

# Soft starters Altistart 22

Catalogue

October 2009





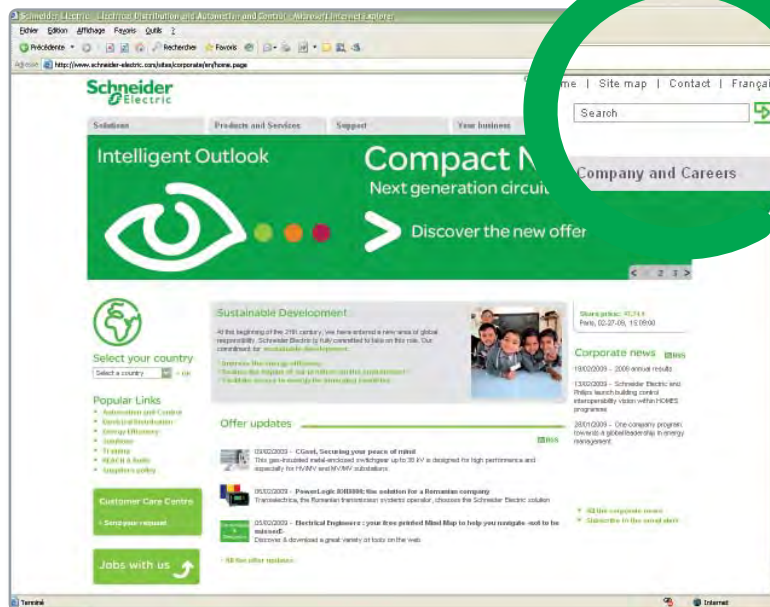
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Browse the “product data sheet” to check out :

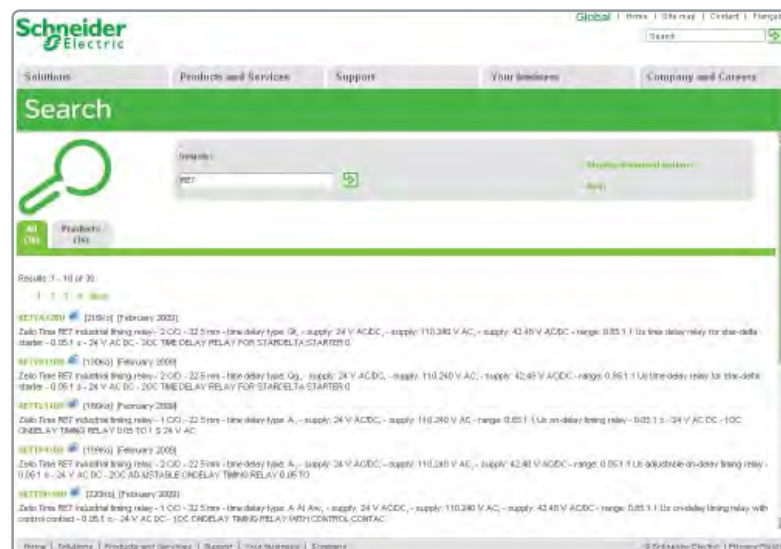
- characteristics,
- dimensions,
- curves, ...
- and also the links to the user guides and the CAD files.

**1** From the home page, type the model number\* into the “Search” box.

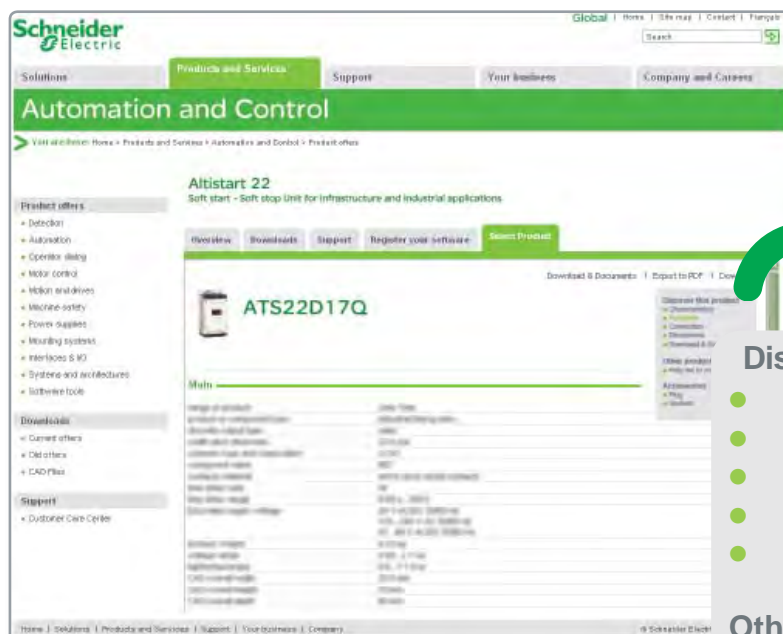


\* type the model number without any blank, replace “.” by “\*”

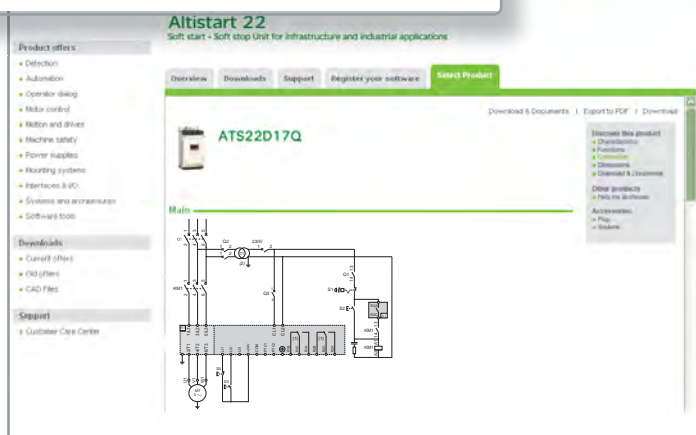
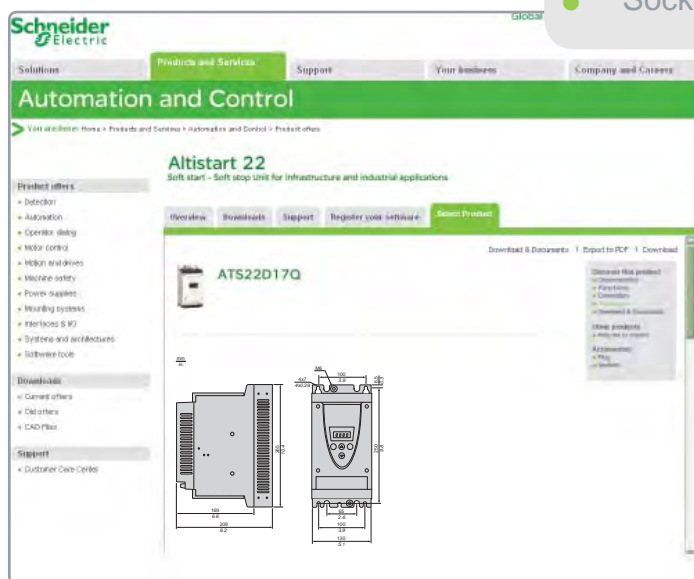
**2** Under “All” tab, click the model number that interests you.



### 3 The product data sheet displays.



- Discover this product**
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  - Functions
  - Connection
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- Other products**
  - Help me to choose
- Accessories**
  - Plug
  - Sockets



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Make the most of your energy!

# Altistart 22 soft start/ soft stop unit



Innovative  
Economical  
Safe

- Reduce your operating costs
- Simplify wiring
- Protect your electrical installation
- Save space with a fully equipped product

## Contents

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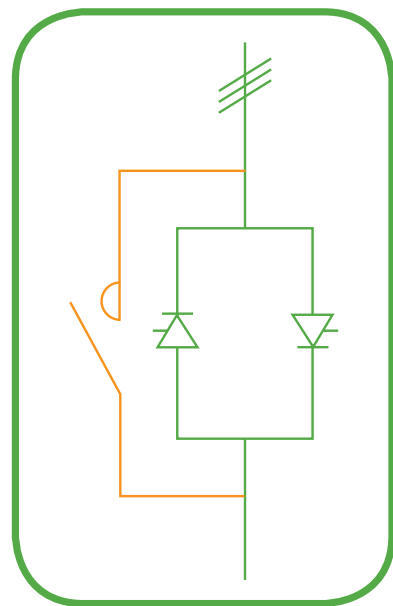
# Reduce your costs with an integrated bypass function\*

## Installation and operation couldn't be simpler

- Save time on wiring (6 terminals instead of 12)
- Optimise the size of your enclosures (Altistart 22 is very compact)
- Keep temperature rises to a minimum (low heat dissipation)
- Reduce the number of components you need to manage (multifunction product)



## 3 controlled phases



**50% reduction in wiring time**

\* shuntage



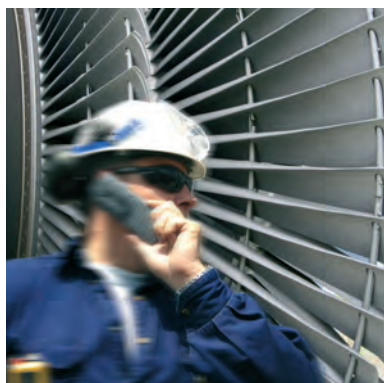
# Bypass the stresses and let your applications take the strain

## Protect your installations

- By minimising jolts and shocks, Altistart 22 reduces mechanical stresses on your machines and increases their service life.
- Altistart 22 prevents installation failure by detecting and signalling faults such as a blocked motor, underload or incorrect earthing of one of the 3 motor phases.
- Cards are coated as standard to provide enhanced resistance to harsh environments.

## Play it safe with a complete product

- Altistart 22, with its three controlled phases, incorporates all the protection functions required to monitor the motor, the electrical installation and the starter itself.
- Simplify setup and operation with:
  - 4 light emitting diodes (LEDs)
  - 4 navigation keys
  - 4-digit display
  - SoMove setup software (common to the Altivar, Lexium and TeSys ranges)



# Soft starters for asynchronous motors

**Applications**

**Starting simple machines**

**Controlled starting and deceleration of simple machines**



| Power range for 50...60 Hz (kW) line supply<br>(connection to the motor's power supply line) |            |
|--|------------|
| Single-phase 110...230 V (kW)  | 0.37...2.2 |
| Three-phase 200...240 V (kW)   | –          |
| Three-phase 200...480 V (kW)   | 0.37...11  |
| Three-phase 208...600 V (kW)   | –          |
| Three-phase 208...690 V (kW)   | –          |
| Three-phase 230...415 V (kW)   | –          |
| Three-phase 230...440 V (kW)   | –          |
| Three-phase 380...415 V (kW)   | –          |

| 0.37...11  |   |
|------------|---|
| 0.37...2.2 | – |
| –          | – |
| 0.37...11  | – |
| –          | – |
| –          | – |
| –          | – |
| –          | – |
| –          | – |
| –          | – |

| 0.75...15  |   |
|------------|---|
| –          | – |
| 0.75...7.5 | – |
| –          | – |
| –          | – |
| –          | – |
| –          | – |
| –          | – |
| –          | – |
| 1.5...15   | – |

| Drive                       |   |
|-----------------------------|---|
| Number of controlled phases | 1 |
| Type of control             | – |
| Operating cycle             | – |

|   |   |
|---|---|
| 1 | – |
| – | – |
| – | – |

|   |   |
|---|---|
| 2 | – |
| – | – |
| – | – |

| Functions        |            |
|------------------|------------|
| Bypass           | Integrated |
| Number of I/O    | –          |
| Analogue inputs  | –          |
| Logic inputs     | –          |
| Analogue outputs | –          |
| Logic outputs    | –          |
| Relay outputs    | –          |

|            |   |
|------------|---|
| Integrated | – |
| –          | – |
| –          | – |
| –          | – |
| –          | – |
| –          | – |

| Communication          |   |
|------------------------|---|
| Integrated             | – |
| Available as an option | – |

|   |   |
|---|---|
| – | – |
| – | – |

**Standards and certifications**

IEC/EN 60947-4-2  
 CE, UL, CSA, C-Tick and CCC

**References**

**ATS 01N1●●●●**

**ATS 01N2●●●●**

**Page**

Please refer to the "Soft starters and variable speed drives" catalogue.



Controlled starting and deceleration of simple and complex machines



|                |                |         |
|----------------|----------------|---------|
| <b>4...400</b> | <b>3...900</b> |         |
| –              | –              | –       |
| –              | –              | –       |
| –              | –              | –       |
| 4...400        | –              | –       |
| –              | –              | 3...900 |
| –              | 3...630        | –       |
| 4...355        | –              | –       |
| –              | –              | –       |

|                           |                             |  |
|---------------------------|-----------------------------|--|
| 3                         | 3                           |  |
| Configurable voltage ramp | TCS (Torque Control System) |  |
| Standard                  | Standard and severe         |  |

|                   |                        |  |
|-------------------|------------------------|--|
| Integrated        | Available as an option |  |
| 1 PTC probe       | 1 PTC probe            |  |
| 3                 | 4                      |  |
| –                 | 1                      |  |
| –                 | 2                      |  |
| 2 ("N/C" / "N/O") | 3                      |  |

|        |   |  |
|--------|---|--|
| Modbus | Modbus                                    |  |
| –      | Fipio, PROFIBUS DP, DeviceNet, Modbus TCP |  |

|   |  |  |
|---|--|--|
| IEC/EN 60947-4-2, EMC class A<br>CE, UL, CSA, C-Tick, GOST, CCC | IEC/EN 60947-4-2, EMC classes A and B<br>CE, UL, CSA, DNV, C-Tick, GOST, CCC, NOM, SEPRO and TCF |  |
|---|--|--|

|                   |                   |                   |
|-------------------|-------------------|-------------------|
| <b>ATS 22●●●●</b> | <b>ATS 48●●●Q</b> | <b>ATS 48●●●Y</b> |
|-------------------|-------------------|-------------------|

|    |  |
|----|--|
| 12 | Please refer to the "Soft starters and variable speed drives" catalogue. |
|----|--|



More technical information on [www.schneider-electric.com](http://www.schneider-electric.com)

# Altistart 22 soft start - soft stop units



The Altistart 22 soft start - soft stop unit offer

## Presentation

The Altistart 22 soft start - soft stop unit supports the controlled starting and stopping, via voltage and torque, of three-phase squirrel cage asynchronous motors for power ratings between 4 and 400 kW.

It comes ready to use for standard applications with class 10 motor protection.

The Altistart 22 soft start - soft stop unit has been designed to satisfy the performance requirements of applications where ruggedness, the safety of personnel and equipment, and easy commissioning are at a premium.

The bypass function (based on a bypass contactor) has been made easier to use by integrating it into the starter. This approach suits applications where it may be necessary to bypass the starter at the end of the starting process in order, for example, to limit the starter's heat dissipation.

The Altistart 22 soft start - soft stop unit contains an integrated display terminal which allows the user to change both the programming and the adjustment or monitoring parameters in order to adapt and customize the application in line with customer needs.

The unit also features thermal protection for motors as well as a monitoring facility for machines and, thanks to the SoMove setup software, enables the installation to be commissioned immediately.

## Applications

The integrated functions of the Altistart 22 soft start - soft stop unit are compatible with the more common types of application found in the construction, infrastructure or industrial sectors:

- Centrifugal pumps, piston pumps
- Fans
- Screw compressors, etc.
- Material handling (conveyors, etc.)
- Specialist machines (agitators, mixers, centrifugal machines)

The Altistart 22 soft start - soft stop unit represents a truly cost-effective solution, as it supports:

- A reduction in installation costs by optimizing product sizes, integrating the bypass function and reducing wiring time
- A reduction in the stress associated with electrical distribution by reducing the current peaks and line voltage drops caused by motors starting up
- A reduction in running costs for machines by reducing mechanical stress

Controlling the three phases of the motor windings ensures that performance remains satisfactory, whatever the situation (with or without a load, all voltage and power ranges, etc.).

## Conformity to standards

| Type                                    |                              | Performance                                       |
|---|------------------------------|---|
| <b>Conducted and radiated emissions</b> | Conforming to IEC 60947-4-2  | Class A   |
| <b>Vibration resistance</b>             | Conforming to IEC 60068-2-6  | 1.5 mm from 2 to 13 Hz,<br>1 gn from 13 to 200 Hz |
| <b>Shock resistance</b>                 | Conforming to IEC 60068-2-27 | 15 gn for 11 ms                                   |
| <b>Maximum ambient pollution</b>        | Conforming to IEC 60664-1    | Step 2  |
| <b>Relative humidity</b>                | Conforming to IEC 60068-2-3  | 95% non-condensing, no dripping water             |
| <b>Degree of protection</b>             | For ATS 22D17...C11          | IP 20<br>(IP 00 if no connections)                |
|   | For ATS 22C14...C59          | IP 00   |

The Altistart 22 soft start - soft stop unit conforms to the RoHS Directive.

# Altistart 22

## soft start - soft stop units

### Functions

The main functions integrated in the drive are as follows:

#### Adjustment functions

- Adjustment of the Altistart 22 soft start - soft stop unit's current in line with the motor's nominal current
- Limiting current
- Selection of the type of stop (freewheel or deceleration)

#### Drive performance functions

- Management of the three supply phases
- Option of connecting the starter in the motor delta connection in series with each winding. This supports the use of a soft start - soft stop unit with a lower rating (only applies to the ATS 22●●●Q range)
- Management of the ramp and torque supplied to the motor throughout the acceleration and deceleration period (significantly less jerk)
- Variety of control profiles to suit different applications
- Integrated and automated management of the bypass function at the end of the starting process (based on a bypass contactor), whilst preserving electronic protection features

#### Protection functions for the motor and machine

- Integration of configurable motor thermal protection
- Thermal protection for the Altistart 22 soft start - soft stop unit
- Integrated processing of the PTC thermal probe with electrical isolation (optimum management of motor protection)
- Monitoring of the duration and number of starts (better installation safety)
- Management of stopping time before restart
- Automatic restart
- Protection against underloads and overcurrents in transient or steady state
- Automatic adjustment to the line frequency
- Detection of phase sequence
- Detection of phase loss
- Detection of imbalances between phases and of leakage currents (for the ATS 22●●●S6 and S6U ranges)

#### Functions to ease integration into control systems

- 3 programmable logic inputs
- 2 programmable N/C / N/O relay outputs
- Pluggable connectors for I/O
- Second set of parameters for motor operation
- Modbus serial link via RJ45 connector
- Display of soft start - soft stop unit and machine states
- Display of I/O currents and states
- Error log, diagnostics for soft start - soft stop unit
- Return to factory settings
- 4 LEDs on the front face (Ready, Communication, Run and Trip)

# Altistart 22 soft start - soft stop units



Commissioning the ATS 22 soft start - soft stop unit with SoMove lite setup software

### The offer

The Altistart 22 soft start - soft stop unit offer comprises 2 voltage ranges for motor power ratings from 4 to 400 kW:

- Three-phase power supply voltage from 230 V to 440 V, 50/60 Hz (ATS 22●●●Q)
- Three-phase power supply voltage from 208 V to 600 V, 50/60 Hz (ATS 22●●●S6 and ATS 22●●●S6U)

### Options

The Altistart 22 soft start - soft stop unit range also offers a number of options:

- A remote terminal unit can be installed on the front face of a floor-standing enclosure with IP 54/NEMA 12 or IP 65 protection (depending on the model). It offers the same functions as an integrated display terminal.

- Additional fans to support a greater number of starts
- SoMove lite setup software
- Protection shrouds for terminals to ensure compliance with IP 20 degree of protection

### Selection criteria

The Altistart 22 soft start - soft stop unit has been designed for standard control system applications.

In addition to the chosen application, the choice of starter will depend on the following main criteria:

- The power and nominal current on the motor rating plate
- The load factor for the application

The starting capacity also needs to be considered when selecting an Altistart 22 soft start - soft stop unit:

### Starting capacity

The standard starting capacity for a class 10 motor is:

- 3.5 In for 40 seconds from cold with S1 motor duty
- 3.5 In for 20 seconds with S4 motor duty, based on a load factor of 95%

#### Note:

S1 motor duty is based on a start followed by operation at constant load, making it possible to achieve thermal equilibrium.

S4 motor duty is based on a cycle consisting of a start, operation at constant load and an idle period.

### Number of starts per hour

Assuming the starting capacity remains the same, the number of starts per hour can be increased by adding a fan.

The ATS 22D17Q...C17Q, ATS 22D17S6...C17S6 and ATS 22D17S6U...C17S6U soft start - soft stop units can be fitted with an additional fan. Page 15 has details of this option.

Possible number of starts per hour based on a capacity of 3.5 In for 20 seconds (S4 motor duty) after adding a fan:

| Soft start - soft stop units | Number of starts per hour |                     |
|------------------------------|---------------------------|---------------------|
|                              | Without fan               | With additional fan |
| ATS 22D17●...D47●            | 6                         | 10                  |
| ATS 22D62●...D88●            | 6                         | 10                  |
| ATS 22C11●...C17●            | 4                         | 10                  |

#### Note:

The ATS 22C21Q...C59Q, ATS 22C21S6...C59S6 and ATS 22C21S6U...C59S6U soft start - soft stop units come with a fan as standard.

The standard number of starts per hour for S4 motor duty is 4. Anything more would require the next lowest rating.



# Altistart 22 soft start - soft stop units



Example of pumping application using the Altistart 22 soft start - soft stop unit

## Standard application areas

Examples of functions performed by the Altistart 22 soft start - soft stop unit depending on the application chosen

| Type of machine          | Functions performed by the Altistart 22   |
|--------------------------|---|
| Centrifugal pump         | Controlled slowing-down and stopping (fewer hammer blows)<br>Protection against underload or reversal of phase rotation direction |
| Piston pump              | Control of pump priming and the pump's direction of rotation  |
| Fan                      | Detection of overloads and underloads (motor/fan transmission broken)<br>Braking torque on stopping                               |
| Turbine                  | Thermal monitoring of motor via electrically isolated PTC probe   |
| Refrigeration compressor | Control of starting characteristics<br>Management of automatic restart  |
| Screw compressor         | Protection against reversal of phase rotation direction<br>Contact for automatic emptying on stopping                             |
| Centrifugal compressor   | Protection against reversal of phase rotation direction<br>Contact for automatic emptying on stopping                             |
| Conveyor                 | Monitoring of overloads for incident detection or underloads for break detection  |
| Conveyor belt            | Second set of motor parameters depending on the load transported  |
| Lifting screw            | Monitoring of overloads for hard spot detection or underloads for break detection   |
| Agitator                 | Displaying the current indicates the density of the material.   |
| Mixer                    | Displaying the current indicates the density of the material.<br>Boost on start-up  |
| Refiner                  | Torque control on starting and stopping   |

## Dedicated applications

The ATS 22 soft start - soft stop unit can be used for applications outside the standard characteristics, but this could involve derating to at least the next lowest level.

Examples of applications outside the standard characteristics:

- Greater number of starts
- Motor thermal protection higher than class 10
- Excess current required at time of start
- Certain ambient temperatures:

For ambient temperatures between +40°C and +60°C, derate the nominal current of the Altistart by 2.2% for each additional degree.

- Certain altitudes:

For altitudes between 1000 and 2000 metres, derate the nominal current of the Altistart by 2% for each additional 100 metres.

- Etc.

# Altistart 22

## soft start - soft stop units

Three-phase power supply voltage 230...440 V



ATS 22D17Q



ATS 22D62Q



ATS 22C11Q

### Connection to the motor's power supply line

Motor power given in kW in accordance with standard IEC/EN 60947-4-2. 220 V control power supply

| Motor | 230...440 V - 50/60 Hz soft start - soft stop unit |       |       |                          |   |   |                        |            |        |
|-------|--|-------|-------|--------------------------|---|---|------------------------|------------|--------|
|       | Power indicated on rating plate                    |       |       | Nominal current (In) (1) | Factory setting for current (IcL) (1) (2) | Dissipated power at nominal current (4) | Dimensions (W x D x H) | Reference  | Weight |
|       | 230 V  | 400 V | 440 V | A                        | A   | W                                       | mm                     |            | kg     |
| 4     | 7.5  | 7.5   | 7.5   | 14.8                     | 17  | 39                                      | 130 x 169 x 265        | ATS 22D17Q | 7.000  |
| 7.5   | 15   | 15    | 15    | 28.5                     | 32  | 44                                      | 130 x 169 x 265        | ATS 22D32Q | 7.000  |
| 11    | 22   | 22    | 22    | 42                       | 47  | 48                                      | 130 x 169 x 265        | ATS 22D47Q | 7.000  |
| 15    | 30   | 30    | 30    | 57                       | 62  | 59                                      | 145 x 207 x 295        | ATS 22D62Q | 12.000 |
| 18.5  | 37   | 37    | 37    | 69                       | 75  | 63                                      | 145 x 207 x 295        | ATS 22D75Q | 12.000 |
| 22    | 45   | 45    | 45    | 81                       | 88  | 66                                      | 145 x 207 x 295        | ATS 22D88Q | 12.000 |
| 30    | 55   | 55    | 55    | 100                      | 110                                       | 73                                      | 150 x 229 x 356        | ATS 22C11Q | 18.000 |
| 37    | 75   | 75    | 75    | 131                      | 140                                       | 82                                      | 150 x 229 x 356        | ATS 22C14Q | 18.000 |
| 45    | 90   | 90    | 90    | 162                      | 170                                       | 91                                      | 150 x 229 x 356        | ATS 22C17Q | 18.000 |
| 55    | 110  | 110   | 110   | 195                      | 210                                       | 117                                     | 206 x 299 x 425        | ATS 22C21Q | 33.000 |
| 75    | 132  | 132   | 132   | 233                      | 250                                       | 129                                     | 206 x 299 x 425        | ATS 22C25Q | 33.000 |
| 90    | 160  | 160   | 160   | 285                      | 320                                       | 150                                     | 206 x 299 x 425        | ATS 22C32Q | 33.000 |
| 110   | 220  | 220   | 220   | 388                      | 410                                       | 177                                     | 206 x 299 x 425        | ATS 22C41Q | 33.000 |
| 132   | 250  | 250   | 250   | 437                      | 480                                       | 218                                     | 304 x 340 x 455        | ATS 22C48Q | 50.000 |
| 160   | 315  | 355   | 355   | 560                      | 590                                       | 251                                     | 304 x 340 x 455        | ATS 22C59Q | 50.000 |

### Connection to the motor's delta connection

Motor power given in kW in accordance with the standard IEC/EN 60947-4-2. 220 V control power supply

| Motor | 230...440 V - 50/60 Hz soft start - soft stop unit |       |       |                          |   |   |                        |            |        |
|-------|--|-------|-------|--------------------------|---|---|------------------------|------------|--------|
|       | Power indicated on rating plate                    |       |       | Nominal current (In) (1) | Factory setting for current (IcL) (1) (3) | Dissipated power at nominal current (4) | Dimensions (W x D x H) | Reference  | Weight |
|       | 230 V  | 400 V | 440 V | A                        | A   | W                                       | mm                     |            | kg     |
| 5.5   | 11   | 15    | 15    | 25                       | 17  | 39                                      | 130 x 169 x 265        | ATS 22D17Q | 7.000  |
| 11    | 22   | 22    | 22    | 48                       | 32  | 44                                      | 130 x 169 x 265        | ATS 22D32Q | 7.000  |
| 18.5  | 45   | 45    | 45    | 70                       | 47  | 48                                      | 130 x 169 x 265        | ATS 22D47Q | 7.000  |
| 22    | 55   | 55    | 55    | 93                       | 62  | 59                                      | 145 x 207 x 295        | ATS 22D62Q | 12.000 |
| 30    | 55   | 75    | 75    | 112                      | 75  | 63                                      | 145 x 207 x 295        | ATS 22D75Q | 12.000 |
| 37    | 75   | 75    | 75    | 132                      | 88  | 66                                      | 145 x 207 x 295        | ATS 22D88Q | 12.000 |
| 45    | 90   | 90    | 90    | 165                      | 110                                       | 73                                      | 150 x 229 x 356        | ATS 22C11Q | 18.000 |
| 55    | 110  | 110   | 110   | 210                      | 140                                       | 82                                      | 150 x 229 x 356        | ATS 22C14Q | 18.000 |
| 75    | 132  | 132   | 132   | 255                      | 170                                       | 91                                      | 150 x 229 x 356        | ATS 22C17Q | 18.000 |
| 90    | 160  | 160   | 160   | 315                      | 210                                       | 117                                     | 206 x 299 x 425        | ATS 22C21Q | 33.000 |
| 110   | 220  | 220   | 220   | 375                      | 250                                       | 129                                     | 206 x 299 x 425        | ATS 22C25Q | 33.000 |
| 132   | 250  | 250   | 250   | 480                      | 320                                       | 150                                     | 206 x 299 x 425        | ATS 22C32Q | 33.000 |
| 160   | 315  | 355   | 355   | 615                      | 410                                       | 177                                     | 206 x 299 x 425        | ATS 22C41Q | 33.000 |
| 220   | 355  | 400   | 400   | 720                      | 480                                       | 218                                     | 304 x 340 x 455        | ATS 22C48Q | 50.000 |
| 250   | 400  | 500   | 500   | 885                      | 590                                       | 251                                     | 304 x 340 x 455        | ATS 22C59Q | 50.000 |

(1) In refers to the maximum continuous current for class 10. IcL refers to the starter rating.  
 (2) The factory setting for the current equates to the nominal current of a standard 4-pole, 400 V, class 10 motor (standard application). It should be adjusted in line with the current indicated on the motor rating plate.  
 (3) The factory setting for the current should be adjusted in line with the current indicated on the motor rating plate.  
 (4) Includes the power dissipated by the fan

# Altistart 22

## soft start - soft stop units

Three-phase power supply voltage 208...600 V



ATS 22C21S6

### Connection to the motor's power supply line

Motor power given in kW in accordance with standard IEC/EN 60947-4-2. 220 V control power supply

| Motor                           |       |       |       | 230...600 V - 50/60 Hz soft start - soft stop unit |   |   |                        |             |        |
|---------------------------------|-------|-------|-------|--|---|---|------------------------|-------------|--------|
| Power indicated on rating plate |       |       |       | Nominal current (In) (1)                           | Factory setting for current (IcL) (1) (2) | Dissipated power at nominal current (3) | Dimensions (W x D x H) | Reference   | Weight |
| 230 V                           | 400 V | 440 V | 500 V | A  | A   | W                                       | mm                     |             | kg     |
| 4                               | 7.5   | 7.5   | 9     | 14   | 17  | 39                                      | 130 x 169 x 265        | ATS 22D17S6 | 7.000  |
| 7.5                             | 15    | 15    | 18.5  | 27   | 32  | 44                                      | 130 x 169 x 265        | ATS 22D32S6 | 7.000  |
| 11                              | 22    | 22    | 30    | 40   | 47  | 48                                      | 130 x 169 x 265        | ATS 22D47S6 | 7.000  |
| 15                              | 30    | 30    | 37    | 52   | 62  | 59                                      | 145 x 207 x 295        | ATS 22D62S6 | 12.000 |
| 18.5                            | 37    | 37    | 45    | 65   | 75  | 63                                      | 145 x 207 x 295        | ATS 22D75S6 | 12.000 |
| 22                              | 45    | 45    | 55    | 77   | 88  | 66                                      | 145 x 207 x 295        | ATS 22D88S6 | 12.000 |
| 30                              | 55    | 55    | 75    | 96   | 110                                       | 73                                      | 150 x 229 x 356        | ATS 22C11S6 | 18.000 |
| 37                              | 75    | 75    | 90    | 124  | 140                                       | 82                                      | 150 x 229 x 356        | ATS 22C14S6 | 18.000 |
| 45                              | 90    | 90    | 110   | 156  | 170                                       | 91                                      | 150 x 229 x 356        | ATS 22C17S6 | 18.000 |
| 55                              | 110   | 110   | 132   | 180  | 210                                       | 117                                     | 206 x 299 x 425        | ATS 22C21S6 | 33.000 |
| 75                              | 132   | 132   | 160   | 240  | 250                                       | 129                                     | 206 x 299 x 425        | ATS 22C25S6 | 33.000 |
| 90                              | 160   | 160   | 220   | 302  | 320                                       | 150                                     | 206 x 299 x 425        | ATS 22C32S6 | 33.000 |
| 110                             | 220   | 220   | 250   | 361  | 410                                       | 177                                     | 206 x 299 x 425        | ATS 22C41S6 | 33.000 |
| 132                             | 250   | 250   | 315   | 414  | 480                                       | 218                                     | 304 x 340 x 455        | ATS 22C48S6 | 50.000 |
| 160                             | 315   | 355   | 400   | 477  | 590                                       | 251                                     | 304 x 340 x 455        | ATS 22C59S6 | 50.000 |

Motor power given in HP. 110 V control power supply

| Motor                           |       |       |       | 208...600 V - 50/60 Hz soft start - soft stop unit |   |   |                        |              |        |
|---------------------------------|-------|-------|-------|--|---|---|------------------------|--------------|--------|
| Power indicated on rating plate |       |       |       | Nominal current (In) (1)                           | Factory setting for current (IcL) (1) (2) | Dissipated power at nominal current (3) | Dimensions (W x D x H) | Reference    | Weight |
| 208 V                           | 230 V | 460 V | 575 V | A  | A   | W                                       | mm                     |              | kg     |
| 3                               | 5     | 10    | 15    | 14   | 17  | 39                                      | 130 x 169 x 265        | ATS 22D17S6U | 7.000  |
| 7.5                             | 10    | 20    | 25    | 27   | 32  | 44                                      | 130 x 169 x 265        | ATS 22D32S6U | 7.000  |
| –                               | 15    | 30    | 40    | 40   | 47  | 48                                      | 130 x 169 x 265        | ATS 22D47S6U | 7.000  |
| 15                              | 20    | 40    | 50    | 52   | 62  | 59                                      | 145 x 207 x 295        | ATS 22D62S6U | 12.000 |
| 20                              | 25    | 50    | 60    | 65   | 75  | 63                                      | 145 x 207 x 295        | ATS 22D75S6U | 12.000 |
| 25                              | 30    | 60    | 75    | 77   | 88  | 66                                      | 145 x 207 x 295        | ATS 22D88S6U | 12.000 |
| 30                              | 40    | 75    | 100   | 96   | 110                                       | 73                                      | 150 x 229 x 356        | ATS 22C11S6U | 18.000 |
| 40                              | 50    | 100   | 125   | 124  | 140                                       | 82                                      | 150 x 229 x 356        | ATS 22C14S6U | 18.000 |
| 50                              | 60    | 125   | 150   | 156  | 170                                       | 91                                      | 150 x 229 x 356        | ATS 22C17S6U | 18.000 |
| 60                              | 75    | 150   | 200   | 180  | 210                                       | 117                                     | 206 x 299 x 425        | ATS 22C21S6U | 33.000 |
| 75                              | 100   | 200   | 250   | 240  | 250                                       | 129                                     | 206 x 299 x 425        | ATS 22C25S6U | 33.000 |
| 100                             | 125   | 250   | 300   | 302  | 320                                       | 150                                     | 206 x 299 x 425        | ATS 22C32S6U | 33.000 |
| 125                             | 150   | 300   | 350   | 361  | 410                                       | 177                                     | 206 x 299 x 425        | ATS 22C41S6U | 33.000 |
| 150                             | –     | 350   | 400   | 414  | 480                                       | 218                                     | 304 x 340 x 455        | ATS 22C48S6U | 50.000 |
| –                               | 200   | 400   | 500   | 477  | 590                                       | 251                                     | 304 x 340 x 455        | ATS 22C59S6U | 50.000 |

(1) In refers to the maximum continuous current for class 10. IcL refers to the starter rating.

(2) The factory setting for the current should be adjusted in line with the current indicated on the motor rating plate.

(3) Includes the power dissipated by the fan



ATS 22C48S6U

# Altistart 22

## soft start - soft stop units

Options: Dialogue and configuration tools,  
Modbus serial link



SoMove setup software

### SoMove setup software

#### Presentation

This software enables the user to configure, set, debug and organize maintenance tasks for the Altistart 22 soft start - soft stop unit. It can also be used to customize the integrated display terminal menus. It can be downloaded from our website, "www.schneider-electric.com".

#### References

| Description  | For soft start - soft stop units | Reference               | Weight kg |
|--|----------------------------------|-------------------------|-----------|
| <b>SoMove lite setup software</b>  | ATS 22                           | -                       | -         |
| <b>USB/RJ45 cordset</b><br>equipped with a USB connector and an RJ45 connector.<br>For connecting a PC to the Altistart 22 soft start - soft stop unit.<br>Length: 2.5 m | ATS 22                           | <b>TCSM CNAM 3M002P</b> | 0.115     |

### Remote display terminal

#### Presentation

This terminal enables the human machine interface of the Altistart 22 soft start - soft stop unit to be positioned remotely on the door of a floor-standing enclosure. It has IP 54/NEMA12 or IP 65 degree of protection depending on the model.

It is used to:

- Set and configure the soft start - soft stop unit remotely
- Display the status and faults of the soft start - soft stop unit remotely

Its maximum operating temperature is 50°C. Please refer to our website at "www.schneider-electric.com" if the temperature exceeds this.

#### Description

- 1 4-digit display
- 2 Selection/validation key **ENT**: opens a menu or validates the value chosen
- 3 Navigation keys ▲, ▼
- 4 Selection key **ESC**: used to exit a menu



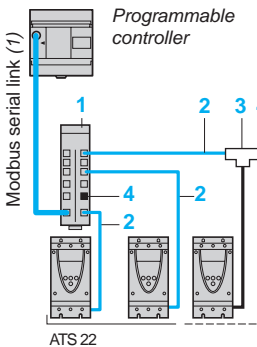
VW3 G22 101

#### References

| Description   | Degree of protection | Length | Dimensions    |    | Reference             | Weight |
|---|----------------------|--------|---------------|----|-----------------------|--------|
|   |                      |        | W x D x H     | mm |                       |        |
| <b>Remote display terminals</b>                             | IP 54/NEMA 12        | -      | 50 x 15 x 70  |    | <b>VW3 G22 101</b>    | 0.250  |
| A remote-mounting cordset is also required - VW3 A1 104 R●● | IP 65                | -      | 66 x 19 x 106 |    | <b>VW3 G22 102</b>    | 0.275  |
| <b>Remote-mounting cordsets</b>                             | -                    | 1      | -             |    | <b>VW3 A1 104 R10</b> | 0.050  |
| equipped with 2 RJ45 connectors                             | -                    | 3      | -             |    | <b>VW3 A1 104 R30</b> | 0.150  |

### Modbus serial link

#### Connection via splitter box and RJ45 connectors



Example of a connection using a Modbus serial link via a splitter box with RJ45 connectors

| Description  | Number                | Length m | Unit reference         | Weight kg |
|--|-----------------------|----------|------------------------|-----------|
| <b>Modbus splitter box</b><br>with 10 RJ45 connectors            | 1                     | -        | <b>LU9 GC3</b>         | 0.500     |
| <b>Cordsets for Modbus serial link</b><br>with 2 RJ45 connectors | 2                     | 0.3      | <b>VW3 A8 306 R03</b>  | 0.025     |
|  |                       | 1        | <b>VW3 A8 306 R10</b>  | 0.060     |
|  |                       | 3        | <b>VW3 A8 306 R30</b>  | 0.130     |
| <b>Modbus T-junction boxes</b><br>(with integrated cable)        | 3                     | 0.3      | <b>VW3 A8 306 TF03</b> | 0.190     |
|  |                       | 1        | <b>VW3 A8 306 TF10</b> | 0.210     |
| <b>Line terminators</b><br>(2) (3)                               | R = 120 Ω<br>C = 1 nf | 4        | <b>VW3 A8 306 RC</b>   | 0.010     |
|  | R = 120 Ω             | 4        | <b>VW3 A8 306 R</b>    | 0.010     |

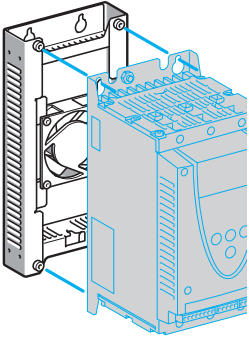
- (1) Cable depends on the type of controller or PLC  
 (2) Sold in lots of 2  
 (3) Depends on the bus architecture



# Altistart 22

## soft start - soft stop units

Options: Fans, accessories and documentation



VW3 G22 40●

### Fans

#### Presentation

The ATS 22C21Q...C59Q, ATS 22C21S6...C59S6 and ATS 22C21S6U...C59S6U soft start - soft stop units come with an integrated fan.

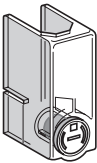
The ATS 22D17Q...C17Q, ATS 22D17S6...C17S6 and ATS 22D17S6U...C17S6U soft start - soft stop units are ventilated by means of natural convection.

For more demanding applications, such as those with a greater number of starts, the Altistart 22 range offers fans as an option. These are driven by the soft start - soft stop unit and attached to the back of the device.

The fan's noise level is less than 60 dBA.

#### References

| Description | Power supply voltage for control<br>V | For soft start - soft stop units          | Dimensions<br>W x D x H<br>mm | Reference    | Weight<br>kg |
|-------------|---------------------------------------|---|-------------------------------|--------------|--------------|
| Fans        | 220                                   | ATS 22D17Q...D47Q,<br>ATS 22D17S6...D47S6 | 130 x 40 x 265                | VW3 G22 400  | 1.200        |
|             |                                       | ATS 22D62Q...D88Q,<br>ATS 22D62S6...D88S6 | 145 x 40 x 295                | VW3 G22 401  | 1.400        |
|             |                                       | ATS 22C11Q...C17Q,<br>ATS 22C11S6...C17S6 | 150 x 40 x 350                | VW3 G22 402  | 1.600        |
|             | 110                                   | ATS 22D17S6U...D47S6U                     | 130 x 40 x 265                | VW3 G22 U400 | 1.200        |
|             |                                       | ATS 22D62S6U...D88S6U                     | 145 x 40 x 295                | VW3 G22 U401 | 1.400        |
|             |                                       | ATS 22C11S6U...C17S6U                     | 150 x 40 x 350                | VW3 G22 U402 | 1.600        |



LA9 F70●

### Protection shrouds for power terminals (to be used with eyelet connections)

The ATS 22C11Q...C59Q, ATS 22C11S6...C59S6 and ATS 22C11S6U...C59S6U soft start - soft stop units have 6 unprotected power terminals. These terminals can be fitted with protection shrouds.

| Description                                | For soft start - soft stop units                                    | Reference | Weight<br>kg |
|--|---|-----------|--------------|
| Set of 6 power terminal protection shrouds | ATS 22C11Q...C17Q,<br>ATS 22C11S6...C17S6,<br>ATS 22C11S6U...C17S6U | LA9 F702  | 0.250        |
|  | ATS 22C21Q...C59Q,<br>ATS 22C21S6...C59S6,<br>ATS 22C21S6U...C59S6U | LA9 F703  | 0.250        |

### Documentation

| Description   | Reference  | Weight<br>kg |
|---|------------|--------------|
| "Description of the Motion & Drives Offer" DVD ROM <sup>(1)</sup><br>It consists of:<br>■ Technical documentation (programming manuals, installation manuals, quick reference guides)<br>■ SoMove lite setup software<br>■ Brochures, catalogues.<br>The documentation relating to the ATS 22 offer is also available on our website, "www.schneider-electric.com". | VW3 A8 200 | 0.100        |

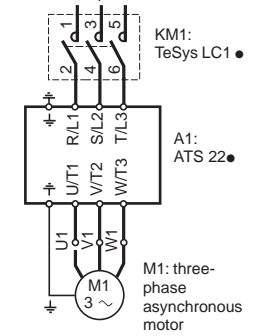
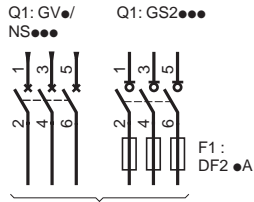
(1) Updated version including the Altistart 22 range available 1<sup>st</sup> quarter 2010.

# Altistart 22 soft start - soft stop units

Motor starters:

400...440 V three-phase power supply voltage

Type 1 coordination



Motor starter with protection by circuit breaker or switch disconnector

## Compatible components in accordance with standard IEC/EN 60947-4-2

Use the contactor and starter with either a circuit breaker or a fuse switch disconnector.

| Three-phase, 4-pole motor 50/60 Hz |       |           | Class 10 starter (1) | Circuit breaker      |                    | Contactor (3) | Fuse switch disconnector (for front and side control) | aM fuse      |         |     |
|------------------------------------|-------|-----------|----------------------|----------------------|--------------------|---------------|---|--------------|---------|-----|
| 400 V                              | 440 V | Reference |                      | Rating               | Unit reference (4) |               |   | Size         | Rating  |     |
| kW                                 | kW    |           | A                    |                      |                    | A             | mm  |              |         | A   |
| M1                                 | M1    | A1        | Q1                   | KM1                  | F1                 |               |   |              |         |     |
| 7.5                                | 7.5   | 14.8      | ATS 22D17●           | GV3 L20              | –                  | LC1 D18●●     | GS1 DD3   | DF2 CA16     | 10 x 38 | 16  |
|                                    |       |           |                      | NS80H6-MA            | 25                 |               |   |              |         |     |
| 15                                 | 15    | 28.5      | ATS 22D32●           | GV3 L32              | –                  | LC1 D32●●     | GS1 DD3   | DF2 CA32     | 10 x 38 | 32  |
|                                    |       |           |                      | NS80H6-MA            | 50                 |               |   |              |         |     |
| 22                                 | 22    | 42        | ATS 22D47●           | GV3 L50              | –                  | LC1 D50A●●    | GS2 F3  | DF2 EA50     | 14 x 51 | 50  |
|                                    |       |           |                      | NS80H6-MA            | 50                 |               |   |              |         |     |
| 30                                 | 30    | 57        | ATS 22D62●           | GV3 L65              | –                  | LC1 D65A●●    | GS2 J3  | DF2 FA63     | 22 x 58 | 63  |
|                                    |       |           |                      | NS80H6-MA            | 80                 |               |   |              |         |     |
| 37                                 | 37    | 69        | ATS 22D75●           | NS80H6-MA            | 80                 | LC1 D80●●     | GS2 J3  | DF2 FA80     | 22 x 58 | 80  |
| 45                                 | 45    | 81        | ATS 22D88●           | NSX100●MA            | 100                | LC1 D115●●    | GS2 J3  | DF2 FA100    | 22 x 58 | 100 |
|                                    |       |           |                      | (2)                  |                    |               |   |              |         |     |
| 55                                 | 55    | 100       | ATS 22C11●           | NSX160●MA            | 150                | LC1 D115●●    | GS2 K3  | DF2 FA125    | 22 x 58 | 125 |
|                                    |       |           |                      | (2)                  |                    |               |   |              |         |     |
| 75                                 | 75    | 131       | ATS 22C14●           | NSX160●MA            | 150                | LC1 D150●●    | GS2 L3  | DF2 GA1161 0 |         | 160 |
|                                    |       |           |                      | (2)                  |                    |               |   |              |         |     |
| 90                                 | 90    | 162       | ATS 22C17●           | NSX250●MA            | 220                | LC1 F185●●    | GS2 N3  | DF2 HA1201 1 |         | 200 |
|                                    |       |           |                      | (2)                  |                    |               |   |              |         |     |
| 110                                | 110   | 195       | ATS 22C21●           | NSX250●MA            | 220                | LC1 F225●●    | GS2 N3  | DF2 HA1251 1 |         | 250 |
|                                    |       |           |                      | (2)                  |                    |               |   |              |         |     |
| 132                                | 132   | 233       | ATS 22C25●           | NSX400●              | 320                | LC1 F265●●    | GS2 N3  | DF2 HA1251 1 |         | 250 |
|                                    |       |           |                      | Micrologic 1.3-M (2) |                    |               |   |              |         |     |
| 160                                | 160   | 285       | ATS 22C32●           | NSX400●              | 320                | LC1 F330●●    | GS2 QQ3   | DF2 JA1311 2 |         | 315 |
|                                    |       |           |                      | Micrologic 1.3-M (2) |                    |               |   |              |         |     |
| 220                                | 220   | 388       | ATS 22C41●           | NSX630●              | 500                | LC1 F400●●    | GS2 S3  | DF2 KA1401 3 |         | 400 |
|                                    |       |           |                      | Micrologic 1.3-M (2) |                    |               |   |              |         |     |
| 250                                | 250   | 437       | ATS 22C48●           | NSX630●              | 500                | LC1 F500●●    | GS2 S3  | DF2 KA1501 3 |         | 500 |
|                                    |       |           |                      | Micrologic 1.3-M(2)  |                    |               |   |              |         |     |
| 315                                | 355   | 560       | ATS 22C59●           | NS630b●              | 500                | LC1 F630●●    | GS2 S3  | DF2 KA1631 3 |         | 630 |
|                                    |       |           |                      | Micrologic 5.0 (2)   |                    |               |   |              |         |     |

(1) Replace ● with Q or S6 depending on the starter's voltage range.

To find more information on combinations for motor power supply voltages of 230 V (ATS 22●●●Q starters) or 500 V (ATS 22●●●S6 starters), please visit our website at "www.schneider-electric.com".

(2) Replace ● with F, N, H, S or L depending on the breaking capacity; see table below.

(3) Replace ●● with the control circuit voltage reference: please consult our "Motor starter solutions. Control and protection components" catalogue.

(4) DF2 CA, EA, FA: sold in lots of 10.

DF2 GA, HA, JA, KA: sold in lots of 3.

### Maximum prospective short-circuit current of the starter according to standard IEC/EN 60947-4-2

| Starter                  | Iq (kA) in 500 V |
|--------------------------|------------------|
| ATS 22D17●... ATS 22D75● | 25               |
| ATS 22D88●... ATS 22C59● | 50               |

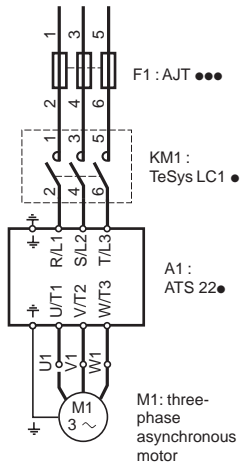
### Breaking capacity of circuit-breakers according to standard IEC/EN 60947-4-2

| Circuit-breaker | Icu (kA) in 400 V |    |    |     |     | Icu (kA) in 440 V |    |    |    |     |
|-----------------|-------------------|----|----|-----|-----|-------------------|----|----|----|-----|
|                 | F                 | N  | H  | S   | L   | F                 | N  | H  | S  | L   |
| GV3 L           | 50                |    |    |     |     | 50                |    |    |    |     |
| NS80H6-MA       | 70                |    |    |     |     | 65                |    |    |    |     |
| Circuit-breaker | Icu (kA) in 400 V |    |    |     |     | Icu (kA) in 440 V |    |    |    |     |
|                 | F                 | N  | H  | S   | L   | F                 | N  | H  | S  | L   |
| NSX100...NSX630 | 36                | 50 | 70 | 100 | 150 | 35                | 50 | 65 | 90 | 130 |
| NS630b          | –                 | 50 | 70 | –   | 150 | –                 | 50 | 65 | –  | 130 |

# Altistart 22 soft start - soft stop units

Motor starters:

208...575 V three-phase power supply voltage



Motor starter with protection by fuse

## Compatible components in accordance with standard UL 508

| Product without enclosure          |          |          |          |     |                  |  |               |  |                                  |  |
|------------------------------------|----------|----------|----------|-----|------------------|--|---------------|--|----------------------------------|--|
| Three-phase, 4-pole motor 50/60 Hz |          |          |          |     | Class 10 starter | Maximum short-circuit current (SCC) at 600 V | Contactor (1) |  | Time delay fuse (sold by Ferraz) |  |
| 208 V HP                           | 230 V HP | 460 V HP | 575 V HP | A   |                  |  |               |  | Class J                          |  |
| M1                                 | M1       | M1       | M1       |     | A1               |  | KM1           |  | F1                               |  |
| 3                                  | 5        | 10       | 15       | 14  | ATS 22D17S6U     | 5  | LC1 D18●●     |  | AJT 40                           |  |
| 7.5                                | 10       | 20       | 25       | 27  | ATS 22D32S6U     | 5  | LC1 D32●●     |  | AJT 70                           |  |
| –                                  | 15       | 30       | 40       | 40  | ATS 22D47S6U     | 5  | LC1 D50A●●    |  | AJT 100                          |  |
| 15                                 | 20       | 40       | 50       | 52  | ATS 22D62S6U     | 10   | LC1 D65A●●    |  | AJT 125                          |  |
| 20                                 | 25       | 50       | 60       | 65  | ATS 22D75S6U     | 10   | LC1 D80A●●    |  | AJT 175                          |  |
| 25                                 | 30       | 60       | 75       | 77  | ATS 22D88S6U     | 10   | LC1 D115●●    |  | AJT 200                          |  |
| 30                                 | 40       | 75       | 100      | 96  | ATS 22C11S6U     | 10   | LC1 D115●●    |  | AJT 250                          |  |
| 40                                 | 50       | 100      | 125      | 124 | ATS 22C14S6U     | 10   | LC1 D150●●    |  | AJT 300                          |  |
| 50                                 | 60       | 125      | 150      | 156 | ATS 22C17S6U     | 10   | LC1 F185●●    |  | AJT 400                          |  |
| 60                                 | 75       | 150      | 200      | 180 | ATS 22C21S6U     | 18   | LC1 F225●●    |  | AJT 500                          |  |
| 75                                 | 100      | 200      | 250      | 240 | ATS 22C25S6U     | 18   | LC1 F265●●    |  | AJT 600                          |  |
| 100                                | 125      | 250      | 300      | 302 | ATS 22C32S6U     | 18   | LC1 F330●●    |  | 2 x AJT 350                      |  |
| 125                                | 150      | 300      | 350      | 361 | ATS 22C41S6U     | 18   | LC1 F400●●    |  | 2 x AJT 400                      |  |
| 150                                | –        | 350      | 400      | 414 | ATS 22C48S6U     | 18   | LC1 F500●●    |  | 2 x AJT 500                      |  |
| –                                  | 200      | 400      | 500      | 477 | ATS 22C59S6U     | 30   | LC1 F630●●    |  | 2 x AJT 600                      |  |

| Enclosed product                   |          |          |          |     |                  |  |                                       |                 |               |  |                   |           |
|------------------------------------|----------|----------|----------|-----|------------------|--|---------------------------------------|-----------------|---------------|--|-------------------|-----------|
| Three-phase, 4-pole motor 50/60 Hz |          |          |          |     | Class 10 starter | Maximum short-circuit current (SCC) at 600 V | Minimum wall-mounted enclosure volume |                 | Contactor (1) |  | Time delay fuse   |           |
| 208 V HP                           | 230 V HP | 460 V HP | 575 V HP | A   |                  |  | kA                                    | cm <sup>3</sup> |               |  | inch <sup>3</sup> | Class J A |
| M1                                 | M1       | M1       | M1       |     | A1               |  |                                       |                 | KM1           |  | F1                |           |
| 3                                  | 5        | 10       | 15       | 14  | ATS 22D17S6U     | 100  | 40                                    | 2406            | LC1 D18●●     |  | 30                | –         |
| 7.5                                | 10       | 20       | 25       | 27  | ATS 22D32S6U     | 100  | 40                                    | 2406            | LC1 D32●●     |  | 60                | –         |
| –                                  | 15       | 30       | 40       | 40  | ATS 22D47S6U     | 100  | 40                                    | 2406            | LC1 D50A●●    |  | 90                | –         |
| 15                                 | 20       | 40       | 50       | 52  | ATS 22D62S6U     | 100  | 52                                    | 3149            | LC1 D65A●●    |  | 110               | –         |
| 20                                 | 25       | 50       | 60       | 65  | ATS 22D75S6U     | 100  | 52                                    | 3149            | LC1 D80A●●    |  | 150               | –         |
| 25                                 | 30       | 60       | 75       | 77  | ATS 22D88S6U     | 100  | 52                                    | 3149            | LC1 D115●●    |  | 175               | –         |
| 30                                 | 40       | 75       | 100      | 96  | ATS 22C11S6U     | 100  | 125                                   | 7630            | LC1 D115●●    |  | 200               | –         |
| 40                                 | 50       | 100      | 125      | 124 | ATS 22C14S6U     | 100  | 125                                   | 7630            | LC1 F150●●    |  | 250               | –         |
| 50                                 | 60       | 125      | 150      | 156 | ATS 22C17S6U     | 100  | 125                                   | 7630            | LC1 F185●●    |  | 300               | –         |
| 60                                 | 75       | 150      | 200      | 180 | ATS 22C21S6U     | 100  | 130                                   | 7892            | LC1 F225●●    |  | 400               | –         |
| 75                                 | 100      | 200      | 250      | 240 | ATS 22C25S6U     | 100  | 130                                   | 7892            | LC1 F265●●    |  | 450               | –         |
| 100                                | 125      | 250      | 300      | 302 | ATS 22C32S6U     | 100  | 130                                   | 7892            | LC1 F330●●    |  | 600               | –         |
| 125                                | 150      | 300      | 350      | 361 | ATS 22C41S6U     | 100  | 130                                   | 7892            | LC1 F400●●    |  | 600               | –         |
| 150                                | –        | 350      | 400      | 414 | ATS 22C48S6U     | 100  | 195                                   | 11,869          | LC1 F500●●    |  | –                 | 800       |
| –                                  | 200      | 400      | 500      | 477 | ATS 22C59S6U     | 100  | 195                                   | 11,869          | LC1 F630●●    |  | –                 | 800       |

(1) Replace ●● with the control circuit reference: please consult our "Motor starter solutions. Control and protection components" catalogue.

**Schneider Electric Industries SAS**

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