

# Product datasheet

Specifications



soft starter for asynchronous motor,  
Altistart 22, control 230V, 230 to  
440V, 22 to 45kW

ATS22D88Q

## Main

|                              |                                                                        |
|------------------------------|------------------------------------------------------------------------|
| Range of product             | Altistart 22                                                           |
| Product or component type    | Soft starter                                                           |
| Product destination          | Asynchronous motors                                                    |
| Product specific application | Pumps and fans                                                         |
| Component name               | ATS22                                                                  |
| Network number of phases     | 3 phases                                                               |
| [Us] rated supply voltage    | 230...440 V - 15...10 %                                                |
| Motor power kW               | 22 kW 230 V<br>45 kW 400 V<br>45 kW 440 V                              |
| Factory setting current      | 81 A                                                                   |
| Power dissipation in W       | 66 W for standard applications                                         |
| Utilisation category         | AC-53A                                                                 |
| Type of start                | Start with torque control (current limited to 3.5 In)                  |
| IcL starter rating           | 88 A for connection in the motor supply line for standard applications |
| IP degree of protection      | IP20                                                                   |

## Complementary

|                              |                                                                                                                                                                                          |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Assembly style               | With heat sink                                                                                                                                                                           |
| Function available           | Internal bypass                                                                                                                                                                          |
| Supply voltage limits        | 195...484 V                                                                                                                                                                              |
| Supply frequency             | 50...60 Hz - 10...10 %                                                                                                                                                                   |
| Network frequency            | 45...66 Hz                                                                                                                                                                               |
| Device connection            | To the motor delta terminals<br>In the motor supply line                                                                                                                                 |
| [Uc] control circuit voltage | 230 V - 15...10 % 50/60 Hz                                                                                                                                                               |
| Control circuit consumption  | 20 W                                                                                                                                                                                     |
| Discrete output number       | 2                                                                                                                                                                                        |
| Discrete output type         | Relay outputs R1 230 V running, alarm, trip, stopped, not stopped, starting, ready C/<br>O<br>Relay outputs R2 230 V running, alarm, trip, stopped, not stopped, starting, ready C/<br>O |
| Minimum switching current    | 100 mA at 12 V DC (relay outputs)                                                                                                                                                        |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

|                             |                                                                                                                                                                               |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum switching current   | 5 A 250 V AC resistive 1 relay outputs<br>5 A 30 V DC resistive 1 relay outputs<br>2 A 250 V AC inductive 0.4 20 ms relay outputs<br>2 A 30 V DC inductive 7 ms relay outputs |
| 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        | Positive logic LI1, LI2, LI3 at State 0: < 5 V and <= 2 mA at State 1: > 11 V, >= 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                                                                                                                                                       |
| Installed device            | 31                                                                                                                                                                            |
| Protection type             | Phase failure: line<br>Thermal protection: motor<br>Thermal protection: starter                                                                                               |
| marking                     | CE                                                                                                                                                                            |
| Type of cooling             | Forced convection                                                                                                                                                             |
| Operating position          | Vertical +/- 10 degree                                                                                                                                                        |
| Height                      | 295 mm                                                                                                                                                                        |
| Width                       | 145 mm                                                                                                                                                                        |
| Depth                       | 207 mm                                                                                                                                                                        |
| Net weight                  | 12 kg                                                                                                                                                                         |
| Motor power range AC-3      | 15...25 kW at 200...240 V 3 phases<br>30...50 kW at 380...440 V 3 phases                                                                                                      |
| Motor starter type          | Soft starter                                                                                                                                                                  |

## Environment

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electromagnetic compatibility | Conducted and radiated emissions level A conforming to IEC 60947-4-2<br>Damped oscillating waves level 3 conforming to IEC 61000-4-12<br>Electrostatic discharge level 3 conforming to IEC 61000-4-2<br>Immunity to electrical transients level 4 conforming to IEC 61000-4-4<br>Immunity to radiated radio-electrical interference level 3 conforming to IEC 61000-4-3<br>Voltage/current impulse level 3 conforming to IEC 61000-4-5 |
| Standards                     | IEC 60947-4-2                                                                                                                                                                                                                                                                                                                                                                                                                          |
| product certifications        | CCC<br>CSA<br>UL<br>GOST<br>C-Tick                                                                                                                                                                                                                                                                                                                                                                                                     |
| Vibration resistance          | 1 gn (f= 13...200 Hz) conforming to IEC 60068-2-6<br>1.5 mm (f= 2...13 Hz) conforming to IEC 60068-2-6                                                                                                                                                                                                                                                                                                                                 |
| Shock resistance              | 15 gn for 11 ms conforming to IEC 60068-2-27                                                                                                                                                                                                                                                                                                                                                                                           |
| Noise level                   | 45 dB                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Pollution degree              | Level 2 conforming to IEC 60664-1                                                                                                                                                                                                                                                                                                                                                                                                      |
| Relative humidity             | 0...95 % without condensation or dripping water conforming to 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 |

## Packing Units

|                              |           |
|------------------------------|-----------|
| Unit Type of Package 1       | PCE       |
| Number of Units in Package 1 | 1         |
| Package 1 Height             | 23.000 cm |
| Package 1 Width              | 30.800 cm |
| Package 1 Length             | 35.800 cm |
| Package 1 Weight             | 8.170 kg  |
| Unit Type of Package 2       | P06       |
| Number of Units in Package 2 | 6         |
| Package 2 Height             | 75.000 cm |
| Package 2 Width              | 60.000 cm |
| Package 2 Length             | 80.000 cm |
| Package 2 Weight             | 63.184 kg |

## Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|

## Sustainability

**Green Premium™ label** is Schneider Electric’s commitment to delivering products with best-in-class environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO<sub>2</sub> products.

**Guide to assessing product sustainability** is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

[Learn more about Green Premium >](#)

[Guide to assess a product’s sustainability >](#)

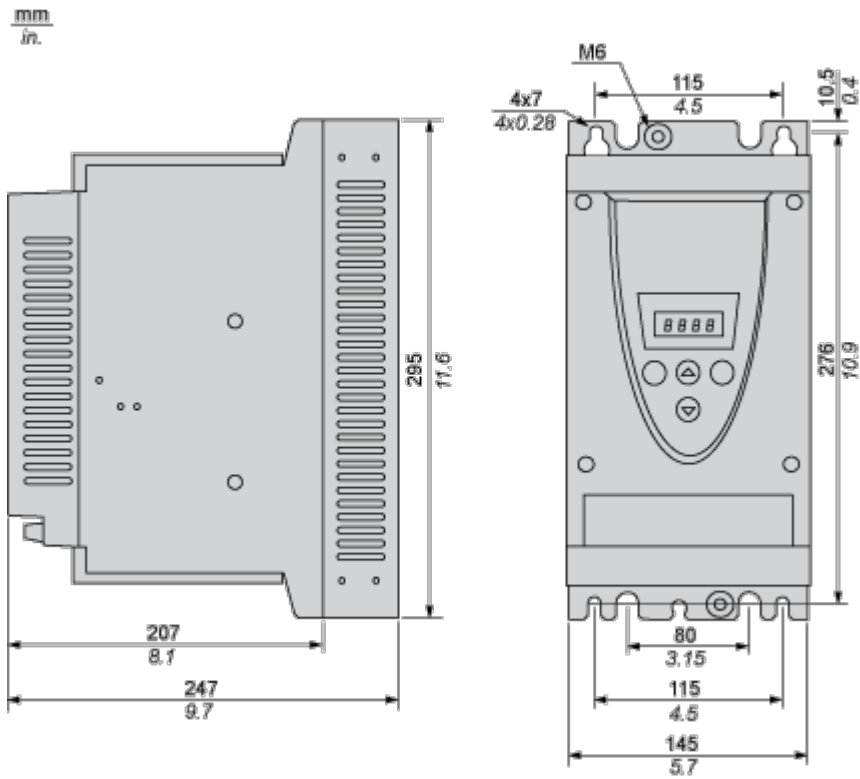
## Well-being performance

|                                                                                                              |                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
|  Mercury Free               |                                                                                                                             |
|  Rohs Exemption Information | <a href="#">Yes</a>                                                                                                         |
| Reach Regulation                                                                                             | <a href="#">REACH Declaration</a>                                                                                           |
| Eu Rohs Directive                                                                                            | Pro-active compliance (Product out of EU RoHS legal scope)                                                                  |
| China Rohs Regulation                                                                                        | <a href="#">China RoHS declaration</a>                                                                                      |
| Weee                                                                                                         | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |

Dimensions Drawings

Frame Size B

Dimensions



Mounting and Clearance

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.



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.

Mounting

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Connection Between the Fan and the Altistart 22 Soft Starter



- 1 Altistart 22 Soft Starter
- 2 Fan

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



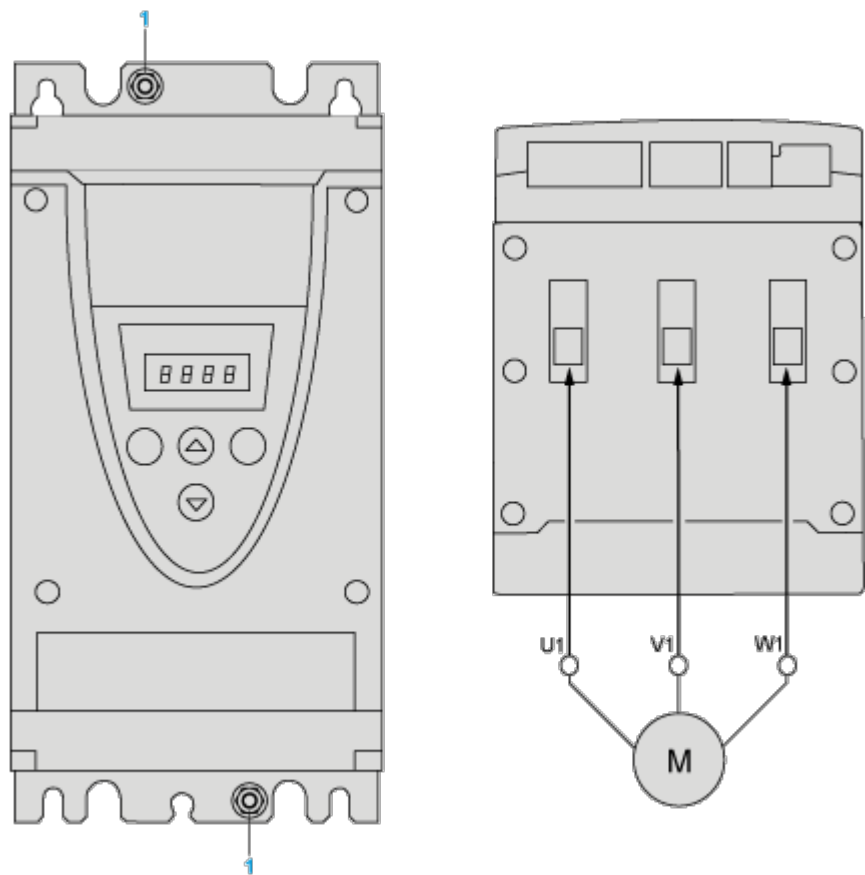
Forced Ventilation Unit



Connections and Schema

Power Terminal

Cage Style



1 Ground connection

Power connections, minimum and maximum wiring capabilities, tightening torque

|                                  |                   |     | IEC cable | UL cable   |
|----------------------------------|-------------------|-----|-----------|------------|
| Power supply and output to motor | Size/gauge        | min | 4 mm (a)  | 10 AWG (a) |
|                                  |                   | max | 50 mm     | 1/0 AWG    |
|                                  | Tightening torque | min | 8 N.m     | 70 lb.in   |
|                                  |                   | max | 8 N.m     | 70 lb.in   |
|                                  | Strip length      |     | 15 mm     | 0.6 in.    |

Power connections, minimum required wiring section

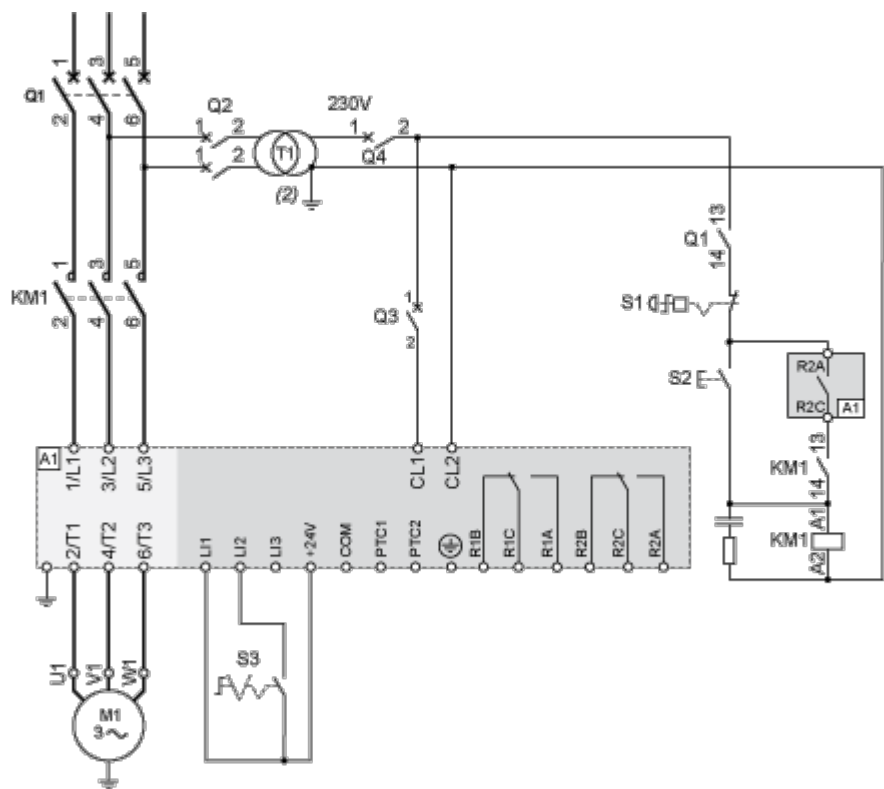
| IEC cable<br>mm² (Cu 70°C/158°F) (1) | UL cable<br>AWG (Cu 75°C/167°F) (1) |
|--------------------------------------|-------------------------------------|
| 35                                   | 2                                   |

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.



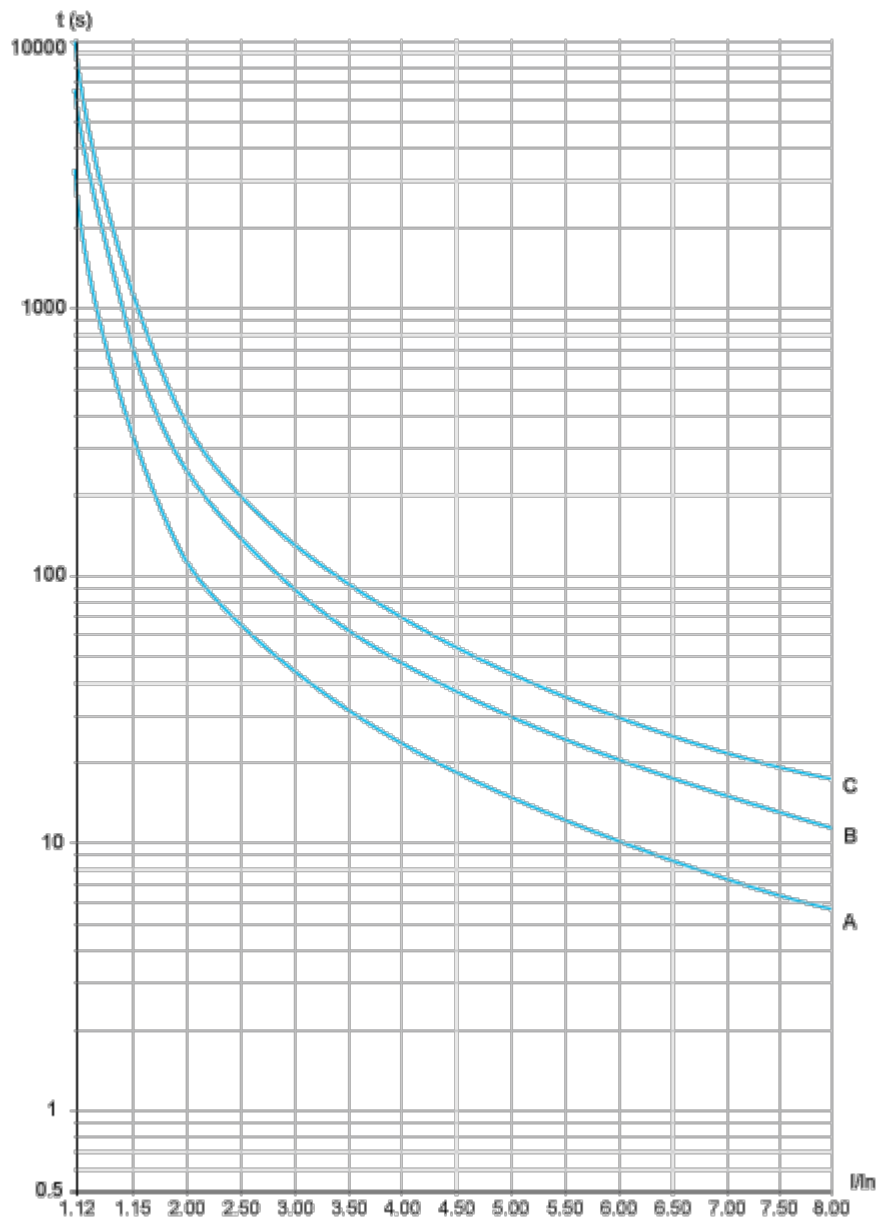
Example

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.

Performance Curves

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   |

Motor Thermal Protection - Warm Curves

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

Image of product / Alternate images

Alternative

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