.5		97.5	
<b>Characteristics with standard efficiency</b>						
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%		96%	
Total losses at 100 % load [kW]	15.5	14.4	19.7	18.7	21.9	20.5
Air flow [m <sup>3</sup> /h]	9889		9889		9889	
Noise level [dB (A)] @ 60 Hz	80		80		80	
Weight [kg / lb]	4221 / 9305		4321 / 9526		4421 / 9746	
Dimension [mm / inch] W*D*H <b>2)</b>	2760*1400*2802 / 109*55*110		2760*1400*2802 / 109*55*110		2760*1400*2802 / 109*55*110	
<b>Connection</b>						
Incoming cable type	Symmetrical three-phase					
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000		95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)					
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	35 / 2		35 / 2		35 / 2	
Motor cable Max. length <b>4)</b>	1000 m		1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz					
Capacity of control power supply w/o options	1 KVA		1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used					
Fan power supply	3-phase 480 Vac, 60Hz					
Capacity of fan power supply (kVA) <b>5)</b>	6		6		6	
<b>Maintenance</b>						
Maintenance access	Front		Front		Front	
Cable entry <b>6)</b>	Bottom in /Bottom out					

ATV6000	ATV6000D780 A6666NA•		ATV6000D890 A6666NA•	
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
<b>Nominal data</b>				
Type rating [kVA]	780		890	
Max. Motor power [kW] / [HP] <b>1)</b>	620 / 831	590 / 791	710 / 952	670 / 898
Nominal Continuous output current [A] <b>1)</b>	65	62	74.3	71
Max. output current with 120 %overload 1 min / 10 min [A]	78	/	89.1	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	93	/	107
<b>Power cells</b>				
Number of cells per phase	5		5	
Power cell rated current [A]	100		100	
Power cell current with 120 %overload 1 min / 10 min [A]	120		120	
Max. output current for 3 sec [A]	150		150	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	27	25.7	30.9	29.2
Air flow [m <sup>3</sup> /h]	9889		9889	
Noise level [dB (A)] @ 60 Hz	80		80	
Weight [kg / lb]	4521 / 9967		4741 / 10452	
Dimension [mm / inch] W*D*H <b>2)</b>	2760*1400*2802 / 109*55*110		2760*1400*2802 / 109*55*110	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase		Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	35 / 2		35 / 2	
Motor cable Max. length <b>4)</b>	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA			
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) <b>5)</b>	6		6	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry <b>6)</b>	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

## F2\_6666 ATV6000C100A6666

## Technical Data

ATV6000	ATV6000C100 A6666NA•	
Nominal data	Normal Duty	Heavy Duty
Type rating [kVA]	1000	
Max. Motor power [kW] / [HP] <b>1)</b>	800 / 1072	760 / 1019
Nominal Continuous output current [A] <b>1)</b>	83.7	80
Max. output current with 120 %overload 1 min / 10 min [A]	100	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	120
<b>Power cells</b>		
Number of cells per phase	5	
Power cell rated current [A]	100	
Power cell current with 120 %overload 1 min / 10 min [A]	120	
Max. output current for 3 sec [A]	150	
<b>Characteristics with standard efficiency</b>		
Efficiency at 100 % load (incl. Transformer) [%]	96%	
Total losses at 100 % load [kW]	34.9	33.1
Air flow [m <sup>3</sup> /h]	11940	
Noise level [dB (A)] @ 60 Hz	80	
Weight [kg / lb]	4889 / 10778	
Dimension [mm / inch] W*D*H <b>2)</b>	3060*1400*2802 / 120*55*110	
<b>Connection</b>		
Incoming cable type	Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	35 / 2	
Motor cable Max. length <b>4)</b>	1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0	
Control power supply	Single phase 120 Vac, 60Hz	
Capacity of control power supply w/o options	1 KVA	
Capacity of control power supply with options	Depending on options to be used	
Fan power supply	3-phase 480 Vac, 60Hz	
Capacity of fan power supply (kVA) <b>5)</b>	7	
<b>Maintenance</b>		
Maintenance access	Front	
Cable entry <b>6)</b>	Bottom in /Bottom out	

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

## F3\_6666 ATV6000C119A6666

### Technical Data

ATV6000	ATV6000C119 A6666NA•	
Nominal data	Normal Duty	Heavy Duty
Type rating [kVA]	1190	
Max. Motor power [kW] / [HP] <b>1)</b>	950 / 1273	760 / 1019
Nominal Continuous output current [A] <b>1)</b>	100	80
Max. output current with 120 %overload 1 min / 10 min [A]	120	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	120
<b>Power cells</b>		
Number of cells per phase	6	
Power cell rated current [A]	100	
Power cell current with 120 %overload 1 min / 10 min [A]	120	
Max. output current for 3 sec [A]	150	
<b>Characteristics with standard efficiency</b>		
Efficiency at 100 % load (incl. Transformer) [%]	96%	
Total losses at 100 % load [kW]	41.4	33.1
Air flow [m <sup>3</sup> /h]	11840	
Noise level [dB (A)] @ 60 Hz	80	
Weight [kg / lb]	5352 / 11799	
Dimension [mm / inch] W*D*H <b>2)</b>	3360*1400*2724 / 132*55*107	
<b>Connection</b>		
Incoming cable type	Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	35 / 2	
Motor cable Max. length <b>4)</b>	1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0	
Control power supply	Single phase 120 Vac, 60Hz	
Capacity of control power supply w/o options	1 KVA	
Capacity of control power supply with options	Depending on options to be used	
Fan power supply	3-phase 480 Vac, 60Hz	
Capacity of fan power supply (kVA) <b>5)</b>	5	
<b>Maintenance</b>		
Maintenance access	Front	
Cable entry <b>6)</b>	Bottom in /Bottom out	

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

## F4\_6666 ATV6000C138A6666

## Technical Data

ATV6000	ATV6000C138 A6666NA•	
Nominal data	Normal Duty	Heavy Duty
Type rating [kVA]	1380	
Max. Motor power [kW] / [HP] <b>1)</b>	1100 / 1475	1050 / 1408
Nominal Continuous output current [A] <b>1)</b>	115	110
Max. output current with 120 %overload 1 min / 10 min [A]	138	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	165
<b>Power cells</b>		
Number of cells per phase	5	
Power cell rated current [A]	150	
Power cell current with 120 %overload 1 min / 10 min [A]	180	
Max. output current for 3 sec [A]	225	
<b>Characteristics with standard efficiency</b>		
Efficiency at 100 % load (incl. Transformer) [%]	96%	
Total losses at 100 % load [kW]	47.9	45.7
Air flow [m <sup>3</sup> /h]	17100	
Noise level [dB (A)] @ 60 Hz	83	
Weight [kg / lb]	5785 / 12753	
Dimension [mm / inch] W*D*H <b>2)</b>	3660*1400*2802 / 144*55*110	
<b>Connection</b>		
Incoming cable type	Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	35 / 2	
Motor cable Max. length <b>4)</b>	1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0	
Control power supply	Single phase 120 Vac, 60Hz	
Capacity of control power supply w/o options	1 KVA	
Capacity of control power supply with options	Depending on options to be used	
Fan power supply	3-phase 480 Vac, 60Hz	
Capacity of fan power supply (kVA) <b>5)</b>	10	
<b>Maintenance</b>		
Maintenance access	Front	
Cable entry <b>6)</b>	Bottom in /Bottom out	

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

**F5\_6666 ATV6000C163A6666**

**Technical Data**

ATV6000	ATV6000C163 A6666NA●	
Nominal data	Normal Duty	Heavy Duty
Type rating [kVA]	1630	
Max. Motor power [kW] / [HP] <b>1)</b>	1300 / 1743	1140 / 1528
Nominal Continuous output current [A] <b>1)</b>	136	120
Max. output current with 120 %overload 1 min / 10 min [A]	163	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	180
<b>Power cells</b>		
Number of cells per phase	5	
Power cell rated current [A]	150	
Power cell current with 120 %overload 1 min / 10 min [A]	180	
Max. output current for 3 sec [A]	225	
<b>Characteristics with standard efficiency</b>		
Efficiency at 100 % load (incl. Transformer) [%]	96%	
Total losses at 100 % load [kW]	56.6	49.6
Air flow [m <sup>3</sup> /h]	17100	
Noise level [dB (A)] @ 60 Hz	83	
Weight [kg / lb]	6565 / 14473	
Dimension [mm / inch] W*D*H <b>2)</b>	3660*1500*2802 / 144*59*110	
<b>Connection</b>		
Incoming cable type	Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	35 / 2	
Motor cable Max. length <b>4)</b>	1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0	
Control power supply	Single phase 120 Vac, 60Hz	
Capacity of control power supply w/o options	1 KVA	
Capacity of control power supply with options	Depending on options to be used	
Fan power supply	3-phase 480 Vac, 60Hz	
Capacity of fan power supply (kVA) <b>5)</b>	10	
<b>Maintenance</b>		
Maintenance access	Front	
Cable entry <b>6)</b>	Bottom in /Bottom out	

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

## F6\_6666 ATV6000C179A6666

## Technical Data

ATV6000	ATV6000C179 A6666NA•	
Nominal data	Normal Duty	Heavy Duty
Type rating [kVA]	1790	
Max. Motor power [kW] / [HP] <b>1)</b>	1430 / 1917	1140 / 1528
Nominal Continuous output current [A] <b>1)</b>	150	120
Max. output current with 120 %overload 1 min / 10 min [A]	180	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	180
<b>Power cells</b>		
Number of cells per phase	6	
Power cell rated current [A]	150	
Power cell current with 120 %overload 1 min / 10 min [A]	180	
Max. output current for 3 sec [A]	225	
<b>Characteristics with standard efficiency</b>		
Efficiency at 100 % load (incl. Transformer) [%]	96%	
Total losses at 100 % load [kW]	62.2	49.6
Air flow [m <sup>3</sup> /h]	19430	
Noise level [dB (A)] @ 60 Hz	83	
Weight [kg / lb]	7009 / 15452	
Dimension [mm / inch] W*D*H <b>2)</b>	3960*1500*2829 / 156*59*111	
<b>Connection</b>		
Incoming cable type	Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	50 / 0	
Motor cable Max. length <b>4)</b>	1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0	
Control power supply	Single phase 120 Vac, 60Hz	
Capacity of control power supply w/o options	1 KVA	
Capacity of control power supply with options	Depending on options to be used	
Fan power supply	3-phase 480 Vac, 60Hz	
Capacity of fan power supply (kVA) <b>5)</b>	13	
<b>Maintenance</b>		
Maintenance access	Front	
Cable entry <b>6)</b>	Bottom in /Bottom out	

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

F7\_6666 ATV6000C200A6666...ATV6000C225A6666

Technical Data

ATV6000	ATV6000C200 A6666NA•		ATV6000C225 A6666NA•	
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
<b>Nominal data</b>				
Type rating [kVA]	2000		2250	
Max. Motor power [kW] / [HP] <b>1)</b>	1600 / 2145	1520 / 2038	1800 / 2413	1520 / 2038
Nominal Continuous output current [A] <b>1)</b>	167	160	188	160
Max. output current with 120 %overload 1 min / 10 min [A]	201	/	226	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	240	/	240
<b>Power cells</b>				
Number of cells per phase	5		5	
Power cell rated current [A]	200		200	
Power cell current with 120 %overload 1 min / 10 min [A]	240		240	
Max. output current for 3 sec [A]	300		300	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	69.6	66.1	78.3	66.1
Air flow [m <sup>3</sup> /h]	18912		18912	
Noise level [dB (A)] @ 60 Hz	80		80	
Weight [kg / lb]	7837 / 17277		8137 / 17939	
Dimension [mm / inch] W*D*H <b>2)</b>	4660*1500*2754 / 183*59*108		4660*1500*2754 / 183*59*108	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	50 / 0		50 / 0	
Motor cable Max. length <b>4)</b>	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) <b>5)</b>	8		8	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry <b>6)</b>	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.



## F8\_6666 ATV6000C263A6666...ATV6000C288A6666

## Technical Data

ATV6000	ATV6000C263 A6666NA•		ATV6000C288 A6666NA•	
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
<b>Nominal data</b>				
Type rating [kVA]	2630		2880	
Max. Motor power [kW] / [HP] 1)	2100 / 2816	2010 / 2695	2300 / 3084	2140 / 2869
Nominal Continuous output current [A] 1)	220	211	241	224
Max. output current with 120 %overload 1 min / 10 min [A]	264	/	289	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	317	/	336
<b>Power cells</b>				
Number of cells per phase	5		5	
Power cell rated current [A]	280		280	
Power cell current with 120 %overload 1 min / 10 min [A]	336		336	
Max. output current for 3 sec [A]	420		420	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96%	
Total losses at 100 % load [kW]	91.3	87.4	100	93.1
Air flow [m <sup>3</sup> /h]	25440		25440	
Noise level [dB (A)] @ 60 Hz	83		83	
Weight [kg / lb]	8500 / 18739		9200 / 20282	
Dimension [mm / inch] W*D*H 2)	4660*1600*2802 / 183*63*110		4660*1600*2802 / 183*63*110	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) 3)	95 / 000		95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) 3)	95 / 000		95 / 000	
Motor cable Max. length 4)	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0		50 / 0	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) 5)	15		15	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry 6)	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

**F9\_6666 ATV6000C334A6666**

**Technical Data**

ATV6000	ATV6000C334 A6666NA●	
Nominal data	Normal Duty	Heavy Duty
Type rating [kVA]	3340	
Max. Motor power [kW] / [HP] <b>1)</b>	2670 / 3580	2140 / 2869
Nominal Continuous output current [A] <b>1)</b>	280	224
Max. output current with 120 %overload 1 min / 10 min [A]	336	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	336
<b>Power cells</b>		
Number of cells per phase	6	
Power cell rated current [A]	280	
Power cell current with 120 %overload 1 min / 10 min [A]	336	
Max. output current for 3 sec [A]	420	
<b>Characteristics with standard efficiency</b>		
Efficiency at 100 % load (incl. Transformer) [%]	96%	
Total losses at 100 % load [kW]	116	93.1
Air flow [m <sup>3</sup> /h]	27634	
Noise level [dB (A)] @ 60 Hz	85	
Weight [kg / lb]	9740 / 21473	
Dimension [mm / inch] W*D*H <b>2)</b>	5160*1700*2829 / 203*67*111	
<b>Connection</b>		
Incoming cable type	Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	95 / 000	
Motor cable Max. length <b>4)</b>	1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	50 / 0	
Control power supply	Single phase 120 Vac, 60Hz	
Capacity of control power supply w/o options	1 KVA	
Capacity of control power supply with options	Depending on options to be used	
Fan power supply	3-phase 480 Vac, 60Hz	
Capacity of fan power supply (kVA) <b>5)</b>	19	
<b>Maintenance</b>		
Maintenance access	Front	
Cable entry <b>6)</b>	Bottom in /Bottom out	

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

## F10\_6666 ATV6000C382A6666

### Technical Data

ATV6000	ATV6000C382 A6666NA•	
Nominal data	Normal Duty	Heavy Duty
Type rating [kVA]	3820	
Max. Motor power [kW] / [HP] <b>1)</b>	3050 / 4090	2930 / 3929
Nominal Continuous output current [A] <b>1)</b>	320	307
Max. output current with 120 %overload 1 min / 10 min [A]	384	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	461
<b>Power cells</b>		
Number of cells per phase	5	
Power cell rated current [A]	410	
Power cell current with 120 %overload 1 min / 10 min [A]	492	
Max. output current for 3 sec [A]	615	
<b>Characteristics with standard efficiency</b>		
Efficiency at 100 % load (incl. Transformer) [%]	96%	
Total losses at 100 % load [kW]	133	127
Air flow [m <sup>3</sup> /h]	22464	
Noise level [dB (A)] @ 60 Hz	83	
Weight [kg / lb]	11785 / 25981	
Dimension [mm / inch] W*D*H <b>2)</b>	5960*1700*2754 / 235*67*108	
<b>Connection</b>		
Incoming cable type	Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	185 / 350MCM	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	185 / 350MCM	
Motor cable Max. length <b>4)</b>	1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	95 / 3/0	
Control power supply	Single phase 120 Vac, 60Hz	
Capacity of control power supply w/o options	1 KVA	
Capacity of control power supply with options	Depending on options to be used	
Fan power supply	3-phase 480 Vac, 60Hz	
Capacity of fan power supply (kVA) <b>5)</b>	10	
<b>Maintenance</b>		
Maintenance access	Front	
Cable entry <b>6)</b>	Bottom in /Bottom out	

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

**F11\_6666 ATV6000C425A6666**

**Technical Data**

ATV6000	ATV6000C425 A6666NA•	
Nominal data	Normal Duty	Heavy Duty
Type rating [kVA]	4250	
Max. Motor power [kW] / [HP] <b>1)</b>	3400 / 4559	3130 / 4197
Nominal Continuous output current [A] <b>1)</b>	356	328
Max. output current with 120 %overload 1 min / 10 min [A]	427	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	492
<b>Power cells</b>		
Number of cells per phase	5	
Power cell rated current [A]	410	
Power cell current with 120 %overload 1 min / 10 min [A]	492	
Max. output current for 3 sec [A]	615	
<b>Characteristics with standard efficiency</b>		
Efficiency at 100 % load (incl. Transformer) [%]	96%	
Total losses at 100 % load [kW]	148	136
Air flow [m <sup>3</sup> /h]	26184	
Noise level [dB (A)] @ 60 Hz	83	
Weight [kg / lb]	12085 / 26642	
Dimension [mm / inch] W*D*H <b>2)</b>	5960*1700*2874 / 235*67*113	
<b>Connection</b>		
Incoming cable type	Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	185 / 350MCM	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	185 / 350MCM	
Motor cable Max. length <b>4)</b>	1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	95 / 3/0	
Control power supply	Single phase 120 Vac, 60Hz	
Capacity of control power supply w/o options	1 KVA	
Capacity of control power supply with options	Depending on options to be used	
Fan power supply	3-phase 480 Vac, 60Hz	
Capacity of fan power supply (kVA) <b>5)</b>	20	
<b>Maintenance</b>		
Maintenance access	Front	
Cable entry <b>6)</b>	Bottom in /Bottom out	

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

**F12\_6666 ATV6000C489A6666...ATV6000C538A6666**
**Technical Data**

ATV6000	ATV6000C489 A6666NA●		ATV6000C538 A6666NA●	
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
<b>Nominal data</b>				
Type rating [kVA]	4890		5380	
Max. Motor power [kW] / [HP] 1)	3910 / 5243	3740 / 5015	4300 / 5766	3740 / 5015
Nominal Continuous output current [A] 1)	410	392	450	392
Max. output current with 120 %overload 1 min / 10 min [A]	492	/	540	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	588	/	588
<b>Power cells</b>				
Number of cells per phase	5		5	
Power cell rated current [A]	490		490	
Power cell current with 120 %overload 1 min / 10 min [A]	588		588	
Max. output current for 3 sec [A]	735		735	
<b>Characteristics with standard efficiency</b>				
Efficiency at 100 % load (incl. Transformer) [%]	96%		96.5%	
Total losses at 100 % load [kW]	170	163	163	142
Air flow [m <sup>3</sup> /h]	29400		29400	
Noise level [dB (A)] @ 60 Hz	83		83	
Weight [kg / lb]	12899 / 28437		13599 / 29980	
Dimension [mm / inch] W*D*H 2)	5960*1700*2952 / 235*67*116		5960*1700*2952 / 235*67*116	
<b>Connection</b>				
Incoming cable type	Symmetrical three-phase			
Typical cable size (mm <sup>2</sup> / AWG) 3)	240 / 500MCM		240 / 500MCM	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)			
Typical cable size (mm <sup>2</sup> / AWG) 3)	240 / 500MCM		240 / 500MCM	
Motor cable Max. length 4)	1000 m		1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	120 / 300		120 / 300	
Control power supply	Single phase 120 Vac, 60Hz			
Capacity of control power supply w/o options	1 KVA		1 KVA	
Capacity of control power supply with options	Depending on options to be used			
Fan power supply	3-phase 480 Vac, 60Hz			
Capacity of fan power supply (kVA) 5)	22		22	
<b>Maintenance</b>				
Maintenance access	Front		Front	
Cable entry 6)	Bottom in /Bottom out			

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

6) For other combination contact Schneider Electric.

**F13\_6666 ATV6000C585A6666**

**Technical Data**

ATV6000	ATV6000C585 A6666NA•	
Nominal data	Normal Duty	Heavy Duty
Type rating [kVA]	5850	
Max. Motor power [kW] / [HP] <b>1)</b>	4680/ 6275	3740 / 5015
Nominal Continuous output current [A] <b>1)</b>	490	392
Max. output current with 120 %overload 1 min / 10 min [A]	588	/
Max. output current with 150 % overload 1 min / 10 min [A]	/	588
<b>Power cells</b>		
Number of cells per phase	6	
Power cell rated current [A]	490	
Power cell current with 120 %overload 1 min / 10 min [A]	588	
Max. output current for 3 sec [A]	735	
<b>Characteristics with standard efficiency</b>		
Efficiency at 100 % load (incl. Transformer) [%]	96.5%	
Total losses at 100 % load [kW]	177	142
Air flow [m <sup>3</sup> /h]	33000	
Noise level [dB (A)] @ 60 Hz	83	
Weight [kg / lb]	15606 / 34405	
Dimension [mm / inch] W*D*H <b>2)</b>	6860*1800*3012 / 270*71*118	
<b>Connection</b>		
Incoming cable type	Symmetrical three-phase	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	240 / 500MCM	
Motor cable type	Symmetrical three-phase (Use of shielded cable is advisable)	
Typical cable size (mm <sup>2</sup> / AWG) <b>3)</b>	240 / 500MCM	
Motor cable Max. length <b>4)</b>	1000 m	
Grounding connection PE (mm <sup>2</sup> / AWG)	120 / 300	
Control power supply	Single phase 120 Vac, 60Hz	
Capacity of control power supply w/o options	1 KVA	
Capacity of control power supply with options	Depending on options to be used	
Fan power supply	3-phase 480 Vac, 60Hz	
Capacity of fan power supply (kVA) <b>5)</b>	23	
<b>Maintenance</b>		
Maintenance access	Front	
Cable entry <b>6)</b>	Bottom in /Bottom out	

1) Values valid for synchronous motor and asynchronous motor. The specifications for the maximum motor shaft power is based on a motor efficiency of 95%.

2) Including the height of top cooling fans.

3) Typical cable size values based on use of copper cables in cable tray laying. Incoming cable size is based on drive current rating. It has to be checked to be in accordance to mains short circuit capability and local and national electrical code requirement as well all other applicable regulations.

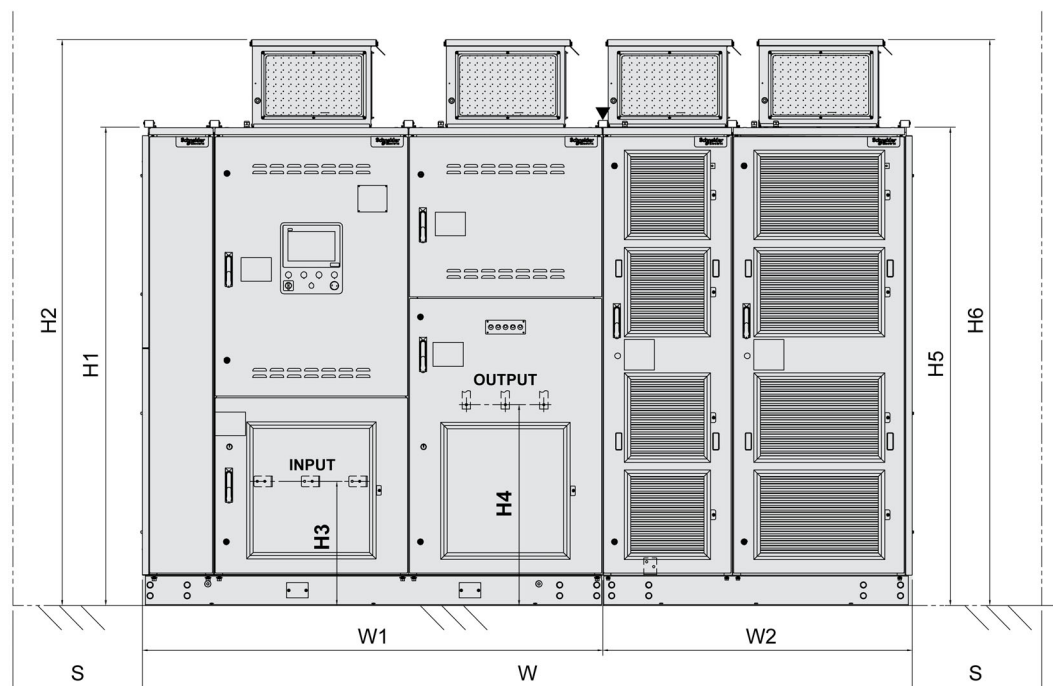
4) Variation in max. cable length may be possible depending on type cable and installation. For longer cable length between motor and drive contact Schneider Electric.

5) Contact Schneider Electric if N+1 redundancy cooling fan requested.

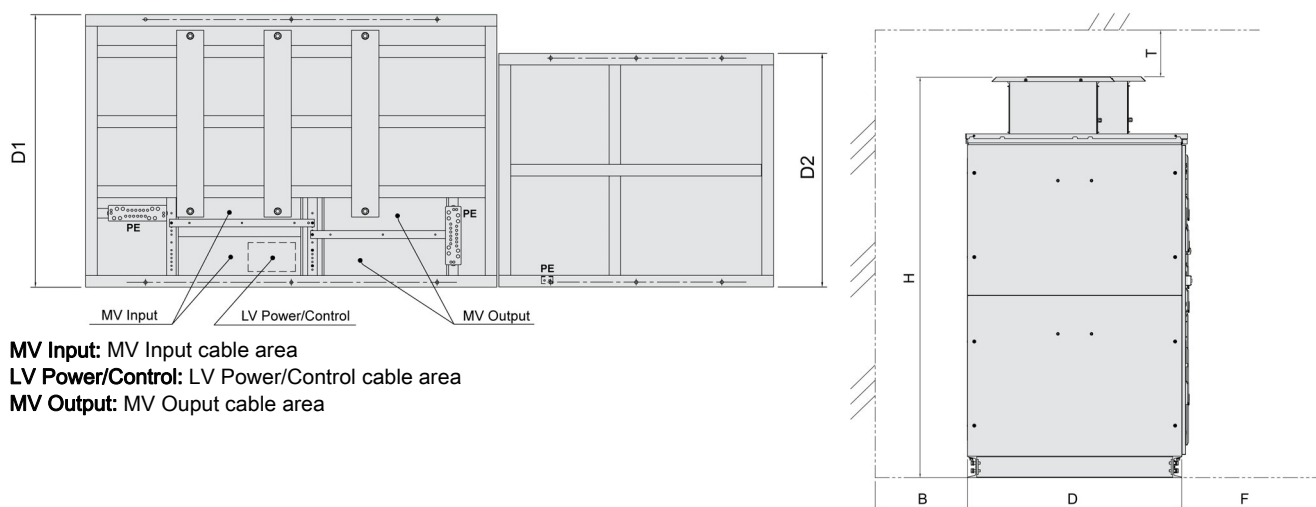
6) For other combination contact Schneider Electric.

## Layout Drawing and Dimensions

### Layout Drawing



**INPUT:** Input terminal  
**OUTPUT:** Output terminal



**MV Input:** MV Input cable area  
**LV Power/Control:** LV Power/Control cable area  
**MV Output:** MV Output cable area

**NOTE:** Sketch is representing outline dimensions only, real cabinet arrangement is depending on power size.

**NOTE:** Refer to your local Schneider representative for further information.

Main dimensions - Output Voltage 6.6 kV

Product reference	Outer dimensions (mm / in)			Transformer cabinet		Powercell cabinet	
	W	H <sup>(a)</sup>	D	Fan Type	Fan Number	Fan Type	Fan number
F1_6666 ATV6000D450A6666...	2760 109	2802 110	1400 55	400	2	500	1
F1_6666 ATV6000D570A6666...	2760 109	2802 110	1400 55	400	2	500	1
F1_6666 ATV6000D630A6666...	2760 109	2802 110	1400 55	400	2	500	1
F1_6666 ATV6000D780A6666...	2760 109	2802 110	1400 55	400	2	500	1
F1_6666 ATV6000D890A6666...	2760 109	2802 110	1400 55	400	2	500	1
F2_6666 ATV6000C100A6666...	3060 120	2802 110	1400 55	450	2	500	1
F3_6666 ATV6000C119A6666...	3360 132	2724 107	1400 55	450	2	400	2
F4_6666 ATV6000C138A6666...	3660 144	2802 110	1400 55	450	2	500	2
F5_6666 ATV6000C163A6666...	3660 144	2802 110	1500 59	450	2	500	2
F6_6666 ATV6000C179A6666...	3960 156	2829 111	1500 59	450	2	560	2
F7_6666 ATV6000C200A6666...	4660 183	2754 108	1500 59	450	3	400	3
F7_6666 ATV6000C225A6666...	4660 183	2754 108	1500 59	450	3	400	3
F8_6666 ATV6000C263A6666...	4660 183	2802 110	1600 63	450	3	500	3
F8_6666 ATV6000C288A6666...	4660 183	2802 110	1600 63	450	3	500	3
F9_6666 ATV6000C334A6666...	5160 203	2829 111	1700 67	450	3	560	3
F10_6666 ATV6000C382A6666...	5960 235	2754 108	1700 67	450	3	400	5
F11_6666 ATV6000C425A6666...	5960 235	2874 113	1700 67	560	3	400	5
F12_6666 ATV6000C489A6666...	5960 235	2952 116	1700 67	560	3	500	5
F12_6666 ATV6000C538A6666...	5960 235	2952 116	1700 67	560	3	500	5
F13_6666 ATV6000C585A6666...	6860 270	3012 118	1800 71	560	3	500	6

a) "H" is linked to higher size of transformer cabinet (H2) or transformer cabinet (H6).



**Additional Dimensions - Output Voltage 6.6 kV**

Product reference	Transformer Cabinet (mm / in)						Power cell Cabinet (mm / in)				Space Maintenance (mm / in)			
	H1	H2	H3	H4	W1	D1	H5	H6	W2	D2	T	B (a)	F (b)	S(c)
ATV6000D450A6666...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2802 110	930 37	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D570A6666...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2802 110	930 37	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D630A6666...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2802 110	930 37	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D780A6666...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2802 110	930 37	1200 47	≥500 ≥20	0	1500 59	0
ATV6000D890A6666...	2210 87	2540 100	500 20	780 31	1830 72	1400 55	2210 87	2802 110	930 37	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C100A6666...	2210 87	2604 103	500 20	780 31	2130 84	1400 55	2210 87	2802 110	930 37	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C119A6666...	2210 87	2604 103	500 20	780 31	2130 84	1400 55	2210 87	2724 107	1230 48	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C138A6666...	2210 87	2604 103	500 20	780 31	2130 84	1400 55	2210 87	2802 110	1530 60	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C163A6666...	2360 93	2754 108	500 20	930 37	2130 84	1500 59	2210 87	2802 110	1530 60	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C179A6666...	2360 93	2754 108	500 20	930 37	2130 84	1500 59	2210 87	2829 111	1830 72	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C200A6666...	2360 93	2754 108	500 20	930 37	2430 96	1500 59	2210 87	2724 107	2230 88	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C225A6666...	2360 93	2754 108	500 20	930 37	2430 96	1500 59	2210 87	2724 107	2230 88	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C263A6666...	2360 93	2754 108	500 20	930 37	2430 96	1600 63	2210 87	2802 110	2230 88	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C288A6666...	2360 93	2754 108	500 20	930 37	2430 96	1600 63	2210 87	2802 110	2230 88	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C334A6666...	2360 93	2754 108	500 20	930 37	2730 107	1700 67	2210 87	2829 111	2430 96	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C382A6666...	2360 93	2754 108	500 20	930 37	2730 107	1700 67	2360 93	2874 113	3230 127	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C425A6666...	2360 93	2795 110	500 20	930 37	2730 107	1700 67	2360 93	2874 113	3230 127	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C489A6666...	2360 93	2795 110	500 20	930 37	2730 107	1700 67	2360 93	2952 116	3230 127	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C538A6666...	2360 93	2795 110	500 20	930 37	2730 107	1700 67	2360 93	2952 116	3230 127	1200 47	≥500 ≥20	0	1500 59	0
ATV6000C585A6666...	2720 107	3155 124	560 22	1290 51	3030 119	1800 71	2420 95	3012 118	3830 151	1200 47	≥500 ≥20	0	1500 59	0

- a) Space could be required for installation and lifting lugs.
- b) For easy handling with power cell exchange to 2000mm (78.7 in) are recommended.
- c) Space (600mm) could be required for maintenance of the front & rear access drive.



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# Chapter 6

## Options and Spare parts

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### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Overview	92
Spares and Repairs	94
Communication Buses and Networks	96
I/O Extension Modules	98
Encoder Interface Modules	99
Output Filters	100
Power Supply	101
Wiring	102
Harsh Environment	103
Guarding Options	104
Customization	106

## Overview

### Available Options

To enlarge the scope of application, various options are available concerning ATV6000.

General enclosure options Allocation table options		
Options (1)	Brief description	Option code
<b>Communication buses and networks</b>		
CANopen RJ45 Daisy chain	Fieldbus module for control of the inverter via CANopen Daisy Chain.	CP07
CANopen SUB-D	Fieldbus module for control of the inverter via CANopen with SUB-D port.	CP09
CANopen Screw terminal block	Fieldbus module for control of the inverter via CANopen with screw terminals.	CP08
EtherCAT	Fieldbus module for control of the inverter via EtherCAT Daisy Chain.	CP06
PROFINET	Fieldbus module for control of the inverter via PROFINET.	CP05
PROFIBUS DP V1	Fieldbus module for control of the inverter via Profibus DP V1.	CP03
DeviceNet	Fieldbus module for control of the inverter via DeviceNet.	CP04
<b>I/O Extension Modules</b>		
Digital and analog I/O	Option module providing additional analog and digital inputs and outputs. (6 digital inputs, 2 digital outputs, 2 analog inputs)	A61
Relay outputs	Option module providing three additional relay outputs.	A62
<b>Encoder Interface Modules</b>		
Resolver encoder	Encoder module for connecting a resolver.	EO01
Encoder with digital output	Encoder module for connecting a digital encoder.	EO02
Encoder with analog output	Encoder module for connecting an analog encoder.	EO03
HTL encoder interface	Encoder module for connecting a HTL encoder.	EO04
<b>Output filters</b>		
Dv/dt filters	Contact your local Schneider Electric representative.	OF01
Sinus filters	Contact your local Schneider Electric representative.	OF02
<b>Power supply</b>		
Cooling fan powered by internal transformer	A shielded 400 V windings is added to the MV transformer in order to supply the cooling fans. In this case, the customer do not need to provide the fan power supply.	A63
UPS	230 V UPS with 40 min autonomy (depends option) for the control power.	A60
<b>Wiring</b>		
Cable entry (top in/ top out)	Additional cabinet to achieve power/control cable entry and exit from the top.	BE01
Cable entry (top in/ bottom out)	Additional cabinet to achieve power/control cable entry from the top and power/control exit from the bottom.	BE02
Motor thermal monitoring 8 x Pt100	The drive allows monitoring of the motor windings temperature (6 x Pt100) and the bearing temperature of motor (2 x Pt100)  <b>NOTE:</b> This option is standard for UL version.	A08
Analog isolators(4I+4O)	The 4 analog input isolators and 4 analog output isolators can be added to help prevent interference (others on request).	A13
Removal of mains voltage off button	Mains voltage off button is mounted by default with the product. It is possible to remove this part from your system.	A64
<b>(1)</b> For more details, see next pages or contact your local Schneider Electric representative. For all other requests not mentioned in the list above, contact your local Schneider Electric representative.		

<b>General enclosure options</b>		
<b>Allocation table options</b>		
<b>Options (1)</b>	<b>Brief description</b>	<b>Option code</b>
Ethernet Port on Front Door	The Ethernet port in the enclosure door allows access to the frequency inverter via Ethernet without opening the enclosure door. The plug provides a dust protection cap.	<b>A65</b>
Switch "Remote / Panel / Local - Control"	The switch "Remote / Panel / Local - Control" allows to switch between remote operation (via terminals or bus), panel operation (via HMI) or local operation (next to motor).	<b>A66</b>
<b>Harsh environment</b>		
Humidity	The drive is designed to run in an environment with a relative humidity of up to 95% (non-condensing).	<b>E01</b>
Cabinet Space heater	The drive is equipped with a thermostat and a circuit breaker to energize an anti-condensation space heater independent if drive is running or not. The space heaters will be connected to the auxiliary power supply. Power for the space heaters need to be provided by the customer.	<b>A06</b>
Cooling fan redundancy	N+1 fans adapted for transformer and power cell cabinets respectively, each fan is equipped with shutter. in case of one fan is inoperative, its shutter is close to avoid short-cut of air flow, meanwhile the redundant fan is switched in by the drive controller. It helps to prevent production downtime or unplanned interruption. Replacement of the inoperative fan can be arranged at the next scheduled maintenance.	<b>E03</b>
Air duct	Cooling with air duct channel optimizes the design of the air conditioning system. Clean air has to be provided to the drive air inlets.	<b>A01</b>
<b>Guarding options</b>		
MCB interlock compatibility box	This provides sequential control between the main circuit breaker key and the "Free key" of VSD.	<b>A02</b>
Grounding cable for maintenance	3 poles earthing and short circuiting device in accordance with IEC 61230.	<b>A07</b>
Inverter Redundancy (N+1)	The inverter redundancy configuration (N+1) offer more availability on the process/application with 100% load capability. Power cell bypass function is embedded in each power cell. Inverter redundancy (N+1) is available up to 490 A.	<b>PC02</b>
VAMP Arc flash detection	The VAMP arc detection system is an easily adaptable arc detection system for detection and monitoring of electricity distribution systems.	<b>E02</b>
<b>Customization</b>		
Cabling color	Customized power and control color cables for identification.	<b>A50</b>
Cabinet color	Customized cabinet color according to a RAL, on request.	<b>CC01</b>
<b>Sync &amp; Transfer</b>		
Synchronization and Transformer Controller	PLC Package, remote I/O and associated software to manage the coordination of a Synchronous Bypass switchgear package to ramp up, synchronize and transfer to across the line up to five motors with a single ATV6000 MV Drive. (Switchgear package is not included).	
<b>EcoStruxure Asset Advisor</b>		
EAA connectivity	The ATV6000 with EcoStruxure Asset Advisor transforms data into insight to help run your operations more efficiently and safer, with more availability, and increased profits.	<b>E05</b>
<b>(1)</b> For more details, see next pages or contact your local Schneider Electric representative. For all other requests not mentioned in the list above, contact your local Schneider Electric representative.		

## Spares and Repairs

### Information

Serviceable product. Refer to your Customer Care Center on: [www.schneider-electric.com/CCC](http://www.schneider-electric.com/CCC).

### Before you begin

## DANGER

### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Read and understand the instructions in **Safety Information** chapter before performing any procedure in this chapter.

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

#### Note:

- The qualified Schneider Electric personnel and its partners are trained in servicing variable speed drives and know how to recognize and avoid the hazards involved. They are authorized to install this component and to service variable speed drives.

Spare Part List (US)	Description For
VX4X6000110	ATV6000 Master Controller
TM241CE40T	PLC - Controller M241 - 40IO Tr_PNP Ethernet
TM3TI4G	PLC - Module TM3 - 4 Temperature Inputs
HMIDT551	HMI - Touch Advanced Display WXGA
HMIG5U2	HMI - Open BOX for Universal Panel
VZ3V60001	ATV6000 Dust filter 345 x 395
VZ3V60002	ATV6000 Dust filter 545 x 395
VZ3V60003	ATV6000 Dust filter 545 x 615
VZ3V60004	ATV6000 Dust filter 345 x 615
VZ3V60007	ATV6000 Cooling fan 400mm
VZ3V60005	ATV6000 Cooling fan 450mm
VZ3V60006	ATV6000 Cooling fan 500mm
VZ3V60008	ATV6000 Cooling fan 560mm
VZ3F60001250160U	ATV6000 Power Cell Fuse 1250V/160A UL
VZ3F60001250200U	ATV6000 Power Cell Fuse 1250V/200A UL
VZ3F60001250250U	ATV6000 Power Cell Fuse 1250V/250A UL
VZ3F60001200315U	ATV6000 Power Cell Fuse 1200V/315A UL
VZ3F60001100500U	ATV6000 Power Cell Fuse 1100V/500A UL
VZ3PC600065U	ATV6000 Power Cell 65A wo. Bypass UL
VZ3PC6000100U	ATV6000 Power Cell 100A wo. Bypass UL
VZ3PC6000150U	ATV6000 Power Cell 150A wo. Bypass UL
VZ3PC6000200U	ATV6000 Power Cell 200A wo. Bypass UL
VZ3PC6000220U	ATV6000 Power Cell 220A wo. Bypass UL
VZ3PC6000280U	ATV6000 Power Cell 280A wo. Bypass UL
VZ3PC6000320U	ATV6000 Power Cell 320A wo. Bypass UL
VZ3PC6000410U	ATV6000 Power Cell 410A wo. Bypass UL
VZ3PC6000490U	ATV6000 Power Cell 490A wo. Bypass UL
VZ3PC600065BU	ATV6000 Power Cell 65A with Bypass UL
VZ3PC6000100BU	ATV6000 Power Cell 100A with Bypass UL

<b>Spare Part List (US)</b>	<b>Description For</b>
VZ3PC6000150BU	ATV6000 Power Cell 150A with Bypass UL
VZ3PC6000200BU	ATV6000 Power Cell 200A with Bypass UL
VZ3PC6000220BU	ATV6000 Power Cell 220A with Bypass UL
VZ3PC6000280BU	ATV6000 Power Cell 280A with Bypass UL
VZ3PC6000320BU	ATV6000 Power Cell 320A with Bypass UL
VZ3PC6000410BU	ATV6000 Power Cell 410A with Bypass UL
VZ3PC6000490BU	ATV6000 Power Cell 490A with Bypass UL

## Communication Buses and Networks

### Presentation

Altivar Process drives have 3 built-in RJ45 communication ports as standard:

- 1 EtherNet/IP and Modbus TCP dual port
- 1 serial port

#### Integrated communication protocols

Altivar Process drives integrate the EtherNet/IP and Modbus TCP and Modbus serial link communication protocols as standard.

- EtherNet/IP and Modbus TCP dual port
  - This offers standard services regularly used in industrial networks: Connection to the Modbus TCP or EtherNet/IP network
  - EtherNet IP adapter including standard CIP objects (AC/DC drive objects, CIP energy objects, etc.), compliant to ODVA specification
  - The RSTP connection allows ring topology to help ensure continuity of service.
  - Dual port allows daisy chain connection to simplify cabling and network infrastructure (no need to use a switch).
  - Modbus TCP message handling is based on the Modbus protocol and is used to exchange process data with other network devices (e.g., a PLC). It provides Altivar Process drives with access to the Modbus protocol and to the high performance of the Ethernet network, which is the communication standard for numerous devices.
  - SNMP (Simple Network Management Protocol) offers standard diagnostics services for network management tools.
  - The FDR (Fast Device Replacement) service allows automatic reconfiguration of a new device installed to replace an existing device.
  - Device integrity is reinforced by disabling some unused services as well as managing a list of authorized devices.
  - Setup and adjustment tools (SoMove, Unity with DTM) can be connected locally or remotely.
  - The embedded Web server is used to display operating data, dashboards and perform systems elements diagnostics from any web browser.

These numerous services offered by Altivar Process drives simplify integration into Schneider Electric process automation control systems like M580 ePAC or Foxboro Evo DCS.

- Serial port
  - Field network operation for exchanging data with other devices via the Modbus protocol
  - Multidrop connection of the following HMIs and configuration tools:
    - The graphic display terminal supplied with the drive
    - A Magelis industrial HMI terminal
    - A PC with SoMove or Unity setup software

The detailed specifications for the EtherNet/IP or serial communication ports, and the Modbus and Modbus TCP protocols are available on our website [www.schneider-electric.com](http://www.schneider-electric.com).



## Modules



CANopen Daisy chain module



CANopen SUB-D module



CANopen module, screw terminal block



PROFINET module



PROFIBUS DP V1 module



DeviceNet module, 5-way screw connector



EtherCAT module

### Optional fieldbus modules

The Altivar Process drive can also be connected to other industrial fieldbuses and networks by using one of the fieldbus modules available as an option. Fieldbus modules are supplied in “cassette” format for ease of mounting/removal.

Dedicated fieldbus modules:

- CANopen:
  - RJ45 Daisy Chain
  - Sub-D
  - Screw terminal block
- EtherCAT
- PROFINET
- PROFIBUS DP V1
- DeviceNet

PROFINET and PROFIBUS DP V1 modules also support the Profidrive and CiA402 profiles.

It is possible to maintain communication using a separate power supply for the control and power sections. Monitoring and diagnostics via the network are possible even if there is no power supplied to the power section.

### Functions

The drive functions can be accessed via the various communication networks:

- Configuration
- Adjustment
- Control
- Monitoring

Altivar Process drives offer a high degree of interfacing flexibility with the possibility to assign, by configuration, the different control sources (I/O, communication networks, and HMI terminal) to control functions in order to meet the requirements of complex applications.

Network services and parameters are configured using the SoMove drive setup software, or using

Communication is monitored according to the specific criteria for each protocol.

However, regardless of the protocol, it is possible to configure how the drive responds to a detected communication interruption, as follows:

- Define the type of stop when a communication interruption is detected
- Maintain last command received
- Fallback position at preset speed
- Ignore the detected communication interruption

## I/O Extension Modules

### Presentation

By installing I/O extension modules Altivar Process drives can be adapted to meet the needs of applications that manage additional sensors or specific sensors.

2 extension modules are available:

- Module with digital and analog I/O
- Module with relay outputs



Digital and analog I/O module

#### Module with digital and analog I/O

- 2 differential analog inputs configurable via software as current (0-20 mA / 4-20 mA), or for PTC, PT100, or PT1000, 2 or 3-wire  
14-bit resolution
- 6 x 24 Vdc positive or negative digital inputs  
Sampling: 1 ms max
- 2 assignable digital outputs
- 2 removable spring terminal blocks



Relay outputs module

#### Module with relay outputs

- 3 relay outputs with NO contacts
- 1 fixed screw terminal block

**NOTE:** Digital and analog I/O modules and relay output modules can go in either slot A or slot B on Altivar Process drives. However, the drives cannot take 2 modules of the same type (e.g., 2 digital and analog I/O modules or 2 relay output modules).

## Encoder Interface Modules

### Encoder



Digital interface encoder module



Analog interface encoder module



Resolver interface module



HTL encoder interface module

#### Presentation

Encoder interface modules are used for Flux Vector Control operation with sensor (FVC mode) for asynchronous motors, or for Vector Control operation with speed feedback (FSY mode) for synchronous motors. They improve drive performance during demanding motor load states:

- Zero speed torque
- Accurate speed regulation
- Torque accuracy
- Shorter response times on a torque surge
- Improved dynamic performance in transient state

For asynchronous motors, in the other control modes (voltage vector control, voltage/frequency ratio), encoder interface modules improve static speed accuracy.

Depending on the model, encoder interface modules can also be used for monitoring, irrespective of the control type:

- Overspeed detection
- Load slipping detection

They can also transmit a reference value provided by the encoder input to the Altivar variable speed drive. This specific feature is used to synchronize the speed of several drives. The encoder options have a thermal sensor input to monitor one standard temperature sensor.

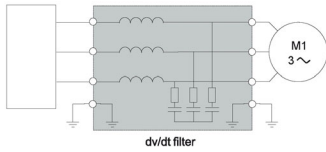
4 modules are available depending on the encoder technology:

- Resolver encoder
- Encoder with digital output
- Encoder with analog output
- HTL encoder interface

The Altivar variable speed drive can only be equipped with one of the encoder interface modules. The interface encoder module is inserted in a dedicated slot. It is designed to help protect against encoder supply short circuits and overloads.

## Output Filters

### Option: dv/dt Filters (OF01)



Altivar Process drive with dv/dt filter

#### Presentation

Altivar Process ATV6000 drives operate with the following maximum motor cable lengths as standard:

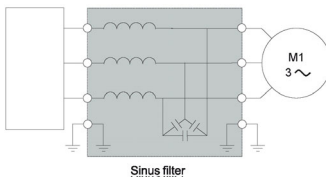
Up to 1000 m depending on cable type and laying.

It is advisable to use dv/dt filters for the following applications:

- Motor cable length is exceeding the above limits for direct connection
- Reduce stress of motor isolation

Contact your local Schneider Electric representative.

### Option: Sinus Filters (OF02)



Altivar Process drive with sinus filter

#### Presentation

Altivar Process ATV6000 drives operate with the following maximum motor cable lengths as standard:

Up to 1000 m depending on cable type and laying.

Contact your local Schneider Electric representative.

#### Application

It is advisable to use sinus filters for the following applications:

- Motor cable length is exceeding the above limits for direct connection
- Quality of motor isolation is not known
- Reduction of EMC influence
- Submersible pumps sensitive to dv/dt and Upeak

## Power Supply

### Cooling Fan Powered by Internal Transformer (A63)

A shielded 400 V windings is added to the MV transformer in order to supply the cooling fans. In this case, the customer does not need to provide the fan power supply.

### Uninterrupted Power Supply (UPS) (A60)

The auxiliary control supply voltage should be provided as uninterrupted power supply. This is important to keep the electronics part of the drive operative, even the other voltages are not available.

In case the auxiliary control supply voltage is not provided with uninterrupted power supply, the UPS option can secure control part stay operative. This is e.g. important for fieldbus communication.

Benefits:

- UPS keep the control electronic operative
- Fieldbus communication is not interrupted, and data exchange is granted
- Autonomy is provided for 40 minutes (depends on the options)



## Wiring

### Cable Entry: Top in / Top Out (BE01)



Additional cabinet to achieve power/control cable entry and exit from the top.

### Cable Entry: Top in/ Bottom Out (BE02)



Additional cabinet to achieve power/control cable entry from the top and power/control exit from the bottom.

### Analog Isolators (4I+4O) (A13)



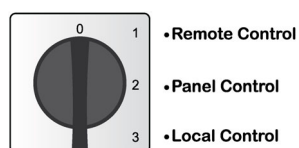
The 4 analog input isolators and 4 analog output isolators can be added to help prevent interference (others on request).

### Ethernet Port on Front Door (A65)



The Ethernet port in the enclosure door allows access to the frequency inverter via Ethernet without opening the enclosure door. The plug provides a dust protection cap.

### Switch "Remote / Panel / Local - Control" (A66)



The switch "Remote / Panel / Local - Control" allows to switch between remote operation (via terminals or bus), panel operation (via HMI) or local operation (next to motor).

## Harsh Environment

### Cabinet Space Heater (A06)



ATV6000 can be equipped with a cabinet space heater inside the transformer and power cell cabinets to help prevent condensation effect within the cabinets.

The default control logic is management by VSD running signal, the space heater in operation when VSD stop, the space heater out of service when VSD running.

It can be controlled also by following methods:

- Controlled by temperature
- Controlled by humidity and temperature

### Cooling Fan Redundant (Transformer Cabinet + Power Cell Cabinet) (E03)



The cooling fans are the only mechanical parts of the drive and therefore subject to wear and tear. The breakdown of a fan could result in overheat and consequently switch off the drive. To prevent this ATV6000 can offer redundant cooling fans option. By a N+1 fans design adapted for transformer and power cell cabinets, each fan is equipped with a shutter. In case of one inoperative fan, the shutter is closed to avoid short-cut of air flow, meanwhile the redundant fan is switched in by the drive controller.

Benefits:

- Redundant fans prevent production down times or interruptions.
- A warning message is provided to inform about if a fan is not operative.
- Replacement of the faulty cooling fan can be postponed until the next scheduled shutdown.

### Air Duct (A01)

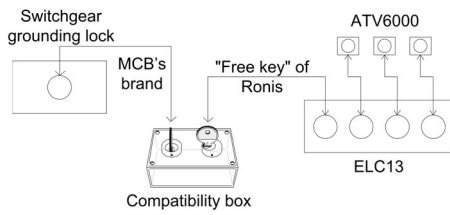


Cooling with air duct channel optimizes the design of the air conditioning system. Clean air has to be provided to the drive air inlets.

The air duct is prepared to have an exhaust opening at the real site.

## Guarding Options

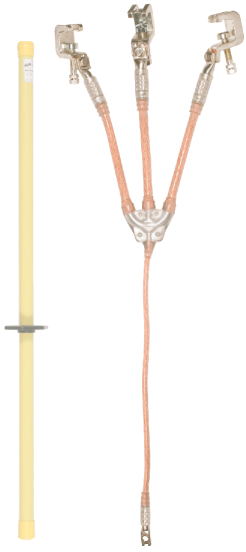
### MCB Interlock Compatibility Box (A02)



MCB interlock <sup>(1)</sup> utilizes keys for sequential control of equipment and machinery to avoid that unauthorized person opens the cabinet.

**(1)** The customer is required to provide the lock cylinder of MCB's to Schneider Electric.

### Grounding Cable for Maintenance (A07)



ATV6000 can be equipped with a grounding cable when maintenance for personal and equipment protection.

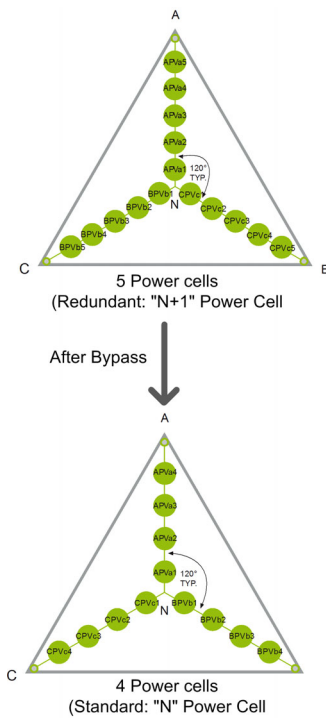
The grounding cable +stick is a 3 pole grounding and short circuiting device in accordance with IEC61230.

The grounding cable:

- Provides personal and equipment protection during maintenance
- Discharges the residual voltage of power supply operation system.



## Inverter Redundancy (N+1) (PC02)

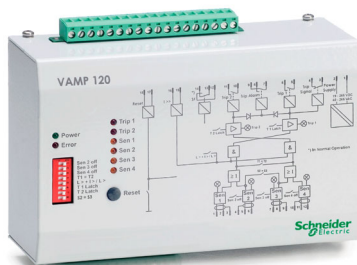


ATV6000 medium voltage drive can be equipped using the inverter redundancy configuration (N+1). With this configuration, the ATV6000 can offer more availability to the process/application with 100% load capability, enabling the pump/fan/conveyor/compressor to operate at full capacity without derating. Both the inverter and transformer section are designed in order to sustain operation at 100% load during power cell bypass. Inverter redundancy (N+1) is available up to 490 A.

### Benefits

- The inverter redundancy design helps to increase the reliability of the whole system in order to increase the availability of service.
- Motor friendly: One power cell in each phase bypassed automatically to keep a neutral point balanced, resulting in less bearing current for significantly low motor stress.
- Rated output: Using redundant inverter configuration, the drive remains able to provide full output voltage and current without any derating of speed or torque.

## Arc Flash Detection (E02)



ATV6000 can be equipped with an arc flash detection system (VAMP series). The unit detects an arc flash in an installation and trips the feeding breaker to avoid larger loss of current. It is only in transformer cabinet.

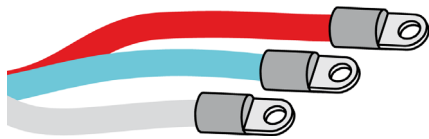
An arc flash detection system runs much faster than conventional relays and thus damage caused by an arc short circuit can be kept to a minimum level.

### Benefits

- Reduces Loss of Production: The shorter the operating time of the arc flash detection unit, the smaller the damage caused by the arc flash will be, and the shorter the possible outage of the power supply.
- Prolonged drive Life Cycle: An unit increases the service life expectancy of Drive installations, investment decisions in new Drive installations can be postponed, and money can be saved.
- Low Investment Costs and Fast Installation: A comprehensive arc flash protection is characterized by low investment costs and a fast installation and commissioning time. One successful operation of the arc flash detection units provides immediate investment pay off.
- Robust Operation: Function is based on appearance of light or alternatively on the appearance of light and current from external equipment.
- Vast Experience: Schneider Electric is the pioneer in the field of arc flash detection with more than 10.000 VAMP arc flash detection systems and units.

## Customization

### Specific Cabling Color (A50)



Customized power and control color cables for identification.

### Specific Cabinet Color RAL (CC01)



Customized cabinet color according to a RAL, on request.



