

# BLEMO®

## Softstarter

### High End – Low cost

The powerful **BLEMO®** softstarter – a torque-controlled device series from 4.0 to 400 kW



### Standard features

- 7-segment display
- operating status display with 4 LEDs
- serial Modbus interface via RJ45
- torque control
- current limitation
- integrated bypass contractor
- two programmable relay outputs
- circuit boards with protective lacquer coating
- simple installation, also retrofitting
- smooth start-up and run-down of all machines
- RoHS compliant
- suitable for  $\sqrt{3}$  circuit
- two PTC inputs

### Type SH31

Electronic softstarter with 17 to 590 A rated current for three-phase squirrel-cage motors  
230 to 440 V, 3~: 4.0 to 315 kW  
208 to 600 V, 3~: 4.0 to 400 kW

### Application areas

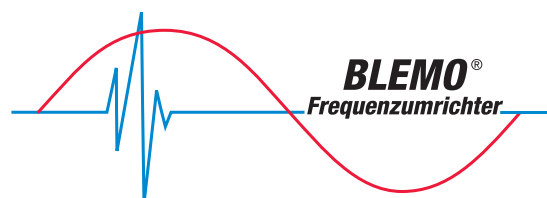
The softstarters are particularly suitable for all conveyor belts, automatic doors, drag lifts, small gantry cranes, fans, pumps, screw conveyors, agitators, mixers, compressors, compressors and machines with a high moment of inertia and all machines with belt drive.

### Universal application

The softstarters of the SH31 series are aligned to the respective motor and mains data and are universally preset. Due to this presetting, the devices can be used immediately in the majority of applications without additional adjustment.

### Advantages for the user

The SH31 softstarter is an economical solution for the user. It reduces installation costs thanks to the integrated bypass contractor, less cabling and space saving in the control cabinet. It protects the power networks by reducing the current peaks and voltage drops in the network caused by motor start-up. Furthermore, the operating costs of machines are reduced by lowering the mechanical load.



## Device overview SH31

Type	Standard operation 1)			Type	Rated motor power at 500 V kW	Rated device current I <sub>SH31</sub> A	Sizes W x B x T mm	Mass kg
	Rated motor power at 400 V kW	Rated motor power at 400 V in $\sqrt{3}$ circuit kW	Rated motor power at 230 V kW					
	SH31-7.5/4	7.5	11					
SH31-15.0/4	15	22	7.5	SH31-15.0/6	18.5	32	265 x 130 x 169	7
SH31-22.0/4	22	45	11	SH31-22.0/6	30	47	265 x 130 x 169	7
SH31-30.0/4	30	55	15	SH31-30.0/6	37	62	295 x 145 x 207	12
SH31-37.0/4	37	55	18.5	SH31-37.0/6	45	75	295 x 145 x 207	12
SH31-45.0/4	45	75	22	SH31-45.0/6	55	88	295 x 145 x 207	12
SH31-55.0/4	55	90	30	SH31-55.0/6	75	110	356 x 150 x 229	18
SH31-75.0/4	75	110	37	SH31-75.0/6	90	140	356 x 150 x 229	18
SH31-90.0/4	90	132	45	SH31-90.0/6	110	170	356 x 150 x 229	18
SH31-110/4	110	160	55	SH31-110/6	132	210	425 x 206 x 299	33
SH31-132/4	132	220	75	SH31-132/6	160	250	425 x 206 x 299	33
SH31-160/4	160	250	90	SH31-160/6	200	320	425 x 206 x 299	33
SH31-200/4	200	315	110	SH31-200/6	250	410	425 x 206 x 299	33
SH31-250/4	250	355	132	SH31-250/6	315	480	455 x 304 x 340	50
SH31-315/4	315	400	160	SH31-315/6	400	590	455 x 304 x 340	50

1) For heavy starting operating mode, the softstarter rated power must be increased by one standard power level.

## Technical Data

### Network connection

#### Rated voltage ranges:

SH31-.../4: 3~ 230 ... 440 V (tolerance -15/+10%)

SH31-.../6: 3~ 208 ... 600 V (tolerance -15/+10%)

#### Supply voltage of the control section:

SH31-.../4/6: 3~ 220 ... 230 V (tolerance -15/+10%)

SH31-.../6 in special version: 3~ 110 ... 115 V (tolerance -15/+10%)

### Control ports

#### Auxiliary voltage:

+24 VDC +/- 6 VDC, max. 42 mA for digital inputs and logic inputs

#### 3 programmable digital inputs:

+24 VDC, impedance 4.3 k $\Omega$

#### 2 PTC inputs:

Input for PTC thermistor temperature sensor. Max total resistance of the sensor circuit 750  $\Omega$  at 25°C

#### RJ45:

Socket for operator terminal and communication bus; serial RS485 modbus protocol

#### 2 programmable, potential-free relay outputs:

max. switching voltage: 250 VAC at 5 A, resistive load  
min. switching capacity: 100 m at 12 VDC

### Ambient conditions

#### Ambient temperature:

-10°C to +40°C without power reduction  
up to max. +60°C with reduction of current by 2.2% per °C above 40°C

**Storage temperature:** -25°C to +70°C

**Relative humidity:** <95%, no condensation or dripping water, according to IEC60068-2-3

**Installation altitude:** max. 1000 m above sea level, above 1000 m the current must be reduced by 2% per 100 m, max 2000 m

**Mounting position:** vertical at  $\pm$  15%

#### Protection class:

SH31-7.5/4.6 to SH31-55.0/4/6: IP20 (IP10 without terminal cover)

SH31-75/4/6 to SH31-315/4/6: IP00

**Max pollution degree:** Grade 2, according to IEC60664-1

### Protective functions

- integrated thermal protection for motor protection
- thermal protection of softstarter
- underload and overcurrent protection during start-up and for continuous operation
- phase failure monitoring
- monitoring the PTC thermistors
- monitoring of the run-up time and number of starts
- automatic restart and monitoring of the waiting time
- phase sequence detection and phase failure monitoring
- detection of phase unbalance and earth fault currents

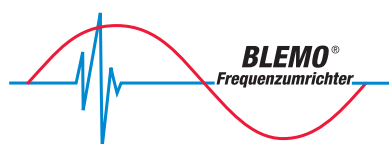
### Conformity with standards

CE marked in accordance with EN/IEC 60947-4-2

**Conducted and radiated interference emissions:** according to EN/IEC 60947-4-2, Class A for all SH31

### Approvals

CE, uL, CSA, C-Tick, GOST, CCC



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**Frequency converter**

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