Altivar Process ATV600/ATV900
Altivar Machine ATV340

ATV61/ATV71 to ATV600/ATV900/ATV340
Modernization Manual

[09/2025]

EAV64336-02

Schneider Electric

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.

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.

Table of Contents

Safety Information

Important Information

NOTICE

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

The addition of this symbol to a Danger 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 an imminently hazardous situation which, if not avoided, **results in** death or serious injury**.**

⚠ WARNING

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

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can 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.

About the Document

Document Scope

The document provides information about:

- Substitution of ATV61 by ATV630 or ATV650.
- Substitution of ATV71 by ATV930 or ATV950.
- Substitution of ATV71 by ATV340.

This information ranges from product selection according to the existing installation, technical differences between the product ranges, product frame size, wiring information or available options.

Validity Note

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

This documentation is valid for ATV630/650, ATV930/950 or ATV340 products.

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

Product Related Information

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

⚠ ⚠ 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.
- The system integrator is responsible for compliance with all local and national electrical code requirements as well as all other applicable regulations with respect to grounding of all equipment.
- Many components of the product, including the printed circuit boards, operate with mains voltage. Do not touch.
- Only use properly rated, electrically insulated tools and measuring equipment.
- Do not touch unshielded components or terminals with voltage present.
- Motors can generate voltage when the shaft is rotated. Prior to performing any type of work on the drive system, block the motor shaft to prevent rotation.
- AC voltage can couple voltage to unused conductors in the motor cable. Insulate both ends of unused conductors of the motor cable.
- Do not short across the DC bus terminals or the DC bus capacitors or the braking resistor terminals.
- Before performing work on the drive system:
  - Disconnect all power, including external control power that may be present.
  - Place a **Do Not Turn On** label on all power switches related to the drive system.
  - Lock all power switches in the open position.
  - Wait 15 minutes to allow the DC bus capacitors to discharge.
  - Follow the instructions given in the chapter "Verifying the Absence of Voltage" in the installation manual of the product.
- Before applying voltage to the drive system:
  - Verify that the work has been completed and that the entire installation cannot cause hazards.
  - If the mains input terminals and the motor output terminals have been grounded and short-circuited, remove the ground and the short circuits on the mains input terminals and the motor output terminals.
  - Verify proper grounding of all equipment.
  - Verify that all protective equipment such as covers, doors, grids is installed and/or closed

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

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

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

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.

⚠ 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.

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

⚠ WARNING

UNAUTHORIZED ACCESS TO THE MACHINE VIA SOFTWARE AND NETWORKS

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

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

⚠ WARNING

LOSS OF CONTROL

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

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

NOTICE

DESTRUCTION DUE TO INCORRECT MAINS VOLTAGE

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

Failure to follow these instructions can result in equipment damage.

General Cybersecurity Information

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

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

Schneider Electric provides additional information and assistance:

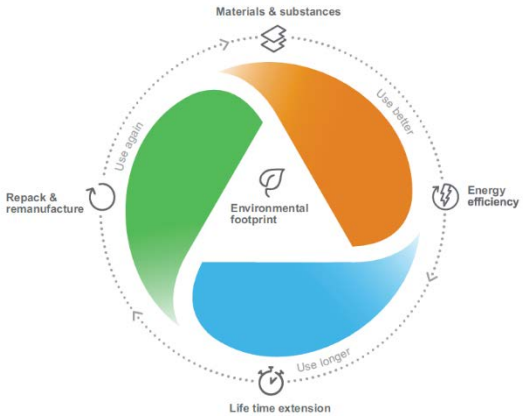
- Subscribe to the Schneider Electric security newsletter.
- Visit the Cybersecurity Support Portal web page to:
  - Find Security Notifications.
  - Report vulnerabilities and incidents.
- Visit the Schneider Electric Cybersecurity and Data Protection Posture web page to:
  - Access the cybersecurity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

Environmental Data

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

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

Five data categories across the product lifecycle



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

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

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

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

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

Refer to Environmental Data Program for more information.

Related Documents

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

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

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

ATV340

Title of Documentation	Catalog number
ATV340 Catalog	DIA2ED2160701EN (English) DIA2ED2160701FR (French)
ATV340 Getting Started - Video	FA367923 FAQ (English) 
ATV340 Getting Started	NVE37643 (English) NVE37642 (French) NVE37644 (German) NVE37646 (Spanish) NVE37647 (Italian) NVE37648 (Chinese) NVE37643PT (Portuguese)
ATV340 Getting Started Annex (SCCR)	NVE37641 (English)
Wiring Diagrams for Frame Sizes S1, S2, S3	NVE97896 (English)
ATV340 Installation Manual	NVE61069 (English) NVE61071 (French) NVE61074 (German) NVE61075 (Spanish) NVE61078 (Italian) NVE61079 (Chinese) NVE61069PT (Portuguese) NVE61069TR (Turkish)
ATV340 Programming Manual	NVE61643 (English) NVE61644 (French) NVE61645 (German) NVE61647 (Spanish) NVE61648 (Italian) NVE61649 (Chinese) NVE61643PT (Portuguese) NVE61643TR (Turkish)
ATV340 Modbus manual (Embedded)	NVE61654 (English)
ATV340 Ethernet manual (Embedded)	NVE61653 (English)
ATV340 PROFIBUS DP manual (VW3A3607)	NVE61656 (English)
ATV340 DeviceNet manual (VW3A3609)	NVE61683 (English)
Altivar dPAC Module user guide (VW3A3530D)	NNZ13577 (English)
ATV340 PROFINET manual (VW3A3627)	NVE61678 (English)
ATV340 CANopen manual (VW3A3608, 618, 628)	NVE61655 (English)

Title of Documentation	Catalog number
ATV340 POWERLINK manual - (VW3A3619)	NVE61681 (English)
ATV340 EtherCAT manual - (VW3A3601)	NVE61686 (English)
ATV340 Sercos III manual (embedded)	PHA33735 (English) PHA33737 (French) PHA33738 (German) PHA33739 (Spanish) PHA33740 (Italian) PHA33741 (Chinese)
ATV340 Communication Parameters	NVE61728 (English)
ATV340 Embedded Safety Function Manual	NVE64143 (English)
ATV340 DC Bus Sharing Technical Note PHA25027	PHA25027 (English)
ATV340 Safety functions Manual with Module VW3A3802	NVE61741 (English) NVE61742 (French) NVE61745 (German) NVE61747 (Spanish) NVE61749 (Italian) NVE61752 (Chinese) NVE61741PT (Portuguese) NVE61741TR (Turkish)
ATV340 CIP Safety functions manual with Module VW3A3809	JYT89148 (English)
SoMove FDT	SoMove_FDT (English, French, German, Spanish, Italian, Chinese)
Altivar 340: DTM	ATV340_DTM_Library_EN (English) ATV340_DTM_Lang_FR (French) ATV340_DTM_Lang_DE (German) ATV340_DTM_Lang_SP (Spanish) ATV340_DTM_Lang_IT (Italian) ATV340_DTM_Lang_CN (Chinese)
Altivar Application Note for Hoisting	NHA80973 (English)
Recommended Cybersecurity Best Practices	CS-Best-Practices-2019-340 (English)

ATV600

Title of Documentation	Reference number	
Catalog: Altivar Process ATV600 variable speed drives	DIA2ED2140502EN (English)	DIA2ED2140502FR (French)
ATV600 Getting Started	EAV63253 (English) EAV63254 (French) EAV63255 (German) EAV63256 (Spanish)	EAV63257 (Italian) EAV64298 (Chinese) EAV63253PT (Portuguese) EAV63253TR (Turkish)
ATV600 Getting Started Annex (SCCR)	EAV64300 (English)	
Video: Getting Started with Altivar Process ATV600	FA364431 FAQ (English) 	
ATV630, ATV650 Installation Manual	EAV64301 (English) EAV64302 (French) EAV64306 (German) EAV64307 (Spanish)	EAV64310 (Italian) EAV64317 (Chinese) EAV64301PT (Portuguese) EAV64301TR (Turkish)
ATV600 Programming Manual	EAV64318 (English) EAV64320 (French) EAV64321 (German) EAV64322 (Spanish)	EAV64323 (Italian) EAV64324 (Chinese) EAV64318PT (Portuguese) EAV64318TR (Turkish)
ATV600 Modbus Serial Link Manual (Embedded)	EAV64325 (English)	
ATV600 Ethernet Manual (Embedded)	EAV64327 (English)	
ATV600 Ethernet IP - Modbus TCP Manual (VW3A3720, 721)	EAV64328 (English)	
ATV600 BACnet MS/TP Manual (VW3A3725)	QGH66984 (English)	
ATV600 PROFIBUS DP manual (VW3A3607)	EAV64329 (English)	
ATV600 DeviceNet manual (VW3A3609)	EAV64330 (English)	
ATV600 PROFINET manual (VW3A3627)	EAV64331 (English)	
ATV600 CANopen Manual (VW3A3608, 618, 628)	EAV64333 (English)	
ATV600 POWERLINK manual (VW3A3619)	PHA99690 (English)	
ATV600 Communication Parameters	EAV64332 (English)	
ATV600 Embedded Safety Function manual	EAV64334 (English)	
Drive Systems Installation manual (ATV660, ATV680)	NHA37119 (English) NHA37121 (French) NHA37118 (German) NHA37123 (Italian) NHA37122 (Spanish)	NHA37130 (Chinese) NHA37124 (Dutch) NHA37126 (Polish) NHA37127 (Portuguese) NHA37129 (Turkish)
ATV660 Handbook	NHA37111 (English)	NHA37110 (German)
ATV680 Handbook	NHA37113 (English)	NHA37112 (German)
Application Note: ATV600 Multi-Drives Booster Control Optimized	QGH36060 (English)	

Title of Documentation	Reference number
Application Note: ATV600 Multi- Masters Booster Control Pressure Feedback with Service Continuity	QGH36061 (English)
Application Note: ATV600 Multi-Drives Standard Level Control	QGH36059 (English)
Application Note: ATV600 Multi- Masters with Optimized Level Control	EAV64367 (English)
ATV600F, ATV900F Installation Instruction sheet	NVE57369 (English)
ATV600, ATV900 ATEX manual	NVE42416 (English)
ATV61-71 to ATV600-900 Migration Manual	EAV64336 (English)
SoMove: FDT	SoMove_FDT (English, French, German, Spanish, Italian, Chinese)
ATV600: DTM	ATV6xx_DTM_Library_EN (English - to be installed first) ATV6xx_DTM_Lang_FR (Italian) (French) ATV6xx_DTM_Lang_DE (German) ATV6xx_DTM_Lang_SP (Spanish) ATV6xx_DTM_Lang_IT ATV6xx_DTM_Lang_CN (Chinese)
Recommended Cybersecurity Best Practices	CS-Best-Practices-2019-340 (English)
EcoStruxure Automation Device Maintenance	EcoStruxure Automation Device Maintenance (English)
EcoStruxure Automation Device Maintenance - Altivar User Manual	JYT50472 (English) JYT50482 (German) JYT50474 (French) (Chinese) JYT50476 (Spanish) JYT50478 (Italian) JYT50485 (Portuguese) JYT50484 (Turkish) JYT50483

ATV900

Title of Documentation	Reference number	
Catalog: Variable speed drives Altivar Process ATV900	DIA2ED2150601EN (English)	DIA2ED2150601FR (French)
ATV930, ATV950 Getting Started	NHA61578 (English) NHA61579 (French) NHA61580 (German) NHA61581 (Spanish)	NHA61724 (Italian) NHA61582 (Chinese) NHA61578PT (Portuguese) NHA61578TR (Turkish)
ATV900 Getting Started Annex (SCCR)	NHA61583 (English)	
Video: Getting Started with Altivar Process ATV900	FAQ000240081 FAQ (English) 	
ATV930, ATV950 Installation manual	NHA80932 (English) NHA80933 (French) NHA80934 (German) NHA80935 (Spanish)	NHA80936 (Italian) NHA80937 (Chinese) NHA80932PT (Portuguese) NHA80932TR (Turkish)
ATV900 Programming manual	NHA80757 (English) NHA80758 (French) NHA80759 (German) NHA80760 (Spanish)	NHA80761 (Italian) NHA80762 (Chinese) NHA80757PT (Portuguese) NHA80757TR (Turkish)
ATV900 Embedded Modbus Serial Link manual	NHA80939 (English)	
ATV900 Embedded Ethernet manual	NHA80940 (English)	
ATV900 PROFIBUS DP manual (VW3A3607)	NHA80941 (English)	
ATV900 DeviceNet manual (VW3A3609)	NHA80942 (English)	
ATV900 PROFINET manual (VW3A3627)	NHA80943 (English)	
ATV900 CANopen manual (VW3A3608, 618, 628)	NHA80945 (English)	
ATV900 EtherCAT manual (VW3A3601)	NHA80946 (English)	
ATV900 POWERLINK manual (VW3A3619)	PHA99693 (English)	
ATV900 Communication Parameters addresses	NHA80944 (English)	
ATV900 DC Bus Sharing Technical Note PHA25028	PHA25028 (English)	
ATV900 Embedded Safety Function manual	NHA80947 (English)	
ATV900 Safety functions manual with Module VW3A3802	NVE64209 (English) NVE64210 (French) NVE64211 (German) NVE64212 (Spanish)	NVE64213 (Italian) NVE64214 (Chinese) NVE64209PT (Portuguese) NVE64209TR (Turkish)
ATV900 Braking unit for Frame Size 6 manual (MFR66979)	MFR66979 (English)	

ATV900 Braking unit for Frame Size 7 manual (VW3A7101)	1757084 (English)	
Drive Systems ATV960 handbook	NHA37115 (English)	NHA37114 (German)
Drive Systems ATV980 handbook	NHA37117 (English)	NHA37116 (German)
Drive Systems ATV990 handbook Multidrive Systems	NHA37145 (English)	NHA37143 (German)

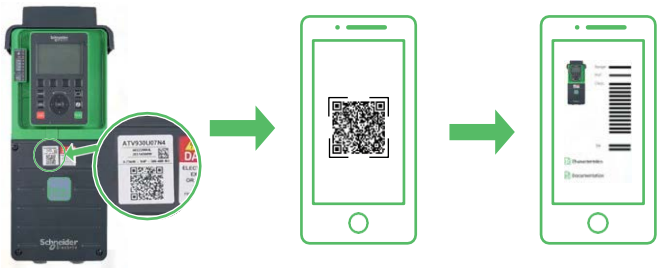
Title of Documentation	**Reference number**	
Drive Systems Installation manual	NHA37119 (English)	NHA37124 (Dutch)
	NHA37118 (German)	NHA37126 (Polish)
	NHA37121 (French)	NHA37127 (Portuguese)
	NHA37122 (Spanish)	NHA37129 (Turkish)
	NHA37123 (Italian)	NHA37130 (Chinese)
Altivar Application Note for Hoisting	NHA80973 (English)	
ATV600F, ATV900F Installation Instruction sheet	NVE57369 (English)	
ATV600, ATV900 ATEX manual	NVE42416 (English)	
ATV61-71 to ATV600-900 Migration Manual	EAV64336 (English)	
SoMove: FDT	SoMove_FDT (English, French, German, Spanish, Italian, Chinese)	
ATV900: DTM	ATV9xx_DTM_Library_EN (English - to be installed first)	ATV9xx_DTM_Lang_SP (Spanish)
	ATV9xx_DTM_Lang_FR (French)	ATV9xx_DTM_Lang_IT (Italian)
	ATV9xx_DTM_Lang_DE (German)	ATV9xx_DTM_Lang_CN (Chinese)
Recommended Cybersecurity Best Practices	CS-Best-Practices-2019-340 (English)	
EcoStruxure Automation Device Maintenance	EcoStruxure Automation Device Maintenance (English)	
EcoStruxure Automation Device Maintenance - Altivar User Manual	JYT50472 (English)	JYT50485 (Portuguese)
	JYT50482 (German)	JYT50484 (Turkish)
	JYT50474 (French)	JYT50483 (Chinese)
	JYT50476 (Spanish)	
	JYT50478 (Italian)	

Information on Non-Inclusive or Insensitive Terminology

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

Electronic product data sheet

Scan the QR code in front of the drive to get the product data sheet.



Terminology used in this document

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

Among others, these standards include:

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

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

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

Contact us

Select your country on www.se.com/contact. Schneider Electric Industries SAS

Head Office

35, rue Joseph Monier

92500 Rueil-Malmaison France

Part I
Current Installation Check-list

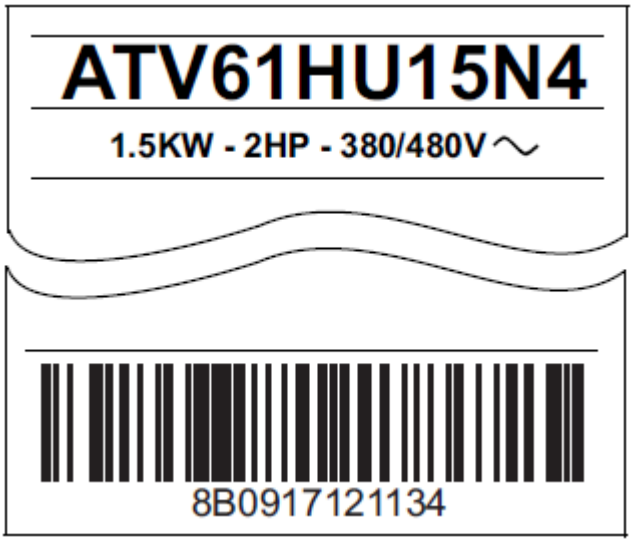
What is in This Part?

This part contains the following chapters:

Drive reference

Finding the drive reference

The drive reference, main characteristics and Serial Number can be found on its nameplate label:



Write them down as a reference to select the most adequate reference in the Altivar Process range Options

Option check-list

Use the table below to list all your drives as well as all the options that you are currently using for each one in order to list all the options you will need to order with the new drives

Drive Reference	Existing Option	Option to order

Motor Characteristics

Motor check-list

Use the table below to list all Motor characteristics that will help you select the right drive for your application

Motor Reference	Motor Type	Motor Frequency	Nominal Motor Power	Nominal Motor Voltage	Nominal Motor Current	Nominal Motor Speed
_____	☐ Asynchronous ☐ Synchronous	___Hz	___kW / ___HP	___Vac	___A	___rpm
_____	☐ Asynchronous ☐ Synchronous	___Hz	___kW / ___HP	___Vac	___A	___rpm
_____	☐ Asynchronous ☐ Synchronous	___Hz	___kW / ___HP	___Vac	___A	___rpm
_____	☐ Asynchronous ☐ Synchronous	___Hz	___kW / ___HP	___Vac	___A	___rpm

Part II
Drive Selection

What is in This Part?

This part contains the following chapters:

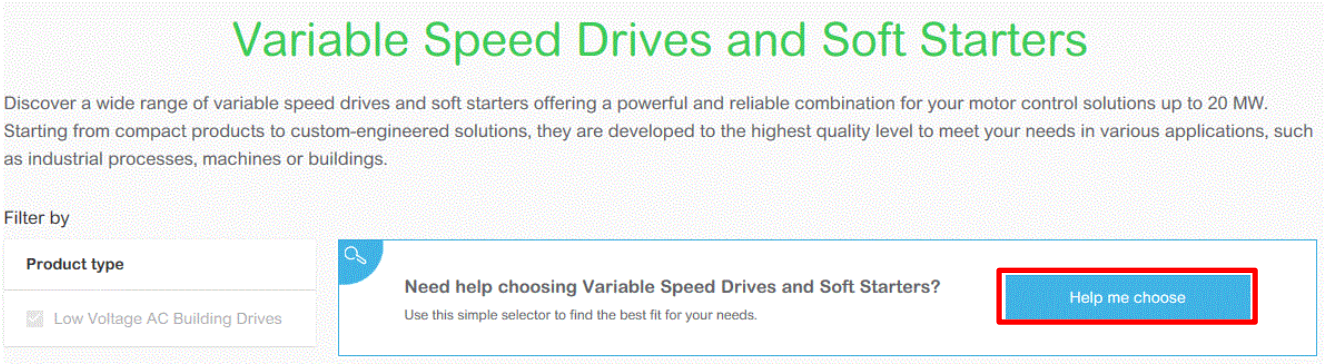
Drive Range and Reference

Finding the right product range (Altivar Process or Altivar Machine)

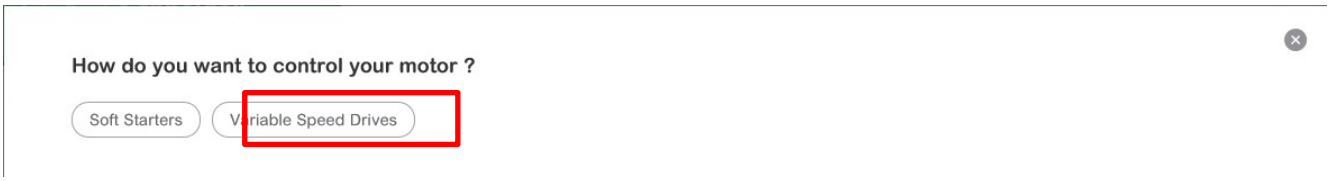
Help me choose

To help you find the right product, you can use the tool available at the following link:
https://www.se.com/ww/en/product-category/2900

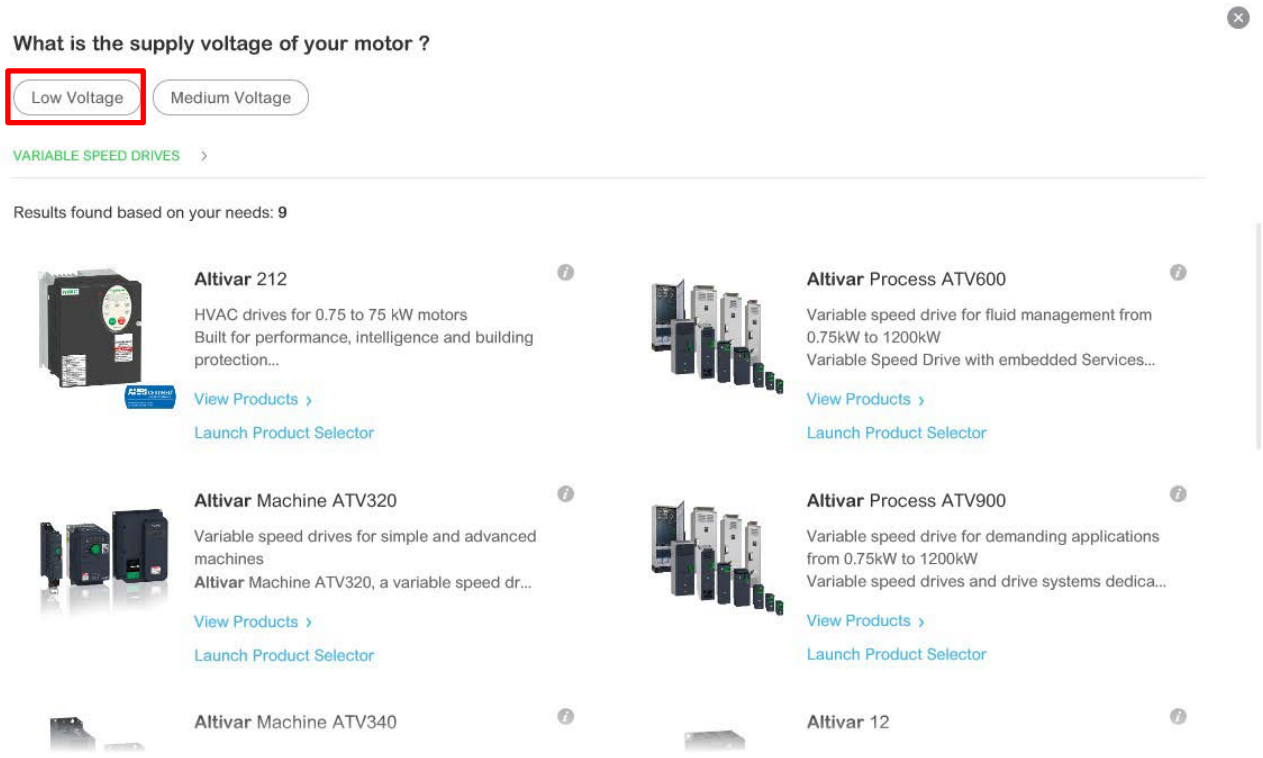
The selection tool is available by clicking on the “Help me choose” button as seen below:



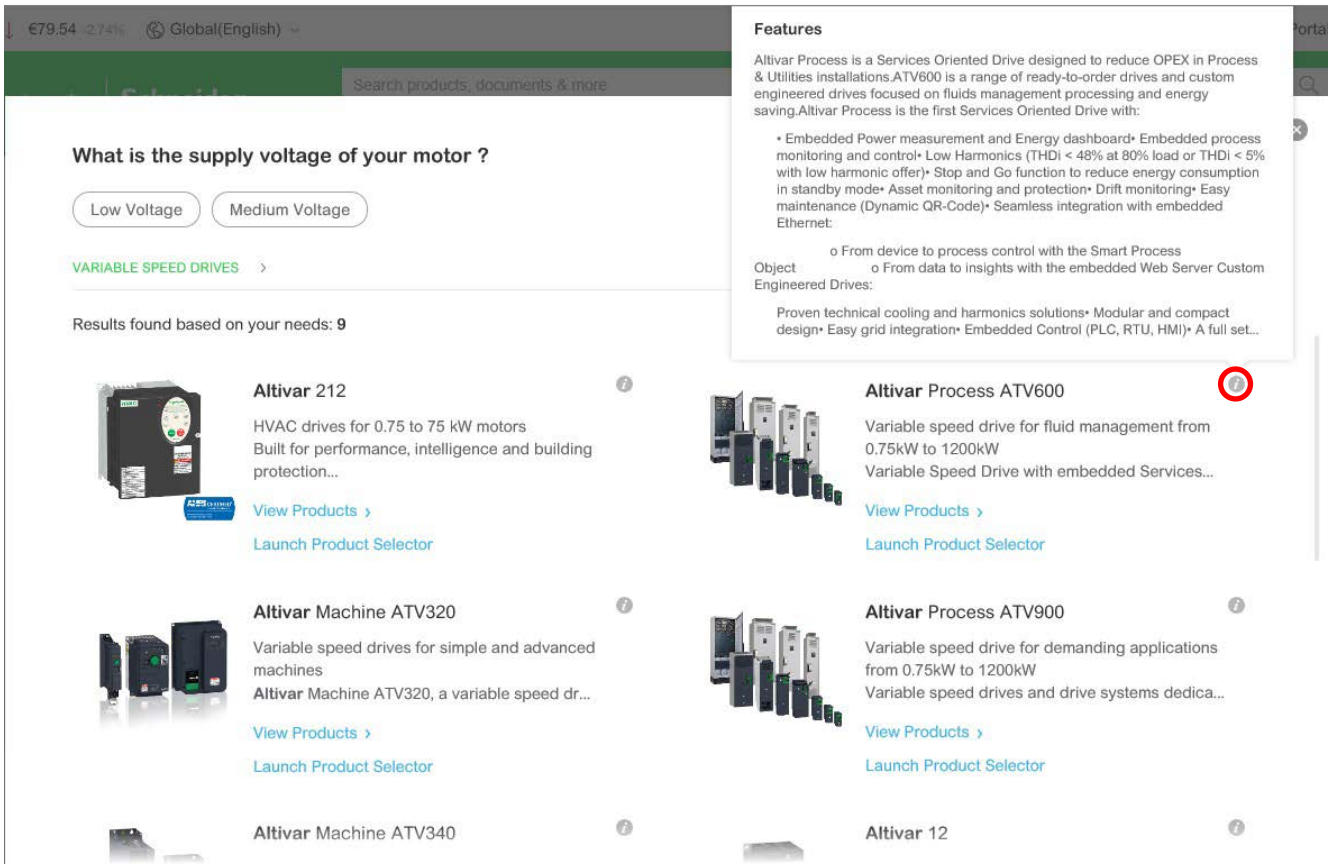
Determine whether you need a soft starter or a drive *(here we select a variable speed drive)*:



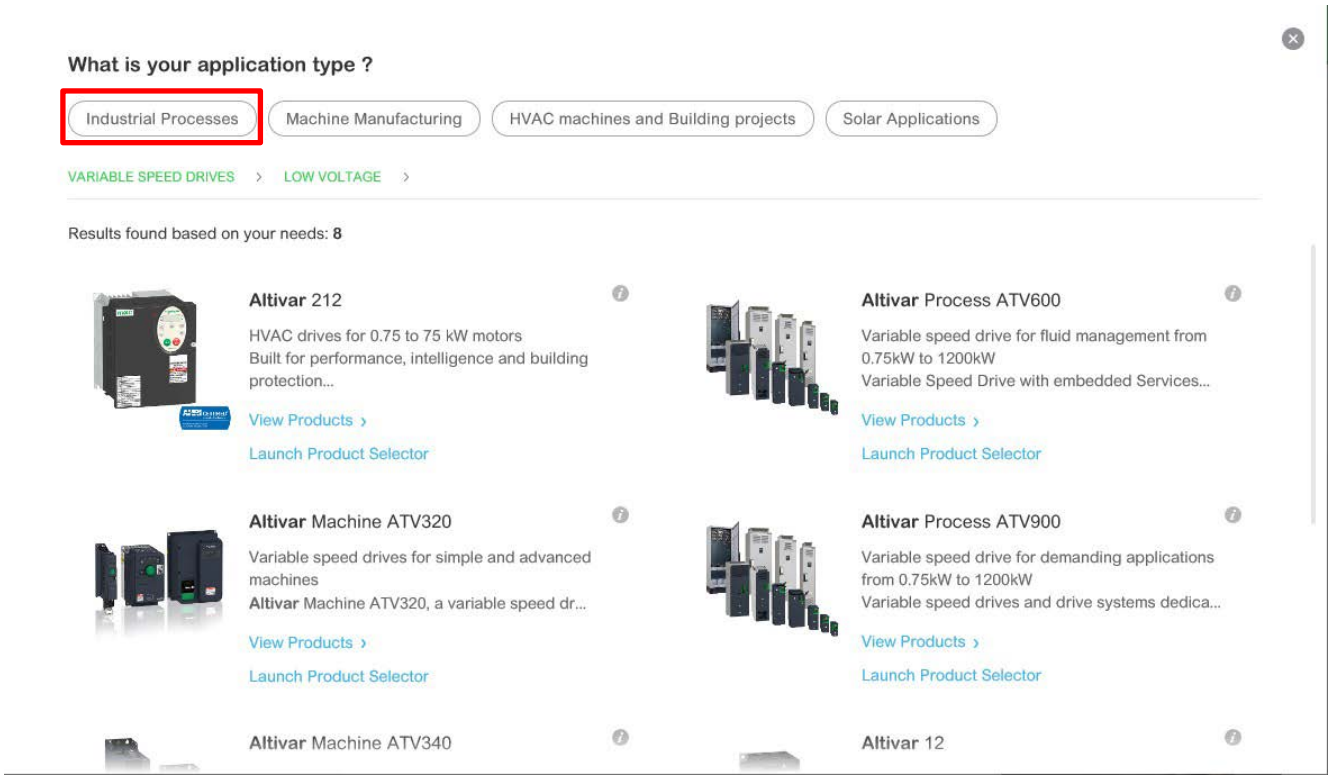
Select the supply voltage of your motor *(here we select low voltage)*

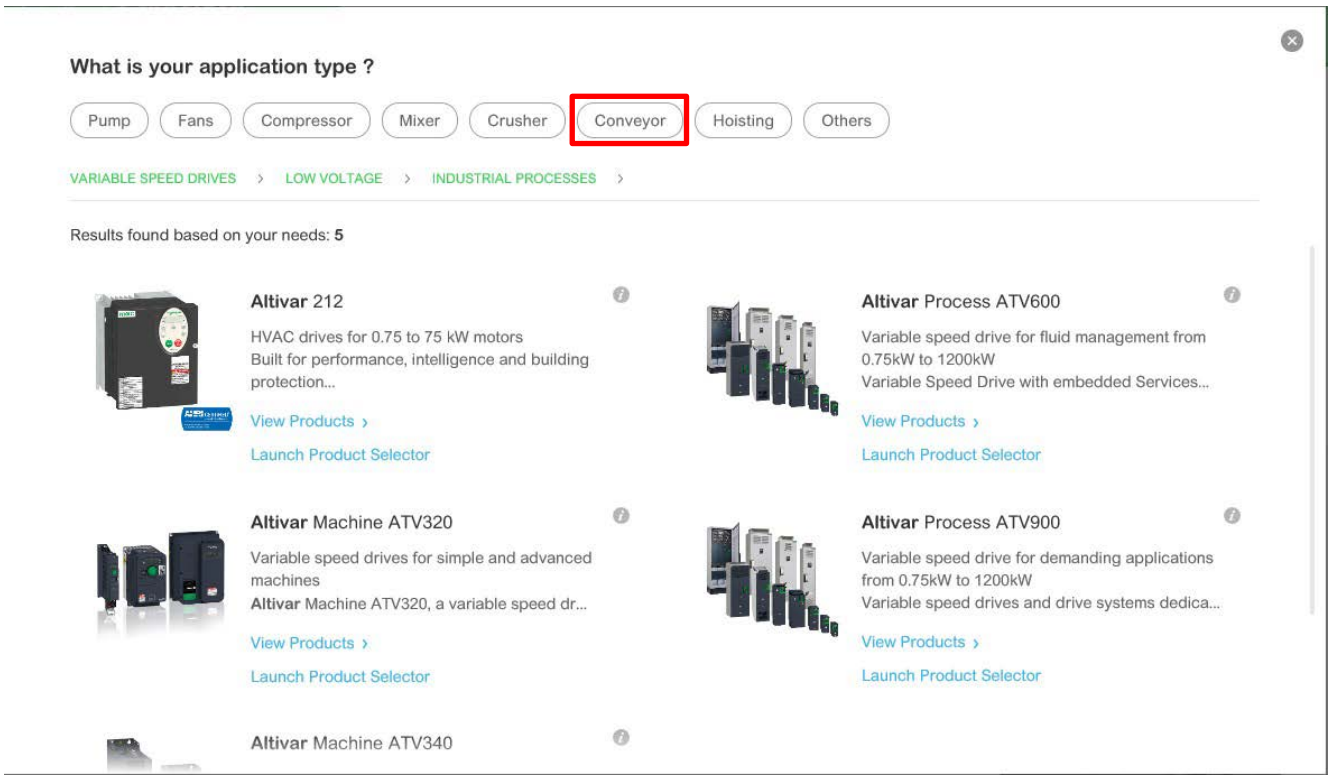


You can get more info on a specific range by clicking on the “I” button next to each range

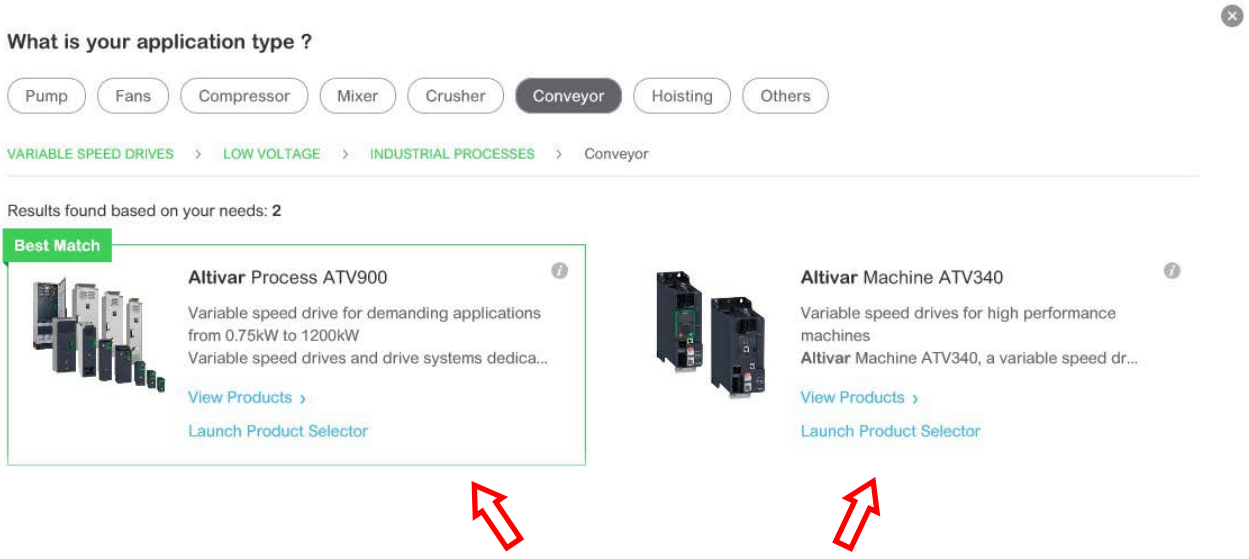


Narrow down the choices by making the appropriate selection for your application in the next two screens *(here we select “industrial processes” and “conveyor”)*:





The selection tool will present you the most adequate products for your needs:



From then on, you can choose the right product based on the characteristics of your motor.

For a better overview, here are the main characteristics and possible applications of the Altivar Process and Altivar Machine offers.

Altivar Process ATV600 and ATV900

Altivar Process drives offer extensive flexibility in water & wastewater, mining, minerals & metals, oil & gas and food & beverage applications. Depending on customer requirements, wall-mounting drives, built-in cabinet and floor-standing solutions are available with IP 20/21, IP 23, IP 54, and IP 55 protection.

Altivar Process drives can help improve equipment performance and reduce operating costs by optimizing energy consumption and user comfort.

Altivar Process drives provide a wide range of integrated functions, such as:

- Safety and automation functions that meet the requirements of some of the most demanding applications
- Various optional communication modules available for seamless integration into the main automation architectures
- Numerous configurable I/O as standard to facilitate adaptation to specific applications
- Intuitive commissioning using the graphic display terminal
- Local and remote access and monitoring using the embedded Web server
- Energy savings and protection of the grid by means of integrated harmonic filters
- Installation EMC conformity by means of integrated EMC filters
- Altivar Process drives are designed for IT systems

Depending on the power range, Altivar Process is available with several mounting types and protection indices:

- Wall-mounting IP 20/21/UL Type 1 from 0.75 to 315 kW/1 to 500 HP, ready-to-use for easy integration inside or without an enclosure in an electrical room
- Wall-mounting IP 55 from 0.75 to 90 kW/1 HP to 125 HP, ready-to-use for easy integration in a harsh environment or in an outdoor installation close to the system to reduce the length of the motor cable. The wall-mounting IP 55 offer is available with and without a disconnect switch.
- Floor-standing IP 21 and IP 54 from 110 to 315 kW, ready-to-use in high-power ranges with minimum dimensions for easy, optimized integration in an electrical room in a standard or harsh environment

Altivar Machine ATV340

The Altivar Machine ATV340 is an IP 20 high-performance variable speed drive for three-phase synchronous and asynchronous motors in open and closed loop control. ATV340 incorporates functions and features suitable for the most common applications, including:

- Packaging
- Material handling
- Material working
- Hoisting
- Food and beverage
- Textiles
- Pumping
- General machine control

The Altivar Machine ATV340 is designed to meet the needs of most demanding automation requirements and machine throughput performance combined with simplicity in selection, engineering & design (automation integration), commissioning, machine mass production and maintaining machine operation, including services for machine builders.

The Altivar Machine ATV340 offers realtime automation capabilities, simplified machine engineering and superior performance for industrial machine applications:

- Dynamic and powerful motor control for asynchronous, synchronous and reluctance motors
- Drive cycle in real time for most demanding automation requirements
- Complete integration into any system architecture by offering a native Ethernet product in real time and commonly used industrial communication fieldbuses (CANopen, Profinet, EtherCAT, etc.)
- The drive features and dedicated application functions are the benchmark for high performance requirements
- Safe torque off (STO) with dual inputs compliant with SIL3/PLe to meet machine safety standards
- Data logging, web server, I/O scanning, easy addressing and many other services are possible with the Ethernet version, reducing the machine design time and improving machine operation.

The Altivar Machine ATV340 helps enhance machine performance, reduce machine design time and maintain machine operation, meeting the needs of original equipment manufacturers by pinpointing all the vital stages of the machine lifecycle.

Finding the right product reference to replace ATV61 or ATV71

Drives are designed according to the targeted application and the output power needed for a specific motor/application. Consequently, there are a number of parameters to take into account when selecting the right product reference:

- The output current levels of the drive that must match the ones needed by the motor used.
- The targeted application and corresponding needs/constraints and whether this application requires normal or heavy duty products.

Indeed, Altivar Process variable speed drives are designed for use in two operating modes that can optimize the drive nominal rating according to the system constraints.

These two modes are:

- **Normal duty (ND):** Dedicated mode for applications requiring a slight overload (See table below) with a motor power no higher than the drive nominal power
- **Heavy duty (HD):** Dedicated mode for applications requiring a significant overload (See table below) with a motor power no higher than the drive nominal power derated by one rating

	ATV61	**ATV71**	**ATV630/650**	**ATV930/950**	**ATV340**	
					Frame Size 1 to 3	**Frame Size 4 & 5**
Normal Duty overload	Up to 120%	Not available	***Factory setting*** Up to 110%	***Factory setting*** Up to 120%	Up to 120% for 60s and up to 135 % for 2s	Up to 120% for 60s and up to 135 % for 2s
Heavy Duty overload	Not available	Up to 150%	Up to 150%	Up to 150%	***Factory setting*** Up to 150% for 60s and up to 180 % for 2s	***Factory setting*** Up to 150% for 60s and up to 180 % for 2s

Typical applications for **normal duty** include (but are not limited to):

- Water and wastewater applications:
  - Pumping
  - Drilling
  - Suction
  - Dosing
  - Odor control
  - Ventilation
  - Gas compression
  - Sludge removal
- Oil&Gas:
  - Hydrocarbon production:
    - Drilling
    - Offshore and onshore extraction
    - Water treatment and re-injection
    - Crude oil storage
    - Separation
    - Pipeline pumping
    - Storage
    - Refining
    - DOF (digital oil field)

- Food&Beverage applications:
  - Pumping
  - Drying fans

Typical applications for **heavy duty** include (but are not limited to):

- Mining, Mineral and Metal (MMM):
  - Open-pit or underground mining
  - Stockpiling/homogenization
  - Concentration/mineral separation
  - Solid-liquid separation
  - Final handling/transport
  - Clinker production
  - Cement production

- Hoisting:
  - Special cranes (Gantry cranes - Grab cranes)
  - Ship loaders
- Food & Beverage:
  - Mixing
  - Centrifuge machines
  - Hot drying

To select a specific product range and reference, determine:

- Whether the application requires normal duty or heavy duty
- The corresponding reference using the tables below

NOTE: For any application requiring braking functions, ATV61 products must be substituted by ATV930 products

Normal Duty ATV61 to Altivar Process ATV630

200…240V Three-Phase Drives						
kW	**ATV61**	**Frame size**	**Continuous output current**	**Altivar Process ATV630**	**Frame size**	**Continuous output current**
0,75	ATV61H075M3	2	4,8	ATV630U07M3	1	4,6
1,5	ATV61HU15M3	2	8	ATV630U15M3	1	8
2,2	ATV61HU22M3	3	11	ATV630U22M3	1	11,2
3	ATV61HU30M3	3	13,7	ATV630U30M3	1	13,7
4	ATV61HU40M3	3	17,5	ATV630U40M3	1	18,7
5,5	ATV61HU55M3	4	27,5	ATV630U55M3	2	25,4
7,5	ATV61HU75M3	5A	33	ATV630U75M3	3	32,7
11	ATV61HD11M3X	5B	54	ATV630D11M3	3	46,8
15	ATV61HD15M3X	5B	66	ATV630D15M3	4	63,4
18	ATV61HD18M3X	6	75	ATV630D18M3	4	78,4
22	ATV61HD22M3X	6	88	ATV630D22M3	4	92,6
30	ATV61HD30M3X	7B	120	ATV630D30M3	5	123
37	ATV61HD37M3X	7B	144	ATV630D37M3	5	149
45	ATV61HD45M3X	7B	176	ATV630D45M3	5	176
55	ATV61HD55M3X	9	221	ATV630D55M3	6	211
75	ATV61HD75M3X	9	285	ATV630D75M3	6	282

380…480V Three-Phase Drives							
kW	**ATV61**	**Frame size**	**Continuous output current**		**Altivar Process ATV630**	**Frame size**	**Continuous output current**
			at 380 Vac	**at 460 Vac**			
0,75	ATV61H075N4	2	2,3	2,1	ATV630U07N4	1	2,2
1,5	ATV61HU15N4	2	4,1	3,4	ATV630U15N4	1	4
2,2	ATV61HU22N4	2	5,8	4,8	ATV630U22N4	1	5,6
3	ATV61HU30N4	3	7,8	6,2	ATV630U30N4	1	7,2
4	ATV61HU40N4	3	10,5	7,6	ATV630U40N4	1	9,3
5,5	ATV61HU55N4	4	14,3	11	ATV630U55N4	1	12,7
7,5	ATV61HU75N4	4	17,6	14	ATV630U75N4	2	16,5
11	ATV61HD11N4	5A	27,7	21	ATV630D11N4	2	23,5
15	ATV61HD15N4	5B	33	27	ATV630D15N4	3	31,7
18	ATV61HD18N4	5B	41	34	ATV630D18N4	3	39,2
22	ATV61HD22N4	6	48	40	ATV630D22N4	3	46,3
30	ATV61HD30N4	7A	66	52	ATV630D30N4	4	61,5
37	ATV61HD37N4	7A	79	65	ATV630D37N4	4	74,5
45	ATV61HD45N4	8	94	77	ATV630D45N4	4	88
55	ATV61HD55N4	8	116	96	ATV630D55N4	5	106
75	ATV61HD75N4	8	160	124	ATV630D75N4	5	145
90	ATV61HD90N4	9	179	179	ATV630D90N4	5	173
110	ATV61HC11N4	9	215	215	ATV630C11N4	6	211
130	ATV61HC13N4	10	259	259	ATV630C13N4	6	250
160	ATV61HC16N4	11	314	314	ATV630C16N4	6	302
200	ATV61HC22N4	12	427	427	ATV630C22N4	7A	427
220	ATV61HC22N4	12	427	427	ATV630C22N4	7A	427
250	ATV61HC25N4	13A	481	481	ATV630C25N4	7B	481
280	ATV61HC31N4	13B	616	616	ATV630C31N4	7B	616

Heavy Duty ATV71 to Altivar Process ATV●30

200…240V Three-Phase Drives						
kW	**ATV71**	**Frame size**	**Continuous output current**	**Altivar Process ATV●30**	**Frame size**	**Continuous output current**
0,75	ATV71H075M3	2	8	ATV●30U15M3	1	4,6
1,5	ATV71HU15M3	2	11	ATV●30U22M3	1	8
2,2	ATV71HU22M3	3	13,7	ATV●30U30M3	1	11,2
3	ATV71HU30M3	3	17,5	ATV●30U40M3	1	13,7
4	ATV71HU40M3	3	27,5	ATV●30U55M3	2	18,7
5,5	ATV71HU55M3	4	33	ATV●30U75M3	3	25,4
7,5	ATV71HU75M3	5A	54	ATV●30D11M3	3	32,7
11	ATV71HD11M3X	5B	66	ATV●30D15M3	4	46,8
15	ATV71HD15M3X	5B	75	ATV●30D18M3	4	63,4
18	ATV71HD18M3X	6	88	ATV●30D22M3	4	78,4
22	ATV71HD22M3X	6	120	ATV●30D30M3/M3C	5	92,6
30	ATV71HD30M3X	7B	144	ATV●30D37M3/M3C	5	123
37	ATV71HD37M3X	7B	176	ATV●30D45M3/M3C	5	149
45	ATV71HD45M3X	7B	221	ATV●30D55M3/M3C	6	176
55	ATV71HD55M3X	9	285	ATV●30D75M3/M3C	6	211

380…480V Three-Phase Drives							
kW	**ATV71**	**Frame size**	**Continuous output current**		**Altivar Process ATV●30**	**Frame size**	**Continuous output current**
			at 380 Vac	**at 460 Vac**			
0,75	ATV71H075N4	2	2,3	2,1	ATV●30U15N4	1	2,2
1,5	ATV71HU15N4	2	4,1	3,4	ATV●30U22N4	1	4
2,2	ATV71HU22N4	2	5,8	4,8	ATV●30U30N4	1	5,6
3	ATV71HU30N4	3	7,8	6,2	ATV●30U40N4	1	7,2
4	ATV71HU40N4	3	10,5	7,6	ATV●30U55N4	1	9,3
5,5	ATV71HU55N4	4	14,3	11	ATV●30U75N4	2	12,7
7,5	ATV71HU75N4	4	17,6	14	ATV●30D11N4	2	16,5
11	ATV71HD11N4	5A	27,7	21	ATV●30D15N4	3	23,5
15	ATV71HD15N4	5B	33	27	ATV●30D18N4	3	31,7
18	ATV71HD18N4	5B	41	34	ATV●30D22N4	3	39,2
22	ATV71HD22N4	6	48	40	ATV●30D30N4	4	46,3
30	ATV71HD30N4	7A	66	52	ATV●30D37N4	4	61,5
37	ATV71HD37N4	7A	79	65	ATV●30D45N4/N4C	4	74,5
45	ATV71HD45N4	8	94	77	ATV●30D55N4/N4C	5	88
55	ATV71HD55N4	8	116	96	ATV●30D75N4/N4C	5	106
75	ATV71HD75N4	8	160	124	ATV●30D90N4/N4C	5	145
90	ATV71HD90N4	9	179	179	ATV●30C11N4C	6	173
110	ATV71HC11N4	10	215	215	ATV●30C13N4C	6	211
130	ATV71HC13N4	11	259	259	ATV●30C16N4C	6	250
160	ATV71HC16N4	12	314	314	ATV●30C22N4/N4C	7A	302
200	ATV71HC20N4	13A	387	387	ATV●30C22N4/N4C	7A	302
220	ATV71HC25N4	13B	427	427	ATV●30C25N4C	7B	387
250	ATV71HC25N4	13B	481	481	ATV●30C31N4C	7B	481
280	ATV71HC28N4	13C	550	550	ATV●30C31N4C	7B	481

Heavy Duty ATV71 to Altivar Machine ATV340

380…480V Three-Phase Drives							
kW	ATV71	Frame size	Continuous output current		Altivar Machine ATV340	Frame size	Continuous output current
			at 380 Vac	at 460 Vac			
0,75	ATV71H075N4	2	2,3	2,1	ATV340U07N4●	1	2,2
1,5	ATV71HU15N4	2	4,1	3,4	ATV340U15N4●	1	4
2,2	ATV71HU22N4	2	5,8	4,8	ATV340U22N4●	1	5,6
3	ATV71HU30N4	3	7,8	6,2	ATV340U30N4●	1	7,2
4	ATV71HU40N4	3	10,5	7,6	ATV340U40N4●	1	9,3
5,5	ATV71HU55N4	4	14,3	11	ATV340U55N4●	2	12,7
7,5	ATV71HU75N4	4	17,6	14	ATV340U75N4●	2	16,5
11	ATV71HD11N4	5A	27,7	21	ATV340D11N4●	3	24
15	ATV71HD15N4	5B	33	27	ATV340D15N4●	3	32
18	ATV71HD18N4	5B	41	34	ATV340D18N4●	3	39
22	ATV71HD22N4	6	48	40	ATV340D22N4E	3	46
30	ATV71HD30N4	7A	66	52	ATV340D30N4E	4	61,5
37	ATV71HD37N4	7A	79	65	ATV340D37N4E	4	74,5
45	ATV71HD45N4	8	94	77	ATV340D45N4E	5	88
55	ATV71HD55N4	8	116	96	ATV340D55N4E	5	106
75	ATV71HD75N4	8	160	124	ATV340D75N4E	5	145

ATV61 and ATV71 Z range

ATV61 and ATV71 “Z” references are products (up to 75kW) available without display terminal (but with a 7-segment display). The closest equivalent Altivar Process product range is the Cabinet Integration range (without any display) (ATV630 and ATV930 only) or ATV340 Z range for Altivar Machine (see below).

NOTE: ATV61/71 display terminal (VW3A1101) cannot be used on Altivar Process or ATV340 products

The following table lists all existing product references in this range

380…480V Three-Phase Drives		
kW	**Reference**	**Frame Size**
0.75	ATV●30U07N4Z	1
1.5	ATV●30U15N4Z	1
2.2	ATV●30U22N4Z	1
3	ATV●30U30N4Z	1
4	ATV●30U40N4Z	1
5.5	ATV●30U55N4Z	1
7.5	ATV●30U75N4Z	2
11	ATV●30D11N4Z	2
15	ATV●30D15N4Z	3
18.5	ATV●30D18N4Z	3
22	ATV●30D22N4Z	3
30	ATV●30D30N4Z	4
37	ATV●30D37N4Z	4
45	ATV●30D45N4Z	4
55	ATV●30D55N4Z	5
75	ATV●30D75N4Z	5
90	ATV●30D90N4Z	5

ATV630 and ATV930 Z range

ATV630 and ATV930 “Z” references are products (up to 90kW) available without display terminal. These products have a smaller footprint for specific cabinet integration needs.

NOTE: ATV61/71 display terminal (VW3A1101) cannot be used on Altivar Process or ATV340 products

The following table lists all existing product references in this range

380…480V Three-Phase Drives		
kW	**Reference**	**Frame Size**
0.75	ATV●30U07N4Z	1
1.5	ATV●30U15N4Z	1
2.2	ATV●30U22N4Z	1
3	ATV●30U30N4Z	1
4	ATV●30U40N4Z	1
5.5	ATV●30U55N4Z	2
7.5	ATV●30U75N4Z	2
11	ATV●30D11N4Z	3
15	ATV●30D15N4Z	3
18.5	ATV●30D18N4Z	3
22	ATV●30D22N4Z	3
30	ATV●30D30N4Z	4
37	ATV●30D37N4Z	4
45	ATV●30D45N4Z	4
55	ATV●30D55N4Z	5
75	ATV●30D75N4Z	5
90	ATV●30D90N4Z	5

ATV340 Z range

ATV340 “Z” references are products (up to 22kW) available without display terminal. These products have a smaller footprint for specific cabinet integration needs.

NOTE: ATV61/71 display terminal (VW3A1101) cannot be used on Altivar Process or ATV340 products

The following table lists all existing product references in this range

380…480V Three-Phase Drives		
kW	**Reference**	**Frame Size**
0.75	ATV340U07N4Z	1
1.5	ATV340U15N4Z	1
2.2	ATV340U22N4Z	1
3	ATV340U30N4Z	1
4	ATV340U40N4Z	1
5.5	ATV340U55N4Z	2
7.5	ATV340U75N4Z	2
11	ATV340D11N4Z	3
15	ATV340D15N4Z	3
18.5	ATV340D18N4Z	3
22	ATV340D22N4Z	3

Dimensions and frame sizes comparison

The following table can be used to compare the physical dimensions of the drives.

ATV61/71				ATV600 / ATV900 Wall-mounting				ATV600 / ATV900 cabinet Integration				ATV340			
Frame size	W mm *in*	H mm *in*	D mm *in*	Frame Size	W mm *in*	H mm *in*	D mm *in*	Frame Size	W mm *in*	H mm *in*	D mm *in*	Frame Size	W mm *in*	H mm *in*	D mm *in*
2	130 *5.11*	230 *9.05*	175 *6.88*	1	144 *5.66*	350 *13.77*	203 *7.99*	1	130 *5.11*	284 *11.18*	196 *7.71*	1	85 *3.34*	270 *10.62*	232,5 *9.15*
3	155 *6.10*	260 *10.23*	187 *7.36*	1	144 *5.66*	350 *13.77*	203 *7.99*	1	130 *5.11*	284 *11.18*	196 *7.71*	1	85 *3.34*	270 *10.62*	232,5 *9.15*
4	175 *6.88*	295 *11.61*	187 *7.36*	1	144 *5.66*	350 *13.77*	203 *7.99*	1	130 *5.11*	284 *11.18*	196 *7.71*	1	85 *3.34*	270 *10.62*	232,5 *9.15*
4	175 *6.88*	295 *11.61*	187 *7.36*	2	171 *6.73*	409 *16.10*	233 *9.17*	2	155 *6.10*	345 *13.58*	225 *8.85*	1	85 *3.34*	270 *10.62*	232,5 *9.15*
5A	210 *8.26*	295 *11.61*	213 *8.38*	2	171 *6.73*	409 *16.10*	233 *9.17*	2	155 *6.10*	345 *13.58*	225 *8.85*	1	85 *3.34*	270 *10.62*	232,5 *9.15*
5A	210 *8.26*	295 *11.61*	213 *8.38*	3	211 *8.30*	545.9 *21.45*	232 *9.13*	3	195 *7.67*	480 *18.89*	225.5 *8.87*	2	110 *4.33*	270 *10.62*	234 *9.21*
5B	230 *9.05*	400 *15.74*	213 *8.38*	3	211 *8.30*	545.9 *21.45*	232 *9.13*	3	195 *7.67*	480 *18.89*	225.5 *8.87*	2	110 *4.33*	270 *10.62*	234 *9.21*
5B	230 *9.05*	400 *15.74*	213 *8.38*	4	226 *8.89*	673 *26.49*	271 *10.66*	4	210 *8.26*	597 *23.50*	262 *10.31*	3	180 *7.08*	385 *15.15*	249 *9.80*
6	240 *9.44*	420 *16.53*	236 *9.29*	3	211 *8.30*	545.9 *21.45*	232 *9.13*	3	195 *7.67*	480 *18.89*	225.5 *8.87*	3	180 *7.08*	385 *15.15*	249 *9.80*
6	240 *9.44*	420 *16.53*	236 *9.29*	4	226 *8.89*	673 *26.49*	271 *10.66*	4	210 *8.26*	597 *23.50*	262 *10.31*	3	180 *7.08*	385 *15.15*	249 *9.80*
7A	240 *9.44*	550 *21.65*	266 *10.47*	4	226 *8.89*	673 *26.49*	271 *10.66*	4	210 *8.26*	597 *23.50*	262 *10.31*	3	180 *7.08*	385 *15.15*	249 *9.80*
7B	320 *12.59*	550 *21.65*	266 *10.47*	5	290 *11.41*	922 *36.29*	323 *12.71*	5	265 *10.43*	748 *29.44*	307 *12.08*	4	213 *8.38*	660 *25.98*	262 *10.31*
8	320 *12.59*	630 *24.80*	290 *11.41*	4	226 *8.89*	673 *26.49*	271 *10.66*	4	210 *8.26*	597 *23.50*	262 *10.31*	4	213 *8.38*	660 *25.98*	262 *10.31*
8	320 *12.59*	630 *24.80*	290 *11.41*	5	290 *11.41*	922 *36.29*	323 *12.71*	5	265 *10.43*	748 *29.44*	307 *12.08*	5	271 *10.66*	908 *35.74*	309 *12.16*
9	320 *12.59*	920 *36.22*	377 *14.84*	5	290 *11.41*	922 *36.29*	323 *12.71*	5	265 *10.43*	748 *29.44*	307 *12.08*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*
9	320 *12.59*	920 *36.22*	377 *14.84*	6	320 *12.59*	852 *33.54*	390 *15.35*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*
10	360 *14.17*	1022 *40.23*	377 *14.84*	6	320 *12.59*	852 *33.54*	390 *15.35*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*
11	340 *13.38*	1190 *46.85*	377 *14.84*	6	320 *12.59*	852 *33.54*	390 *15.35*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*
12	440 *17.32*	1190 *46.85*	377 *14.84*	6	320 *12.59*	852 *33.54*	390 *15.35*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*
12	440 *17.32*	1190 *46.85*	377 *14.84*	7A	440 *17.32*	1195 *47.04*	380 *14.96*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*
13A	595 *23.42*	1190 *46.85*	377 *14.84*	7A	440 *17.32*	1195 *47.04*	380 *14.96*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*
13A	595 *23.42*	1190 *46.85*	377 *14.84*	7B	598 *23.54*	1195 *47.04*	380 *14.96*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*
13B	595 *23.42*	1190 *46.85*	377 *14.84*	7A	440 *17.32*	1195 *47.04*	380 *14.96*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*
13B	595 *23.42*	1190 *46.85*	377 *14.84*	7B	598 *23.54*	1195 *47.04*	380 *14.96*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*
13C	595 *23.42*	1190 *46.85*	377 *14.84*	7B	598 *23.54*	1195 *47.04*	380 *14.96*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*	N/A	N/A *N/A*	N/A *N/A*	N/A *N/A*

Electrical Data - Upstream Protective Device

Overview

The Short Circuit Protective Device (SCPD) used for ATV61/71 may not be suitable for use on ATV630, ATV930 or ATV340. Appropriate information is given in the Upstream Protection Device section of the Installation Manual.

⚠ ⚠ DANGER

INSUFFICIENT PROTECTION AGAINST OVERCURRENTS CAN CAUSE FIRE OR EXPLOSION

- Use properly rated overcurrent protection devices.
- Use the fuses/circuit breakers specified.
- Do not connect the product to a supply mains whose prospective short circuit current rating (current that flows during a short circuit) exceeds the specified maximum permissible value.
- When rating the upstream mains fuses and the cross sections as well as the lengths of the mains cables, take into account the minimum required prospective short-circuit current (Isc). Refer to the Upstream Protection Device section of the Installation Manual.
- If the minimum required prospective short-circuit current (Isc) is not available, increase the power of the transformer or decrease the length of the cables.

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

General

The Short Circuit Protective Device (SCPD) rated to the drive will help protect the upstream installation in case of a short-circuit internal to the drive and mitigate the damage to the drive and its surrounding area.

The SCPD rated to the drive is mandatory to help ensuring the safety of the Power Drive System. It comes in addition to the upstream branch circuit protection which is in compliance with the local regulation for electrical installation.

The SCPD shall mitigate the damage in case of detected error condition such as an internal short-circuit of the drive.

The SCPD must take into account both following characteristics...

- a maximum prospective short-circuit current
- a minimum required prospective short-circuit current (Isc).

If the minimum required prospective short-circuit current (Isc) is not available, increase the power of the transformer or decrease the length of the cables

In other cases, contact your Schneider Electric Customer Care Center (CCC) http://www.se.com/CCC for specific selection of Short Circuit Protective Device (SCPD).

Part III
Mounting Accessories

What is in This Part?

This part contains the following chapters:

IP20, IP21/UL Type 1 and IP31 conformity kits for ATV630

IP Conformity levels for ATV630

Up to 90kW, ATV630 drives are already UL Type 1 compliant out of the box, no kit is needed. For other ranges, there are optional UL kits.

IP20 and IP21/UL Type 1 kits for ATV630

The following table lists all UL Type1 kits available for ATV630 and their reference.

IP 20 and IP 21/UL Type 1 conformity kits		
Description	**For use with**	**Reference**
IP 20/UL Type 1 conformity kit	ATV630U22Y6...D30Y6	VW3A9705
	ATV630D37Y6...D90Y6	VW3A9706
IP 21/UL Type 1 conformity kit	ATV630D55M3…D75M3 ATV630C11N4…C16N4	VW3A9704
UL Type 1 conformity kit	ATV630C22N4	VW3A9212
	ATV630C25N4 ATV630C31N4	VW3A9213

For more information on how to mount the kits, go to www.se.com, type the kit reference in the search engine and download the corresponding Instruction sheet.

IP31 conformity kits for ATV630

The following table lists all IP31 kits available for ATV630 and their reference.

IP 31 conformity kits		
Description	**For use with**	**Reference**
IP 31 conformity kit	ATV630C22N4	VW3A9112
	ATV630C25N4 ATV630C31N4	VW3A9113

For more information on how to mount the kits, go to www.se.com, type the kit reference in the search engine and download the corresponding Instruction sheet.

IP20, IP21/UL Type 1 and IP31 conformity kits for ATV930

IP Conformity levels for ATV930

Up to 90kW, ATV930 drives are already UL Type 1 compliant out of the box, no kit is needed. For other ranges, there are optional UL kits.

IP20 and IP21/UL Type 1 kits for ATV930

The following table lists all UL Type1 kits available for ATV930 and their reference.

IP 20 and IP 21/UL Type 1 conformity kits		
Description	**For use with**	**Reference**
IP 20/UL Type 1 conformity kit	ATV930U22Y6...D30Y6	VW3A9705
	ATV930D37Y6...D90Y6	VW3A9706
IP 21/UL Type 1 conformity kit	ATV930D55M3…D75M3 ATV930C11N4…C16N4	VW3A9704
UL Type 1 conformity kit	ATV930C22N4	VW3A9212
	ATV930C25N4 ATV930C31N4	Without braking unit: VW3A9213 With braking unit: VW3A9214

For more information on how to mount the kits, go to www.se.com, type the kit reference in the search engine and download the corresponding Instruction sheet.

IP31 conformity kits for ATV930

The following table lists all IP31 kits available for ATV930 and their reference.

IP 31 conformity kits		
Description	**For use with**	**Reference**
IP 31 conformity kit	ATV930C22N4 ATV930C22N4C	VW3A9112
	ATV630C25N4C ATV630C31N4C	Without braking unit: VW3A9113 With braking unit: VW3A9114

For more information on how to mount the kits, go to www.se.com, type the kit reference in the search engine and download the corresponding Instruction sheet.

Flange Mounting Kits

Flange-mounting kits description

Flange-mounting kits are used for enclosure designs where the power part of the drive is mounted outside the enclosure to reduce the power dissipated into the enclosure. Altivar Process and Altivar Machne ranges have flange-mounting kits and drives optimized for cabinet integration.

Flange-mounting kits for ATV630

The following table lists all accessories for flange-mounting for ATV630 and their reference.

Accessories for flange-mounting				
Description	**For use with**	**Enclosure max. height (mm/*in.*)**	**Enclosure max. width (mm/*in.*)**	**Reference**
Mounting bracket for flange-mounting kit	NSYPTDS1, NSYPTDS2, NSYPTDS3	–	–	NSYAEFPFPTD
Flange-mounting kit for separate air flow	ATV630U07M3...U40M3, ATV630U07N4...U55N4	360/*14.17*	235/*9.25*	NSYPTDS1
	ATV630U55M3, ATV630U75N4...D11N4	420/*16.54*	265/*10.43*	NSYPTDS2
	ATV630U75M3...D11M3, ATV630D15N4...D22N4	555/*21.85*	295/*11.61*	NSYPTDS3
	ATV630D15M3...D22M3, ATV630D30N4...D45N4	800/*31.50*	385/*15.16*	NSYPTDS4
	ATV630D30M3…D45M3 ATV630D55N4…D90N4	975/*38.39*	427/*16.81*	NSYPTDS5
	ATV630C11N4…C16N4 ATV630D55M3...D75M3	–		VW3A95116
	ATV630C22N4	–		VW3A9513
	ATV630C25N4 ATV630C31N4	–		VW3A9514

For more information on how to mount the kits, go to www.se.com, type the kit reference in the search engine and download the corresponding Instruction sheet.

Flange-mounting kits for ATV930

The following table lists all accessories for flange-mounting for ATV930 and their reference.

Accessories for flange-mounting					
Description	**For use with**	**Use with braking unit**	**Enclosure max. height (mm/*in.*)**	**Enclosure max. width (mm/*in.*)**	**Reference**
Mounting bracket for flange-mounting kit	NSYPTDS1, NSYPTDS2, NSYPTDS3	–	–	–	NSYAEFPFPTD
Flange-mounting kit for separate air flow	ATV930U07M3...U40M3, ATV930U07N4...U55N4	–	360/*14.17*	235/*9.25*	NSYPTDS1
	ATV930U55M3, ATV930U75N4...D11N4	–	420/*16.54*	265/*10.43*	NSYPTDS2
	ATV930U75M3...D11M3, ATV930D15N4...D22N4	–	555/*21.85*	295/*11.61*	NSYPTDS3
	ATV930D15M3...D22M3, ATV930D30N4...D45N4	–	800/*31.50*	385/*15.16*	NSYPTDS4
	ATV930D30M3…D45M3 ATV930D55N4…D90N4	–	975/*38.39*	427/*16.81*	NSYPTDS5
	ATV930C11N4…C16N4 ATV930D55M3...D75M3	–	–	–	VW3A95116
	ATV930C22N4	–	–	–	VW3A9513
	ATV930C25N4 ATV930C31N4	Without braking unit	–	–	VW3A9514
		With braking unit	–	–	VW3A9515

For more information on how to mount the kits, go to www.se.com, type the kit reference in the search engine and download the corresponding Instruction sheet.

Flange-mounting kits for ATV340

The following table lists the flange-mounting kits available for ATV340 and their reference.

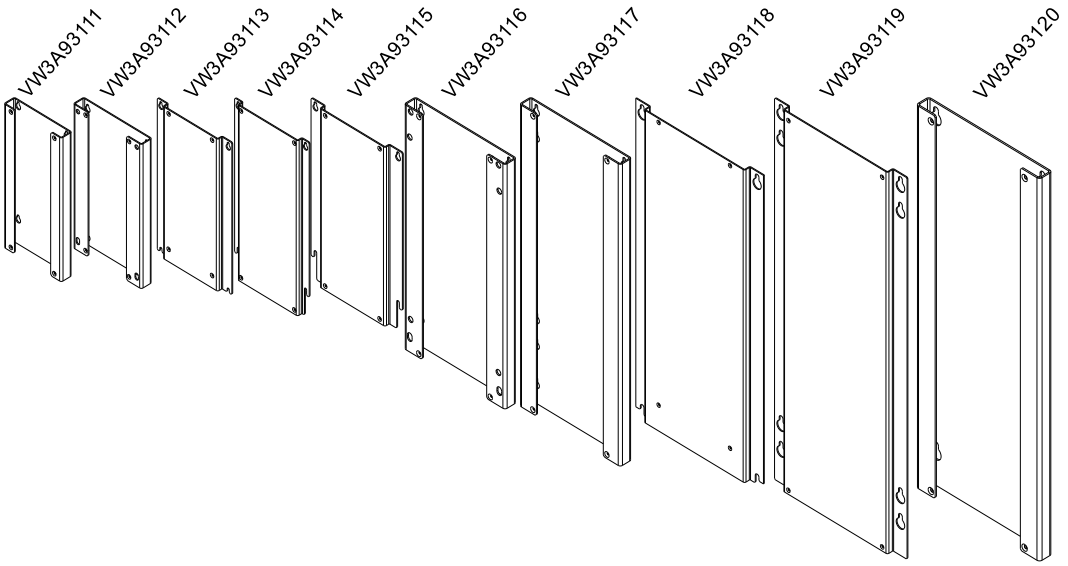
Description	Contents	For use with	Reference
Flange-mounting kit	• Mounting accessories • 1 metal frame • Screws and seals • 1 instruction sheet	ATV340D11N4…D22N4 ATV340D11N4E…D22N4E	VW3M2606
		ATV340D30N4E…D37N4E	NSYPTDS4
		ATV340D45N4E…D75N4E	NSYPTDS5

For more information on how to mount the kits, go to www.se.com, type the kit reference in the search engine and download the corresponding Instruction sheet.

Mechanical Substitution kits

Mechanical Substitution Kits Description

Mechanical Substitution Kits consist of metal support plates that make it possible to re-use the same mounting holes as the ATV61/71. There are 10 kits designed for different product frame sizes.



Please note that no kit is needed for frame size 7 products as ATV61/71 and ATV630/930 product dimensions are identical.

Mechanical Substitution Kit selection

Check your current product frame size (see check-list) and refer to the table below to choose the right Mechanical Substitution Kit.

ATV61/71 Frame size	ATV630/650 ATV930/950 Frame size	Kit Catalog Number
2	1	VW3A93111
3	1	VW3A93112
4	1	VW3A93113
4	2	VW3A93114
5A	2	VW3A93115
5B	3	VW3A93116
6	3	VW3A93116
6	4	VW3A93117
7A	4	VW3A93117
8	4	VW3A93118
8	5	VW3A93119
9	5	VW3A93120

For more information on how to mount the kits and additional dimensions, go to www.se.com, type the kit reference in the search engine and download the corresponding Instruction sheet: MFR22528.

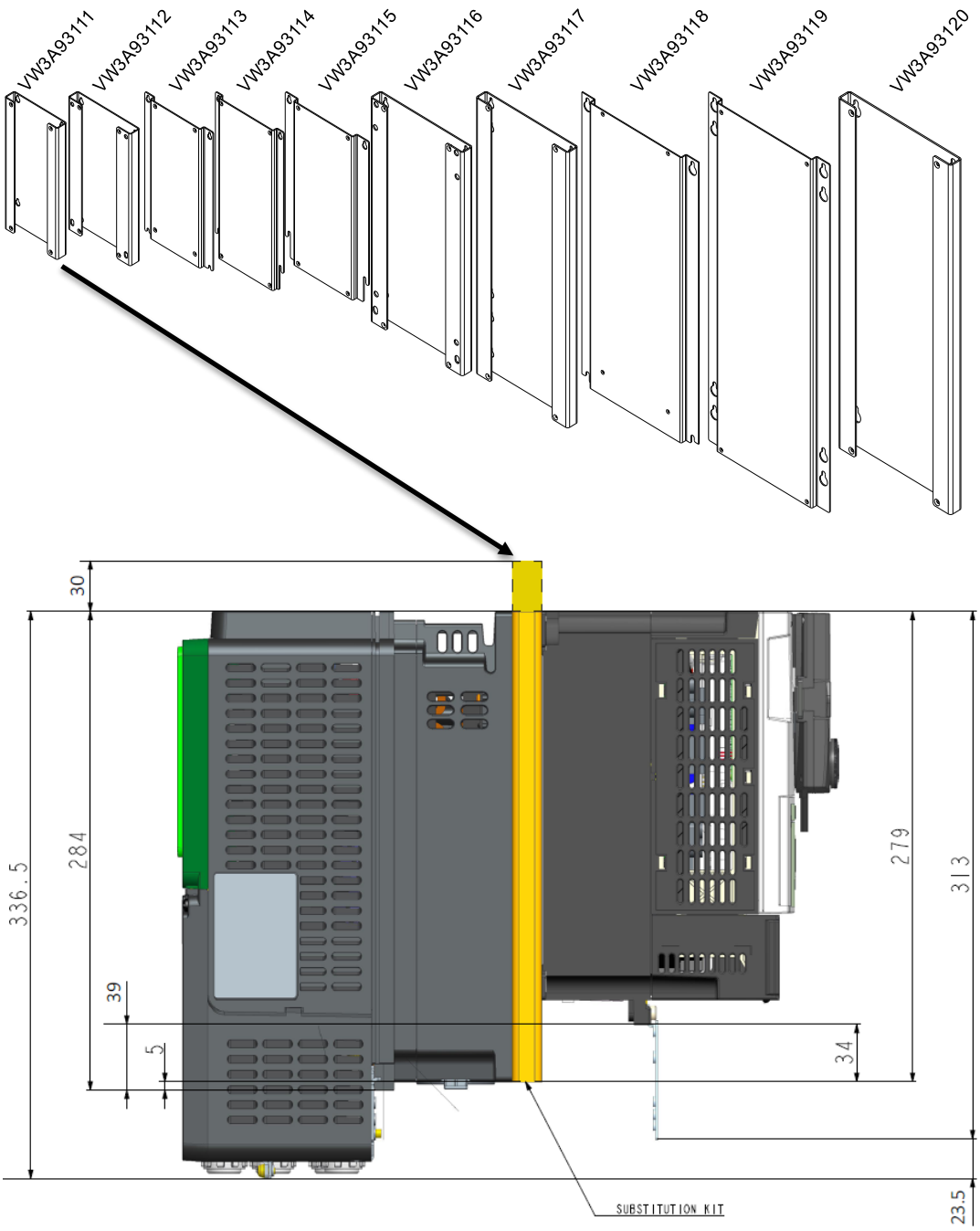
Please note that the addition of slot C will increase the overall depth of the product and kit assembly.

Product footprint comparison

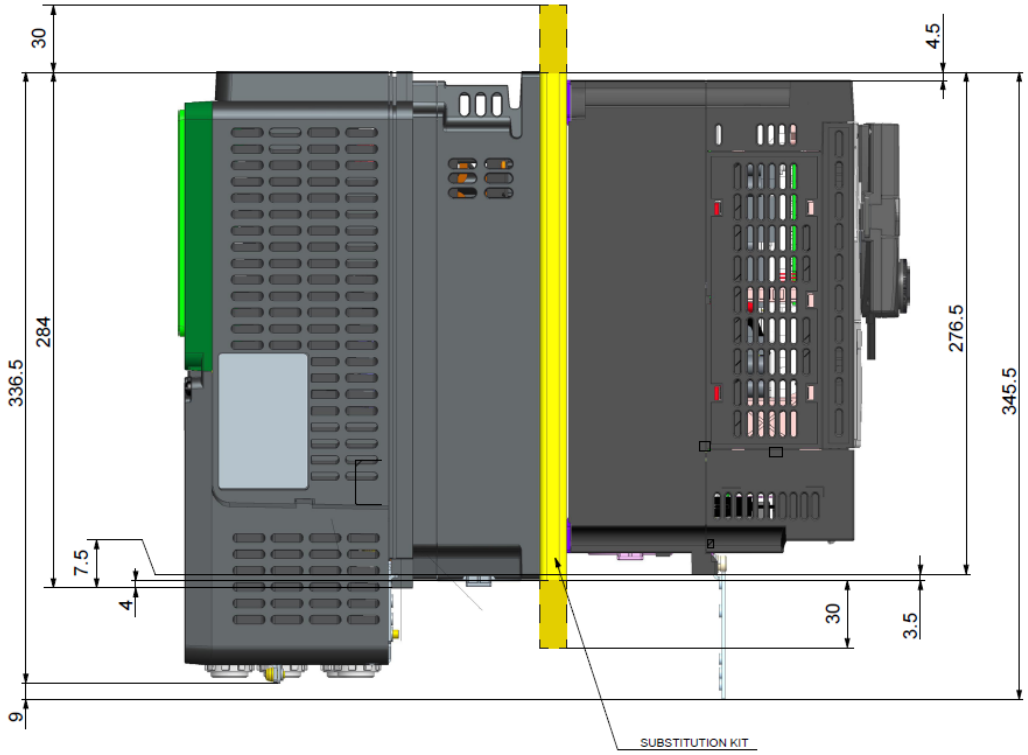
To determine how much more space you need for your Altivar Process drive, here are some size comparisons (all dimensions are in mm).

In all the following images, the Altivar Process product is on the left, the ATV61/71 product on the right and the mechanical substitution kit in the middle.

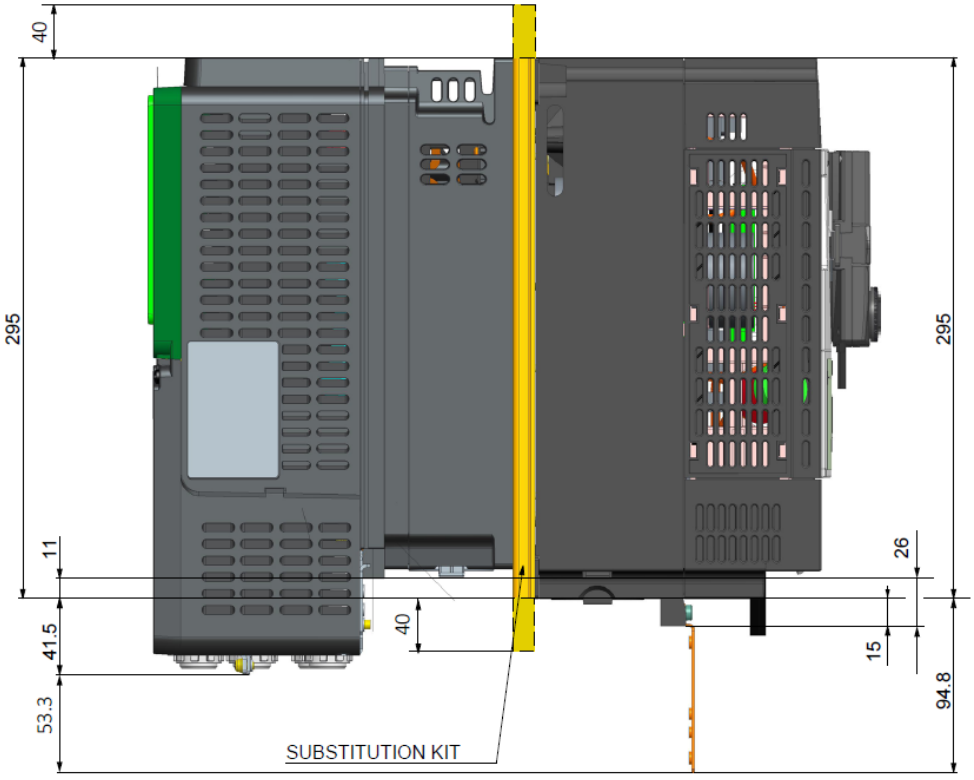
With VW3A93111 (From ATV61/71 Frame Size 2 to ATV630/930 Frame Size 1)



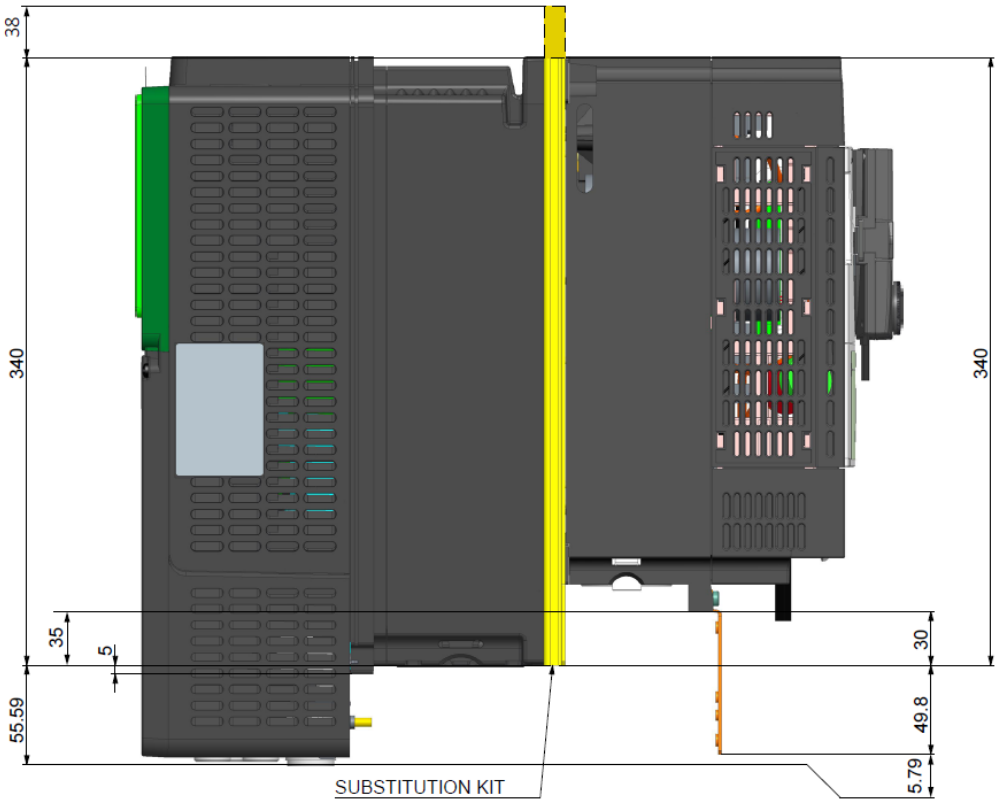
With VW3A93112 (From ATV61/71 Frame Size 3 to ATV630/930 Frame Size 1)



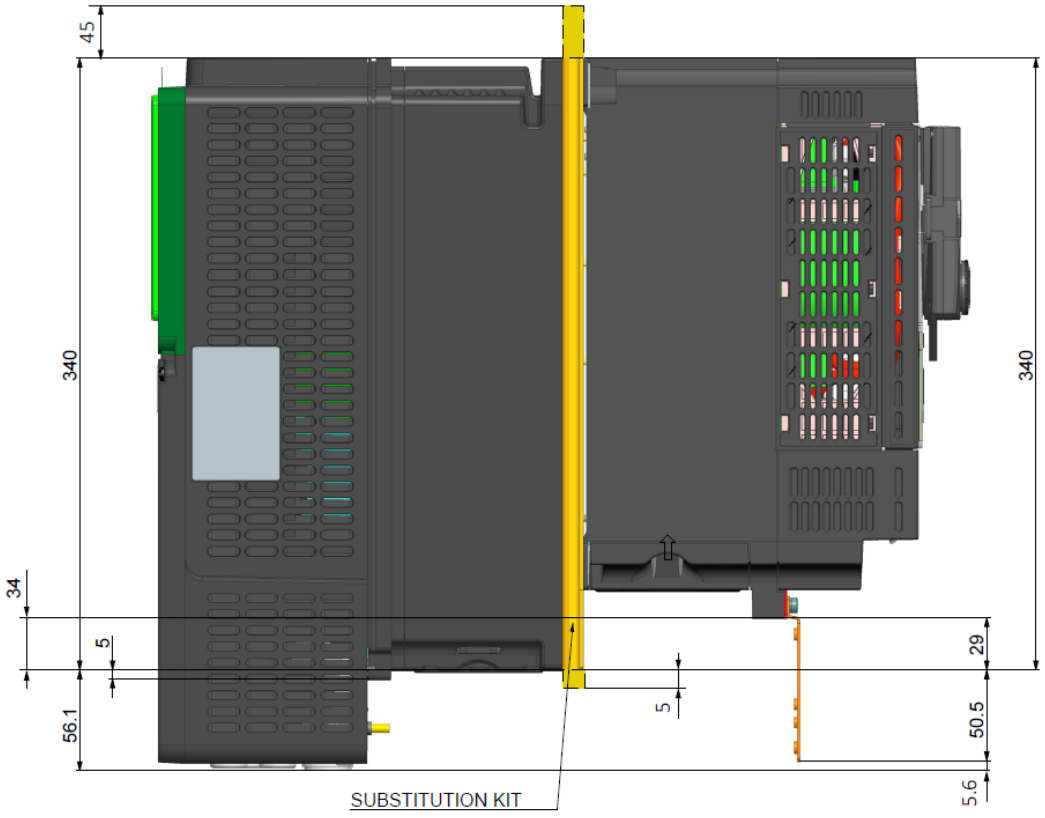
With VW3A93113 (From ATV61/71 Frame Size 4 to ATV630/930 Frame Size 1)



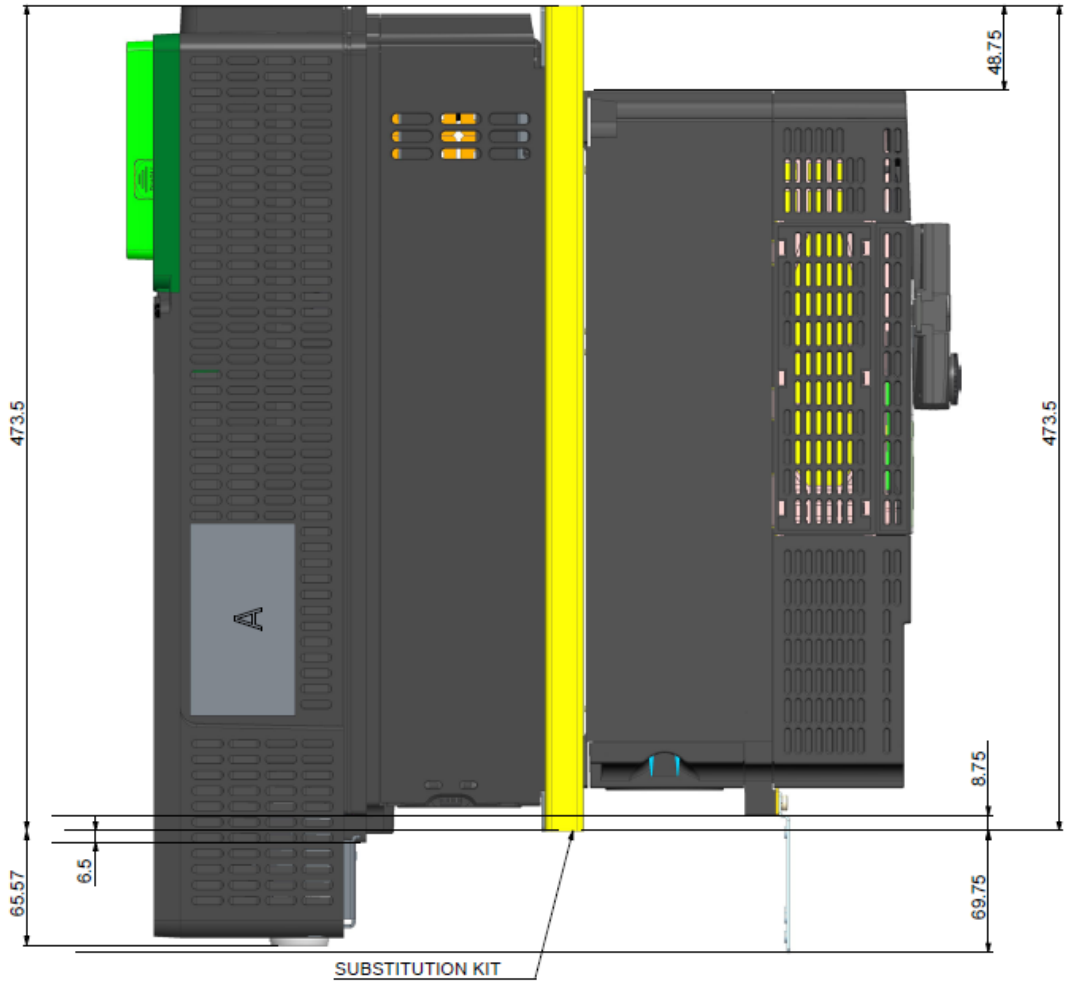
With VW3A93114 (From ATV61/71 Frame Size 4 to ATV630/930 Frame Size 2)



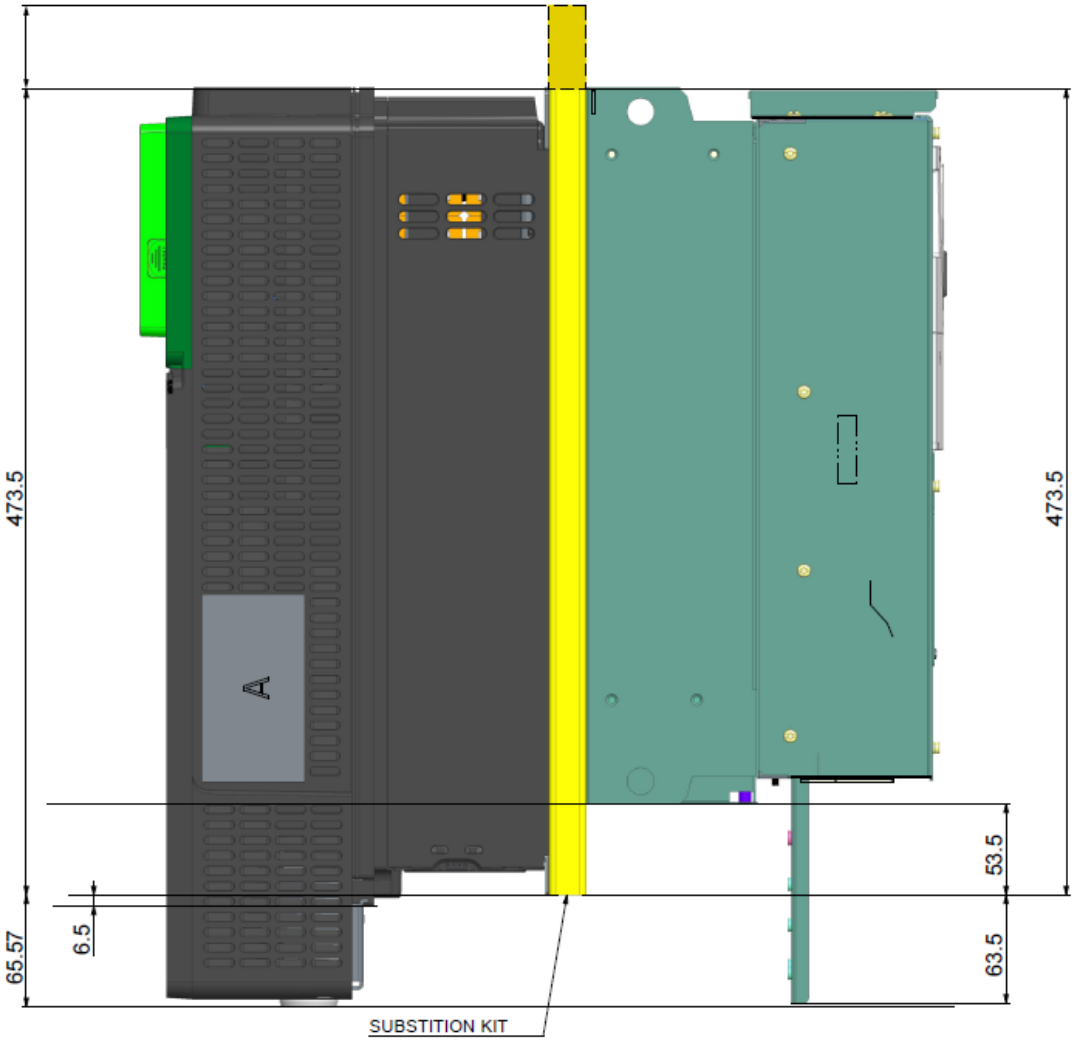
With VW3A93115 (From ATV61/71 Frame Size 5A to ATV630/930 Frame Size 2)



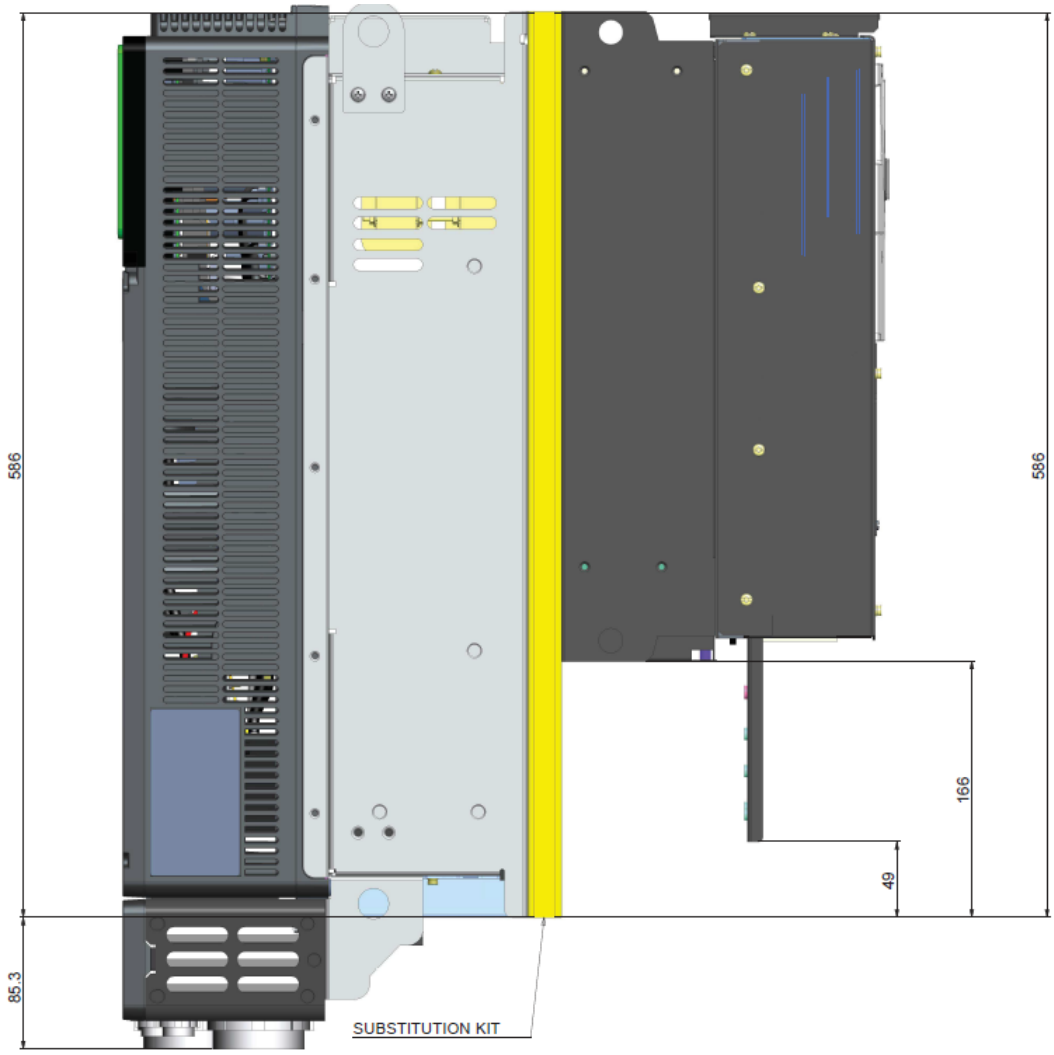
With VW3A93116 (From ATV61/71 Frame Size 5B to ATV630/930 Frame Size 3)

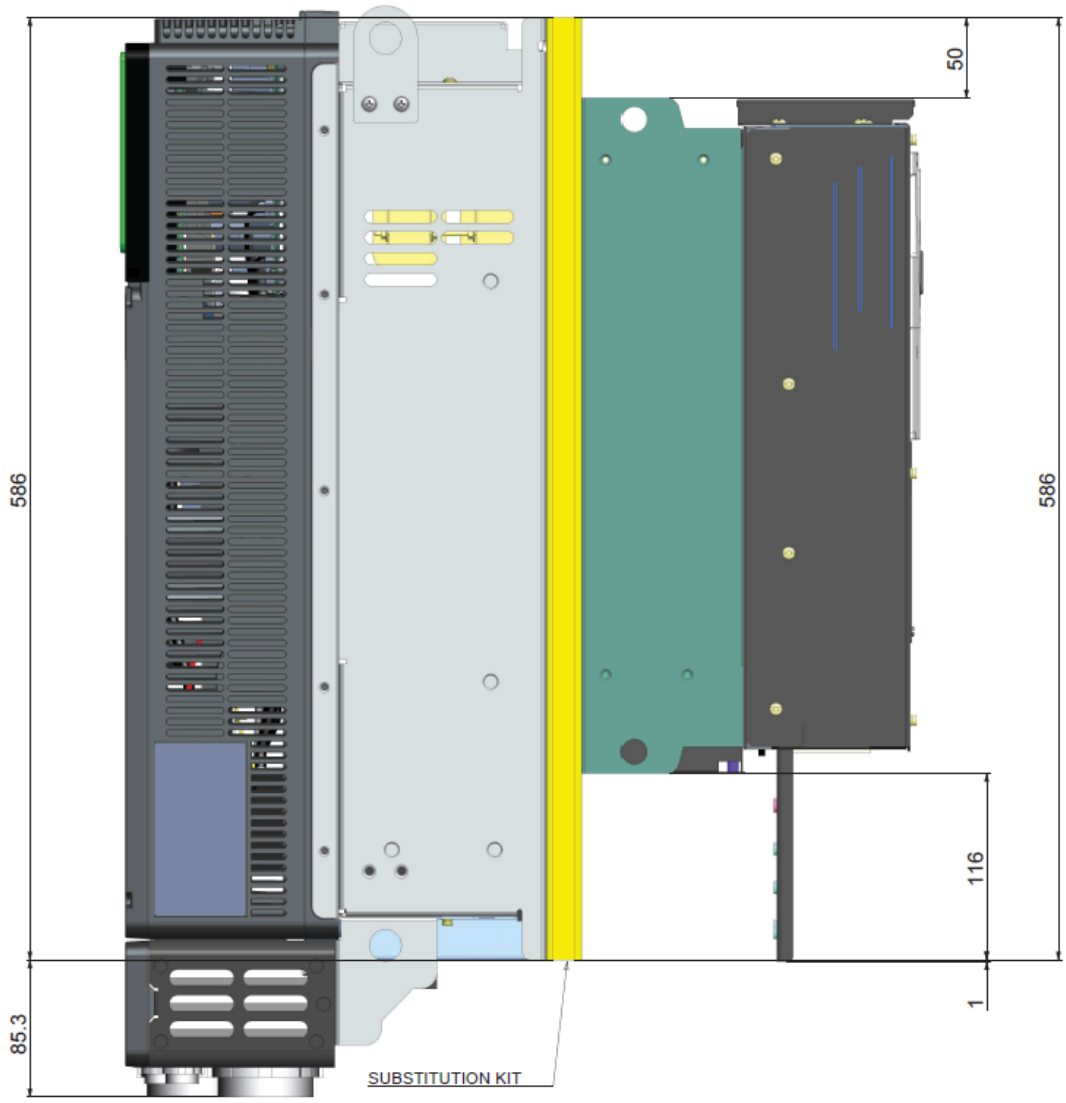


With VW3A93116 (From ATV61/71 Frame Size 6 to ATV630/930 Frame Size 3)

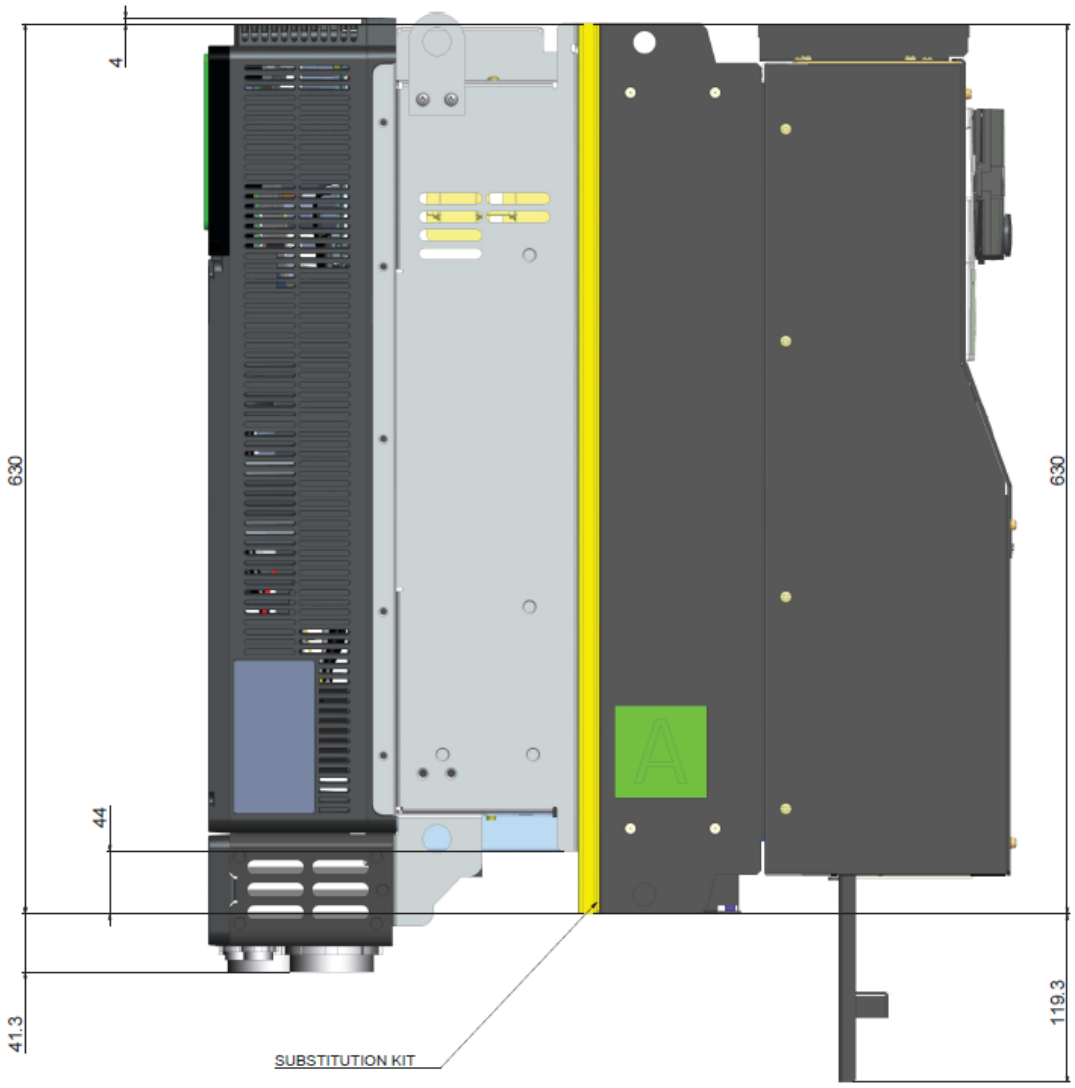


With VW3A93117 (From ATV61/71 Frame Size 6 to ATV630/930 Frame Size 4)

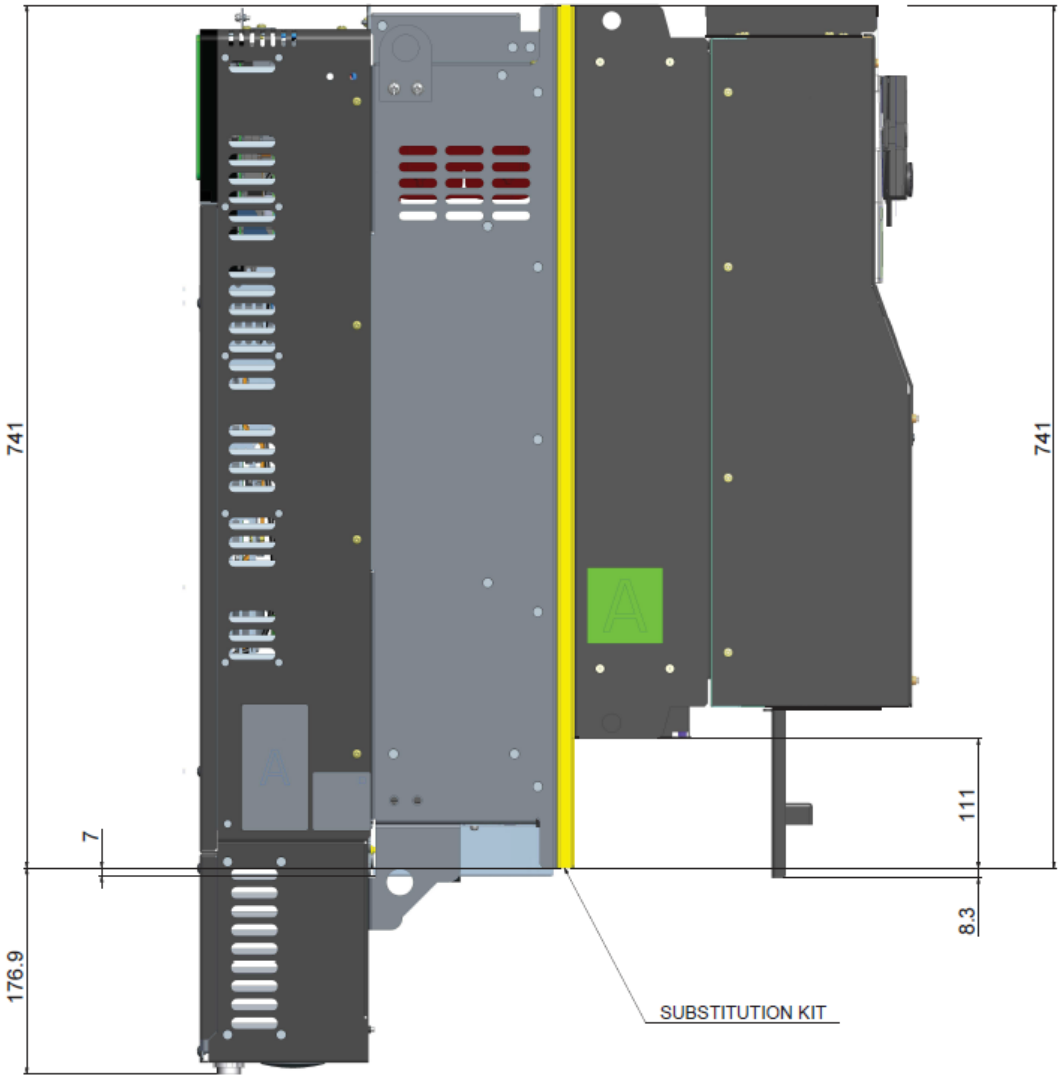




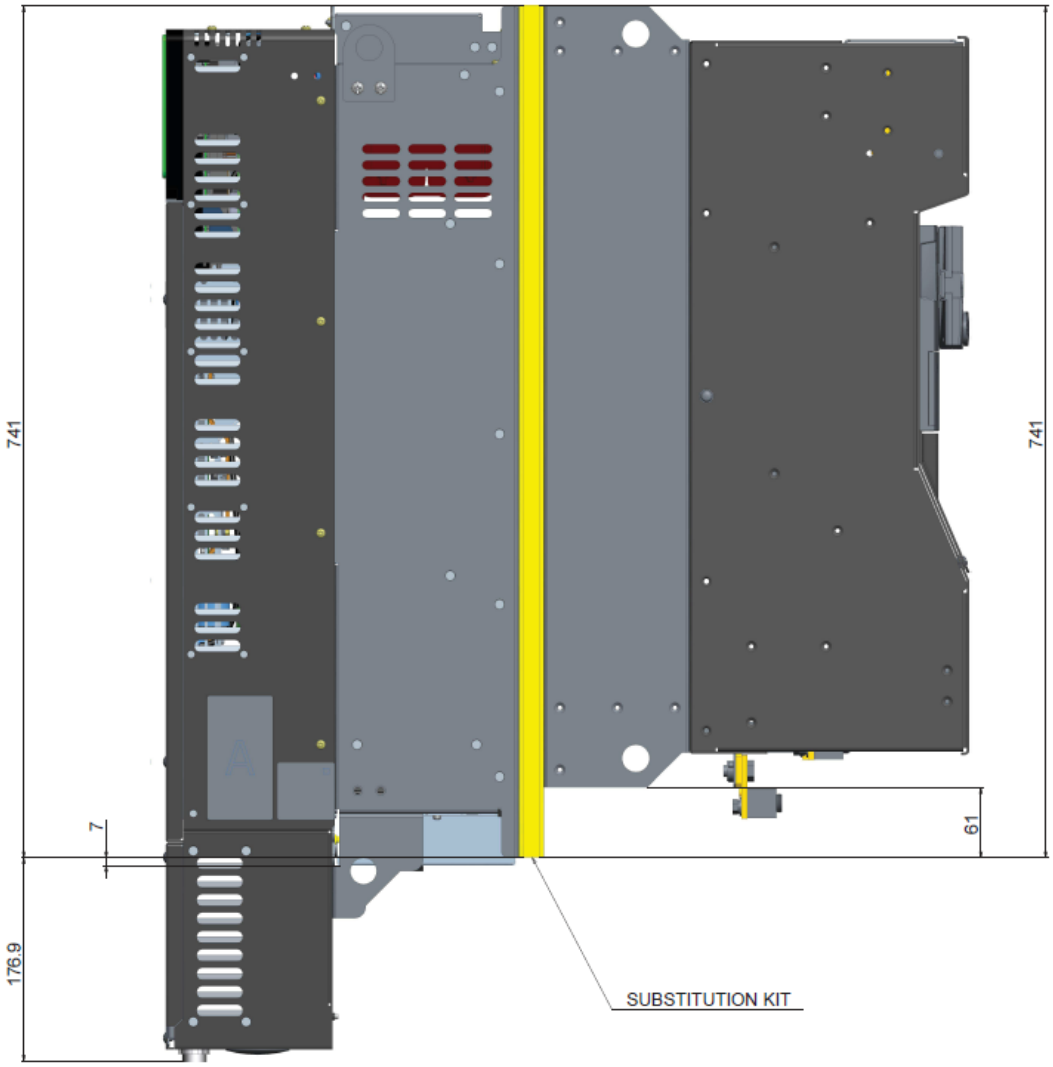
With VW3A93118 (From ATV61/71 Frame Size 8 to ATV630/930 Frame Size 4)



With VW3A93119 (From ATV61/71 Frame Size 8 to ATV630/930 Frame Size 5)



With VW3A93119 (From ATV61/71 Frame Size 9 to ATV630/930 Frame Size 5)

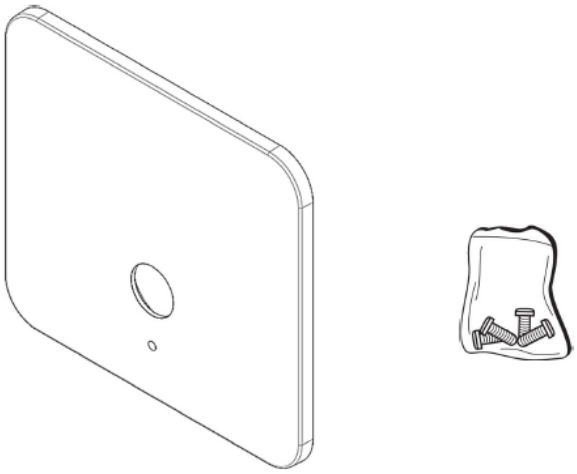


Door Mounting Graphic Display Terminal Adapter from VW3A1102 to VW3A1112

Description

The Door Mounting Graphic Display Terminal Adapter (SRVMODATVK6171) can be used to mount the newer Remote Mounting Kit (VW3A1112) (more information below) on enclosure doors previously drilled to fit the larger remote mounting kit (VW3A1102).

This avoids buying new enclosure doors when replacing ATV61/71 with ATV600/900/340.



Remote Mounting Kit for Graphic Display Terminal (ATV630, ATV930 and ATV340) and Plain Text Display Terminal (ATV340)

Description

The IP65 Door Mounting Kit (VW3A1112) can be used to mount the Graphic Display Terminal (VW3A1111) or the Plain Text Display Terminal (VW3A1113) on enclosure doors for easier access. When the Display Terminal is removed, this kit is designed to help maintain IP65 protection against dust, water projections, etc.

Compared to the remote mounting kit available for ATV61/71 products, this remote mounting kit has the following advantages:

- Mounting the kit to the enclosure door is easier
- The hole that needs to be drilled into the enclosure door is much smaller (22.5mm / 0.89in)

Part IV
Control Inputs/Outputs and Communication

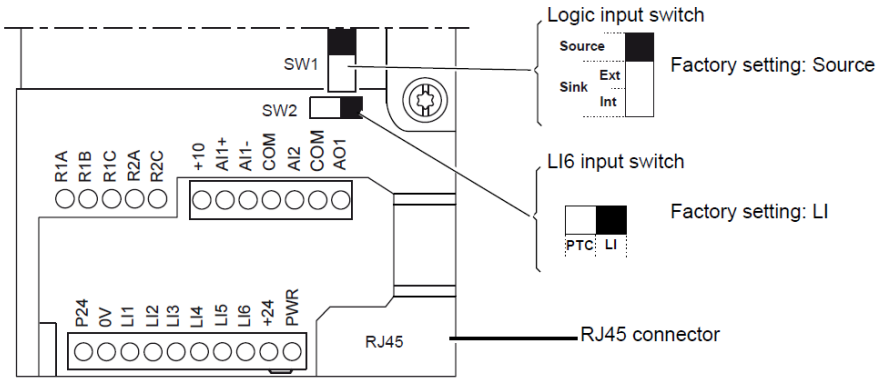
What is in This Part?

This part contains the following chapters:

Control Terminals

ATV61/71 Control Terminals

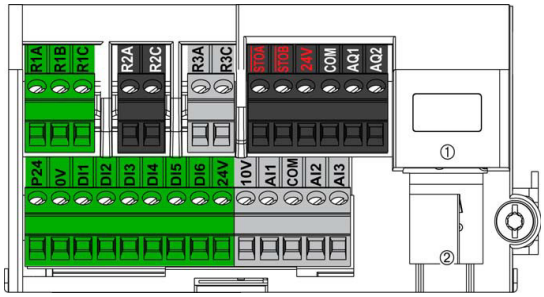
The following figure shows the ATV61/71 control terminals



NOTE: ATV61/71 are supplied with a link between the PWR and +24 terminals.

ATV630 Control Terminals

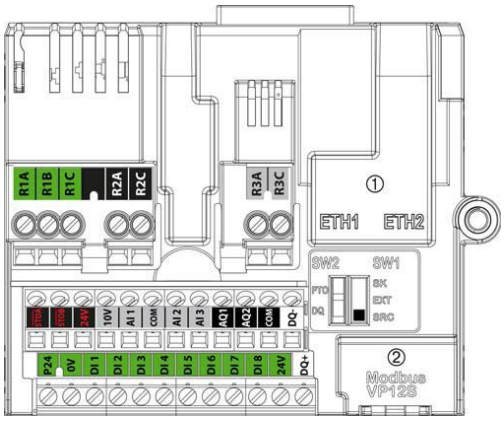
The following figure shows the ATV630 control terminals



① Ethernet Modbus TCP, ② Serial Modbus

ATV930 Control Terminals

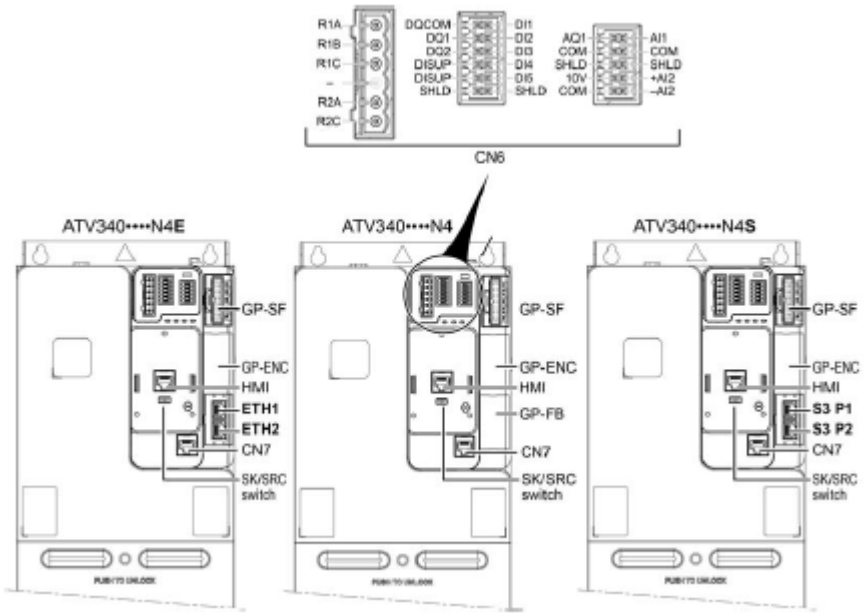
The following figure shows the ATV930 control terminals



① Ethernet Modbus TCP, ② Serial Modbus

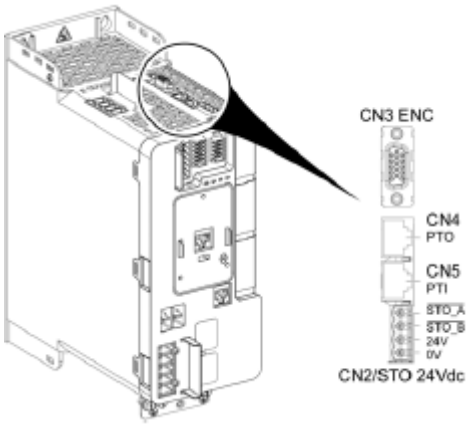
ATV340 (Frame Size 1 to 3) Control Terminals

The following figure shows the ATV340 (Frame Size 1 to 3) front control terminals



Connector/Switch	Description
GP-SF	Slot for safety and general purpose modules like I/O, Relay
GP-ENC	Slot for encoder module. Use only VW3A3420, VW3A3422 , VW3A3423 modules and general purpose modules like I/O, Relay
HMI	RJ45 port for Plain Text Display Terminal (VW3A1113) direct plug-in or Graphic Display Terminal (VW3A1111) to connect with a cable.
ETH1, ETH2	2 x RJ45 Advanced Ethernet ports, on ATV340•••••E
S3 P1, S3 P2	2 x RJ45 Embedded Sercos III ports, on ATV340•••••S
GP-FB	Slot for fieldbus and general purpose modules like IO, Relay
CN7	Modbus VP12S port
SK/EXT/SRC switch	Sink-Source switch
CN6	Analog and digital I/O, relay outputs...

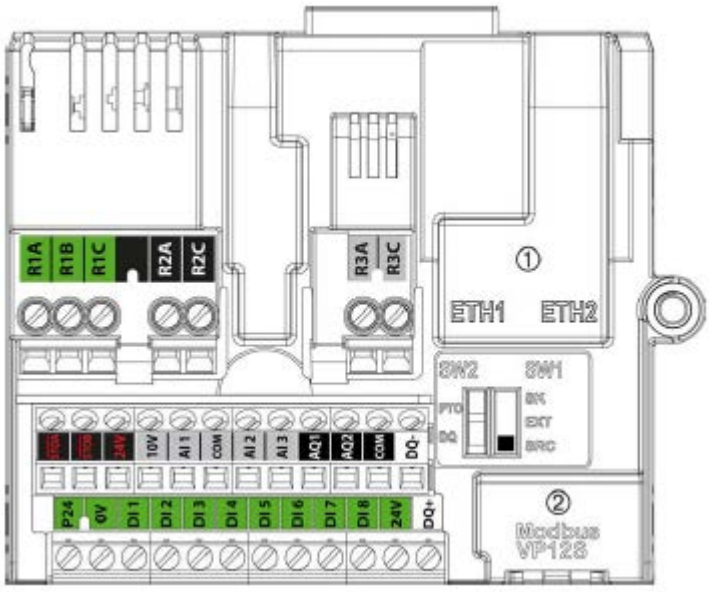
The following figure shows the ATV340 (Frame Size 1 to 3) top control terminals



Connector/Switch	Description
CN3 ENC	Embedded encoder **NOTE**: An additional clearance is required on top of the drive when using the embedded encoder.
CN4	PTO (Pulse Train Output)
CN5	PTI (Pulse Train Input)
CN2/STO 24Vdc	STO (Safe Torque Off)

ATV340 (Frame Size 4 & 5) Control Terminals

The following figure shows the ATV340 (Frame Size 4 & 5) control terminals



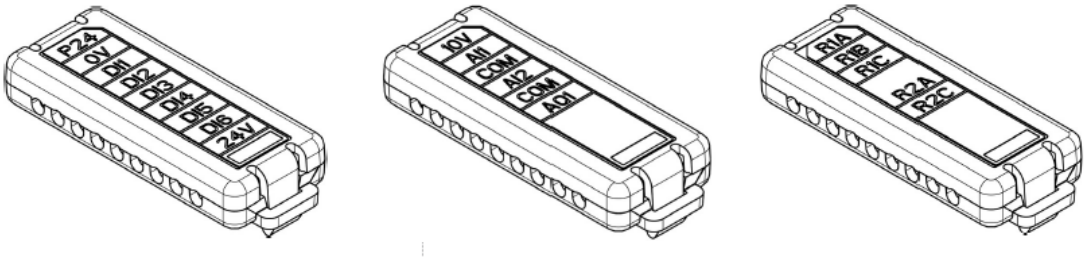
① Ethernet Modbus TCP, ② Serial Modbus

ATV61 to ATV600 Fast Wiring Exchange Tool

Description

When replacing an ATV61 with an ATV600, the ATV61 to ATV600 Fast Wiring Exchange Tool (SRVMODATVC6xx) makes wiring control and power terminals much easier.

More information can be found in the instruction sheet coming with the tool.

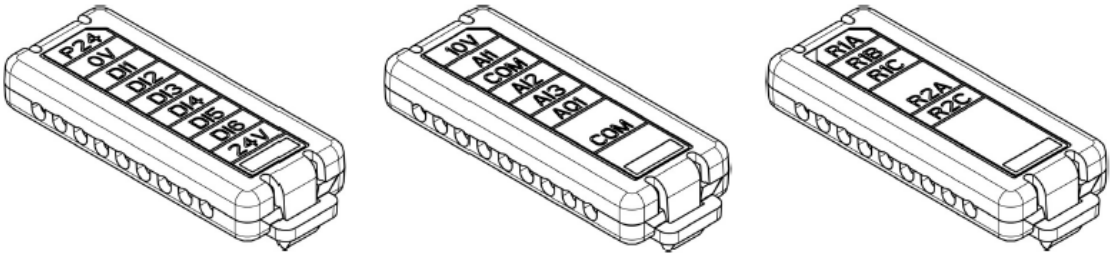


ATV71 to ATV900 Fast Wiring Exchange Tool

Description

When replacing an ATV71 with an ATV900, the ATV71 to ATV900 Fast Wiring Exchange Tool (SRVMODATVC9xx) makes wiring control and power terminals much easier.

More information can be found in the instruction sheet coming with the tool.



Digital Inputs

The following table provides the list and characteristics of Digital inputs available on ATV61/71, ATV630, ATV930 and ATV340 drives

Digital Inputs					Characteristics				
ATV61/71	ATV630	ATV930	ATV340 (Frame Size 1 to 3)	ATV340 (Frame Size 4 & 5)	**ATV61/71**	**ATV630**	**ATV930**	**ATV340 (Frame Size 1 to 3)**	**ATV340 (Frame Size 4 & 5)**
LI1	DI1	DI1	DI1	DI1	• +24 V ⎓ (max. 30 V) • Impedance 3.5 kΩ • Reaction time: 2 ms ± 0.5 ms Switch SW1 Source (factory setting): • State 0 : < 5 V ⎓ • State 1: > 11 V ⎓ Switch SW1 Sink Int or Sink Ext: • State 0: > 16 V ⎓ • State 1: < 10 V ⎓	6 programmable logic inputs 24 Vdc, comply with IEC/EN 61131-2 logic type 1 • Positive logic (Source): State 0 if ≤ 5 Vdc or logic input not wired, state 1 if ≥ 11 Vdc • Negative logic (Sink):State 0 if ≥16 Vdc or logic input not wired, state 1 if ≤ 10 Vdc • Impedance 3.5 kΩ • Maximum voltage: 30 Vdc • Sampling time: 2 ms + 0.5 ms maximum Multiple assignment makes it possible to configure several functions on one input (example: DI1 assigned to forward and preset speed 2, DI3 assigned to reverse and preset speed 3).	8 programmable logic inputs 24 Vdc, comply with IEC/EN 61131-2 logic type 1 • Positive logic (Source): State 0 if ≤ 5 Vdc or logic input not wired, state 1 if ≥ 11 Vdc • Negative logic (Sink):State 0 if ≥16 Vdc or logic input not wired, state 1 if ≤ 10 Vdc • Impedance 3.5 kΩ • Maximum voltage: 30 Vdc • Sampling time: 2 ms + 0.5 ms maximum Multiple assignment makes it possible to configure several functions on one input (example: DI1 assigned to forward and preset speed 2, DI3 assigned to reverse and preset speed 3).	5 programmable logic inputs. 24 Vdc input voltage Comply with IEC/EN 61131-2 logic type 1 • Positive logic (Source): State 0 if ≤ 5 Vdc or logic input not wired, state 1 if ≥ 11 Vdc • Negative logic (Sink): State 0 if≥16 Vdc or logic input not wired, state 1 if ≤ 10 Vdc • Impedance 4.4 kΩ • Maximum voltage: 30 Vdc • Sampling time: 2 ms + 0.5 ms maximum Multiple assignment makes it possible to configure several functions on one input (example: DI1 assigned to forward and preset speed 2, DI3 assigned to reverse and preset speed 3).	8 programmable logic inputs 24 Vdc, comply with IEC/EN 61131-2 logic type 1 • Positive logic (Source): State 0 if 5 Vdc or logic input not wired, state 1 if 11 Vdc • Negative logic (Sink):State 0 if 16 Vdc or logic input not wired, state 1 if 10 Vdc • Impedance 3.5 kΩ • Maximum voltage: 30 Vdc • Sampling time: 2 ms + 0.5 ms maximum Multiple assignment makes it possible to configure several functions on one input (example: DI1 assigned to forward and preset speed 2, DI3 assigned to reverse and preset speed 3).
LI2	DI2	DI2	DI2	DI2					
LI3	DI3	DI3	DI3	DI3					
LI4	DI4	DI4	DI4	DI4					
LI5	DI5[1]	DI5	DI5	DI5					

Digital Inputs					Characteristics				
ATV61/71	ATV630	ATV930	ATV340 (Frame Size 1 to 3)	ATV340 (Frame Size 4 & 5)	ATV61/71	ATV630	ATV930	ATV340 (Frame Size 1 to 3)	ATV340 (Frame Size 4 & 5)
LI6	DI6[1]	DI6			Switch SW2 on LI (factory setting): • Same characteristics as logic inputs LI1 to LI5 Or Switch SW2 on PTC: • Trip threshold 3 kΩ, reset threshold 1.8 kΩ • Short-circuit detection threshold < 50 Ω			-	
-	-	DI7[2]			-	-		-	
-	-	DI8[2]			-	-		-	

[1] DI5 and DI6 on ATV630 can also be used as Pulse Inputs with the following characteristics:

[2] DI7 and DI8 on ATV930 and ATV340 (Frame Size 4 & 5) can also be used as Pulse Inputs with the following characteristics:

Digital Inputs			Characteristics
ATV630	ATV930	ATV340 (Frame Size 4 & 5)	
DI5 DI6	DI7 DI8	DI7 DI8	• Programmable Pulse inputs • Comply with level 1 PLC, IEC 65A-68 standard • State 0 if < 0.6 Vdc, state 1 if > 2.5 Vdc • Pulse counter 0...30 kHz • Frequency range: 0…30 kHz • Cyclic ratio: 50 % ± 10 % • Maximum input voltage 30 Vdc, < 10 mA • Sampling time: 5 ms + 1 ms maximum

Digital Outputs

The following table provides the list and characteristics of Digital outputs available on ATV61/71, ATV630, ATV930 and ATV340 drives

Digital Outputs					Characteristics				
ATV61/71	ATV630	ATV930	ATV340 (Frame Size 1 to 3)	ATV340 (Frame Size 4 & 5)	ATV61/71	ATV630	ATV930	ATV340 (Frame Size 1 to 3)	ATV340 (Frame Size 4 & 5)
AO1	Option Module only	DQ-	DQ1	DQ-	Can be configured as: • logic output: 0 to +10V or 0 to 20 mA.	-	Digital output configurable by switch • Insulated • Maximum voltage: 30 Vdc • Maximum current: 100 mA • Frequency range: 0...1 kHz • Positive/Negative logic is managed by user external wiring.	2 programmable logic inputs/outputs, using configuration menus [DQ1 Configuration] do1 and [DQ2 Configuration] do2 Digital Output • Insulated, Input impedance 4.4 kΩ • Maximum voltage: 30 Vdc • Maximum output current: 100 mA • Frequency range: 0⋯1 kHz • Output Positive/Negative logic is managed by user external wiring. Digital Input: Inputs comply with IEC/EN 61131-2 logic type 1 • Positive logic (Source): State 0 if≤5 Vdc or logic input not wired, state 1 if≥11 Vdc • Negative logic (Sink): State 0 if≥16 Vdc or logic input not wired, state 1 if≤10 Vdc • Maximum sampling time: 2 ms + 0.5 ms maximum Multiple assignment makes it possible to configure several functions on one input	Digital output configurable by switch • Insulated • Maximum voltage: 30 Vdc • Maximum current: 100 mA • Frequency range: 0...1 kHz • Positive/Negative logic is managed by user external wiring.
-	-	DQ+[1]	DQ2	DQ+[1]	-	-			

[1] DQ+ on ATV930 and ATV340 (Frame Size 4 &5) can also be used as Pulse Output with the following characteristics (see table next page):

Digital Outputs		Characteristics
ATV930	ATV340 (Frame Size 4 & 5)	
DQ+	DQ+	• Pulse train output configurable by switch • Open collector not insulated • Maximum voltage: 30 Vdc • Maximum current: 20 mA • Frequency range: 0...30 kHz

Analog Inputs

The following table provides the list and characteristics of Analog inputs available on ATV61/71, ATV630, ATV930 and ATV340 drives

Analog Inputs					Characteristics				
ATV61/71	**ATV630**	**ATV930**	**ATV340 (Frame Size 1 to 3)**	**ATV340 (Frame Size 4 & 5)**	**ATV61/71**	**ATV630**	**ATV930**	**ATV340 (Frame Size 1 to 3)**	**ATV340 (Frame Size 4 & 5)**
AI1+ AI1-	AI1	AI1[3]	AI1[2]	AI1[3]	• -10 to +10 V ⎓ (max. safe voltage 24 V) • Reaction time: 2 ms ± 0.5 ms, 11-bit resolution + 1 sign bit • Accuracy ± 0.6% for Δ θ = 60°C (108°F), linearity ± 0.15% of max. value	Software-configurable V/A : voltage or current analog input • Voltage analog input 0...10 Vdc, impedance 30 kΩ, • Current analog input X-Y mA by programming X and Y from 0...20 mA, with impedance 250 Ω • Sampling time: 5 ms + 1 ms maximum • Resolution 12 bits • Accuracy: ± 0.6% for a temperature variation of 60°C (108°F) • Linearity ± 0.15% of maximum value	Software-configurable V/A : voltage or current analog input • Voltage analog input 0...10 Vdc, impedance 31.5 kΩ, • Current analog input X-Y mA by programming X and Y from 0...20 mA, with impedance 250 Ω • Sampling time: 1 ms + 1 ms maximum • Resolution 12 bits • Accuracy: ± 0.6% for a temperature variation of 60°C (108°F) • Linearity ± 0.15% of maximum value	Software-configurable V/A: voltage or current analog input • Voltage analog input 0...10 Vdc, impedance 30 kΩ, • Current analog input X-Y mA by programming X and Y from 0...20 mA, with impedance 250 Ω • Sampling time: 1 ms + 1 ms maximum • Resolution 12 bits • Accuracy: ± 0.6% for a temperature variation of 60° C (108° F) • Linearity ± 0.15% of maximum value	Software-configurable V/A: voltage or current analog input • Voltage analog input 0...10 Vdc, impedance 30 kΩ, • Current analog input X-Y mA by programming X and Y from 0...20 mA, with impedance 250 Ω • Sampling time: 1 ms + 1 ms maximum • Resolution 12 bits • Accuracy: ± 0.6% for a temperature variation of 60° C (108° F) • Linearity ± 0.15% of maximum value
AI2	AI2[1]	AI2	-	AI2	• Analog input 0 to +10 V ⎓ (max. safe voltage 24 V), • impedance 30 kΩ or • Analog input X - Y mA, X and Y being programmable from 0 to 20 mA • Impedance 250 Ω • Reaction time: 2 ms ± 0.5 ms 11-bit resolution, accuracy ± 0.6% for Δ θ = 60°C (108°F), linearity ± 0.15% of max.value		Voltage bipolar analog input –10...10 Vdc, impedance 31.5 kΩ • Sampling time: 1 ms + 1 ms maximum • Resolution 12 bits • Accuracy: ± 0.6% for a temperature variation of 60°C (108°F) • Linearity ± 0.15% of maximum value	-	

Analog Inputs					Characteristics				
ATV61/71	**ATV630**	**ATV930**	**ATV340 (Frame Size 1 to 3)**	**ATV340 (Frame Size 4 & 5)**	**ATV61/71**	**ATV630**	**ATV930**	**ATV340 (Frame Size 1 to 3)**	**ATV340 (Frame Size 4 & 5)**
-	AI3[1]	AI3[3]	-	AI3[3]	-		Software-configurable V/A : voltage or current analog input • Voltage analog input 0...10 Vdc, impedance 31.5 kΩ, • Current analog input X-Y mA by programming X and Y from 0...20 mA, with impedance 250 Ω • Sampling time: 1 ms + 1 ms maximum • Resolution 12 bits • Accuracy: ± 0.6% for a temperature variation of 60°C (108°F) • Linearity ± 0.15% of maximum value	-	
PWR	$\overline{\text{STOA}}$ $\overline{\text{STOB}}$	$\overline{\text{STOA}}$ $\overline{\text{STOB}}$	$\overline{\text{STOA}}$ $\overline{\text{STOB}}$	$\overline{\text{STOA}}$ $\overline{\text{STOB}}$	• 24 Vdc power supply (max. 30 V) • Impedance 1.5 kΩ • State 0 if < 2 V, state 1 if > 17 V • Reaction time: 10 ms	Safety Function STO Inputs Refer to the Embedded Safety Function Manual (EAV64334) available on www.se.com	Safety Function STO Inputs Refer to the ATV900 Embedded Safety Function manual (NHA80947) available on www.se.com	Safety Function STO Inputs Refer to the Embedded Safety Function Manual (NVE64143) available on www.se.com	Safety Function STO Inputs Refer to the Embedded Safety Function Manual (NVE64143) available on www.se.com

[1] AI2 and AI3 on ATV630 can also be used as Sensor Inputs with the following characteristics:
[2] AI1 on ATV340 (Frame Size 1 to 3) can also be used as Sensor Input with the following characteristics:
[3] AI1 and AI3 on ATV930 and ATV340 (Frame Size 4 & 5) can also be used as Sensor Inputs with the following characteristics:

Analog Inputs				Characteristics
ATV630	**ATV930**	**ATV 340 (Frame Size 1 to 3)**	**ATV340 (Frame Size 4 & 5)**	
AI2 AI3	AI1 AI3	AI1	AI1 AI3	• Software-configurable PT100/PT1000 or KTY84 or PTC or Water level sensor • PT100 o 1 or 3 thermal sensors mounted in series (configurable by software) o Sensor current: 5 mA o Range –20...200°C (–4...392°F) o Accuracy +/– 4°C (7.2°F) for a temperature variation of 60°C (108°F) • PT1000 o 1 or 3 thermal sensors mounted in series (configurable by software) o Thermal sensor current: 1 mA o Range –20...200°C (–4...392°F) o Accuracy +/– 4°C (7.2°F) for a temperature variation of 60°C (108°F) • PTC o 6 sensors maximum mounted in series o Sensor current: 1 mA o Nominal value: < 1.5 kΩ o Overheat trigger threshold: 2.9 kΩ ± 0.2 kΩ o Overheat reset threshold: 1.575 kΩ ± 75 Ω o Low impedance detection threshold: 50 Ω –10 Ω/+20 Ω • KTYp84 o 1 thermal sensor o Thermal sensor current: 1 mA o Range –20...200°C (–4...392°F) o Accuracy +/– 4°C (7.2°F) for a temperature variation of 60°C (108°F) • Water Level Sensor (For ATV630 only) • Sensitivity: 0...1 MΩ, adjustable by software o Water level sensor current: 0.3 mA...1 mA maximum o Adjustable delay: 0...10 s

Analog Outputs

The following table provides the list and characteristics of Analog Outputs available on ATV61/71, ATV630, ATV930 and ATV340 drives

Analog Outputs					Characteristics			
ATV61/71	**ATV630**	**ATV930**	**ATV340 (Frame Size 1 to 3)**	**ATV340 (Frame Size 4 & 5)**	**ATV61/71**	**ATV630**	**ATV930**	**ATV340**
AO1	AQ1 AQ2	AQ1 AQ2	AQ1	AQ1 AQ2	• Analog output 0 to +10 V c, load impedance greater than 50 kΩ or • Analog output X - Y mA, X and Y being programmable from 0 to 20 mA • Max. load impedance 500 Ω • 10-bit resolution, reaction time: 2 ms ± 0.5 ms • Accuracy ± 1% for Δθ = 60°C (108°F), linearity ± 0.2% of max. value or • logic output: 0 to +10V or 0 to 20 mA.	AQ: Analog output software-configurable for voltage or current • Voltage analog output 0...10 Vdc, minimum. Minimum load impedance 470 Ω, • Current analog output X-Y mA by programming X and Y from 0...20 mA, maximum load impedance 500 Ω • Sampling time: 10 ms + 1 ms maximum • Resolution 10 bits • Accuracy: ± 1% for a temperature variation of 60°C (108°F) • Linearity ± 0.2%	AQ: Analog output software-configurable for voltage or current • Voltage analog output 0...10 Vdc, minimum. Minimum load impedance 470 Ω, • Current analog output X-Y mA by programming X and Y from 0...20 mA, maximum load impedance 500 Ω • Sampling time: 5 ms + 1 ms maximum • Resolution 10 bits • Accuracy: ± 1% for a temperature variation of 60°C (108°F) • Linearity ± 0.2%	AQ: Analog output software-configurable for voltage or current • Voltage analog output 0...10 Vdc, minimum. Minimum load impedance 470 Ω, • Current analog output X-Y mA by programming X and Y from 0...20 mA, maximum load impedance 500 Ω • Sampling time: 5 ms + 1 ms maximum • Resolution 10 bits • Accuracy: ± 1% for a temperature variation of 60°C (108°F) • Linearity ± 0.2%

Power Supplies

The following table provides the list and characteristics of power supplies available on ATV61/71, ATV600, ATV900 and ATV340 drives

Power Supplies					Characteristics				
ATV61/71	**ATV630**	**ATV930**	**ATV340 (Frame Size 1 to 3)**	**ATV340 (Frame Size 4 & 5)**	**ATV61/71**	**ATV630**	**ATV930**	**ATV340 (Frame Size 1 to 3)**	**ATV340 (Frame Size 4 & 5)**
+10	10V	10V	10V	10V	• +10 V ⎓ (10.5 V ± 0.5 V) • 10 mA max.	Internal supply for the analog inputs • 10.5 Vdc • Tolerance ± 5% • Current: maximum 10 mA Short circuit protected			
P24	P24		P24	P24	• +24 V ⎓ (min. 19 V, max. 30 V) • Power 30 Watts	External input supply +24 Vdc • Tolerance: minimum 19 Vdc, maximum 30 Vdc Current: maximum 0.8 A			
0V	0V	0V	0V	0V	0V	0 V for P24			
+24	24V	24V	24V	24V	Switch SW1 in Source or Sink Int position: • +24 V ⎓ power supply (min. 21 V, max. 27 V), protected against short-circuits and overloads • Max. current available for customers 200 mA Switch SW1 in Sink Ext position: • Input for external +24 V ⎓ power supply for the logic inputs	• +24 Vdc • Tolerance: minimum 20.4 Vdc, maximum 27 Vdc • Current: maximum 200 mA for both 24 Vdc terminals • Terminal protected against overload and short-circuit • In Sink Ext position, this supply is powered by external PLC supply			

Relays

The following table provides the list and characteristics of relays available on ATV61/71, ATV600, ATV900 and ATV340 drives

Relays			Characteristics				
ATV61/71	**ATV630**	**ATV930**	**ATV61/71**	**ATV630**	**ATV930**	**ATV340 (Frame Size 1 to 3)**	**ATV340 (Frame Size 4 & 5)**
R1A R1B R1C	R1A R1B R1C	R1A R1B R1C	• Minimum switching capacity: 3 mA for 24 V ⎓ • Maximum switching capacity on resistive load: 5 A for 250 V ∿ or 30 V ⎓ • Maximum switching current on inductive load (cos ϕ = 0.4 L/R = 7 ms): 2 A for 250 V ∿ or 30 V ⎓ • Reaction time: 7 ms ± 0.5 ms • Service life: 100,000 operations at max. switching power	**Output Relay 1** • Minimum switching capacity: 5 mA for 24 Vdc • Maximum switching current on resistive load: 3 A for 250 Vac (OVC II) and 30 Vdc • Maximum switching current on inductive load: 2 A for 250 Vac (OVC II) and 30 Vdc. Inductive load must be equipped with a voltage surge suppression device according to ac or dc operation with total energy dissipation greater than the inductive energy stored in the load. Refer to sections Output Relay with Inductive AC Loads (see Installation Manual) and Output Relay with Inductive DC Loads (see Installation Manual) . • Refresh time: 5 ms ± 0.5 ms • Service life: 100,000 operations at maximum switching current	**Output Relay 1** • Minimum switching capacity: 5 mA for 24 Vdc • Maximum switching current on resistive load: • 3 A for 250 Vac (OVC II) and 30 Vdc • Maximum switching current on inductive load: 2 A for 250 Vac (OVC II) and 30 Vdc. Inductive load must be equipped with a voltage surge suppression device according to ac or dc operation with total energy dissipation greater than the inductive energy stored in the load. Refer to sections Output Relay with Inductive AC Loads (see Installation Manual) and Output Relay with Inductive DC Loads (see Installation Manual) . • Refresh time: 1 ms ± 0.25 ms Service life: 100,000 operations at maximum switching current	**Output Relay 1** • Minimum switching capacity: 5 mA for 24 Vdc • Maximum switching current on resistive load: • 3 A for 250 Vac (OVC II) and 30 Vdc • Maximum switching current on inductive load: 2 A for 250 Vac (OVC II) and 30 Vdc. Inductive load must be equipped with a voltage surge suppression device according to ac or dc operation with total energy dissipation greater than the inductive energy stored in the load. Refer to sections Output Relay with Inductive AC Loads (see Installation Manual) and Output Relay with Inductive DC Loads (see Installation Manual) . • Refresh time: 1 ms ± 0.25 ms Service life: 100,000 operations at maximum switching current	**Output Relay 1** • Minimum switching capacity: 5 mA for 24 Vdc • Maximum switching current on resistive load: • 3 A for 250 Vac (OVC II) and 30 Vdc • Maximum switching current on inductive load: 2 A for 250 Vac (OVC II) and 30 Vdc. Inductive load must be equipped with a voltage surge suppression device according to ac or dc operation with total energy dissipation greater than the inductive energy stored in the load. Refer to sections Output Relay with Inductive AC Loads (see Installation Manual) and Output Relay with Inductive DC Loads (see Installation Manual) . • Refresh time: 1 ms ± 0.25 ms Service life: 100,000 operations at maximum switching current

Relays			Characteristics				
ATV61/71	ATV630	ATV930	ATV61/71	ATV630	ATV930	ATV340 (Frame Size 1 to 3)	ATV340 (Frame Size 4 & 5)
R2A R2C	R2A R2C	R2A R2C		**Output Relay 2** • Minimum switching capacity: 5 mA for 24 Vdc • Maximum switching current on resistive load: • 5 A for 250 Vac (OVCII) and 30 Vdc • Maximum switching current on inductive load: • 2 A for 250 Vac (OVCII) and 30 Vdc. Inductive load must be • equipped with a voltage surge suppression device according to ac or • dc operation with total energy dissipation greater than the inductive • energy stored in the load. Refer to sections Output Relay with • Inductive AC Loads (see Installation Manual) and Output Relay with Inductive • DC Loads (see Installation Manual) • Refresh time: 5 ms ± 0.5 ms • Service life: ○ 100,000 operations at maximum switching current ○ 1,000,000 operations at 0.5 A	**Output Relay 2** • Minimum switching capacity: 5 mA for 24 Vdc • Maximum switching current on resistive load: • 5 A for 250 Vac (OVCII) and 30 Vdc • Maximum switching current on inductive load: • 2 A for 250 Vac (OVCII) and 30 Vdc. Inductive load must be • equipped with a voltage surge suppression device according to ac or • dc operation with total energy dissipation greater than the inductive • energy stored in the load. Refer to sections Output Relay with • Inductive AC Loads (see Installation Manual) and Output Relay with Inductive • DC Loads (see Installation Manual) • Refresh time: 1 ms ± 0.25 ms • Service life: ○ 100,000 operations at maximum switching current ○ 1,000,000 operations at 0.5 A	**Output Relay 2** • Minimum switching capacity: 5 mA for 24 Vdc • Maximum switching current on resistive load: • 5 A for 250 Vac (OVCII) and 30 Vdc • Maximum switching current on inductive load: • 2 A for 250 Vac (OVCII) and 30 Vdc. Inductive load must be • equipped with a voltage surge suppression device according to ac or • dc operation with total energy dissipation greater than the inductive • energy stored in the load. Refer to sections Output Relay with • Inductive AC Loads (see Installation Manual) and Output Relay with Inductive • DC Loads (see Installation Manual) • Refresh time: 1 ms ± 0.25 ms • Service life: ○ 100,000 operations at maximum switching current ○ 1,000,000 operations at 0.5 A	**Output Relay 2** • Minimum switching capacity: 5 mA for 24 Vdc • Maximum switching current on resistive load: • 5 A for 250 Vac (OVCII) and 30 Vdc • Maximum switching current on inductive load: • 2 A for 250 Vac (OVCII) and 30 Vdc. Inductive load must be • equipped with a voltage surge suppression device according to ac or • dc operation with total energy dissipation greater than the inductive • energy stored in the load. Refer to sections Output Relay with • Inductive AC Loads (see Installation Manual) and Output Relay with Inductive • DC Loads (see Installation Manual) • Refresh time: 1 ms ± 0.25 ms • Service life: ○ 100,000 operations at maximum switching current 1,000,000 operations at 0.5 A

Relays			Characteristics				
ATV61/71	ATV630	ATV930	ATV61/71	ATV630	ATV930	ATV340 (Frame Size 1 to 3)	ATV340 (Frame Size 4 & 5)
-	R3A R3C	R3A R3C	-	**Output Relay 3** • Minimum switching capacity: 5 mA for 24 Vdc • Maximum switching current on resistive load: • 5 A for 250 Vac (OVCII) and 30 Vdc • Maximum switching current on inductive load: • 2 A for 250 Vac (OVCII) and 30 Vdc. Inductive load must be • equipped with a voltage surge suppression device according to ac or • dc operation with total energy dissipation greater than the inductive • energy stored in the load. Refer to sections Output Relay with • Inductive AC Loads (see Installation Manual) and Output Relay with Inductive • DC Loads (see Installation Manual) • Refresh time: 5 ms ± 0.5 ms • Service life: ○ 100,000 operations at maximum switching current ○ 1,000,000 operations at 0.5 A	**Output Relay 3** • Minimum switching capacity: 5 mA for 24 Vdc • Maximum switching current on resistive load: • 5 A for 250 Vac (OVCII) and 30 Vdc • Maximum switching current on inductive load: • 2 A for 250 Vac (OVCII) and 30 Vdc. Inductive load must be • equipped with a voltage surge suppression device according to ac or • dc operation with total energy dissipation greater than the inductive • energy stored in the load. Refer to sections Output Relay with • Inductive AC Loads (see Installation Manual) and Output Relay with Inductive • DC Loads (see Installation Manual) • Refresh time: 1 ms ± 0.25 ms • Service life: ○ 100,000 operations at maximum switching current ○ 1,000,000 operations at 0.5 A	-	**Output Relay 3** • Minimum switching capacity: 5 mA for 24 Vdc • Maximum switching current on resistive load: • 5 A for 250 Vac (OVCII) and 30 Vdc • Maximum switching current on inductive load: • 2 A for 250 Vac (OVCII) and 30 Vdc. Inductive load must be • equipped with a voltage surge suppression device according to ac or • dc operation with total energy dissipation greater than the inductive • energy stored in the load. Refer to sections Output Relay with • Inductive AC Loads (see Installation Manual) and Output Relay with Inductive • DC Loads (see Installation Manual) • Refresh time: 1 ms ± 0.25 ms • Service life: ○ 100,000 operations at maximum switching current ○ 1,000,000 operations at 0.5 A

I/O Extension Modules

The following table provides the list and characteristics of I/O Extension Modules available on ATV61, ATV/71, ATV630, ATV930 and ATV340 drives

	AT61/V71				ATV630 / ATV930		ATV340 (All Frame Sizes)	
Option Module	VW3A3201		VW3A3202		VW3A3203		VW3A3204	
Logic Inputs / Digital Inputs	4	24 V ⎓ positive logic (Source) or negative logic (Sink) inputs	4	24 V ⎓ positive logic (Source) or negative logic (Sink) inputs	6	24 V ⎓ positive or negative digital inputs Sampling: 1 ms max	-	-
Analog Inputs	-	-		1 differential current analog input 0...20 mA 1 software-configurable voltage (0...10 V ⎓) or current (0...20 mA) analog input	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	-	-
Logic outputs / Digital outputs	2	24 V ⎓ open collector positive logic (Source) or negative logic (Sink) outputs	2	24 V ⎓ open collector positive logic (Source) or negative logic (Sink) outputs	2	Assignable digital outputs	-	-
Analog Outputs	-	-	2	Software-configurable voltage (± 10 V ⎓, 0...10 V) or current (0...20 mA) analog outputs	-	-	-	-
Relay Outputs	1	Relay logic output (“C/O” contact)	1	Relay logic output	-	-	3	Relay outputs with NO contacts
Inputs for PTC probes	1	Input for 6 PTC probes This PTC probe input must never be used to protect an ATEX motor in applications in explosive atmospheres	1	Input for 6 PTC probes This PTC probe input must never be used to protect an ATEX motor in applications in explosive atmospheres	-	-	-	-
Frequency Control input	-	-	1		-	-	-	-

Communication

EtherNet/IP

The following table provides the list of EtherNet/IP capabilities (integrated or option) available on ATV61/71, ATV630, ATV930 and ATV340 drives

	AT61/V71	ATV630		ATV930	ATV340 (All Frame Sizes)
Integrated	-	-		1 EtherNet/IP and Modbus TCP dual port	1 EtherNet/IP and Modbus TCP dual port (ATV340●●●●●E only)
Option Module	VW3A3316	VW3A3720	VW3A3721	-	-

ModBus TCP

The following table provides the list of ModBus TCP capabilities (integrated or option) available on ATV61/71, ATV630, ATV930 and ATV340 drives

	AT61/V71	ATV630		ATV930	ATV340 (All Frame Sizes)
Integrated	-	1 Modbus TCP dual port		1 EtherNet/IP and Modbus TCP dual port	1 EtherNet/IP and Modbus TCP dual port (ATV340●●●●●E only)
Option Module	VW3A3310D	VW3A3720	VW3A3721	-	-

CANopen

The following table provides the list of CANopen capabilities (integrated or option) available on ATV61/71, ATV630, ATV930 and ATV340 drives

	AT61/V71	ATV630			ATV930			ATV340 (All Frame Sizes)		
Integrated	-	-			-					
Option Module	-	VW3A3608	VW3A3618	VW3A3628	VW3A3608	VW3A3618	VW3A3628	VW3A3608	VW3A3618	VW3A3628

PROFINET

The following table provides the list of PROFINET capabilities (integrated or option) available on ATV61/71, ATV630, ATV930 and ATV340 drives

	AT61/V71	ATV630		ATV930		ATV340 (All Frame Sizes)	
Integrated	-	-		-		-	
Option Module	VW3A3627	VW3A3627	VW3A3647	VW3A3627	VW3A3647	VW3A3627	VW3A3647

PROFIBUS DP

The following table provides the list of PROFIBUS DP capabilities (integrated or option) available on ATV61/71, ATV630, ATV930 and ATV340 drives

	AT61/V71		ATV630	ATV930	ATV340 (All Frame Sizes)
Integrated	-		-	-	-
Option Module	VW3A3307	VW3A3307S371	VW3A3607	VW3A3607	VW3A3607

DeviceNet

The following table provides the list of DeviceNet capabilities (integrated or option) available on ATV61/71, ATV630, ATV930 and ATV340 drives

	AT61/V71	ATV630	ATV930	ATV340 (All Frame Sizes)
Integrated	-	-		
Option Module	VW3A3309	VW3A3609	VW3A3609	VW3A3609

BACnet

The following table provides the list of BACnet capabilities (integrated or option) available on ATV61/71, ATV630, ATV930 and ATV340 drives

	AT61/V71	ATV630	ATV930	ATV340 (All Frame Sizes)
Integrated	-	-		-
Option Module	VW3A3319	VW3A3725	-	-

Part V
Power Options

What is in This Part?

This part contains the following chapters:

Output filters (ATV600 and ATV900 Only)

Depending on the cable lengths or the type of application, it may be necessary to use output filters:

- Motor chokes used to limit the dv/dt
- Sinus filters that are particularly effective for long cable runs or to reduce electromagnetic motor noise

The following table gives an overview of the means available according to motor characteristics and cable length

Motor cable length (unshielded cable)	Motor conforming to IEC60034-25	Motor NOT conforming to IEC60034-25
1m (3ft) < L < 50m (164ft)	Filter not required	dV/dt filter
50m (164ft) < L < 100m (328ft)	Filter not required	Sinus filter
100m (328ft) < L < 300m (984ft)	Filter not required	Sinus filter
300m (984ft) < L < 500m (1640ft)	dV/dt filter	Sinus filter
500m (1640ft) < L < 1000m (3281ft)	Sinus filter	Sinus filter

NOTE: When calculating cable lengths for the purpose of guarding against these overvoltage situations, a shielded cable should count as twice the length of an unshielded cable. For example, if a shielded cable is 100 m (328 ft) in actual length, it should be considered equal to a 200 m (656 ft) length standard cable in the calculation.

Further detailed technical information is available in the following white paper *An Improved Approach for Connecting VSD and Electric Motors* (998-2095-10-17-13AR0_EN) available on www.se.com

EMC Filters

Integrated EMC filters

Both Altivar Process and ATV61/71 drives have integrated radio interference input filters in accordance with the EMC standard for variable speed electrical power drive “products” IEC/EN 61800-3, edition 2, category C2 or C3 in environment 1 or 2, and to comply with the European EMC (electromagnetic compatibility) directive. Nevertheless, Altivar Process drives have improved performance with the integrated filters.

Performance comparison With integrated filters

<table>
<tr><th rowspan="3">Power range</th><th colspan="4">Maximum length of shielded cable (m)(1)</th></tr>
<tr><th colspan="2">IEC/EN 61800-3
category C2</th><th colspan="2">IEC/EN 61800-3
category C3</th></tr>
<tr><th>ATV61/71</th><th>ATV600 / ATV900</th><th>ATV61/71</th><th>ATV600 / ATV900</th></tr>
<tr><td>U07N4… U40N4</td><td>10</td><td rowspan="2">50</td><td rowspan="2">10</td><td rowspan="3">150</td></tr>
<tr><td>U55N4…HD15N4</td><td rowspan="4">Additional filter Required</td></tr>
<tr><td>D18N4…D45N4</td><td rowspan="3">50</td></tr>
<tr><td>D55N4…C16N4</td><td rowspan="2">Additional filter Required</td></tr>
<tr><td>C22N4…C31N4</td><td>50</td></tr>
<tr><td>61HU30Y…HD90Y</td><td>-</td><td>-</td><td>25</td><td>25</td></tr>
</table>

(1) The maximum lengths are given as examples only, as they vary depending on the stray capacitance of the motors and the cables used. If motors are connected in parallel, it is the total length of all cables that should be taken into account

Additional EMC Input filters

Additional EMC input filters can be used to meet more stringent requirements and are designed to reduce conducted emissions on the line supply below the limits of standard IEC/EN 61800-3 category C1, C2 or C3.

	Cable length (m) ATV71					Cable length (m) ATV900			
ADDITIONAL INPUT EMC BOARDS									
FILTER REFERENCE for ATV71	C1		C2		FILTER REFERENCE for ATV900	C1	C2	C3	ATV900 REFERENCE
	LF (Low Switching Frequency)	HF (High Switching Frequency)	LF (Low Switching Frequency)	HF (High Switching Frequency)					
	200/240 V					200/240 V			
VW3A4401	50	20	100	50	VW3A4701	50	150	300	ATV930U07M3...U15M3
VW3A4402	50	20	100	50	VW3A4702	50	150	300	ATV930U22M3...U30M3
VW3A4403	50	20	100	50	VW3A4703	50	150	300	ATV930U40M3...U75M3
VW3A4404	50	20	100	50	VW3A4704	50	150	300	ATV930D11M3
VW3A4405	50	25	100	50	VW3A4705	50	150	300	ATV930D15M3
VW3A4406	50	25	100	50	VW3A4706	50	150	300	ATV930D18M3...D22M3
VW3A4408	50	25	100	50	VW3A4707	50	150	300	ATV930D30M3...D37M3 ATV930D30M3C...D37M3C
VW3A4410	50	25	100	50	VW3A4708	50	150	300	ATV930D45M3 ATV930D45M3C
-	-	-	-	-	VW3A4709	50	150	300	ATV930D55M3C
-	-	-	-	-	VW3A4710	50	150	300	ATV930D75M3C

	Cable length (m) ATV71					Cable length (m) ATV900			
ADDITIONAL INPUT EMC BOARDS									
FILTER REFERENCE for ATV71	**C1**		**C2**		**FILTER REFERENCE for ATV900**	**C1**	**C2**	**C3**	**ATV900 REFERENCE**
	LF (Low Switching Frequency)	HF (High Switching Frequency)	LF (Low Switching Frequency)	HF (High Switching Frequency)					
	380/480 V					380/480 V			
VW3A4401	50	20	100	50	VW3A4701	50	150	300	ATV930U07N4...U22N4 ATV950U07N4...U22N4 ATV950U07N4E...U22N4E
VW3A4402	50	20	100	50	VW3A4702	50	150	300	ATV930U30N4...U55N4 ATV950U30N4...U55N4 ATV950U30N4E...U55N4E
VW3A4403	50	20	100	50	VW3A4703	50	150	300	ATV930U75N4...D15N4 ATV950U75N4...D15N4 ATV950U75N4E...D15N4E
VW3A4404	50	20	100	50	VW3A4704	50	150	300	ATV930D18N4...D22N4 ATV950D18N4...D22N4 ATV950D18N4E...D22N4E
VW3A4405	100	100	300	200	VW3A4705	50	150	300	ATV930D30N4 ATV950D30N4 ATV950D30N4E
VW3A4406	100	100	300	200	VW3A4706	50	150	300	ATV930D37N4...D45N4 ATV950D37N4...D45N4 ATV950D37N4E...D45N4E
VW3A4407	100	100	300	200	VW3A4707	50	150	300	ATV930D55N4 ATV930D55N4C ATV950D55N4 ATV950D55N4E

	Cable length (m) ATV71					Cable length (m) ATV900			
VW3A4408	100	100	300	200	VW3A4708	50	150	300	ATV930D75N4...D90N4 ATV930D75N4C...D90N4C ATV950D75N4...D90N4 ATV950D75N4E...D90N4E
VW3A4410	50	25	300	150	VW3A4709	50	150	300	ATV930C11N4C ATV930C13N4C
VW3A4411	50	25	300	150	VW3A4710	50	150	300	ATV930C16N4C
VW3A4412	50	25	300	150	VW3A4411	50	150	300	ATV930C22N4 ATV930C22N4C...C31N4C
VW3A4413	50	25	300	150					

Refer to the product catalog available on www.se.com for more information about the additional EMC input filters.

Braking Resistors and Braking Units

Braking Resistors

Braking resistors allow the drives to operate while braking to a standstill or during slowdown braking, by dissipating the braking energy. They enable maximum transient braking torque. ATV630/650 are not compatible with braking resistors.

For a detailed description and catalog numbers, refer to the Catalog available on www.se.com.

For mounting instructions, wiring diagrams and other information, refer to the instruction sheet NHA87388 supplied with the resistor and available on www.se.com.

ATV930/950 Minimum Resistor Values

Minimum allowed value of the resistor to be connected

Catalog Number	Minimum Value in Ω	Catalog Number	Minimum Value in Ω	Catalog Number	Minimum Value in Ω
ATV930U07N4	56	ATV930U30M3	22	ATV930D15Y6	12
ATV930U15N4	56	ATV930U40M3	16	ATV930D18Y6	12
ATV930U22N4	56	ATV930U55M3	11	ATV930D22Y6	12
ATV930U30N4	34	ATV930U75M3	8	ATV930D30Y6	12
ATV930U40N4	34	ATV930D11M3	5	ATV930D37Y6	8
ATV930U55N4	23	ATV930D15M3	5	ATV930D45Y6	8
ATV930U75N4	19	ATV930D18M3	5	ATV930D55Y6	8
ATV930D11N4	12	ATV930D22M3	5	ATV930D75Y6	5
ATV930D15N4	15	ATV930D30M3	2.5	ATV930D90Y6	5
ATV930D18N4	15	ATV930D37M3	2.5	ATV950U07N4	56
ATV930D22N4	15	ATV930D45M3	2.5	ATV950U15N4	56
ATV930D30N4	10	ATV930D55M3C	1.4	ATV950U22N4	56
ATV930D37N4	10	ATV930D75M3C	1.4	ATV950U30N4	34
ATV930D45N4	10	ATV930D18S6	10	ATV950U40N4	34
ATV930D55N4	2.5	ATV930D22S6	10	ATV950U55N4	23
ATV930D75N4	2.5	ATV930D30S6	5	ATV950U75N4	19
ATV930D90N4	2.5	ATV930D37S6	5	ATV950D11N4	12
ATV930C11N4C	2.5	ATV930D45S6	5	ATV950D15N4	15
ATV930C13N4C	2.5	ATV930D55S6	2.5	ATV950D18N4	15
ATV930C16N4C	2.5	ATV930D75S6	2.5	ATV950D22N4	15

Catalog Number	Minimum Value in Ω	Catalog Number	Minimum Value in Ω	Catalog Number	Minimum Value in Ω
ATV930C22N4	1.4	ATV930U22Y6	12	ATV950D30N4	10
ATV930C25N4C	1.05	ATV930U30Y6	12	ATV950D37N4	10
ATV930C31N4C	1.05	ATV930U40Y6	12	ATV950D45N4	10
ATV930U07M3	44	ATV930U55Y6	12	ATV950D55N4	2.5
ATV930U15M3	33	ATV930U75Y6	12	ATV950D75N4	2.5
ATV930U22M3	22	ATV930D11Y6	12	ATV950D90N4	2.5
(1) Resistor values apply to both catalog numbers ATV930•••N4 and ATV930•••N4Z.					

NOTE: It is not possible to connect braking resistors on floor standing drives (catalog numbers ATV930•••••F and ATV950•••••F).

ATV340 Minimum Resistor Values

Minimum allowed value of the resistor to be connected

Catalog Number	Minimum Value in Ω	Catalog Number	Minimum Value in Ω
ATV340U07N4	78	ATV340D15N4	16
ATV340U15N4	52	ATV340D18N4	13
ATV340U22N4	52	ATV340D22N4	10
ATV340U30N4	31	ATV340D30N4E	10
ATV340U40N4	31	ATV340D37N4E	10
ATV340U55N4	31	ATV340D45N4E	2.5
ATV340U75N4	28	ATV340D55N4E	2.5
ATV340D11N4	16	ATV340D75N4E	2.5

Braking Units

Braking units allow Altivar Process drives to operate while braking to a standstill or during “generator” operation, by dissipating the energy in the braking resistor.

- ATV930U07M3...D45M3, ATV930U07N4...C22N4, ATV930D15Y6...D90Y6 and ATV950U07N4...D90N4 drives have a built-in dynamic brake transistor.
- For ATV930D55M3C...D75M3C, ATV930C11N4C...C16N4C and ATV930C25N4C...C31N4C drives, a braking unit must be used.

Braking units provide IP 20 protection. Thermal protection is given by an integrated temperature probe.

For drives	Power		Losses	Cable (drive-braking unit)		Cable (braking unit-resistors)		Percentage of conduction time	Minimum resistor value	Reference
	Continuous	Maximum	At continuous power	Cross-section	Maximum length	Cross-section	Maximum length			
kW	kW		W	mm²	m	mm²	m	%	Ohms	
Supply voltage: 200…240 V 50/60 Hz										
ATV930D55M3C ...D75M3C	60	80	400	3 x 120	10	3 x 120	10	5% at 150 kW 15% at 120 kW 50% at 95 kW	1.4	VW3A7106
Supply voltage: 380…480 V 50/60 Hz										
ATV930C11N4C ...C16N4C	100	160	400	2 x 120	5	2 x 120	5	5% at 320 kW 15% at 250 kW 50% at 200 kW	2.5	VW3A7105
ATV930C25N4C ATV930C31N4C	200	420	550	– *(1)*	– *(1)*	2 x 95	50	5% at 420 kW 15% at 320 kW 50% at 250 kW	1	VW3A7101
(1) For the ATV930C25N4C variable speed drive, the braking unit is connected to the drive with internal connections.										

Part VI
Wiring and Mounting

What is in This Part?

This part contains the following chapters:

Power Terminals Wiring

Comparison of the Power Terminals

The following table provides the list and characteristics of the power terminals on ATV61/71, ATV600, ATV900 and ATV340 drives

Terminals				Function			
ATV61/71	**ATV630**	**ATV930**	**ATV340 (All Frame Sizes)**	**ATV61/71**	**ATV630**	**ATV930**	**ATV340 (All Frame Sizes)**
PE or ⏚	PE or ⏚	PE or ⏚	PE or ⏚	Ground connection terminal	Ground connection terminal	Ground connection terminal	Ground connection terminal
R/L1 S/L2 T/L3	R/L1 S/L2 T/L3	R/L1 S/L2 T/L3	R/L1 S/L2 T/L3	AC supply mains	AC supply mains	AC supply mains	AC supply mains
PO	PO	PO	PO	DC bus + polarity	DC bus + polarity (Only available for diagnostics)	DC bus + polarity	DC bus + polarity
PA/+	PA/+	PA/+	PA/+	Output to braking resistor (+ polarity)	-	Output to braking resistor (+ polarity)	Output to braking resistor (+ polarity)
PB	PB	PB	PB	Output to braking resistor	-	Output to braking resistor	Output to braking resistor
PC/-	PC/-	PC/-	PC/-	DC bus - polarity	-	DC bus - polarity	DC bus - polarity
U/T1 V/T2 W/T3	U/T1 V/T2 W/T3	U/T1 V/T2 W/T3	U/T1 V/T2 W/T3	Outputs to the motor	Outputs to the motor	Outputs to the motor	Outputs to the motor

Cable section and tightening torques

Characteristics of the Power Part Terminals

DANGER

HAZARD OF FIRE OR ELECTRIC SHOCK

- Wire cross sections and tightening torques must comply with the specifications provided in this document.
- If you use flexible multi-wire cables for a connection with a voltage higher than 25 Vac, you must use ring type cable lugs or wire ferrules, depending on the wire gauge and the specified stripping length of the cable.

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

Protective earth ground cables

DANGER

ELECTRIC SHOCK CAUSED BY INSUFFICIENT GROUNDING

For the protective earth conductor connected to the grounding screw, verify that the minimum cross section is compliant with the next table.

- Verify compliance with all local and national electrical code requirements as well as all other applicable regulations with respect to grounding of the entire drive system.

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

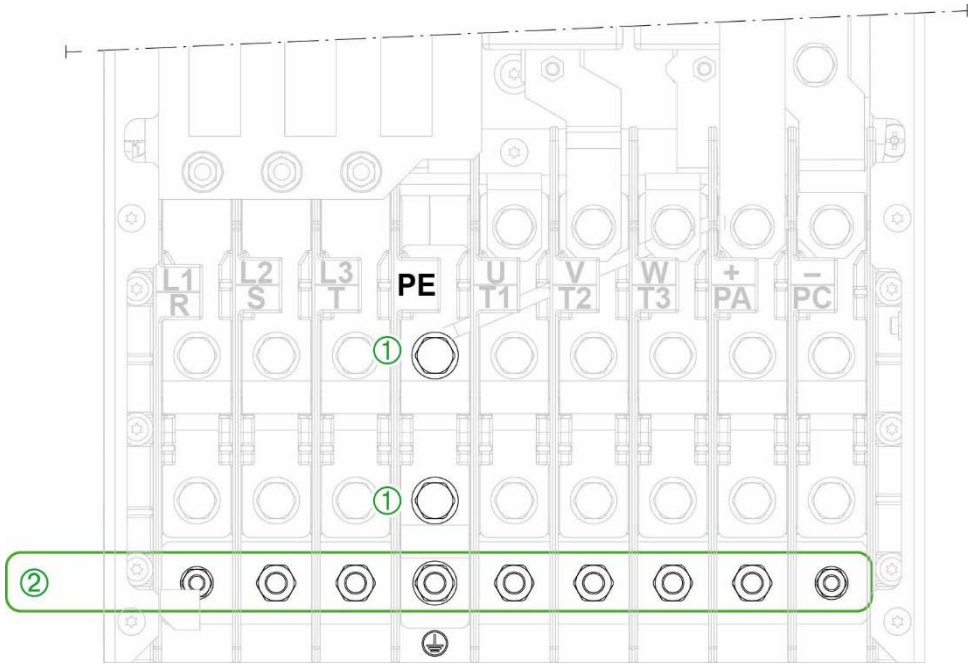
Cross-sectional area of phase conductors of the product S (mm^2) (for copper cables)	Minimum cross-sectional area of the corresponding protective earthing conductor Sp (mm^2) (for copper cables)
S ≤ 10	10
10 < S ≤ 16	S
16 < S ≤ 35	16
35 < S	S/2

Ground Cables

Ground cable cross sections of supply and output ground cables are the same as those given for the supply and output cables.

Tightening torques according to frame size

- Frame sizes 1 to 3: 2.5 N·m (22.1 lb.in)
- Frame size 4: 5 N·m (44.2 lb.in)
- Frame size 5: 25 N·m (221.3 lb.in)
- Frame size 6:
  - ① : 27 N·m (239 lb.in)
  - ② :13.5 N·m (119.5 lb.in)



- Frame size 7: 37.5...50.8 N·m (332. 449 lb.in)

Cross Section: Electrical and Mechanical characteristics

Information about DC Bus Terminals (PA/+, PC/-) are given only for ATV930 products.

DANGER

HAZARD OF FIRE OR ELECTRIC SHOCK

- If the product is used below its rated power and you choose to reduce the wire cross section compared to the specified minimum wire cross section given at rated condition, ensure that the selected wire cross section is compliant with the duty cycle and current load of the application

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

Frame Size 1

Electrical characteristics (*)

ATV•30	Minimum Wire Cross Section at rated condition	
	Supply Terminals (L1, L2, L3) DC Bus Terminals (PA/+, PC/-) (**)	Output Terminals (U, V, W)
	mm² (AWG)	mm² (AWG)
U07••, U15••, U22••, U30N4•, U40N4•	2.5 (14)	2.5 (14)
U55N4•, U30M3	2.5 (14)	4 (12)
U40M3	4 (12)	6 (10)

(*) Minimum wire cross section to be applied when the product is used at rated power.
(**) Wire cross section in case of DC bus voltage supply.

Mechanical characteristics

ATV930	Supply Terminals (L1, L2, L3) Output Terminals (U, V, W) DC Bus Terminals (PA/+, PC/-) (*)			
	Minimum (**)		Maximum	
	Permissible Cross Section (***)	Rated Tightening Torque	Permissible Cross Section	Rated Tightening Torque
	mm² (AWG)	N·m (lbf.in)	mm² (AWG)	N·m (lbf.in)
U07••...U40••, U55N4•	0.5 (20)	1.3 (11.5)	6 (10)	1.3 (11.5)

(*) Wire cross section in case of DC bus voltage supply.
(**) The mechanical characteristics concern power terminal only and do not take into account the cabling equipment (cable clamp, cable gland,...) that are designed for the rated conditions.
(***) Minimum permissible cross sections are provided, if the product is used below its rated power. In this case, ensure that the wire cross section is compliant with the duty cycle and current load.

NOTE: Only use cables with solid wires or rigid stranded wires.

Frame Size 2

Electrical characteristics (*)

ATV•30	Minimum Wire Cross Section at rated condition	
	Supply Terminals (L1, L2, L3) DC Bus Terminals (PA/+, PC/-) (**)	Output Terminals (U, V, W)
	mm² (AWG)	mm² (AWG)
U75N4•	4 (12)	6 (10)
D11N4•	6 (10)	6 (10)
U55M3	6 (10)	10 (8)

(*) Minimum wire cross section to be applied when the product is used at rated power.
(**) Wire cross section in case of DC bus voltage supply.

Mechanical characteristics

ATV•30	Supply Terminals (L1, L2, L3) DC Bus Terminals (PA/+, PC/-) (*)				Output Terminals (U, V, W)			
	Minimum (**)		Maximum		Minimum (**)		Maximum	
	Permissible Cross Section (***)	Rated Tightening Torque	Permissible Cross Section	Rated Tightening Torque	Permissible Cross Section (***)	Rated Tightening Torque	Permissible Cross Section	Rated Tightening Torque
	mm² (AWG)	N·m (lbf.in)	mm² (AWG)	N·m (lbf.in)	mm² (AWG)	N·m (lbf.in)	mm² (AWG)	N·m (lbf.in)
ATV630U75N4•, ATV630D11N4• ATV630U55M3	0.5 (20)	1.8 (15.6)	6 (10)	1.8 (15.6)	0.5 (20)	1.8 (15.6)	6 (10)	1.8 (15.6)
ATV930U75N4•, ATV930D11N4• ATV930U55M3	0.5 (20)	1.8 (15.6)	6 (10)	1.8 (15.6)	0.5 (20)	1.8 (15.6)	10 (8)	1.8 (15.6)

(*) Wire cross section in case of DC bus voltage supply.
(**) The mechanical characteristics concern power terminal only and do not take into account the cabling equipment (cable clamp, cable gland,...) that are designed for the rated conditions.
(**) Minimum permissible cross sections are provided, if the product is used below its rated power. In this case, ensure that the wire cross section is compliant with the duty cycle and current load.

NOTE: Only use cables with solid wires or rigid stranded wires.

Frame Size 3

Electrical characteristics (*)

ATV•30	Minimum Wire Cross Section at rated condition	
	Supply Terminals (L1, L2, L3) DC Bus Terminals (PA/+, PC/-) (**)	Output Terminals (U, V, W)
	mm² (AWG)	mm² (AWG)
D15N4•, D18N4•, U75M3	10 (8)	10 (8)
D22N4•, D11M3	10 (8)	16 (6)

(*) Minimum wire cross section to be applied when the product is used at rated power.
(**) Wire cross section in case of DC bus voltage supply.

ATV•30	Supply Terminals (L1, L2, L3) Output Terminals (U, V, W) DC Bus Terminals (PA/+, PC/-) (*)			
	Minimum (**)		Maximum	
	Permissible Cross Section (***)	Rated Tightening Torque	Permissible Cross Section	Rated Tightening Torque
	mm² (AWG)	N·m (lbf.in)	mm² (AWG)	N·m (lbf.in)
D15N4•, D18N4•, D22N4• U75M3, D11M3	0.5 (20)	3.5 (30.4)	16 (6)	3.5 (30.4)

(*) Wire cross section in case of DC bus voltage supply.
(**) The mechanical characteristics concern power terminal only and do not take into account the cabling equipment (cable clamp, cable gland,...) that are designed for the rated conditions.
(***) Minimum permissible cross sections are provided, if the product is used below its rated power. In this case, ensure that the wire cross section is compliant with the duty cycle and current load.

NOTE: Only use cables with solid wires or rigid stranded wires.

Frame Size 4

Electrical characteristics

ATV•30	Minimum Wire Cross Section at rated condition		
	Supply Terminals (L1, L2, L3)	Output Terminals (U, V, W)	DC Bus Terminals (PA/+, PC/-) (**)
	mm² (AWG)	mm² (AWG)	mm² (AWG)
D30N4•, D15M3	25 (4)	25 (4)	25 (4)
D37N4•, D18M3	35 (3)	35 (3)	25 (4)
D45N4•, D22M3	35 (2)	50 (1)	35 (3)

(*) Minimum wire cross section to be applied when the product is used at rated power.
(**) Wire cross section in case of DC bus voltage supply.

ATV•30	Supply Terminals (L1, L2, L3) Output Terminals (U, V, W) DC Bus Terminals (PA/+, PC/-) (*)			
	Minimum (**)		Maximum	
	Permissible Cross Section (***)	Rated Tightening Torque	Permissible Cross Section	Rated Tightening Torque
	mm² (AWG)	N·m (lbf.in)	mm² (AWG)	N·m (lbf.in)
D30N4•, D37N4•, D45N4• D15M3, D18M3, D22M3	16 (6)	12 (106.2)	50 (1)	12 (106.2)

(*) Wire cross section in case of DC bus voltage supply.
(**) The mechanical characteristics concern power terminal only and do not take into account the cabling equipment (cable clamp, cable gland,...) that are designed for the rated conditions.
(***) Minimum permissible cross sections are provided, if the product is used below its rated power. In this case, ensure that the wire cross section is compliant with the duty cycle and current load.

NOTE: Only use cables with solid wires or rigid stranded wires.

Frame Size 5

Electrical characteristics

ATV•30	Minimum Wire Cross Section at rated condition		
	Supply Terminals (L1, L2, L3)	Output Terminals (U, V, W)	DC Bus Terminals (PA/+, PC/-) (**)
	mm² (AWG)	mm² (AWG)	mm² (AWG)
D55N4•	70 (1/0)	70 (1/0)	70 (1/0)
D30M3•	70 (1/0)	70 (2/0)	70 (1/0)
D75N4•	95 (3/0)	95 (3/0)	70 (1/0)
D37M3•	70 (2/0)	95 (3/0)	70 (2/0)
D90N4•	120 (4/0)	120 (250MCM)	95 (3/0)
D45M3•	120 (4/0)	120 (250MCM)	120 (4/0)

(*) Minimum wire cross section to be applied when the product is used at rated power.
(**) Wire cross section in case of DC bus voltage supply.

ATV•30	Supply Terminals (L1, L2, L3) Output Terminals (U, V, W) DC Bus Terminals (PA/+, PC/-) (*)			
	Minimum (**)		Maximum	
	Permissible Cross Section (***)	Rated Tightening Torque	Permissible Cross Section	Rated Tightening Torque
	mm² (AWG)	N·m (lbf.in)	mm² (AWG)	N·m (lbf.in)
D55N4•, D75N4•, D90N4• D30M3, D37M3, D45M3	16 (4)	25 (221.3)	120 (250MCM)	25 (221.3)

(*) Wire cross section in case of DC bus voltage supply.
(**) The mechanical characteristics concern power terminal only and do not take into account the cabling equipment (cable clamp, cable gland,...) that are designed for the rated conditions.
(***) Minimum permissible cross sections are provided, if the product is used below its rated power. In this case, ensure that the wire cross section is compliant with the duty cycle and current load.

NOTE: Only use cables with solid wires or rigid stranded wires.

Frame Size 6

NOTE:
• If used with ring tongue: selection criteria are compatible with screw M10, width 24 mm (0.94 in.), following DIN 46234.
• If used with lugs: selection criteria are compatible with standard cable lug according to DIN 46234. You may also use lug kit DZ2FH6 available on se.com

Electrical characteristics

ATV•30	Minimum Wire Cross Section at rated condition
	Supply Terminals (L1, L2, L3) Output Terminals (U, V, W) DC Bus Terminals (PA/+, PC/-) (**)
	mm² (AWG)
C11N4•	2 x 50 (2 x 1/0)
C13N4•, D55M3C	2 x 70 (2 x 2/0)
C16N4•, D75M3C	2 x 95 (2 x 3/0)
(*) Minimum wire cross section to be applied when the product is used at rated power. **(**)** Wire cross section in case of DC bus voltage supply.	

Mechanicalcharacteristics

ATV•30	Rated Tightening Torque (with Screw size M10)
	Supply Terminals (L1, L2, L3) Output Terminals (U, V, W) DC Bus Terminals (PA/+, PC/-) (*)
	N·m (lbf.in)
C11N4•, C13N4•, C16N4•, D55M3C, D75M3C	27 (239)
(*) Wire cross section in case of DC bus voltage supply.	

NOTE: Only use cables with solid wires or rigid stranded wires.

Frame Size 7A and 7B

Electrical characteristics

ATV•30	Minimum Wire Cross Section at rated condition
	Supply Terminals (L1, L2, L3) Output Terminals (U, V, W) DC Bus Terminals (PA/+, PC/-) (**)
	mm² (AWG)
C22N4•	2 x 150 (2 x 350MCM)
C25N4C, C31N4C	4 x 185 (3 x 350MCM)
(*) Minimum wire cross section to be applied when the product is used at rated power. **(**)** Wire cross section in case of DC bus voltage supply.	

Mechanical characteristics

ATV•30	Rated Tightening Torque (with Screw size M10)
	Supply Terminals (L1, L2, L3) Output Terminals (U, V, W) DC Bus Terminals (PA/+, PC/-) (*)
	N·m (lbf.in)
C22N4•, C25N4C, C31N4C	41 (360)
(*) Wire cross section in case of DC bus voltage supply.	

Part VII
Functions compatibility (ATV61/71 to ATV630/930 only)

What is in This Part?

This part contains the following chapters:

Motor Control Laws and Functions

The following table compares motor control laws and functions available on each product range.

Function	ATV61	ATV71	ATV630	ATV930	ATV340	Comments
[SVC V] (UUC): Open-loop voltage flux vector control	x	x	-	x	x	
[SVC I] (CUC): Open-loop current flux vector control	-	x	-	-	-	
[FVC] (FUC): Closed-loop current flux vector control	-	x	-	x	x	
[U/F 2pts] (UF2): Standard U/F profile without slip compensation	x	x	x	-	-	Named Standard on ATV630. U/F on ATV61 and ATV71. Vectorized U/F on ATV630.
[U/F 5pts] (UF5): 5-segment U/F profile	x	x	x	x	x	U/F on ATV61 and ATV71. Vectorized U/F on ATV630 and ATV930.
[Sync. mot.] (SYn): synchronous permanent magnet motors control	x	x	-	x	x	
[SYN_U VC] (SYnu): Permanent magnet control law for variable torque applications	-	-	x	x	x	
[U/F Quad.] (UFq): Variable Torque	x	-	x	-	-	
[Energy Sav.] (nLd): Energy Saving	x	-	x	x	x	
[Rel. Mot.] (SrVC) - Reluctance Motor	-	-	x	x	x	
[Sync.CL] (FSY) - Permanent magnet control law - Close Loop	-	-	-	x	x	S383 Version … of ATV71 Sync motors
nrd - Noise reduction	x	x	x	x	x	
SVL/SUL - Motor surge limit. (This function limits motor overvoltages)	x	x	x	x	x	
bbA - Braking Balance (to be used on drives connected in parallel via their DC bus)	x	x	-	x	x	

Simply Start/Settings/Command/IO config

The following table compares parameters linked to Simply Start/Settings/Command/IO config available on each product range.

Function	ATV61	ATV71	ATV630	ATV930	ATV340	Comments
Factory Settings	x	x	x	x	x	
tCC - [2/3 wire Control] (2C/3C)	x	x	x	x	x	
CFG - Macro Configuration	x	x	x	x	x	Altivar Process macros and ATV61/ATV71 macros are handled differently. Refer to the user manual of each product for more information.
ASA - [Angle test setting]	-	-	-	x	x	
tUn - Auto tunig	x	x	x	x	x	
Stun - Tune Selection	-	-	x	x	x	
Aut - Automatic Autotune	x	x	x	x	x	
drt - Dual Rating	-	-	x	x	x	
PHr - Output PH Rotation (reverse the direction of rotation of the motor without reversing the wiring)	x	x	x	x	x	
rrS - Reverse assign.	x	x	x	x	x	
rIn - Reverse Inhibition (RV Inhibition - Inhibition of movement in reverse direction)	x	x	x	x	x	Named [Reverse Disable] in ATV600 / ATV900
Pst - Stop Key Priority (Gives priority to the STOP key on the graphic)	x	x	x	x	x	With a new feature handled by Altivar Process
Flu - Motor Fluxing (In order to obtain rapid high torque on startup)	x	x	-	x	x	
rEF- [REFERENCE SWITCH.]: Command and reference channels with I/O profile (Run commands (forward, reverse, stop, etc.) and references can be sent using the different channels)	x	x	x	x	x	
Encoder configuration	x	x	-	x	x	
Password	x	x	x	x	x	With new features handled by Altivar Process
Virtual AI1	x	x	x	x	x	3 Virtual AI on ATV630
RP configuration	x	x	x	x	x	Named Pulse input in ATV600 / ATV900 (2 pulse inputs as standard in ATV600 / ATV900)
Skip frequencies	x	x	x	x	x	Named [Jump Frequency] in ATV600 / ATV900
Speed loop optimization (SPG, SIT, SFC parameters)	x	x	x	x	x	Dedicated menu on ATV600 / ATV900 and function improved
DCR - [Input Filter]	-	-	x	x	x	New function on ATV600 / ATV900

Application Functions

The following table compares application functions available on each product range.

Function	ATV61	ATV71	ATV630	ATV930	ATV340	Comments
Speed limits (LSP, HSP, BSP)	x	x	x	x	x	Dedicated menu on ATV600 / ATV900
CHS - [High Speed switching]	-	-	-	x	x	
PRSP - [Stop after speed timeout]	-	-	x	x	x	
OAI- [REF. OPERATIONS] / Summing input/Subtracting input/Multiplier	x	x	x	x	x	
rPt- [RAMP]	x	x	x	x	x	Named [Ramp] RAMP- & [Ramp Switching]RPT- in ATV600 / ATV900
Stt- [STOP CONFIGURATION]	x	x	x	x	x	
AdC- [AUTO DC INJECTION]	x	x	x	x	x	
JOG- [JOG]	x	x	-	x	x	
PSS- [PRESET SPEEDS]	x	x	x	x	x	
UPd- [+/- SPEED]	x	x	x	x	x	
SrE- [+/-SPEED AROUND REF.]	x	x	-	x	x	
SPM- [MEMO REFERENCE] - Reference Saving	x	x	-	x	x	Named [Memo reference frequency] in ATV900
FLI- [FLUXING BY LI]	x	x	x	x	x	Named [Fluxing by DI] on ATV600 / ATV900
LSt- [LIMIT SWITCHES]	-	x	-	x	x	
bLC- [BRAKE LOGIC CONTROL] - Hoisting	-	x	-	x	x	Improved in ATV900
ELM- [EXTERNAL WEIGHT MEASUREMENT]	-	x	-	x	x	
HSH- [HIGH SPEED HOISTING]	-	x	-	x	x	
ROPE SLACK	-	x	-	x	x	
BSCC - [Backspin control]	-	-	-	x	x	
PId- [PID REGULATOR]	x	x	x	x	x	Named [PID controller] in ATV600 / ATV900
PID feedback supervision	x	-	x	x	x	Named [Feedback monit.] in ATV600 / ATV900
Pr1- [PID PRESET REFERENCES]	x	x	x	x	x	Inside [PID controller] menu in ATV600 / ATV900
SrM- [SLEEP / WAKE UP]	x	-	x	x	x	
tOr- [TORQUE CONTROL]	-	x	-	x	x	
tOL- [TORQUE LIMITATION]	x	x	x	x	x	
CLI- [2nd CURRENT LIMIT.] (current limitation)	x	x	-	x	x	
LLC- [LINE CONTACTOR COMMAND]	x	x	x	x	x	Named [Mains contactor command] in ATV600 / ATV900
OCC- [OUTPUT CONTACTOR CMD]	x	x	x	x	x	
Master/Slave	-	x	-	x	x	Improved on ATV930 with possibility of Multi Drive Link
LbA - LOAD SHARING	-	x	-	x	x	

Function	ATV61	ATV71	ATV630	ATV930	ATV340	Comments
dAM- [DAMPER MANAGEMENT] / Damper control	x	-	-	-	-	
LPO - [POSITIONING BY SENSORS] or limit switches (Stop at distance calculated after deceleration limit switch)	-	x	-	x	x	
ENA system (mechanical with unbalanced load)	-	x	-	x	x	
MLP- [PARAM. SET SWITCHING]	x	x	x	x	x	Named [Parameters switching] in ATV600 / ATV900
MMC- [MULTIMOTORS/CONFIG.] (switching)	x	x	-	x	x	Named [Multimotors config] in ATV900
tnL- [AUTO TUNING BY LI]	x	x	x	x	x	Available in the menu [Autotuning]TUN- for Altivar Process
nFS - [NO FLOW DETECTION]: Zero fluid or zero flow detection via sensor	x	-	x	-	-	Named [Pump low flow Monit] in ATV600
FLL- [FLOW LIMITATION]	x	-	x	-	-	
trO- [TRAVERSE CONTROL] - Textiles	-	x	-	-	-	
rFt- [EVACUATION] - Elevator	-	x	-	-	-	
HFF- [HALF FLOOR] - Elevator	-	x	-	-	-	
dCO- [DC BUS SUPPLY] / Direct power supply via DC bus	x	x	-	x	x	
AFE- [REGEN CONNECTION]	x	x	-	x	x	For ATV930, there are dedicated regenerative units named ATV regen. For Active Front End, refer to drive system offer.
Bus ref Link	-	-	-	x	x	This menu is used to configure the DC bus link on Multi-Drive configuration with common DC bus supply.
BSC - [Booster Control]	-	-	x	-	-	
LCC - [Level Control]	-	-	x	-	-	
PCR - [Pump characteristics]	-	-	x	-	-	
SFE - [Sensorless flow estimation]	-	-	x	-	-	
DPHC - [dP/Head Correction]	-	-	x	-	-	
PST - [Pump start stop]	-	-	x	-	-	
PFI - [Pipe fill]	-	-	x	-	-	
FLC - [Friction loss compensation]	-	-	x	-	-	
JKP - [Jockey pump]	-	-	x	-	-	
PPC - [Priming pump ctrl]	-	-	x	-	-	
BSQM - [Backlash compensation]	-	-	-	x	x	

Error Management Functions

The following table compares error management functions available on each product range.

Function	ATV61	ATV71	ATV630	ATV930	ATV340	Comments
PtC- [PTC MANAGEMENT] / PTC probes	x	x	x	x	x	Menu [Thermal monitoring] TPP in ATV600 / ATV900
rSt- [FAULT RESET]	x	x	x	x	x	
Atr- [AUTOMATIC RESTART]	x	x	x	x	x	Named [Auto fault reset] in ATV600 / ATV900
FLr- [CATCH ON THE FLY]	x	x	x	x	x	
tHt- [MOTOR THERMAL PROT.]	x	x	x	x	x	Named [Motor Thermal monit] in ATV600 / ATV900
OPL- [OUTPUT PHASE LOSS]	x	x	x	x	x	
IPL- [INPUT PHASE LOSS]	x	x	x	x	x	
OHL- [DRIVE OVERHEAT]	x	x	x	x	x	Named [DriveTemp ErrorResp] in ATV600 / ATV900
SAt- [THERMAL ALARM STOP] / Deferred stop on thermal alarm	x	x	x	x	x	Named TSA in ATV600 / ATV900
EtF- [EXTERNAL FAULT]	x	x	x	x	x	Named [external Error] in ATV600 / ATV900
USb- [UNDERVOLTAGE MGT]	x	x	x	x	x	Named Undervoltage handling in ATV600 / ATV900
STRT [IGBT test]	x	x	x	x	x	
LFL- [4-20mA LOSS]	x	x	x	x	x	
InH- [FAULT INHIBITION]	x	x	x	x	x	Named Error Detection disable in ATV600 / ATV900
CLL- [COM. FAULT MANAGEMENT]	x	x	x	x	x	Named Fieldbus monitoring in ATV600 / ATV900
EMTC - [Embedded Modbus TCP]	-	-	x	x	x	
Sdd- [ENCODER FAULT]	-	x	-	x	x	Named [Encoder Monitoring] in ATV600 / ATV900
tid- [TORQUE OR I LIM. DETECT]	x	x	-	x	x	
FqF- [FREQUENCY METER]: Use of the "Pulse input" to measure the speed of rotation of the motor	x	x	-	x	x	
dLd- [DYNAMIC LOAD DETECT.]	-	x	-	x	x	
brP- [DB RES. PROTECTION]	x	x	-	x	x	Named Braking Resistor monitoring in ATV900
bUF- [BU PROTECTION]	x	x	-	x	x	Named [Braking Resistor] BRC in ATV900
TNL [Autotune fault mgt]	x	x	x	x	x	Named [Tuning Error Resp] tnL in ATV600 / ATV900
PPI- [CARDS PAIRING]	x	x	x	x	x	Named Pairing Pasword in ATV600 / ATV900
ULd- [PROCESS UNDERLOAD]	x	-	x	x	x	
OLd- [PROCESS OVERLOAD]	x	-	x	x	x	
STPR - [Stall Monitoring]	-	-	x	x	x	
FdL- [DAMPER FAULT MGT.]	x	-	-	-	-	
LFF- [FALLBACK SPEED]	x	x	x	x	x	
Dcf [Ramp divider]	x	x	x	x	x	
dCI- [DC INJECTION]	x	x	x	x	x	Refer to the menu [Stop Configuration] in ATV600 / ATV900 (parameter [DC Injection Assign] dCI)
GRFL - [Ground Fault]	-	-	x	x	x	
JAM - [Anti-jam monit]	-	-	x	-	-	
DYR - [Dry run monit]	-	-	x	-	-	
IPP - [Inlet pressure monitoring]	-	-	x	-	-	
OPP - [Outlet pressure monitoring]	-	-	x	-	-	
HFP - [High flow monitoring]	-	-	x	-	-	
CSP - [PumpCycle monitoring]	-	-	x	x	x	

Monitoring/Diagnostic/Maintenance

The following table compares parameters linked to Monitoring/Diagnostic/Maintenance available on each product range.

Function	ATV61	ATV71	ATV630	ATV930	ATV340	Comments
user-defined menu - "MyMenu" Tab (Quick access to specific parameters)	x	x	x	x	x	
Modified Parameters (Gives a quick access to the 10 last modified parameters)	x	x	x	x	x	
SUC - Define System units	-	-	x	x	x	
DSH - Pump/Fan Dashboards	-	-	x	-	-	
kWC - kWh Counters	x	x	x	x	x	
DSH - Energy Consumption Dashboards (Instantaneous, Daily, Weekly, Monthly, Yearly)	-	-	x	x	x	
DSH - Pump Curve and Operation point	-	-	x	-	-	
DSH - Torque vs Speed curve	-	-	-	x	x	
Fnt - Fan Diagnostics	-	-	x	x	x	
HLT - LED Diagnostics	-	-	x	x	x	
IWT - IGBT Diag with motor	-	-	x	x	x	
IWOT - IGBT diag without motor	-	-	x	x	x	
Ser - Service Message (user-defined service message configured)	-	-	x	x	x	
PFH - Errors History	x	x	x	x	x	
Alrd- List of current Warnings	-	-	x	x	x	
Alarm Group	x	x	x	x	x	Named [Warn grp x definition] on ATV600 / ATV900
ALH - Warnings history	-	-	x	x	x	
ESA - Energy Saving Menu (Money, Energy and CO2 savings)	-	-	x	x	x	
Customer event	-	-	x	x	x	

Display Terminals

The following table compares parameters linked to the display terminal options available on each product range.

Function	Remote Display Terminal VW3A1101	Graphic Display Terminal VW3A1111	Plain Text Display Terminal VW3A1113	Comments
Connection to PC	-	x	-	
Screenshots	-	x	-	
Number of languages	8	10 as standard 25 languages downloadable via this link	8	
Number of configurations	4	limited to available storage	1	
Language update	-	online procedure (refer to www.se.com)	-	
Personalization (units, parameter name)	x	x	x	
IP rating	IP54	IP65	IP21	
Real Time Clock	-	x	-	
Graphics	-	x	-	
Multipoint	x	x	-	
Red backlight	-	x	-	
Logo at power on	x	x	x	
F1 - F4 key functions	x	x	-	
QR code	-	x	-	

Part VIII
How to Convert Your ATV61/ATV71 Drive configuration with SoMove Software

What is in This Part?

This part contains the following chapters:

Pre-requisites

⚠ WARNING

INCOMPLETE DEVICE CONVERSION

Device conversion function is used to apply the configuration from a device to another device from a different product range
However, the values of certain parameters cannot be applied because the functional behaviors of the source device and the target device are different.
The parameters whose values cannot be applied are kept to the factory settings.

- Consult the programming manual for the parameters that are kept to the factory settings and select appropriate values for these parameters.
- Do not operate the device 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.

In order to perform the Drive conversion, you must:

1. Ensure that you have at least the following versions of SoMove software and DTMs:

Software	Minimum required version	Download link
SoMove Software (FDT)	**2.9.5**	https://www.se.com/ww/en/download/document/SoMove_FDT/
Altivar Process ATV6XX DTM	**3.7.3.0**	https://www.se.com/ww/en/download/document/ATV6xx_DTM_Library_EN/
Altivar Process ATV9XX DTM	**3.8.5.0**	https://www.se.com/ww/en/download/document/ATV9xx_DTM_Library_EN/
ATV61 DTM	**2.0.3.0**	http://www.se.com/ww/en/download/document/Altivar_DTM_Library/
ATV71 DTM	**2.0.3.0**	http://www.se.com/ww/en/download/document/Altivar_DTM_Library/

2. Ensure you own a communication cable (TCSMCNAM3M002P or VW3A8127) to be able to transfer the configuration file from your ATV61 or ATV71 to your PC.

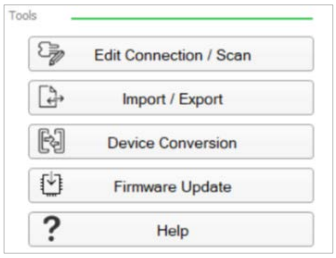
3. Download a configuration file from your drive.

Step by step conversion using the conversion tool

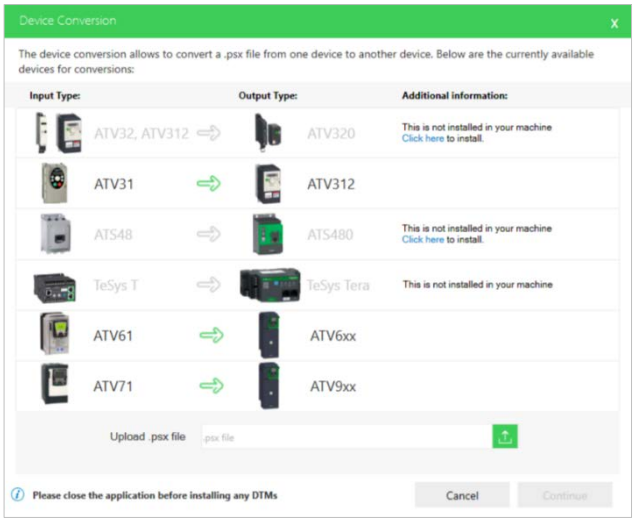
Here are the steps needed to convert your configuration:

1. Ensure you have the minimum recommended version of the software and DTM files (see previous chapter)
2. Download the configuration file directly from your ATV61 or ATV71 using a communication cable.

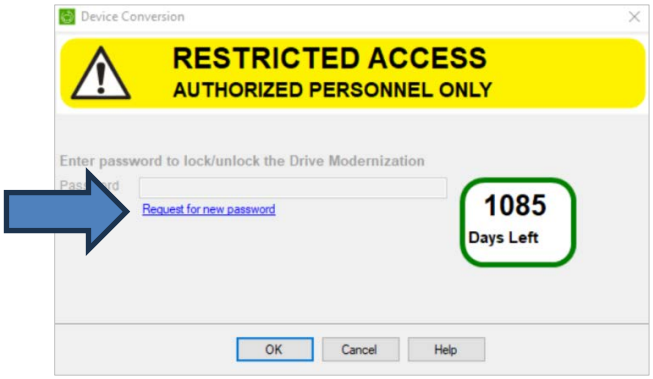
   Do not use any external backup file you may have.
3. Open SoMove.
4. In the Tools menu, click “Device Conversion.”
5. In Device Conversion, press Ctrl+Alt+D on the keyboard to enable the ATV61/71 conversion options.



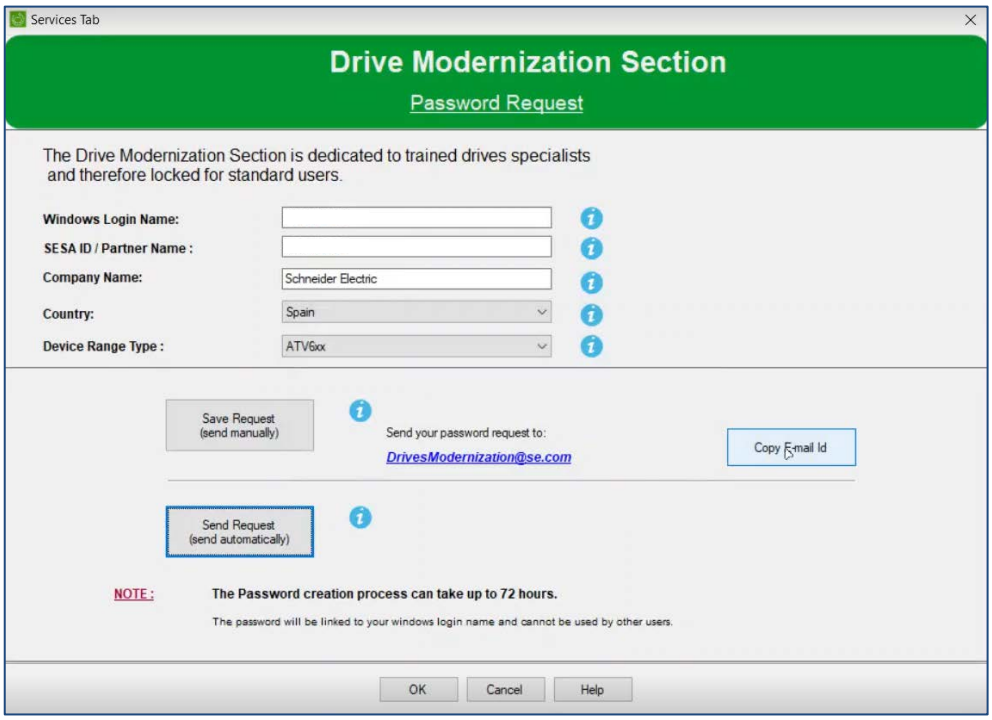
6. Upload the old drive configuration file and follow the instructions in the software.



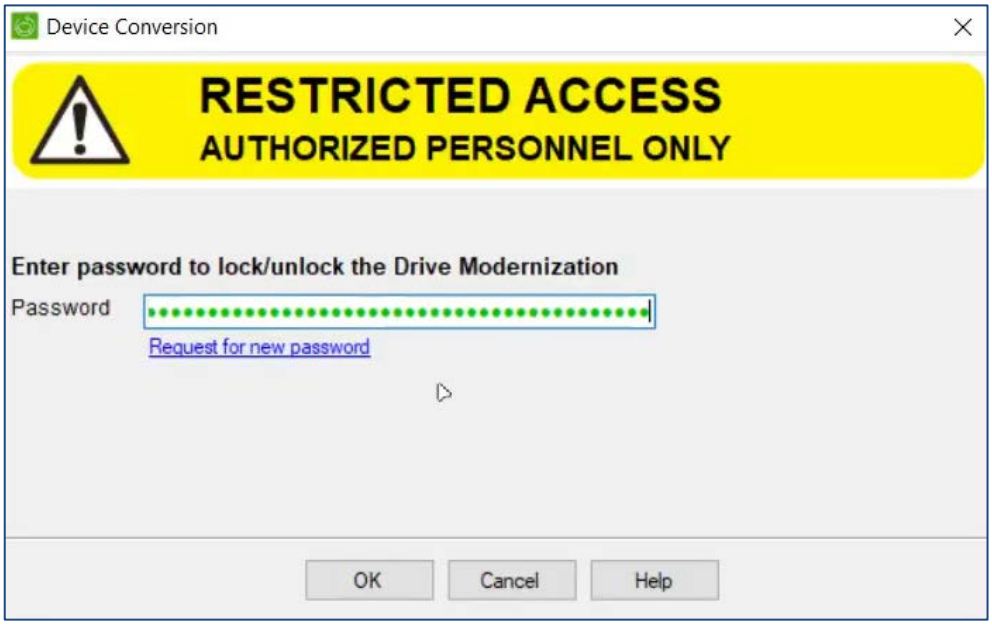
7. In the Restricted Access window, click Request for new password.



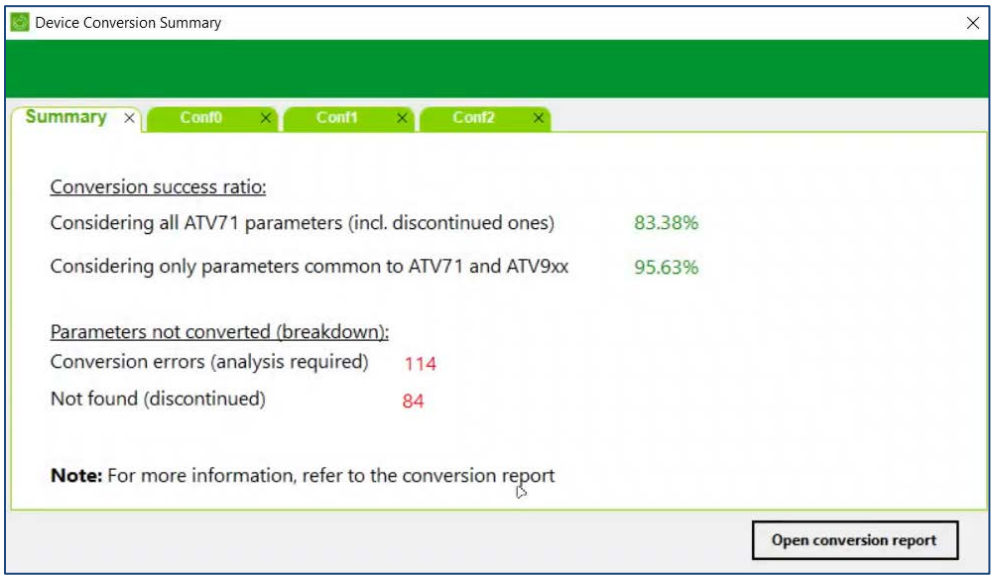
8. In the Password Request window, fill in all the fields. When complete click on Send Request (manual or automatic). The conversion process will be cancelled waiting for your access validation.



9. When you receive the password by email, proceed again with the conversion process (step 3.) and type in the password in the Restricted Access window.



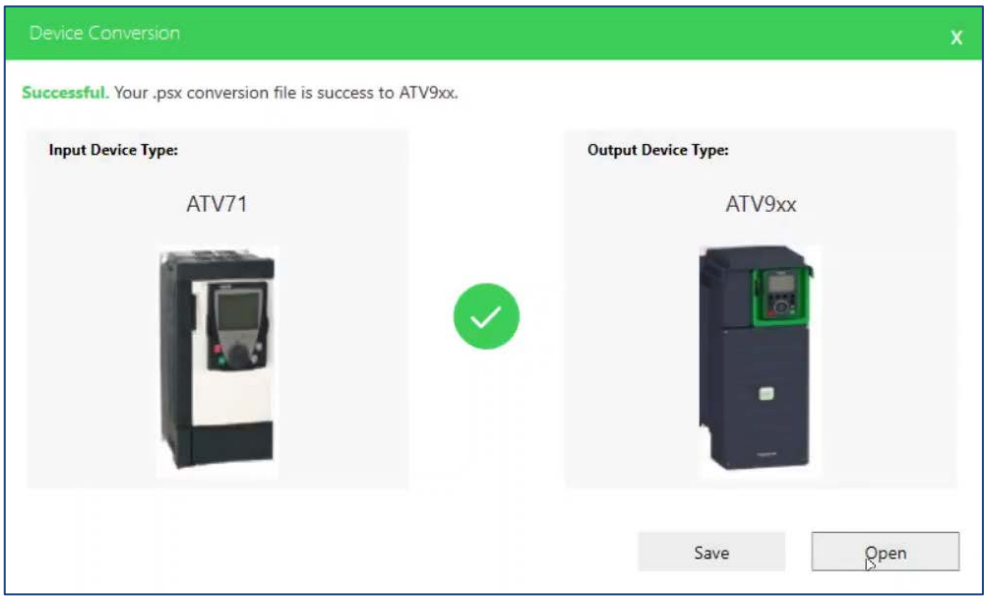
10. When you have completed the migration process, review conversion success information by clicking on Open conversion report.



11. Open the file and make the necessary adjustments.

SimplyStart								
Code	Long Label	Original Configuration	Converted Configuration	Default Value	Min Value	Max Value	Logical Address	Conversion Status
BFR	Motor Standard	50Hz motor frequency	50Hz motor frequency	50Hz motor frequency			3015	OK
NPR	Nominal motor power	0.18 kW	0.18 kW	1.5 kW	0.09 kW	3 kW	9613	OK
UNS	Nominal motor voltage	230 V	230 V	230 V	100 V	240 V	9601	OK
NCR	Nominal motor current	1.2 A	2 A	6.1 A	2 A	12 A	9603	Not Converted
FRS	Nominal motor frequency	50 Hz	50 Hz	50 Hz	10 Hz	599 Hz	9602	OK
NSP	Nominal motor speed	1350 rpm	1350 rpm	1420 rpm	0 rpm	65535 rpm	9604	OK
COS	Motor 1 Cosinus Phi	-	0.79	0.79	0.5	1	9606	New Parameter
TCC	2/3-wire control	2-wire control	2-wire control	2-wire control			11101	OK
TFR	Max frequency	60 Hz	60 Hz	60 Hz	10 Hz	500 Hz	3103	OK
STUN	Tune selection	-	Default	Default			9617	New Parameter
ITH	Motor Thermal current	1.2 A	1.6 A	2 A	1.6 A	8.8 A	9622	Not Converted
ACC	Acceleration ramp time	2 s	2 s	3 s	0 s	999.9 s	9001	OK
DEC	Deceleration ramp time	2 s	2 s	3 s	0 s	999.9 s	9002	OK
LSP	Low speed	0 Hz	0 Hz	0 Hz	0 Hz	50 Hz	3105	OK
HSP	High speed	50 Hz	50 Hz	50 Hz	0 Hz	60 Hz	3104	OK
MyMenu								
Code	Long Label	Original Configuration	Converted Configuration	Default Value	Min Value	Max Value	Logical Address	Conversion Status
Modified								
Code	Long Label	Original Configuration	Converted Configuration	Default Value	Min Value	Max Value	Logical Address	Conversion Status
EN10	Motor control word 10	150 %	150	0	0	65535	9511	Not Converted
AO1T	AQ1 Type	Current	Current	Voltage			4601	OK
AI4T	Configuration of AI4	Voltage	Voltage	Current			4405	OK
BDR	Comm. option baudrate	19200 bps	19200 bps	Automatic			6603	OK
CL2	Current limitation 2 value	7.2 A	7.2 A	9.6 A	0 A	9.6 A	9203	OK
CLI	Current limitation	7.2 A	7.2 A	9.6 A	0 A	9.6 A	9201	OK
FBCI	Brake feedback filter	0 ms	0 ms	100 ms	0 ms	5000 ms	10025	OK
BIP	Brake release pulse	No	No	Brake impulse Fwd			10007	OK
IBR	Brake Release current	0 A	0 A	2 A	0 A	8.8 A	10006	OK
BRT	Brake release time	0 s	0 s	0.5 s	0 s	5 s	10004	OK
BET	Brake engage time	0 s	0 s	0.5 s	0 s	5 s	10005	OK
SDC1	Auto DC injection level 1	3.3 A	3.3 A	5.6 A	0 A	8.8 A	10403	OK
BFTD	BRH_b4 frequency threshold detection	0.2 Hz	0.2 Hz	5 Hz	0 Hz	10 Hz	10051	OK
PDCO	CANopen baudrate	Baud rate 125kbps	Baud rate 125kbps	Baud rate 250kbps			6053	OK

12. Select to open or save the configuration.



13. Perform a commissioning test before using the device

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.

www.schneider-electric.com/contact
www.schneider-electric.com/drives

ATV61-71_to_ATV600-900-340_Modernization_Manual_EAV64336_02
09/2025