Product data sheet
Characteristics

ATSU01N209LT
soft starter for asynchronous motor - ATSU01 - 9 A - 200..480V - 1.5..4 KW

Main

Range of product	Altistart U01 and TeSys U
Product or component type	Soft starter
Product destination	Asynchronous motors
Product specific application	Simple machine
Component name	ATSU01
Network number of phases	3 phases
Power supply voltage	200...480 V (- 10...10 %)
Motor power kW	1.5 kW at 230 V 3 phases 4 kW at 400 V 3 phases
Motor power hp	5 hp at 460 V 3 phases 2 hp at 230 V 3 phases
Icl nominal current	9 A
Utilisation category	AC-53B conforming to EN/IEC 60947-4-2
Current at nominal load	65 mA
Type of start	Start with voltage ramp
Power dissipation in W	91.5 W in transient state 1.5 W at full load and at end of starting

Complementary

Assembly style	With heat sink
Function available	Integrated bypass
Power supply voltage limits	180...528 V
Power supply frequency	50...60 Hz (- 5...5 %)
Power supply frequency limits	47.5...63 Hz
Output voltage	<= power supply voltage
Control circuit voltage	24 V DC +/- 10 %
Starting time	Adjustable from 1 to 10 s 5 s / 20 start(s) per hour 10 s / 10 start(s) per hour 1 s / 100 start(s) per hour
Deceleration time symb	Adjustable from 1 to 10 s
Starting torque	30...80 % of starting torque of motor connected directly on the line supply
Discrete input type	(LI1, LI2, BOOST) stop, run and boost on start-up functions logic <= 8 mA 27 kOhm
Discrete input voltage	24...40 V
Electrical isolation	Galvanic between power and control
Discrete input logic	(LI1, LI2, BOOST) positive state 0 < 5 V and < 0.2 mA, state 1 > 13 V and > 0.5 mA
Discrete output current	3 A AC-15 2 A DC-13
Discrete output type	(R1A, R1C) relay outputs NO (LO1) open collector logic end of starting signal
Discrete output voltage	24 V (6...30 V) open collector logic
Minimum switching current	Relay outputs 10 mA 6 V DC
Maximum switching current	Relay outputs 2 A 250 V AC AC-15 inductive load, cos phi = 0.5 L/R = 20 ms Relay outputs 2 A 30 V DC inductive load, cos phi = 0.5 L/R = 20 ms
Maximum switching voltage	440 V relay outputs
Display type	1 LED (yellow) for nominal voltage reached 1 LED (green) for starter powered up

Tightening torque	0.5 N.m 1.9...2.5 N.m
Electrical connection	2 conductor(s) flexible cable without cable end, connection via screw connector 0.5...1.5 mm² / AWG 16 for control circuit 2 conductor(s) flexible cable without cable end, connection via 4 mm screw clamp terminal 1.5...6 mm² / AWG 10 for power circuit 2 conductor(s) flexible cable with cable end, connection via 4 mm screw clamp terminal 1...6 mm² / AWG 10 for power circuit 1 conductor(s) flexible cable without cable end, connection via screw connector 0.5...2.5 mm² / AWG 14 for control circuit 1 conductor(s) flexible cable without cable end, connection via 4 mm screw clamp terminal 1.5...10 mm² / AWG 8 for power circuit 1 conductor(s) flexible cable with cable end, connection via screw connector 0.5...1.5 mm² / AWG 16 for control circuit 2 conductor(s) rigid cable, connection via screw connector 0.5...1 mm² / AWG 17 for control circuit 2 conductor(s) rigid cable, connection via 4 mm screw clamp terminal 1...6 mm² / AWG 10 for power circuit 1 conductor(s) rigid cable, connection via screw connector 0.5...2.5 mm² / AWG 14 for control circuit 1 conductor(s) rigid cable, connection via 4 mm screw clamp terminal 1...10 mm² / AWG 8 for power circuit
Marking	CE
Operating position	Vertical +/- 10 degree
Height	234 mm
Width	45 mm
Depth	150 mm
Product weight	0.34 kg

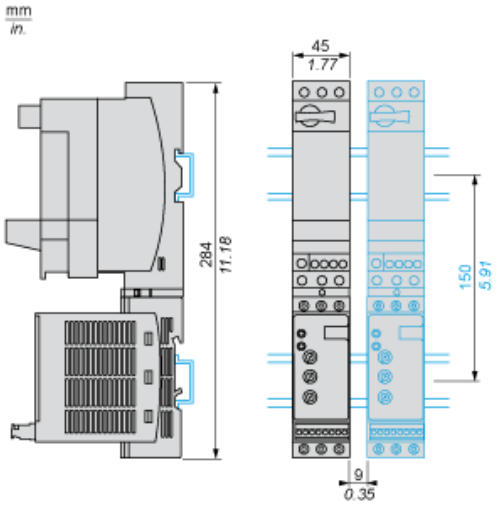
Environment

Electromagnetic compatibility	Immunity to conducted interference caused by radio-electrical fields conforming to IEC 61000-4-11 Conducted and radiated emissions conforming to IEC 61000-4-6 level 3 Voltage/Current impulse conforming to IEC 61000-4-5 level 3 Immunity to radiated radio-electrical interference conforming to IEC 61000-4-3 level 3 Immunity to electrical transients conforming to IEC 61000-4-4 level 4 Harmonics conforming to IEC 1000-3-4 Harmonics conforming to IEC 1000-3-2 EMC immunity conforming to EN 50082-2 EMC immunity conforming to EN 50082-1 Electrostatic discharge conforming to IEC 61000-4-2 level 3 Damped oscillating waves conforming to IEC 61000-4-12 level 3 Conducted and radiated emissions conforming to IEC 60947-4-2 level B Conducted and radiated emissions conforming to CISPR 11 level B
Standards	EN/IEC 60947-4-2
Product certifications	CCC CSA C-Tick UL
IP degree of protection	IP20
Pollution degree	2 conforming to EN/IEC 60947-4-2
Vibration resistance	1.5 mm peak to peak (f = 3...13 Hz) conforming to EN/IEC 60068-2-6 1 gn (f = 13...150 Hz) conforming to EN/IEC 60068-2-6
Shock resistance	15 gn for 11 ms conforming to EN/IEC 60068-2-27
Relative humidity	5...95 % without condensation or dripping water conforming to EN/IEC 60068-2-3
Ambient air temperature for operation	40...50 °C with current derating of 2 % per °C -10...40 °C without derating
Ambient air temperature for storage	-25...70 °C conforming to EN/IEC 60947-4-2
Operating altitude	> 1000 m with current derating of 2.2 % per additional 100 m <= 1000 m without derating

Dimensions

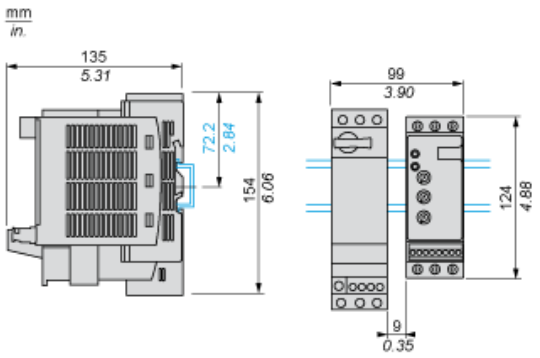
With TeSys U Combination (Non Reversing Power Base)

Mounting on symetrical (35 mm) rail with power connector between ATS and TeSys U.

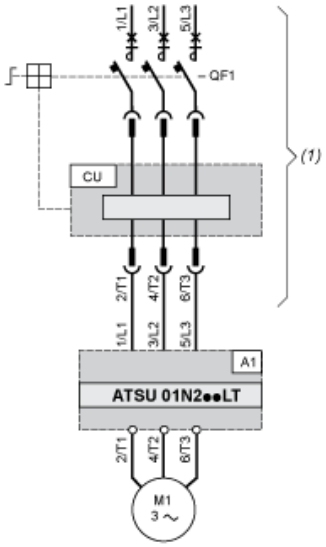


With TeSys U Combination (Non Reversing or Reversing Power Base)

Side by side mounting

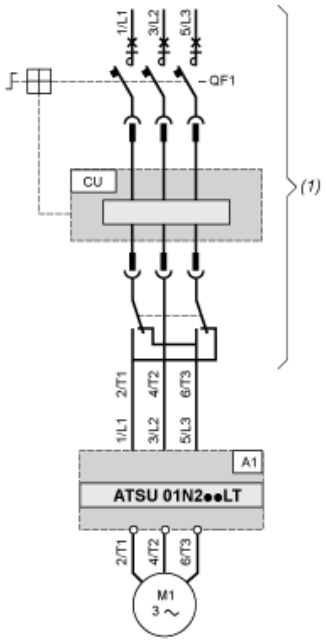


Power Wiring



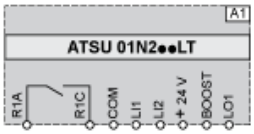
(1) TeSys U
A1 : Soft start/soft stop unit
QF1 :TeSys U controller-starter
CU : TeSys U control unit

With Reversing Unit



(1) TeSys U with reversing unit
A1 : Soft start/soft stop unit
QF1 :TeSys U controller-starter
CU : TeSys U control unit

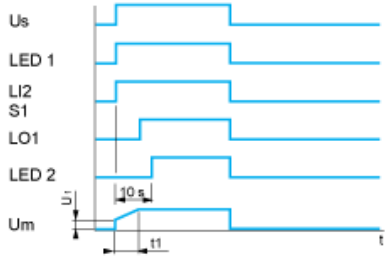
Control Wiring



A1 : Soft start/soft stop unit
R1A, Relay output NO
R1C :
COM : Commun
LI1, Logic inputs (stop and run functions)
LI2 :
BOOST : Logic input (boost on start-up function)
LO1 : Logic output

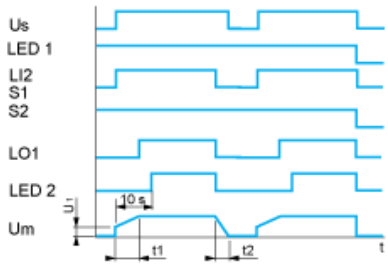
Functional Diagram Automatic 2-wire Control

Without Deceleration



Us : Power supply voltage
LED Green LED
1 :
LI2 : Logic input
S1 : Pushbutton
LED Yellow LED
2 :
Um : Motor voltage
t1 : Acceleration time can be controlled by a potentiometer
U1 : Starting time can be controlled by a potentiometer

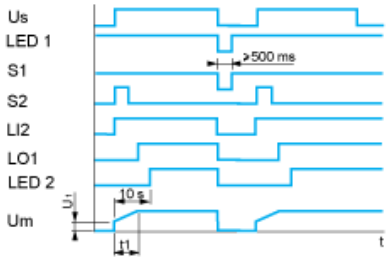
With and without Deceleration



Us : Power supply voltage
LED Green LED
1 :
LI2 : Logic input
S1, Pushbuttons
S2 :
LO1 :Logic output
LED Yellow LED
2 :
Um : Motor voltage
t1 : Acceleration time can be controlled by a potentiometer
t2 : Deceleration time can be controlled by a potentiometer
U1 : Starting time can be controlled by a potentiometer

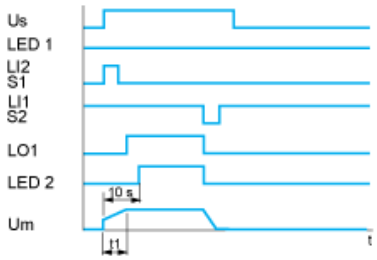
Functional Diagram Automatic 3-wire Control

Without Deceleration



Us : Power supply voltage
LED Green LED
1 :
S1, Pushbuttons
S2 :
LI2 : Logic input
LO1 :Logic output
LED Yellow LED
2 :
Um : Motor voltage
t1 : Acceleration time can be controlled by a potentiometer
U1 : Starting time can be controlled by a potentiometer

With Deceleration



Us : Power supply voltage
LED Green LED
1 :
S1, Pushbuttons
S2 :
LI1, Logic inputs
LI2 :
LO1 :Logic output
LED Yellow LED
2 :
Um : Motor voltage
t1 : Acceleration time can be controlled by a potentiometer