

Altistart 01 soft starters

for single-phase and three-phase asynchronous motors

eCatalog

2014



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Altistart 01 & U01 soft starters for asynchronous motors

Introduction *Altistart 01 products*



Introduction

The **Altistart™ 01 soft starter** offers enhanced starting and stopping performance for single-phase and three-phase, low horsepower asynchronous motors in a compact package.

This highly functional mini soft starter provides a controlled and smooth operation while providing torque surge suppression during both starting and stopping of the motor. It is ideal for applications that do not require high starting torque. By limiting the starting torque, the ATS01 reduces the current inrush experienced with other motor starting methods. This stepless starting method avoids the damaging torque surges associated with other reduced voltage starting methods.

Altistart 01 soft starter helps decrease your maintenance work and production downtime by helping prevent the mechanical shocks that create wear and tear on your motor and machinery. Available in three different performance levels, Altistart 01 soft starters meet the application needs of a wide range of fractional and low horsepower single-phase and three-phase asynchronous motors. A feature-rich alternative to low horsepower electromechanical reduced voltage starters, the Altistart 01 mini soft starters offer many options to fit your application.

The Altistart 01 is compact, easy to install and can be mounted side-by-side. It complies with standards IEC/EN 60947-4-2, carries UL, CSA, C-Tick, CCC certifications and CE marking. Most Altistart 01 models are available in a 45 mm width to match the industry standard for IEC motor starters rated at or below 32 Amps.



Applications

Altistart 01 soft starters are designed for use on simple applications such as:

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

Altistart 01 & U01 soft starters for asynchronous motors

Introduction Altistart 01 products



ATS01N109FT,
ATS01N112FT



ATS01N222LU/QN/RT...
ATS01N232LU/QN/RT,



ATSU01N206LT...
ATSU01N212LT,

Product

The Altistart 01 offer comprises 3 ranges:

- **ATS01N1●●●●** for soft start operation
- **ATS01N2●●●●** for soft start and stop operation
- **ATSU01N2●●●●** for soft start and stop operation with TeSys U

Motor starting performance easily adapted to the application

- Dials conveniently located on the front of the Altistart 01 soft starter allow adjustments for starting torque as well as starting and stopping ramp times
- Handles both easy and hard to start load with a selectable kickstart feature
- Compatibility with motor starters such as TeSys U, GV2, GV3, and others

Simple setup and operation

- 3 logic inputs, 1 logic output, 1 relay output
- Adjustment dials and indicator lights

Easy to install and start up

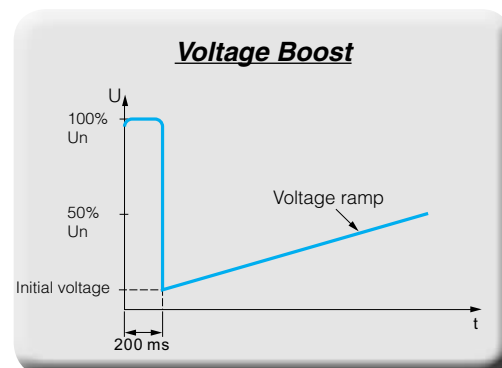
- DIN rail or panel mounting options
- Removable control terminal for simple and easy wiring
- Quick adjustments
- Eliminate power wiring by using custom power connector to TeSys U-line motor starter

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 indicator

- Application function via logic output LO1
 - Soft start/soft stop units ATS01N2●●●● and ATSU01N2●●●● are equipped with an open collector logic output LO, which indicates the end of starting when the motor has reached nominal speed.

Altistart 01 & U01 soft starters for asynchronous motors

Introduction ATS01N1 soft starters



ATS01N103FT, 06FT

ATS01N1 soft starters

ATS01N1 torque limiting mini soft starters extend the Altistart 01 product range down into the fractional horsepower arena (3 to 12 A, 1/2 to 3 HP at 208 V). They can control the starting ramp of either a single-phase or a three-phase motor.

By reducing the starting torque produced by an asynchronous motor, the ATS01N1 soft start extends the motor's starting time. The ATS01N1 soft start ramps up the AC voltage applied to one of the motor terminals. The other motor terminal(s) are supplied full motor starting voltage. Hence, starting current is not reduced.

The ATS01N1 is ideal for the following applications:

- Small conveyors for fragile goods, such as bottle conveyors
- Constant power machines, such as drills, where the starting torque must be limited

The ATS01N1 is compatible with the following common motor voltages:

- Single phase: 115 V and 230 V
- Three phase: 208 V, 230 V, and 460 V

The ATS01N1 soft start is compatible with most single-phase motor designs, including split phase induction, capacitor start, and shaded pole.

The ATS01N1 series is one of the smallest soft starts on the market and is available in two frame sizes:

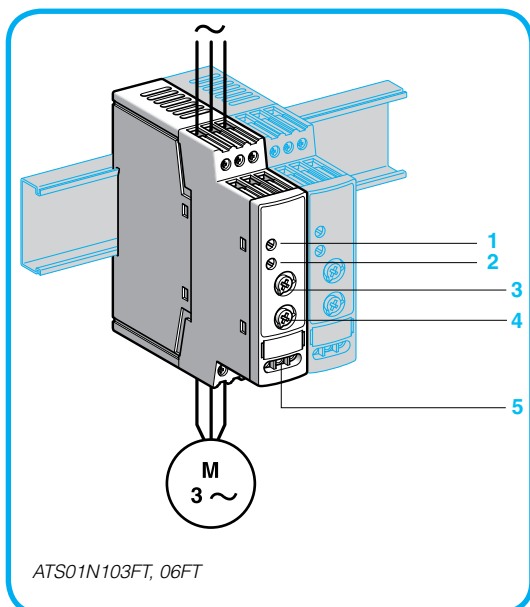
- 0.9 inch (22.5 mm) wide modules, rated for 3 and 6 A
- 1.77 inch (45 mm) wide modules, rated for 9 and 12 A

Both can be DIN rail or panel mounted. They can be mounted side-by-side with no gap between soft starts required.

The **ATS01N109FT** and **ATS01N112FT** models offer an internal shorting contactor to eliminate wasted energy and to reduce the heat that must be removed from the control panel. They also offer removable control terminal plugs for ease of wiring and installation.

The ATS01N1 is equipped with:

- One green LED **1** to indicate that soft start power is on
- One yellow LED **2** that illuminates 10 seconds after a start command is given, indicating that the soft starter's voltage ramp is complete, the internal shorting contactor (09FT & 12FT models only) is closed, and the motor is up to speed
- A potentiometer **3** for setting the starting time
- A potentiometer **4** for adjusting the start voltage threshold according to the motor load
- Two inputs **5**:
 - One 24 V $\overline{\sim}$ input or one 110...240 V \sim for powering the control circuitry that controls the motor



ATS01N103FT, 06FT

Altistart 01 & U01 soft starters for asynchronous motors

Introduction ATS01N1 soft starters



Functions

Starting and stopping the ATS01N1 soft start:

The motor starts when both line and control power are supplied to the soft start. The soft start will not soft stop the motor. When the run command is removed, the motor will coast to a stop. If only line power is removed to stop the motor, reapplying line power will not restart the motor. Soft start control power must also be cycled off and on to restart the motor. In a single-phase application, the soft start will allow the motor to stop when either line or control power is removed.

Note: In a 3-phase application, connect line power to the soft start **ONLY** when soft start control power is present and motor operation is needed. Applying line power when no soft start control power is present will single-phase the connected 3-phase motor.

Control power

Control power can be either:

- 110 V to 220 Vac ($\pm 10\%$): terminals CL1/0 and CL2
- 24 Vac/dc ($\pm 10\%$): terminals CL1/0 (-) and 24 V (+)

Line power

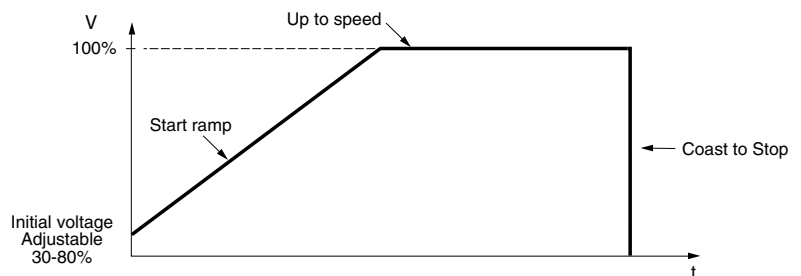
Line power must match the voltage rating of the motor and must not exceed 480 V ($\pm 10\%$).

- Single-phase motors:
 - Power in: ATS01N1 terminals 1/L1 and 5/L3
 - Power out: ATS01N1 terminals 2/T1 and 6/T3
- Three-phase motors:
 - Power in: ATS01N1 terminals 1/L1, 3/L2, and 5/L3
 - Power out: ATS01N1 terminals 2/T1, 4/T2, and 6/T3

Starting times

The ATS01N1 soft start controls the starting time of the motor by ramping up the voltage applied to one phase of the motor. The starting voltage ramp time can be adjusted from 1 to 5 seconds by means of the potentiometer on the front of the soft start. Since the actual motor starting time is dependent on the level of the applied load, the scale on the front of the soft start is calibrated from A to E rather than from 1 to 5 seconds, with A being the shortest time and E being the longest time. The starting voltage ramp begins at the AC line voltage level set by the Initial Voltage adjustment. See the diagram below for more detail.

Note: The ATS01 soft start is internally bypassed at the end of the time set by the start time adjustment. If the motor is not up to speed by that time (due to a heavy load), the internal contactor can be damaged, requiring replacement of the soft start. SET THE START TIME AT A LEVEL ACHIEVABLE WITH THE MOTOR AT ITS HIGHEST LOAD LEVEL.



Initial (or starting) voltage

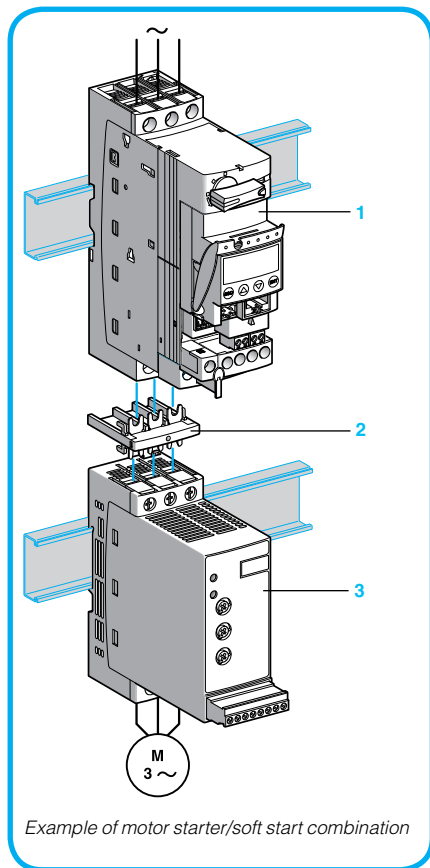
The initial voltage applied to the motor (the level at which the voltage ramp begins) can be adjusted by a potentiometer on the front of the ATS01N1 soft start. The initial voltage level can be adjusted from approximately 30 to 80% of the AC line voltage level. See the diagram above. Since the resultant motor torque varies in proportion to the square of the applied voltage, the scale on the front of the soft start is calibrated from A to E rather than from 30 to 80%, with A being the lowest level and E being the highest level. A lower setting will reduce motor torque during starting. Set this level to the minimum required that will result in motor rotation immediately after a start command.

Altistart 01 & U01 soft starters for asynchronous motors

Introduction *ATS01N2 & ATSU01N2 soft starters*



ATSU01N206LT...ATSU01N212LT,



Example of motor starter/soft start combination

ATS01N2 & ATSU01N2 soft starters

The **ATS01N2●●LU/QN/RT** and **ATSU01N2●●LT** soft starters control the starting and stopping ramps of three-phase motors ranging from 0.5 to 20 HP (0.75 to 15 kW) and have a motor voltage range of 208 V to 460 V.

The ATS01N2●●LU/QN/RT soft start is self-powered from the AC line supply and is compatible with all other control power schemes.

The ATSU01N2●●LT soft start is optimized for installations offering 24 Vdc control power.

These soft starters control two phases of the AC voltage supplied to the motor in order to limit starting torque and current. This is ideal for applications that do not require high starting torque. It limits starting torque and reduces the current inrush experienced with other motor starting methods. The stepless starting method of the ATS01 soft start avoids the torque surges associated with other reduced voltage starting methods.

These two soft starters are ideal for any of the following applications:

- Material handling conveyors
- Belt-driven machinery
- Fans and pumps
- Small compressors
- Automatic doors and gates
- Process machinery (such as grinders, mixers, and agitators)
- Filling lines
- People movers
- Any other application that can benefit from stepless reduced voltage starting

The ATS01N2 and ATSU01N2 are compatible with these common motor voltages:

- 0.5 to 10 HP @ 200/208 V
- 0.5 to 10 HP @ 230/240 V
- 1.1 to 15 kW @ 400 V
- 0.5 to 20 HP @ 460 V

While Altistart 01 soft starters can be used with almost any motor starter, they now add soft start and soft stop motor control to the **TeSys™ U-Line** family of motor starters.

ATS01N2 or ATSU01N2 with TeSys U-Line motor starter

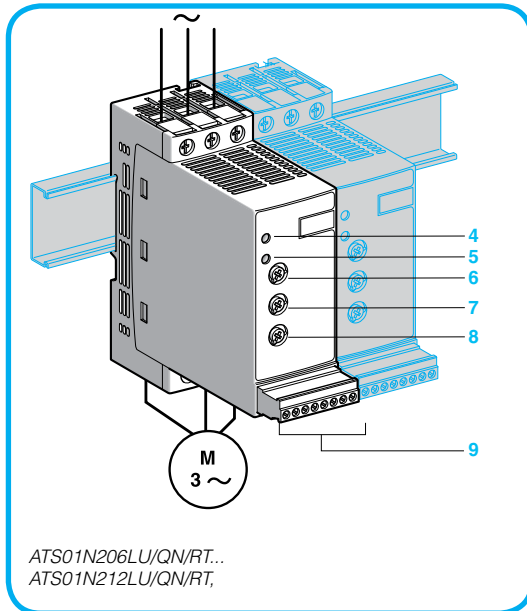
When an ATS01N2●●LU/QN/RT or an ATSU01N2●●LT model **3** is combined with the TeSys U-Line motor starter **1** by means of a power connector **2** (included with the ATSU01N2●●LT), the result is a unique, innovative motor starting solution. A low power soft start installation now has access to the benefits of the TeSys U-Line motor starter, including:

- Modular design with a standard 45 mm width
- Short-circuit and multi-class overload protection
- Phase loss, phase imbalance, ground fault, jam, underload, and long-start protection
- Fault history
- PC based programming software
- Optional LCD display
- Networking capabilities: Modbus™, AS-I, DeviceNet™, Ethernet TCP/IP, Profibus® DP
- Monitoring of motor status
- Remote starting and fault reset
- Electronic reversing

The panel space required to install the ATS01 soft start and the TeSys U-Line motor starter is minimal, with a standard 45 mm product width and side-by-side mounting. Please consult the TeSys U-Line motor starter catalog for TeSys U-Line mounting information.

Altistart 01 & U01 soft starters for asynchronous motors

Introduction ATS01N2 & ATSU01N2 soft starters



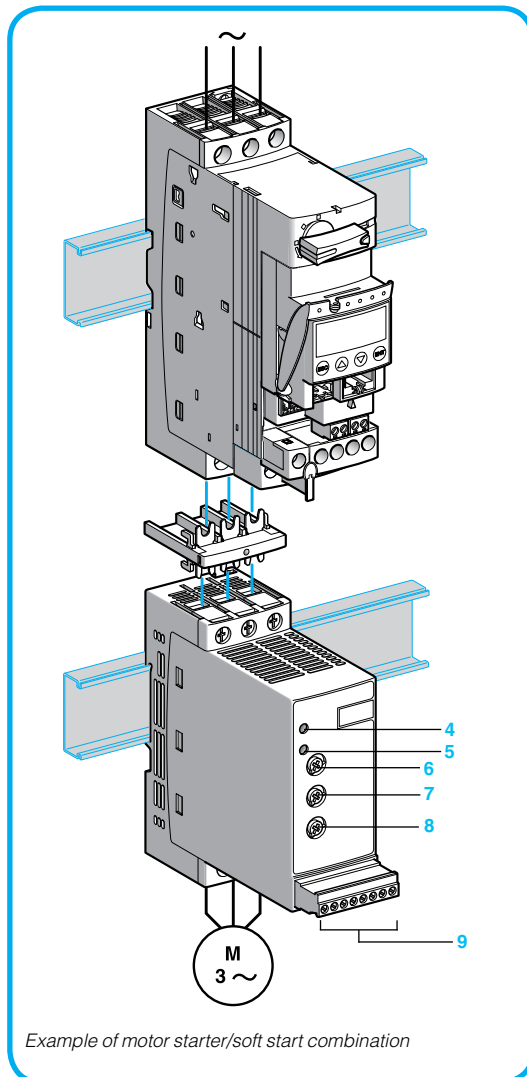
ATS01N2 for soft start and stop operation

- Control two phases of the motor power supply to limit the starting current and deceleration
- Internal bypass relay
- Motor power ratings ranging from 0.5 to 20 HP (0.75 to 15 kW) and 6 to 32 A
- The motor supply voltages range from 230 V - 460 V, 50/60 Hz. The use of a line contactor is not necessary on machines where electrical isolation is not required.

These units are also compatible with motor starters such as TeSys U, GV2, GV3 and others.

Equipped with:

- 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 potentiometer 6 for setting the starting time
- A potentiometer 7 for adjusting the start voltage threshold according to the motor load
- A potentiometer 8 for setting the deceleration time
- 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 motor has reached a standstill at the end of the deceleration stage



ATSU01N2 for soft start and stop operation with TeSys U

Designed specially for use with TeSys U

- When installed with TeSys U-Line family of motor starters, the Altistart 01 becomes the smallest combination soft starter on the market with a full set of motor control and machine protection features

The ATSU01N2●●●● have the same specifications as the ATS01N2●●●● units, with the added benefits of TeSys-U including but not limited to:

- Motor protection options
- Communication options
- Load management

Equipped with:

- 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 potentiometer 6 for setting the starting time
- A potentiometer 7 for adjusting the start voltage threshold according to the motor load
- A potentiometer 8 for setting the deceleration time
- 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 motor has reached a standstill at the end of the deceleration stage

Altistart 01 & U01 soft starters for asynchronous motors

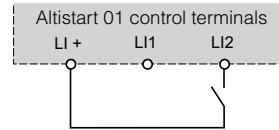
Introduction ATS01N2 & ATSU01N2 soft starters



Functions

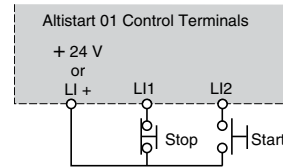
2-wire control

The start and stop commands are provided by a single logic or control input. As soon as the state of logic input 2 (LI2) goes high (connected to the LI+ or +24 V terminal), the starting process begins. As soon as the state of LI2 goes low (the connection to LI+ or +24 V is removed), the stopping process begins. No connection to LI1 is required.



3-wire control

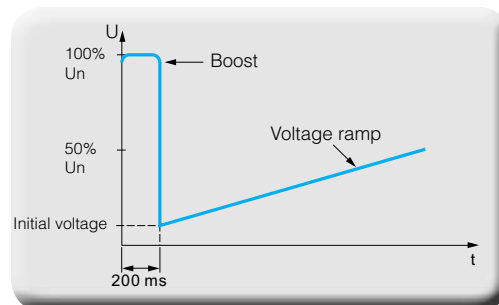
The start and stop commands are provided by two different logic or control inputs. While logic input 1 (LI1) is continuously held high (connected to LI+ or +24 V), a momentary high on LI2 will provide a start command. A stop command is issued as soon as LI1 goes low (the connection to LI+ or +24 V is removed). To issue a second start command, reconnect LI1 to LI+ or +24 V and momentarily pull LI2 high.



Starting and stopping times

The ATS01 soft start controls the starting and stopping time of the motor by ramping the applied motor voltage up and down. The starting and stopping voltage ramp times can be adjusted from 1 to 10 seconds by means of two potentiometers on the front of the soft start. Since the actual motor starting and stopping times are dependent on the level of the applied load, the scale on the front of the soft start is marked from A to E rather than from 1 to 10 seconds, with A being the shortest time and E being the longest time. The starting voltage ramp begins at the AC voltage level set by the Initial Voltage adjustment. Refer to diagram below for more detail.

Note: The ATS01 soft start is internally bypassed at the end of the time set by the start time adjustment. If the motor is not up to speed by that time (due to a heavy load), the internal contactor can be damaged, requiring replacement of the soft start. SET THE START TIME AT A LEVEL ACHIEVABLE WITH THE MOTOR AT ITS HIGHEST LOAD LEVEL.



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

Altistart 01 & U01 soft starters for asynchronous motors

Introduction ATS01N2 & ATSU01N2 soft starters

Functions (continued)

Initial (or starting voltage)

The initial voltage applied to the motor (the level at which the voltage ramp begins) can be adjusted by a potentiometer on the face of the Altistart 01 soft starter. The initial voltage level can be adjusted from approximately 30 to 80% of the AC line voltage. Since the resultant motor torque varies in proportion to the square of the applied voltage (see the Torque Characteristics diagram), the scale on the front of the ATS01 is calibrated from A to E rather than from 30 to 80%, with A being the lowest level and E being the highest level. A lower setting will reduce motor current and torque during starting. Set this level to the minimum required that will result in motor rotation immediately after a start command. If no level of adjustment here starts immediate motor rotation, use the Boost function. Refer to diagram on page 10 for more detail.

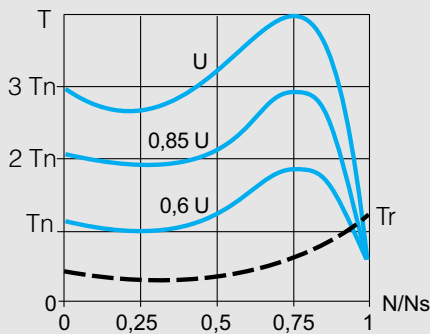
Boost (kickstart function)

If the Boost control input is active (connected to LI+ or +24 V) when a start command is given, full line voltage will be applied to the motor for the first 200 mS of soft start operation. Thereafter, the normal voltage ramp will resume. Use this function to start high inertia loads or applications with a high level of starting friction. Refer to diagram on page 10 for more detail.

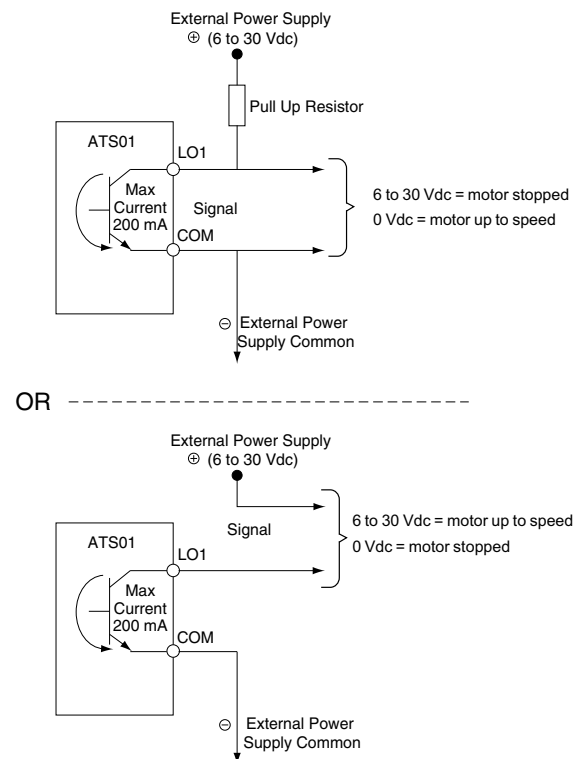
Motor up to speed

The ATS01 soft start provides a logic signal to indicate that the starting voltage ramp is complete and the motor is up to speed. This signal is provided by an open collector output illustrated in the diagrams below. An external power supply is required to complete this circuit.

Torque Characteristics



This diagram shows the torque/speed characteristic of a squirrel cage motor in relation to the applied voltage. The torque varies in proportion to the squared ratio of the applied voltage to the motor's rated voltage at a fixed frequency. For example, 1/2 voltage results in approximately 1/4 torque. The gradual increase in the voltage helps prevent the instantaneous current peak on startup.



Fault/stop

The ATS01 soft start provides a relay contact to indicate either that it has detected a fault or that it has stopped running the motor. The normally-open contact between terminals R1A and R1C closes when a run command is provided at LI2. The relay contact opens under either one of the following two conditions:

- The contact opens instantly when the soft start detects a fault condition.
- The contact opens when the motor voltage reaches zero after a stop command.

This information can be used to sequence a contactor if both line isolation and soft stop are needed in the same application.

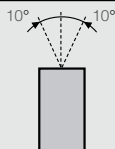
Altistart 01 & U01

soft starters for asynchronous motors

Specifications

Environmental

Environmental specifications

Type of starter		ATS01N1●●FT ATS01N2●●LU ATS01N2●●QN ATS01N2●●RT ATSU01N2●●LT
Conforming to standards		Altistart 01 soft starts conform to the strictest international standards and recommendations relating to electrical industrial control devices, in particular the standard IEC 60947-4-2.
Electromagnetic compatibility EMC	Conducted and radiated emissions	CISPR 11 level B, IEC 60947-4-2, level B
	Harmonics	IEC 61000-3-2, IEC 61000-3-4
	EMC immunity	EN 50082-2, EN 50082-1
	Electrostatic discharge	IEC 61000-4-2 level 3
	Immunity to radiated radio-frequency electromagnetic field	IEC 61000-4-3 level 3
	Immunity to electrical transients	IEC 61000-4-4 level 4
	Surge immunity	IEC 61000-4-5 level 3
	Immunity to voltage disturbances	IEC 61000-4-6 level 3
	Immunity to conducted interference caused by radio-electrical fields	IEC 61000-4-11
	Damped oscillating waves	IEC 61000-4-12 level 3
CE marking		The soft starts are CE marked on the basis of European directives governing low voltage (72/73/EEC) and EMC (89/336/EEC).
Product certifications		UL, CSA, C-Tick and CCC
Degree of protection		IP20
Degree of pollution		2 (conforming to IEC/EN 60947-4-2)
Vibration resistance		1.5 mm peak to peak from 3 to 13 Hz, 1 gn from 13 to 150 Hz conforming to IEC/EN 60068-2-6
Shock resistance		15 gn for 11 ms conforming to IEC 60068-2-27
Relative humidity		5...95% without condensation or dripping water, conforming to IEC/EN 60068-2-3
Ambient air temperature around the device	Storage	°F - 13...+ 158 °F (- 25...+ 70 °C) conforming to IEC/EN 60947-4-2
	Operation	°F + 14... +104 °F (- 10...+ 40 °C) without derating, up to 122 °F (50 °C) with current derating of 1.1% per °F above 104°F (2% per °C above 40 °C)
Maximum operating altitude		ft 3300 ft (1000 m) without derating Above this, derate the current by 2.2% per additional 330 ft (100 m)
Operating position Maximum permanent angle in relation to the normal vertical mounting position		

Altistart 01 & U01

soft starters for asynchronous motors

Specifications

Electrical

Electrical specifications

Soft starter ratings

Type of starter	ATS		01N1	01N2			U01N2	
			●●FT	●●LU	●●QN	●●RT	●●LT	
Category of use Conforming to IEC 60947-4-2			Ac-53b					
Rated AC supply voltage	Three phase	Vac	200...480 Vac	200...240 Vac	380...415 Vac	440...480 Vac	200...480 Vac	
	Single phase	Vac	110...240 Vac	-	-	-	-	
AC line voltage tolerance			± 10%					
Frequency		Hz	50/60 Hz ± 5%					
Output voltage			Maximum output voltage equal to AC supply voltage.					
Control supply voltage			110...220 Vac or 24 Vac/dc (± 10%)	Built into the starter			24 Vac/dc ± 10%	
Rated operating current	A		3, 6, 9, and 12 A	6, 9, 12, 22, and 32 A				
Adjustable starting time	sec		1...5 s	1...10 s				
Adjustable deceleration time	sec		-	1...10 s				
Starting voltage	%		30-80% of motor's rated voltage					

Power consumption and dissipation

Type of starter	ATS01N1		03FT	06FT	09FT	12FT	25FT
Control power supply and consumption			110 Vac, 30 mA 24 Vac/dc, 25 mA 240 Vac, 65 mA		110 Vac, 35 mA 24 Vac/dc, 30 mA 240 Vac, 80 mA		
Power dissipated	At full load at end of starting	W	4 W	1 W	1 W	1 W	1 W
	During starting and stopping at 5 times the rated operating current	W	19 W	31 W	46 W	61 W	126 W
Type of starter	ATS01N2		06LU/QN/RT	09LU/QN/RT	12LU/QN/RT	22LU/QN/RT	32LU/QN/RT
Control power supply and consumption			24 Vac/dc, 65 mA			24 Vac/dc, 100 mA	
Power dissipated	At full load at end of starting	W	4 W	4 W	4 W	4.5 W	4.5 W
	In transient state	W	64 W	94 W	124 W	224.5 W	324.5 W
Type of starter	ATSU01N2		06LT	09LT	12LT	22LT	32LT
Control power supply and consumption			24 Vac/dc, 65 mA			24 Vac/dc, 100 mA	
Power dissipated	At full load at end of starting	W	1.5 W	1.5 W	1.5 W	2.5 W	2.5 W
	During starting and stopping at 5 times the rated operating current	W	61.5 W	91.5 W	121.5 W	222.5 W	322.5 W

Cycles per hour

Type of starter	ATS		01N1		01N2				U01N2			
			●●FT		06●● to 22●●		32●●		06LT to 22LT		32LT	
Use	sec	Starting time at 5 times the rated operating current	1 s	5 s	1 s	5 s	1 s	5 s	1 s	5 s	1 s	5 s
			310	20	310	20	180	10	310	20	180	10
Maximum number of cycles per hour												

Altistart 01 & U01

soft starters for asynchronous motors

Specifications

I/O & Control

Contact reference table

Functions	ATS01N1	ATS01N2	ATSU01N2
Relay outputs	CL1/0	R1A	R1A
	CL/2	R1C	R1C
External power supply 0 V	-	COM	COM
Stop command	-	LI1	LI1
Run command	-	LI2	LI2
Control section power supply	24V	LI + (+24V positive logic)	24V
BOOST	-	BOOST	BOOST
End of starting	-	LO1	LO1

I/O & Control specifications

ATS01N1●●●● Control Terminals

CL1/0	CL2	24V
-------	-----	-----

Control terminal description	110...230 Vac	24 Vac/dc
CL1/0 and CL2 or CL1/0 and 24V Control power (electrical isolation between line power and control power)	Connect line supply to CL2 Connect neutral to CL1/0	Connect (+) to 24 V Connect (-) to CL1/0
LED Signaling		
Green LED	Soft starter power on	
Yellow LED	Voltage ramp complete, motor up to speed	

ATS01N2●●●● and ATSU01N2●●●● Control Terminals

ATS01N2●●●●:

R1A	R1C	COM	LI1	LI2	LI+	BOOST	LO1
-----	-----	-----	-----	-----	-----	-------	-----

ATSU01N2●●●●:

R1A	R1C	COM	LI1	LI2	24V	BOOST	LO1
-----	-----	-----	-----	-----	-----	-------	-----

Control terminal description	ATS01N2●●●●LU/QN/RT	ATSU01N2●●●●LT
24V and COM or LI+ and COM Control power (electrical isolation between line power and control power)	24 V from ATS01 internal power supply Connect to terminals: LI+ and COM Max. available current: 10 mA No short-circuit or overload protection	24 V ± 10% from ATS01 external power supply Connect to terminals: +24V and COM Max. required current: 100 mA
LI1, LI2, Boost Logic inputs Stop, Run, and Boost (Kickstart) functions	27 kohms input impedance 40 Vdc maximum input signal Max. current: 8 mA State 0 if signal < 5 V State 1 if signal > 13 V	
LO1 End of starting signal	Open collector logic output External power supply (minimum 6 Vdc, maximum 30 Vdc) Max current: 200 mA	
R1A, R1C Relay output Fault signal and isolation contactor control Relay contact is open when soft starter is not running or when it has detected a fault.	Normally-open (N.O.) contact Minimum switching capacity: 10 mA at 6 Vdc Max. switching capacity on inductive load (cos φ= 0.5 and L/R = 20 ms): 2 A at 250 V ac or 30 Vdc (AC-15) Max. operating voltage: 44 Vac	
LED Signaling		
Green LED	Soft starter power on	
Yellow LED	Voltage ramp complete, motor up to speed	

Altistart 01 & U01

soft starters for asynchronous motors

Specifications

Connections

Connections (maximum connection capacity and tightening torque)

ATS01N1●●●●

Type of Soft Starter	ATS01N1	03FT/06FT	09FT/12FT
Power circuit		Cage type connector	Connection onto Ø 4 mm screw terminals
Stranded wire without cable end	1 conductor	2.5 mm ² (14 AWG)	1.5 - 10 mm ² (16 - 8 AWG)
	2 conductors	1 mm ² (18 AWG)	1.5 - 6 mm ² (16 - 10 AWG)
Stranded wire with cable end	1 conductor	2.5 mm ² (14 AWG)	1 - 6 mm ² (18 - 10 AWG)
	2 conductors	0.75 mm ² (18 AWG)	1 - 6 mm ² (18 - 10 AWG)
Solid wire	1 conductor	2.5 mm ² (14 AWG)	1 - 10 mm ² (18 - 8 AWG)
	2 conductors	1 mm ² (18 AWG)	1 - 6 mm ² (18 - 10 AWG)
Tightening torque		0.8 N•m (7 in-lb)	1.9 - 2.5 N•m (16.9 - 22.1 in-lb)
Control circuit		Cage type connector	Screw connector
Stranded wire without cable end	1 conductor	2.5 mm ² (14 AWG)	0.5 - 2.5 mm ² (20 - 14 AWG)
	2 conductors	1 mm ² (18 AWG)	0.5 - 1.5 mm ² (20 - 16 AWG)
Stranded wire with cable end	1 conductor	2.5 mm ² (14 AWG)	0.5 - 1.5 mm ² (20 - 16 AWG)
	2 conductors	0.75 mm ² (18 AWG)	0.5 - 1.5 mm ² (20 - 16 AWG)
Solid wire	1 conductor	2.5 mm ² (14 AWG)	0.5 - 2.5 mm ² (20 - 14 AWG)
	2 conductors	1 mm ² (18 AWG)	0.5 - 1 mm ² (20 - 18 AWG)
Tightening torque		0.8 N•m (7 in-lb)	0.5 N•m (4.43 in-lb)

ATS01N2●●●● and ATSU01N2●●●●

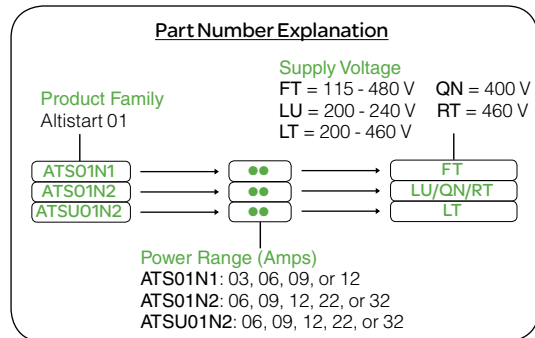
A customized power connector is supplied with the **ATSU01N2●●LT** soft starters. It eliminates the need for power wiring between the soft starter and the TeSys U-Line motor starter and minimizes the height of the assembly when the two units are mounted one above the other.

For **ATS01N2●●LU/QN/RT** soft starters, the power connector is available as an option (**VW3G4104**).

Power circuit	Connection onto Ø 4 mm screw terminals	
Stranded wire without cable end	1 conductor	1.5 - 10 mm ² (16 - 8 AWG)
	2 conductors	1.5 - 6 mm ² (16 - 10 AWG)
Stranded wire with cable end	1 conductor	1 - 6 mm ² (16 - 10 AWG)
	2 conductors	1 - 6 mm ² (16 - 10 AWG)
Solid wire	1 conductor	1 - 10 mm ² (16 - 8 AWG)
	2 conductors	1 - 6 mm ² (16 - 10 AWG)
Tightening torque		1.9 - 2.5 N•m (16.9 - 22.1 in-lb)
Control circuit	Screw connector	
Stranded wire without cable end	1 conductor	0.5 - 2.5 mm ² (20 - 14 AWG)
	2 conductors	0.5 - 1.5 mm ² (20 - 16 AWG)
Stranded wire with cable end	1 conductor	0.5 - 1.5 mm ² (20 - 16 AWG)
	2 conductors	0.5 - 1.5 mm ² (20 - 16 AWG)
Solid wire	1 conductor	0.5 - 2.5 mm ² (20 - 14 AWG)
	2 conductors	0.5 - 1 mm ² (20 - 18 AWG)
Ground connection (ATSU01N2●●LT only)	Tinned connector. Fixed using Ø 6 screws	
Tightening torque		0.5 N•m (4.4 in-lb)

Altistart O1 & UO1 soft starters for asynchronous motors

Selection Table ATS01N1 soft starters



ATS01N1 soft starters

ATS01N1 torque limiting mini soft starts extend the Altistart O1 product range down into the fractional horsepower arena. They can control the starting ramp of either a single-phase motor (115 V, 230 V) or a three-phase motor (208 V, 230 V, and 460 V).

The ATS01N1 is ideal for the following applications:

- Small conveyors for fragile goods, such as bottle conveyors
- Constant power machines, such as drills, where the starting torque must be limited

Single-phase motors

Motor Power		ATS01 Soft Starter	GV Manual Starter	Isolation Contactor with AC Coil	Isolation Contactor with DC Coil	Fast Acting Class J Fuses ⁽¹⁾	Overload Relay ⁽²⁾
Voltage	HP						
115/ 120 V	0.25	ATS01N106FT	GV2ME10	LC1D09 or LC1K06	LC1D09 or LP1K06	15 A	LRD10 or LR2K0312
	0.33	ATS01N109FT	GV2ME14	LC1D09 or LC1K09	LC1D09 or LP1K09	25 A	LRD12 or LR2K0314
	0.5	ATS01N112FT	GV2ME16	LC1D12 or LC1K12	LC1D12 or LP1K12	30 A	LRD16 or LR2K0316
230/ 240 V	0.25	ATS01N103FT	GV2ME08	LC1D09 or LC1K06	LC1D09 or LP1K06	10 A	LRD08 or LR2K0310
	0.33	ATS01N106FT	GV2ME08	LC1D09 or LC1K06	LC1D09 or LP1K06	15 A	LRD08 or LR2K0310
	0.5	ATS01N106FT	GV2ME10	LC1D09 or LC1K06	LC1D09 or LP1K06	15 A	LRD10 or LR2K0312
	0.75 - 1	ATS01N109FT	GV2ME14	LC1D09 or LC1K09	LC1D09 or LP1K09	25 A	LRD12 or LR2K0314
	1.5	ATS01N112FT	GV2ME16	LC1D12 or LC1K12	LC1D12 or LP1K12	30 A	LRD16 or LR2K0316
2	ATS01N112FT	GV2ME16	LC1D12	LC1D12	35 A	LRD16	

Three-phase motors

Motor Power			ATS01 Soft Starter	GV Manual Starter	Isolation Contactor with AC Coil	Isolation Contactor with DC Coil	Fast Acting Class J Fuses ⁽¹⁾	Overload Relay ⁽²⁾
Voltage	HP	kW						
200/ 208 V	0.5	-	ATS01N103FT	GV2ME07	LC1D09 or LC1K06	LC1D09 or LP1K06	10 A	LRD07 or LR2K0308
	0.75	-	ATS01N106FT	GV2ME08	LC1D09 or LC1K06	LC1D09 or LP1K06	15 A	LRD08 or LR2K0310
	1	-	ATS01N106FT	GV2ME10	LC1D09 or LC1K06	LC1D09 or LP1K06	15 A	LRD10 or LR2K0312
	1.5 - 2	-	ATS01N109FT	GV2ME14	LC1D09 or LC1K09	LC1D09 or LP1K09	25 A	LRD12 or LR2K0314
	3	-	ATS01N112FT	GV2ME16	LC1D12 or LC1K12	LC1D12 or LP1K12	35 A	LRD16 or LR2K0316
230/ 240 V	0.5	-	ATS01N103FT	GV2ME07	LC1D09 or LC1K06	LC1D09 or LP1K06	10 A	LRD07 or LR2K0308
	0.75	-	ATS01N106FT	GV2ME08	LC1D09 or LC1K06	LC1D09 or LP1K06	10 A	LRD08 or LR2K0310
	1	-	ATS01N106FT	GV2ME10	LC1D09 or LC1K06	LC1D09 or LP1K06	15 A	LRD10 or LR2K0312
	1.5	-	ATS01N106FT	GV2ME10	LC1D09 or LC1K06	LC1D09 or LP1K06	20 A	LRD12 or LR2K0314
	2	-	ATS01N109FT	GV2ME14	LC1D09 or LC1K09	LC1D09 or LP1K09	20 A	LRD12 or LR2K0314
	3	-	ATS01N112FT	GV2ME16	LC1D12 or LC1K12	LC1D12 or LP1K12	30 A	LRD16 or LR2K0316
460/ 480 V	0.5	-	ATS01N103FT	GV2ME06	LC1D09 or LC1K06	LC1D09 or LP1K06	3 A	LRD06 or LR2K0306
	0.75	-	ATS01N103FT	GV2ME06	LC1D09 or LC1K06	LC1D09 or LP1K06	6 A	LRD06 or LR2K0307
	1	-	ATS01N103FT	GV2ME07	LC1D09 or LC1K06	LC1D09 or LP1K06	6 A	LRD07 or LR2K0308
	1.5	-	ATS01N103FT	GV2ME08	LC1D09 or LC1K06	LC1D09 or LP1K06	10 A	LRD08 or LR2K0310
	2	-	ATS01N106FT	GV2ME08	LC1D09 or LC1K06	LC1D09 or LP1K06	10 A	LRD08 or LR2K0310
	3	-	ATS01N106FT	GV2ME10	LC1D09 or LC1K06	LC1D09 or LP1K06	15 A	LRD10 or LR2K0312
	5	-	ATS01N109FT	GV2ME14	LC1D09 or LC1K09	LC1D09 or LP1K09	25 A	LRD12 or LR2K0314
	7.5	-	ATS01N112FT	GV2ME16	LC1D12 or LC1K12	LC1D12 or LP1K12	35 A	LRD16 or LR2K0316
400 V	-	0.37	ATS01N103FT	GV2ME05	LC1D09 or LC1K06	LC1D09 or LP1K06	3 A	LRD05 or LR2K0306
	-	0.55	ATS01N103FT	GV2ME06	LC1D09 or LC1K06	LC1D09 or LP1K06	6 A	LRD06 or LR2K0307
	-	0.75	ATS01N103FT	GV2ME07	LC1D09 or LC1K06	LC1D09 or LP1K06	6 A	LRD07 or LR2K0308
	-	1.1	ATS01N103FT	GV2ME07	LC1D09 or LC1K06	LC1D09 or LP1K06	10 A	LRD07 or LR2K0308
	-	1.5	ATS01N106FT	GV2ME08	LC1D09 or LC1K06	LC1D09 or LP1K06	15 A	LRD08 or LR2K0310
	-	2.2	ATS01N106FT	GV2ME10	LC1D09 or LC1K06	LC1D09 or LP1K06	15 A	LRD10 or LR2K0312
	-	3	ATS01N109FT	GV2ME14	LC1D09 or LC1K09	LC1D09 or LP1K09	20 A	LRD12 or LR2K0314
	-	4	ATS01N109FT	GV2ME14	LC1D09 or LC1K09	LC1D09 or LP1K09	25 A	LRD14 or LR2K0316
-	5.5	ATS01N112FT	GV2ME16	LC1D12 or LC1K12	LC1D12 or LP1K12	35 A	LRD16 or LR2K0316	

(1) Fuses are not required when using the GV manual starter with motor branch-circuit protection installed per NEC article 430.

(2) Overload relay is not required when using the GV manual starter.

Altistart 01 & U01 soft starters for asynchronous motors

Dimensions ATS01N1 soft starters



ATS01N103FT, 06FT

ATS01N109FT, 12FT

ATS01N1 soft starters

The ATS01N1 series is one of the smallest soft starts on the market and is available in two frame sizes:

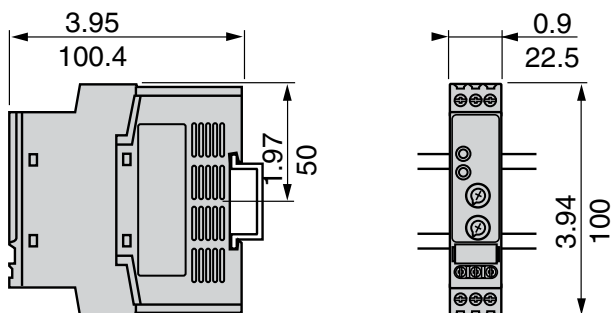
- 0.9 inch (22.5 mm) wide modules, rated for 3 and 6 A
- 1.77 inch (45 mm) wide modules, rated for 9 and 12 A

All ATS01 soft starters can be DIN rail or panel mounted. They can be mounted side-by-side with no gap between soft starters required.

Soft Starter	W x H x D	
	inches	mm
ATS01N103FT, ATS01N106FT	0.9 x 3.94 x 3.95	22.5 x 100 x 100.4
ATS01N109FT, ATS01N112FT	1.77 x 4.88 x 5.15	45 x 124 x 130.7

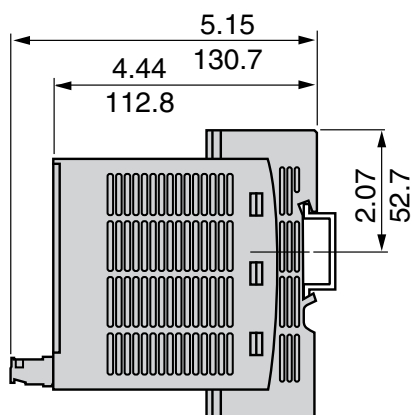
ATS01N103FT, 06FT

Mounting on (35 mm) DIN rail or rail with adaptor RHZ 66

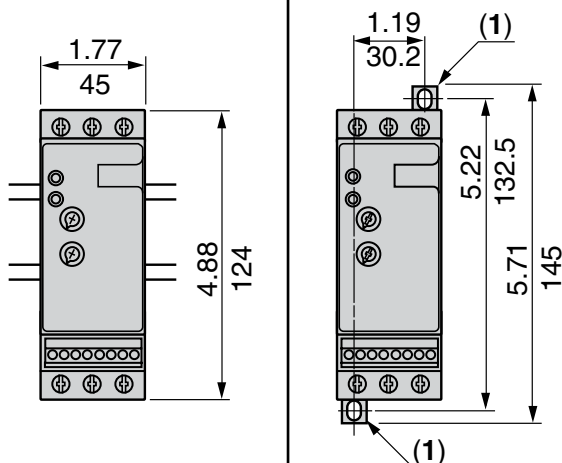


ATS01N109FT, 12FT

Mounting on (35 mm) DIN rail



Panel Mounting



(1) Retractable screws

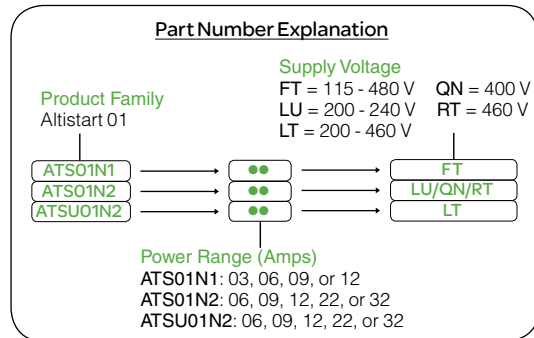
Dimensions: $\frac{\text{in.}}{\text{mm}}$

Altistart O1 & UO1

soft starters for asynchronous motors

Selection Table

ATS01N2 & ATSU01N2 soft starters



ATS01N2 & ATSU01N2 soft starters

The ATS01N2●●LU/QN/RT and ATSU01N2●●LT soft starters control the starting and stopping ramps of three-phase motors ranging from 0.5 to 20 HP (0.75 to 15 kW), and have a motor voltage range of 208 V to 460 V.

The ATSU01N2●●LT soft starter features the same specifications as the ATS01N2●●LU/QN/RT, with the added benefits of the Tesys U-Line motor starter.

The ATS01N2 and ATSU01N2 are compatible with these common motor voltages:

- 0.5 to 10 HP @ 200/208 V
- 0.5 to 10 HP @ 230/240 V
- 1.1 to 15 kW @ 400 V
- 0.5 to 20 HP @ 460 V

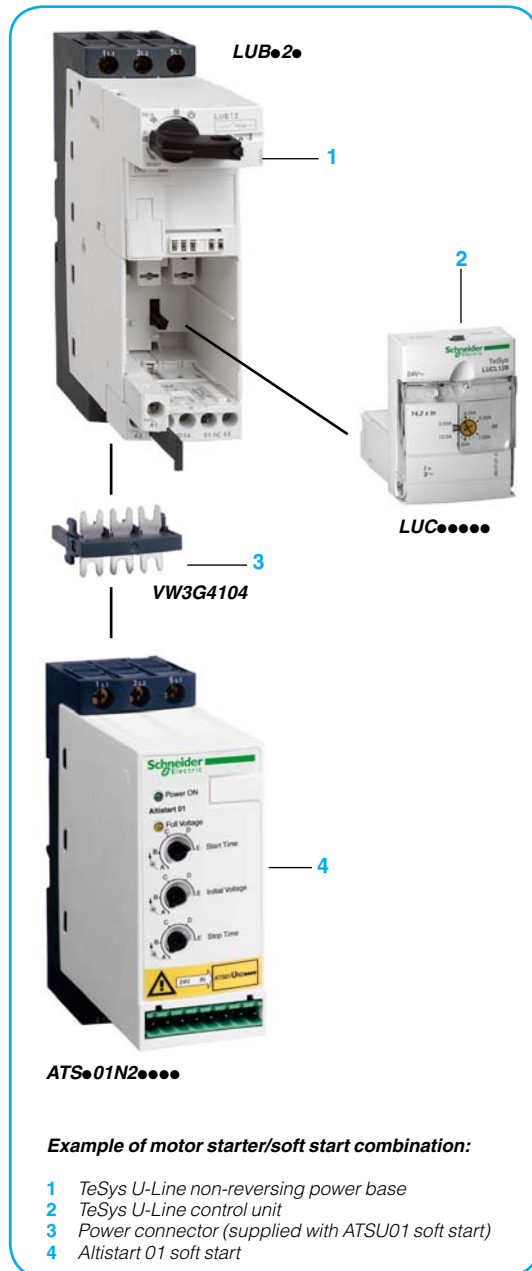
Motor power (3-phase)			ATS01 Soft Starter	GV Manual Starter	KM1 Isolation Contactor	Fast Acting Class J Fuses ⁽¹⁾	Overload Relay ⁽²⁾
Voltage	HP	kW					
200/208 V	0.5	-	ATS01N206LU	GV2ME07	LC1D09 or LC1K06	10 A	LRD07 or LR2K0308
	0.75	-	ATS01N206LU	GV2ME08	LC1D09 or LC1K06	15 A	LRD08 or LR2K0310
	1	-	ATS01N206LU	GV2ME10	LC1D09 or LC1K06	15 A	LRD10 or LR2K0312
	1.5-2	-	ATS01N209LU	GV2ME14	LC1D09 or LC1K09	25 A	LRD12 or LR2K0314
	0.75	-	ATS01N212LU	GV2ME16	LC1D12 or LC1K12	30 A	LRD16 or LR2K0316
	3	-	ATS01N212LU	GV2ME16	LC1D12 or LC1K12	35 A	LRD16 or LR2K0316
	5	-	ATS01N222LU	GV2ME20	LC1D18	60 A	LRD22
	7.5	-	ATS01N232LU	GV2ME32	LC1D25	80 A	LRD32
230/240 V	0.5	-	ATS01N206LU	GV2ME07	LC1D09 or LC1K06	10 A	LRD07 or LR2K0308
	0.75	-	ATS01N206LU	GV2ME08	LC1D09 or LC1K06	10 A	LRD08 or LR2K0310
	1	-	ATS01N206LU	GV2ME10	LC1D09 or LC1K06	15 A	LRD10 or LR2K0312
	1.5	-	ATS01N206LU	GV2ME10	LC1D09 or LC1K06	20 A	LRD12 or LR2K0314
	2	-	ATS01N209LU	GV2ME14	LC1D09 or LC1K09	20 A	LRD12 or LR2K0314
	3	-	ATS01N212LU	GV2ME16	LC1D12 or LC1K12	30 A	LRD16 or LR2K0316
	5	-	ATS01N222LU	GV2ME20	LC1D18	50 A	LRD21
	7.5	-	ATS01N222LU	GV2ME21	LC1D25	70 A	LRD22
400 V	-	1.1	ATS01N206QN	GV2ME07	LC1D09 or LC1K06	10 A	LRD07 or LR2K0308
	-	1.5	ATS01N206QN	GV2ME08	LC1D09 or LC1K06	15 A	LRD08 or LR2K0310
	-	2.2	ATS01N206QN	GV2ME10	LC1D09 or LC1K06	15 A	LRD10 or LR2K0312
	-	3	ATS01N209QN	GV2ME14	LC1D09 or LC1K09	20 A	LRD12 or LR2K0314
	-	4	ATS01N209QN	GV2ME14	LC1D09 or LC1K09	25 A	LRD14 or LR2K0316
	-	5.5	ATS01N212QN	GV2ME16	LC1D12 or LC1K12	35 A	LRD16 or LR2K0316
	-	7.5	ATS01N222QN	GV2ME20	LC1D18	45 A	LRD21
	-	9	ATS01N222QN	GV2ME21	LC1D25	60 A	LRD22
460 V	0.5	-	ATS01N206RT	GV2ME06	LC1D09 or LC1K06	3 A	LRD06 or LR2K0306
	0.75	-	ATS01N206RT	GV2ME06	LC1D09 or LC1K06	6 A	LRD06 or LR2K0307
	1	-	ATS01N206RT	GV2ME07	LC1D09 or LC1K06	6 A	LRD07 or LR2K0308
	1.5-2	-	ATS01N206RT	GV2ME18	LC1D09 or LC1K06	10 A	LRD08 or LR2K0310
	3	-	ATS01N206RT	GV2ME10	LC1D09 or LC1K06	15 A	LRD10 or LR2K0312
	5	-	ATS01N209RT	GV2ME14	LC1D09 or LC1K09	25 A	LRD12 or LR2K0314
	7.5	-	ATS01N212RT	GV2ME16	LC1D12 or LC1K12	35 A	LRD16 or LR2K0316
	10	-	ATS01N222RT	GV2ME20	LC1D18	45 A	LRD21
	15	-	ATS01N222RT	GV2ME21	LC1D25	70 A	LRD22
	20	-	ATS01N232RT	GV2ME32	LC1D32	90 A	LRD32

(1) Fuses are not required when using the GV manual starter with motor branch-circuit protection installed per NEC article 430.

(2) Overload relay is not required when using the GV manual starter.

Altistart 01 & U01 soft starters for asynchronous motors

Selection Table TeSys U-Line motor starter combinations



ATS01 and TeSys U-Line motor starter combinations

Numerous combination possibilities exist. Consult the TeSys U-Line motor starter catalog for more information.

Motor Power ⁽¹⁾			ATS01 Rated Current A	24 Vdc Control Power		
Voltage	kW	HP		ATS01 Soft Starter	TeSys U-Line Power Base	Control Module ⁽²⁾
230 V	0.75	1	6	ATS01N206LU	LUB12	LUC●05FU
	1.1	1.5	6	ATS01N206LU	LUB12	LUC●12FU
	1.5	2	9	ATS01N209LU	LUB12	LUC●12FU
	2.2	3	12	ATS01N212LU	LUB12	LUC●12FU
	3	-	12	ATS01N212LU	LUB32	LUC●18FU
	4	5	22	ATS01N222LU	LUB32	LUC●18FU
	5.5	7.5	22	ATS01N222LU	LUB32	LUC●32FU
400 V	7.5	10	32	ATS01N232LU	LUB32	LUC●32FU
	1.5	-	6	ATS01N206QN	LUB12	LUC●05FU
	2.2	-	6	ATS01N206QN	LUB12	LUC●12FU
	3	-	9	ATS01N209QN	LUB12	LUC●12FU
	4	-	9	ATS01N209QN	LUB12	LUC●12FU
	5.5	-	12	ATS01N212QN	LUB32	LUC●32FU
	7.5	-	22	ATS01N222QN	LUB32	LUC●32FU
460 V	11	-	22	ATS01N222QN	LUB32	LUC●32FU
	15	-	32	ATS01N232QN	LUB32	LUC●32FU
	-	2	6	ATS01N206RT	LUB12	LUC●05FU
	-	3	6	ATS01N206RT	LUB12	LUC●12FU
	-	5	9	ATS01N209RT	LUB12	LUC●12FU
	-	7.5	12	ATS01N212RT	LUB32	LUC●18FU
	-	10	22	ATS01N222RT	LUB32	LUC●18FU
460 V	-	15	32	ATS01N222RT	LUB32	LUC●32FU
	-	20	32	ATS01N232RT	LUB32	LUC●32FU

Motor Power ⁽¹⁾			ATS01 Rated Current A	120 Vdc Control Power		
Voltage	kW	HP		ATS01 Soft Starter	TeSys U-Line Power Base	Control Module ⁽²⁾
230 V	0.75	1	6	ATSU01N206LT	LUB12	LUC●05BL
	1.1	1.5	6	ATSU01N206LT	LUB12	LUC●12BL
	1.5	2	9	ATSU01N209LT	LUB12	LUC●12BL
	2.2	3	12	ATSU01N212LT	LUB12	LUC●12BL
	3	-	12	ATSU01N212LT	LUB32	LUC●18BL
	4	5	22	ATSU01N222LT	LUB32	LUC●18BL
	5.5	7.5	22	ATSU01N222LT	LUB32	LUC●32BL
400 V	7.5	10	32	ATSU01N232LT	LUB32	LUC●32BL
	1.5	-	6	ATSU01N206LT	LUB12	LUC●05BL
	2.2	-	6	ATSU01N206LT	LUB12	LUC●12BL
	3	-	9	ATSU01N209LT	LUB12	LUC●12BL
	4	-	9	ATSU01N209LT	LUB12	LUC●12BL
	5.5	-	12	ATSU01N212LT	LUB32	LUC●32BL
	7.5	-	22	ATSU01N222LT	LUB32	LUC●32BL
460 V	11	-	22	ATSU01N222LT	LUB32	LUC●32BL
	15	-	32	ATSU01N232LT	LUB32	LUC●32BL
	-	2	6	ATSU01N206LT	LUB12	LUC●05BL
	-	3	6	ATSU01N206LT	LUB12	LUC●12BL
	-	5	9	ATSU01N209LT	LUB12	LUC●12BL
	-	7.5	12	ATSU01N212LT	LUB32	LUC●18BL
	-	10	22	ATSU01N222LT	LUB32	LUC●18BL
460 V	-	15	32	ATSU01N222LT	LUB32	LUC●32BL
	-	20	32	ATSU01N232LT	LUB32	LUC●32BL

(1) Standard power rating according to UL508

(2) Depending on the configuration of the selected TeSys U-Line motor starter, replace the ● with A for standard, B for advanced, and M for malfunction

Altistart 01 & U01 soft starters for asynchronous motors

Dimensions ATS01N206●● to ATS01N212●● ATSU01N206LT to ATSU01N212LT



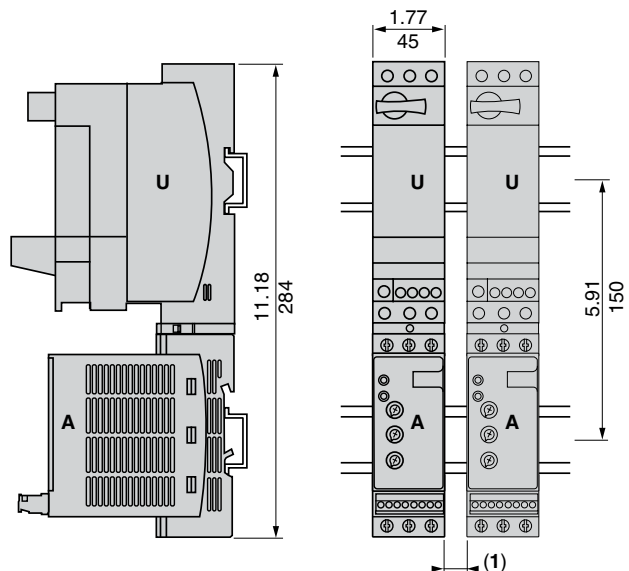
ATSU01N206LU/QN/RT...
ATSU01N212LU/QN/RT,

Dimensions

Soft Starter	W x H x D	
	inches	mm
ATS01N206LU/QN/RT...ATS01N212LU/QN/RT, ATSU01N206LT...ATSU01N212LT	1.77 x 4.88 x 5.15	45 x 124 x 130.7

TeSys U-Line combination (non-reversing power base) and
ATS01N206●● to ATS01N212●● or ATSU01N206LT to ATSU01N212LT

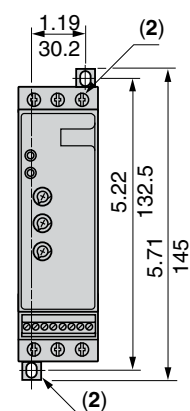
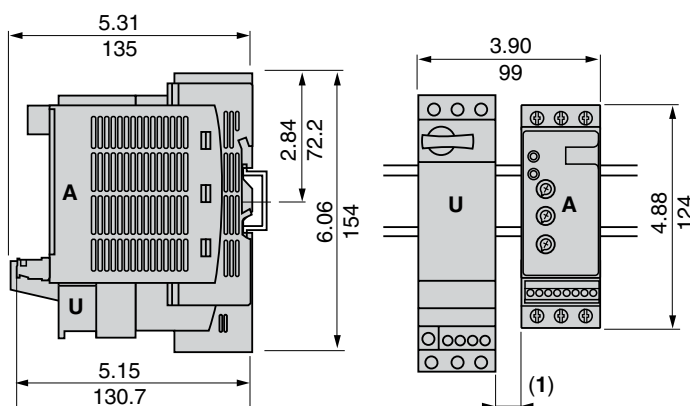
Mounting on $\underline{\text{U}}$ (35 mm) DIN rail with VW3G4104 connector



TeSys U-Line combination (non-reversing or reversing power base) and ATS01N206●●..ATS01N212●● or ATSU01N206LT...ATSU01N212LT

Side-by-side mounting

Panel mounting



(1) Gap only required when using a TeSys-U type LUCM multifunction control unit in an ambient temperature above 113°F (45°C). See TeSys U-Line motor starter catalog for more information
(2) Retractable screw tabs

A - ATS01 soft start
U - TeSys U-Line motor starter

Dimensions: $\frac{\text{in.}}{\text{mm}}$

Altistart 01 & U01 soft starters for asynchronous motors

Dimensions ATS01N222●●, ATS01N232●● ATSU01N222LT, ATSU01N232LT



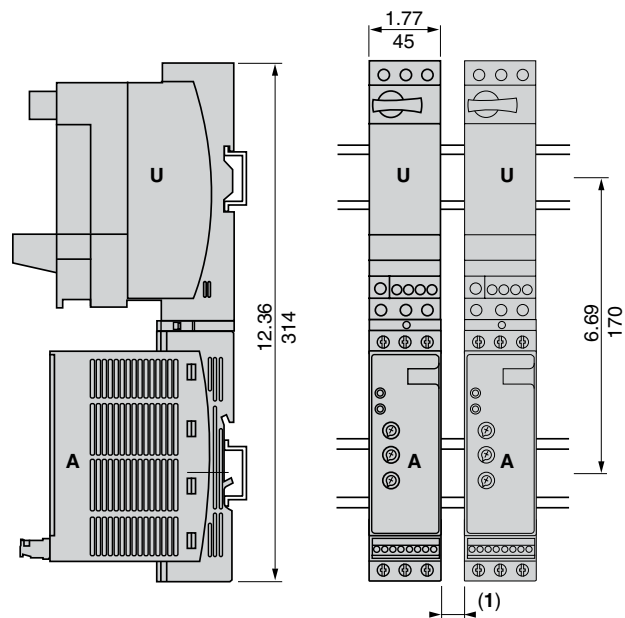
ATS01N222LU/QN/RT...
ATS01N232LU/QN/RT,

Dimensions

Soft Starter	W x H x D	
	inches	mm
ATS01N222LU/QN/RT...ATS01N232LU/QN/RT, ATSU01N222LT...ATSU01N232LT	1.77 x 6.06 x 5.16	45 x 154 x 131

TeSys U-Line combination (non-reversing power base) and
ATS01N222●●...ATS01N232●● or ATSU01N222LT...ATSU01N232LT

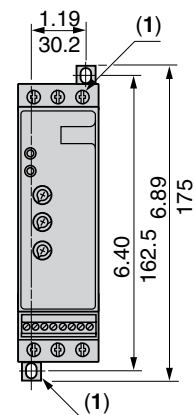
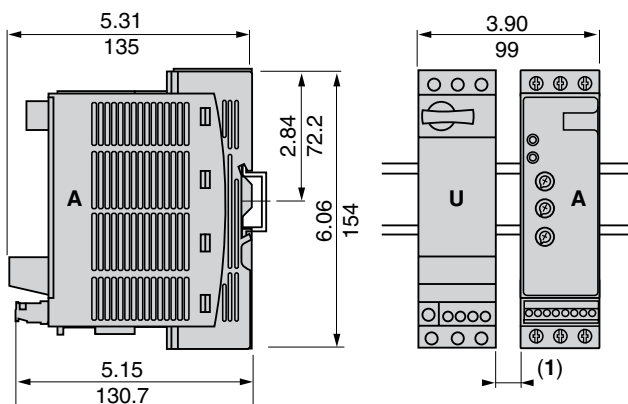
Mounting on \perp (35 mm) DIN rail with VW3G4104 connector



TeSys U-Line combination (non-reversing or reversing power base) and ATS01N222●●...ATS01N232●● or ATSU01N222LT...ATSU01N232LT

Side-by-side mounting

Panel mounting



(1) Gap only required when using a TeSys-U type LUCM multifunction control unit in an ambient temperature above 113°F (45°C). See TeSys U-Line motor starter catalog for more information
(2) Retractable screw tabs

A - ATS01 soft start
U - TeSys U-Line motor starter

Dimensions: $\frac{\text{in.}}{\text{mm}}$

Altistart 01 & U01 soft starters for asynchronous motors

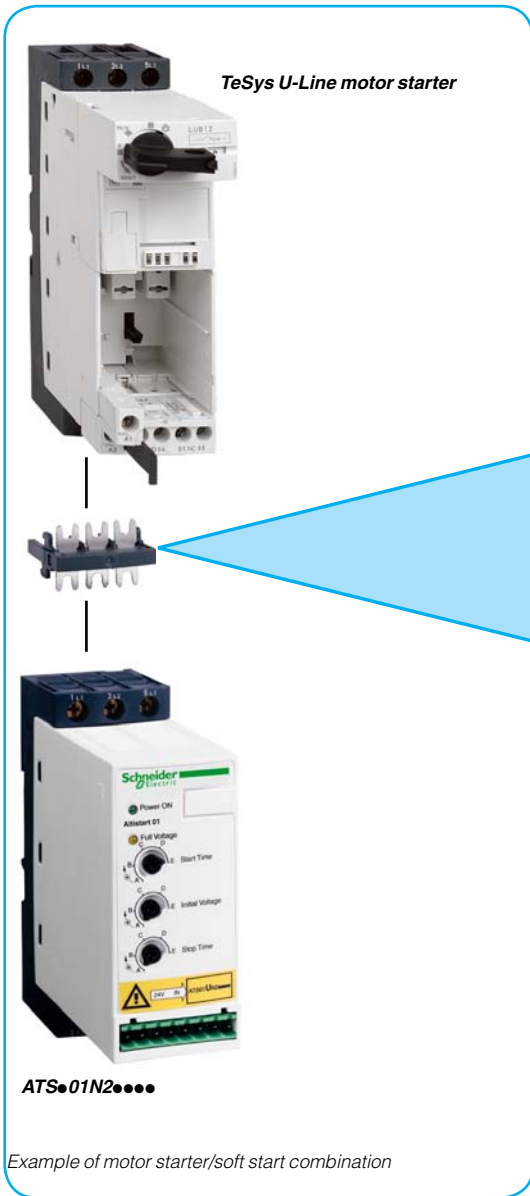
Accessories Power connector

Power connector

This power connector is used to connect the ATS01N2●●LU/QN/RT soft starter to the TeSys U-Line motor starter. This connection allows the ATS01N2●●LU/QN/RT soft starter to access the additional features available with the TeSys U-Line motor starter, including:

- Modular design with a standard 45 mm width
- Short-circuit and multi-class overload protection
- Phase loss, phase imbalance, ground fault, jam, underload, and long-start protection
- Fault history
- PC and PDA based programming software
- Optional LCD display
- Networking capabilities: Modbus™, AS-I, DeviceNet™, Ethernet TCP/IP, Profibus® DP
- Monitoring of motor status
- Remote starting and fault reset
- Electronic reversing

The power connector is included with the ATSU01N2●●LT soft starter offer.

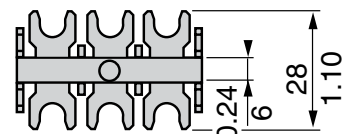
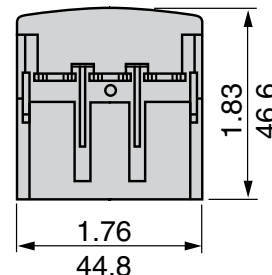
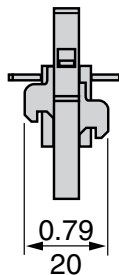


Description	Part number
Power connector (included with ATSU01 soft starter)	VW3G4104



Dimensions

Part number	W x H x D	
	inches	mm
VW3G4104	1.76 x 1.10 x 1.83	44.8 x 28 x 46.6



Dimensions: $\frac{\text{in.}}{\text{mm}}$

Altistart O1 & U01

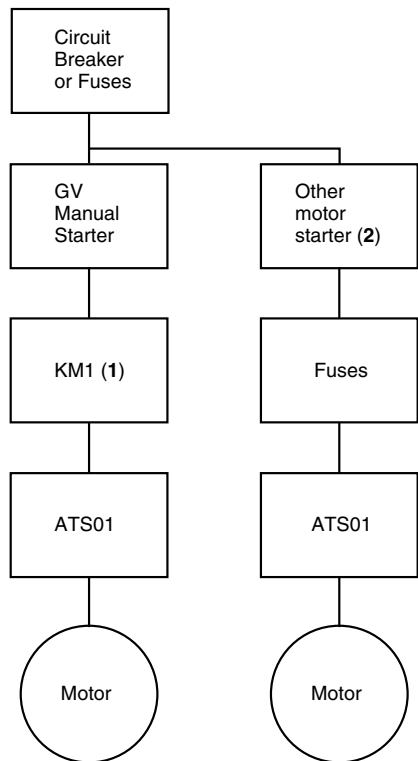
soft starters for asynchronous motors

Wiring Diagrams

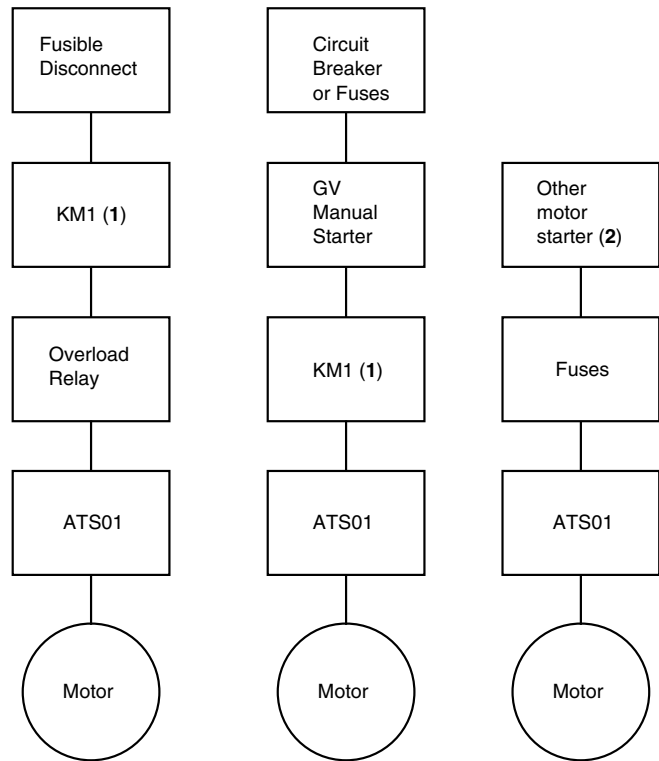
Motor Installation

ATS01N2●●LU/QN/RT soft starter with GV manual starter or other motor starter

Group motor installation



Non-group motor installation



- (1): Optional contactor for line isolation and remote control.
 (2): Other motor starters must provide motor overload protection.

Note: Observe national and local electrical codes when selecting the circuit breaker and other motor starters. See the selection table on page 18 for recommendations on the following components:

- ATS01 soft start
- GV manual starter
- KM1 isolation contactor
- Fuses
- Overload relay

Altistart O1 & UO1

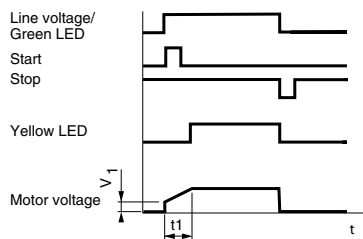
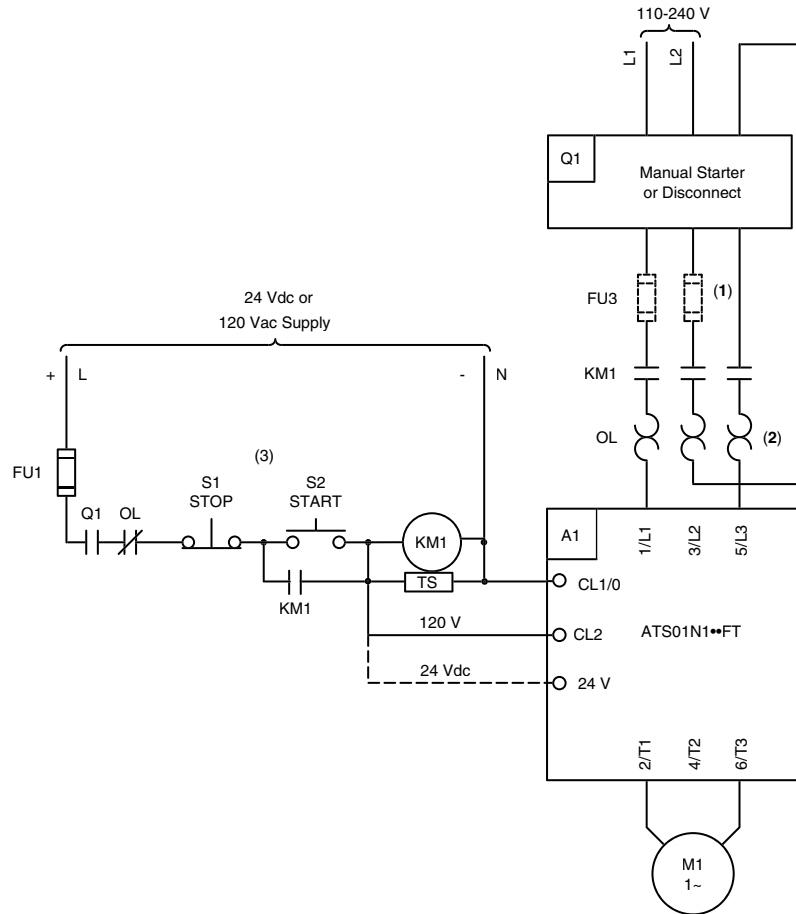
soft starters for asynchronous motors

Wiring Diagrams

ATS01N1●●●●

ATS01N1●●FT soft starter with GV manual starter, fusible disconnect, or other motor starter

Automatic 3-wire control with isolation contactor (single-phase motor)



Notes:

- A1:** ATS01 soft starter
- FU1:** Control circuit fuse - 120 Vac control power only
- FU3:** Fast-acting UL Listed Class J fuse
- KM1:** Isolation contactor
- TS:** Transient suppressor
- OL:** Overload relay
- Q1:** Manual motor starter or disconnect switch
- S1, S2:** Momentary pushbuttons
- t1:** 1 - 5 second adjustable starting time
- V1:** Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

(1) Fuses FU3 are not required if device Q1 is a TeSys U-Line or GV manual starter. Motor starter installed per local and national electrical codes.
 (2) Overload protection is required if not included on device Q1.

Altistart O1 & U01

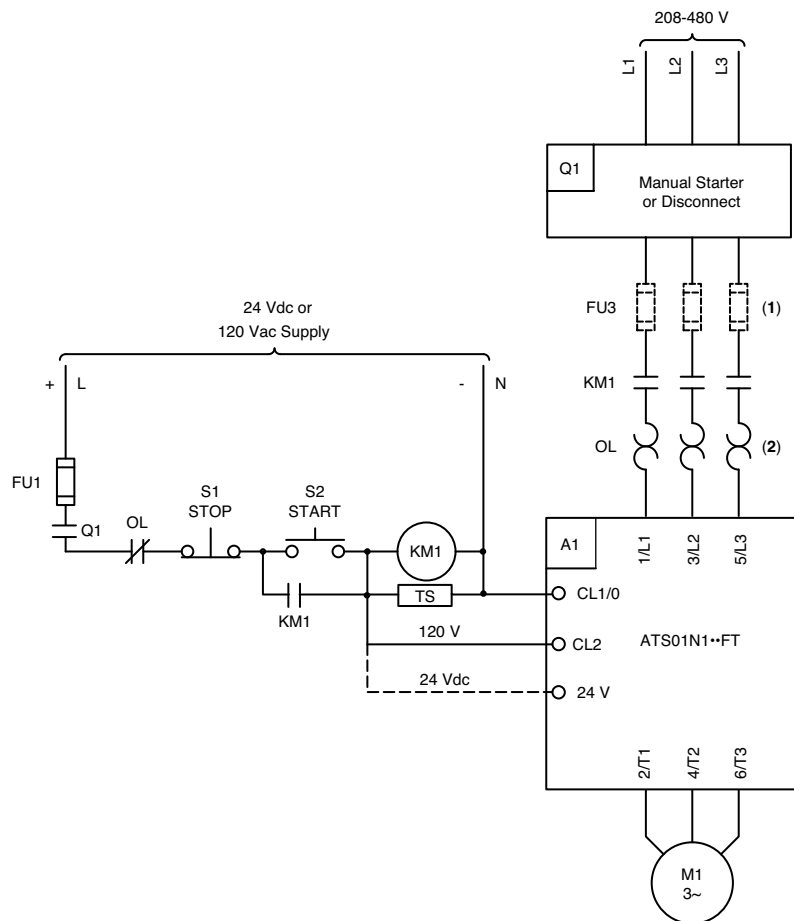
soft starters for asynchronous motors

Wiring Diagrams

ATS01N1●●●●

ATS01N1●●FT soft starter with GV manual starter, fusible disconnect, or other motor starter

Automatic 3-wire control with isolation contactor (three-phase motor)



Notes:

- A1:** ATS01 soft starter
- FU1:** Control circuit fuse - 120 Vac control power only
- FU3:** Fast-acting UL Listed Class J fuse
- KM1:** Isolation contactor
- TS:** Transient suppressor
- OL:** Overload relay
- Q1:** Manual motor starter or disconnect switch
- S1, S2:** Momentary pushbuttons
- t1:** 1 - 5 second adjustable starting time

(1) Fuses FU3 are not required if device Q1 is a TeSys U-Line or GV manual starter. Motor starter installed per local and national electrical codes. Fuse is not required on neutral leg.

(2) Overload protection is required if not included on device Q1.

(3) Wait 5 seconds after switching off the soft start before switching it on again.

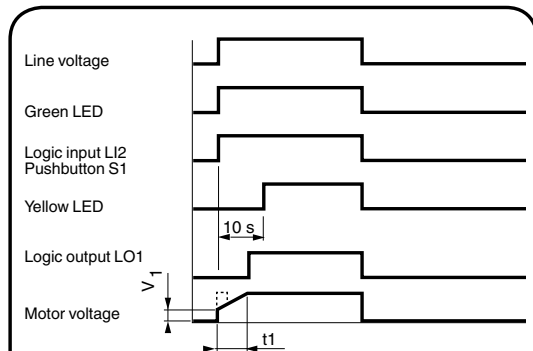
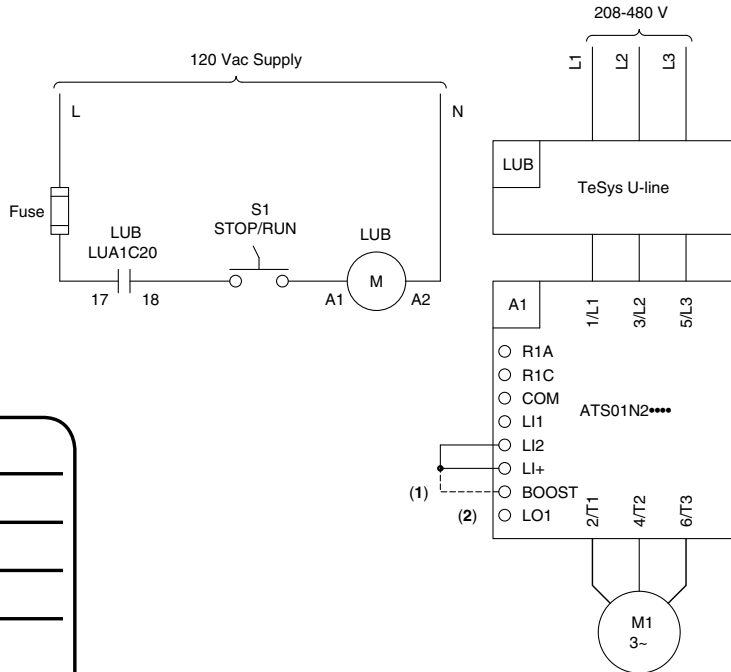
Altistart 01 & U01 soft starters for asynchronous motors

Wiring Diagrams ATS01N2●●●● & ATSU01N2●●●●

Altistart 01 soft starter and TeSys U-Line motor starter combinations

Automatic 2-wire control without soft stop

ATS01N2●●LU/QN/RT

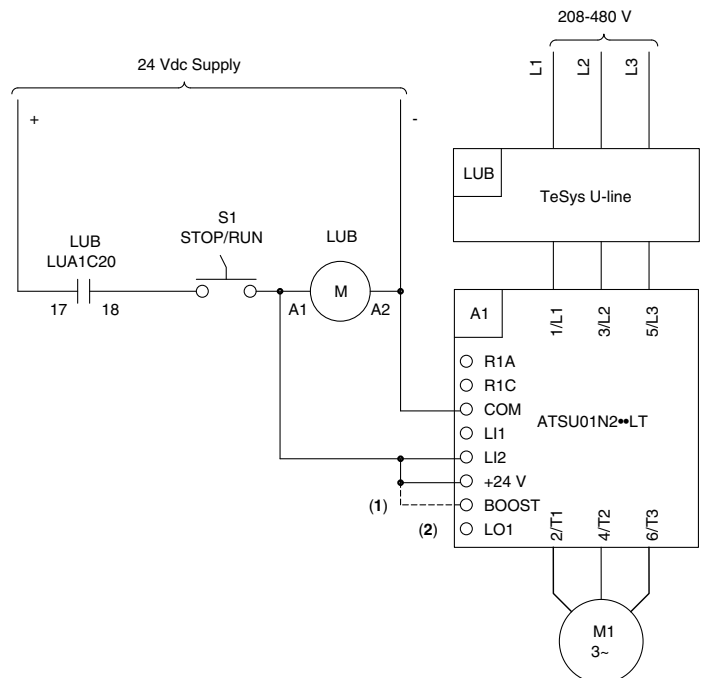


Notes:

- A1:** ATS01 soft starter
- LUB:** TeSys U-Line motor starter
- LUA1C20:** Control circuit contact block for TeSys U-Line motor starter
- S1:** Selector switch or maintained pushbutton
- t1:** 1 - 10 second adjustable starting time
- V1:** Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

- (1) Optional jumper to select boost
- (2) See page 11 for LO1 wiring recommendations

ATSU01N2●●LT



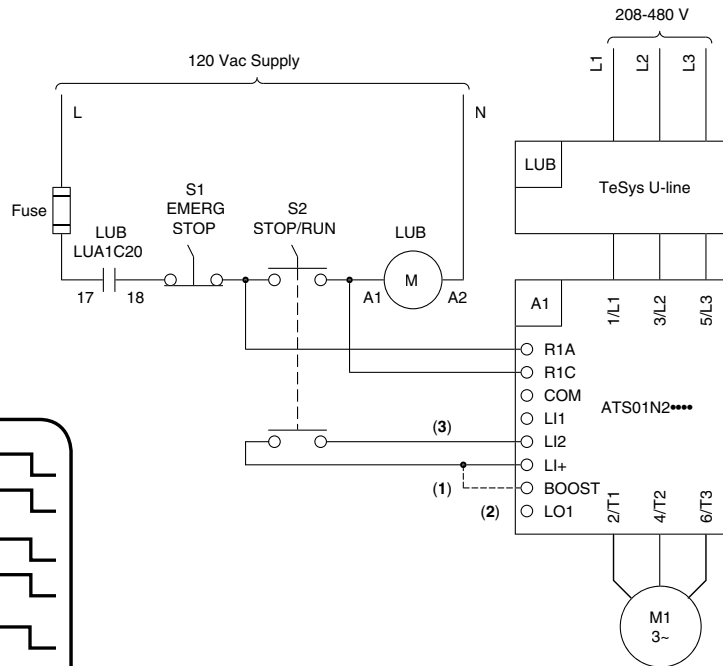
Altistart O1 & UO1 soft starters for asynchronous motors

Wiring Diagrams ATS01N2●●●● & ATSU01N2●●●●

Altistart O1 soft starter and TeSys U-Line motor starter combinations

Automatic 2-wire control with or without soft stop

ATS01N2●●LU/QN/RT

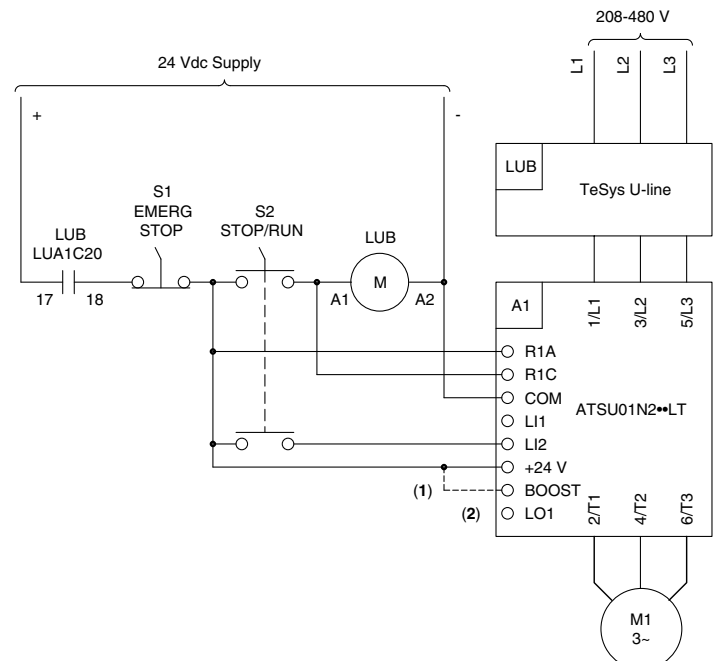


Notes:

- A1:** ATS01 soft starter
- LUB:** TeSys U-Line motor starter
- LUA1C20:** Control circuit contact block for TeSys U-Line motor starter
- S1, S2:** Selector switches or maintained pushbuttons
- t1:** 1 - 10 second adjustable starting time
- t2:** 1 - 10 second adjustable stopping time
- V1:** Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

(1) Optional jumper to select boost
 (2) See page 11 for L01 wiring recommendations
 (3) Use shielded cable if control wiring is longer than 3 feet

ATSU01N2●●LT



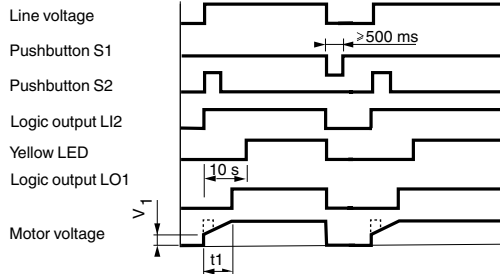
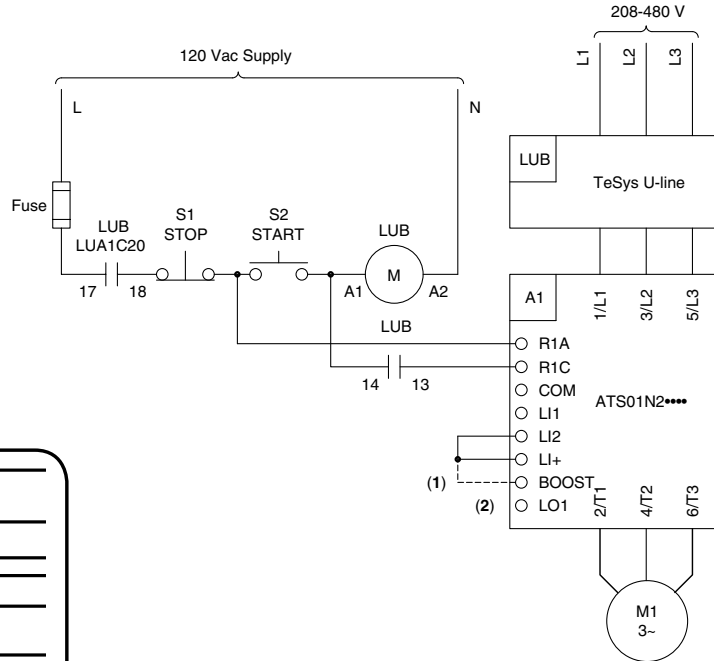
Altistart O1 & UO1 soft starters for asynchronous motors

Wiring Diagrams ATS01N2●●●● & ATSU01N2●●●●

Altistart O1 soft starter and TeSys U-Line motor starter combinations

Automatic 3-wire control without soft stop

ATS01N2●●LU/QN/RT

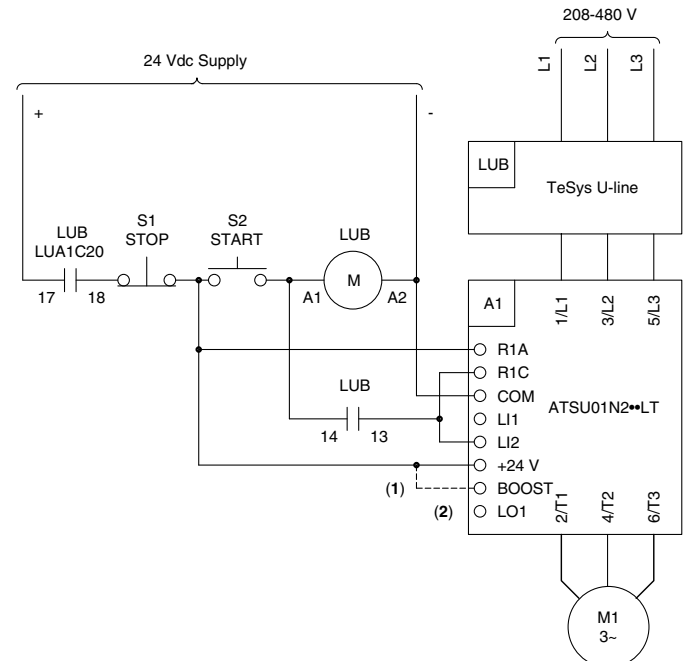


Notes:

- A1:** ATS01 soft starter
- LUB:** TeSys U-Line motor starter
- LUA1C20:** Control circuit contact block for TeSys U-Line motor starter
- S1, S2:** Momentary pushbuttons
- t1:** 1 - 10 second adjustable starting time
- V1:** Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

- (1) Optional jumper to select boost
- (2) See page 11 for LO1 wiring recommendations

ATSU01N2●●LT



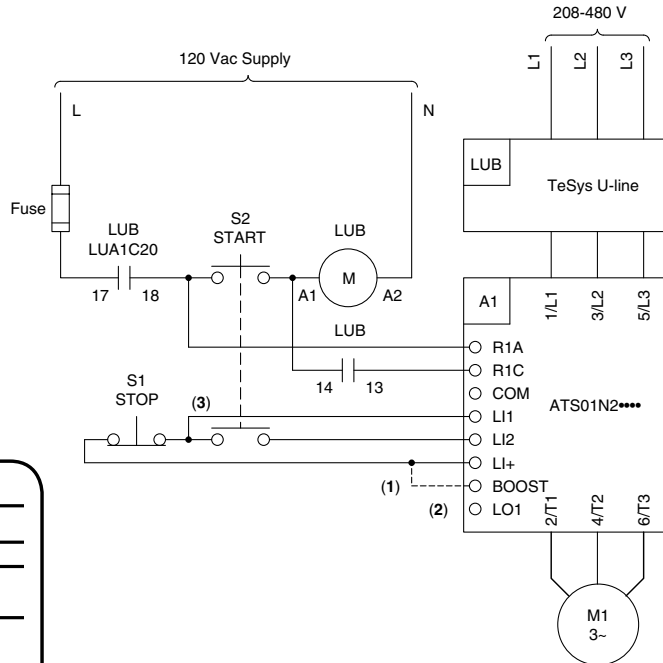
Altistart 01 & U01 soft starters for asynchronous motors

Wiring Diagrams ATS01N2●●●● & ATS01N2●●●●

Altistart 01 soft starter and TeSys U-Line motor starter combinations

Automatic 3-wire control with soft stop

ATS01N2●●LU/QN/RT



Line voltage

Logic input LI2

Pushbutton S2

Logic input LI1

Pushbutton S1

Yellow LED

Logic output LO1

Motor voltage

Notes:

A1: ATS01 soft starter

LUB: TeSys U-Line motor starter

LUA1C20: Control circuit contact block for TeSys U-Line motor starter

S1, S2: Momentary pushbuttons

t1: 1 - 10 second adjustable starting time

t2: 1 - 10 second adjustable stopping time

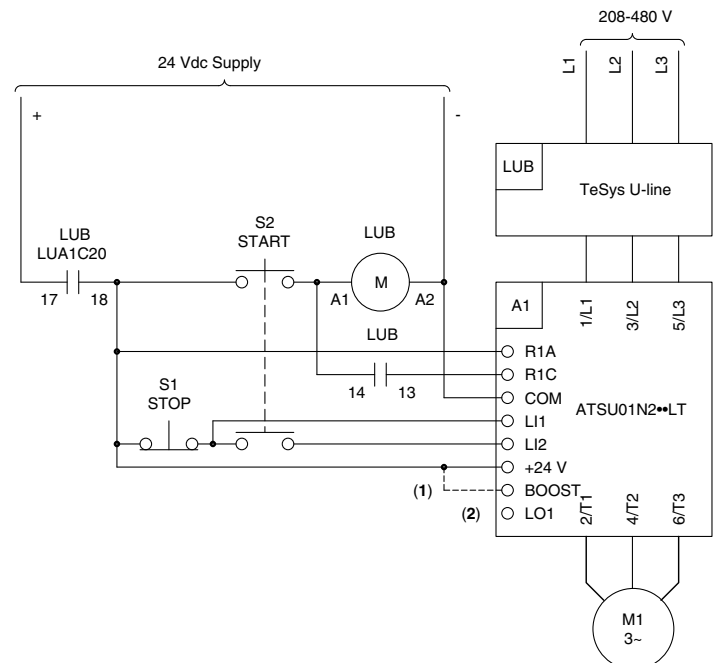
V1: Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

(1) Optional jumper to select boost

(2) See page 11 for LO1 wiring recommendations

(3) Use shielded cable if control wiring is longer than 3 feet

ATSU01N2●●LT



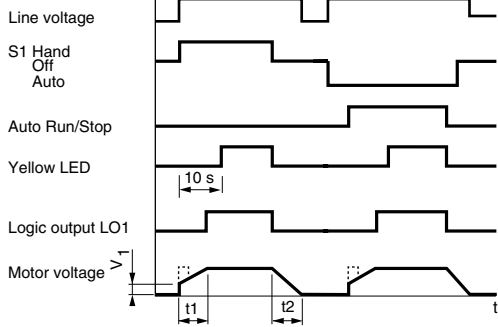
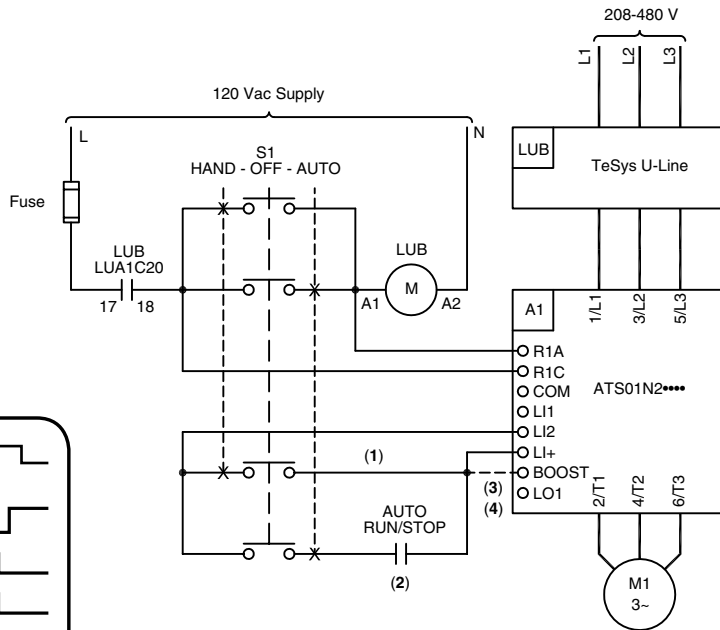
Altistart O1 & UO1 soft starters for asynchronous motors

Wiring Diagrams ATS01N2●●●● & ATSU01N2●●●●

Altistart O1 soft starter and TeSys U-Line motor starter combinations

Hand-Off-Auto Control with soft stop

ATS01N2●●LU/QN/RT

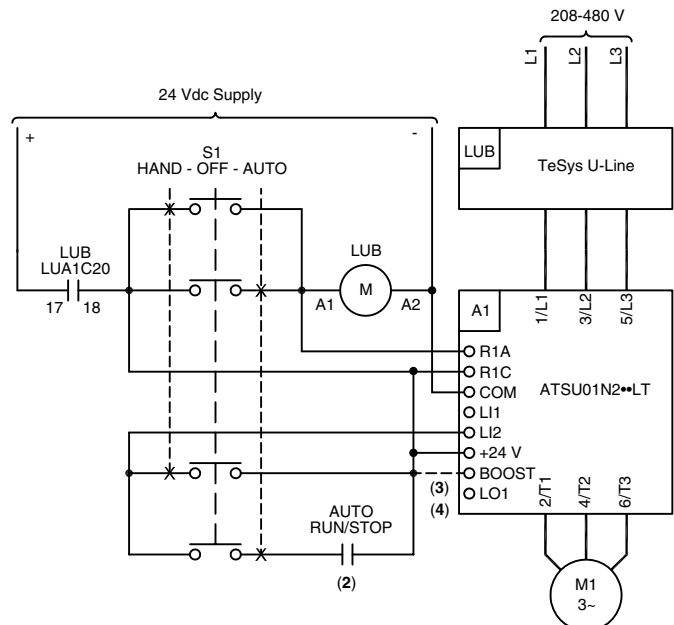


Notes:

- A1:** ATS01 soft starter
- LUB:** TeSys U-Line motor starter
- LUA1C20:** Control circuit contact block for TeSys U-Line motor starter
- S1, S2:** Momentary pushbuttons
- t1:** 1 - 10 second adjustable starting time
- t2:** 1 - 10 second adjustable stopping time
- V1:** Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

- (1) Use shielded cable if control wiring is longer than 3 feet
- (2) From automated control system
- (3) Optional jumper to select boost
- (4) See page 11 for LO1 wiring recommendations

ATSU01N2●●LT



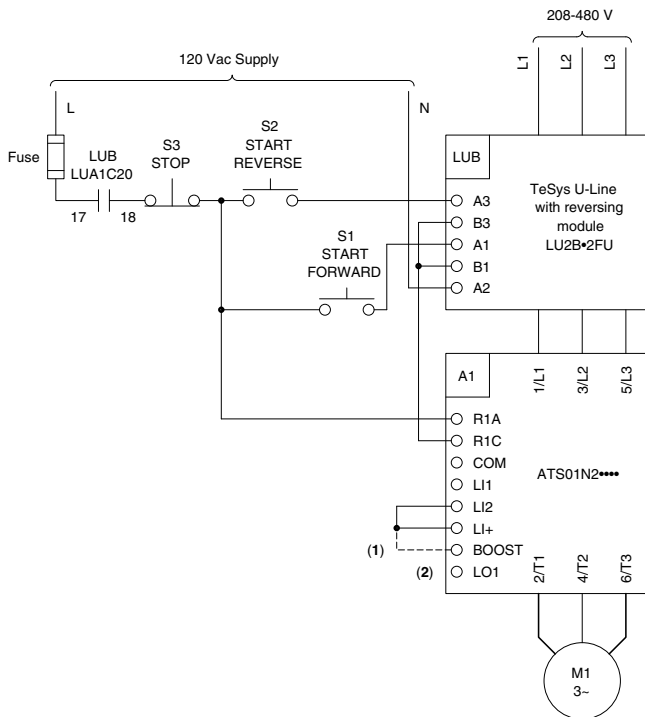
Altistart 01 & U01 soft starters for asynchronous motors

Wiring Diagrams ATS01N2●●●● & ATSU01N2●●●●

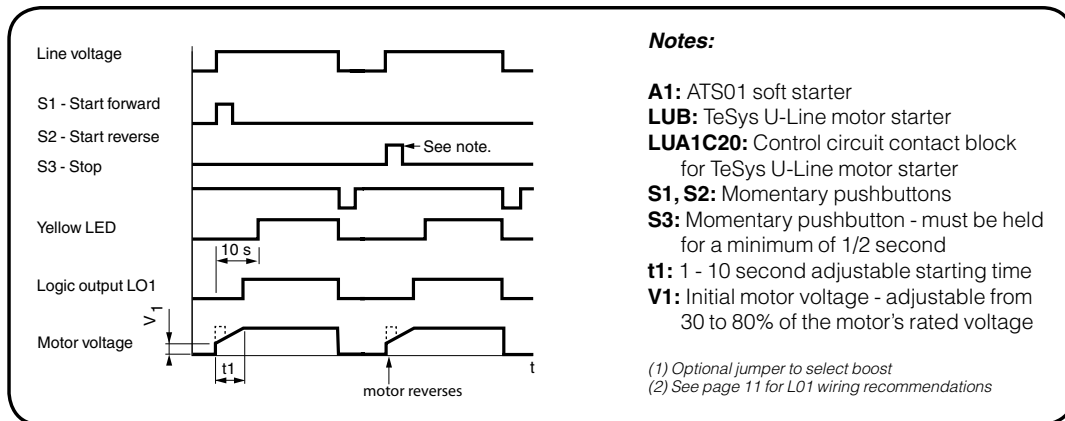
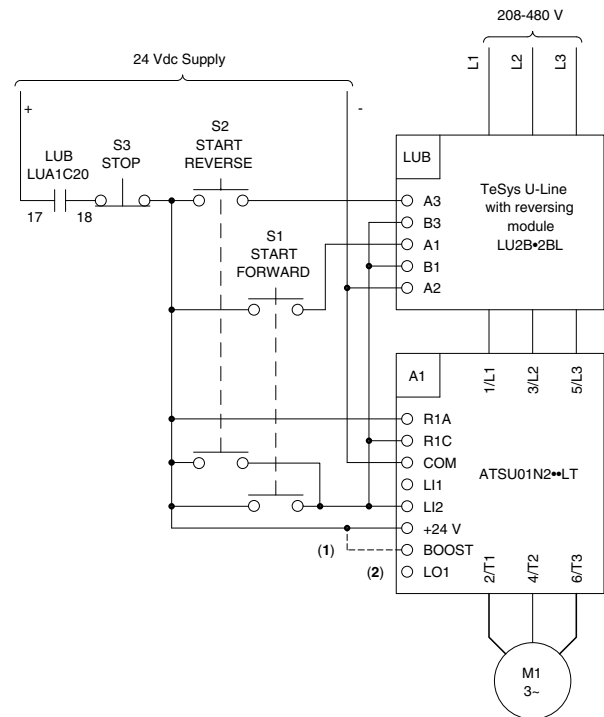
Altistart 01 soft starter and TeSys U-Line motor starter combinations

Automatic 3-wire control with reversing without soft stop

ATS01N2●●LU/QN/RT



ATSU01N2●●LT



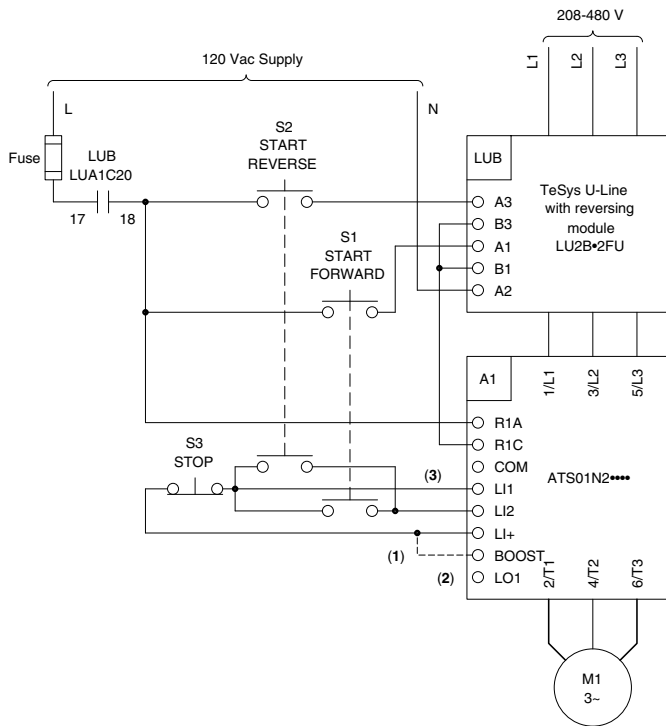
Altistart 01 & U01 soft starters for asynchronous motors

Wiring Diagrams ATS01N2●●●● & ATSU01N2●●●●

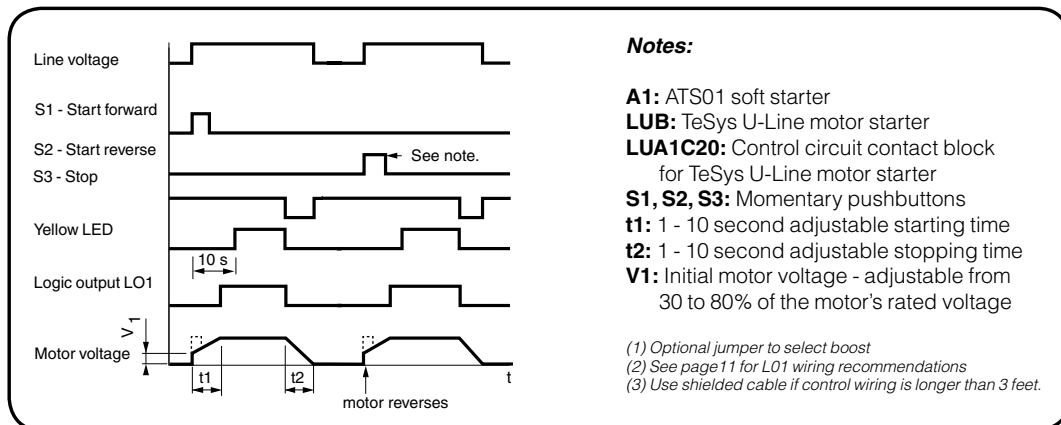
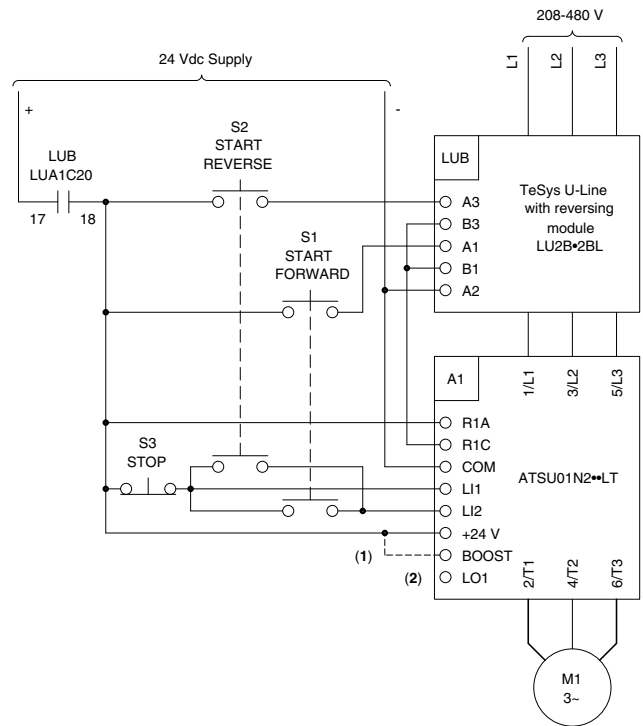
Altistart 01 soft starter and TeSys U-Line motor starter combinations

Automatic 3-wire control with reversing with soft stop

ATS01N2●●LU/QN/RT



ATSU01N2●●LT



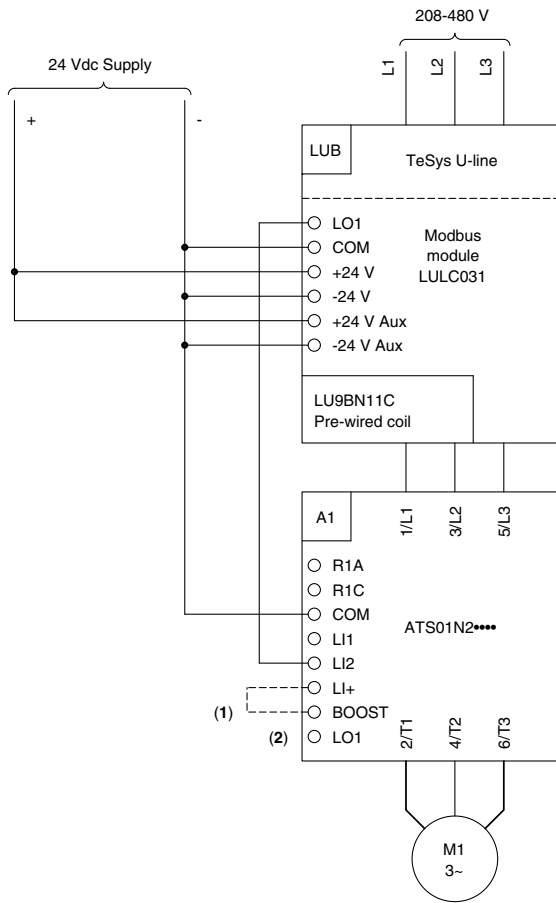
Altistart 01 & U01 soft starters for asynchronous motors

Wiring Diagrams ATS01N2●●●● & ATSU01N2●●●●

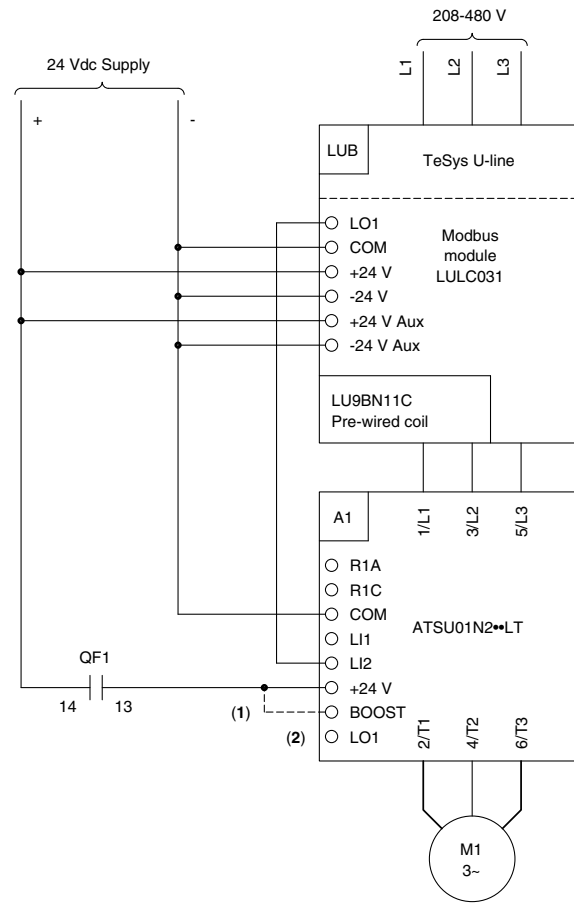
Altistart 01 soft starter and TeSys U-Line motor starter combinations

Automatic control with Modbus module with or without soft stop

ATS01N2●●LU/QN/RT



ATSU01N2●●LT



Function reference table

Function	Register	Bit	Value
Powering down U-Line motor starter and ATS01 soft starter			
-	704	0	0
Automatic control without soft stop			
Run	700	0	1
Stop	704	0	0
Automatic control with soft stop			
Run	700	0	1
Soft stop	700	0	0

Notes:

A1: ATS01 soft starter
LUB: TeSys U-Line motor starter

(1) Optional jumper to select boost
(2) See page 11 for LO1 wiring recommendations

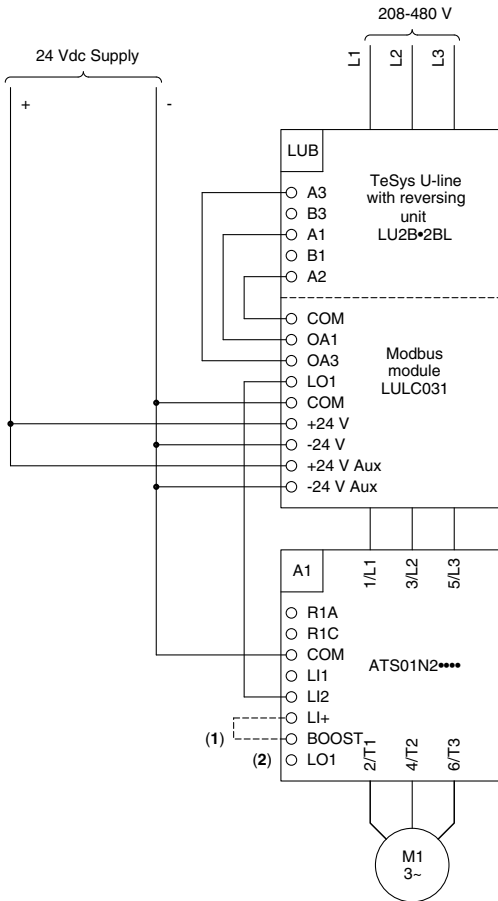
Altistart 01 & U01 soft starters for asynchronous motors

Wiring Diagrams ATS01N2●●●● & ATSU01N2●●●●

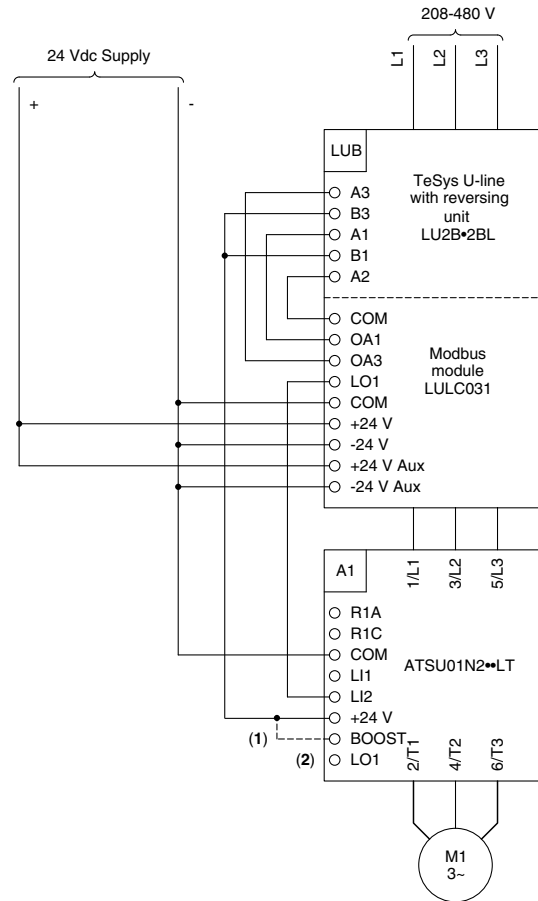
Altistart 01 soft starter and TeSys U-Line motor starter combinations

Automatic control with Modbus module with reversing with or without soft stop

ATS01N2●●LU/QN/RT



ATSU01N2●●LT



Function reference table

Function	Register	Bit	Value
Powering up U-Line motor starter and ATS01 soft starter			
Forward	704	0	1
Reverse	704	1	1
Powering down U-Line motor starter and ATS01 soft starter			
Forward	704	0	0
Reverse	704	1	0
Automatic control without deceleration			
Run	700	0	1
Stop forward	704	0	0
Stop reverse	704	1	0
Automatic control with deceleration (forward or reverse)			
Run	700	0	1
Soft stop	700	0	0

Notes:

A1: ATS01 soft starter
LUB: TeSys U-Line motor starter

(1) Optional jumper to select boost
(2) See page 11 for L01 wiring recommendations

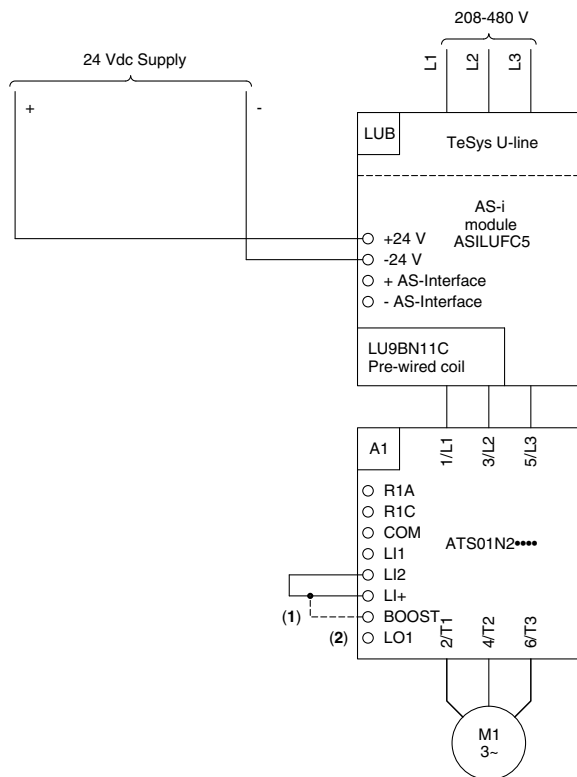
Altistart 01 & U01 soft starters for asynchronous motors

Wiring Diagrams ATS01N2●●●● & ATSU01N2●●●●

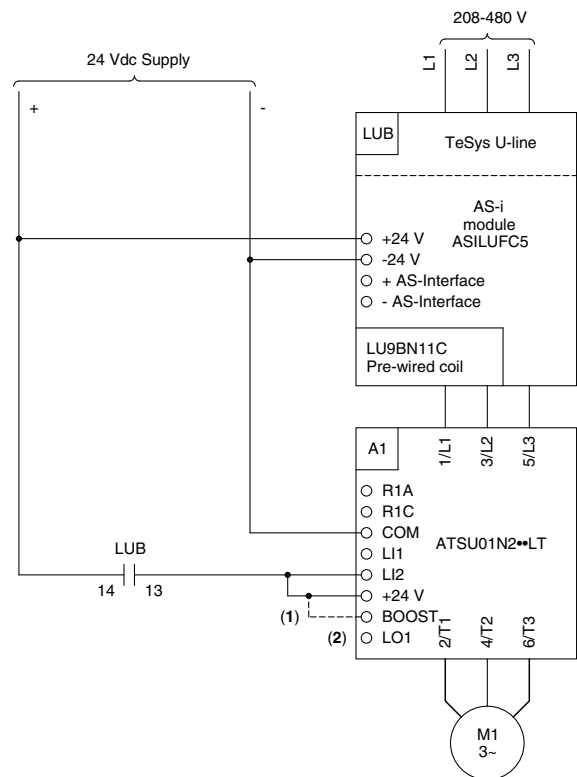
Altistart 01 soft starter and TeSys U-Line motor starter combinations

Automatic control with AS-Interface communication module without soft stop

ATS01N2●●LU/QN/RT



ATSU01N2●●LT



Function reference table

Function	Bit	Value
Power-up and automatic control without soft stop		
Run	D0	1
Stop	D0	0

Notes:

A1: ATS01 soft starter
LUB: TeSys U-Line motor starter

(1) Optional jumper to select boost
(2) See page 11 for LO1 wiring recommendations

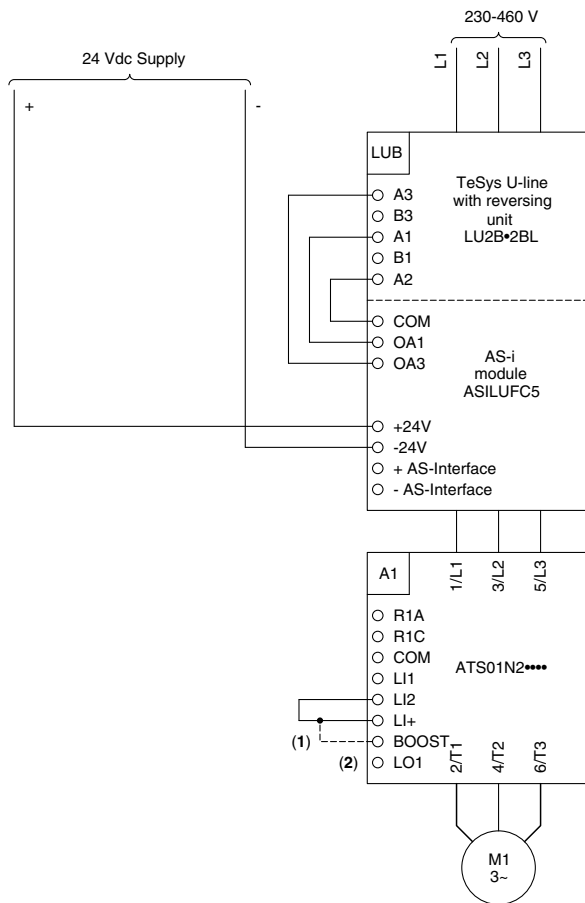
Altistart O1 & UO1 soft starters for asynchronous motors

Wiring Diagrams ATS01N2●●●● & ATSU01N2●●●●

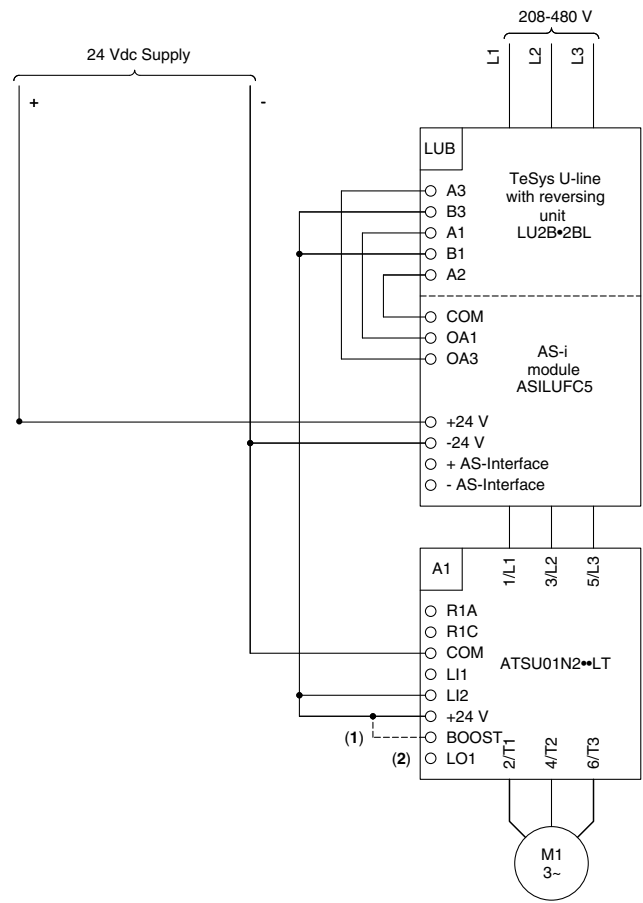
Altistart O1 soft starter and TeSys U-Line motor starter combinations

Automatic control with AS-Interface communication module with reversing without soft stop

ATS01N2●●LU/QN/RT



ATSU01N2●●LT



Function reference table

Function	Bit	Value
Power-up and automatic control without soft stop		
Run forward	D0	1
Stop	D0	0
Run reverse	D1	1
Stop	D1	0

Notes:

A1: ATS01 soft starter
LUB: TeSys U-Line motor starter

(1) Optional jumper to select boost
(2) See page 11 for L01 wiring recommendations

Altistart O1 & U01

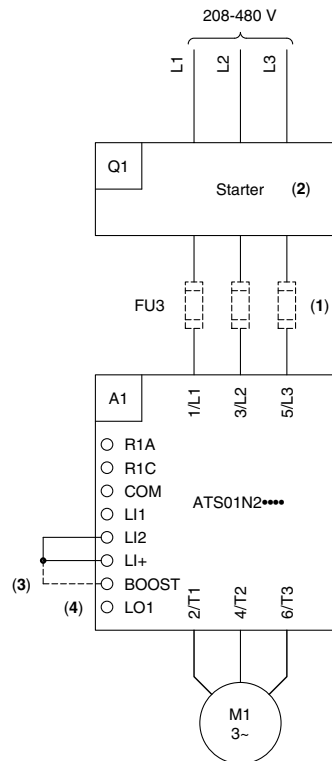
soft starters for asynchronous motors

Wiring Diagrams

ATS01N2●●●● & ATSU01N2●●●●

ATS01N2●●LU/QN/RT soft starter with GV manual starter, or other motor starter

Manual control without soft stop



Notes:

A1: ATS01 soft starter
FU3: Fast-acting UL Listed Class J fuse
Q1: Manual motor starter or disconnect switch
t1: 1 - 10 second adjustable starting time
t2: 1 - 10 second adjustable stopping time
V1: Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

(1) Fuses are not required if device Q1 is a GV manual motor starter installed per local and national electrical codes.
 (2) Overload protection is required if not included on device Q1.
 (3) Optional jumper to select boost.
 (4) See page 11 for LO1 wiring recommendations

Line voltage/
Green LED

Yellow LED

LO1

Motor voltage

Altistart O1 & U01

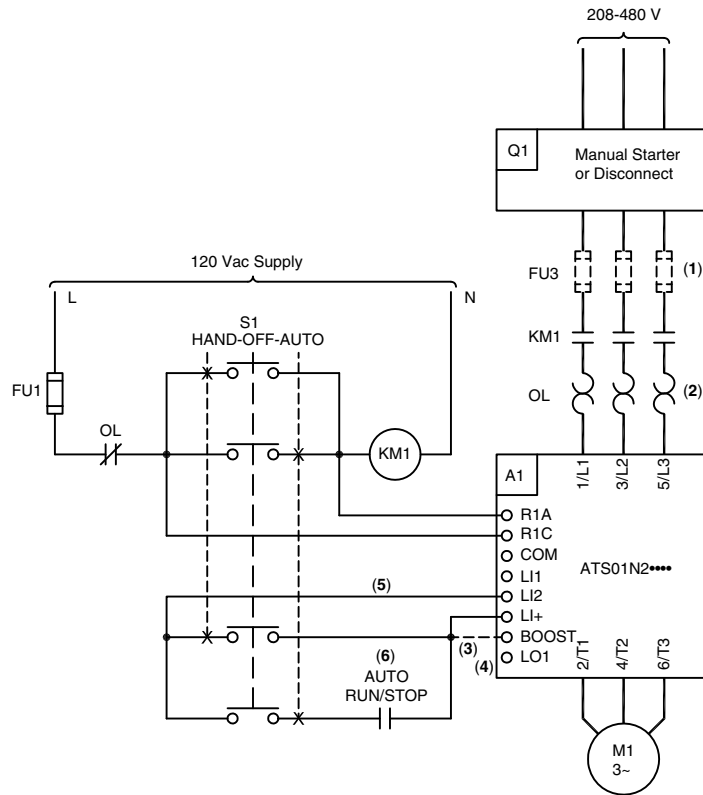
soft starters for asynchronous motors

Wiring Diagrams

ATS01N2●●●● & ATSU01N2●●●●

ATS01N2●●LU/QN/RT soft starter with GV manual starter, fusible disconnect, or other motor starter

Hand-Off-Auto control with soft stop and isolation contactor



Notes:

- A1:** ATS01 soft starter
- FU1:** Control circuit fuse
- FU3:** Fast-acting UL Listed Class J fuse
- KM1:** Isolation contactor
- OL:** Overload relay
- Q1:** Manual motor starter or disconnect switch
- S1:** Selector switch
- t1:** 1 - 10 second adjustable starting time
- t2:** 1 - 10 second adjustable stopping time
- V1:** Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

(1) Fuses FU3 are not required if device Q1 is a GV manual motor starter installed per local and national electrical codes.
 (2) Overload protection is required if not included on device Q1.
 (3) Optional jumper to select boost.
 (4) See page 11 for LO1 wiring recommendations
 (5) Use shielded cable if control wiring is longer than 3 feet.
 (6) From automated control system.

The timing diagram shows the sequence of events during motor starting and stopping. It includes waveforms for Line voltage, S1 Hand Off Auto, Auto Run/Stop, Yellow LED, Logic output LO1, and Motor voltage. Key time intervals t1 (starting time) and t2 (stopping time) are indicated. A 10s interval is shown for the Yellow LED pulse.

Altistart O1 & U01

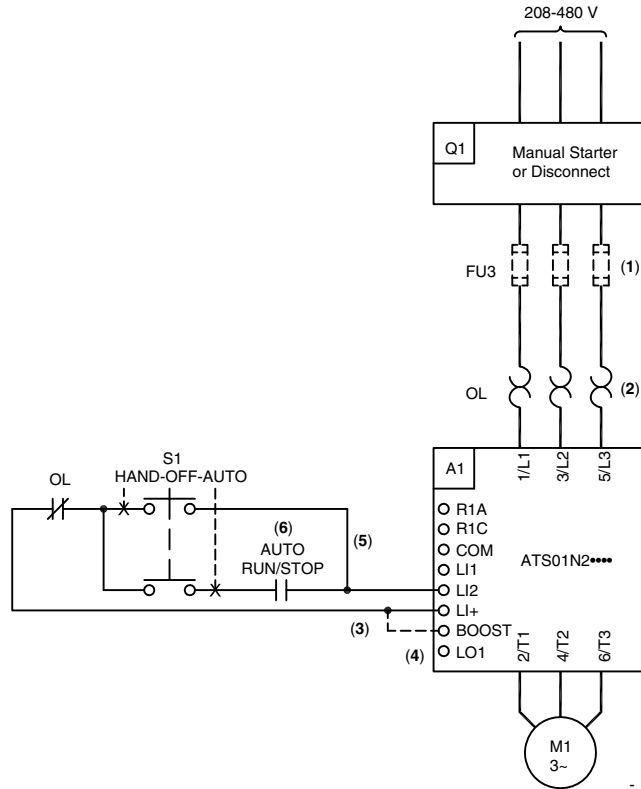
soft starters for asynchronous motors

Wiring Diagrams

ATS01N2●●●● & ATSU01N2●●●●

ATS01N2●●LU/QN/RT soft starter with GV manual starter, or other motor starter

Hand-Off-Auto control with soft stop without isolation contactor



Notes:

A1: ATS01 soft starter
FU3: Fast-acting UL Listed Class J fuse
OL: Overload relay
Q1: Manual motor starter or disconnect switch
S1: Selector switch
t1: 1 - 10 second adjustable starting time
t2: 1 - 10 second adjustable stopping time
V1: Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

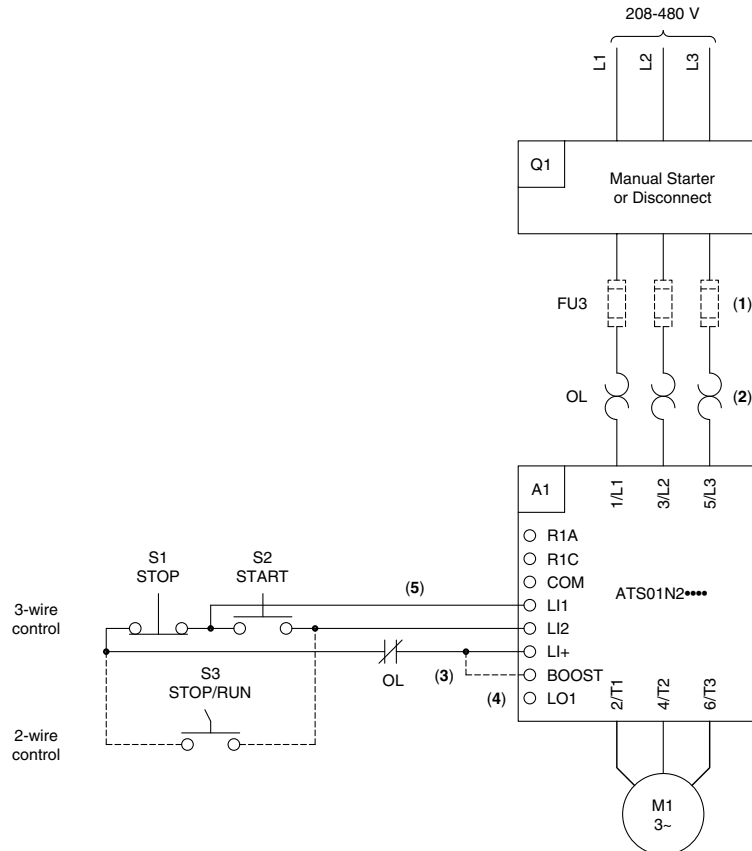
(1) Fuses FU3 are not required if device Q1 is a GV manual motor starter installed per local and national electrical codes.
 (2) Overload protection is required if not included on device Q1.
 (3) Optional jumper to select boost.
 (4) See page 11 for LO1 wiring recommendations
 (5) Use shielded cable if control wiring is longer than 3 feet.
 (6) From automated control system.

Altistart O1 & U01 soft starters for asynchronous motors

Wiring Diagrams ATS01N2●●●● & ATS01N2●●●●●

ATS01N2●●LU/QN/RT soft starter with GV manual starter, or other motor starter

Automatic control (2 or 3-wire) with or without soft stop



Notes:

A1: ATS01 soft starter
FU3: Fast-acting UL Listed Class J fuse
OL: Overload relay
Q1: Manual motor starter or disconnect switch
S1, S2: Momentary pushbuttons
S3: Selector switch
t1: 1 - 10 second adjustable starting time
t2: 1 - 10 second adjustable stopping time
V1: Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

(1) Fuses FU3 are not required if device Q1 is a GV manual motor starter installed per local and national electrical codes.
(2) Overload protection is required if not included on device Q1.
(3) Optional jumper to select boost.
(4) See page 11 for LO1 wiring recommendations
(5) Use shielded cable if control wiring is longer than 3 feet.

Altistart O1 & UO1

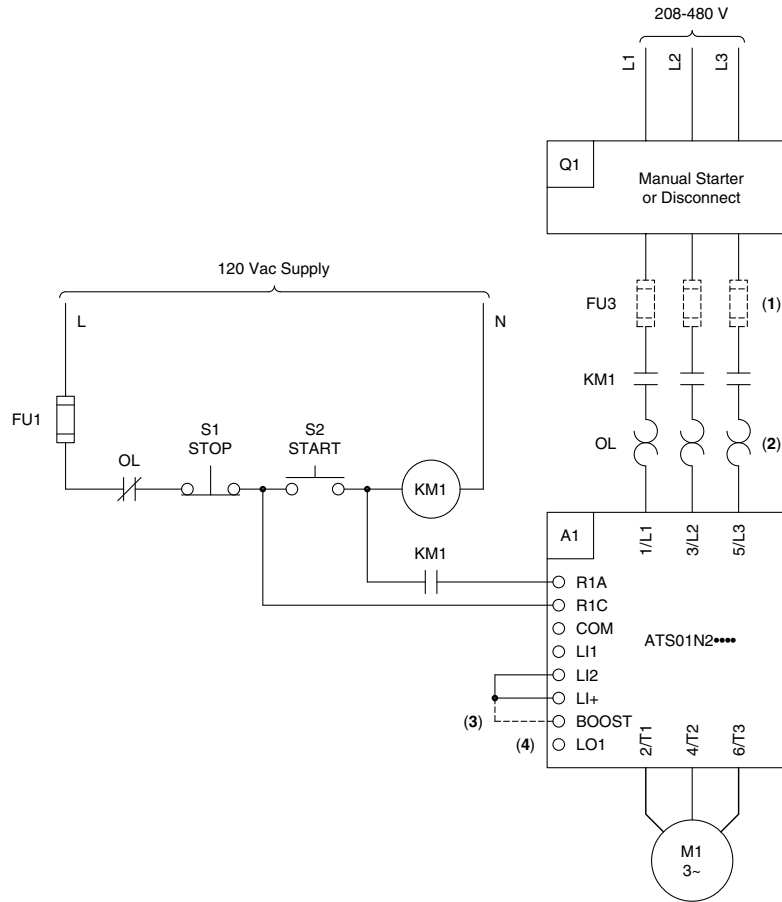
soft starters for asynchronous motors

Wiring Diagrams

ATS01N2●●●● & ATSU01N2●●●●

ATS01N2●●LU/QN/RT soft starter with GV manual starter, or other motor starter

Automatic 3-wire control with isolation contactor without soft stop



Notes:

A1: ATS01 soft starter
FU1: Control circuit fuse
FU3: Fast-acting UL Listed Class J fuse
KM1: Isolation contactor
OL: Overload relay
Q1: Manual motor starter or disconnect switch
S1, S2: Momentary pushbuttons
t1: 1 - 10 second adjustable starting time
V1: Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

1) Fuses FU3 are not required if device Q1 is a GV manual motor starter installed per local and national electrical codes.
 2) Overload protection is required if not included on device Q1.
 3) Optional jumper to select boost.
 4) See page 11 for LO1 wiring recommendations

Line voltage/
Green LED

Start

Stop

R1 Relay

Yellow LED

LO1

Motor voltage

Altistart O1 & U01

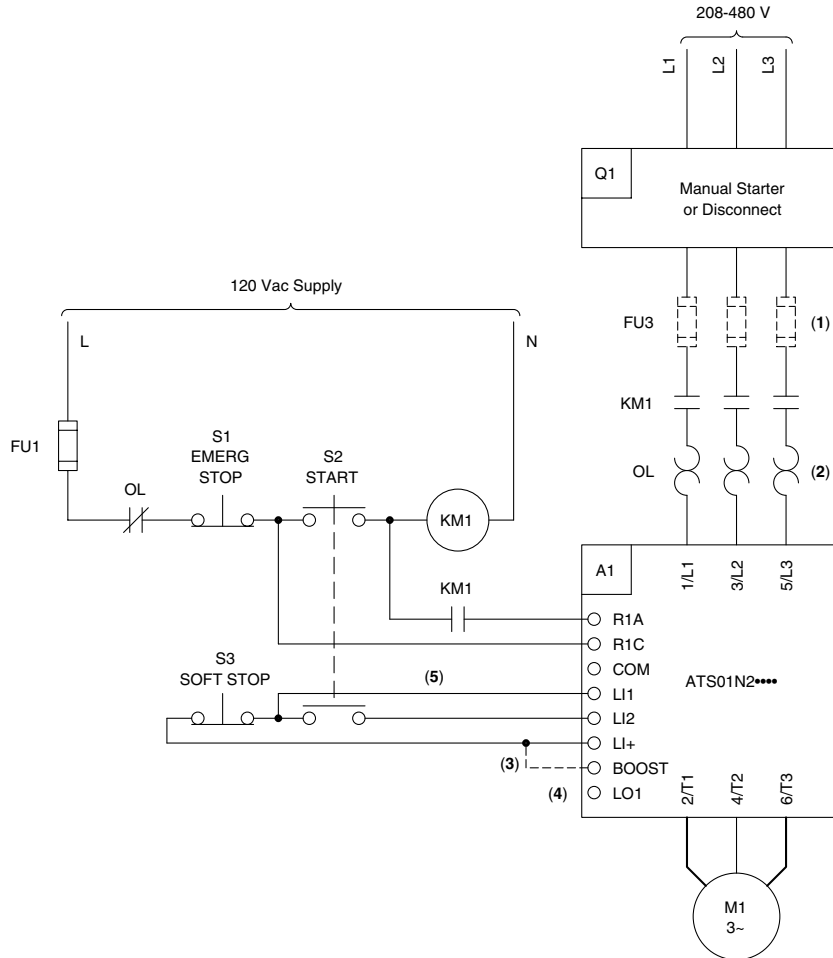
soft starters for asynchronous motors

Wiring Diagrams

ATS01N2●●●● & ATSU01N2●●●●

ATS01N2●●LU/QN/RT soft starter with GV manual starter, or other motor starter

Automatic 3-wire control with isolation contactor with or without soft stop



Notes:

A1: ATS01 soft starter
FU1: Control circuit fuse
FU3: Fast-acting UL Listed Class J fuse
KM1: Isolation contactor
OL: Overload relay
Q1: Manual motor starter or disconnect switch
S1, S2, S3: Momentary pushbuttons
t1: 1 - 10 second adjustable starting time
t2: 1 - 10 second adjustable stopping time
V1: Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

(1) Fuses FU3 are not required if device Q1 is a GV manual motor starter installed per local and national electrical codes.
 (2) Overload protection is required if not included on device Q1.
 (3) Optional jumper to select boost.
 (4) See page 11 for L01 wiring recommendations
 (5) Use shielded cable if control wiring is longer than 3 feet.

Altistart O1 & UO1

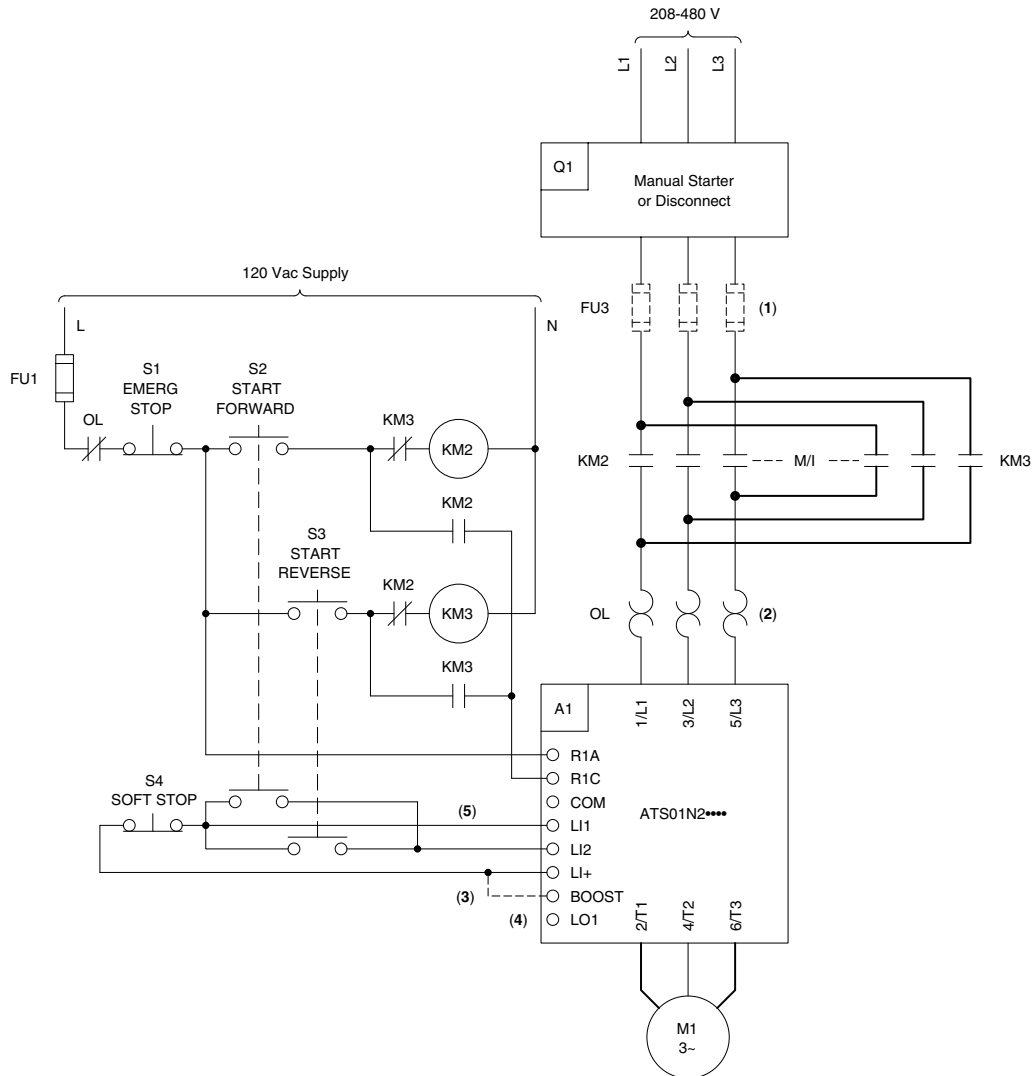
soft starters for asynchronous motors

Wiring Diagrams

ATS01N2●●●● & ATSU01N2●●●●

ATS01N2●●LU/QN/RT soft starter with GV manual starter, or other motor starter

Automatic 3-wire control with reversing with or without soft stop



Notes:

A1: ATS01 soft starter
FU1: Control circuit fuse
FU3: Fast-acting UL Listed Class J fuse
KM2, KM3: Reversing contactor
OL: Overload relay
Q1: Manual motor starter or disconnect switch
S1, S2, S3, S4: Momentary pushbuttons
t1: 1 - 10 second adjustable starting time
t2: 1 - 10 second adjustable stopping time
V1: Initial motor voltage - adjustable from 30 to 80% of the motor's rated voltage

(1) Fuses FU3 are not required if device Q1 is a GV manual motor starter installed per local and national electrical codes.
 (2) Overload protection is required if not included on device Q1.
 (3) Optional jumper to select boost.
 (4) See page 11 for LO1 wiring recommendations
 (5) Use shielded cable if control wiring is longer than 3 feet.



Quality Assurance Procedures

This document provides information regarding the quality assurance processes and procedures that are in place for the manufacturing of Altistart 01 (ATS01) soft starters. Schneider Electric utilizes quality assurance processes and procedures to verify the integrity of components and the assembly process. This document provides a summary of these processes and procedures.



Outline of Test Process and Procedures

Data is gathered on each unit and tracked via the unique serial number of each unit. Test during production validates all electrical and software parameters. Final verification sample testing is conducted at various points in the manufacturing process for each soft starter. Test sampling size is 1 commercial reference per size per week.

In addition to the processes and procedures detailed above, the ISO certified manufacturing facility test stations have instructions for visual quality checks and electrical inspection. The visual quality check list includes a physical inspection for proper connections, proper assembly torques, mechanical integrity and proper documentation.

The quality assurance procedures detailed above are in place for the manufacturing of Altistart 01. These procedures are established to monitor and confirm the quality of the product line that has been designed in from the outset.

- ☑ Individual unit data tracked by unique serial number
- ☑ Electrical parameters
- ☑ Software parameters
- ☑ Final verification sample testing
- ☑ ISO certified visual quality checks
 - ☑ Proper connections
 - ☑ Proper assembly torques
 - ☑ Mechanical integrity
 - ☑ Proper documentation

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Solutions for every stage of your equipment's life cycle

Schneider Electric™ provides services far beyond meeting your immediate needs for application or equipment repair. We take a long-term, holistic approach to determine your facility and operational needs and develop a strategy for improving the performance of your people, systems, and processes.

Schneider Electric provides services from system design and consulting, to maintenance support, modernization of your installation, and project delivery. Schneider Electric provides the people, tools, and processes to help maximize your business's infrastructure.

Our expertise enables you to cut costs, reduce energy consumption, and keep your systems up and running through routine maintenance, added enhancements, and migrations to new state-of-the-art functionality.

> Start-up and commissioning

Expert installation support to provide assistance in the start-up of your new system. Service includes a comprehensive power-up and diagnostic check on system components to minimize risk and optimize operation.

> Technical training

Training offered on-site, off-site, or online for Schneider Electric automation products taught by professional instructors with up-to-date knowledge of our latest hardware and software.

> Remote technical support

Comprehensive online and phone support from experts specially trained on Schneider Electric drive products, helping to reduce downtime and costs and optimize your system's life cycle.

> On-site technical support

Support service to perform regular maintenance, upgrades, and conversion assistance, small application and programming assistance, on-the-job training, equipment repair, support and troubleshooting, even in emergency situations.

> Preventative maintenance

Maintenance programs to scan for, and proactively detect, potential issues or problems with your automation system to help you avoid the costs of unscheduled downtime and short equipment service life. Also serves to extend the life of your installed base by using our services to properly maintain your equipment.

> Industrial repair services

Repair capabilities for over 400,000 part numbers from more than 2,500 manufacturers at our Greensboro, NC repair facility. Repair is available for both Schneider Electric and non-Schneider Electric equipment.

> Spare parts management

Save money and reduce downtime through our parts management program. An on-site assessment is performed to determine parts and inventory levels needed to ensure proper system operation and reduce downtime and inventory costs.

> Migration and modernization

Realize the productivity benefits of the latest Schneider Electric automation technology by using our assessment tools to identify and implement replacement of your legacy automation products, regardless of brand. We make extensive use of existing hardware and wiring for a cost-effective solution with minimal downtime.

> Software renewals

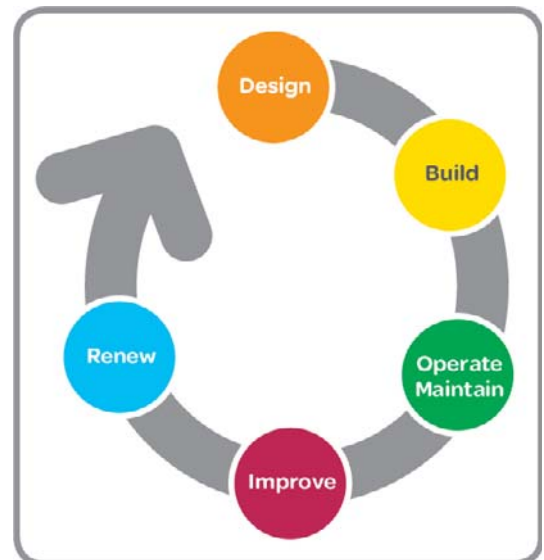
Access the latest software, firmware, and custom options to ensure you always have the latest functionality available to optimize your system's life cycle.

> Extended warranty

Extend your Schneider Electric standard manufacturer warranty from one year to five years. Protection plans are tailored to your needs reducing costs and out-of-service time.

> When it comes to your automation equipment, we can help you

- Increase productivity
- Improve reliability and safety
- Mitigate risk and limit downtime
- Keep equipment up to date
- Extend the life of your installed base
- Cut costs and increase savings
- Improve your return on investment



Talk to someone you can trust

The Altivar family of variable speed AC drives and the Altistart family of soft starts presents the most advanced and user-friendly solutions in the marketplace. Featuring proprietary motor control algorithms to achieve optimal reaction times and complete scalability to match your application requirements for speed, size, and protection, the complete line of Altivar and Altistart products provides the flexibility and performance to:

- Meet the needs of a broad range of industries, including HVAC, pump, material handling, hoisting, packaging and many more.
- Reduce your energy costs using proprietary energy-saving technologies available only from Schneider Electric.
- Improve your up-time by simplifying installation, commissioning and maintenance by providing advanced diagnostics, industry-leading voltage ride thru capability and seismic qualified products.

We also work with you to deliver the benefits of a global service and support of a global service and support organization to further increase the value of working with Schneider Electric. Our product specialists, industry experts, distributors, partners, and the countless other members of the Schneider Electric family are dedicated to helping you make the most of your energy everyday. Contact your local sales representative today to learn how Schneider Electric can improve operational performance and help your business to achieve a competitive advantage. Or visit www.schneider-electric.com

>Drive Product Support Group

For support and assistance, contact the Drive Product Support Group. The Drive Product Support Group is staffed from 8:00 am until 6:00 pm Eastern time to assist with product selection, start-up, and diagnosis of product or application problems.

EMERGENCY Technical phone support is available 24 hours a day, 365 days a year.

Toll Free **1-888-778-2733**

E-mail **drive.products.support@us.schneider-electric.com**

Fax **919-217-6508**

>Schneider Electric Service (On-Site)

The Schneider Electric Services division is committed to providing quality on-site service that consistently meets customer expectations. Services responds to your requests, seven days a week, 24 hours a day.

Phone **1-888-778-2733**

>Schneider Electric Customer Training

Schneider Electric offers a variety of instructor-led skill enhancing and technical product training programs for customers. For a complete list of drives/soft start training with dates, locations, and pricing please call:

Phone **978-975-9306**

Fax **978-975-2821**

>Customer Care Center

(Assist with stock checks, assist with claims, and assist with order management issues)

To provide additional support, Schneider Electric has rolled out new Technical Service Representatives in local offices which have the strongest needs.

Due to time zone changes and different time operation requirements business operation times vary.

Phone **888-778-2733**

Fax **888-329-9773**



Schneider Electric USA, Inc.

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8001 Knightdale Blvd.
Knightdale, NC 27545

USA Customer Care Center
Tel: 888-778-2733

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