# Starting Torque Limiter (Soft Starter)

* Starting Torque Limiter
* Rated operational current: 15 Amp or 25 Amp AC-3. AC-53a, AC58a (10Hp or 15Hp 400-480V)
* Ramp Up adjustable from 0.5-5 sec
* Initial torque adjustable from 0-85%
* One unit for 3 or 1 Phase motors on 230 to 480 V mains 50 or 60 Hz
* LED status indication
* Meets IEC 947-4-2 requirements
* True Solid State for long life
* Unlimited number of start/stop operation pr. hour
* IP-20 Protection

## Product Description and Item Selection

Starting Torque Limiter designed for soft start of 3 Phase or 1 Phase motors.
Allows smoother starting of all AC induction motors thus decreasing shock and vibration problems encountered during the line starting. Ramp-up time / torque adjustable from 0.5 to 5 sec. / 0 to 85% of nominal start torque.

| Line Voltage | Item No. 15A | Motor Size 3 Phase | Motor Size 1 Phase |
|---|---|---|---|
| 208 V AC | STL 3 4015 | 0.1 - 4.0 kW / 5.5 HP | |
| 220 - 240 VAC | STL 3 4015 | 0.1 - 4.0 kW / 5.5 HP | 0.1 - 2.2 kW / 3.0 HP |
| 380 - 415 VAC | STL 3 4015 | 0.1 - 7.5 kW / 10 HP | |
| 440 - 480 VAC | STL 3 4015 | 0.1 - 7.5 kW / 10 HP | |
| 440 - 480 VAC | STL 3 6015 | | 0.1 - 4.0 kW / 5.0 HP |
| 550 - 600 VAC | STL 3 6015 | 0.1 - 10 kW / 15 HP | |
| **Line Voltage** | **Item No. 25A** | **Motor Size 3 Phase** | **Motor Size 1 Phase** |
| 208 V AC | STL 3 4025 | 0.1 - 5.5 kW / 7.5 HP | |
| 220 - 240 VAC | STL 3 4025 | 0.1 - 5.5 kW / 7.5 HP | 0.1 - 4.0 kW / 5.0 HP |
| 380 - 415 VAC | STL 3 4025 | 0.1 - 11 kW / 15 HP | |
| 440 - 480 VAC | STL 3 4025 | 0.1 - 11 kW / 15HP | |
| 380 - 415 VAC | STL 3 6025 | | 0.1 - 7.5 kW / 10 HP |
| 440 - 480 VAC | STL 3 6025 | | 0.1 - 7.5 kW / 10 HP |
| 550 - 600 VAC | STL 3 6025 | 0.1 - 18.5 kW / 25 HP | |

| Output Specifications | STL 15 A | STL 25 A |
|---|---|---|
| Operational current max. | 15A AC-53a, AC-3, | 25A AC-53a, AC-3 |
| Leakage current | 5 mA AC max. | 5 mA AC max. |
| Minimum operational current | 50 mA | 50 mA |
| Overload relay trip class | 10 or 10 A | 10 or 10 A |

## Time and Torque settings

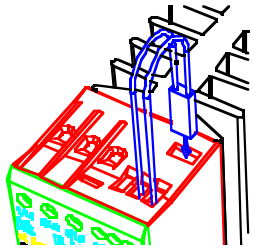
| | |
|---|---|
| Ramp-Up time Adjustable from 0.5 - 5 Sec. | Initial Torque Adjustable from 0 - 85 % of nominal. torque |

| Current Derating | Amb. Temperature | STL 3 - 25 A |
|---|---|---|
| **Current derating in high temperature applications**<br>Operation in ambient temperatures exceeding 40°C is possible if the power dissipation is limited either by reducing the steady-state current or by reducing the duty-cycle of the Soft Starter as shown in the table. | 50°C | 23.0 A continuous |
| | Limited duty-cycle rating by 50°C | 25 A: On time max.15min<br>Duty-cycle max. 0.8 |
| | 60°C | 15 A continuous |
| | Limited duty-cycle rating by 60°C | 25 A: On time max.15min<br>Duty-cycle max. 0.65 |

Specifications are subject to change without notice

# Starting Torque Limiter (Soft Starter)

## Thermal Overload Protection



Optional thermal overload protection is possible by inserting a thermostat in the slot on the right hand side of the Soft starter.
Type number UP62-100

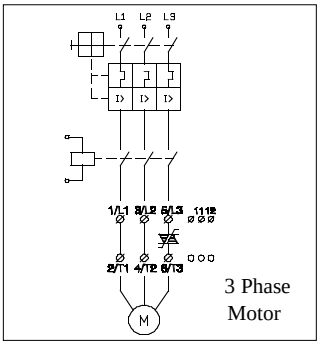
See application hints for further details page 22

## Thermal Specifications

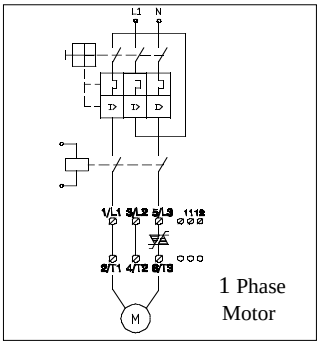
| | |
|---|---|
| Power dissipation for continuous operation PDmax. | 1 W/A |
| Power dissipation for intermittent operation PD | 1 W/ A x Dutycycle |
| Cooling method. | Natural convection |
| Mounting | Vertical +/-30$^{o}$ |
| Operating temperature range EN 947-4-2 | -5C$^{o}$ to 40$^{o}$C |
| Storage temperature EN 947-4-2 | -20C$^{o}$ to 80$^{o}$C |
| Max. operating temperature with current derating according to table | 60$^{o}$C |

## Wiring Diagram

**Three Phase or Single Phase Soft- Start**
When the contactor is switched ON the motor will soft-start according to the settings of the torque and time potentiometers. When the contactor is switched Off the motor will stop




3 Phase Motor




1 Phase Motor

Terminal 11 and 12 have no connection with the internal circuit. Can be used in conjunction with a thermal overload protection or for other wiring purposes. See application hints for further details page 22

## EMC

This component meets the requirements of the product standard EN60947-4-2 and is CE marked according to this standard. This product has been designed for class A equipment. Use of the product in domestic environments may cause radio interference, in which case the user may be required to employ additional mitigation methods.

## Insulation Specifications

| | |
|---|---|
| Rated insulation voltage | Ui 660 Volt |
| Rated impulse withstand voltage | Uimp. 4 kVolt |
| Installation category | III |

## Approvals

CAN/CSA-C22.2 / UL Std No. 508

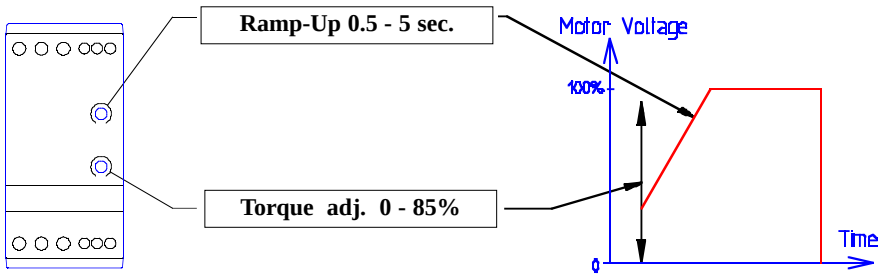
## Overload Protection

See page 22-23

## Environment

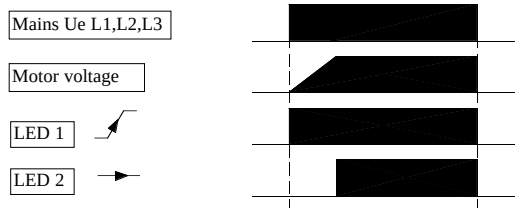
| | |
|---|---|
| Degree of protection / Pollution degree | IP 20 / 3 |

## How to adjust time and torque (See under adjustment hints page 18)




Control of the motor torque is achieved by acting on the motor voltage. The motor speed depends on the load on the motor shaft. A motor with little or no load will reach full speed before the voltage has reached its maximum value.

## Functional Diagram




## Cable Wiring Hints

See page 57

## Dimension and Mounting Instruction

See page 57

## Application Information

See page22-23

* UL:Use thermal overload protection as required by the National Electric Code. When protected by a non-time delay K5 or H Class fuse, rated 266% of motor FLA, this device is rated for use on a circuit capable of delive ring not more than 5,000 rms. symmetrical amperes, 600 V maximum.Maximum surro-unding temperature 40°C.