SSW06

Soft-Starter

VERSATILITY AND **HIGH PERFORMANCE**

Soft-starters are ***drives designed for the smooth acceleration*** and deceleration of three-phase induction motors by controlling the voltage applied to the motor.

Microprocessed and fully digital, the SSW06 line of soft-starters was developed with cutting-edge technology, ***ensuring the best performance in the start*** and stop of induction motors.
The line has an advanced operating interface that allows easy parameter setting, built-in Pump Control function, providing effective pump control, in addition to the torque control function, which allows accelerations and decelerations with linear speed ramps.

Main Characteristics

SoftPLC
Built-in Programmable Logic Controller Software (unique on the market)

Kick Start Function
to start loads with high static friction

Bypass
incorporated to the Soft-Starter (10 to 820 A), providing size reduction and energy savings

Pump Control Function
for smart control of pumping systems, preventing Water Hammer in pumps and hydraulic systems

Full electronic motor protection

Longer lifespan of the motor and mechanical devices of the driven machine

Easy operation, programming and maintenance via human-machine interface

Detachable human-machine interface with double display (LED/LCD)

Benefits

- Fault diagnosis, recording: voltage, current and status of the soft-starter at the error event
- Actuation level adjustment of the programmable faults
- 32-bit, RISC type, high-performance microcontroller
- Built-in electronic thermal relay
- Fully programmable control types
- Totally flexible torque control
- Limitation of current peaks on the line
- Limitation of voltage drops at the start
- Voltage (220 to 575 V ac) or (575 to 690 V ac)
- Switched-mode power supply of the electronics with EMC filter (94 to 253 V ac)
- Monitoring of the control section voltage, allowing the backup
  of the motor thermal image values
- Protection against over and undervoltage on the motor
- Protection against voltage and current imbalance on the motor
- Protection against overload on the motor due to over and under: current, power or torque
- Input for the motor PTC
- Elimination of mechanical shocks
- Great reduction of the stresses on couplings and driving devices (gear units, pulleys, gears, belts, etc.)
- Simpler electrical installation
- Oriented start-up
- Option of standard connection (3 cables) or motor inside delta connection (6 cables)
- All the protections and functions are available in the two connection types (unique on the market)
- Error-protection functions in serial or Fieldbus communication
- Change of speed direction possibility
- JOG function in frequency for both speed directions without contactor
- Three braking methods to stop the motor and the load more quickly, with or without contactor
- Operation in environments at up to 55 °C (without current derating for model range 10 A to 820 A)
- Operation in environments at up to 40 °C (without current derating for model range 950 A to 1,400 A above 40 °C)

Applications

Chemical and Petrochemical

Cement and Mining

Steel and Metallurgy

Pulp and Paper

Food and Beverage

Sugar and Ethanol

Plastic and Rubber

Textile

Glass

Water and Wastewater

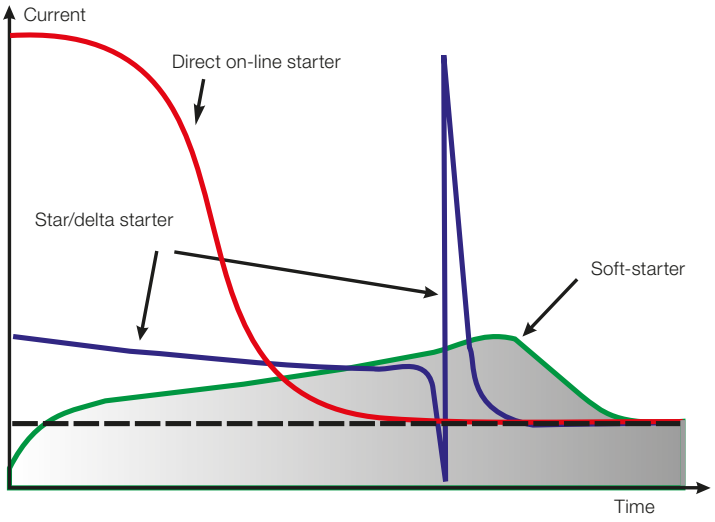
Ceramic

Wood

Refrigeration

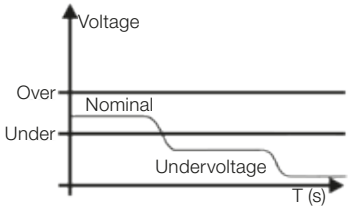
Material Handling

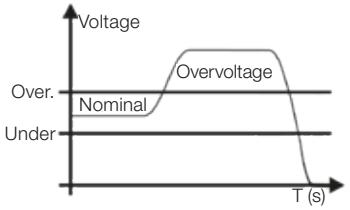
Comparison



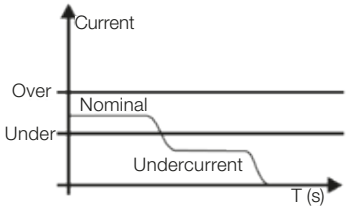
Voltage and Current Protections

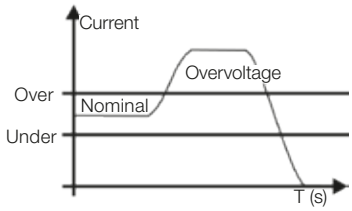
Over and Undervoltage
It allows setting the over and undervoltage limits for complete motor protection. Available in both types of connection to the motor.





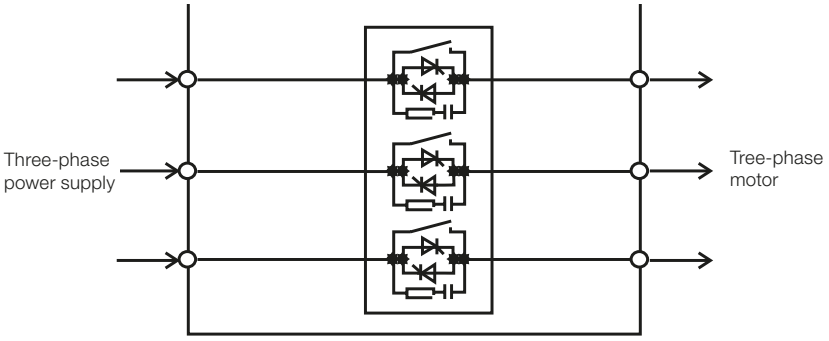
Over and Undercurrent
It allows setting the over and undercurrent limits for full motor protection.





Built-In Bypass

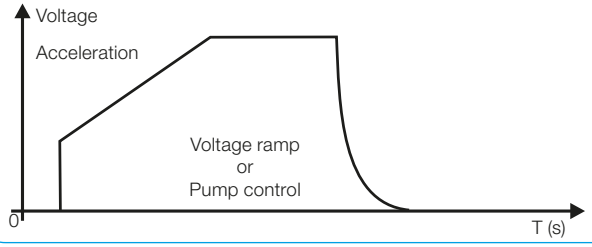
Over and Undervoltage
Built-in bypass minimizing the power losses and heat dissipation on the thyristors, reducing space and saving energy.
Available in the model range 10 to 820 A.



Starting Methods

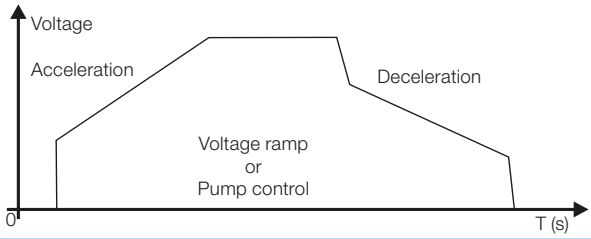
Voltage Ramp

It allows the smooth acceleration and/or deceleration by means of voltage ramps.



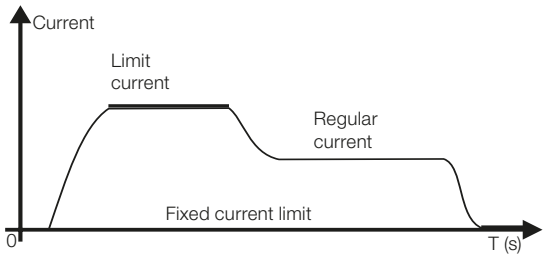
Pump Control

The pump control provides a smooth deceleration that avoids the Water Hammer.



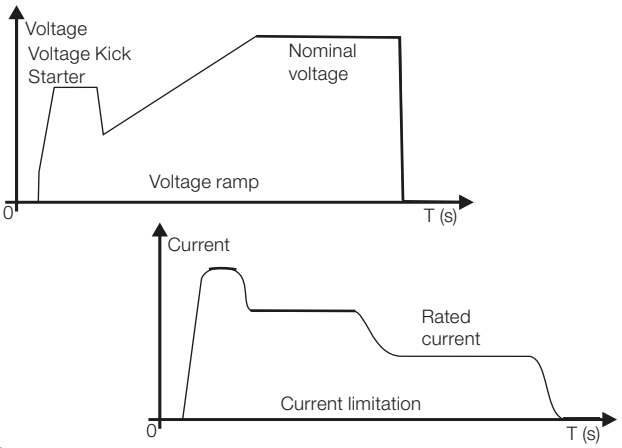
Current Limitation

It allows setting the current limit during the start according to the application requirements.



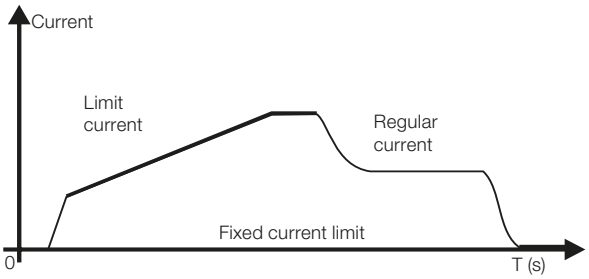
Voltage or Current Kick Starter

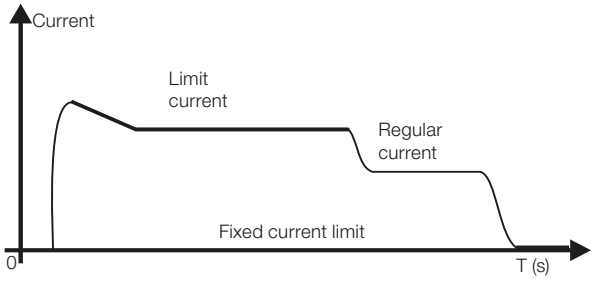
It allows an initial voltage or current pulse that boosts the motor starting torque, which is necessary to start loads with high static friction.



Current Ramp

It allows setting higher or lower current limits for the beginning of the start. Applied to loads with low or high initial torque.



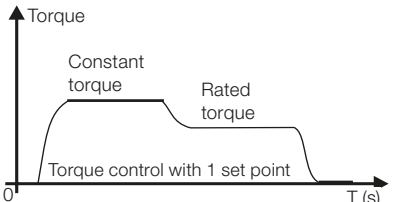


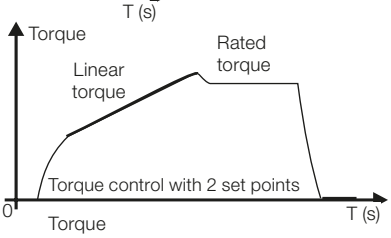
Torque Control

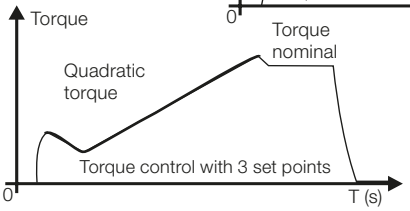
The SSW06 has an extremely high performance and totally flexible torque control algorithm in order to meet the requirements of any application, for both starting and stopping the motor. Available in two motor connection types: standard connection (three cables) or motor inside delta connection (six cables).

- 1 set point: constant torque
- 2 set points: linear torque ramp
- 3 set points: quadratic torque ramp

Such type of control allows the acceleration and deceleration with linear speed ramp.







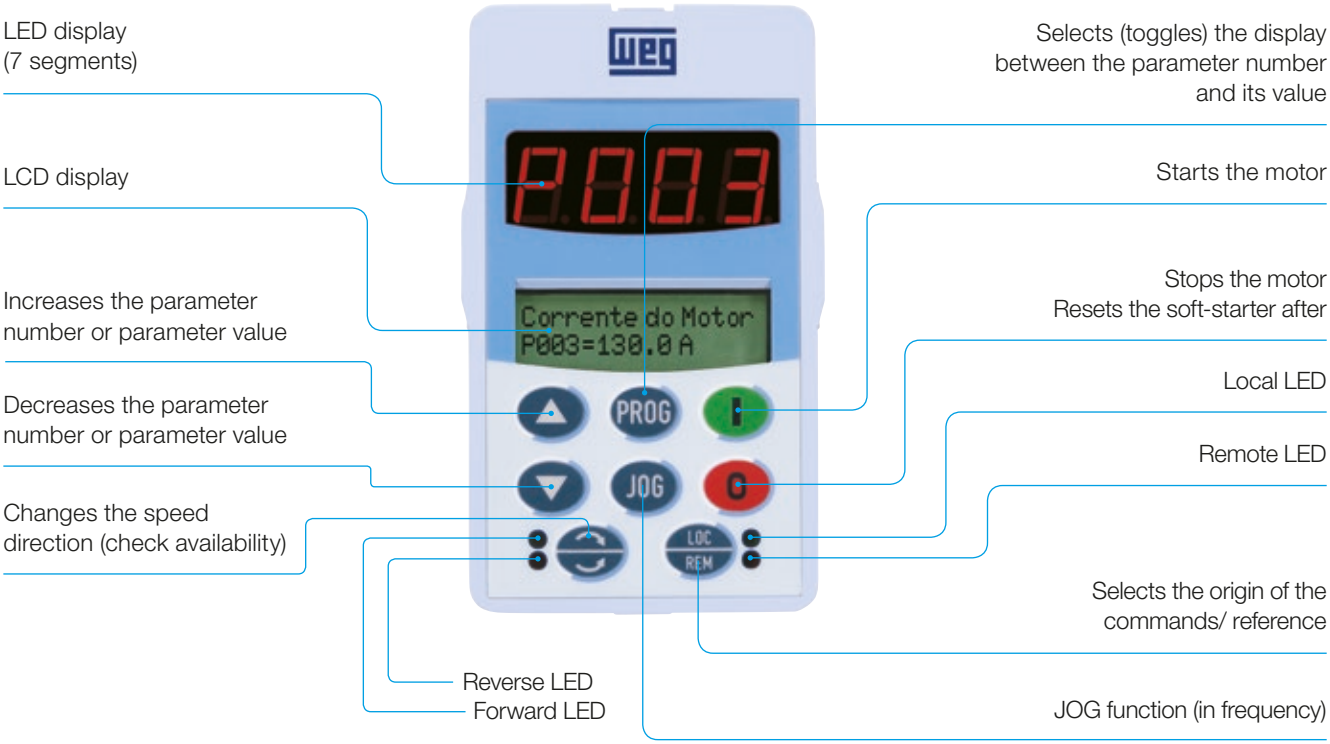
Operating Interface

Smart Interface

Smart operating interface with double display - LEDs (7 segments) and LCD (2 lines of 16 characters) - which provides excellent visualization as well as a detailed description of all parameters and messages via alphanumeric LCD display.

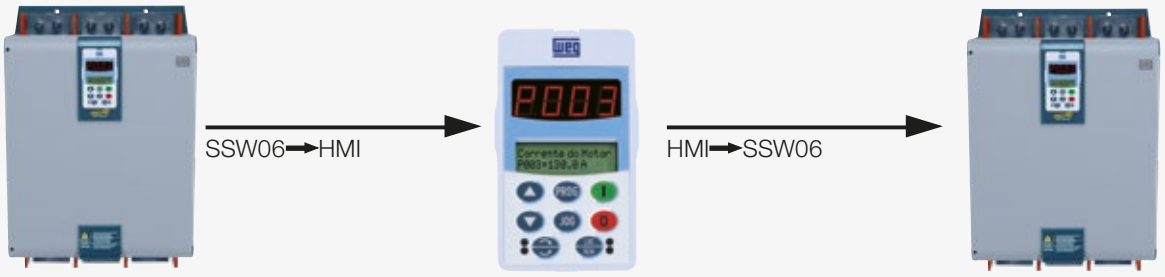
Selectable Language

The smart operating interface also enables the user to choose the language for the programming, reading and presenting the parameters and alphanumeric messages through the LCD display. The great hardware and software capacity of the product provides the user several language options, such as Portuguese, English, German and Spanish in order to adjust it to any user around the world.



Copy Function

The smart interface also incorporates the Copy function, which allows copying the parameter setting from one soft-starter to others, providing programming agility, reliability and repeatability in applications of serially manufactured machines.



Oriented Start-Up

Soft-starters are devices designed to start induction motors, whose adaptation and performance are directly related to their characteristics and of the power supply line.
The SSW06 soft-starters contain a programming wizard especially developed to speed up the product start-up. Such resource guides the user in the setting of the minimum characteristics necessary for a perfect adaptation of the soft-starter to the motor and the load.

Fieldbus Communication Networks

The SSW06 soft-starter can be interconnected in Fieldbus fast communication networks through the most widely used standardized protocols in the world, namely:

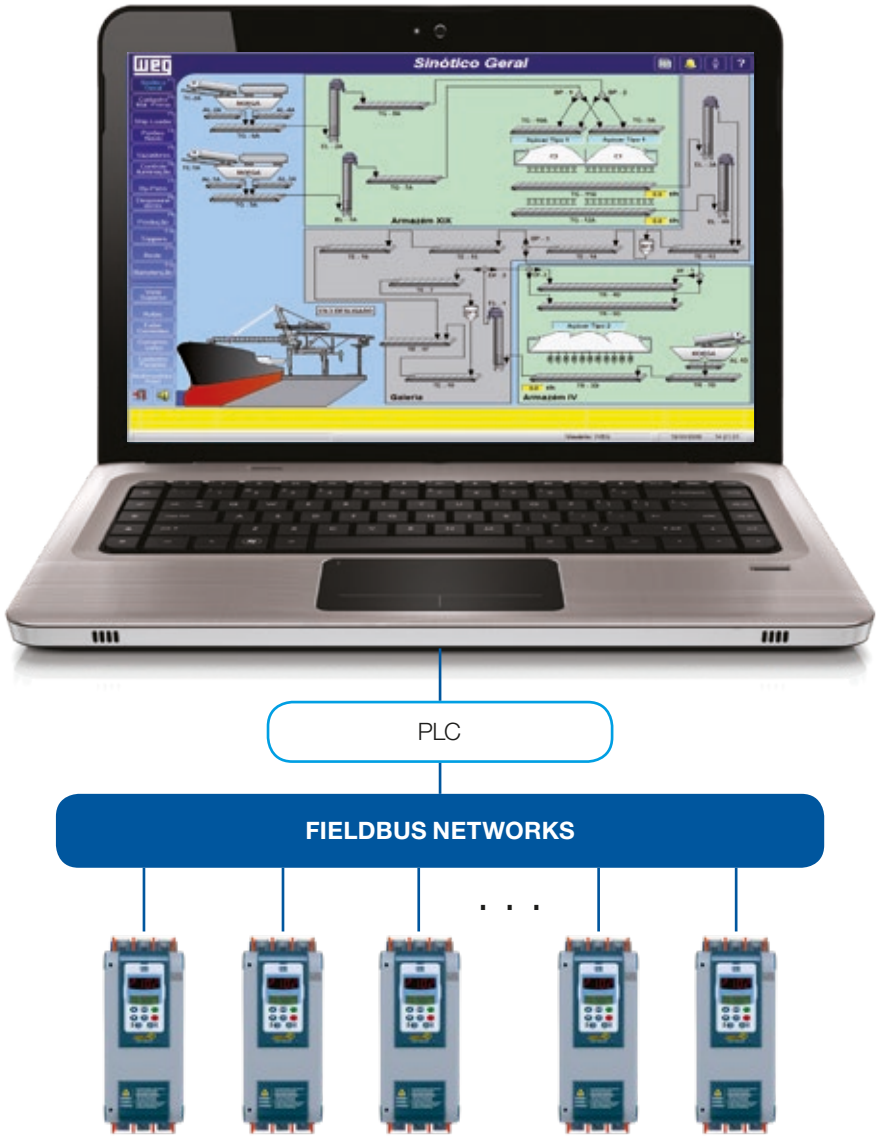
Fieldbus

- Profibus-DP (optional)
- DeviceNet (optional)
- Modbus-TCP
- EtherNet/IP
- Modbus-RTU RS232 (built-in)
- Modbus-RTU RS485 (optional)

Especially designed to integrate large industrial automation plants, the fast communication networks provide advantages such as complete and on-line supervision, monitoring and control of the soft-starter, delivering high performance and great operational flexibility.

For the interconnection in Fieldbus, Profibus-DP or DeviceNet communication networks, the SSW06 soft-starters allow installing a network board according to the desired protocol. For the interconnection in Fieldbus and Modbus-RTU communication networks, a connection via RS232 (available) or RS485 (optional) interface can be used.

Additionally to the advantages in monitoring the protections and driving the motor, digital and analog inputs and outputs can be used as a mini-remote of the Fieldbus network master.



SuperDrive G2

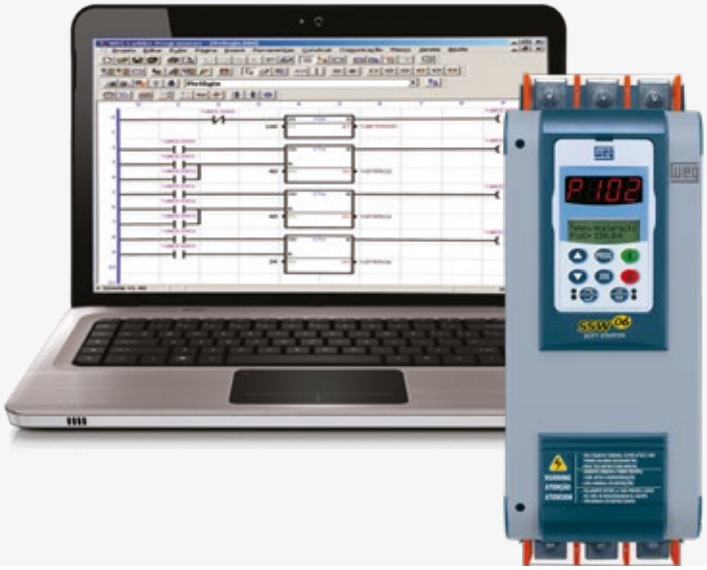
Software in Windows® environment for parameter setting, control and monitoring of the SSW06.

- Automatic identification of the SSW06
- Reading of parameters of the SSW06
- Writing of parameters to the SSW06
- Edition of parameters of the SSW06 online
- Edition of parameters offline on the PC
- Possibility to create the whole application documentation
- Easily accessible
- Parameter setting, control and monitoring of the SSW06 is possible via SuperDrive G2 software
- Supplied with a 3 m RS232 serial cable when the SuperDrive G2 software is purchased
- Free software on *www.weg.net*

SoftPLC Function

It is a resource that adds the functionalities of a PLC to the SSW06, providing the users with flexibility and allowing the development of their own applications (user's programs).

- LADDER programming language - WLP Software
- Access to all parameters and I/Os of the SSW06
- PLC mathematical and logical blocks
- Download, upload and online monitoring
- Memory capacity of 1 Kbytes
- Online help
- 18 parameters, 4 errors, 4 alarms of the user which can be programmed individually
- Free software on *www.weg.net*



Accessories

Operating Interface with Double Display
LEDs and LCD with complete resources via codes and messages with alphanumeric texts and Copy function for local installation (soft-starter cover) or remote installation on panel door. Maximum distance 5 m (without frame).

HUMAN-MACHINE INTERFACE
COMPLETE (standard)
HMI-SSW06-LCD

Frame to Install/Mount the HMI
For remote installation of the HMI transferring the soft-starter operation to the panel door or a machine console. Maximum distance of 5 m.
Degree of protection: IP42

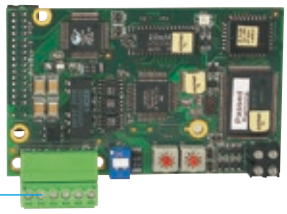
FRAME KIT FOR REMOTE INTERFACE
KMR-SSW06

Cable to Connect the HMI to the SSW06
Cables with lengths of 1; 2; 3 and 5 m. The x on the cable name represents the cable lenght.

CONNECTING CABLES FOR REMOTE INTERFACE
CAB-HMI SSW06- X

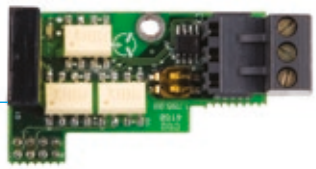
Fieldbus Communication Boards
They enable data exchange and control of the SSW06 in communication networks.

KITS FOR FIELDBUS COMMUNICATION NETWORKS
Profibus-DP ➔ KFB-PD
DeviceNet ➔ KFB-DN
Profibus-DP V1 ➔ KFB-PDPV1
Acyclic DeviceNet ➔ KFB-DD
EtherNet/IP and Modbus/TCP ➔ KFB-ENIP



It Enables the Connection of the SSW06
To a Modbus-RTU communication network in RS485 with galvanic isolation.

RS485 COMMUNICATION KIT
RS485 ➔ KRS485



Protection for Power Terminals

Provides IP20 protection to the soft-starter power terminals.

POWER TERMINAL PROTECTION KIT (for model range 45 to 820 A)

KIT IP20-M2 (45 A and 130 A)
KIT IP20-M3 (170 A and 205 A)
KIT IP20-M4 (255 A to 365 A)
KIT IP20-M5 (412 A to 604 A)
KIT IP20-M6 (670 A and 820 A)

USB Kit

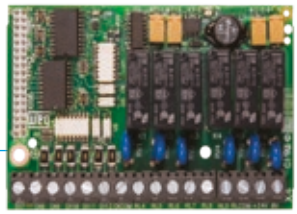
Allows the connection of the SSW06 to a PC via USB.

USB K-USB COMMUNICATION KIT

Digital Input and Output Expansion Kit

Six digital inputs and six digital outputs with galvanic isolation to be used with the SoftPLC.

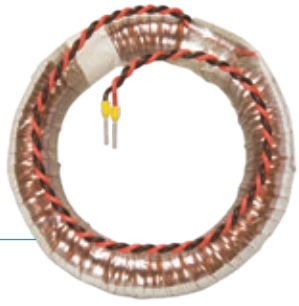
DIGITAL K-IOE IO EXPANSION KIT



External Current Acquisition Kit

If you use an external bypass contactor, it is necessary to install the external current transformers.

K-ECA EXTERNAL CURRENT ACQUISITION KIT (for model range 255 A to 1,400 A)



Flexible and Compact

Supply line input

Electronic board coating class 3C2 or class 3C3 as optional item, according to IEC 60721-3-3, ensures greater protection for installations in environments with corrosive chemical agents.

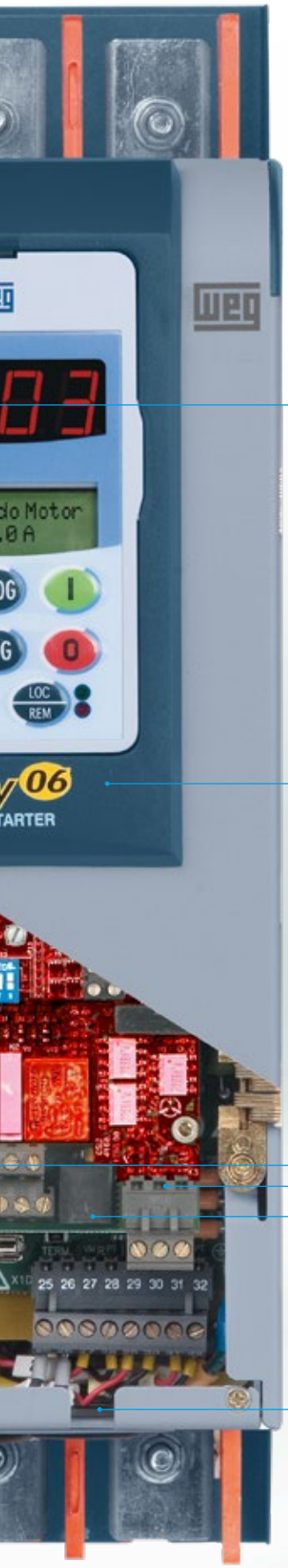
Fieldbus communication network modules for:
- Profibus-DP
- DeviceNet (optional)

PTC input for the motor

Six isolated and programmable digital inputs

Motor supply output

Two programmable analog outputs



Detachable human-machine interface with double display (LCD + LEDs), multiple languages and copy function

32-bit, RISC type, high-performance microcontroller

Three programmable digital relay outputs

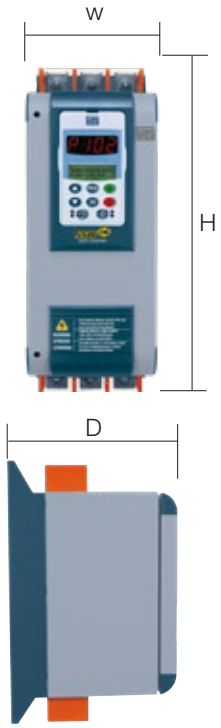
RS485 Modbus-RTU Serial Interface (optional)

RS232 Modbus-RTU Serial Interface

Control cable passage and conduit connection system

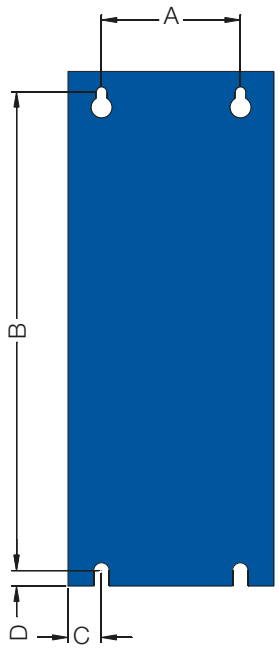
Electronics protection fuse

Dimensions and Weights



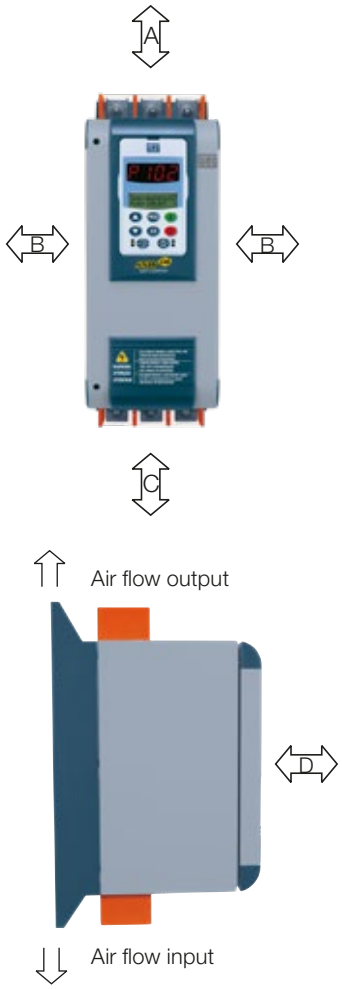
Model	Width "W" (mm)	Height "H" (mm)	Depth "D" (mm)	Weight (kg)	Frame
SSW06.0010	130	256	182	3.3	1
SSW06.0016					
SSW06.0023					
SSW06.0030					
SSW06.0045	132	370	244	8.5	2
SSW06.0060					
SSW06.85					
SSW06.130					
SSW06.170	223	440	278	18.6	3
SSW06.205					
SSW06.255	370	550	311	41.5	4
SSW06.312					
SSW06.365					
SSW06.412	370	650	347	55	5
SSW06.480					
SSW06.604					
SSW06.670	540	795	357	120	6
SSW06.820					
SSW06.950	568	895	345	107	7
SSW06.1100	685	1,235	433	217.5	8
SSW06.1400					

Mounting



Model	A (mm)	B (mm)	C (mm)	D (mm)	Fixing screw	Frame
SSW06.0010	75	239	28	8.5	M5	1
SSW06.0016						
SSW06.0023						
SSW06.0030						
SSW06.0045	75	350	28.5	8.5	M5	2
SSW06.0060						
SSW06.0085						
SSW06.0130						
SSW06.0170	150	425	36.5	5.9	M6	3
SSW06.0205						
SSW06.0255	200	527.5	85	10	M6	4
SSW06.0312						
SSW06.0365						
SSW06.0412	200	627.5	85	10	M6	5
SSW06.0480						
SSW06.0604						
SSW06.0670	350	775	95	7.5	M8	6
SSW06.0820						
SSW06.0950	400	810	84	10	M8	7
SSW06.1100	500	1,100	93	15	M8	8
SSW06.01400						

Clearances for Ventilation



Model	A (mm)	B (mm)	C (mm)	D (mm)	Frame
SSW06.0010	150	30	150	50	1
SSW06.0016					
SSW06.0023					
SSW06.0030					
SSW06.0045	150	30	150	50	2
SSW06.0060					
SSW06.0085					
SSW06.0130					
SSW06.0170	150	30	150	50	3
SSW06.0205					
SSW06.0255	150	30	150	50	4
SSW06.0312					
SSW06.0365					
SSW06.0412	150	30	150	50	5
SSW06.0480					
SSW06.0604					
SSW06.0670	150	30	150	50	6
SSW06.0820					
SSW06.0950	150	30	150	50	7
SSW06.1100	150	100	150	50	8
SSW06.01400					

Technical Data

Power supply	Power	(220 to 575) V ac (-15% to +10%) or (187 to 632) V ac
		(575 to 690) V ac (-15% to +10%) or (489 to 759) V ac
	Control	(110 to 230) V ac (-15% to +10%) or (94 to 253) V ac
	Fan	Model range 255 to 820 A:
		115 V ac (104 to 127) V ac / 230 V ac (207 to 253) V ac
		Model 950 A:
		115 V ac (103.5 to 122) V ac / 230 V ac (207 to 243.8) V ac
		Model range 1,100 to 1,400 A:
		230 V ac (207 to 243.8) V ac
	Frequency	(50 to 60) Hz (±10%), or (45 to 66) Hz
Degree of protection	Metallic cabinet	IP00
Electronic board coating	Standard	Electronic board coating class 3C2, according to IEC 60721-3-3
	Optional	Electronic board extra coating class 3C3, according to IEC 60721-3-3
Control	Control method	Voltage variation on the load (three-phase induction motor)
	CPU	32-bit RISC microcontroller
	Control types	Voltage ramp
		Current limit
		Current limit ramp
		Pump control
		Torque control 1, 2 or 3 points
Starting duty[2)]	Normal	300% (3 x Inom.) for 30s for 3-cable connection and for
		25 s for 6-cable connection
Inputs	Digital	5 programmable isolated inputs 24 V dc
		1 programmable isolated input 24 V dc (for the motor thermistor-PTC)
Outputs	Relay	3 programmable outputs 250 V / 2 A: (02 x NO) + (01 x NO + NC - Defect)
	Analog	1 programmable output (10 bits) 0… V dc
		1 programmable output (10 bits) 0…20 mA or 4... 20 mA
Safety	Protections	Overvoltage
		Undervoltage
		Voltage imbalance
		Undercurrent
		Overcurrent
		Current imbalance
		Overload in the output (motor) - i^2t
		Overtemperature in the thyristors/heatsink
		Overtemperature in the motor/PTC
		Reverse phase sequence
		External defect
		Defect in the bypass open[1)]
		Defect in bypass closed[1)]
		Overcurrent in the bypass[1)]
		Undercurrent before the bypass[1)]
		Phase loss in the power supply
		Phase loss in the output (motor)
		Fault in the thyristor
		Error in the CPU (Watchdog)
		Programming error
		Serial communication error
		Self-diagnosis error
		HMI-SSW06-LCD communication error
		Starting time too long
		Fieldbus communication error
		Undervoltage in the electronics
		Frequency out of range
		Ground fault
		Motor misconnection
		Undertorque
		Overtorque
		Underpower
		Overpower
Functions/resources	Standard	Built-in (detachable) human-machine interface with double display LED + LCD (HMI-SSW06-LCD)
		Password to enable programming
		HMI-SSW06-LCD language selection: Portuguese, English, Spanish, German
		Control type selection: voltage ramp, current limit
		Current limit ramp, pump control
		Torque control
		Selection of local/remote operation
		Fault self-diagnosis
		Guided start-up according to control type
		Standard or motor inside delta connection
		All the protections and functions also available in the motor inside delta connection
		Pump Control Function (protection against Water Hammer in pumps)
		Copy function (Soft-starter → HMI or HMI → Soft-starter)
		Bypass incorporated to the soft-starter (model range 10 to 820 A)
		RS232 serial interface with built-in Modbus-RTU, RS485 optional
		Input for the motor PTC
		Fault self-diagnosis and auto-reset
		Reset to factory setting or user's setting
		Special resources: hour meter, wattmeter
		Programmable overvoltage, undervoltage and voltage imbalance between phases
		Programmable overcurrent, undercurrent and current imbalance between phases

Functions/resources	Standard (V)	Undercurrent and overcurrent before the bypass
		Programmable overtorque and undertorque
		Programmable overpower and underpower
		Programmable rated line voltage
		Fully programmable voltage ramp
		Programmable current limit
		Programmable current ramp
		Programmable pump control
		Totally flexible torque control
		Programmable thermal memory auto-reset
		Programmable protection thermal class (motor overload) from class 5 to class 45
		Change of speed direction
		JOG in frequency function in both speed directions
		Reverse braking
		Optimal braking without contactor
		DC braking
		Built-in SoftPLC
	Optional items	Frame for remote HMI
		Cable for the remote interconnection of the HMI: 1, 2, 3 and 5 m
		RS485 communication kit
		Profibus-DP and Profibus-DP V1 communication kit
		Acyclic DeviceNet communication kit
		EtherNet/IP and Modbus/TCP communication kit
		IP20 kit for model range 45 A to 820 A
Human-machine interface (HMI-SSW06-LCD)	Command	Start, stop/reset and parameter setting (programming of general functions)
	Supervision (reading)	Increases and decreases parameters or their content
		Motor current (% I_n of the Soft-Starter)
		Motor current (% I_n of the motor)
		Motor current (A)
		Supply line frequency (0...99.9 Hz)
		Supply line voltage (0...999 V)
		Output voltage (0...999 V)
		Motor torque (% I_n of the motor)
		Active power supplied to the load (kW)
		Apparent power supplied to the load (kVA)
		Soft-starter state
		Digital and analog input and output state
		Cos (φ) of the load (0.00 ... 0.99)
		Hours energized
		Hours enabled
		Energy consumption in kWh
		Analog output value
		SoftPLC state
		Backup of the last 6 errors with state, current and voltage diagnosis
		Soft-starter software version
		Motor thermal protection (0...250)
		Current indication in each R-S-T phase
		Indication of R-S/S-T/T-R line voltage
		State of the Fieldbus communication board
		Start diagnosis
		Diagnosis of operation in full duty
Environment conditions	Temperature	0 to 55 ºC (model range 85 to 820 A) without rated current derating
		0 to 40 ºC (model range 950 to 1,400 A) without rated current derating
	Humidity	20...90% non-condensing
	Altitude	(0…1,000 m): normal operating conditions at rated current
		1,000…4,000 m): with output current derating of 1%/100 m above of 1,000 m
Finishing	Color	Cover: extreme matte gray
		Cabinet: extreme matte blue
Compliance/standards	Safety	UL 508 Standard – Industrial Control Equipment
	Low voltage	EN 60947-4-2; LVD 2006/95/EC Standard - Low Voltage Directive
	EMC	EMC directive 2004 / 108 / EEC - Industrial Environment
	UL (USA) / cUL (Canada)	Underwriters Laboratories Inc. – USA
	CE (Europe)	Certified by EPCOS
	IRAM (Argentina)	Instituto Argentino de Normalización
	C-Tick (Australia)	Australian Communications Authority
	Gost	(Russia)

Notes: 1) Model range 10 to 820 A.
2) Starting duty: 10 starts/hour for model range 10 A to 820 A.
5 starts/hour for model range 950 A to 1,400 A.

Specification Table

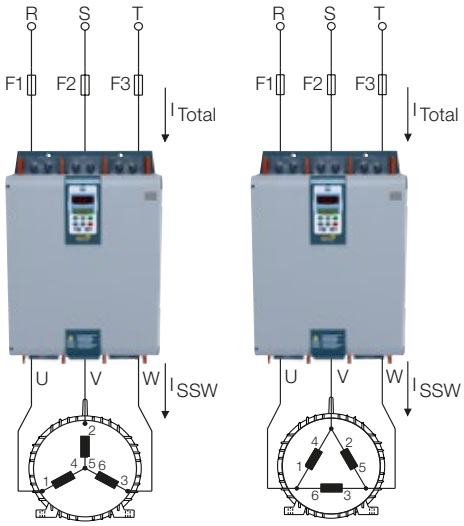
SSW06 soft-starter			Maximum applicable motor				Frame
Model (control: 94 - 253 V) (fan: 110/220)[2) 3)]	Inominal (A)	Voltage (V)	Standard connection (3 cables)		Inside delta connection (6 cables)		
			Ta=0...55 °C[4)]		Ta=0...55 °C[4)]		
	Ta=0...55 °C[4)]		cv	kW	cv	kW	
SSW06 0010 T 2257 PSZ	10	220	3	2.2	-	-	1
SSW06 0016 T 2257 PSZ	16		5	3.7	-	-	
SSW06 0023 T 2257 PSZ	23		7.5	5.5	-	-	
SSW06 0030 T 2257 PSZ	30		10	7.5	-	-	
SSW06 0045 T 2257 PSZ	45		15	11	25	18.5	2
SSW06 0060 T 2257 PSZ	60		20	15	30	22	
SSW06 0085 T 2257 PSZ	85		30	22	60	45	
SSW06 0130 T 2257 PSZ	130		50	37	75	55	
SSW06 0170 T 2257 PSZ	170		60	45	125	90	3
SSW06 0205 T 2257 PSZ	205		75	55	150	110	
SSW06 0255 T 2257 PSZ	255		100	75	175	130	4
SSW06 0312 T 2257 PSZ	312		125	90	200	150	
SSW06 0365 T 2257 PSZ	365		150	110	250	185	
SSW06 0412 T2257 PSZ	412		150	110	250	185	5
SSW06 0480 T2257 PSZ	480		200	150	350	260	
SSW06 0604 T2257 PSZ	604		250	185	450	330	
SSW06 0670 T2257 PSZ	670		250	185	500	370	6
SSW06 0820 T2257 PSZ	820		350	260	600	450	
SSW06 0950 T2257 PSZ	950		400	300	700	520	7
SSW06 1100 T2257 PSZ	1,100		450	330	800	600	8
SSW06 1400 T2257 PSZ	1,400		550	410	1,050	775	
SSW06 0010 T 2257 PSZ	10	380	6	4.5	-	-	1
SSW06 0016 T 2257 PSZ	16		10	7.5	-	-	
SSW06 0023 T 2257 PSZ	23		15	11	-	-	
SSW06 0030 T 2257 PSZ	30		20	15	-	-	
SSW06 0045 T 2257 PSZ	45		30	22	40	30	2
SSW06 0060 T 2257 PSZ	60		40	30	60	45	
SSW06 0085 T 2257 PSZ	85		60	45	100	75	
SSW06 0130 T 2257 PSZ	130		75	55	150	110	
SSW06 0170 T 2257 PSZ	170		125	90	200	150	3
SSW06 0205 T 2257 PSZ	205		150	110	250	185	
SSW06 0255 T 2257 PSZ	255		175	132	300	220	4
SSW06 0312 T 2257 PSZ	312		200	150	350	260	
SSW06 0365 T 2257 PSZ	365		250	185	450	330	
SSW06 0412 T 2257 PSZ	412		300	220	500	370	5
SSW06 0480 T 2257 PSZ	480		350	260	600	450	
SSW06 0604 T 2257 PSZ	604		450	330	750	550	
SSW06 0670 T 2257 PSZ	670		500	370	850	630	6
SSW06 0820 T 2257 PSZ	820		550	410	1,000	750	
SSW06 0950 T 2257 PSZ	950		750	550	1,200	900	7
SSW06 1100 T 2257 PSZ	1,100		800	600	1,400	1,030	8
SSW06 1400 T 2257 PSZ	1,400		1,000	750	1,750	1,290	

Soft-starter SSW06			Maximum applicable motor				Frame
Model (control: 94 - 253 V) (fan: 110/220)[2) 3)]	Inominal (A)	Voltage (V)	Standard connection (3 cables)		Inside delta connection (6 cables)		
			Ta=0...55 °C[4)]		Ta=0...55 °C[4)]		
	Ta=0...55 °C[4)]		HP	kW	HP	kW	
SSW06 0010 T 2257 PSZ	10	440	7.5	5.5	-	-	1
SSW06 0016 T 2257 PSZ	16		12.5	9.2	-	-	
SSW06 0023 T 2257 PSZ	23		15	11	-	-	
SSW06 0030 T 2257 PSZ	30		20	15	-	-	
SSW06 0045 T 2257 PSZ	45		30	22	75	55	2
SSW06 0060 T 2257 PSZ	60		40	30	100	75	
SSW06 0085 T 2257 PSZ	85		60	45	125	90	
SSW06 0130 T 2257 PSZ	130		100	75	175	130	
SSW06 0170 T 2257 PSZ	170		125	90	200	150	3
SSW06 0205 T 2257 PSZ	205		150	110	300	220	
SSW06 0255 T 2257 PSZ	255		200	150	350	260	4
SSW06 0312 T 2257 PSZ	312		250	185	450	330	
SSW06 0365 T 2257 PSZ	365		300	225	500	370	
SSW06 0412 T 2257 PSZ	412		350	260	600	450	5
SSW06 0480 T 2257 PSZ	480		400	300	700	520	
SSW06 0604 T 2257 PSZ	604		500	370	850	630	
SSW06 0670 T 2257 PSZ	670		550	410	950	700	6
SSW06 0820 T 2257 PSZ	820		700	525	1,200	900	
SSW06 0950 T 2257 PSZ	950		800	600	1,400	1,030	7
SSW06 1100 T 2257 PSZ	1,100		900	670	1,600	1,175	8
SSW06 1400 T 2257 PSZ	1,400		1,200	900	2,000	1,475	
SSW06 0010 T 2257 PSZ	10	575	10	7,5	-	-	1
SSW06 0016 T 2257 PSZ	16		15	11	-	-	
SSW06 0023 T 2257 PSZ	23		20	15	-	-	
SSW06 0030 T 2257 PSZ	30		30	22	-	-	
SSW06 0045 T 2257 PSZ	45		40	30	100	75	2
SSW06 0060 T 2257 PSZ	60		60	45	150	112	
SSW06 0085 T 2257 PSZ	85		75	55	150	110	2
SSW06 0130 T 2257 PSZ	130		125	90	250	185	2
SSW06 0170 T 2257 PSZ	170		175	132	300	220	3
SSW06 0205 T 2257 PSZ	205		200	150	350	260	3
SSW06 0255 T 2257 PSZ	255		250	185	450	330	4
SSW06 0312 T 2257 PSZ	312		300	225	550	400	4
SSW06 0365 T 2257 PSZ	365		400	300	650	475	4
SSW06 0412 T 2257 PSZ	412		450	330	800	600	5
SSW06 0480 T 2257 PSZ	480		500	370	900	670	
SSW06 0604 T 2257 PSZ	604		650	485	1,150	820	
SSW06 0670 T 2257 PSZ	670		750	550	1,250	920	6
SSW06 0820 T 2257 PSZ	820		850	630	1,550	1,140	
SSW06 0950 T 2257 PSZ	950		1,050	775	1,800	1,325	7
SSW06 1100 T 2257 PSZ	1,100		1,200	900	2,100	1,550	8
SSW06 1400 T 2257 PSZ	1,400		1,500	1,100	2,650	1,950	

Notes: 1) The maximum powers of the motors in the table above were calculated based on WEG 2 to 4-pole motors.
For motors with other polarities (e.g., 6 and 8 poles), other voltages (e.g., 230, 400 and 460 V) and/or motors of other manufacturers, specify the soft-starter by means of the motor nominal current.
2) For model 950 A, you must indicate if the fan voltage is 110 or 220 V ac.
3) For models 1,100 A and 1,400 A, the fan voltage is 220 V ac only.
4) Ambient temperature (You) = 0... 55 °C is only valid for 10... 820 A; for 950 A, 1,100 A and 1,400 A Ta = 0... 40 °C, (without rated current derating).
5) Designed for exclusive industrial or professional use.

Connection Types of the Soft-Starter to the Motor

Standard (3 Cables)



Motor in Y

$$I_{Soft\text{-}Starter} = I_{Total\ consumed}$$

Motor in Δ

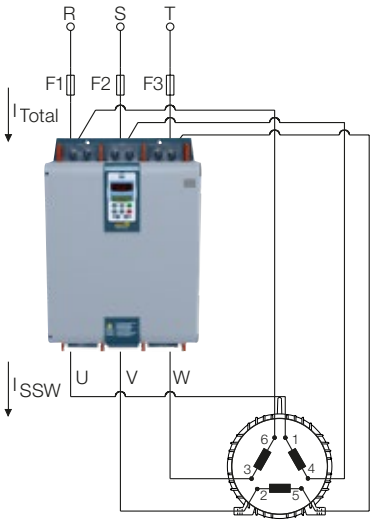
$$I_{Soft\text{-}Starter} = \frac{I_{Total\ consumed}}{\sqrt{3}} = 58\%\ da\ I_{Total\ consumed}$$

(After the start)

$$I_{Soft\text{-}Starter} = \frac{I_{Total\ consumed}}{1.5} = 67\%\ da\ I_{Total\ consumed}$$

(During the start)

Motor Inside Delta (6 Cables)



Motor inside delta connection

IMPORTANT:

- In the standard connection (3 cables) the motor can be connected in either Y (star) connection or in deltas connection.
- In the motor inside delta connection (6 cables), the motor can only be connected in delta. The table below shows the voltages available for the standard motor types.

Motor	6-cable connection
220 V -Δ / 380 V-Y	220 V -Δ
380 V -Δ / 660 V-Y	380 V -Δ
440 V -Δ / 760 V-Y	440 V -Δ
575 V - Δ	575 V -Δ
220 V -Δ / 380 V- Y/ 440 V -Δ / 760 V-Y	220 V -Δ 440 V -Δ

- For the same motor power, the motor inside delta connection (6 cables) enables a reduction of 42% in the soft-starter current in comparison to the standard connection (3 cables)
- The motor inside delta connection (6 cables) allows driving a motor with a 73% higher power than the standard connection (3 cables)
- The motor inside delta connection requires 6 connecting cables as far as the motor
- During the start, the motor current in relation to the soft-starter current may be up to 1.5 times higher
- After the start at full voltage, the motor current in relation to the soft-starter current may be up to 1,73 times higher

Selection Guide

1	2	3	4	5	6	7	8	9	10	11
SSW06	0085	T	2257	P	0	-	SI	-	-	Z

1 - WEG Soft-Starter SSW06 Family
2 - Soft-Starter Rated Output Current

0010 = 10 A	00130 = 130 A	0480 = 480 A
0016 = 16 A	00170 = 170 A	0604 = 604 A
0023 = 23 A	0205 = 205 A	0670 = 670 A
0030 = 30 A	0255 = 255 A	0820 = 820 A
0045 = 45 A	0312 = 312 A	0950 = 950 A
0060 = 60 A	0365 = 365 A	1,100 = 1,100 A
0085 = 85 A	0412 = 412 A	1,400 = 1,400 A

3 - Soft-Starter Input Power Supply

T	Three-phase

4 - Power Supply

2,257 = range	(220 ... 575 V)
5,769 = range	(575 ... 690 V)

5 - Language of the Product Manual

P	Portuguese
E	English
S	Spanish

6 - Product Versions

S	Standard
O	With optional items

7 - Degree of Protection

Blank	Standard (see table of characteristics)

8 - Human-Machine Interface (HMI)

Blank	Standard (with LEDs + LCD HMI)
SI	Without HMI

9 - Special Hardware

Blank	Standard
H1	Ventilation 115 V (950 A) E.g.: SSW06 0085 T 2257 P S Z
H2	Ventilation 230 V (model range 950 A to 1,400 A) E.g.: SSW06 0950 T 2257 P S H1 Z

10 - Coating of the Electronic Boards

Blank	Coating class 3C2, according to IEC 60721-3-3
EC	Extra coating class 3C3, according to IEC 60721-3-3

11 - Special Software

Blank	Standard
S1	Optional with special software version

12 - End of Code

Blank	Standard
Z	Product final coding indicator digit

Notes: 1) The communication kits are optional.
2) For model range 950 A to 1,400 A, the ventilation voltage must be defined (H1 or H2).

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Availability is to have a global support network

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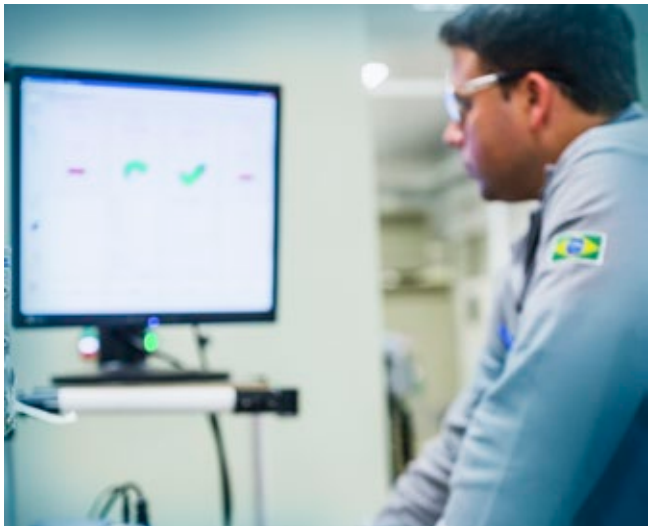

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Cod: 50076320 | Rev: 00 | Date (m/y): 01/2018