

AC Semiconductor Soft Starter



- * Rated operational voltage up to 600 V AC 50/60 Hz
- * AC Semiconductor Soft Starter (True Solid State)
- * Rated operational current: 15 A or 25 A
- AC-3. AC-53a, AC58a (10Hp or 15Hp 400-480V)
- * Ramp Up/Down time adjustable from 0.5-10 sec
- * Initial torque adjustable from 0-85%
- * Optional break-loose function (Kick-start)
- * Control voltage range from: 24 to 480 VAC/DC
- * LED status indication
- * Meets IEC 947-4-2 requirements
- * Unlimited number of start/stop operations pr. hour
- * IP-20 Protection



Product Description and Item Selection

Soft Starter designed to control acceleration and deceleration of 3 Phase motors. Ramp-up and ramp-down time adjustable from 0.5 to 10 sec. Torque is adjustable from 0 to 85% of nominal start torque, with or without break-loose (kick start) function.

Line Voltage	Control Voltage	Item No. (15 A)	Item No. (25A)
208 - 240 VAC	24 - 230 VAC/DC	SMC 3 DA 2315	SMC 3 DA 2325
400 - 480 VAC	24 - 480 VAC/DC	SMC 3 DA 4015	SMC 3 DA4025
550 - 600 VAC	24 - 480 VAC/DC	SMC 3 DA 6015	SMC 3 DA 6025
Ramp-Up time		Adjustable from 0.5 - 10 Sec.	
Ramp-Down time		Adjustable from 0.5 - 10 Sec.	
Initial Torque with optional Kick Start (200ms)		Adjustable from 0 - 85 % of nominal. torque	

Output Specifications

	SMC3 - 15 A	SMC3 - 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 current profile	X-Tx: 8 - 3	X-Tx: 8 - 3
Overload relay trip class	10 or 10 A	10 or 10 A
Motor size by 208 - 240 VAC	0.1 - 4.0 kW / 5.5 HP	0.1 - 7.5 kW / 10HP
Motor size by 400 - 480 VAC	0.1 - 7.5 kW / 10 HP	0.1 - 11 kW / 15 HP
Motor size by 550 - 600 VAC	0.1 - 7.5 kW / 10 HP	0.1 - 18.5 kW / 25 HP

Control specifications

Control voltage range	24 - 480 V AC/DC	Max. control current for no operation	1 mA
Pick-up voltage max.	20.4 V AC/DC	Response time max.	70 ms
Drop out voltage min..	5 V AC/DC	Control current/power max.	15 mA / 2 VA

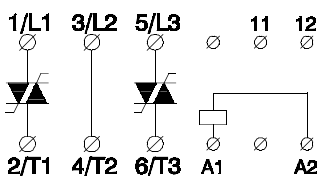
Current Derating

	Amb. Temperature	SMC3 - 15 A	SMC3 - 25 A
Current derating in high temperature applications 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	12,5 A continuous	20 A continuous
	Limited duty-cycle rating by 50°C	15 A:On time max.15min duty-cycle max. 0.8	25 A:On time max.15min duty-cycle max. 0.8
	60°C	10 A continuous	17 A continuous
	Limited duty-cycle rating by 60°C	15 A:On time max.15min duty-cycle max. 0.65	25 A:On time max.15min duty-cycle max. 0.65

Specifications are subject to change without notice

AC Semiconductor Soft Starter

Wiring Diagram

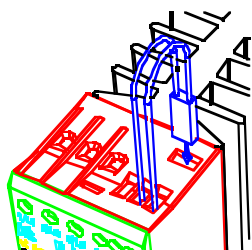


Terminal 11 and 12 have no connection with the internal circuit. Can be used in conjunction with a thermal overload protection or for other wiring purposes. See application hints for further details page 19

Thermal Specifications

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

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 19

Insulation Specifications

Rated insulation voltage	Ui 660 Volt
Rated impulse withstand voltage	Uimp. 4 kV
Installation category	III

EMC

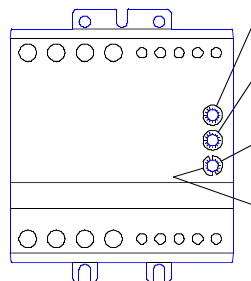
This component meets the requirements of the product standard EN60947-4-2 and is CE marked according to this standard.

* Approvals

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

How to adjust time and torque (See adjustment hints page 15)

NB: Make sure NOT to set the switches in between positions as this corrupts the time and torque adjustments. The Soft Starter will read time and torque settings in the off state. Repeated starts may trip the motor protection relay.

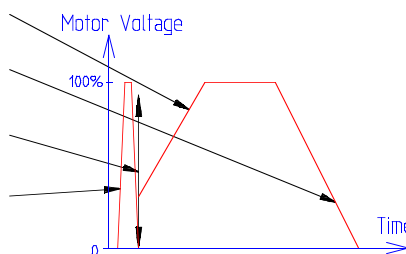


Ramp-Up 0.5 - 10 sec.

Ramp-Down 0.5 - 10 sec.

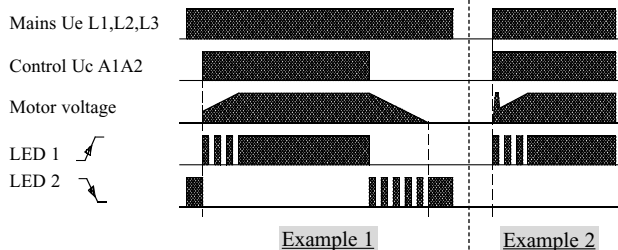
Torque adj. 0 - 85%

200 ms kick start with adj. torque 0 - 85%



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



Example 1

Soft Start with initial torque controlled from the input

Example 2

Soft Start with kickstart, initial torque, Soft Stop controlled from the mains input

Cable Wiring Hints

See page 57

Dimension and Mounting Instruction

See page 57

Overload Protection

See page 18-19

Environment

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

Application Hints

See page 18-19

* 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 deliver ring not more than 5,000 rms. symmetrical amperes, 600 V maximum. Maximum surrounding temperature 40°C.

* 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.