

# Soft starters for asynchronous motors

## Altistart U01 and TeSys model U

### Presentation

The Altistart U01 is a soft start/soft stop unit for asynchronous motors. It is designed primarily for combinations with **TeSys model U** controller-starters.

When combined with a **TeSys model U 1** controller by means of a connector **2**, the Altistart U01 **3** is a power option which provides the "Soft start/soft stop" function. The result is a unique, innovative motor starter.

Using the Altistart U01 starter enhances the starting performance of asynchronous motors by allowing them to start gradually, smoothly and in a controlled manner. It prevents mechanical shocks, which lead to wear and tear, and limits the amount of maintenance work and production downtime.

The Altistart U01 limits the starting torque and current peaks on starting, on machines which do not require a high starting torque.

The Altistart U01 is designed for the following simple applications:

- Conveyors
- Conveyor belts
- Pumps
- Fans
- Compressors
- Automatic doors and gates
- Small cranes
- Belt-driven machines, etc.

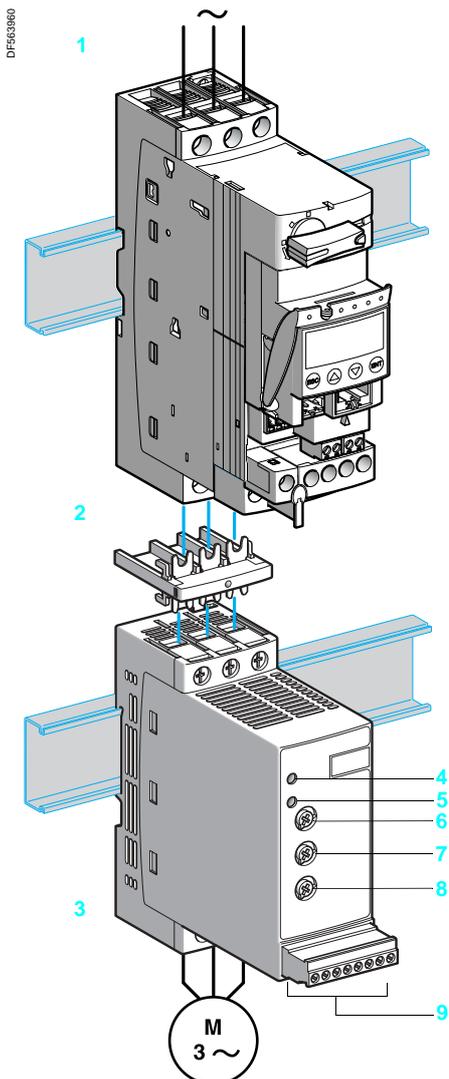
The Altistart U01 is compact and easy to install. It complies with standards IEC/EN 60947-4-2, carries UL, CSA, C-Tick, CCC and GOST certifications and C€ marking.

#### ■ ATSU 01N2●●LT soft start/soft stop units

- Control two phases of the motor power supply to limit the starting current and for deceleration
  - Internal bypass relay
  - Motor power ratings ranging from 0.75 kW to 15 kW
  - Motor supply voltages ranging from 200 V to 480 V, 50/60 Hz.
- An external power supply is required for controlling the starter.

### Description

- Altistart U01 soft start/soft stop units are equipped with:
  - A potentiometer for setting the starting time **6**
  - A potentiometer for setting the deceleration time **8**
  - A potentiometer for adjusting the start voltage threshold according to the motor load **7**
  - 1 green LED **4** to indicate that the unit is switched on
  - 1 yellow LED **5** to indicate that the motor is powered at nominal voltage, if it is connected to the starter
  - A connector **9**:
    - 2 logic inputs for Run/Stop commands
    - 1 logic input for the BOOST function
    - 1 logic output to indicate the end of starting
    - 1 relay output to indicate the starter has a power supply fault or the motor has reached a standstill at the end of the deceleration stage



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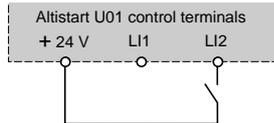
### Description of a TeSys model U controller-starter

Please consult the "TeSys model U starters - open version" catalogue.

### ATSU 01N2●●●LT soft start unit functions

#### ■ 2-wire control

The run and stop commands are controlled by a single logic input. State 1 of logic input LI2 controls starting and state 0 controls stopping.



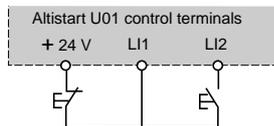
Wiring diagram for 2-wire control

#### ■ 3-wire control

The run and stop commands are controlled by 2 different logic inputs.

Stopping is achieved when logic input LI1 opens (state 0).

The pulse on input LI2 is stored until input LI1 opens.



Wiring diagram for 3-wire control

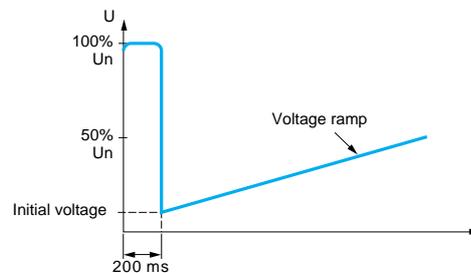
#### ■ Starting time

Controlling the starting time means that the time of the voltage ramp applied to the motor can be adjusted to obtain a gradual starting time, dependent on the motor load.

#### ■ Voltage boost function via logic input

Activating the BOOST logic input enables the function for supplying a starting overtorque capable of overcoming any mechanical friction.

When the input is at state 1, the function is active (input connected to the + 24 V) and the starter applies a fixed voltage to the motor for a limited time before starting.



Application of a voltage boost equal to 100% of the nominal motor voltage

#### ■ End of starting

##### □ Application function for logic output LO1

ATSU 01N2●●●LT soft start/soft stop units are equipped with an open collector logic output LO, which indicates the end of starting when the motor has reached nominal speed.

#### ■ Fault relay

ATSU 01N2●●●LT soft start/soft stop units have a relay which opens when a fault is detected.

Relay contact R1A-R1C closes when the LI2 run command is sent and opens when the motor voltage approaches 0 on a decelerated stop or immediately on a fault.

This information can be used for controlling the line contactor and achieving motor deceleration (by maintaining the line contactor until the motor has stopped).