

# ATS22C41Q

soft starter-ATS22-control 220V-power  
230V(110kW)/400...440V(220kW)



## Main

|                              |   |
|------------------------------|---|
| Range of product             | Altistart 22  |
| Product or component type    | Soft starter  |
| Product destination          | Asynchronous motors   |
| Product specific application | Severe and standard applications                                      |
| Component name               | ATS22   |
| Network number of phases     | 3 phases  |
| Power supply voltage         | 230...440 V (- 15...10 %)   |
| Motor power kW               | 110 kW at 230 V<br>220 kW at 400 V<br>220 kW at 440 V                 |
| Factory setting current      | 388 A   |
| Power dissipation in W       | 177 W for standard applications                                       |
| Utilisation category         | AC-53A  |
| Type of start                | Start with torque control (current limited to 3.5 In)                 |
| Icl nominal current          | 410 A (connection in the motor supply line) for standard applications |
| IP degree of protection      | IP00  |

## Complementary

|                             |  |
|-----------------------------|--|
| Assembly style              | With heat sink   |
| Function available          | Internal bypass  |
| Power supply voltage limits | 195...484 V  |
| Power supply frequency      | 50...60 Hz (- 10...10 %)   |
| Network frequency           | 45...66 Hz   |
| Device connection           | In the motor supply line<br>To the motor delta terminals   |
| Control circuit voltage     | 220...230 V -15...10 % at 50/60 Hz   |
| Control circuit consumption | 20 W   |
| Discrete output number      | 2  |
| Discrete output type        | (R1)Relay outputs 230 V running, alarm, trip, stopped, not stopped, starting, ready, C/O<br>(R2)Relay outputs 230 V running, alarm, trip, stopped, not stopped, starting, ready, C/O   |
| Minimum switching current   | Relay outputs 100 mA at 12 V, DC   |
| Maximum switching current   | Relay outputs 5 A at 250 V, AC resistive load, cos phi = 1<br>Relay outputs 5 A at 30 V, DC resistive load, cos phi = 1<br>Relay outputs 2 A at 250 V, AC inductive load, cos phi = 0.4, L/R = 20 ms<br>Relay outputs 2 A at 30 V, DC inductive load, L/R = 7 ms |
| Discrete input number       | 3  |
| Discrete input type         | (LI1, LI2, LI3)logic 5 mA 4.3 kOhm   |
| Discrete input voltage      | 24 V (<= 30 V)   |
| Discrete input logic        | (LI1, LI2, LI3)positive logic state 0 < 5 V and < 2 mA state 1 > 11 V and > 5 mA   |
| Output current              | 0.4...1 Icl adjustable   |
| PTC probe input             | 750 Ohm  |
| Communication port protocol | Modbus   |
| Connector type              | 1 RJ45   |
| Communication data link     | Serial   |
| Physical interface          | RS485 multidrop  |

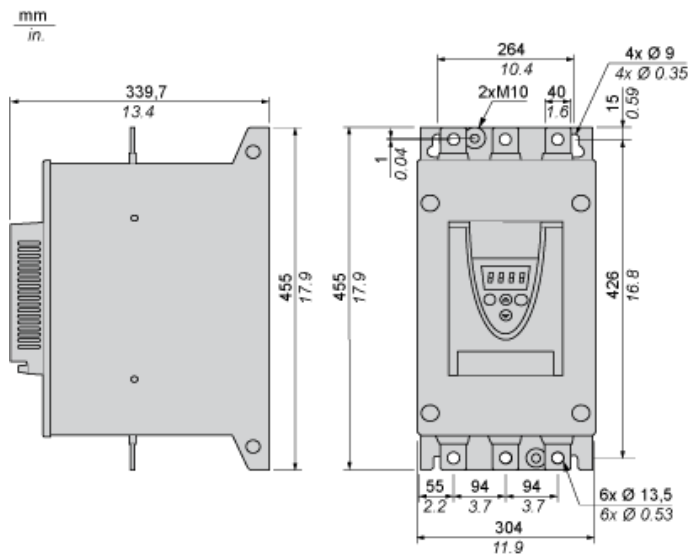
|                    |   |
|--------------------|---|
| Transmission rate  | 4800, 9600 or 19200 bps   |
| Max nodes number   | 31  |
| Protection type    | Phase failure on line<br>Thermal protection on motor<br>Thermal protection on starter |
| Marking            | CE  |
| Type of cooling    | Forced convection   |
| Operating position | Vertical +/- 10 degree  |
| Product weight     | 33 kg   |

## Environment

|                                       |  |
|---------------------------------------|--|
| Electromagnetic compatibility         | Conducted and radiated emissions conforming to IEC 60947-4-2 level A<br>Damped oscillating waves conforming to IEC 61000-4-12 level 3<br>Electrostatic discharge conforming to IEC 61000-4-2 level 3<br>Immunity to electrical transients conforming to IEC 61000-4-4 level 4<br>Immunity to radiated radio-electrical interference conforming to IEC 61000-4-3 level 3<br>Voltage/Current impulse conforming to IEC 61000-4-5 level 3 |
| Standards                             | EN/IEC 60947-4-2   |
| Product certifications                | CCC<br>CSA<br>C-Tick<br>GOST<br>UL   |
| Vibration resistance                  | 1 gn (f = 13...200 Hz) conforming to EN/IEC 60068-2-6<br>1.5 mm (f = 2...13 Hz) conforming to EN/IEC 60068-2-6   |
| Shock resistance                      | 15 gn for 11 ms conforming to EN/IEC 60068-2-27  |
| Noise level                           | 56 dB  |
| Pollution degree                      | Level 2 conforming to IEC 60664-1  |
| Relative humidity                     | <= 95 % without condensation or dripping water conforming to EN/IEC 60068-2-3  |
| Ambient air temperature for operation | -10...40 °C without derating<br>> 40...< 60 °C with current derating 2.2 % per °C  |
| Ambient air temperature for storage   | -25...70 °C  |
| Operating altitude                    | <= 1000 m without derating<br>> 1000...< 2000 m with current derating of 2.2 % per additional 100 m  |
| RoHS EUR status                       | Compliant  |
| RoHS EUR conformity date              | 0939   |

## Frame Size E

### Dimensions



## Precautions

### Standards

The Altistart 22 soft starter is compliant with pollution Degree 2 as defined in NEMA ICS1-1 or IEC 60664-1.  
For environment pollution degree 3, install the Altistart 22 soft starter inside a cabinet type 12 or IP54.

 DANGER

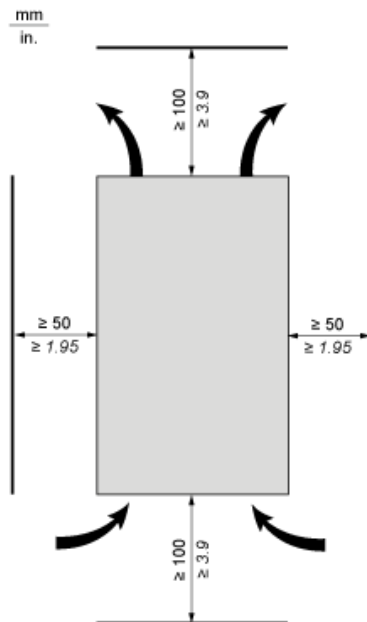
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

ATS22 soft starters are open devices and must be mounted in a suitable enclosure.

Failure to follow these instructions will result in death or serious injury.

### Air Circulation

Leave sufficient free space to help the air required for cooling purposes to circulate from the bottom to the top of the unit.



### Overheating

To avoid the soft starter to overheat, respect the following recommendations:

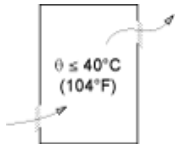
- Mount the Altistart 22 Soft Starter within  $\pm 10^\circ$  of vertical.
- Do not locate the Altistart 22 Soft Starter near heat radiating elements.
- Electrical current through the Altistart 22 Soft Starter will result in heat losses that must be dissipated into the ambient air immediately surrounding the soft starter. To help prevent a thermal fault, provide sufficient enclosure cooling and/or ventilation to limit the ambient temperature around the soft starter.
- If several soft starters are installed in a control panel, arrange them in a row. Do not stack soft starters. Heat generated from the bottom soft starter can adversely affect the ambient temperature around the top soft starter.

## Wall mounted or Floor-standing Enclosure with IP 23 Degree of protection

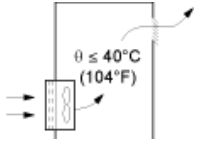
### Introduction

To help proper air circulation in the soft starter, grilles and forced ventilation can be installed.

## Ventilation Grilles

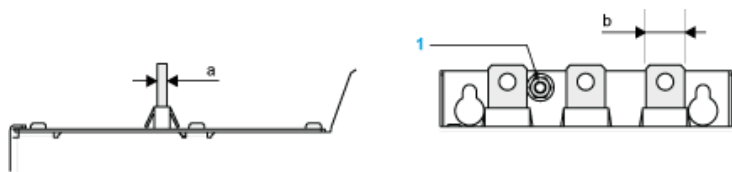


## Forced Ventilation Unit



Power Terminal

Bar Style



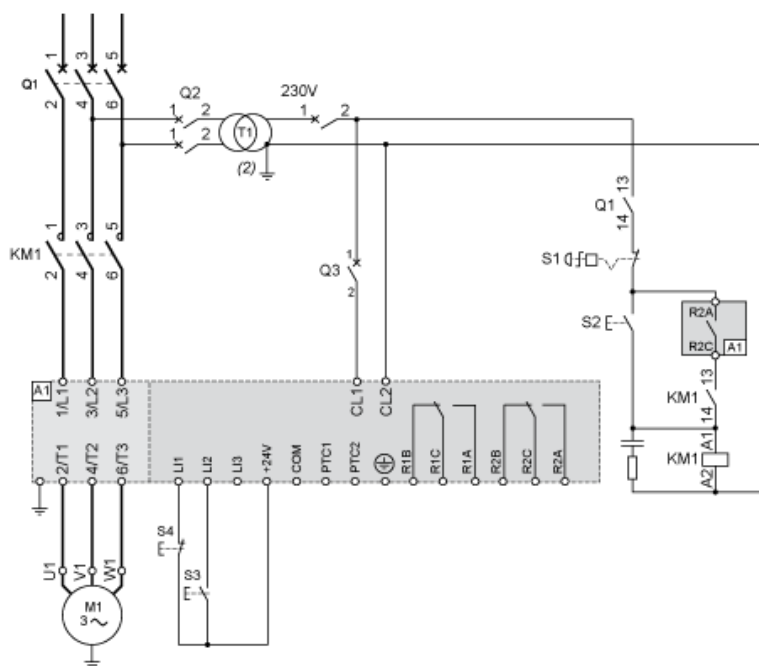
|                                  |               |                       |                 |
|----------------------------------|---------------|-----------------------|-----------------|
| Power supply and output to motor | Bar           | b                     | 30 mm (1.18 in) |
| a                                | 5 mm (0.2 in) |                       |                 |
| Bolt                             | M12 (0.47 in) |                       |                 |
| Cable and protective cover       | Size          | 2X150 mm <sup>2</sup> |                 |
| Gauge                            | 2X250 MCM     |                       |                 |
| Protective cover                 | LA9F703       |                       |                 |
| Tightening torque                | 57 N.m        |                       |                 |
| 498.75 lb.in                     |               |                       |                 |

Power connections, minimum required wiring section

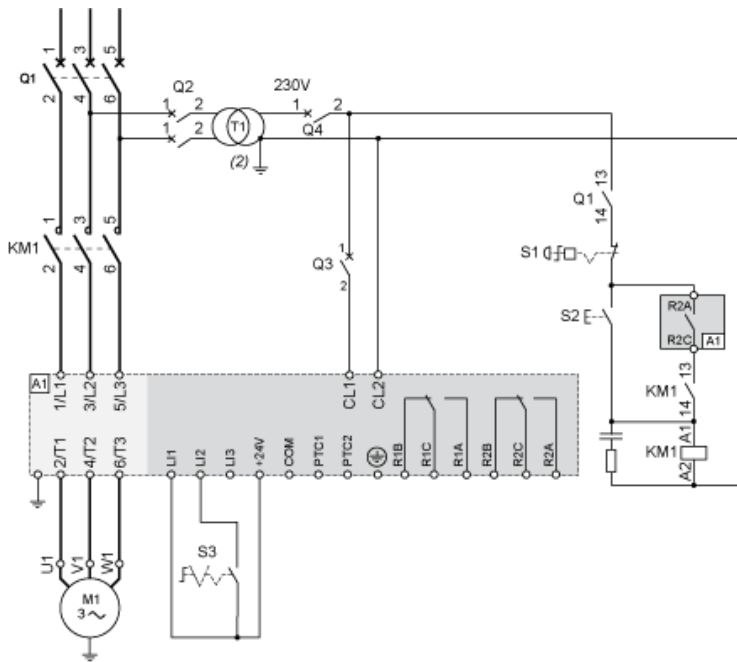
|  |                                     |
|--|-------------------------------------|
| IEC cable<br>mm <sup>2</sup> (Cu 70°C/158°F) (1) | UL cable<br>AWG (Cu 75°C/167°F) (1) |
| 2 X 150  | 2 X 250 MCM                         |

230 Vac control, logic Inputs (LI) 24 Vdc, 3-wire control

With Line Contactor, Freewheel or Controlled Stop



230 Vac control, logic Inputs (LI) 24 Vdc, 2-wire control, freewheel stop

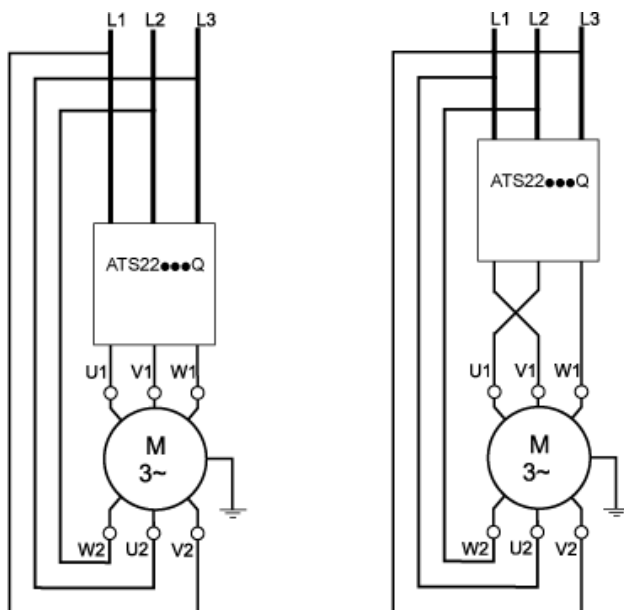


## Connection in the motor delta winding in series with each winding

### Wiring

ATS22 soft starters connected to motors with the delta connections can be inserted in series in the motor windings.

The following wiring requires particular attention. It is documented in the Altistart 22 Soft start - soft stop unit user manual. Please contact Schneider Electric commercial organisation for further informations.

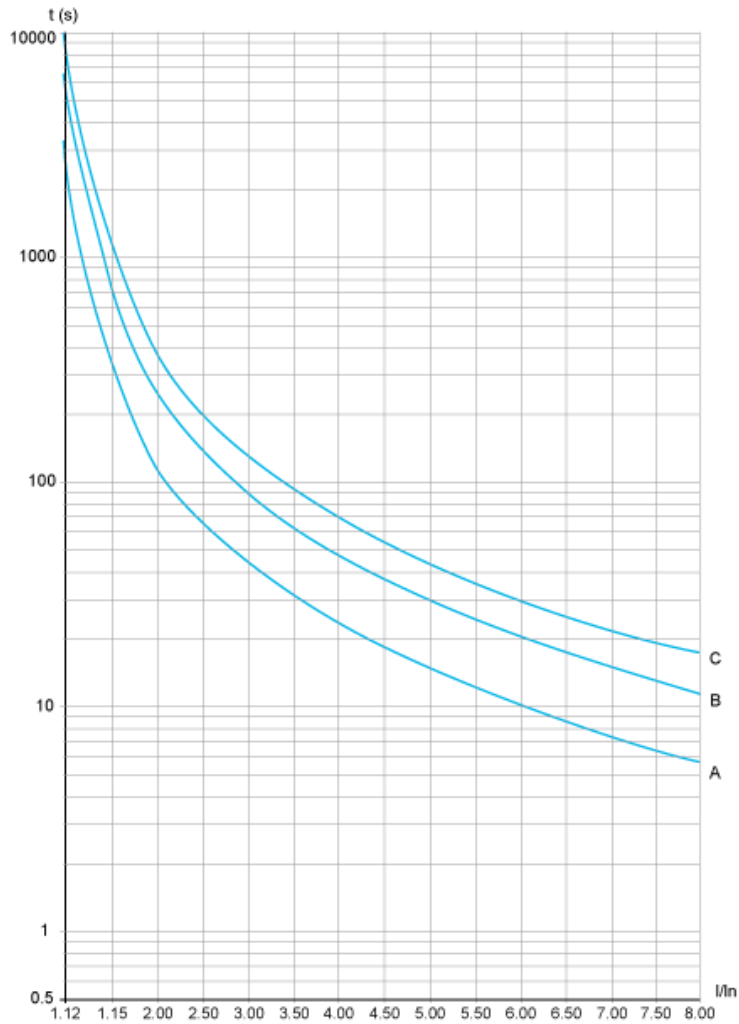


### Example

A 400 V - 110 kW motor with a line current of 195 A (nominal current for the delta connection). The current in each winding is equal to  $195/1.5$  or 130 A. The rating is determined by selecting the soft starter with a permanent nominal current (ICL) just above this current.

Motor Thermal Protection - Cold Curves

Curves



- A Class 10
- B Class 20
- C Class 30

Trip time for a Standard Application (Class 10)

|        |
|--------|
| 3.5 In |
| 32 s   |

Trip time for a Severe Application (Class 20)

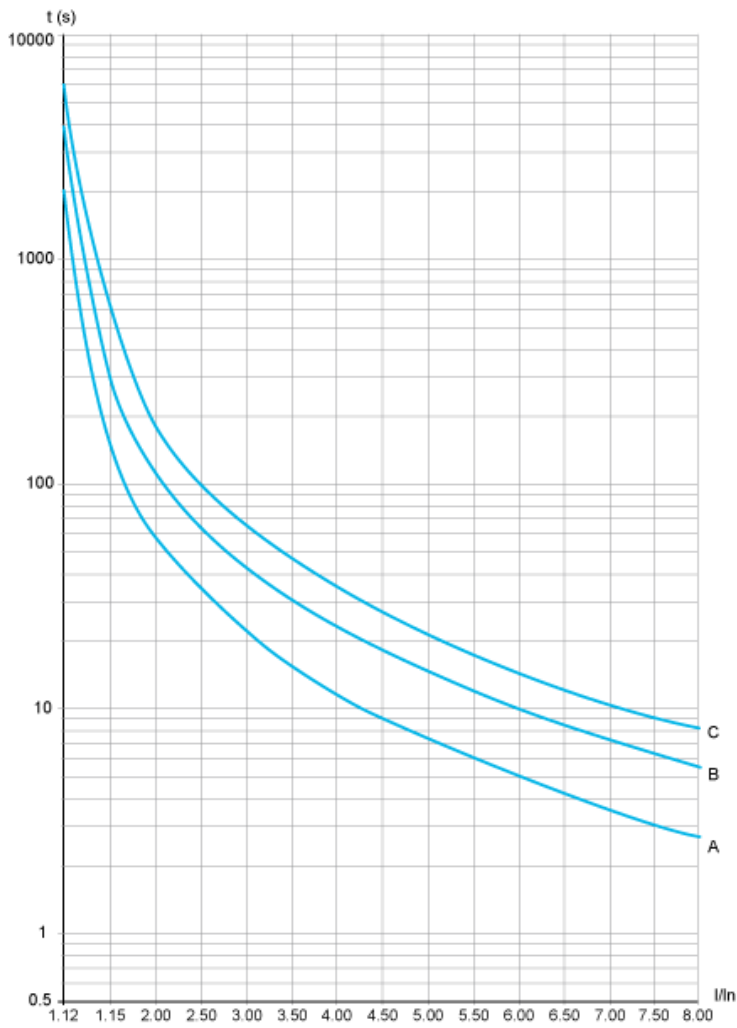
|        |
|--------|
| 3.5 In |
| 63 s   |

Trip time for a Severe Application (Class 30)

|        |
|--------|
| 3.5 In |
| 95 s   |



Curves



- A Class 10
- B Class 20
- C Class 30

Trip time for a Standard Application (Class 10)

|        |
|--------|
| 3.5 In |
| 16 s   |

Trip time for a Severe Application (Class 20)

|        |
|--------|
| 3.5 In |
| 32 s   |

Trip time for a Severe Application (Class 30)

|        |
|--------|
| 3.5 In |
| 48 s   |