SSW07

Soft-Starter

Technical Catalogue
AUSTRALIA

SSW-07

The SSW-07, with DSP (Digital Signal Processor) control was designed for high performance motor soft start and protection with an excellent cost-benefit ratio. Easy to set up, it simplifies start-up activities and daily operation.
The SSW-07 is compact, optimizing space in electric panels.
Incorporating electric motor protection. It adapts to customer needs through its easy-to-install optional accessories.
A keypad, communication interface or a motor PTC input can be added to the product as accessories.

Benefits

- Reduction of mechanical stresses applied to the coupling and transmission devices (gearboxes, pulleys, gears, conveyors, etc) during the start;
- Increase in motor and machine mechanical equipment lifetime due to the reduction of mechanical stress;
- Easy operation, setup and maintenance;
- Simple electrical installation;
- Operation in environments up to 55°C (without current reduction for all models);
- Integral electronic motor protection;
- "Kick-Start" function for starting high breakaway torque loads;
- Reduction of "Water Hammer" in pump applications;
- Limitation of voltage drop during start;
- Universal voltage (220 to 575 Vac);
- Switched mode power supply with EMC filter for the control electronics (110 to 240 Vac);
- Built-in by-pass providing size reduction and energy saving;
- Voltage monitoring of the electronics allows to back-up I x t values (thermal image).

Applications

CHEMICAL AND PETROCHEMICAL
- Fans / Exhaust fans
- Centrifugal Pumps
- Dosing / Process Pumps
- Stirrers / Mixers
- Compressors
- Soap Extruders

SUGAR AND ALCOHOL
- Fans / Exhaust fans
- Process Pumps
- Conveyors

FOOD
- Dosing/Process Pumps
- Fan / Exhaust fans
- Stirrers / Mixers
- Driers / Continuous Ovens
- Pelletizers
- Conveyors / Monorails

CERAMICS
- Fans / Exhaust fans
- Driers / Continuous Ovens
- Balls / Hammer Mills
- Roller Tables
- Conveyors

WOOD
- Polishing Machines
- Cutters
- Wood Chippers
- Saws and Plains

PLASTIC AND RUBBER
- Extruders
- Injectors / Blowers
- Mixers
- Rollers / Pullers
- Granulators

BEVERAGES
- Stirrers / Mixers
- Roller Tables
- Conveyors
- Bottling Lines

TEXTILE
- Stirrers / Mixers
- Driers / Washing Machines

GLASS
- Fans / Exhaust fans
- Bottle Manufacturing Machine
- Roller Tables
- Conveyors

SANITATION
- Centrifugal Pumps
- Suppression Systems

STEEL PLANTS
- Fans / Exhaust fans
- Conveyors
- Drills / Grinders
- Wire Drawing
- Pumps

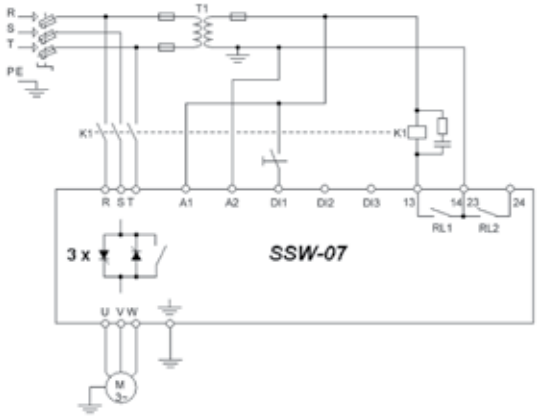
PULP AND PAPER
- Dosing Pumps
- Process Pumps
- Fans / Exhaust fans
- Stirrers / Mixers
- Rotating Filters
- Rotating Ovens
- Wood Chip
- Conveyors
- Roller Table
- Coaters
- Paper Refineries

CEMENT AND MINING
- Dosing/Process Pumps
- Pumps
- Sifters / Vibrating Tables
- Dynamic Separators
- Dosers

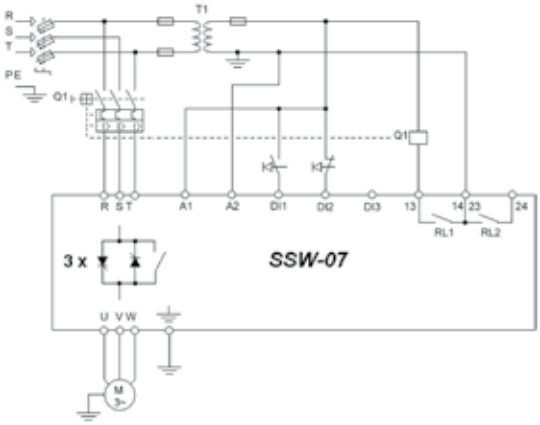
REFRIGERATION
- Process Pumps
- Fans / Exhaust fans
- Air Conditioning Systems
- Screw/Piston Compressors

LOAD TRANSPORTATION
- Conveyors / Belts / Chains
- Roller Tables
- Monorails
- Escalators
- Baggage Conveyors (Airports)

SSW-07
Typical Starter Connection Diagrams



2-wire start control



3-wire start control

Applications

Connections, settings and indication

Three Phase Power Supply input

Setting trimpots

DIP Switch for soft starter adjustment and protection enabling

DIP Switch for motor thermal Class setting

SSW-07 status indication LEDs

Reset button

Expansion slot for optional Plug-ins

Electronic power supply (A1 and A2)

Relay output (13,14 / 23,24)

Motor output

Motor start / stop and Reset digital inputs

Accessories and Options

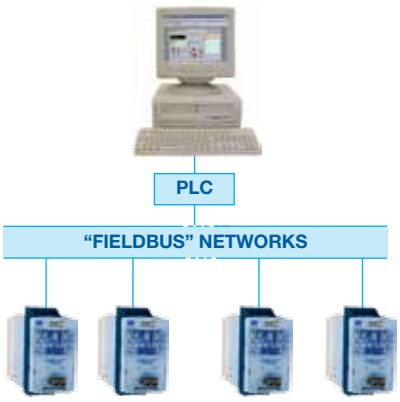
The SSW-07 soft-starters can be connected to fieldbus communication network through the most common protocols:

FIELDBUS →
- PROFIBUS DP
- DeviceNet
- Modbus RTU RS-232

Mainly intended to integrate large plants with industrial automation, the communication networks offer many advantages in the supervision, monitoring and on-line control of the soft-starters, providing high performance and great operational flexibility.

To be integrated in communication network as PROFIBUS DP or Device Net, the SSW-07 soft-starters offers plug-in accessories to install according to the desired protocol. For the Modbus RTU protocol, the connection can be done via RS-232 or RS-485 optional interfaces.

In addition to the protection monitoring advantages and motor control, it is also possible to control the digital soft-starter inputs and outputs from the PLC or master control.



SSW-07 - Human Machine Interface (HMI)

Operation interface with LED display (7 segments), which allows excellent long distance visibility. The HMI has a copy function incorporated, which allows copying of parameter from one soft-starter to others, allowing fast reliable setting of identical starters.

Local
Plug-in type HMI.

Remote
Remote HMI for mounting on panel door or machinery console.

SSW-07 local HMI

SSW-07 remote HMI
Cable for connecting HMI to SSW-07.
Cable length: 10m.

Superdrive G2

Software in Windows platform for SSW-07 parameter setting, control and monitoring.

- Automatically identifies the SSW-07
- Reads SSW-07 parameters.
- Writes parameters in SSW-07.
- Edits parameters online in SSW-07
- Edits parameters offline in PC.
- Enables creation of application documentation.
- Easily accessible.
- Enables parameter setting, control and monitoring of the SSW-07.
- Supplied with a 3m RS-232 serial cable on the Superdrive G2 software purchase.
- Free version available at WEG's website www.weg.net

SSW-07 - Accessories and Options

Modbus RTU – RS – 232
Optional Plug-in type module for Mobus RTU communication in RS-232.

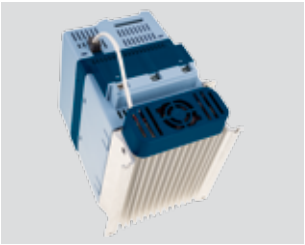
Modbus RTU – RS – 485
Optional Plug-in type module for Mobus RTU communication in RS-485.

Communication modules
Profibus-DP via external gateway MFW-01/PD.

IP20 Kit
For models from 130 A to 200 A, this kit guarantees protection against contact with energized parts.

Cable for connecting RS-232. Cable length in 3 and 10m.

Motor PTC
Optional module for motor PTC connection.

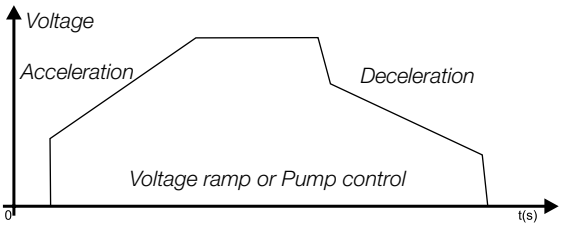


Ventilation Kit
For models from 45 A to 200 A. The ventilation kit is necessary for heavy duty starting cycle.

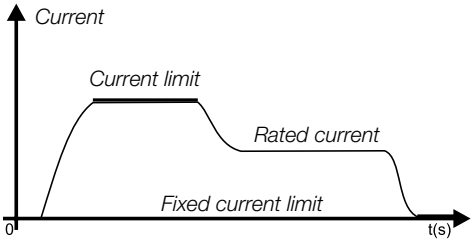
SSW-07
Programming Features

Settings necessary for starting any type of load is available via trimpots and dip-switches.

Voltage ramp
Allows smooth acceleration and/or deceleration, through voltage ramps, to provide “soft starts” to load.

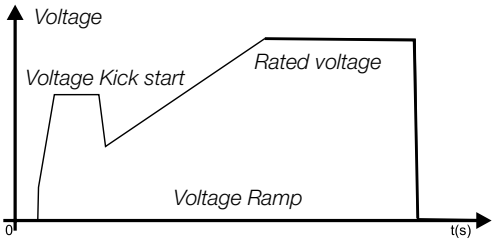


Current limit
Allows the setting of current limit during acceleration, to prevent excessive current draw when starting load.



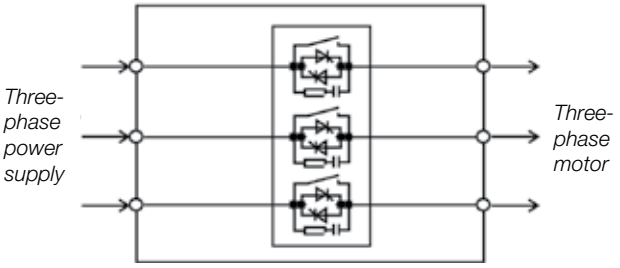
Voltage Kick Start

Enables an initial voltage pulse which provides an increase in the initial starting torque. This is required to start high breakway torque loads.



Built-in By Pass Contacts

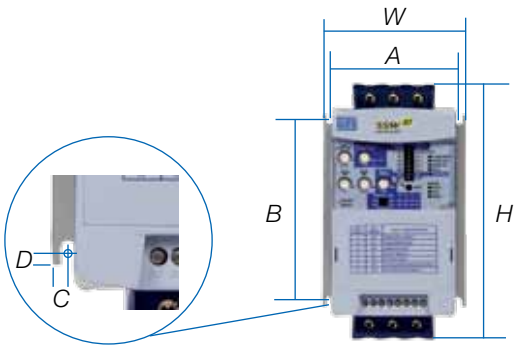
Built-in by-pass minimizes power losses and heat dissipation in the thyristors, providing size reduction and contributing to energy saving. This feature is available in all models.



Dimensions and Weight

SSW-07 Model	H Height (mm)	W Width (mm)	D Depth (mm)	A (mm)	B (mm)	C (mm)	D (mm)	Mounting Screw	Weight (kg)	Degree of Protection
17 A 24 A 30 A	162	95	157	85	120	5	4	M4	1.3	IP20
45 A 61 A 85 A	208	144	203	132	148	6	3.4	M4	3.3	IP20
130 A 171 A 200 A	276	223	220	208	210	7.5	5	M5	7.6	IP00 *
255 A 312 A 365 A 412 A	331	227	242	200	280	15	9	M8	11.5	IP00 *

Data for installation with dimensions in mm **Option for IP20 Kit*

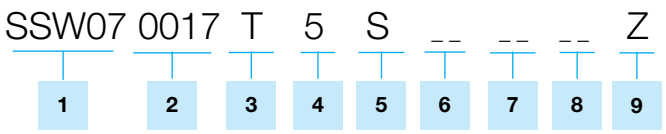


SSW-07 - Technical Characteristics

Power Supply	Power	220 to 575 Vac	
	Control	110 to 240 Vac (-15% to +10%), or 94 to 264 Vac	
	Frequency	50 to 60 Hz (+/- 10%), or 45 to 66 Hz	
Degree of protection	Injected plastic case	IP20 in models from 17 to 85 A	
		IP00 in models from 130 to 412 A (IP20 as option)	
Control	Control Method	Motor Voltage Variation	
	CPU	DSP type microprocessor (Digital Signal Processor)	
	Types of Control	Voltage ramp	
		Current limit	
Starting Cycle (1)	Normal	300% (3 x Inom.) during 30 s, 10 starts per hour (every 6 minutes)	
Inputs	Digital	3 isolated programmable inputs	
Outputs	Relay	02 relays with NO contacts, 240Vac, 1A, programmable functions	
Starting Duty Cycle	Standard 17 - 30A	10 starts (1 every 6 minutes)	
	Standard 45 - 200A	3 starts (1 every 20 minutes)	
	With optional ventilation kit 45-200A	10 starts (1 every 6 minutes)	
	Standard 255 - 412A	10 starts (1 every 6 minutes)	
Safety	Protections (Standard)	Overcurrent	Locked rotor
		Overcurrent before By-pass	Excess starting time
		Phase loss	Frequency outside tolerance
		Inverted phase sequence	By-pass contact open
		Overtemperature in power heatsink	Undervoltage in control supply
		Motor overload (class 5 to 30)	Available with accessory
	Protections (with Accessory)	Undercurrent	Programming error *
		Current imbalance	Serial communication error *
		Undercurrent before by-pass	HMI communication error *
		External fault	Overtemperature in motor PTC *
Functions / Resources	Standard	Voltage ramp (Initial voltage: 30% to 90%)	
		Current limitation (150% to 450% of SSW-07 rated current)	
		Starting time (1 to 40s)	
		Kick Start (Off - 0.2 to 2s)	
		Deceleration ramp (0 to 40s)	
		Motor and SSW-07 current relation (50% to 100%)	
		Faults automatic-reset	
		Thermal memory automatic-reset	
		Factory standard reset	
		Soft-starter built-in By-pass	
Programming Accessory (HMI or Serial communication)	Command	On, Off / Reset and Parameterization (function programming)	
	Additional Functions / Resources	Starting time up to 999s	
		Deceleration time up to 999s	
		Program enabling password	
		Selection for Local / Remote operation	
		COPY function (SSW-07 >>> HMI and HMI >>> SSW-07)	
		Programmable rated voltage	
	Supervision (Reading)	Motor current (%Soft-Starter In)	
		Motor current (%motor In)	
		Motor current (A)	
		Current indication in each phase R-S-T	
		Supply network frequency	
		Apparent power supplied to load (kVA)	
		Soft-Starter status	
		Digital input and output status	
		Last 4 faults	
		Soft-Starter Software Version	
		Heatsink temperature	
		Motor thermal protection status	
Accessories and Options	Options	Plug-in type local HMI	
		HMI remote Kit	
		5 and 10m cable for remote HMI interconnection	
		RS-232 communication kit	
		SSW-07 interconnection leads >>> PC Serial (RS-232) 3 and 10m	
		RS-485 communication kit	
		Motor PTC kit	
		Ventilation kit for size 2 (45 to 85 A)	
		Ventilation kit for size 3 (130 to 200 A)	
		IP20 kit for size 3 (130 to 200 A)	
		IP20 kit for size 4 (255 to 412 A)	
Finishing	Colour	Lid: Ultra mat gray	
		Cabinet: Ultra mat blue	
Conformities / Standards	Safety	UL 508 Standard- Industrial Control Equipment	
	Low voltage	EN60947-4-2; LVD 2006/95/EC Standard – Low voltage Directive	
	EMC	EMC 89/336/EEC Directive – Industrial Environment	
	UL (USA) / cUL (Canada)	Underwriters Laboratories Inc. – USA	
	CE (Europe)	Conformity test conducted by EPCOS	
	C-Tick (Australia)	Australian Communication Authority	

(1) To withstand this cycle, models 45 to 200A must be fitted with the ventilation kit.

SSW-07 - Part Number Specification



1 - WEG SSW-07 Series Soft-Starter

2 - Soft-Starter rated output current

3 - Soft-Starter input power supply: T = Three-phase

4 - Power supply voltage: 5 = 220 to 575 V range

5 - Product version:
S = Standard
O = with Options

6 - Enclosure:
Blank = Standard
IP = IP20 for models from 130 A to 412 A

7 - Special Hardware:
Blank = Standard
H1 = 110 V fans (255 - 412 A only)
H2 - 230 V fans (255 - 412 A only)

8 - Special Software: Blank = Standard

9 - End of code: Z = End of product code indicator digit.

Rating Table

SSW-07 Model	Motor Voltage (kW) 220 / 230 V	Motor Voltage (kW) 380 / 400 V	Motor Voltage (kW) 440 / 460 V	Motor Voltage (kW) 575 V
17 A	3.7	5.5	7.5	11
24 A	5.5	7.5	11	15
30 A	7.5	11	15	18.5
45 A	11	18.5	22	30
61 A	15	22	30	37
85 A	22	37	45	55
130 A	37	55	75	90
171 A	45	75	90	110
200 A	55	75	110	150
255 A	75	110	150	185
312 A	90	130	185	225
365 A	110	150	225	260
412 A	110	185	260	330

Power and currents according to UL508.

NOTE: The maximum powers indicated above are based on 3 x nominal current of Soft Starter SSW-07 during 30 s and 10 starts per hour (3xIn @ 30 s).

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WEG Worldwide

Founded in 1961 in the state of Santa Catarina, Brazil by Werner Ricardo Voigt, Eggon João da Silva and Geraldo Werninghaus, WEG has amassed great experience in research/development, design, manufacture, test and commissioning of motors, drives and transformers.

Our motor manufacturing capacity is one of the largest in the world, producing over 68,000 motors per day, equivalent to approximately 11.5 million per year. We employ over 22,000 people worldwide, with over 3,000 specialist engineers to support our customers from design, development, application, through to commissioning.

With factories, branches and technical services located around the world WEG offers a complete solution from small systems through to complex integrated projects. Offering over 20 state of the art testing laboratories, a large investment in research & development and a genuine focus on sustainability, WEG continually invests in the development of more efficient and environmentally friendly electrical solutions.

DLW direct-on-line starters

Start, control & protect with WEG

CFW11 variable speed drives

SSW07 soft starters

SSW06 soft starters

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