

Getting Started with Altivar Soft Starter ATS490



PKR6341000

1 Download The ATS490 User Manual

Information below is designed to use for applications with squirrel cage induction motor class 10 thermal protection. You must have detailed information to be able to carry out the installation and commissioning. This information can be found in the User manual [PKR52680](#) on www.se.com or scan the QR code in front of the Soft starter. The Getting Started manual does not replace the User manual. For other configurations, refer to the User Manual. *All details related to the safety function STO are given in the Embedded Safety Function Manual [PKR63419](#). All details related to ATEX are given in the ATEX Manual [BQT74920](#)*



[PKR52680](#)



You can watch
our Video

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 soft starter system, block the motor shaft to prevent rotation.
- Insulate both ends of unused conductors of the motor cable.
- 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.

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 product. © 2024 Schneider Electric. All Rights Reserved.

2 Verify The Delivery

Unpack the soft starter and verify that it has not been damaged.

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

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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.

Verify compatibility between your soft starter and your application.

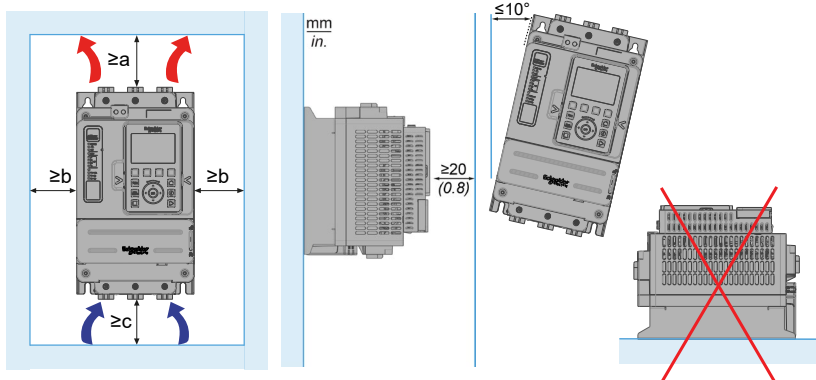
See the ATS490 Catalog [DIA2ED2240603EN](#).



3 Mount ATS490 Vertically Inside An Enclosure

For a surrounding air temperature up to 40 °C (104 °F).

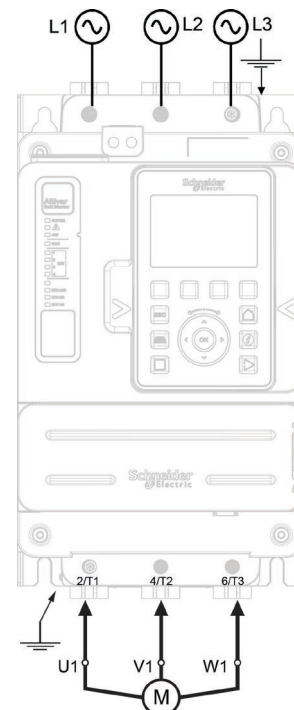
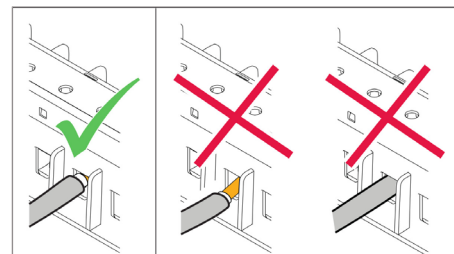
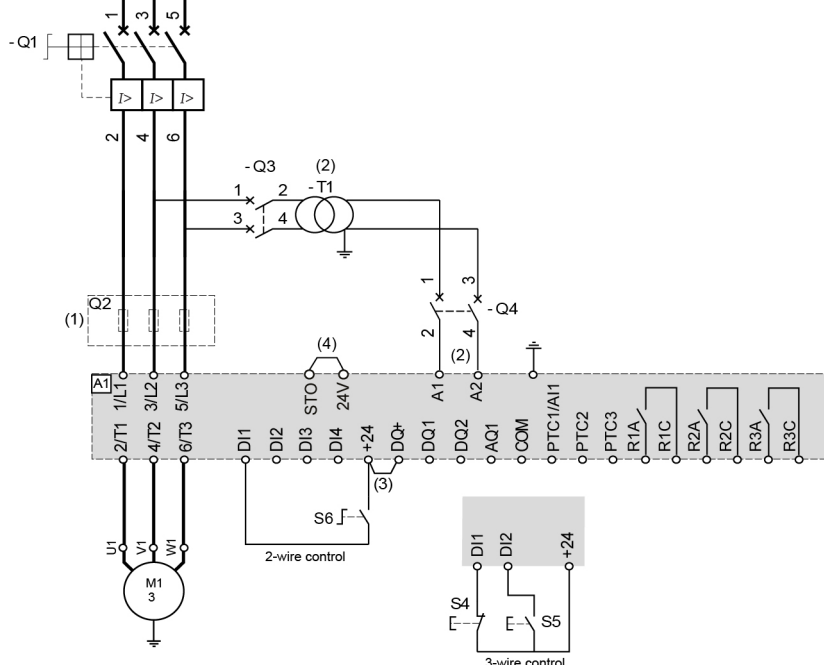
For other thermal conditions, see the User Manual [PKR52680](#).



Reference	a mm(in)	b mm(in)	c mm(in)
ATS490D17Y...D47Y	55 (2.2)	20 (0.8)	50 (2)
ATS490D62Y...C17Y	75 (3)	10 (0.4)	60 (2.4)
ATS490C21Y...C41Y	85 (3.4)	10 (0.4)	60 (2.4)
ATS490C48Y...M12Y	100 (4)	20 (0.8)	75 (3)

④ Connect the Soft Starter: Power

- Wire the soft starter to the Ground \equiv
- Wire the motor (2/T1 – 4/T2 – 6/T3)
- Wire the supply mains (1/L1 – 3/L2 – 5/L3)
- Refer to the nameplate for tightening torque and cables section
- Stripping length: ATS490D17Y...C11Y: 17 mm (0.7 in)
- For information on the protective and control devices, refer to the ATS490 catalog [DIA2ED2240603EN](#).

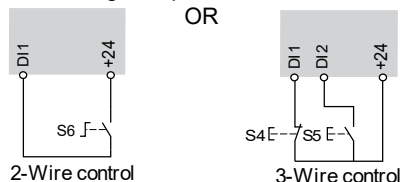


- (1) Installation of additional fast-acting fuses to upgrade to type 2 coordination according to IEC 60947-4-2
- (2) The transformer "T1" must supply **110...230 Vac -15% +10%**, 50/60Hz
- (3) 24Vdc supply on DQ+ if usage of DQ outputs
- (4) STO Safe Torque Off

- Q1:** Magnetic circuit breaker. Protection of the motor
- Q2:** Fast acting fuses. Protection of the soft starter to be used only when type 2 coordination according to IEC 60947-4-2 is required. Refer to the catalog [DIA2ED2240603EN](#)
- Q3:** Circuit breaker. Protection for the primary of the transformer
- Q4:** Circuit breaker. Protection for the control part of the soft starter

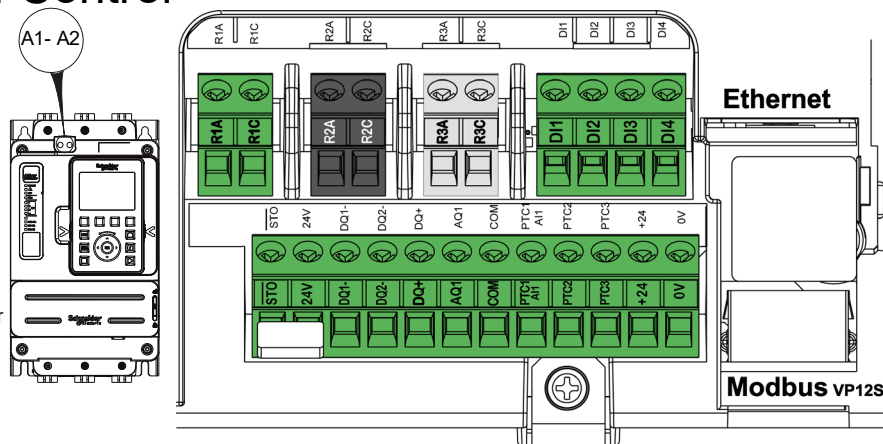
⑤ Connect The Soft Starter: Control

- Wire the control supply (A1 - A2) **110...230 Vac -15% +10%**, 50/60 Hz
- Wire the digital inputs to control the Soft Starter



Note: Depending on the wiring, set appropriately the parameter [2/3-Wire Control] (Factory setting: [2-Wire Control])

Screw type 0.5 N.m
4.4 lb.in

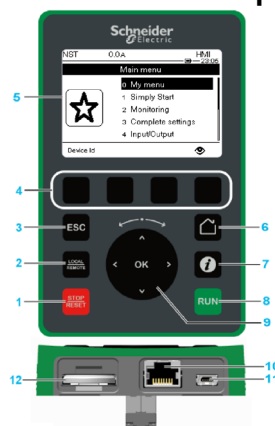


⑥ Power-up The Product

- Switch-on: Q4, then Q3, then Q1. The soft starter is powered On and Mains are supplied.
 - With 2-wire control, the device displays **RDY** status.
 - With 3-wire control, the device displays **NST** status until [2/3-Wire Control] is set.

Graphic Display Terminal and LEDs: Description

1 STOP/RESET	STOP command / apply a Fault Reset (according to configuration).
2 LOCAL / REMOTE	Used to switch between local and remote control of the soft starter. (only if configured)
3 ESC	Used to quit a menu/parameter or remove the currently displayed value to revert to the previous selection.
4 F1 to F4	Function keys used to access soft starter identification, QR code, quick view, and submenus. Holding F1+F4 generates a screenshot file in the Graphic Display Terminal internal memory.
5	Graphic display
6 Home	Access directly the home page.
7 Information	Used to have more information about submenus and parameters. The selected parameter or submenu code is displayed on the first line of the information page.
8 RUN	RUN command (according to configuration)
9 Touch wheel (OK – arrows)	Used to save the current value or access the selected menu/parameter. The touch wheel is used to scroll 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 has no use
13 LEDs	Signaling LEDs



13 LED	Colour	LED status	Soft starter Status
Status	Off	Off	Powered off
	Green	Flashing	Ready to start
		Blinking	Transitory
	Yellow	On	Running
		On	Localisation in progress
!	Red	Flashing	Warning
		On	Error
ASF	Off	Off	Safety function is not activated
	Yellow	On	Safety function is activated
COM	Yellow	Flashing	Modbus activity
NET 1	Green/Yellow	Refer to fieldbus manual	
NET 2	Green/Red		
NET 3	Green/Red		
NET 4	Green/Yellow		
-	Reserved	Refer to fieldbus manual	
ETHLINK	Green/Yellow		
ETHMS	Green/Red		
ETHNS	Green/Red		

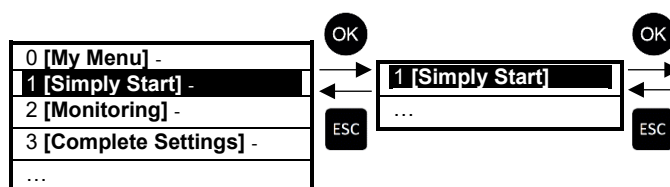
7 Initial Setup

At first power on:

- 1- In the **[LANGUAGE]** menu, select the desired language
- 2- In the **[Time Zone]** menu, set the local UTC offset
- 3- In the **[Set Date/Time]** menu, set the local time
- 4- In the **[Initial Setup]** menu, scroll to **[Go to product]** and press the **OK** button
- 5- Select **[Minimum Cybersec]** to set no credentials and access the main menu
Or select **[Advanced Cybersec]** to set credentials then access the main menu
- 6- In the **[Access Level]** menu, select the level of menus and parameters access

8 Simply Start

Select **[Simply Start]** - menu and set parameters. Refer to the recommended values page 4.



NOTE:

The value set to **[Motor Nom Current]** determines the current of the motor thermal monitoring. For more information regarding the motor thermal monitoring, refer to the menu **[Monitoring]** (User manual [PKR52680](#)).

Parameter	Factory Setting	Customer Setting
[2/3-Wire Control]	[2-Wire Control]	
[2-Wire Type]	[Transition]	
[Motor Nom Current]	0.4...1 of Soft Starter rating	
[Limiting Current]	400% of [Motor Nom Current]	
[Acceleration]	15 s	
[Initial Starting Torque]	20% of nominal torque	
[Type Of Stop]	[Freewheel]	

If [Type Of Stop] = [Deceleration]

[Deceleration]	15 s	
[End Of Deceleration]	20% of nominal torque	

If [Type Of Stop] = [Braking]

[Braking Level]	50%	
[DC Braking To Stop]	20%	

Recommended Values, To Adapt To Customer Requirements

Application	[Limiting Current] (% of [Motor Nom Current])	[Acceleration] (seconds)	[Initial Starting Torque] (% of nominal torque)	[Type Of Stop]
Centrifugal pump	300	5 to 15	0	[Deceleration]
Submersible pump	300	Up to 2	0	[Deceleration]
Piston pump	350	5 to 10	30	[Deceleration]
Fan	300	10 to 40	0	[Freewheel] or [Braking]
Cold compressor	300	5 to 10	30	[Deceleration]
Screw compressor	300	3 to 20	30	[Deceleration]
Centrifugal compressor	350	10 to 40	0	[Freewheel]
Piston compressor	350	5 to 10	30	[Deceleration]
Conveyor, transporter	300	3 to 10	30	[Deceleration]
Lifting screw	300	3 to 10	30	[Deceleration]
Drag lift	400	2 to 10	0	[Deceleration]
Product elevator	350	5 to 10	20	[Deceleration]
Circular saw, band saw	300	10 to 60	0	[Braking]
Pulper, butchery knife	400	3 to 10	20	[Freewheel]
Agitator	350	5 to 20	10	[Deceleration]
Mixer	350	5 to 10	50	[Deceleration]
Grinder	450	5 to 60	0	[Braking]
Crusher	400	10 to 40	50	[Freewheel]
Refiner	300	5 to 30	40	[Deceleration]
Press	400	20 to 60	20	[Deceleration]

⑨ Start And Stop The Motor

Refer to step ④ diagram.

If you are in 2-wire control:

- To start the motor close S6
- To stop the motor open S6

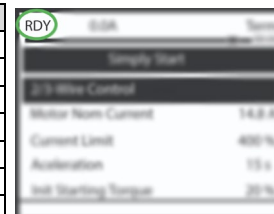
If you are in 3-wire control:

- To start the motor push S5
- To stop the motor push S4

For more information on "Run and Stop Management", refer to the User Manual [PKR52680](#)

Soft Starter Displayed Status

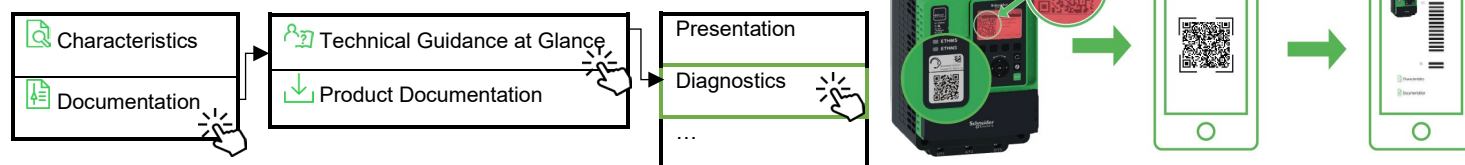
Displayed Value	Condition
Error label	Triggered error, refer to the Troubleshooting below
NLP	Soft starter without run command and mains not supplied
RDY	Soft starter without run command and mains supplied
BYP	Soft starter is bypassed internally
ACC	Soft starter in acceleration phase
DEC	Soft starter in deceleration phase
RUN	Soft starter in operating state
TBS	Minimum delay between one stop and one start not elapsed
BRL	Soft starter in braking phase
CLI	Soft starter in current limitation. When current limitation is active, the displayed value flashes.
NST	Soft starter forced to freewheel stop.
STO	Safe Torque Off active



Refer to the user manual [PKR52680](#) for the complete list.

Troubleshooting

To get the error code explanation, scan the QR code on the red screen; or scan the QR code on the front of the Soft Starter and follow as below :



Other Tool To Configure The Soft Starter

SoMove is a setup software for PC designed to configure Schneider Electric motor control devices.

You can download the SoMove FDT ([SoMove_FDT](#)), the DTM in English ([ATS490_DTM_Library_EN](#)) and language pack, on www.se.com.