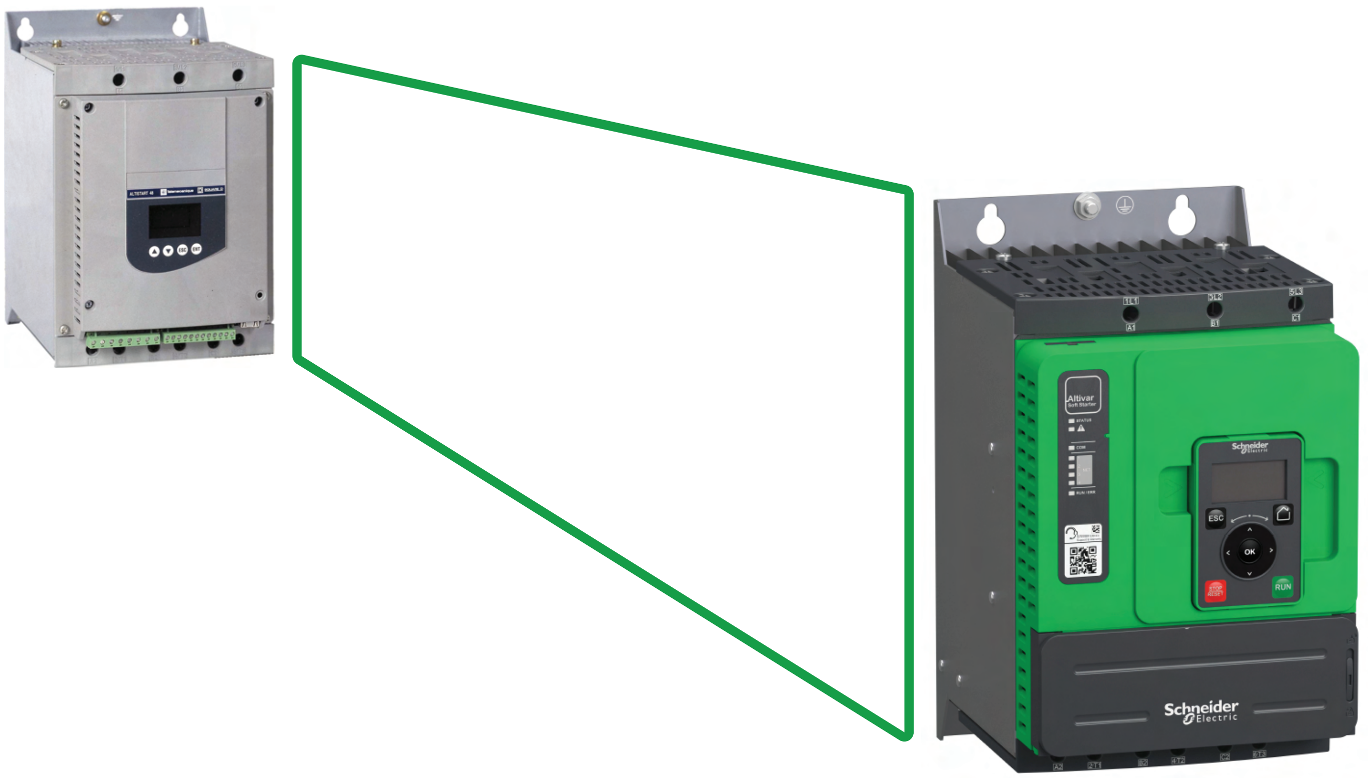
Altivar Soft Starter ATS480

ATS48 to ATS480 Substitution Manual

NNZ85529.02
05/2025



Legal Information

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

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

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Table of Contents

Safety Information

Important Information

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

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

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

⚠ DANGER

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

⚠ WARNING

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

⚠ CAUTION

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

NOTICE

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

Please Note

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

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

Qualification of Personnel

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

Intended Use

This product is 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 purpose of this document is to:

- Show you how to the Modbus RTU fieldbus on your soft starter.
- Show you how to configure the soft starter to use the Modbus RTU for monitoring and control.
- Provide examples of setup using Modbus RTU communication.

NOTE: Read and understand this document and all related documents (see below) before installing, operating, or maintaining your soft starter.

Validity Note

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

NOTE: The products listed in the document are not all available at the time of publication of this document online. The data, illustrations and product specifications listed in the guide will be completed and updated as the product availabilities evolve. Updates to the guide will be available for download once products are released onto the market.

This documentation is valid only for ATS480.

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 soft starter.

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Before performing work on the equipment:

- Use all required personal protective equipment (PPE).
- Disconnect all power, including external control power that may be present. Take into account that the circuit breaker or main switch does not de-energize all circuits.
- Place a "Do Not Turn On" label on all power switches related to the equipment.
- Lock all power switches in the open position.
- Verify the absence of voltage using a properly rated voltage sensing device.

Before applying voltage to the equipment:

- 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.

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Never operate energized switch with door open.
- Turn off switch before removing or installing fuses or making load side connections.
- Do not use renewable link fuses in fused switches.

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

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

⚠⚠DANGER

ELECTRIC SHOCK OR UNANTICIPATED EQUIPMENT OPERATION

Do not use damaged products or accessories.

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

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

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

⚠DANGER

POTENTIAL FOR EXPLOSION

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

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

Your application consists of a whole range of different interrelated mechanical, electrical, and electronic components, the device being just one part of the application. The device by itself is neither intended to nor capable of providing the entire functionality to meet all safety-related requirements that apply to your application. Depending on the application and the corresponding risk assessment to be conducted by you, a whole variety of additional equipment is required such as, but not limited to, external monitoring devices, guards, etc.

As a designer/manufacturer of machines, you must be familiar with and observe all standards that apply to your machine. You must conduct a risk assessment and determine the appropriate Performance Level (PL) and/or Safety Integrity Level (SIL) and design and build your machine in compliance with all applicable standards. In doing so, you must consider the interrelation of all components of the machine. In addition, you must provide instructions for use that enable the user of your machine to perform any type of work on and with the machine such as operation and maintenance in a safe manner.

The present document assumes that you are fully aware of all normative standards and requirements that apply to your application. Since the device cannot provide all safety-related functionality for your entire application, you must ensure that the required Performance Level and/or Safety Integrity Level is reached by installing all necessary additional equipment.

⚠WARNING

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

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

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

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

⚠WARNING

UNANTICIPATED EQUIPMENT OPERATION

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

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

⚠WARNING

LOSS OF CONTROL

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

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

(1) For USA: Additional information, refer to NEMA ICS 1.1 (latest edition), Safety Guidelines for the Application, Installation and Maintenance of Solid State Control.

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, SE recommended Cybersecurity Best Practices*).
- 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.

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

⚠WARNING

LOSS OF CONTROL

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

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

This product meets the EMC requirements according to the standard IEC 60947-4-2. This device has been designed for environment A. Use of this product in a domestic environment (B environment) may cause unwanted radio interference.

⚠WARNING

RADIO INTERFERENCE

- In a domestic environment (B environment), this product may cause radio interference in which case supplementary mitigation measures may be required.
- The references from ATS480D17Y to ATS480C11Y can be adapted to a domestic environment (B environment) by adding an external bypass contactor. For other ATS480 references, you must consider other mitigation measures.

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

NOTICE

DESTRUCTION DUE TO INCORRECT MAINS VOLTAGE

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

Failure to follow these instructions can result in equipment damage.

General Cybersecurity Information

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

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

Schneider Electric provides additional information and assistance:

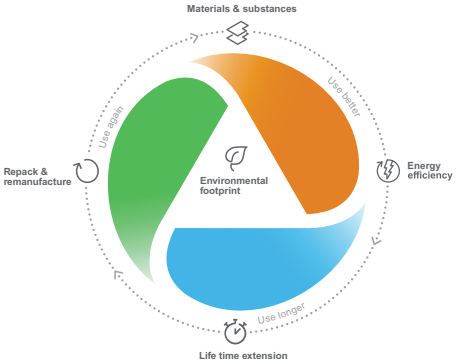
- Subscribe to the Schneider Electric security newsletter.
- Visit the Cybersecurity Support Portal web page to:
  - Find Security Notifications.
  - Report vulnerabilities and incidents.
- Visit the Schneider Electric Cybersecurity and Data Protection Posture web page to:
  - Access the cybersecurity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

Environmental Data

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

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

Five data categories across the product lifecycle



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

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

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

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

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

Refer to Environmental Data Program for more information.

Related Documents

Use your tablet or your PC to quickly access detailed and comprehensive information on all our products on www.se.com The Internet site provides the information you need for products and solutions:

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

You can download there technical publications and other technical information from our website at www.se.com/en/download.

Catalog

Title of documentation	Reference number
Catalog: Altivar Soft Starter ATS480	DIA2ED2210602EN (English) DIA2ED2210602FR (French) ECATA1172 (Chinese) DIA2ED2210602DE (German)

Documentations

Title of documentation	Reference number
ATS480 Getting Started Manual	NNZ85504 (English), NNZ85505 (French) NNZ85506 (Spanish), NNZ85507 (Italian) NNZ85508 (German), NNZ85509 (Chinese) NNZ85510 (Portuguese), NNZ85511 (Turkish)
ATS480 Getting Started Manual Annex for UL	NNZ86539 (English)
ATS480 User Manual	NNZ85515 (English), NNZ85516 (French) NNZ85517 (Spanish), NNZ85518 (Italian) NNZ85519 (German), NNZ85520 (Chinese) NNZ85521 (Portuguese), NNZ85522 (Turkish)
ATS480 Embedded Modbus RTU Manual	NNZ85539 (English)
ATS480 EtherNet/IP – Modbus TCP Manual	NNZ85540 (English)
ATS480 PROFIBUS DP Manual	NNZ85542 (English)
ATS480 Profinet Manual	NNZ85541 (English)
ATS480 CANopen Manual	NNZ85543 (English)
ATS480 Communication Parameter Addresses	NNZ85544 (English)
ATS480 Cascade Function Application Note	NNZ85564 (English)
Recommended Cybersecurity Best Practices	CS-Best-Practices-2019–340 (English)

ATS48 to ATS480 substitution

Title of documentation	Reference number
ATS48 to ATS480 Substitution Manual	NNZ85529 (English), NNZ85530 (French) NNZ85531 (Spanish), NNZ85532 (Italian) NNZ85533 (German), NNZ85534 (Chinese) NNZ85535 (Portuguese), NNZ85536 (Turkish)
Video: How to substitute an ATS48 for an ATS480?	FAQ000210049 (English)

Videos

Title of documentation	Reference number
Getting Started with ATS480	FAQ000233342 (English)
How to update the firmware on ATS480 with EcoStruxure Automation Device Maintenance?	FAQ000233943 (English)
How to configure the cybersecurity applied to ATS480?	FAQ000236206 (English)
How to Integrate ATS480 DFB with EcoStruxure Control Expert	FAQ000244312 (English)

Software

Title of documentation	Reference number
SoMove: FDT	SoMove FDT (English, French, German, Spanish, Italian, Chinese)
ATS480: DTM	ATS480 DTM Library EN (English – to be installed first) ATS480 DTM Lang FR (French) ATS480 DTM Lang SP (Spanish) ATS480 DTM Lang IT (Italian) ATS480 DTM Lang DE (German) ATS480 DTM Lang CN (Chinese)
EcoStruxure Automation Device Maintenance	EADM (English)

Information on Non-Inclusive or Insensitive Terminology

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

Terminology used in this document

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

Among others, these standards include:

- ISO 13849: The Foundation of Functional Safety in the Machinery
- IEC 60204-1: Safety of machinery - Electrical equipment of machines – Part 1: General requirements.
- 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 61800 series: Adjustable speed electrical power drive systems.
- 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.

Structure of the Parameter Table

Pictogram	Description
	This parameter can be set during operation or when stopped. **NOTE:** It is advisable to stop the motor before modifying any of the settings
	The motor must be stopped to set this parameter.
	Power cycle must be performed after setting this parameter.
	Read only parameter, mainly used for monitoring.
	Expert mode required to access this parameter.

Contact us

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

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How to substitute an ATS48 with an ATS480?

In complement of this manual a video presenting the substitution procedure is available on the Schneider Electric FAQ (FAQ000210049).

Substitution Procedure Overview

Step	Action
1	Make the inventory of the existing ATS48 installation: • Note the ATS48 commercial reference to replace by the ATS480 • Note the installed ATS48 options and accessories: ◦ Remote display terminal VW3G48101 ◦ Protective covers for power terminals ◦ Line choke ◦ DNV kits For more information refer to Inventory of the Existing ATS48 Installation, page 19.
2	Select the ATS480 commercial reference to replace the ATS48: • Select the soft starter reference with the ATS480 catalog or selector on ***se.com*** • Select the display terminal and remote mounting kit to match the required IP protection degree • Keep the existing protective covers for power terminals, line chokes and DNV kits For more information refer to ATS480 Soft Starter Selection and Accessories, page 22.
3	Uninstall the ATS48 and install the ATS480 in the same environment: • Same enclosure • Same clearances • Consider the depth difference between ATS48 and ATS480 • Install the new display terminal and the remote mounting kit if used For more information refer to Installation, page 28.
4	Wire the ground, supply mains and motor supply of the newly installed ATS480: • Reuse the cables from the ATS48 • Same cables section, length and position For more information refer to Power and Ground Wiring, page 37.
5	Wire the control terminals of the newly installed ATS480: • Reuse the cables from the ATS48 • Refer to the correspondence table between ATS48 and ATS480 control terminals **NOTE:** **The ATS480 must be supplied with 110...230 Vac only** For more information refer to Layout And Characteristics Of Control Terminals, page 38.
6	Before switching On refer to Checking Installation, page 42.
7	Initialize the ATS480: • Set the language and date • Set the cybersecurity policy of the ATS480 This menu is displayed when the ATS480 is supplied for the first time. For more information refer to Layout And Characteristics Of Control Terminals, page 38.
8	Migrate the ATS48 configuration to the newly installed ATS480: • The ATS480 must be supplied • Use the migration tool from SoMove For more information refer to Configuration Migration, page 45. This concludes the substitution from the ATS48 to the ATS480.

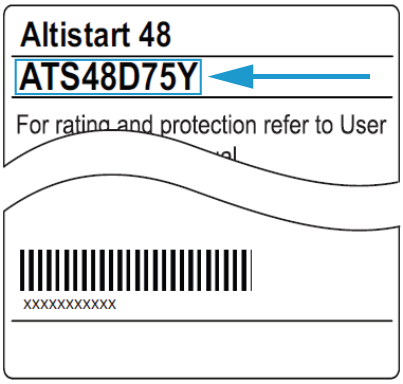
Inventory of the Existing ATS48 Installation

What’s in This Part

Identification of the ATS48 Commercial Reference

Identify the commercial reference of the ATS48 to substitute with the ATS480.

The ATS48 reference can be found on its nameplate label localized on the right side or on the front of the product:



Identification of the Accessories and Options Commercial References

Use this table to write down each ATS48 and related options to substitute in the existing installation.

	Quanti-ties	ATS reference	Remote terminal VW3G48101 (Yes/No)	Protective covers power terminals (Yes/No)	Line chokes (Yes/No)	DNV kits (Yes/No)	Comments
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							

ATS480 Soft Starter Selection and Accessories

What’s in This Part

Soft Starter Selection

Refer to the following table to select the ATS480 compatible with the ATS48 to substitute.

Legacy offers		New offers
ATS48●●●Q 230...415 Vac	ATS48●●●Y 208...690 Vac	ATS480●●●Y 208...690 Vac
ATS48D17Q	ATS48D17Y	ATS480D17Y
ATS48D22Q	ATS48D22Y	ATS480D22Y
ATS48D32Q	ATS48D32Y	ATS480D32Y
ATS48D38Q	ATS48D38Y	ATS480D38Y
ATS48D47Q	ATS48D47Y	ATS480D47Y
ATS48D62Q	ATS48D62Y	ATS480D62Y
ATS48D75Q	ATS48D75Y	ATS480D75Y
ATS48D88Q	ATS48D88Y	ATS480D88Y
ATS48C11Q	ATS48C11Y	ATS480C11Y
ATS48C14Q	ATS48C14Y	ATS480C14Y
ATS48C17Q	ATS48C17Y	ATS480C17Y
ATS48C21Q	ATS48C21Y	ATS480C21Y
ATS48C25Q	ATS48C25Y	ATS480C25Y
ATS48C32Q	ATS48C32Y	ATS480C32Y
ATS48C41Q	ATS48C41Y	ATS480C41Y
ATS48C48Q	ATS48C48Y	ATS480C48Y
ATS48C59Q	ATS48C59Y	ATS480C59Y
ATS48C66Q	ATS48C66Y	ATS480C66Y
ATS48C79Q	ATS48C79Y	ATS480C79Y
ATS48M10Q	ATS48M10Y	ATS480M10Y
ATS48M12Q	ATS48M12Y	ATS480M12Y

The specific legacy references and their functionality are included in the substitution:

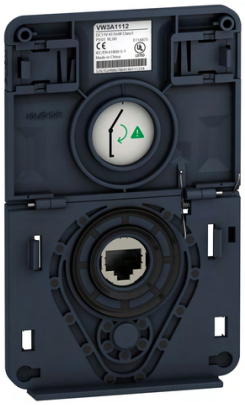
Specific legacy offers	New offers
ATS48●●●YS316, ability to set in Delta up to 500 V	ATS480●●●Y
ATS48●●●YS338, tropicalization coating	
ATS48●●●QS338, tropicalization coating	

Display Terminal and Remote Mounting Kit Selection

Not compatible

- **The ATS48 remote terminal is not compatible with the ATS480. You cannot reuse it.**
- **To reach IP65 or higher protection degree, use the Graphic Display Terminal and its door mounting kit.**
- **For IP43, use the Plain Text Display Terminal and its door mounting kit.**

Refer to the following table to choose a display terminal and its door mounting kit.

Door Mounting Kit protection degree	Display terminal	Door mounting kit
IP65	***VW3A1111*** graphic display terminal **Available as option** 	***VW3A1112*** remote mounting kit **Available as option**  Refer to the instruction sheet ***EAV7640603***.
IP43	***VW3A1113*** plain text display terminal **Included with the product** 	***VW3A1114*** remote mounting kit **Available as option**  Refer to the instruction sheet ***EAV91355***.
Use the cable ***VW3A1104R30*** to replace the ATS48 3 meters cable for remote mounting kit. **Not included with the remote kit**		

Protective Covers for Power Terminals

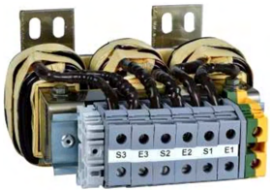
Compatible

The ATS48 protective covers for power terminals are fully compatible with the ATS480 and can be reused.

Line Chokes

Compatible

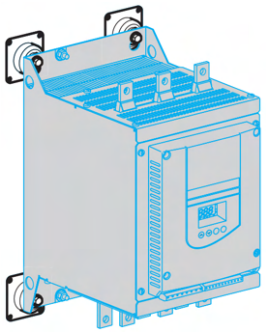
The ATS48 line chokes are fully compatible with the ATS480 and can be reused.



DNV Kits

Partially compatible

- **The ATS48 DNV kits are fully compatible with the ATS480 for the references from ATS480D17Y to ATS480C66Y**
- **For the references from ATS480C79Y to ATS480M12Y please refer to the ATS480 catalogue on SE.com to order the new kit**



Installation

What's in This Part

Product related information

Conductive foreign objects may cause parasitic voltage.

⚠⚠DANGER

ELECTRIC SHOCK AND/OR UNANTICIPATED EQUIPMENT OPERATION

- Keep foreign objects such as chips, screws or wire clippings from getting into the product.
- Verify correct seat of seals and cable entries in order to avoid deposits and humidity.

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

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

⚠WARNING

HOT SURFACES

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

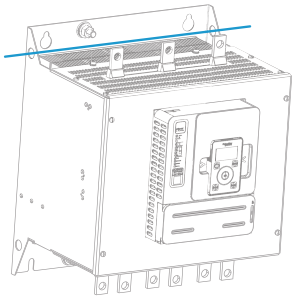
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Handling

Compatible

- **The ATS480 and ATS48 must be handled the same way according to the following instructions.**
- **The ATS480 and ATS48 weights are identical.**

Weight And Lifting Lugs Availability



See the weights, lifting lugs availability and packaging types in the following table before installing the soft starter.

References	Weight kg (lbs)	Lifting lugs	Packaging
ATS480D17Y...D47Y	4.9 (10.8)	No	Cardboard box
ATS480D62Y...C11Y	8.3 (18.2)	No	Cardboard box
ATS480C14Y...C17Y	12.4 (27.3)	Yes	Cardboard box
ATS480C21Y...C32Y	18.2 (40.1)	Yes	Pallet
ATS480C41Y...C66Y	51.4 (113.3)	Yes	Pallet
ATS480C79Y...M12Y	115 (253.5)	Yes	Pallet

Unpacking and Hoisting the References on Pallet

The references from ATS480C21Y to ATS480M12Y are mounted on pallet.

⚠CAUTION

SHARP EDGES

Use all necessary personal protective equipment (PPE) such as gloves when removing the components from the pallet.

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

⚠WARNING

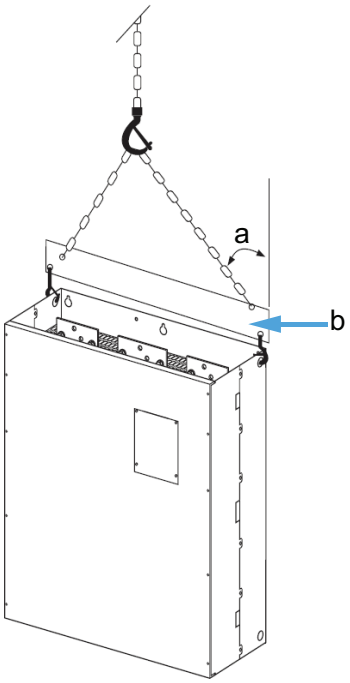
TOPPLING, SWINGING, OR FALLING EQUIPMENT

- Take all measures necessary to keep the equipment from swinging, toppling and falling.
- Follow the instructions provided to remove the equipment from the packaging and to mount it at its final position.

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

See the procedure for hoisting the references from ATS480C41Y to ATS480M12Y:

Step	Action
1	Lift the soft starter by means of a hoist by using the handling lugs of the soft starter to fasten the lifting equipment. The lifting bar is not supplied.
2	Keep the soft starter suspended by means of appropriate equipment until it is securely fastened in the final installation position.
3	Move the soft starter to the final installation or on the back of the enclosure in accordance with the instructions given in this document.



- a: 45° maximum
- b: Lifting bar

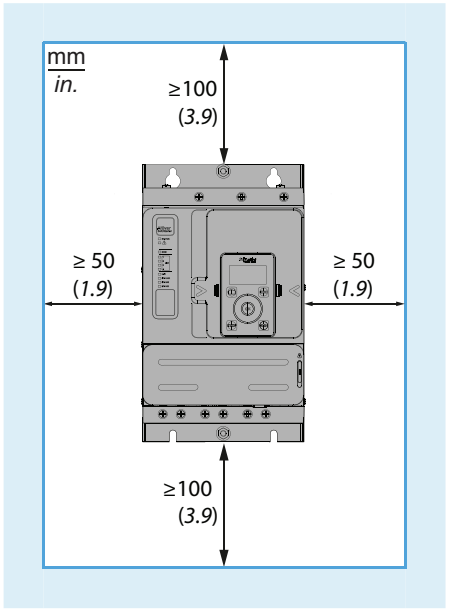
Clearances

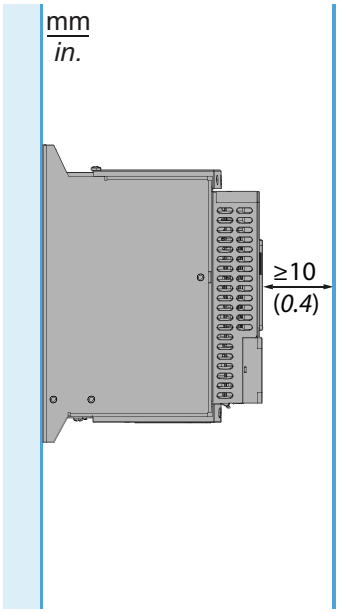
Compatible

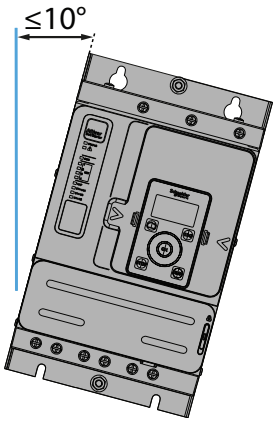
The ATS48 and ATS480 have the same:

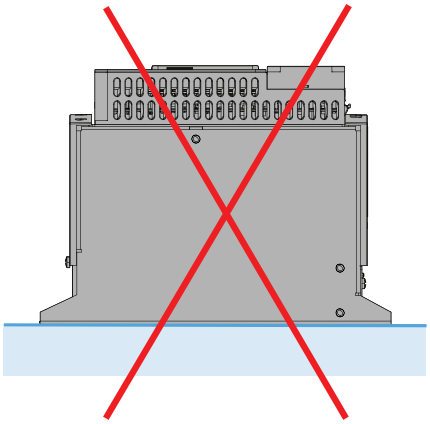
- **Minimum clearances**
- **Maximum angle**

No change is required.









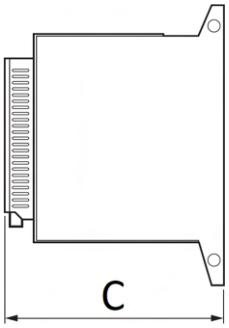
Mounting

- **The ATS480 use the same mounting plan as the ATS48.**
- **Use the same mounting holes from the existing ATS48 installation.**
- **Hole diameters, positions and mounting screws are identical.**

Dimension Differences

Partially compatible

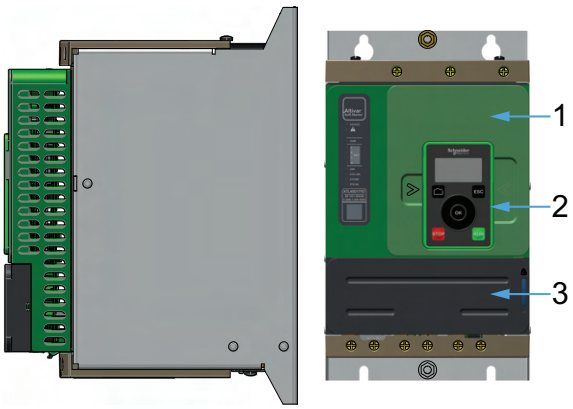
- **The ATS480 and ATS48 have the same width and height.**
- **The ATS480 is deeper than the ATS48 (dimension “c” on the figure).**
- **Refer to the following table for the differences in depth.**



References	**ATS480 depth (dimension “c”)** mm (inch)	**Depth difference with ATS48** mm (inch)
ATS480D17Y...D47Y	203 (8)	+13 (0.51)
ATS480D62Y...C11Y	247 (9.72)	+12 (0.47)
ATS480C14Y...C17Y	272 (10.7)	+7 (0.27)
ATS480C21Y...C32Y	277 (10.9)	+12 (0.47)
ATS480C41Y...C66Y	314 (12.3)	+14 (0.55)
ATS480C79Y...M12Y	329 (12.95)	+14 (0.55)

Refer to the following table for possibilities to reduce the depth difference between the ATS48 and the ATS480.

Removable parts for depth reduction	**Depth reduction if removed** mm (inch)
Plain text display terminal	0.5 (0.019)
Plain text display terminal + control trap	3 (0.11)
Plain text display terminal + control trap + casing	5 (0.19)



1. Casing
2. Plain text display terminal
3. Control trap

NOTE: To assure an IP20 protection degree on the front with the ATS480D17Y...C11Y it is necessary to keep the casing.

ATS480 Remote Mounting Kits

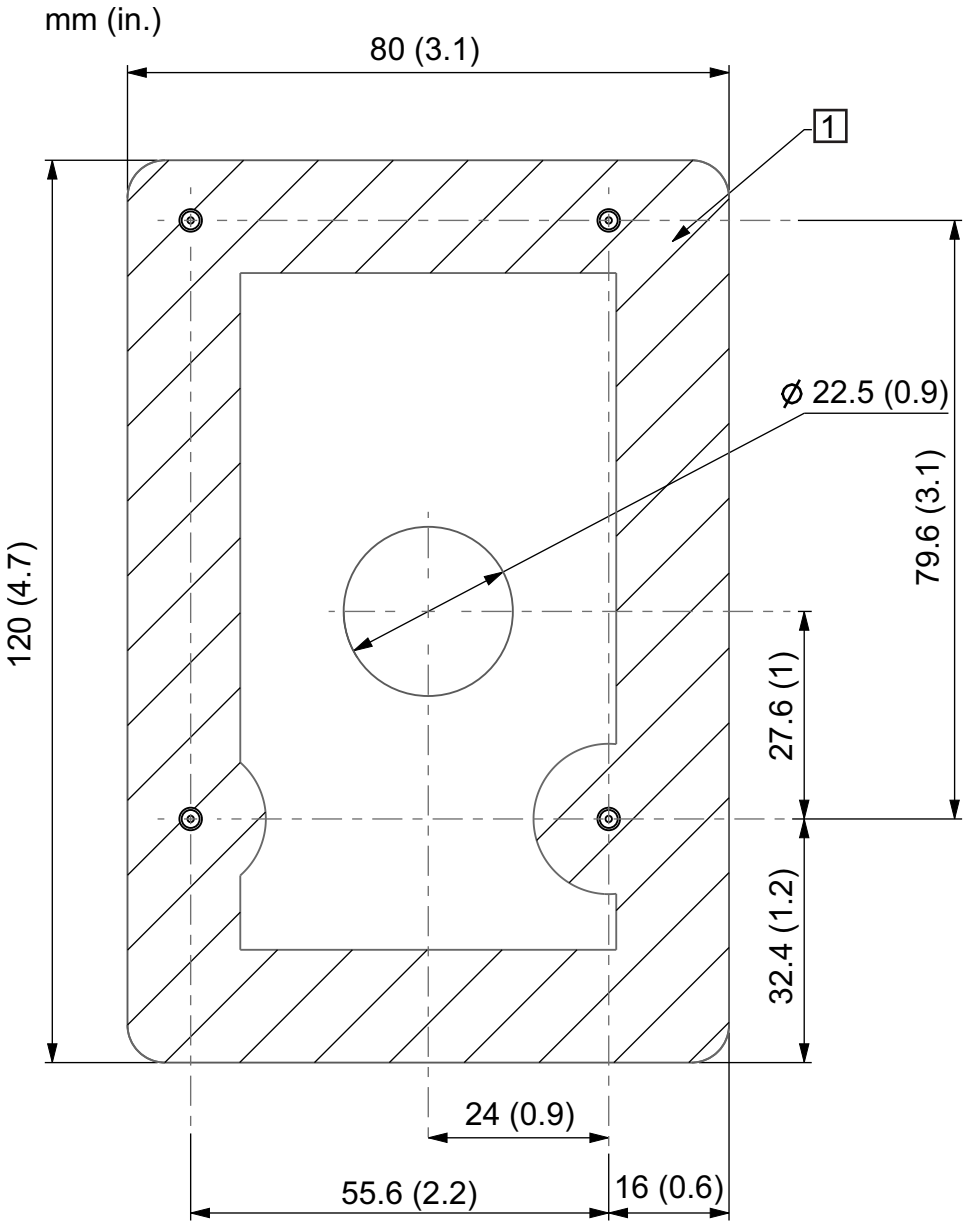
Not compatible

The drilling plans of the remote mounting kits for the Plain Text and Graphic Display Terminals are not compatible with the ATS48 door mounting kit drilling plan:

- The number and diameter of mounting holes is different
- The remote mounting kits for ATS480 are 1.5mm deeper than the ATS48 mounting kits

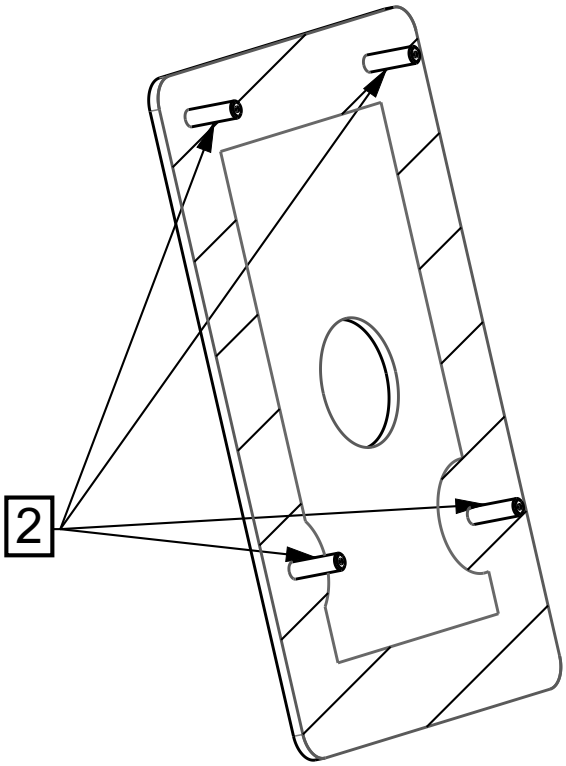
Refer to the following plan to create a support for the Plain Text Terminal and Graphic Display Terminal remote mounting kits.

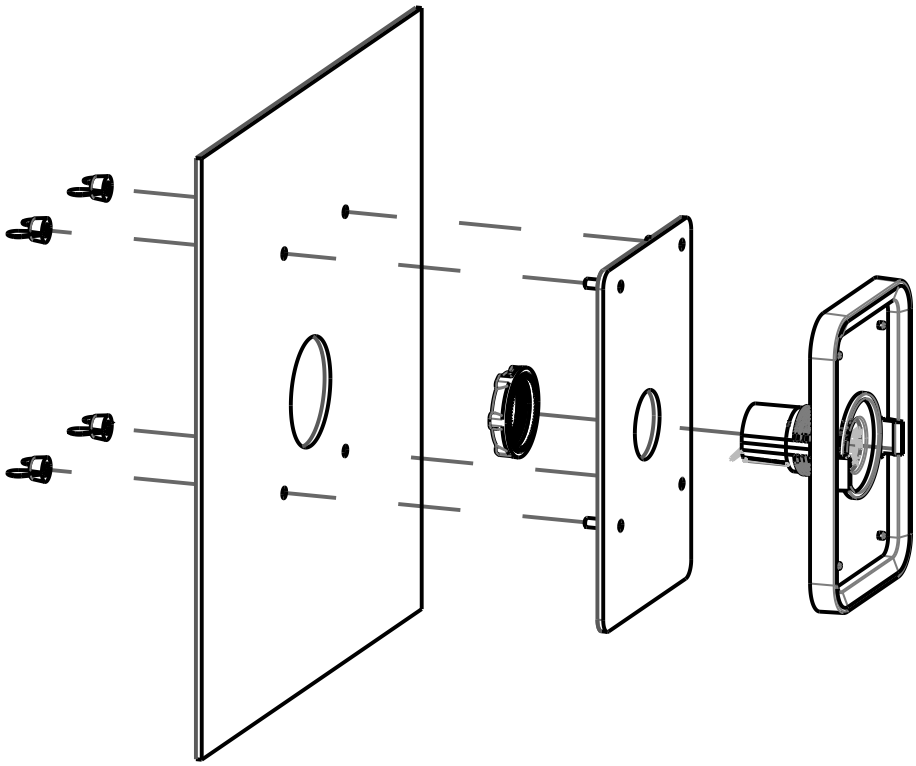
1 Apply gasket for sealing



Scale 1:1

2	4 crimped stud FH M3 length 12mm (0.47 in.)





Wiring

What’s in This Part

Power and Ground Wiring

Compatible

- **The ATS480 supply mains and ground wiring is identical to ATS48. The supply mains terminals denomination is identical between the two offers.**
- **The ATS48 electrical coordination elements, protections and contactors can be reused with the ATS480.**

Identify the position of the mains supply cables on the ATS48 and identically connect the mains supply of the ATS480 with the same cables.

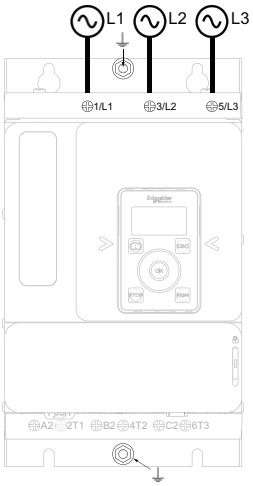
⚠WARNING

UNANTICIPATED EQUIPMENT OPERATION

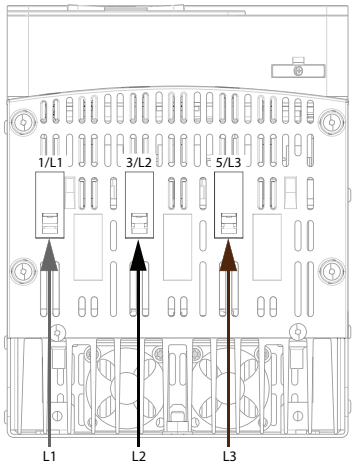
The ATS480 wiring must be identical to the ATS48 wiring in order to avoid wrong direction of the motor rotation.

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

ATS480 front view



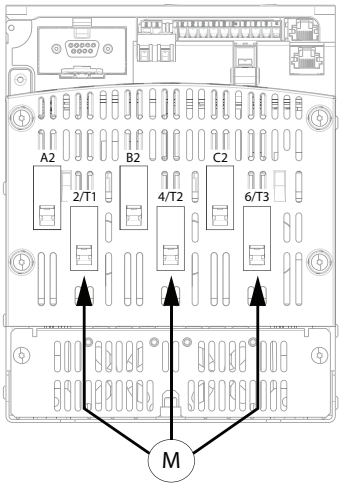
ATS480 top view



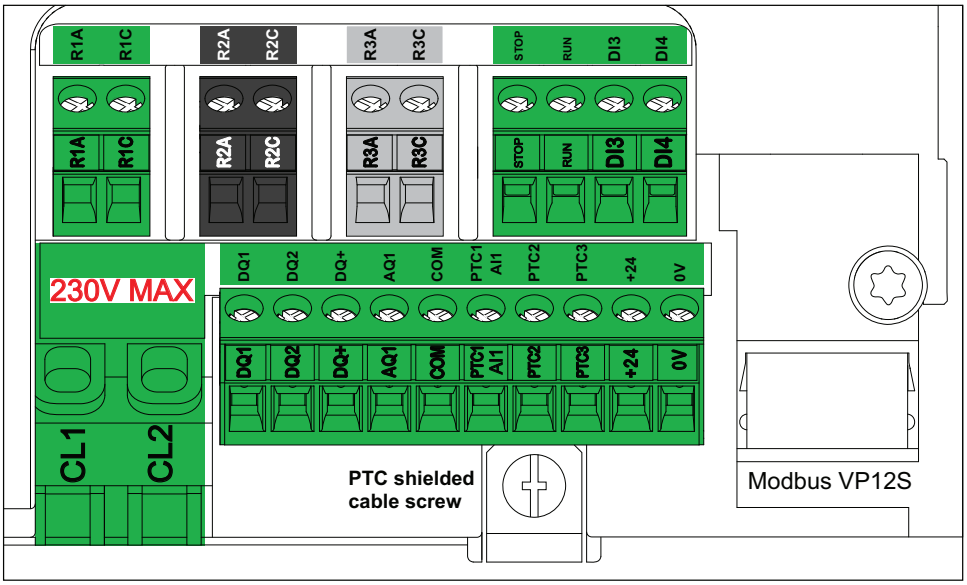
Connection characteristics

References	Tightening torque			
	Power connections		Ground	
	N·m	lbf.in	N·m	lbf.in
ATS480D17Y...D47Y	3	26	1.7	15
ATS480D62Y...C11Y	10	89	3	26
ATS480C14Y...C17Y	34	300	4.5	40
ATS480C21Y...C32Y	34	300	24	212
ATS480C41Y...C66Y	57	500		
ATS480C79Y...M12Y	57	500		

ATS480 bottom view



Layout And Characteristics Of Control Terminals



The control terminals are installed with one-way plug-in connectors and can be unplugged during the wiring.

Not compatible

The ATS480 control is supplied in 110...230 Vac +10% – 15%, 50/60 Hz ONLY.

- The ATS48●●●Y control block is supplied with 110...230 Vac. If the previous product is an ATS48●●●Y no change is required for the ATS480●●●Y.
- The ATS48●●●Q control block is supplied with 220...415 Vac. If the previous product is an ATS48●●●Q **you must adapt the supply voltage to 110...230 Vac** for the ATS480●●●Y.

You can use an existing 230 Vac supply source or a transformer to adapt the tension to 110 – 230 Vac.

NOTICE

INCORRECT VOLTAGE

- Supply the control supply terminals CL1 / CL2 within a range of 110...230 Vac only
- In case of migration from ATS48●●●Q to ATS480●●●Y, adapt the control supply transformer

Failure to follow these instructions can result in equipment damage.

Refer to this table to select the upstream electrical protection of CL1 / CL2:

References	**Control apparent power** (VA)
ATS480D17Y...D22Y	60
ATS480D32Y...C17Y	90
ATS480C21Y...C41Y	106
ATS480C48Y...C66Y	125
ATS480C79Y...M12Y	200

Not compatible

The ATS480 output relays allow for a maximum voltage of 230 Vac instead of 400 Vac on ATS48.

ATS48 terminals name	ATS480 terminals name	Description	Differences between ATS48 and ATS480
CL1	Same as ATS48	Control power supply	110...250 Vac, -15%…+10% **Remove the sticker**
CL2			
R1A	Same as ATS48	Programmable NO relay R1 – Assigned to Operating state Fault by default	Output relays allow for 230Vac instead of 400Vac on ATS48.
R1C			
R2A	Same as ATS48	NO relay R2 – Assigned to End of starting	
R2C			
R3A	Same as ATS48	Programmable NO relay R3	
R3C			
STOP	Same as ATS48	Digital Input 1 – Assigned to STOP	–
RUN		Digital Input 2 – Assigned to RUN	
LI3	DI3	Digital Input 3	
LI4	DI4	Digital Input 4	
COM	Same as ATS48	I/O common	–
LO+	DQ+	Digital output supply	–
LO1	DQ1	Programmable digital output 1	
LO2	DQ2	Programmable digital output 2	
AO1	AQ1	Programmable analog output 1	–
PTC1	PTC1/AI1	Motor Thermal sensor connection	+1 PTC terminal
PTC2	PTC2		
Not present	PTC3		
+24	Same as ATS48	Output: logic power supply / Input: device bloc control supply	–
Not present	0V	0V control	New terminal
RJ45 Modbus	Modbus VP12S	RS 485 Modbus	–

Control Terminals Wiring

- **Reuse the wires of the ATS48 control terminals for the ATS480 control terminals.**
- **Wire the ATS480 control terminals identically to the ATS48 control terminals.**
- **The maximum connecting capacity and tightening torque are the same between ATS48 and ATS480 control terminals.**

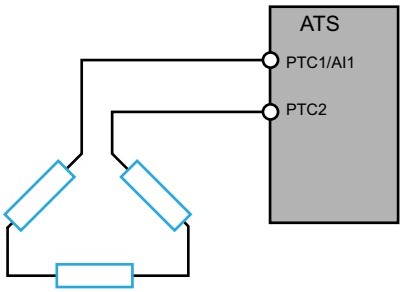
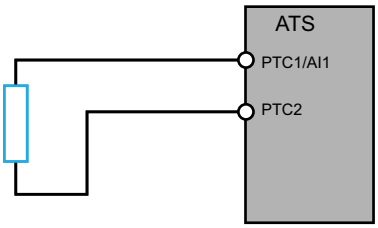
NOTE: The wires of the control part are 4.5 cm longer for the ATS480 references from ATS480D17Y to ATS480C17Y.

Maximum tightening torque	Minimum wires section		Maximum connection capacity
	Except relays	Relays	
N.m (lbf.in)	mm² (AWG)		mm² (AWG)
0.5 (4.4)	0.5 (20)	0.75 (18)	1.5 (15)

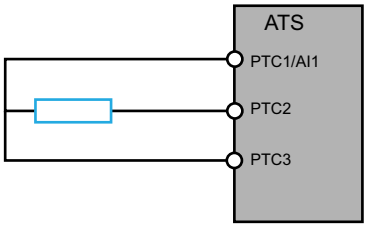
Refer to the following table of correspondence between the ATS48 to the ATS480 control terminals:

ATS48 terminals to unwire	Equivalent ATS480 terminals to wire
CL1	CL1
CL2	CL2
R1A	R1A
R1C	R1C
R2A	R2A
R2C	R2C
R3A	R3A
R3C	R3C
STOP	STOP
RUN	RUN
LI3	DI3
LI4	DI4
COM	COM
+24	+24
LO+	DQ+
LO1	DQ1
LO2	DQ2
AO1	AQ1
PTC1	PTC1 AI1
PTC2	PTC2
RJ45 Modbus	Modbus VP12S

For 2-Wire Sensors

3 serial PTC	Single PTC or PT100
	

For 3-Wire Sensors

Single PT100


Checking Installation

Check List: Before Switching On

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

⚠WARNING

UNANTICIPATED EQUIPMENT OPERATION

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

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

Check List: Mechanical Installation

Verify the mechanical installation of the entire soft starter system:

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

Check List: Electrical Installation

Verify the electrical connections and the wiring:

Step	Action	✓
1	Did you connect all protective Ground conductors?	
2	The correct tightening of the screws may be altered during assembly and wiring phases of the soft starter. Verify and adjust the tightening of all terminal screws to the specified nominal torque.	
3	Do all fuses and circuit breaker have the correct rating; are the fuses of the specified type? Refer to the information provided in the catalog.	
4	Did you connect or insulate all wires at the cable ends?	
5	Did you properly separate and insulate the control and power wiring?	
6	Did you properly connect and install all cables and connectors?	
7	Did you properly connect the signal wires?	
8	Are the required shield connections EMC-compliant?	
9	Did you take all measures for EMC compliance?	
10	Did you confirm that CL1/CL2 terminals are only supplied with 110...230 Vac?	
11	Did you confirm that the output of the relays R1 R2 and R3 are only connected to a maximum voltage of 250Vac / 30Vdc?	

Check List: Covers and Seals

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

Initial Setup

The **[LANGUAGE]** LNG menu is displayed at the first power-up of the ATS480. Refer to the following steps to prepare the ATS480 for the migration procedure.

Step	Action
1	In the **[LANGUAGE]** LNG menu, scroll to the desired device language and press **OK** to validate or press **ESC** to skip this step and keep the labels in English. **Result:** The device labels are now displayed in the selected language.
2	1. In the **[Time Zone]** TOP menu, set the local UTC offset and press **OK** to validate or press **ESC** to skip. 2. In the **[Set Date/Time]** DTO, set the local date and time and press **OK** to confirm or press **ESC** to skip. **Result:** The device is now set on the local time and date.
3	1. In the **[Initial Setup]** ROOT menu, select **[Go to product]** PRDM and press **OK**. 2. Choose a cybersecurity policy: • To set **no credentials** to access this device, refer to step 4. • To set **credentials** or **load an existing cybersecurity policy**, refer to the ATS480 User Manual, page 13.
4	1. Select **[Minimum Cybersec]** CSE and press **OK**. 2. Read the message explaining the functionalities of this profile and press **OK** to validate and access the main menu or **ESC** to cancel the selection. **Result:** The cybersecurity policy is set with no credentials and the device is ready to be commissioned. Refer to Configuration Migration, page 45 to migrate an ATS48 configuration to an ATS480. Selecting the profile **[Minimum Cybersec]** CSE, no credentials will be required to access your process or machine. This setting is saved with the configuration and will be active if a configuration is loaded or copied. **⚠WARNING** **UNAUTHENTICATED ACCESS AND MACHINE OPERATION** Do not select the profile **[Minimum Cybersec]** CSE if your machine or process is accessible to unauthorized personnel either directly or via a network. **Failure to follow these instructions can result in death, serious injury, or equipment damage.**

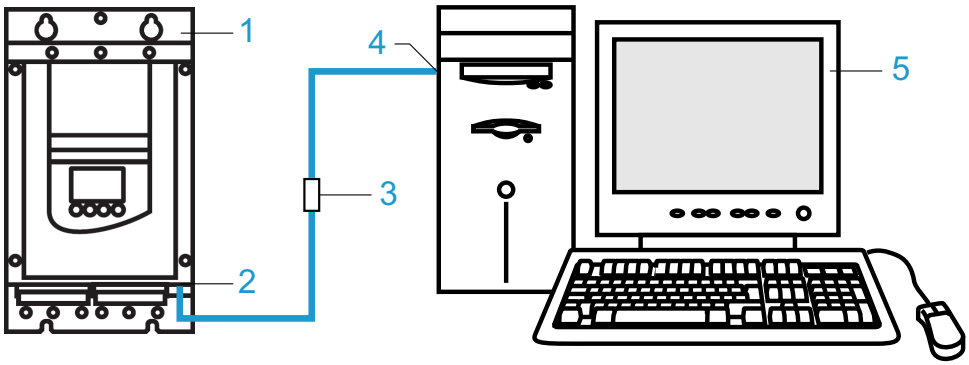
Configuration Migration

What’s in This Part

Requirements

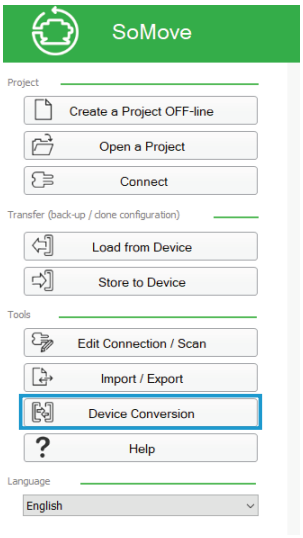
Description	Catalog number and link	
In the menu **[Complete settings]** CST –> **[Command channel]** CCP: • Set the parameter **[Control Mode]** CHCF to **[SE8 Profile]** SE8 (factory setting) This setting is necessary to migrate the ATS48 configuration to the ATS480.		
SoMove setup software Includes: • SoMove setup software for PC in English, French, German, Italian, Spanish and Chinese.	SoMove software can be downloaded from the Schneider Electric website: • *SoMove FDT* (English, French, German, Spanish, Italian, Chinese)	
ATS480 DTM	DTMs (Device Type Managers) can be downloaded from the Schneider Electric website: • DTM: ATS480 DTM Library EN (English — to be installed first), ATS480 DTM Lang FR (French), ATS480 DTM Lang SP (Spanish), ATS480 DTM Lang IT (Italian), ATS480 DTM Lang DE (German), ATS480 DTM Lang CN (Chinese)	
USB/RJ45 cable • Used to connect a PC to the device. • This cable is 2.5 m / 8.20 ft long, has a USB connection (PC end) and an RJ45 connector (device end).	TCSMCNAM3M002P	

Connect the ATS48 to a computer with SoMove installed and power-up the ATS48.

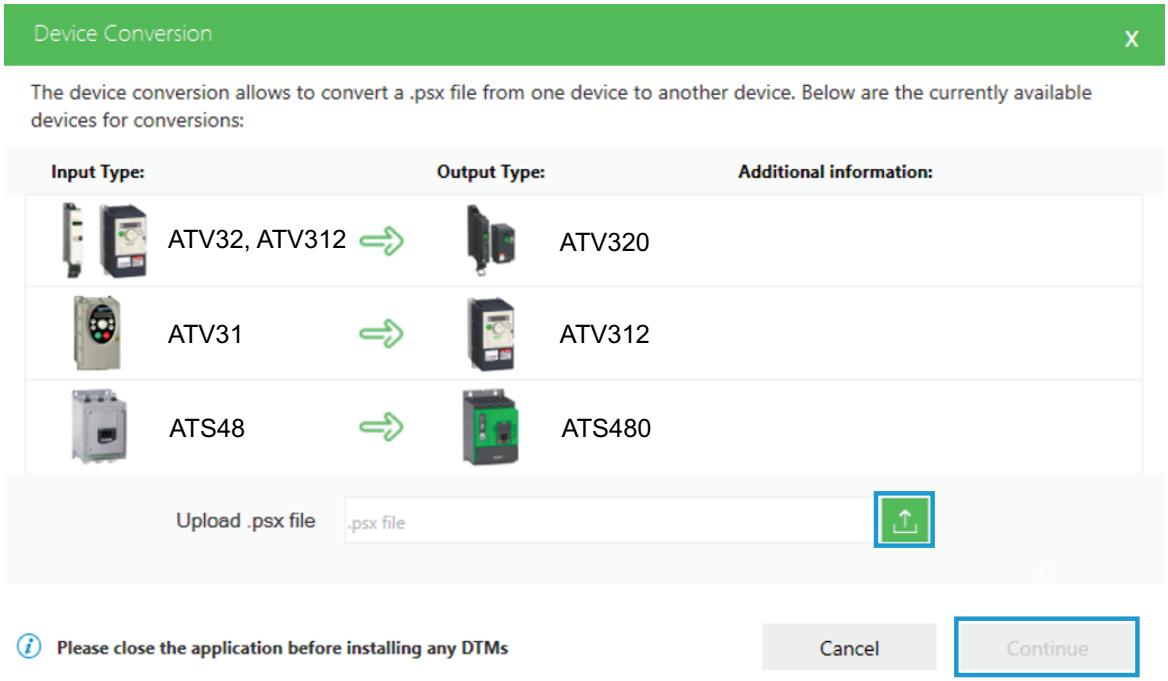
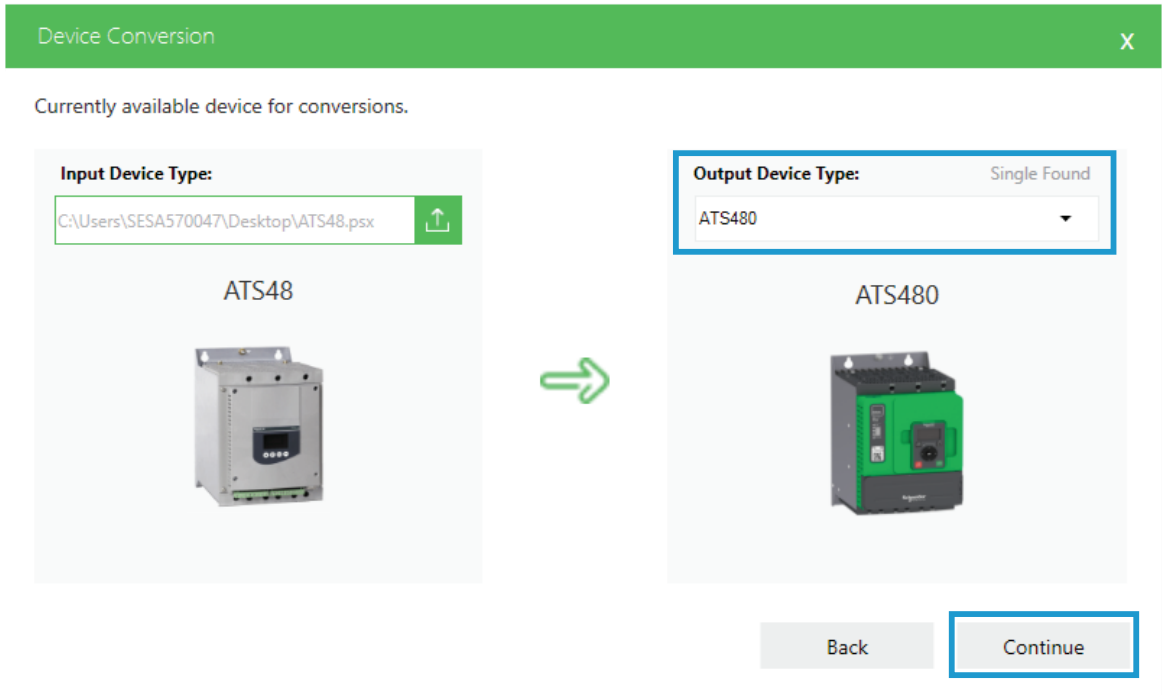


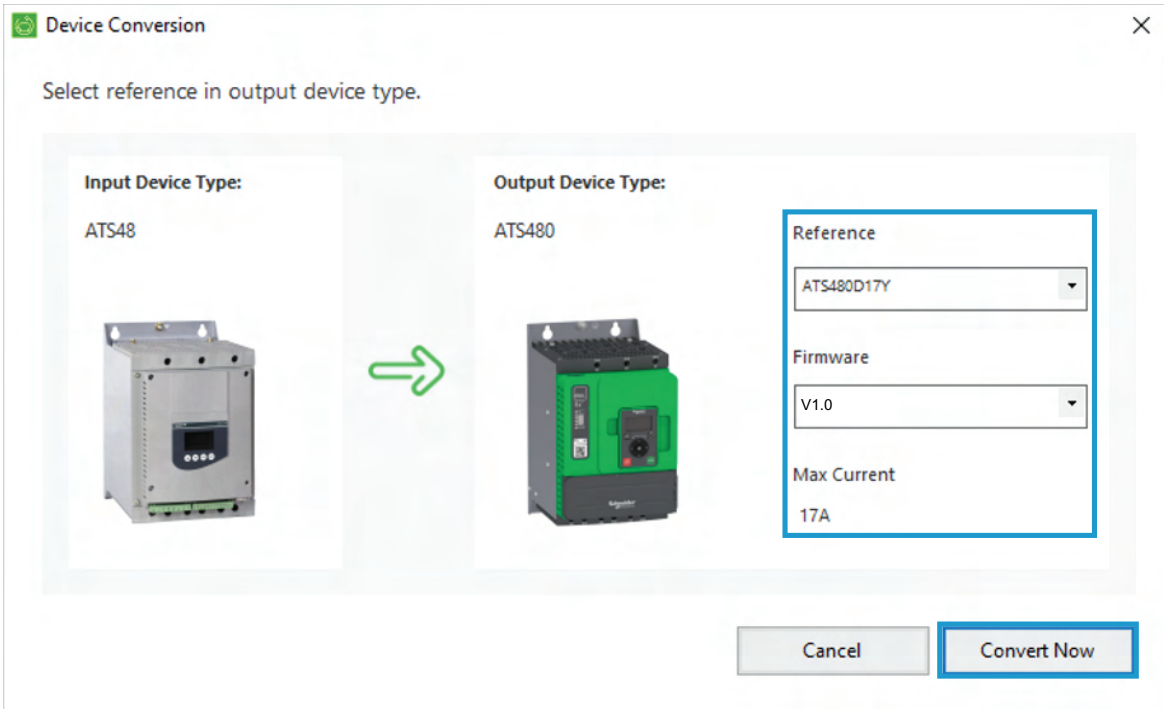
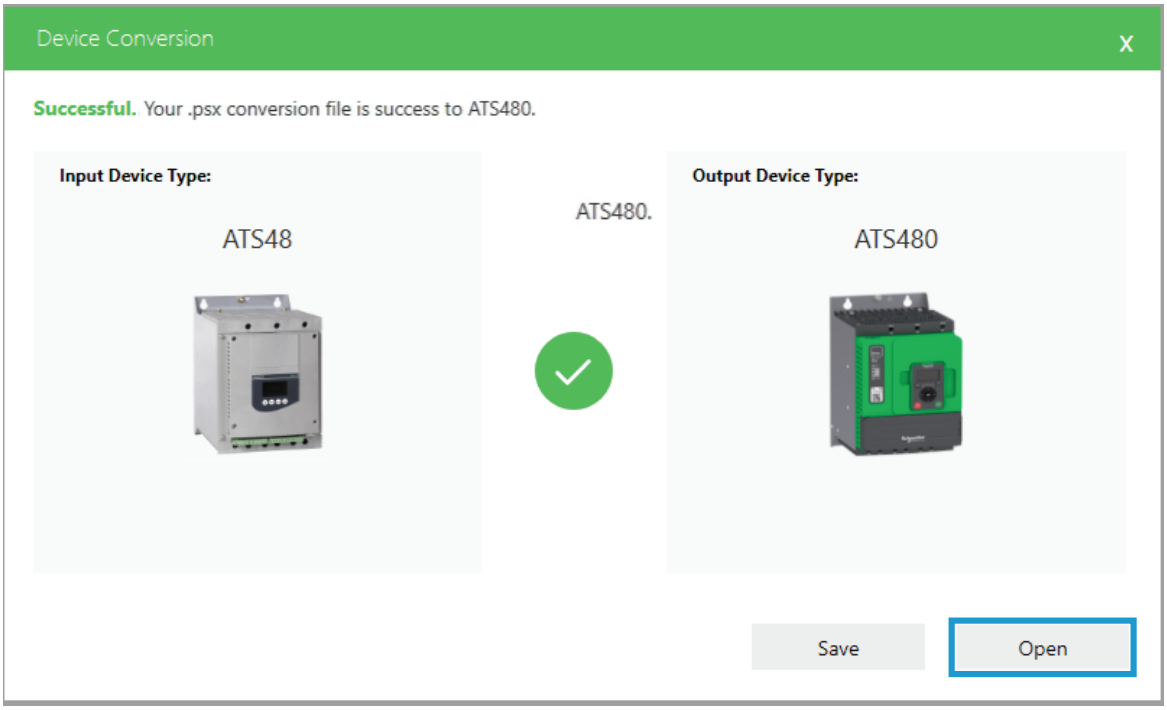
1. ATS48
2. ATS48 Serial Modbus RJ45 port
3. RJ45/USB communication cable TCSMCNAM3M002P
4. PC USB port
5. PC with SoMove installed and the ATS480 DTM

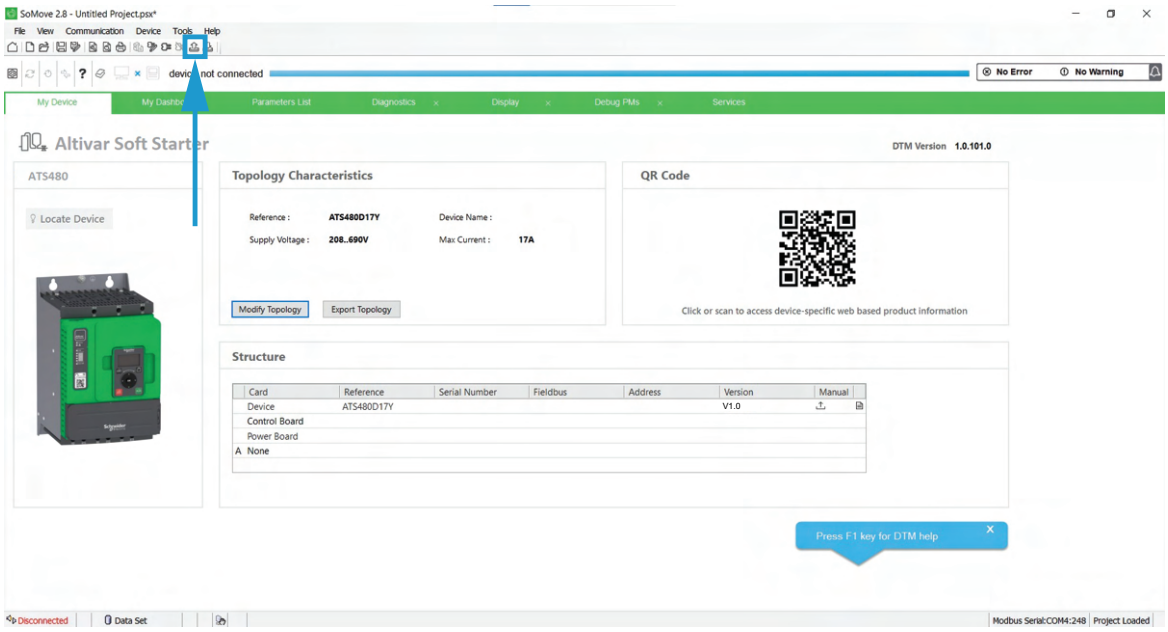
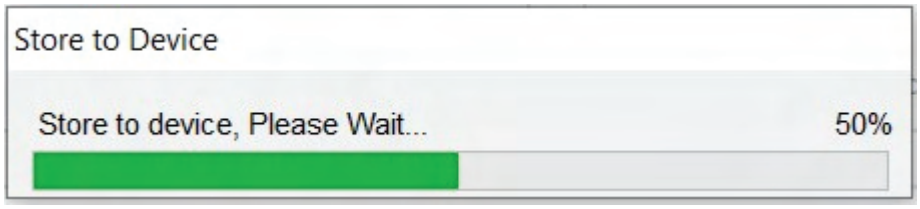
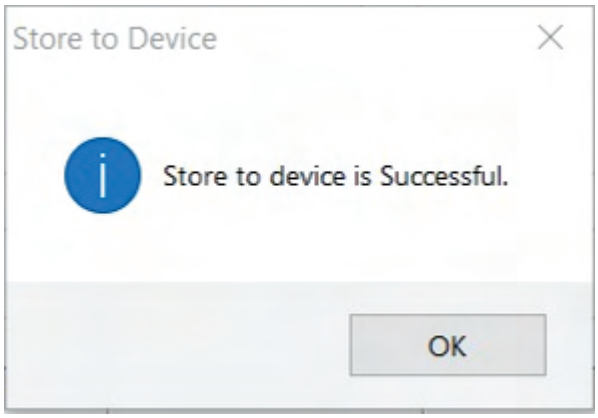
Migration Procedure

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>
1. Connect a computer with SoMove and ATS480 DTM to the ATS48 to substitute. Refer to Requirements, page 46.
2. Start the SoMove application.
3. In the SoMove home page, do one of the following:
• Click the Device Conversion button
• Press CTRL + ALT + Q keys, on the menu bar, click File –> Device Conversion


Result: Opening of the Device Conversion dialog box.
NOTE: The following table shows the default Modbus format:
<table>
<tr><th></th><th>Soft Starter ATS 48</th><th>Soft Starter ATS 480</th></tr>
<tr><td>Default Modbus Format</td><td>8n1</td><td>8e1</td></tr>
</table>
</td></tr>
<tr><td>2</td><td>
In the Device Conversion dialog box:
1. Click on 
2. Select the configuration file (.psx) to convert and click Open
3. Click Continue
</td></tr>
</table>

Step	Action
	 **Result:** Opening of the **Currently available device for conversions** dialog box
3	In the **Currently available device for conversions** dialog box: 1. Select the target device reference in the **Output Device Type** list 2. Click **Continue**  **Result:** Opening of the **Select reference in output device type** dialog box

Step	Action
4	In the **Select reference in output device type** dialog box: 1. Select the output device reference 2. Select the latest output device firmware version available 3. Check the output device current rating 4. Click **Convert Now**  **Result:** Opening of the list of converted parameters and their value in the ATS480 project
5	In the **Successfully psx file conversion** dialog box: 1. Check the input and output devices 2. Click **Open**  **Result:** Opening of the new ATS480 project with the converted .psx file

Step	Action
6	In the toolbar click **Store to Device**  **Result:** Opening of the **Store to Device** dialog box, loads the converted .psx file to the output device 
7	If the transfer is successful: **Result:** Opening of the **Store to device is Successful** dialog box  If the transfer is not successful, verify the connection with the output device. When the transfer is successful, restart the device to take the new Modbus communication values into account. This conclude the configuration transfer from the ATS48 to the ATS480. To modify the migrated configuration, refer to the ATS480 User Manual, page 13.

ATS48 Code Equivalence With ATS480 Parameters

This table presents the equivalence between the ATS48 codes and the ATS480 parameters visible on the display terminal.

ATS48		ATS480	
Code	**HMI access path**	**HMI access path**	**Parameter**
SEt	Main menu	1 **[Simply Start]** SYS ➡ **[Simply start]** SIM	**[Simply Start]** SYS
In	SEt	1 **[Simply Start]** SYS ➡ **[Simply start]** SIM	**[Motor Nom Current]** IN
ILt	SEt		**[Current Limit]** ILT
uLn	drC		**[Mains Voltage]** ULN
ACC	SEt		**[Acceleration]** ACC
tq0	SEt		**[Init Starting Torque]** TQ0
Sty	SEt		**[Type Of Stop]** STY
dEC	SEt		**[Deceleration]** DEC
EdC	SEt		**[End Of Deceleration]** EDC
brC	SEt		**[Braking Level]** BRC
EbA	SEt		**[DC Braking Time]** EBA
Pro	Main menu	Main menu	**[Monitoring]** PROT
tHP	Pro	2 **[Monitoring]** PROT	**[Motor Class]** THP
uLL	Pro	2 **[Monitoring]** PROT	**[Underload Activation]** UDLA
tuL	Pro	➡ **[Process underload]** ULD	**[Unld Detect Delay]** ULT
LuL	Pro		**[Unld.Thr.0.Speed]** LUL
uLL	Pro		**[Underload ErrorResp]** UDL
tLS	Pro	2 **[Monitoring]** PROT	**[Too Long Start]** TLS
oIL	Pro	2 **[Monitoring]** PROT	**[Overload Activation]** ODLA
toL	Pro	➡ **[Process overload]** OLD	**[Ovld Detection Delay]** TOL
LoC	Pro		**[Overload Threshold]** LOC
oIL	Pro		**[Overload ErrorResp]** ODL
PHr	Pro	2 **[Monitoring]** PROT	**[Phase Inversion Mon]** PHR
tbS	Pro		**[Time Before Restart]** TBS
PHL	Pro		**[Phase Loss Cur Thd]** PHL
rtH	Pro		**[Mot Th State Reset]** RTHR
PtC	Pro	2 **[Monitoring]** PROT ➡ **[Thermal monitoring]** TPP	**[AI1 Th Monitoring]** TH1S **[AI1 Type]** AI1T **[AI1 Th Error Resp]** TH1B
drC	Main menu	Main menu	**[Complete settings]** CST
FrC	drC	3 **[Complete settings]** CST	**[Mains Frequency]** FRC
dLt	drC	➡ **[Motor parameters]** MPA	**[Inside Delta]** DLT
SSt	drC		**[Small Motor Test]** SST

ATS48		ATS480	
Code	**HMI access path**	**HMI access path**	**Parameter**
bSt	drC	3 **[Complete settings]** CST ➡ **[Motor wiring]** MWMT	**[Boost]** BST **[Init Starting Voltage]** V0
CLP	drC		**[Control Mode]** CLP
iPr	IO	3**[Complete settings]** CST ➡ **[Preheating]** PRF	**[Preheat Level]** IPR
tPr	IO		**[Time Before Preheat]** TPR
tiG	drC	3 **[Complete settings]** CST ➡ **[Start & Stop]** SSP	**[Deceleration Gain]** TIG
tLi	drC		**[Torque Limit]** TLI
LSC	drC		**[Stator Loss Comp]** LSC
CSC	drC	3 **[Complete settings]** CST ➡ **[Cascade]** CSC	**[Cascade Activation]** CSC
ArS	Pro	3 **[Complete settings]** CST ➡ **[Error/Warning handling]** CSWM	**[Auto Fault Reset]** ATR
IO	Main Menu	Main Menu	**[Input/Output]** IO
LI3	IO	4 **[Input/Output]** IO	**[DI3 High Assignment]** L3H
LI4	IO		**[DI4 High Assignment]** L4H
Lo1	IO	4 **[Input/Output]** IO ➡ **[DQ1 configuration]** DO1	**[DQ1 Assignment]** DO1
Lo2	IO	4 **[Input/Output]** IO ➡ **[DQ2 Configuration]** DO2	**[DQ2 Assign]** DO2
Ao	IO	4 **[Input/Output]** IO	**[AQ1 assignment]** AO1
O4	IO	➡ **[AQ1 configuration]** AO1	**[AQ1 Type]** AO1T **[AQ1 min output]** AOL1 **[AQ1 max output]** AOH1
ASC	IO		**[AQ1 Scaling]** AO1S
r1	IO	4 **[Input/Output]** IO ➡ **[R1 configuration]** R1	**[R1 Assignment]** R1
r3	IO	4 **[Input/Output]** IO ➡ **[R3 configuration]** R3	**[R3 Assignment]** R3
St2	Main menu	Main menu	**[2nd Mot Parameters]** ST2
In2	St2	5 **[2nd Mot Parameters]** ST2	**[Nom Current Motor 2]** INM2
IL2	St2		**[Current Limit Motor 2]** ILM2
AC2	St2		**[Acceleration Motor 2]** ACM2
tq2	St2		**[Init Start Torque Mot 2]** TQM2
dE2	St2		**[Deceleration Motor 2]** DEM2
Ed2	St2		**[End Of Dec Motor 2]** EDM2
tL2	St2		**[Torque Limit Motor 2]** TLM2
ti2	St2		**[Dec Gain Motor 2]** TIM2
CoP	Main menu	Main menu	**[Communication]** COM

ATS48		ATS480	
Code	**HMI access path**	**HMI access path**	**Parameter**
Add	CoP	6 **[Communication]** COM ➡ **[Modbus Fieldbus]** MD1	**[Modbus Address]** ADD
tbr	CoP		**[Modbus Baud Rate]** TBR
For	CoP		**[Modbus Format]** TFO
tLP	CoP		**[ModbusTimeout]** TTO
SuP	Main menu	Main menu	**[Display]** MON
CoS	SuP	7 **[Display]** MON ➡ **[Motor parameters]** MMO	**[Power Factor]** COS
LCr	SuP		**[Motor Current]** LCR
LPr	SuP		**[Acv Elc Out Pwr in %]** EPR
Ltr	SuP		**[Motor Torque]** LTR
PHE	SuP		**[Phase Direction]** PHE
tHr	SuP	7 **[Display]** MON ➡ **[Thermal Monitoring]** TPM	**[Motor Therm State]** THR
rPr	drC	7 **[Display]** MON ➡ **[Counter Management]** ELT	**[Counter Reset]** RPR
rnt	SuP	7 **[Display]** SUP ➡ **[Counter Management]** ELT	**[Motor Run Time]** RTHH
LAP	SuP	7 **[Display]** MON ➡ **[Energy parameters]** ENP	**[Acv Elc Out Pwr in kW]** EPRW
LFt	SuP	8 **[Diagnostics]** DIA ➡ **[Diag. data]** DDT	**[Last Error]** LFT
FCS	drC	9 **[Device Management]** DMT ➡ **[Factory settings]** FCS	**[Factory settings]** FCS
EtA	SuP	Not migrated.	
Cod	SuP	Not migrated	

ATS48 Parameter Changes

The following parameters has been modified from ATS48 to ATS480.

- The soft starter behavior is identical between ATS48 and ATS480
- The following changes do not affect the migration procedure
- To access to all parameters, set **[Access Level]** LAC in the **[My preferences]** MYP menu to **[Expert]** EPR.

O 4 – Configuration of the type of signal supplied by output AO

The O 4 ATS48 parameter set the type of signal supplied by the control terminal AO1:

- 020: 0 – 20 mA signal
- 040: 4 – 20 mA signal

For ATS480 this functionality is split into the 3 following parameters:

- **[AQ1 Type]** AO1T for setting the type of signal supplied by the terminal AQ1
- **[AQ1 min output]** AOL1 for setting the lower limit of the current output from AQ1
- **[AQ1 max output]** AOH1 for setting the upper limit of the current output from AQ1

With ATS48 the scaling of the value measured by AO1 is assured by the parameter A S C. This functionality is identical for ATS480 with the parameter **[AQ1 Scaling]** AO1S.

ATS48 parameters

Code	Setting	Factory setting
O 4	020 – 420	020
• 020: 0 – 20 mA signal • 040: 4 – 20 mA signal		
A S C	50...500%	200
• Motor current scaling: A S C percentage multiplied by the nominal motor current • Motor torque scaling: A S C percentage multiplied by the nominal motor torque • Motor thermal state: A S C percentage multiplied by 100% • Power factor: A S C between 0 and 1. • Motor electrical active power: A S C percentage multiplied by the nominal motor power		

ATS480 parameters

Parameter	Setting	Factory setting
[AQ1 Type] AO1T	–	**[Current]** 0A
AQ1 Type This parameter set the type of analogue output. • **[Voltage]** 10U: voltage output • **[Current]** 0A: current output Access path: **[Input/Output]** ➡ **[AI/AQ]** ➡ **[AQ1 configuration]**		
[AQ1 min output] AOL1	0.0...20.0 mA	0.0 mA
AQ1 min output value This parameter set the minimum current output from AQ1 This parameter is visible only if **[AQ1 Type]** AO1T is set to **[Current]** 0A. Access path: **[Input/Output]** ➡ **[AI/AQ]** ➡ **[AQ1 configuration]**		
[AQ1 max output] AOH1	0.0...20.0 mA	20.0 mA
AQ1 max output value This parameter set the maximum current output from AQ1 This parameter is visible only if **[AQ1 Type]** AO1T is set to **[Current]** 0A. Access path: **[Input/Output]** ➡ **[AI/AQ]** ➡ **[AQ1 configuration]**		
[AQ1 Scaling] AO1S	50...500%	200
Analog output AQ1 scaling • Motor current scaling: **[AQ1 Scaling]** percentage multiplied by the nominal motor current • Motor torque scaling: **[AQ1 Scaling]** percentage multiplied by the nominal motor torque • Motor thermal state: **[AQ1 Scaling]** percentage multiplied by 100% • Power factor: **[AQ1 Scaling]** between 0 and 1. • Motor electrical active power: **[AQ1 Scaling]** percentage multiplied by the nominal motor power • Access path: **[Input/Output]** ➡ **[AI/AQ]** ➡ **[AQ1 configuration]**		

CLP – Torque control

The CLP ATS48 parameter set the torque control to On or OFF.

The ATS480 parameter **[Control Mode]** CLP behave identically, the difference being the name of the settings:

- On is changed to **[Torque Control]** TC
- OFF is changed to **[Voltage Control]** VC

ATS48 parameter

ATS48 Code	Setting	Factory setting
CLP	On – OFF	On
• On: Torque control active • OFF: Torque control inactive When the torque control is inactive, acceleration and deceleration are controlled by voltage variation.		

ATS480 parameter

Parameter	Setting	Factory setting
[Control Mode] CLP	–	**[Torque Control]** TC
Control mode • **[Torque Control]** TC: enable torque control. • **[Voltage Control]** VC: enable voltage control Access path: **[Complete settings]** ➡ **[Start & Stop]**		

bST – Voltage boost level

With **[Control Mode]** CLP set to **[Torque Control]** TC (factory setting):

- The ATS480 **[Boost]** BST parameter is identical to the ATS48 bST parameter.

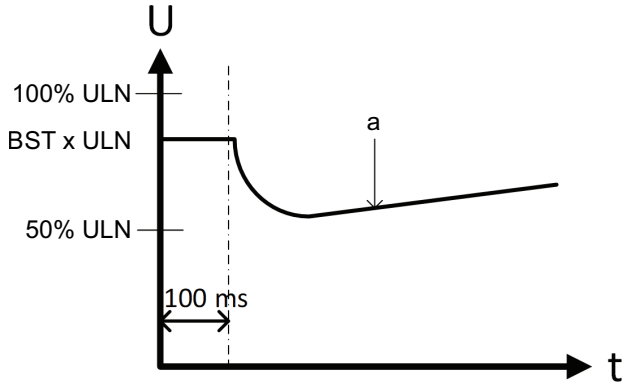
ATS48 and ATS480 parameter

ATS48 Code	Setting	Factory setting
bST	50...100% or OFF	OFF

The ATS48 bST parameter provide a boost of 100 ms at the start to overcome a mechanical hard point. The level of the starting boost can be set between 50% and 100% of **[Mains Voltage]** ULN. At the end of boost, the starting ramp follow the start profile set by ACC and tQO.

The ATS480 **[Boost]** BST parameter is identical.

- OFF: Function inactive
- 50%...100%: setting as a % of nominal motor voltage during boost



- U: Voltage
- t: Time
- a: Voltage generated by the torque control
- ULN: **[Mains Voltage]** ULN, mains supply set in **[Simply Start]** SYS.

NOTE: Setting the value of this parameter too high can cause overcurrent and trigger error such as **[Overcurrent]** OCF

With **[Control Mode]** CLP set to **[Voltage Control]** VC:

- The ATS48 bST parameter can be set between 25% and 100% of **[Mains Voltage]** ULN. This range regroups two different behaviors:
  - Between 25% and 49%, bST set the initial voltage of the starting ramp
  - Between 50% and 100%, bST set the level of the starting boost for 100 ms before following the starting ramp

To clarify, the bST parameter has been split into the 2 following parameters:

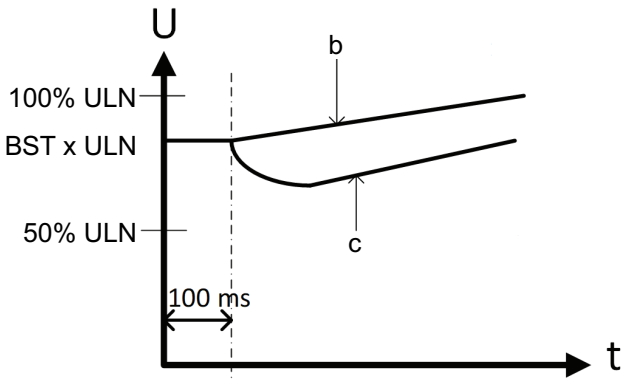
- **[Boost]** BST restricted between 50% and 100% which set the level of the boost for 100 ms before following the starting ramp
- **[Init Starting Voltage]** V0 restricted between 25% and 49% which set the initial voltage of the starting ramp

When **[Boost]** BST is active, **[Init Starting Voltage]** V0 is ignored and not visible.

ATS480 parameter – Boost with voltage control

Parameter	Setting range	Factory setting
[Boost] BST	50...100% of **[Mains Voltage]** ULN or **[No]** NO	**[No]** NO

When **[Control Mode]** CLP is set to **[Voltage Control]** VC the starting ramp initialized with **[Boost]** BST follow this curve:



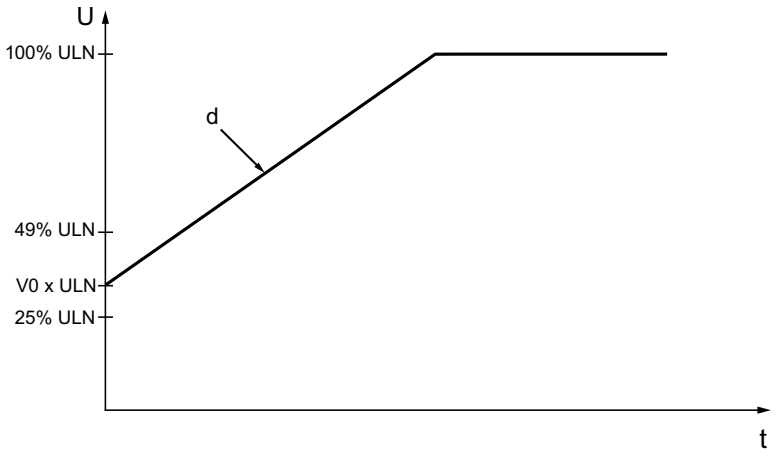
- U: Voltage
- t: Time
- b: Voltage ramp initialized to **[Boost]** BST level
- c: Voltage ramp in case of current limitation
- ULN: **[Mains Voltage]** ULN, mains supply set in **[Simply Start]** SYS.

Access path: **[Complete settings]** ➡ **[Start & Stop]**

ATS480 parameters – Initial voltage

Parameter	Setting range	Factory setting
[Init Starting Voltage] V0	25...49% of **[Mains Voltage]** ULN	49%

Set the initial voltage of the starting ramp.



- U: Voltage
- t: Time
- d: Voltage starting ramp

This parameter is visible if:

- **[Control Mode]** CLP is set to **[Voltage Control]** VC
- **[Boost]** BST is set to **[No]** NO

Access path: **[Complete settings]** ➡ **[Start & Stop]**

oIL – Activation of current overload

The oIL ATS48 parameter enables the motor overload monitoring and the soft starter behavior when the measured motor current exceeds the set threshold:

For ATS480 the activation of this function is splitted into the 2 following parameters:

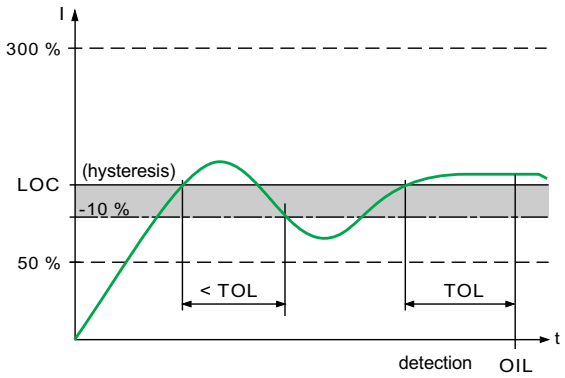
- **[Overload Activation]** ODLA to enable or disable the motor overload monitoring
- **[Overload ErrorResp]** ODL to set the soft starter behavior when the measured motor current exceeds the set threshold. The definition of the threshold and detection time is same as ATS48.

ATS48 parameter

ATS48 Code	Setting	Factory setting
oIL	–	OFF

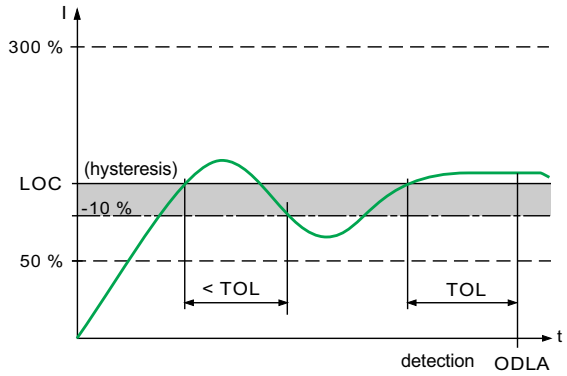
If the motor current exceeds an adjustable threshold LoC for a period of time longer than an adjustable value toL:

- ALA: an alarm is activated (internal bit and configurable logic output)
- dEF: the soft starter is locked and the oLC fault is triggered
- oFF: deactivate this functionality



- I: Current
- t: Time

ATS480 parameters

Parameter	Setting	Factory setting
[Overload Activation] ODLA	–	**[No]** NO
Overload activation This parameter enable overload monitoring. The monitoring is active when the soft starter displays **[Running]** RUN. If the motor current exceeds the threshold set in **[Overload Threshold]** LOC for a duration longer than the value set in **[Ovld Detection Delay]** TOL, the soft starter behave according to the value set in **[Overload ErrorResp]** ODL. • **[Yes]** YES: Activate overload monitoring • **[No]** NO: Deactivate overload monitoring  • I: Current • t: Time Access path: **[Monitoring]** ➡ **[Process overload]**		
[Overload ErrorResp] ODL	–	**[No]** NO
Response to overload error This parameter set the soft starter behavior when the motor current exceeds the threshold set in **[Overload Threshold]** LOC for a duration longer than the value set in **[Ovld Detection Delay]** TOL. • **[No]** NO: trigger a warning (internal bit and configurable digital output) • **[Yes]** YES: trigger the **[Process Overload]** OLC error This parameter can be accessed if **[Overload Activation]** ODLA is set to **[Yes]** YES. Access path: **[Monitoring]** ➡ **[Process overload]**		

uLL – Activation of motor underload

The uLL ATS48 parameter enables the motor underload monitoring and the soft starter behavior when the measured motor torque is lower than the set threshold:

For ATS480 the activation of this function is splitted into the 2 following parameters:

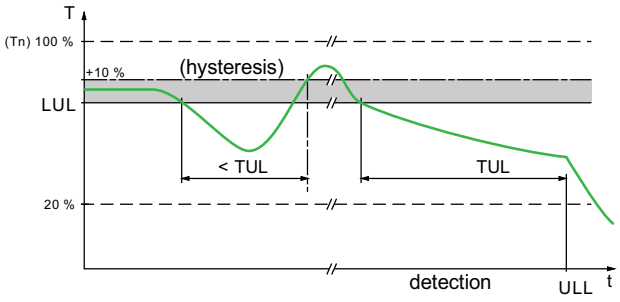
- **[Underload Activation]** UDLA to enable of disable the motor underload monitoring
- **[Underload ErrorResp]** UDL to set the soft starter behavior when the measured torque is below the set threshold. The definition of the threshold and detection time is same as ATS48.

ATS48 parameter

ATS48 Code	Setting	Factory setting
uLL	–	OFF

If the motor torque is less than an adjustable threshold LuL for a period of time longer than an adjustable value tuL :

- AlA: an alarm is activated (internal bit and configurable logic output)
- dEF: the soft starter is locked and the uLF fault is triggered
- oFF: deactivate this functionality



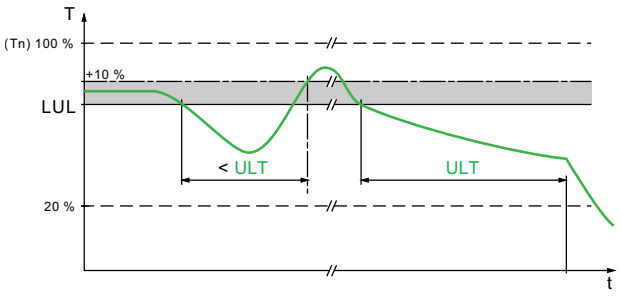
- T: Torque
- t: Time

ATS480 parameters

Parameter	Setting	Factory setting
[Underload Activation] UDLA	**[Yes]** YES or **[No]** NO	**[No]** NO

Underload activation
This parameter enable underload monitoring.

If the motor torque is inferior to the threshold set in **[Underload Threshold]** LUL for a duration longer than the value set in **[Unld Detect Delay]** ULT, the soft starter behave according to the value set in **[Underload ErrorResp]** UDL.



- T: Torque
- t: Time

ATS480 parameters (Continued)

Access path: **[Monitoring]** ➡ **[Process underload]**		
[Underload ErrorResp] UDL	**[Yes]** YES or **[No]** NO	**[OFF]** OFF
Response to underload error This parameter set the soft starter behavior when the motor torque is inferior to the threshold set in **[Underload Threshold]** LUL for a duration longer than the value set in **[UnId Detect Delay]** ULT. • **[Yes]** YES: trigger the **[Process Underload]** ULF error • **[No]** NO: trigger a warning (internal bit and configurable digital output) This parameter can be accessed if **[Underload Activation]** UDLA is set to **[Yes]** YES. Access path: **[Monitoring]** ➡ **[Process underload]**		

PtC – Activation of motor monitoring by PTC probes

The PtC ATS48 parameter provides motor thermal monitoring with PTC probes and set the soft starter behavior when the measured motor temperature trigger the warning otF:

ATS48 parameter

ATS48 Code	Setting	Factory setting
PtC	–	OFF
The PTC probes on the motor must be connected to the AI1 input on the soft starter. This monitoring is independent of the calculated thermal protection (tHP parameter). Both types of protection can be used simultaneously. • ALA: an alarm is activated (internal bit and configurable logic output) • dEF: the soft starter is locked and the otF error is trigered • oFF: deactivate this functionality		

Because the ATS480 allows the use of PTC and PT100 probes this functionality is splitted into the 5 following parameters:

- **[AI1 Th Monitoring]** TH1S to enable or disable the thermal probe monitoring on the terminal AI1
- **[AI1 Type]** AI1T to set the type of thermal probe used on AI1
- **[AI1 Th Error Resp]** TH1B to set the soft starter behavior when the AI1 monitoring triggers an error
- **[AI1 Th Error Level]** TH1F
- **[AI1 Th Warn Level]** TH1A

ATS480 parameters

Parameter	Setting	Factory setting
[AI1 Th Monitoring] TH1S	–	**[No]** NO
Activation of the thermal monitoring on AI1 This parameter activates the thermal monitoring with thermal probes on AI1 • **[Not Configured]** NO: Thermal monitoring on PTC1/AI1 disabled • **[AI1]** AI1: Thermal monitoring on PTC1/AI1 enabled Access path: **[Monitoring]** ➡ **[Thermal monitoring]**		
[AI1 Type] AI1T	–	**[PTC]** PTC
Configuration of AI1 This parameter sets the type of probe on AI1. • **[PTC]** PTC: PTC • **[PT100]** 1PT2: PT100 • **[PT100 in 3 wires]** 1PT23: PT100 in 3 wires This parameter is visible only if **[AI1 Th Monitoring]** TH1S is **not** set to **[Not Configured]** NO. Access path: **[Monitoring]** ➡ **[Thermal monitoring]**		
[AI1 Th Error Resp] TH1B	–	**[Freewheel Stop]** YES
Response to thermal error for AI1 This parameter sets the behavior of the soft starter when an error is triggered by AI1 input. • **[Ignore]** NO: Soft starter ignore the error • **[Freewheel Stop]** YES: Error is triggered and motor stop in freewheel • **[Configured Stop]** STT: Error is triggered and motor stop according to the value set in **[Type of stop]** STT Access path: **[Monitoring]** ➡ **[Thermal monitoring]**		
[AI1 Th Error Level] TH1F	–15°C/5°F...200°C/392°F	110°C/230°F
Thermal error level for AI1 This parameter sets the temperature threshold to trigger the **[AI1 Th Level Error]** TH1F. This parameter is visible when **[AI1 Th Monitoring]** TH1S is set to **[AI1]** AI1. Access path: **[Monitoring]** ➡ **[Thermal monitoring]**		
[AI1 Th Warn Level] TH1A	–15°C/5°F...200°C/392°F	90°C/194°F
Thermal warning level for AI1 This parameter sets the temperature threshold to trigger the **[AI1 Th Warning]** TP1A warning. This parameter is visible when **[AI1 Th Monitoring]** TH1S is set to **[AI1]** AI1. Access path: **[Monitoring]** ➡ **[Thermal monitoring]**		

About [Current Limit] ILT

NOTE:

ILt on ATS48 is similar to **[Current Limit]** ILT on ATS480.

In general, using the same setting for ILT do not affect the starting behavior of your application.

Nevertheless, on ATS480, if a difference in the starting behavior has been detected, adjust the **[Current Limit]** ILT parameter by decreasing its value (1...10%).

Modbus Communication

What’s in This Part

ATS480 Embedded Modbus Wiring

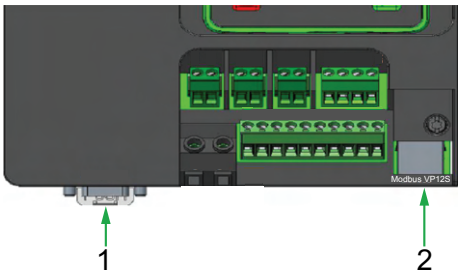
Compatible

It is possible to use the ATS48 communication architecture with the ATS480

- Use the same PLC, splitter boxes, and T-junction boxes.

The ATS48 communication wiring recommendations apply to the ATS480

- Use the same communication cable VW3A8306 on the embedded Modbus port.



1. Optional communication module slot
2. Modbus RTU VP12S

The following optional communication modules offer new communication protocols with the ATS480:

- Ethernet IP and Modbus TCP: VW3A3720 and VW3A3721
- Profibus DP: VW3A3607
- CANopen: VW3A3608, VW3A3618 and VW3A3628

Refer to the fieldbus manuals in Related Documents, page 13 for further instructions.

Modbus Configuration

Modbus Compatibility

- **The ATS480 embedded Modbus is compatible with the ATS48 embedded Modbus.**
  - The parameter **[Control Mode]** CHCF must be set to **[SE8 Profile]** SE8 (factory setting).
  - Adapt to your installation the value set to **[Modbus Format]** TFO in the menu **[Communication]** COM ➡ **[Modbus Fieldbus]** MD1
  - The ATS48 Modbus addresses, ETA words, CMD words and frame format are functional with ATS480. No change required.
- **Use the configuration transfer tool, refer to** **Configuration Migration, page 45****.**
- **For a new configuration refer to the ATS480 User Manual on www.se.com.**

[Control Mode] CHCF

Parameter	Setting	Factory setting
[Control Mode] CHCF	–	**[SE8 Profile]** SE8

Access path: **[Complete settings]** ➡ **[Command channel]**

This parameter is relevant if the soft starter is used with a fieldbus.

- Set **[Control Mode]** CHCF to **[SE8 Profile]** SE8 to substitute the ATS48 fieldbus architecture. This setting enables the reuse of the same gateways, parameter mapping, command words and status words as ATS48.

  Available only in Modbus RTU.
- Set **[Control Mode]** CHCF to **[Standard Profile]** STD to use the latest evolutions of the embedded Modbus and the fieldbus modules.

  The **[Standard Profile]** STD is based on CIA402.

Plugging or unplugging a fieldbus module does not automatically change the value set in **[Control Mode]** CHCF . Set manually **[Control Mode]** CHCF to **[Standard Profile]** STD to use a fieldbus module.

To access this parameter you must set **[Access Level]** LAC in the menu **[My preferences]** MYP ➡ **[Parameter access]** PAC to **[Expert]** EPR .

HMIS status

Different HMIS status between ATS480 and ATS48 in Modbus command (**[Control Mode]** CHCF = **[SE8 Profile]** SE8) and *Stop command* = 1 and **[Mains Voltage]** ULN are present.

	Soft Starter ATS 48	Soft Starter ATS 480
CMD = 0	HMIS = NST	HMIS = NST
CMD = 6	HMIS = NST	HMIS = RDY
CMD = 15	HMIS = RUN	HMIS = RUN

Modbus Broadcast

	Soft Starter ATS 48	Soft Starter ATS 480
Client Configured at @248 (Broadcast)	off	off
Client Configured at @248 (Broadcast)	1	1
Client Configured at @1	1	1

	Doesn't answer to the client
	Answer to the client

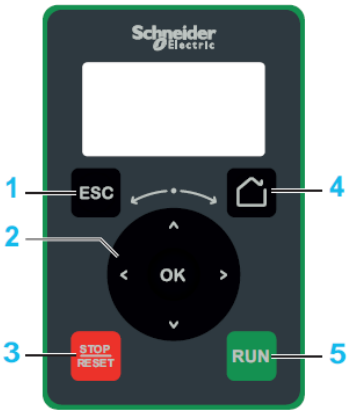
Product HMI

What’s in This Part

Display Terminals

Plain Text Display Terminal VW3A1113

This Plain Text Display Terminal is a local control unit plugged on the soft starter. The Display Terminal can be removed to be mounted on the door of the wall-mounted or floor-standing enclosure, using a dedicated door-mounting kit, refer to Mounting display terminal on the door of the enclosure, page 73. The Display Terminal communicates with the soft starter using Modbus serial link. Both embedded Modbus connections (Modbus HMI & Modbus Fieldbus) can be used but only one Display Terminal must be connected at the same time.

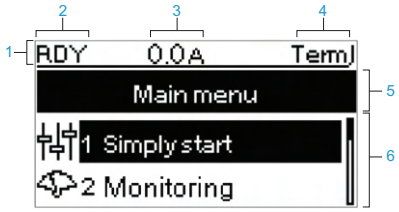


1. **ESC:** used to quit a menu/parameter, to clear the display of the triggered error or remove the currently displayed value in order to revert to the previous value retained in the memory
2. **Touch wheel / OK:** used to save the current value or access the selected menu/parameter. The touch wheel is used to scroll fast into the menus. Up/down arrows are used for precise selections, right/left arrows are used to select digits when setting a numerical value of a parameter.
3. **STOP / RESET:** stop command / apply a Fault Reset (a).
4. **Home:** used to access the home page.
5. **RUN:** executes the function (a).

(a) The function **RUN** of the **RUN** button and **RESET** of the **STOP / RESET** button are active only if the active command channel is the Display Terminal.

- **[Control Mode]** `CHCF` is set to **[Standard Profile]** `STD`
- **[Command Switching]** `CCS` is set to the channel commanding the display terminal

Example: Control via display terminal is active when **[Command Switching]** `CCS` is set to **[Cmd channel 1]** `CD1` and **[Cmd channel 1]** `CD1` is set to **[HMI]** `LCC`.



Key	
1	Display line.
2	Soft starter state, refer to Soft Starter State, page 74
3	Monitored parameter user defined. Can be configured in **[My preferences]**.
4	Active control channel • TERM: terminals • HMI: plain text display terminal • MDB: embedded Modbus serial • CAN: CANopen® • NET: Fieldbus module • PWS: DTM based commissioning software
5	Menu line: indicates the name of the current menu or submenu.
6	Menus, submenus, parameters, values, bar charts, and so on, are displayed in drop-down window format on a maximum of 2 lines. The line or value selected by the navigation button is displayed in reverse video.

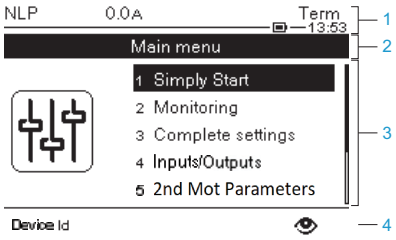
Graphic Display Terminal VW3A1111

The Graphic Display Terminal is available as an optional Display Terminal and can be plugged like the Plain Text Display Terminal, using the Modbus HMI serial link connection. This Display Terminal can also be mounted on the door of the wall-mounted or floor-standing enclosure, refer to Mounting display terminal on the door of the enclosure, page 73. Both embedded Modbus connections (Modbus HMI & Modbus Fieldbus) can be used but only one Graphic Display Terminal must be connected at the same time.

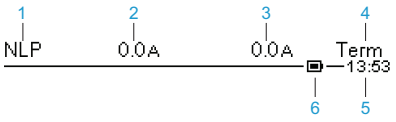
1. **STOP / RESET:** stop command / apply a Fault Reset (a).
2. **LOCAL / REMOTE:** used to switch between local and remote control of the soft starter. This button is disabled if **[HMI L/R cmd]** `BMP` is set to **[Disabled]** `DIS`, in the menu **[My preferences]** `MYP` ➡ **[Customization]** `CUS`.
3. **ESC:** used to quit a menu/parameter, to clear the display of the triggered error or remove the currently displayed value in order to revert to the previous value retained in the memory
4. **F1 to F4:** function keys used to access soft starter id, QR code, quick view, and submenus. Simultaneous press of F1 and F4 keys generates a screenshot file in the Graphic Display Terminal internal memory.
5. **Graphic display.**
6. **Home:** used to access the home page.
7. **Information:** used to have more information about menus, submenus, and parameters. The selected parameter or menu code is displayed on the first line of the information page.
8. **RUN:** executes the function (a).
9. **Touch wheel / OK:** used to save the current value or access the selected menu/parameter. The touch wheel is used to scroll fast into the menus. Up/down arrows are used for precise selections, right/left arrows are used to select digits when setting a numerical value of a parameter.
10. **RJ45 Modbus serial port:** used to connect the Graphic Display Terminal to the soft starter in remote control.
11. **MiniB USB port:** used to connect the Graphic Display Terminal to a computer.
12. **Battery:** The battery have no use for the soft starter and there is no alarm for display terminal low battery level.

(a) The function **RUN** of the **RUN** button and **RESET** of the **STOP / RESET** button are active only if the active command channel is the Display Terminal.

- **[Control Mode]** CHCF is set to **[Standard Profile]** STD
- **[Command Switching]** CCS is set to the channel commanding the display terminal



Key	
1	Display line.
2	Menu line: indicates the name of the current menu or submenu.
3	Menus, submenus, parameters, values, bar charts, and so on, are displayed in drop-down window format on a maximum of five lines. The line or value selected by the navigation button is displayed in reverse video.
4	Section displaying tabs (1 to 4 by menu), these tabs can be accessed using F1 to F4 keys



Key	
1	Soft starter state, refer to Soft Starter State, page 74.
2	Monitored parameter user defined, can be modified in **[My preferences]**.
3	Monitored parameter user defined, can be modified in **[My preferences]**.
4	Active control channel: • TERM: terminals • HMI: Graphic display terminal • MDB: integrated Modbus serial • CAN: CANopen® • NET: Fieldbus module • PWS: DTM based commissioning software
5	Present time.
6	Battery level. Level of battery embedded in the soft starter.

Graphic display terminal connected to a computer

The graphic display terminal is recognized as a USB storage device named SE_ VW3A1111 while plugged into a computer.

This allows to access the saved soft starter configurations (DRVCONF folder) and the graphic display terminal screenshots (PRTSCR folder).

Screenshots can be stored by a simultaneous press on F1 and F4 functions keys.

Mounting display terminal on the door of the enclosure

The ATS480 is delivered with the VW3A1113 Plain Text Display Terminal.

The VW3A1111 Graphic Display Terminal is available as an option to replace the Plain Text Display Terminal.

Door mounting kits are available as options to mount the display terminal on the door of the enclosure.

Refer to the following table to choose a display terminal and its door mounting kit.

Door Mounting Kit protection degree	Display terminal	Door mounting kit
IP43	VW3A1113 Plain Text Display Terminal **Delivered with the soft starter** 	VW3A1114 door mounting kit. **Available as option**  Refer to the instruction sheet EAV91355.
IP65	VW3A1111 Graphic Display Terminal **Available as option** 	VW3A1112 door mounting kit. **Available as option**  Refer to the instruction sheet EAV76406.
Select one of the following RJ45 cables to connect the remote mounting kit to the soft starter: • 1 meter: VW3A1104R10 • 3 meters: VW3A1104R30 • 5 meters: VW3A1104R50 • 10 meters: VW3A1104R100 **Not included with the remote kit**		

Soft Starter State

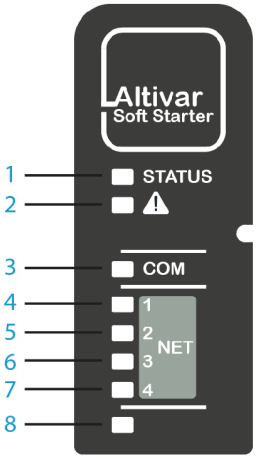
List of possible soft starter states, visible on the Display Terminal.

State	Condition
Displayed error label	Detected error. The soft starter is in operating state Fault.
Monitoring parameter selected by the user with the **[Display]** SUP menu. Factory setting: **[Motor Current]** LCR	Displayed value on the display terminal when the soft starter is running.
[Ready] RDY	No RUN command and mains supplied.
[No Mains Voltage] NLP	No RUN command and mains not supplied.
[Control Supply Loss] CLA	The warning **[Control Supply Loss]** CLA triggers when control supply is lost, the soft starter is not running and **[Control Supply Loss]** CLB is set to **[Warning]** 2
[Running] RUN	Soft starter running.
[Bypassed] BYP	Bypass active
[Accelerating] ACC	Soft starter in acceleration phase.
[Decelerating] DEC	Soft starter in deceleration phase.
[Wait for Restart] TBS	Starting time delay not elapsed.
[Operating State "Fault"] FLT	Detected error. The soft starter is in operating state Fault.
[Freewheel] NST	Soft starter forced to freewheel stop by serial link.
[Braking In Progress] BRL	Soft starter in braking phase.
[Cascade Waiting] STB	Waiting for a command (RUN or STOP) in cascade mode.
[Current Limitation] CLI	Soft starter in current limitation.
[Motor Preheating] HEA	Motor preheating, correspond to one of the following step of the preheating sequence: • Preheating order applied but **[Time Before Preheat]** TPR not elapsed, no preheating current injected yet • Preheating order applied and **[Time Before Preheat]** TPR elapsed, preheating current is injected
[Small Motor Test] SST	Small motor test in progress
[Firmware Update] FWUP	Firmware update mode
[Demo Mode] DEMO	Demonstration mode active

When current limitation is active, the displayed value flashes.

It is still possible to modify the parameters if the soft starter detects an error.

Front Product LEDs



Item	LED	Color & status	Description
1	**STATUS**	OFF	Indicates that the soft starter is not ready to start
		Green flashing	Indicates that the soft starter is not running, ready to start
		Green blinking	Indicates that the soft starter is in transitory status (acceleration, deceleration, and so on)
		Green on	Indicates that the soft starter is running
		Yellow on	Indicates that the soft starter localization is in progress
2	**Warning/Error**	Red flashing	Indicates that the soft starter has detected a warning
		Red on	Indicates that the soft starter has detected an error
3	**COM**	Yellow flashing	Indicates embedded Modbus serial activity
4	**NET 1**	Green/Yellow	For details, refer to the fieldbus manual
5	**NET 2**	Green/Red	
6	**NET 3**	Green/Red	
7	**NET 4**	Green/Yellow	
8	Reserved		

Glossary

A

AC:

Alternating Current

D

DC:

Direct Current

E

Error :

Discrepancy between a detected (computed, measured, or signaled) value or condition and the specified or theoretically correct value or condition.

F

Factory setting:

Machine status in factory settings when the product was shipped.

Fault Reset:

A function used to restore the soft starter to an operational state after a detected error is cleared by removing the cause of the error so that the error is no longer active.

Fault:

Fault is an operating state. If the monitoring functions detect an error, a transition to this operating state is triggered, depending on the error class. A "Fault reset" is required to exit this operating state after the cause of the detected error has been removed. Further information can be found in the pertinent standards such as IEC 61800-7, ODVA Common Industrial Protocol (CIP).

N

NC contact:

Normally Closed contact

NO contact:

Normally Open contact

O

OEM:

Original Equipment Manufacturer

OVCII:

Overvoltage Category II, according IEC 61800-5-1

P

PTC:

Positive Temperature Coefficient. PTC thermistor probes integrated in the motor or application to measure its temperature

W

Warning:

If the term is used outside the context of safety instructions, a warning alerts to a potential error that was detected by a monitoring function. A warning does not cause a transition of the operating state.

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NNZ85529.02 – 05/2025