

ASA 4.0 Advanced

Soft Starters for
Three-phase Asynchronous Motors

ASA4.0-A-0069B_5_14 Model



(picture is for illustration purposes only)

The ASA 4.0 is an advanced soft start solution for motors up to 1200 kW. The ASA 4.0 provides a management system for the most demanding soft starting and stopping applications, with a complete range of motor and system protection features and a high level of flexibility in a compact and user-friendly package.

HIGHLIGHTS

- Models for all connection requirements
 - 23 A to 1250 A (nominal)
 - 200 to 525Vac or 380 to 690 Vac
 - Internally bypassed depending on the model
 - In-line or inside delta connection (auto-detect)
- Extensive starting and stopping options
 - AAC Adaptive
 - Constant current
 - Current ramp start mode
 - Timed voltage ramp soft stop
 - Brake
- Inputs and outputs
 - Remote control inputs (2x fixed, 2x programmable)
 - Relay outputs (1x fixed, 2x programmable)
 - Analog output (4-20 mA)
 - Motor thermal protection (thermistor)
 - Communication modules using DeviceNet, Modbus RTU, Profibus, Ethernet (Ethernet/IP, Modbus TCP, Profinet) (optional)
- Easy-to-read display
 - Multiple status screens and performance graphs
 - Date and time stamped event logging
 - Operational counters (number of starts, hours run, kWh)
 - Performance monitoring (current, voltage, power factor, kWh)
 - Multi-language feedback and user-programmable monitoring screen
- Integrated USB port
 - Firmware upgrade
 - Upload new or more languages
 - Download or upload parameters
 - Download starter logs and data
 - Diagnostic logging

- Customizable protection
 - Motor overload
 - Excess start time
 - Undercurrent
 - Instantaneous overcurrent
 - Current imbalance
 - Mains frequency
 - Input trip (x2)
 - Motor thermistor
 - Motor overload
 - Supply circuit
 - Phase sequence
 - SCR short circuit
 - Phase loss
 - Power loss
 - ... and many more

Main features	
Model	ASA4.0-A-0069B_5_14
Frame size	G1
N. of Controlled phases	3
Bypass contactor presence	Yes - With Internal Bypass Contactor
Degree of protection	IP20
Operating temperature range	-10 up to 60 °C
Max. operating temperature without derating	40 °C
Storage temperature range	-25 up to 60 °C
Max. operating altitude without derating	1000 m a.s.l.
Input Ratings	
Mains frequency	45 Hz ÷ 65 Hz
Mains voltage ⁽¹⁾	200 Vac .. 525 Vac (± 10%)
Control voltage ⁽¹⁾	24 Vac/Vdc ±20%, 2.8A

In-line connection, IEC ratings, 6 starts per hour					
Motor current at full load [A]	Up to 300% for 10 s 69	Up to 350% for 15 s 69	Up to 400% for 10 s 69	Up to 400% for 20 s 62	Up to 500% for 5 s 64
Delta connection (6-wire), IEC ratings, 6 starts per hour					
Motor current at full load [A]	Up to 300% for 10 s 104	Up to 350% for 15 s 104	Up to 400% for 10 s 104	Up to 400% for 20 s 93	Up to 500% for 5 s 96
In-line connection, NEMA ratings, 4 starts per hour ⁽²⁾					
Motor current at full load [A]	Up to 350% for 30 s 59		Up to 450% for 30 s 46		
Dissipation					
Dissipation at start	4.5 W / ampere				
Dissipation in run [W]	≤ 50				
Dimensions and weight					
Soft Starter dimensions (WxHxD)	152x336x233 mm				
Soft Starter weight	4,9 kg				

NOTE:

- (1) The required mains and control voltage must be specified when ordering the equipment.
- (2) All ratings are calculated at ambient temperature of 50 °C.

Standards	
Main Standards	▪ CE: IEC 60947-4-2 ▪ UL: UL 60947-4-2 ▪ C-UL: CAN/CSA-C22.2 No.60947-1-13, CAN/CSA C22.2 No.60947-4-2-14

ASA 4.0 – Main Features

SCR Shorted Action

This feature keeps your plant running even if the ASA 4.0 soft starter is damaged in one phase. In the event that a damaged SCR is detected in one phase, the ASA 4.0 soft starter offers the option to continue operation using two-phase control. This ensures continued operation while long term repair of the damage is initiated.

Premium Overload Protection

Motor overload protection is an important consideration for all applications. The ASA 4.0 soft starter excels in this area providing a protection levels previously only available from dedicated and expensive high-end motor protection relays. The ASA 4.0 soft starter's thermal model allows motors to be used to their full potential without fear of damage from overloading.

Emergency Run Mode

In case of fire, equipment such as ventilation fans in high rise buildings can be required to run under any conditions. Activation of the ASA 4.0's Emergency Run mode deactivates all protections systems, enabling the motor to run as long as possible despite the deteriorating environment.

Auto-Reset of Fault Conditions

Uninterrupted operation of unmanned installations such as irrigators, flood pumps, remote pump stations is aided by the ASA 4.0 soft starter's Auto-Reset function.

Jog Operation (Forward and Reverse)

The ASA 4.0 soft starter's jog function allows the operator to run the motor at part speed in either the forward or reverse direction. This is ideal for machine positioning of loads such as mixers or hopper bins ready for unloading.

Dual Parameter Sets

The ASA 4.0 soft starter can be programmed for two separate start scenarios. Typical application of this capability includes:

- A single ASA 4.0 soft starter to control duty-standby pumps.
- Different start performance for varying load conditions.
- Soft braking.

Adaptive Acceleration Control - AAC

Every application has a particular starting profile, based on characteristics of the load and the motor. Adaptive Control offers three different starting profiles, to suit the requirements of most applications.

Braking of High Inertia Loads

DC brake is used to electrically brake high inertia loads. The brake cycle produces a motor brake torque which approximates the parameter set motor torque.

The ASA 4.0 soft starter pulses the DC over all three phases and does not require an external contactor.

Operation Timers

Operation of remote installations such as irrigation pumps can be automatically controlled using the ASA 4.0 soft starter's operation timer doing away with the need for external control circuits.

Pump Control

Flow, pressure transducers or level probes can all be connected directly to the ASA 4.0 soft starter. This simplifies control circuits and reduces installed costs, making installation, maintenance and operation simple and straight forward.

Metering & Monitoring

ASA 4.0 soft starters deliver extensive monitoring information to support process improvement and maintenance. Feedback is available on-screen or via serial, analog and relay outputs.

ASA 4.0 – Main Options

The following options are available on ASA 4.0 Soft Starters:

Communications Modules

ASA 4.0 soft starters support network communication via easy-to-install communications modules. Each soft starter can support one communications module at a time.

Available protocols: Ethernet (Profinet, Modbus TCP, Ethernet/IP), Profibus, DeviceNet, Modbus RTU, and USB.

Remote Control Panel (RCP)

A remote mounted keypad can be installed with the ASA 4.0. The keypad can be mounted up to 3 meters away from the starter, for control and monitoring purposes.

The starter can be controlled and programmed from either the remote keypad or the keypad on the starter. Both displays show the same information.

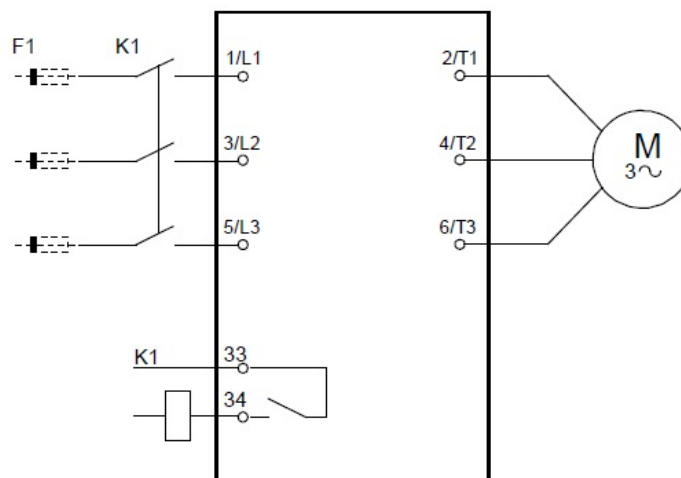
The remote keypad also allows parameter settings to be copied between soft starters.

Finger Guard Kit for IP00 Soft Starters

Finger guards may be specified for personnel safety. Finger guards fit over the soft starter terminals to prevent accidental contact with live terminals. Finger guards provide IP20 protection when correctly installed.

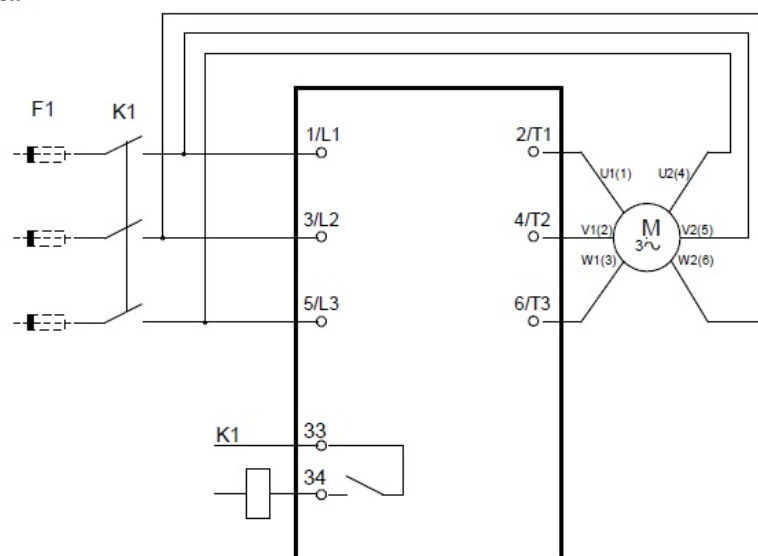
In-Line / Inside delta installations

In-line installation



K1	Main contactor (strongly recommended)
F1	Fuses or circuit breaker (optional)
33, 34	Main contactor output

Inside delta installation



K1	Main contactor
F1	Fuses or circuit breaker (optional)
33, 34	Main contactor output