

Soft starter for 3-phase motors with integrated by-pass



Rated operational voltage 200...480VAC
 Rated operational current: 100A (rms)
 (up to 173A inside delta)
 Frequency: 50/60Hz
 Phase sequence protection
 Integrated by-pass
 Relay for operating signal
 Soft start / soft stop
 Kickstart / starting torque
 Status via LED and signal relay
 Fault, via LED and signal relay
 Power supply monitoring
 Motor connection detection
 Inside delta proper connection
 By-pass control

Selection and technical specifications:

Product type	Rated operational voltage Ue	EAN Nr.	Rated operational current Ie	Control voltage Uc
SMC 33 DA 48100BPI	200...480VAC	5705609003166	100A AC 58b	230VAC

Product description:

The soft starter is 3-phase controlled with integrated by-pass relays which give a compact solution and reduce the wiring.

The soft starter is dimensioned to handle many starts per hour.

The soft starter is used for start-up of 3-phase motors in applications such as pumps, compressors, conveyor belts, escalators, centrifugal fans, crushers, mixers, mills and stirrers etc.

Protection:

The soft starter can be used with motor protection, which protects the engine against overload. Motor protection type 10A and type 10 is recommended. At very high load during soft start and soft stop, type 20 is used.

The soft starter to be short-circuit protected by circuit breakers or fuses. It is recommended to use the circuit breaker or fuse that has a lower I²t value than the soft-starter's. National regulations must be observed. See general technical information about the installation of soft starter.

Technical specifications:

Voltage specifications:

Rated operational voltage U_e	:	3 x 200...480VAC +10/- 15%
Current I_e (In line)	:	3 x 100A/phase (by-pass relay 120A) (rms)
Current I_e (Inside delta)	:	3 x 173A/phase (by-pass relay 120A) (rms)
Rated AC frequency	:	50/60Hz +/- 2 Hz
By-pass	:	With internal by-pass 3 relay
Categori	:	AC - 53b

Control voltage specifications: (L - N)

Control voltage U_c	:	230 Vac +/-15% (min. 185 Vac)
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Control signal:

Start/stop (A1 - A2)	:	230 Vac +/-15%
Signal output 2 relay	:	Max 3A @ 12...230 Vac/Vdc (signal relay)
	:	min. 20mA @ 12V

Adjustable settings:

Ramp up	:	16 step	0,5...30 sec.
Ramp down	:	16 step	0,5...60 sec.
Initial torque / kick start	:	8+8 step	200mS / 0...85%
Switch for inline / inside delta / L1/L2/L3:	:	4 step	(2 in line / 2 inside delta)

General specifications:

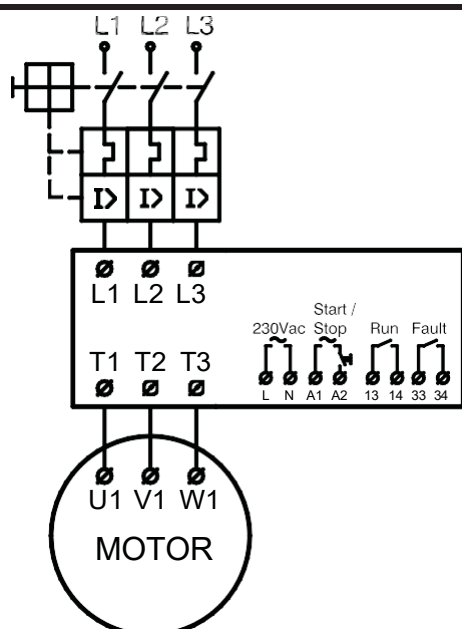
Initial torque	:	0 ... 85%
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Motor current nominal	100A	:	100A
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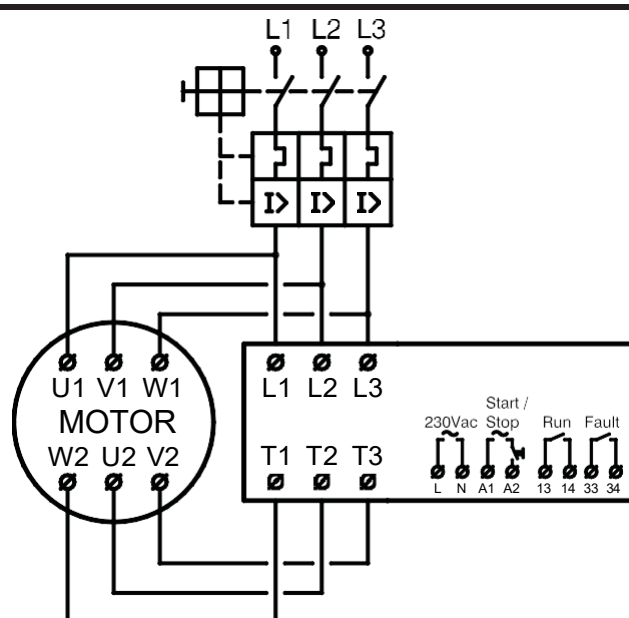
Semiconductor data:

Product type	Rated operational current	I^2t	Short circuit protection
SMC 33 DA 48100BPi	100A	60000 A ² s	250A max.: gl/gG

In line



Inside delta



SMC 33 DA 48100BPi

Environmental conditions:

Degree of protection : IP 20
 Storage temperature : -200 to 800C
 Operating temperature Large : -100C ... 400C
 Pollution degree 3

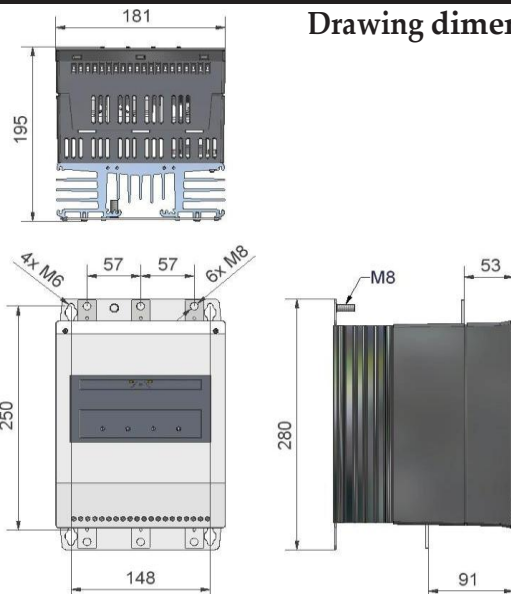
Features:

Soft starter with microprocessor control.
 Line frequency detection.
 Setting rotary switches, ramp up, ramp down, kick start and / or starting torque increase.
 Fault, indication LED and signal relay.
 Internal by-pass.
 Power supply monitoring
 Motor connection detection

Operation in ambient temperatures exceeding 40°C is possible if the power dissipation is limited either by reducing the steady-state current.

	400C	500C	600C
	100%	80%	70%
	Load duty-cycle	Load duty-cycle	Load duty-cycle

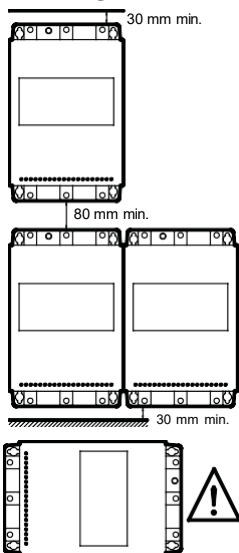
Drawing dimension



Housing material:

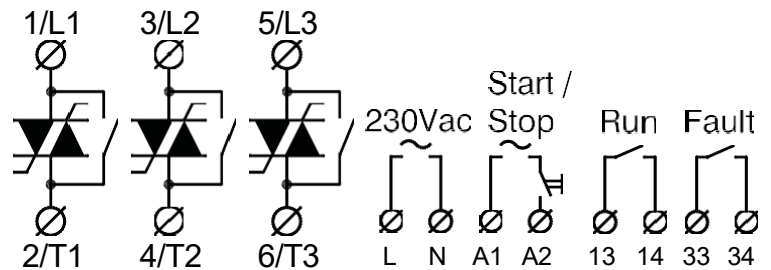
Self-extinguishing PPO UL94V1 halogen free
 Color: black / gray

Mounting instructions



If the unit is mounted horizontally the current must be derated by 50%
 Keep heatsink clean. Airflow must not be blocked

Connections



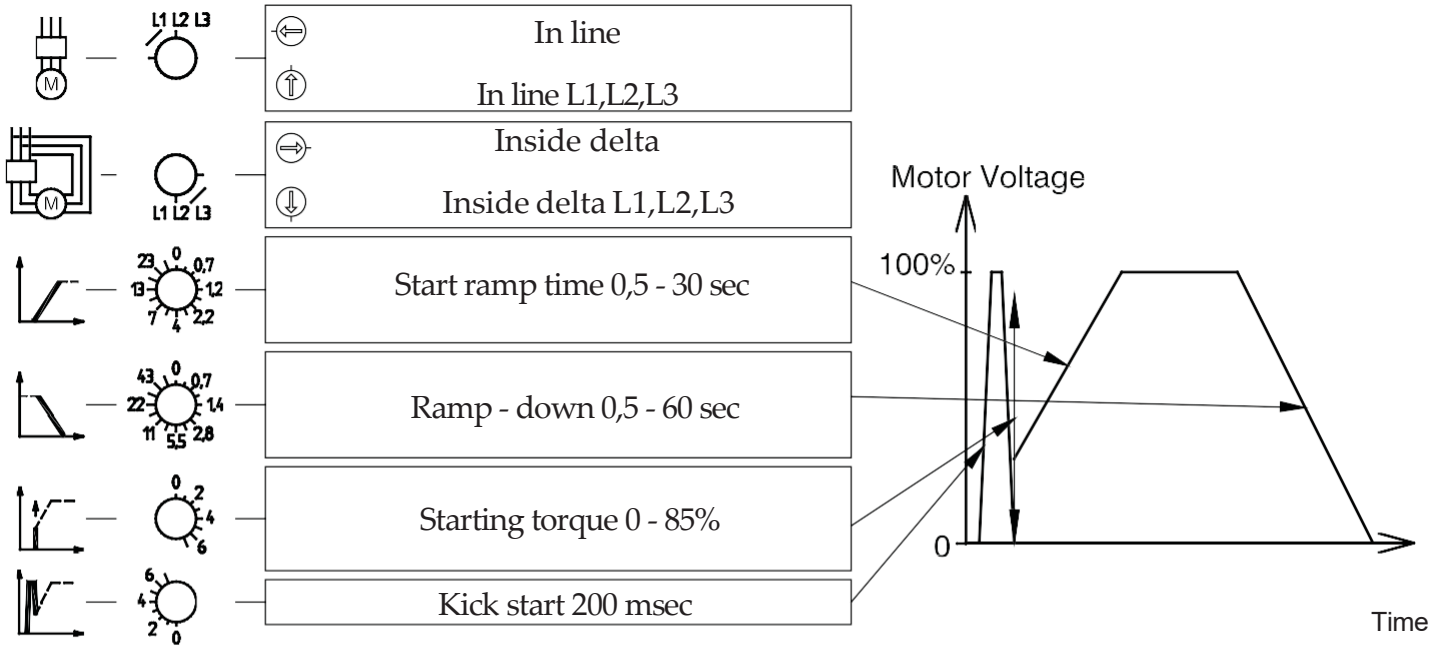
Output load specification:

Overload current profile AC-53b
 X-Tx: 6-6:30 (100A)

Connection:

L1; L2; L3: Line voltage
 T1; T2; T3: Motor mounting
 L - N : Control voltage 230VAC
 A1 - A2: Start / Stop 230VAC
 13-14: Signal relay status
 33-34: Fault signal relay

Setting



Functional operating

Control voltage Uc A1A2

Line voltage Ue L1,L2,L3

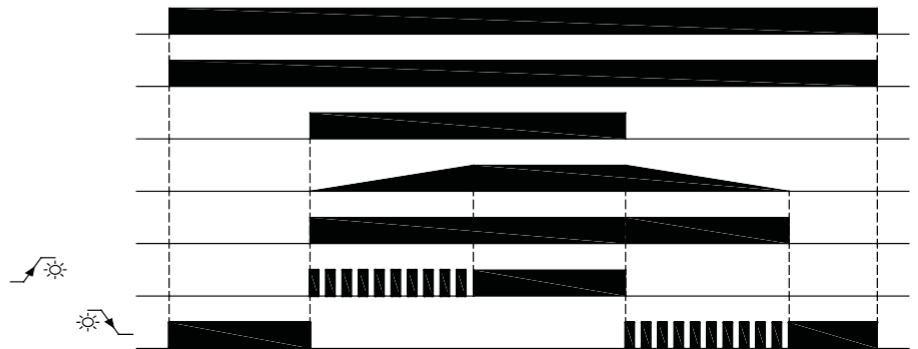
Control voltage A1 - A2

Motor voltage T1,T2,T3

13 - 14

LED 1

LED 2



Functional failure

33-34 Fejl - failure - Fehler

LED 1 + 2 Net fejl, frekvens - Net errors Frequency - Net Fehlerrate
Net fejl, forkert fasefølge - Net errors, incorrect phase sequence - Net Fehler, falsche Phasenfolge
Net fejl, fase mangler - Net errors, phase missing - Net-Fehler, fehlende Phase
Motorforbindelse mangler - Motor connection missing - Motoranschluss fehlt (5 Hz)

LED 1 + 2 Kontrolspænding fejl - control voltage failure - Steuerspannung Fehler (2,5 Hz)
Intern fejl - Internal error - Interner Fehler (2,5 Hz)



Internal error:

: Manual reset (remove supply voltage shortly)

Setting:

Mode : Normal / Inside Delta with/without phase proper connection

Ramp up : 0 ... 30S. 16 steps (step 0 short ramp up before by-pass)

Ramp down : 0 ... 60S. 16 steps (step 0 no soft stop)

Torque / kickstart : 0 ... 7 increased starting torque / 8 ... 15 kickstart + increased starting torque
Starting torque 0...85%
0 no increase in starting torque / 8 kickstart without increasing the starting torque