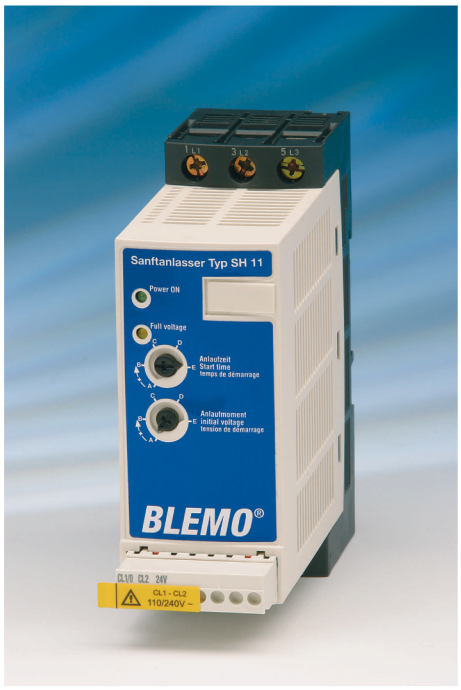
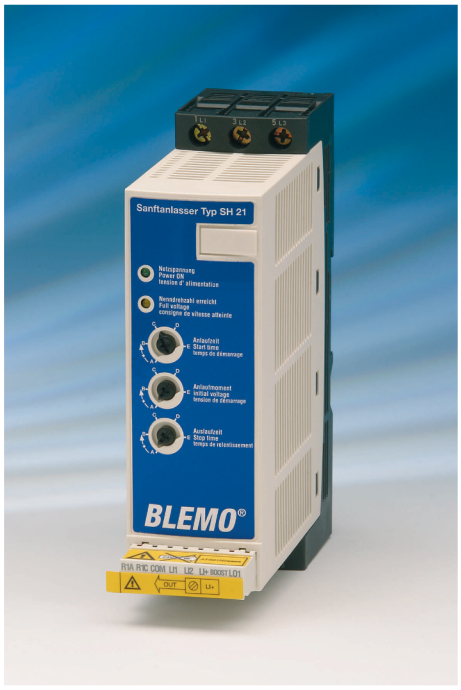
BLEMO®
Softstarter

The universal *BLEMO®* softstarter range of devices from 0.75 kW to 15 kW





Standard features
- operating status display with 2 LEDs
- boost bit at SH21
- logic output for “Run-up” signaling
- no neutral conductor (Mp/N) required
- simple installation, also retrofitting
- smooth start-up and run-down of all machines
- available for mains from 110 to 480 V
- suitable for all winding circuits
- suitable for √3 circuit
- top hat rail mounting
- control voltage only required for SH11

Type SH11/SH21
Electronic softstarter with 3 to 85 A rated current for asynchronous motors.
Voltage ranges:
110 … 480 <V, 1~ and 3~
Power ranges:
0.75 … 15 kW

The softstarters of the SH11/21 series ensure jolt-free starting (SH11) or start-up and run-down (SH21) of asynchronous motors. This avoids torque surges caused by the otherwise abrupt starting torque, current peaks during switch-on and voltage dips in the mains and reduces wear on the mechanical drive elements. The softstarters of the SH11 series for progressive start-up are used with single-phase and three-phase motors when smooth starting is required.
The SH21 series of softstarters for progressive acceleration and deceleration are used for controlling the starting torque, reducing the starting current and for controlled deceleration for single and three-phase motors. The softstarters are designed for a voltage range of 110 to 480 V and are therefore universally applicable.

Operating principle
In contrast to electromechanical starters, the electronic starters of the SH11/SH21 series allow the starting torque and starting time to be adjusted. The softstarters are particularly suitable for conveyor belts, automatic doors, drag lifts, small gantry cranes, fans, pumps, refrigeration compressors, compressors and machines with high inertia moment and all machines with belt drive.

Functional description
In the softstarters of the SH11 series, the current is controlled in one phase, in SH21 in two phases, time-dependently by an increasing voltage ramp.
The starting torque can be adjusted with a potentiometer.
A second potentiometer is used to adjust the ramp-up time according to requirements.
In the SH21 units, the deceleration time can be adjusted via a third potentiometer. SH21 devices also have a relay output which indicates the status of the softstarter.
After the start-up, a built-in bypass relay bridges the electronics and the motor runs directly on the mains.

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Device overview SH11/SH21

Type	Nominal operating current	3 x 400 V/ √3-circuit	Rated motor power (50/60 Hz) at				Sizes WxHxT	Mass
			1x230V	1x110V	3x230V	3x460V		
	A	kW	kW	hp	kW	hp	mm	kg
SH11-1.1/42	3	1.1/-	0.37	0.22	-	1.5	22.5 x 100 x 100.4	0.16
SH11-3.0/42	6	3.0/-	0.75	0.45	-	3.0	22.5 x 100 x 100.4	0.16
SH11-4.0/42	9	4.0/-	1.1	0.67	-	5.0	45 x 125 x 130.7	0.28
SH11-5.5/42	12	5.5/-	2.2	0.90	-	7.5	45 x 125 x 130.7	0.28
SH11-11.0/42	22	11.0/-	3.0	1.65	-	11.0	45 x 125 x 130.7	0.36
SH21-/3.0/22	6	-	0.75	-	1.1	-	45 x 125 x 130.7	0.42
SH21-/4.0/22	9	-	1.1	-	1.5	-	45 x 125 x 130.7	0.42
SH21-/5.5/22	12	-	2.2	-	3.0	-	45 x 125 x 130.7	0.42
SH21-/11.0/22	22	-	4.0	-	5.5	-	45 x 154 x 130.7	0.56
SH21-/15.0/22	32	-	5.5	-	7.5	-	45 x 154 x 130.7	0.56
SH21-3.0/4	6	3.0/4.0	-	-	-	-	45 x 125 x 130.7	0.42
SH21-4.0/4	9	4.0/5.5	-	-	-	-	45 x 125 x 130.7	0.42
SH21-5.5/4	12	5.5/11.0	-	-	-	-	45 x 125 x 130.7	0.42
SH21-11.0/4	22	11.0/18.5	-	-	-	-	45 x 154 x 130.7	0.56
SH21-15.0/4	32	15.0/22.0	-	-	-	-	45 x 154 x 130.7	0.56
SH21-3.0/46	6	-	-	-	-	4.0	45 x 125 x 130.7	0.42
SH21-4.0/46	9	-	-	-	-	5.5	45 x 125 x 130.7	0.42
SH21-5.5/46	12	-	-	-	-	7.5	45 x 125 x 130.7	0.42
SH21-11.0/46	22	-	-	-	-	15.0	45 x 154 x 130.7	0.56
SH21-15.0/46	32	-	-	-	-	20.0	45 x 154 x 130.7	0.56

Device types in bold print: Preferred type, available from stock. Subject to prior sale.

Technical Data

Mains connection

Mains voltage range (tolerance range -15/+10%):
SH11-…/42: 110 …480 V
SH21-…/22: 200 …350 V
SH21-…/46: 440 …480 V
SH21-…/4: 380 …415 V
Frequency: 50/60 Hz (tolreance range -5/+5%)
Control voltage range tolerance range -10/+10%):
SH11-…/42: 110…240 VAC and 24 VCD

Setting range

Breakaway torque during acceleration:
adjustable to 0.3 to 0.8 times the breakaway torque of the motor with direct starting
Run-up time:
for SH11-…/42: adjustable from 1 to 5 s
for SH21-…/22, SH21-…/46, SH21-…/4: adjustable from 1 to 10 s
Deceleration time (only for SH21 devices):
for SH21-…/22, SH21-…/46, SH21-…/4: adjustable from 1 to 10 s

Control connections for SH21-…/4/22/46 devices

LI+: **Supply for the inputs LI1, LI2 and Boost, +24 VDC, max. 10 mA**
COM: **Mass, 0 V potential**
LI1: **Stop input**
LI2: **Start input**
LO1: **Logic output for “Run-up” signaling**
BOOST: **Voltage boost 200 ms**
R1A and R1C: **Relay contacts**
With contact NO (contact open in case of fault
Max. switching capacity with inductive load:
2A at 250 VAD or 30 VDC
Max. operating voltage 440 VAC

Ambient conditions

Ambient temperature:
0 to 40°C without restriction
max. 50°C with reduction of rated current by 2% per °C above 40°C
Storage temperature: -25°C to +70°C
Relative humidity: <95%, no condensation
Installation altitude: 1000m above sea level, above 1000 m the output must be reduced by 2.2% per 100 m
Protection class: IP20
Conformity with standards / approvals:
IEC/EN 60947-4-2 / UL and CSA, CE

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