SOFT-STARTERS

Advanced technology for the
soft-start of electric motors

Motors | Automation | Energy | Transmission & Distribution | Coatings

WEG

W900
STARTER

Pronta ~ Loc   0.0A 11:53
Corrente Motor %In
300.0

PROG

JOG

LOC
REM

WEG

P102

Tempo Aceleração
P102= 130.0 A

PROG

JOG

SSW 06
SOFT-STARTER

WEG   SS
SOFT-ST

WEG
SSW 05
SOFT-STARTER Plus

R / 1L1   S / 3L2   T / 5L3

A1 A2 D

U /2T1   V /4T2   W /6T3

WEG   SSW 07
SOFT-STARTER

THERMAL CLASS

LED FAULT	LED READY	FAULT DESCRIPTION
1x	OFF	FREQUENCY RANGE
1x	ON	OVERTEMPERATURE
2x	OFF	UNDER VOLTAGE
2x	ON	START TIME OUT
3x	OFF	BY-PASS OPEN
4x	OFF	OVERCURRENT
6x	OFF	SCR OR

STATUS

LED FAULT	LED READY	FAULT DESCRIPTION
1x	OFF	FREQUENCY RANGE
1x	ON	OVERTEMPERATURE
2x	OFF	UNDER VOLTAGE
2x	ON	START TIME OUT
3x	OFF	BY-PASS OPEN
4x	OFF	OVERCURRENT W/FORCED BY-PASS
6x	OFF	BY-PASS OVERCURRENT

Soft-Starters

Summary

ADVANCED TECHNOLOGY
FOR THE SOFT-START OF
ELECTRIC MOTORS

In view of the evolution of processes and machines, it has become increasingly clear the need to use resources that allow driving motors in a smooth and controlled way. Using cutting-edge technology, WEG soft-starters have been designed **to ensure the best performance for each kind of application**, offering resources that enable to start and stop three-phase induction motors in a simple and efficient way, protecting the motor and the load from torque shocks (jolts) by means of gradual acceleration up to the rated speed.

WEG soft-starters are **the ideal solutions with excellent cost-benefit** for starting and stopping three-phase induction motors in applications requiring speed and torque control during the start.

Benefits

Simple operation and maintenance	Easy installation and start-up	Effective motor protection	Free programming software	Special functions	Excellent cost-effectiveness

Main Functions

Kick Start
Ideal for applications where the loads require an extra effort from the drive at the moment of the start due to the high resistant torque, being necessary feed the motor with a higher voltage than that set in the acceleration voltage ramp.

Pump Control
This is a preset (specific) configuration for pumping systems, where it is usually necessary to establish a voltage ramp in the acceleration and deceleration, in addition to enabling protections in the SSW.

Motor Coasting
The SSW takes the output voltage instantaneously to zero, implying that the motor does not produce any torque on the load, which in turn will slow down until all the kinetic energy is dissipated.

Current Limitation
Used in most cases where the load has a high inertia, this function causes the grid/SSW system to feed the motor with the current just necessary to perform the load acceleration.

Reduction of the Water Hammer
Using an SSW to for stopping the motor softly (pump control) reduces the chances of Water Hammer.

Voltage Ramp in the Deceleration
At the controlled stop, the SSW will gradually reduce the output voltage to a minimum value in a preset time.

Voltage Ramp in the Acceleration
The SSW, by controlling the variation of the firing angle of the thyristor bridge generates a gradual and continuous effective voltage at its output, increasing until the rated line voltage is reached.

Note: for more details, refer to the catalog or user's manual of each SSW, available on our website: www.weg.net.
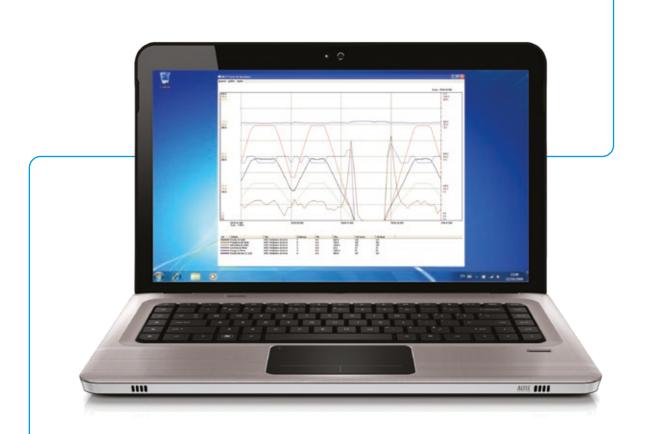
Applications

Ventilation
& Exhaust

Sugar &
Alcohol

Cement
& Mining

Agribusiness

Water &
Wastewater

Chemical, Petrochemical,
Oil & Gas

Connectivity

SuperDrive G2
Using the SuperDrive G2 software, it is possible to change, monitor and graphically view the variables of the frequency inverter via connection to a personal computer.

Trend Function
Trend charts for online monitoring of parameters and other variables within the SuperDrive G2 software.
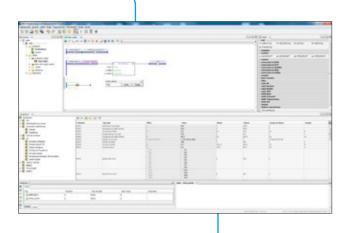
- Easy operation and view
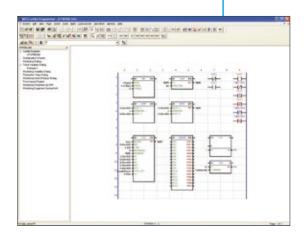- Free on *www.weg.net*

WEG Programming Suite (WPS)

Integrated tool that assists in the creation of automation applications, allowing graphical monitoring, parameter setting and programming in Ladder language (IEC 61131-3) of various WEG product families.

- Multi-Products, meeting the requirements of a wide range of WEG products
- Multi-Use, allowing:
  - Parameter setting of the devices
  - Programming of the devices in Ladder language
  - Monitoring of the devices
  - Assistance in the creation and configuration of automation applications

WEG Ladder Programmer (WLP)[4]

Software for Windows® environment that enables the programming in Ladder language of various WEG product families.

- Edition of the program by means of several Ladder function blocks
- Compilation of the program in Ladder for a language compatible with the devices
- Transfer of the compiled program to the devices
- Reading of the program installed on the devices[1]
- Online monitoring of the program running on the devices
- Point-to-point communication with the devices through serial in RS232 or USB[2]
- Serial communication in RS485 with up to 30 devices[3]
- Online help with all the functions and blocks present in the software

Notes: 1) For devices that supports the upload function.
2) For devices that have a USB communication port.
3) Through an RS232-to-RS485 converter connected to the PC.
4) Functions valid for SSW06 and SSW900 only.

SSW05

The SSW05 is WEG's most compact solid state starter with control of two motor phases, built-in bypass and all the protections for the electric motor. Featuring DSP control (Digital Signal Processor), the SSW05 is designed for optimal performance in motor start and stop, with excellent cost-effectiveness. In addition, they are easily set, simplifying the start-up activities and daily operations. Their compact dimensions contribute to the optimization of spaces in electrical panels.
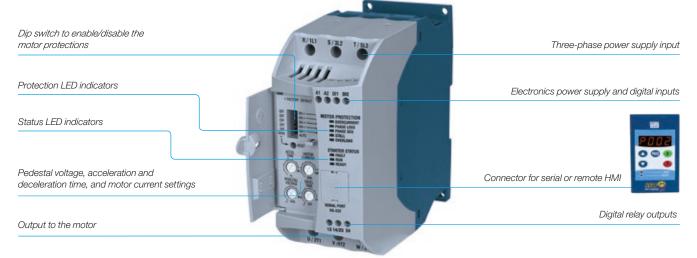
Main Characteristics

- Current: 3 to 85 A
- Voltage: 220 to 575 V
- Built-in bypass
- Control with digital processor (DSP)
- Electronic thermal relay
- Built-in motor protections
- High efficiency

- Compact
- Simple electrical installation
- Easy to operate, adjust and service
- Extended motor and equipment lifespan without mechanical shocks
- Operation in environments up to 55 °C

- Great reduction of the forces on the couplings and on the transmission devices (gearboxes, pulleys, gears, belts, etc.) during the start
- Remote operating interface (HMI) (optional)

Settings and Indications

Dip switch to enable/disable the motor protections

Protection LED indicators

Status LED indicators

Pedestal voltage, acceleration and deceleration time, and motor current settings

Output to the motor

Three-phase power supply input

Electronics power supply and digital inputs

Connector for serial or remote HMI

Digital relay outputs

Certifications

Specifcation

SSW05 soft-starter			Maximum applicable motor							
Reference	Size	Rated current (A)	Power supply 220 V		Power supply 380 V		Power supply 440 V		Power supply 575 V	
			Power		Power		Power		Power	
			CV	kW	CV	kW	CV	kW	CV	kW
SSW050003T2246TPZ	1	3	0.75	0.5	1.5	1.1	2	1.5	-	-
SSW050010T2246TPZ		10	3	2.2	6	4.5	7.5	5.5	-	-
SSW050016T2246TPZ		16	5	3.7	10	7.5	12.5	9.2	-	-
SSW050023T2246TPZ		23	7.5	5.5	15	11	15	11	-	-
SSW050030T2246TPZ		30	10	7.5	20	15	20	15	-	-
SSW050045T2246TPZ	2	45	15	11	30	22	30	22	-	-
SSW050060T2246TPZ		60	20	15	40	30	40	30	-	-
SSW050085T2246TPZ		85	30	22	60	45	60	45	-	-
SSW050003T4657TPZ	1	3	-	-	-	-	-	-	2	1.5
SSW050010T4657TPZ		10	-	-	-	-	-	-	7.5	5.5
SSW050016T4657TPZ		16	-	-	-	-	-	-	10	7.5
SSW050023T4657TPZ		23	-	-	-	-	-	-	20	15
SSW050030T4657TPZ		30	-	-	-	-	-	-	25	18.9
SSW050045T4657TPZ	2	45	-	-	-	-	-	-	40	30
SSW050060T4657TPZ		60	-	-	-	-	-	-	50	37.8
SSW050085T4657TPZ		85	-	-	-	-	-	-	75	56.7

Accessories

Model	Description
SSW05-7-8-CB-RS-1M	1 m serial remote HMI cable
SSW05-7-8-CB-RS-2M	2 m serial remote HMI cable
SSW05-7-8-CB-RS-3M	3 m serial remote HMI cable
SSW05-HMI-RS	Remote HMI for use with CAB-RS cable up to 3 m

Dimensions and Weights

| Size | Width L (mm) | | Height H (mm) | | Depth P (mm) | Mounting A (mm) | Mounting B (mm) | Mounting D (mm) | Mounting | Weight (kg) |
	L	La	H	Ha						
1	59	60.4	130	130.7	145	51	122	61	M4 Screw/Rail	0.74
2	79	80.4	185	185.7	172	71	177	99	M4 Screw/Rail	1.64

Note: La, Ha, Mounting (only for mounting with screw).

SSW06

Designed for industrial or professional use, WEG SSW06 soft-starters are the ideal solution for the soft-start of electric motors in operations that require high overload capacity, robustness and excellent performance, as they have advanced control for the three motor phases, built-in bypass, torque control and customizable functions for different applications.

The SSW06 offers a current range from 10 to 1,400 A, a great variety of accessories and possibility to customize the operation by means of internal PLC (SoftPLC).

Main Characteristics

- Fault diagnosis, recording: voltage, current and state of the soft-starter at the error event
- Actuation 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 electronics 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 the 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
- 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

Certifications

Specification

SSW06 soft-starter			Maximum applicable motor[1]									
Reference	Size	Rated current (A)	Power supply 220 V		Power supply 380 V		Power supply 440 V		Power supply 525 V		Power supply 575 V		Power supply 690 V	
			Power		Power		Power		Power		Power		Power	
			cv	kW	cv	kW	cv	kW	cv	kW	cv	kW	cv	kW
SSW060010T2257ESZ	1	10	3	2.2	6	4.5	7.5	5.5	7.5	5.5	10	7.5	-	-
SSW060016T2257ESZ		16	5	3.7	10	7.5	12.5	9.2	12.5	9.2	15	11	-	-
SSW060023T2257ESZ		23	7.5	5.5	15	11	15	11	20	15	20	15	-	-
SSW060030T2257ESZ		30	10	7.5	20	15	20	15	25	18.5	30	22	-	-
SSW060045T2257ESZ	2	45	15	11	30	22	30	22	40	30	40	30	-	-
SSW060060T2257ESZ		60	20	15	40	30	40	30	50	37	60	45	-	-
SSW060085T2257ESZ		85	30	22	60	45	60	45	75	55	75	55	-	-
SSW060130T2257ESZ		130	50	37	75	55	100	75	125	90	125	90	-	-
SSW060170T2257ESZ	3	170	60	45	125	90	125	90	150	110	175	132	-	-
SSW060205T2257ESZ		205	75	55	150	110	150	110	200	150	200	150	-	-
SSW060255T2257ESZ	4	255	100	75	175	132	200	150	250	185	250	185	-	-
SSW060312T2257ESZ		312	125	90	200	150	250	185	300	220	300	225	-	-
SSW060365T2257ESZ		365	150	110	250	185	300	225	350	260	400	300	-	-
SSW060412T2257ESZ	5	412	150	110	300	220	350	260	440	315	450	330	-	-
SSW060480T2257ESZ		480	200	150	350	260	400	300	500	370	500	370	-	-
SSW060604T2257ESZ		604	250	185	450	330	500	370	600	450	650	485	-	-
SSW060670T2257ESZ	6	670	250	185	500	370	550	410	650	485	750	550	-	-
SSW060820T2257ESZ		820	350	260	550	410	700	525	800	600	850	630	-	-
SSW060950T2257ESH1Z[2]	7	950	400	300	750	550	800	600	900	670	1,050	775	-	-
SSW060950T2257ESH2Z[2]		950	400	300	750	550	800	600	900	670	1,050	775	-	-
SSW061100T2257ESH2Z[3]	8	1,100	450	330	800	600	900	670	1,100	810	1,200	900	-	-
SSW061400T2257ESH2Z[3]		1,400	550	410	1,000	750	1,200	900	1,400	1,050	1,500	1,100	-	-
SSW060045T5769ESZ	2	45	-	-	-	-	-	-	-	-	-	-	50	37
SSW060060T5769ESZ		60	-	-	-	-	-	-	-	-	-	-	75	55
SSW060085T5769ESZ		85	-	-	-	-	-	-	-	-	-	-	100	75
SSW060130T5769ESZ	3	130	-	-	-	-	-	-	-	-	-	-	150	110
SSW060170T5769ESZ		170	-	-	-	-	-	-	-	-	-	-	220	165
SSW060205T5769ESZ	4	205	-	-	-	-	-	-	-	-	-	-	250	185
SSW060255T5769ESZ		255	-	-	-	-	-	-	-	-	-	-	340	250
SSW060312T5769ESZ		312	-	-	-	-	-	-	-	-	-	-	430	320
SSW060365T5769ESZ		365	-	-	-	-	-	-	-	-	-	-	470	350
SSW060412T5769ESZ	5	412	-	-	-	-	-	-	-	-	-	-	500	370
SSW060480T5769ESZ		480	-	-	-	-	-	-	-	-	-	-	600	450
SSW060604T5769ESZ		604	-	-	-	-	-	-	-	-	-	-	750	550
SSW060670T5769ESZ	6	670	-	-	-	-	-	-	-	-	-	-	850	630
SSW060820T5769ESZ		820	-	-	-	-	-	-	-	-	-	-	1,000	750
SSW060950T5769ESH1Z[2]	7	950	-	-	-	-	-	-	-	-	-	-	1,150	860
SSW060950T5769ESH2Z[2]		950	-	-	-	-	-	-	-	-	-	-	1,150	860
SSW061100T5769ESH2Z[3]	8	1,100	-	-	-	-	-	-	-	-	-	-	1,300	1,000
SSW061400T5769ESH2Z[3]		1,400	-	-	-	-	-	-	-	-	-	-	1,700	1,250

Notes: 1) The power ratings listed in the table above are for loads like centrifugal pumps and compressors (start in relief), based on WEG IV pole - 60 Hz motors.
The sizing must be based on the load curve, number of starts per hour and load type.
2) H1 = Control voltage 110 V / H2 = Control voltage 220 V.
3) 1,100 and 1,400 A models have control voltage of 220 V.
Visit our website www.weg.net and use the free SDW software for sizing soft-starters.
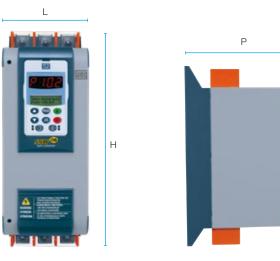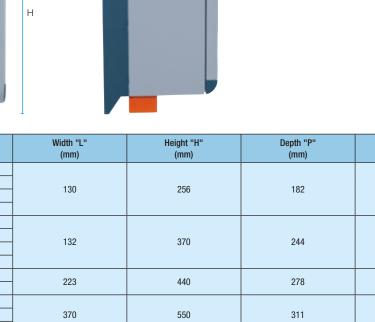
Accessories

Reference	Description
HMI-SSW06-LCD	Remote Human-Machine Interface (IHM LCD)
KMR-SSW06	Frame kit for panel door installation
CAB-HMI-SSW06-1	1.0 m HMI communication cable
CAB-HMI-SSW06-2	5.0 m HMI communication cable
CAB-HMI-SSW06-3	3.0 m HMI communication cable
CAB-HMI-SSW06-5	5.0 m HMI communication cable
KRS-485	RS485 communication kit
KFB-DN-SSW06	DeviceNet communication kit
KFB-PD-SSW06	Profibus-DP communication kit
KFB-PD-PV1-SSW6	Profibus DP-V1 communication kit
KFB-DD-SSW06	DeviceNet Fieldbus profile drive communication kit
KFB-EN-SSW06	EtherNet/IP communication kit
KUSB	USB communication kit
KEIO	Expansion of digital inputs and outputs
KPT100	Pt-100 input kit
MIW02-P	RS232 to RS485 converter with galvanic isolation
IP20-SSW06-M2	IP20 protection kit for frame 2
IP20-SSW06-M3	IP20 protection kit for frame 3
IP20-SSW06-M4/5	IP20 protection kit for frames 4 and 5
IP20-SSW06-M6	IP20 protection kit for frame 6
TC255A	External current acquisition kit, 255 A
TC312A	External current acquisition kit, 312 A
TC365A	External current acquisition kit, 365 A
TC412A	External current acquisition kit, 412 A
TC480A	External current acquisition kit, 480 A
TC604A	External current acquisition kit, 604 A
TC670A	External current acquisition kit, 670 A
TC820A	External current acquisition kit, 820 A
TC950A	External current acquisition kit, 950 A
TC1100A	External current acquisition kit, 1,100 A
TC1400A	External current acquisition kit, 1,400 A

Dimensions and Weights

Model	Width "L" (mm)	Height "H" (mm)	Depth "P" (mm)	Weight (kg)	Frame
10 A	130	256	182	3.3	1
16 A					
23 A					
30 A					
45 A	132	370	244	8.5	2
60 A					
85 A					
130 A					
170 A	223	440	278	18.6	3
205 A					
255 A	370	550	311	41.5	4
312 A					
365 A					
412 A	370	650	347	55	5
480 A					
604 A					
670 A	540	795	357	120	6
820 A					
950 A	568	895	345	107	7
1,100 A	685	1,235	433	217.5	8
1,400 A					

SSW07 / SSW08

Developed for industrial or professional applications, the SSW07 and SSW08 soft-starters are compact and have built-in bypass, thus contributing to increased lifespan, space optimization and less heat dissipation in electrical panels.

The SSW07 and SSW08 soft-starters are equipped with the same functionalities. The SSW07 controls three motor phases, being recommended to drive heavy loads, while the SSW08 controls two motor phases, and it is recommended to drive light to moderate loads.

Main Characteristics

- Currents: 17 to 412 A
- Voltage: 220 to 575 V
- Built-in bypass
- Full electronic motor protection
- Kick start function to start loads with high static friction
- Electronic thermal relay
- Switched-mode power supply of the electronics with EMC filter (110 to 220 V)

- Thermal image (monitoring of the electronics voltage, allowing the backup of the current and voltage values)
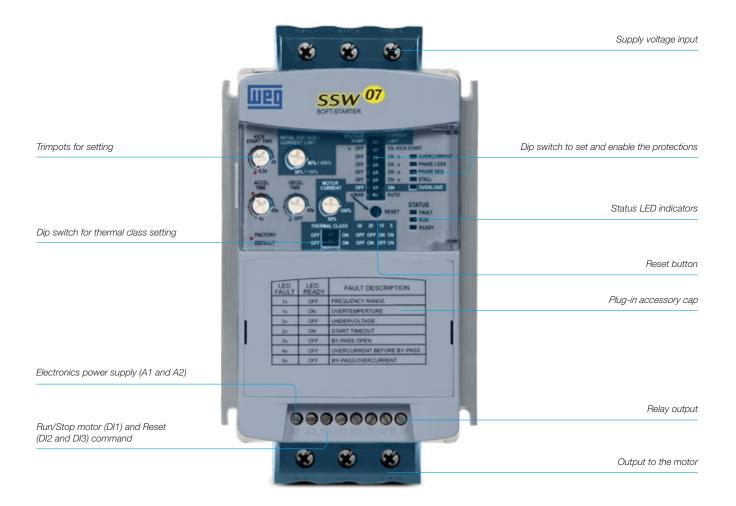- Simple electrical installation
- Interconnection with Fieldbus communication networks: Modbus-RTU and DeviceNet (optional)
- Human-Machine Interface - HMI (optional)
- Free SuperDrive G2 programming software

Certifications

Settings and Indications

Supply voltage input

Dip switch to set and enable the protections

Trimpots for setting

Status LED indicators

Dip switch for thermal class setting

Reset button

Plug-in accessory cap

Electronics power supply (A1 and A2)

Relay output

Run/Stop motor (DI1) and Reset (DI2 and DI3) command

Output to the motor

LED FAULT	LED READY	FAULT DESCRIPTION
1x	OFF	FREQUENCY RANGE
1x	ON	OVERTEMPERTURE
2x	OFF	UNDERVOLTAGE
2x	ON	START TIMEOUT
3x	OFF	BY-PASS OPEN
4x	OFF	OVERCURRENT BEFORE BY-PASS
5x	OFF	BY-PASS OVERCURRENT

Specification

SSW07 / SSW08 soft-starter			Maximum applicable motor[2]									
Reference[1]	Size	Rated current (A)	Power supply 220 V		Power supply 380 V		Power supply 440 V		Power supply 525 V		Power supply 575 V	
			Power		Power		Power		Power		Power	
			CV	kW	CV	kW	CV	kW	CV	kW	CV	kW
SSW0x0017T5SZ	1	17	6	4.5	10	7.5	12.5	9.2	15	11	15	11
SSW0x0024T5SZ		24	7.5	5.5	15	11	15	11	20	15	20	15
SSW0x0030T5SZ		30	10	7.5	20	15	20	15	25	18.5	30	22
SSW0x0045T5SZ	2	45	15	11	30	22	30	22	40	30	40	30
SSW0x0061T5SZ		61	20	15	40	30	50	37	50	37	60	45
SSW0x0085T5SZ		85	30	22	60	40	60	45	75	55	75	55
SSW0x0130T5SZ	3	130	50	37	75	55	100	75	125	90	125	90
SSW0x0171T5SZ		171	60	45	125	90	125	90	150	110	175	132
SSW0x0200T5SZ		200	75	55	125	90	150	110	200	150	200	150
SSW0x0255T5SH1Z[3]	4	255	100	75	175	130	200	150	250	185	250	185
SSW0x0255T5SH2Z3[3]		255	100	75	175	130	200	150	250	185	250	185
SSW0x0312T5SH1Z[3]		312	125	90	200	150	250	185	300	220	300	220
SSW0x0312T5SH2Z[3]		312	125	90	200	150	250	185	300	220	300	220
SSW0x0365T5SH1Z[3]		365	150	110	250	185	300	220	350	260	350	260
SSW0x0365T5SH2Z[3]		365	150	110	250	185	300	220	350	260	350	260
SSW0x0412T5SH1Z[3]		412	150	110	300	220	350	260	440	315	450	330
SSW0x0412T5SH2Z[3]		412	150	110	300	220	350	260	440	315	450	330

Notes: 1) Replace the "x" in the smart code according to the desired option, 7 for SSW07 and 8 for SSW08.
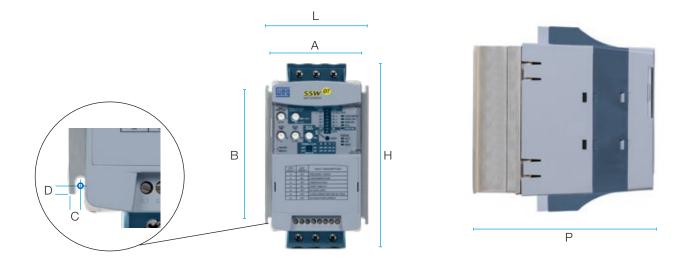
2) The power ratings listed in the table above are for loads like centrifugal pumps and compressors (start in relief), based on WEG IV pole - 60 Hz motors. The sizing must be based on the load curve, number of starts per hour and load type. Visit our website www.weg.net and use the free SDW software for sizing soft-starters.

3) The SSW07 soft-starters that contain the designation H1 in the code have control voltage supply for the ventilation at 110 V. The models with the designation H2 have the control voltage supply for ventilation at 220 V.

Accessories

Reference	Description
SSW07-08-HMI-LOC	Local Human-Machine Interface - HMI
SSW07-HMI-REM	Remote human-machine interface kit (HMI LED + HMI interface module) for SSW07
SSW08-HMI-REM	Remote human-machine interface kit (HMI LED + HMI interface module) for SSW08
CAB-RS-1M-SSW07/08	1 m cable to connect to remote HMI
CAB-RS-2M-SSW07/08	2 m cable to connect to remote HMI
CAB-RS-3M-SSW07/08	3 m cable to connect to remote HMI
CAB-RS-5M-SSW07/08	5 m cable to connect to remote HMI
CAB-RS-7,5M-SSW07/08	7.5 m cable to connect to remote HMI
CAB-RS-10M-SSW07/08	10 m cable to connect to remote HMI
HMI-SSW07-REM+RS485	Remote human-machine interface kit (HMI LED + HMI interface module) for SSW07
HMI-SSW08-REM+RS485	Remote human-machine interface kit (HMI LED + HMI interface module) for SSW08
SSW07-08-KRS-485	RS485 communication kit
KFB-DN-SSW07/08	DeviceNet communication module
SSW07-08-KRS-232	RS232 communication module
KRS232-SSW07/08	RS232 communication module and cable kit
CAB-SER-3M-SSW07/08	3 m cable for serial connection to PC
CAB-SER-10M-SSW07/08	10 m cable for serial connection to PC
SSW07/08/900-KVT-2B	Ventilation kit for frame 2 (currents from 45 to 85 A)
SSW07/08/900-KVT-3C	Ventilation kit for frame 3 (currents from 130 to 200 A)
SSW07-08-KPTC-MTR	Motor PTC module
SSW07/08/900-IP20-3C	IP20 kit for frame 3 (currents from 130 to 200 A)
SSW07/08/900-IP20-4D	IP20 kit for frame 4 (currents from 255 to 412 A)

Dimensions and Weights

The SSW07 and SSW08 soft-starters have the same dimensions, according to following table:

Model	Height H (mm)	Width L (mm)	Depth P (mm)	A (mm)	B (mm)	C (mm)	D (mm)	Mounting screw	Weight (kg)	Protection rating
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[1]
255 A 312 A 365 A 412 A	331	227	242	200	280	15	9	M8	11.5	IP00[1]

Note: 1) IP20 with optional kit.

SSW900

Combining convenience and innovation, the SSW900 is the right choice for the full motor start, stop and protection control. Developed for industrial or professional use, the new line of soft-starters allows simple and quick access to information on the application and configuration settings.
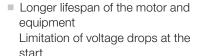
Using a menu structure, the new interface of the SSW900 line presents an unprecedented experience of interactivity with the user, allowing settings and configurations with online parameter help right on the HMI, in addition to event logs with date and time and setup wizard.

The equipment also has built-in bypass, which contributes to extending the lifespan of the drive, optimizing space and reducing heat dissipation in electric panels.
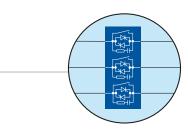
Main Characteristics

- Current range from 10 to 1,400 A
- Supply voltage from 220 to 575 V ac
- Oriented start-up
- Option of standard connection (3 cables) or motor inside delta connection (6 cables)
- Elimination of mechanical shocks
- Pump control function for smart control of pumping systems that prevent water hammer and pressure overshoots in the hydraulic piping
- Integral motor thermal protection

- Longer lifespan of the motor and equipment Limitation of voltage drops at the start
- Great reduction of the forces on the couplings and on the transmission devices (gearboxes, pulleys, gears, belts, etc.) during the start
- Operation at ambient temperature up to 55 °C without current derating[1]
- Three braking methods to stop the motor and the load faster

- Built-in bypass: minimizing power losses and heat dissipation in the thyristors, providing space reduction, contributing to energy saving and increasing the product lifespan

Certifications[1] CE (UL)c us

MANY ➕ ADVANTAGES

The SSW900 can replace contactors or star-delta starters, bringing many other advantages for your application:
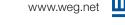- Electric energy savings
- Greater protection and durability of the electric motor
- Fault history and diagnostics
- Flexibility, because it allows the installation of accessories in the application (Plug and Play)
- Monitoring of the variables in graphical mode
- Customizable home screens

Menu navigation   Easy to install   Easy to operate   Simple monitoring

Note: 1) Frame size A to D.

Easy to Use

USB Port
Easy monitoring via PC or
firmware updating

Detachable Keypad
Option to install on machine
or panel door

Easy access to the control
terminals: digital and analog
inputs and outputs

Bluetooth connectivity[1]

RTC
Real time clock with event log
including date and time

Graphic HMI
Intuitive, customizable, complete

Flexibility

Power supply connection

LED
Visual status indication

HMI connection

Two Slots
Two accessory modules
can be used

RTC battery

Quick Connect
Detachable terminals

I/O
Totally programmable inputs
and outputs

- **5 isolated digital**
  input 24 V dc
- **1 analog output**
  0-10 V dc / 4-20 mA
- **1 input** for the
  motor PTC
- **3 relay outputs**
  1.0 A / 240 V ac

Motor connection

*Note: 1) HMI with Bluetooth connectivity available as an accessory
item. Please consult the availability for your region.*

Specification

The power ratings for the maximum applicable motor shown in the following tables are referential and valid for WEG 4-pole three-phase induction motors under light load conditions (e.g., centrifugal pump). Motor powers may vary according to the manufacturer or speed.

Standard Connection (with 3 Cables)

Model SSW900	Rated current (A)	Motor voltage 220/230 V		Motor voltage 380/400 V		Motor voltage 440/460 V		Motor voltage 525 V		Motor voltage 575 V	
	A	HP	kW	HP	kW	HP	kW	HP	kW	HP	kW
SSW900A0010T5E2	10	3	2.2	6	4.5	7.5	5.5	7.5	5.5	10	7.5
SSW900A0017T5E2	17	6	4.5	10	7.5	12.5	9.2	15	11	15	11
SSW900A0024T5E2	24	7.5	5.5	15	11	15	11	20	15	20	15
SSW900A0030T5E2	30	10	7.5	20	15	20	15	25	18.5	30	22
SSW900B0045T5E2	45	15	11	30	22	30	22	40	30	40	30
SSW900B0061T5E2	61	20	15	40	30	50	37	50	37	60	45
SSW900B0085T5E2	85	30	22	60	45	60	45	75	55	75	55
SSW900B0105T5E2	105	40	30	75	55	75	55	75	55	100	75
SSW900C0130T5E2	130	50	37	75	55	100	75	125	90	125	90
SSW900C0171T5E2	171	60	45	125	90	125	90	150	110	175	132
SSW900C0200T5E2	200	75	55	150	110	150	110	200	150	200	150
SSW900D0255T5Ex[1]	255	100	75	175	132	200	150	250	185	250	185
SSW900D0312T5Ex[1]	312	125	90	200	150	250	185	300	220	300	220
SSW900D0365T5Ex[1]	365	150	110	250	185	300	225	350	260	400	300
SSW900D0412T5Ex[1]	412	150	110	300	220	350	260	440	315	450	330
SSW900E0480T5Ex[1]	480	200	150	350	260	400	300	500	370	500	370
SSW900E0604T5Ex[1]	604	250	185	450	330	500	370	600	450	650	485
SSW900E0670T5Ex[1]	670	250	185	500	370	550	410	650	485	750	550
SSW900F0820T5Ex[1]	820	350	260	550	410	700	525	800	600	850	630
SSW900F0950T5Ex[1]	950	400	300	750	550	800	600	900	670	1,050	775
SSW900G1100T5Ex[1]	1,100	450	330	800	600	900	670	1,100	810	1,200	900
SSW900G1400T5Ex[1]	1,400	550	410	1,000	750	1,200	900	1,400	1,050	1,500	1,100

Notes: 1) To select a SSW900 model with control voltage 110-130 V, replace "x" by 3 and to select a model with control voltage 220-240, replace "x" by 4.
   Models ≤412 A: AC-53b 3-30:330, ambient temperature of 55 °C;
   Models ≥480 A: AC-53b 3-30:690, ambient temperature of 40 °C;
   Models of 45 A to 200 A: with ventilation kit;
   WEG motors Premium or Plus, IV pole.

Motor Inside Delta Connection (with 6 Cables)

| Model SSW900 | Maximum applicable motor | | | | | | | | | | |
	Rated current (A)	Motor voltage 220/230 V		Motor voltage 380/400 V		Motor voltage 440/460 V		Motor voltage 525 V		Motor voltage 575 V	
	A	HP	kW	HP	kW	HP	kW	HP	kW	HP	kW
SSW900C0130T5E2	225	75	55	150	110	175	132	200	150	250	185
SSW900C0171T5E2	296	125	90	200	150	200	150	250	185	300	220
SSW900C0200T5E2	346	150	110	250	185	300	220	300	220	350	260
SSW900D0255T5Ex[1]	441	175	132	300	220	350	260	400	300	450	330
SSW900D0312T5Ex[1]	540	200	150	350	260	450	330	500	370	550	410
SSW900D0365T5Ex[1]	631	250	185	450	330	500	370	600	450	650	485
SSW900D0412T5Ex[1]	713	250	185	500	370	600	450	700	525	800	600
SSW900E0480T5Ex[1]	831	350	260	600	450	700	525	800	600	900	670
SSW900E0604T5Ex[1]	1,046	450	330	750	550	850	630	1,050	775	1,150	820
SSW900E0670T5Ex[1]	1,160	500	370	850	630	950	700	1,150	820	1,250	920
SSW900F0820T5Ex[1]	1,420	600	450	1,000	750	1,200	900	1,400	1,050	1,550	1,140
SSW900F0950T5Ex[1]	1,645	720	520	1,200	900	1,400	1,030	1,650	1,200	1,800	1,325
SSW900G1100T5Ex[1]	1,905	800	600	1,400	1,030	1,600	1,175	1,900	1,400	2,100	1,550
SSW900G1400T5Ex[1]	2,425	1,050	775	1,750	1,290	2,000	1,475	2,450	1,800	2,650	1,950

Notes: 1) To select a SSW900 model with control voltage 110-130 V, replace "x" by 3 and to select a model with control voltage 220-240, replace "x" by 4.
   Models ≤412 A: AC-53b 3-25:335, ambient temperature of 55 °C;
   Models ≥480 A: AC-53b 3-25:695, ambient temperature of 40 °C;
   Models of 130 A to 200 A: with ventilation kit;
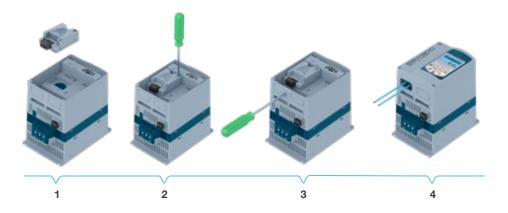   WEG motors Premium or Plus, IV poles.

Accessories

Accessory	Description	Image
Accessories for communication and control - Slots 1 and 2		
SSW900-CAN-W	CANopen and DeviceNet communication plug-in module	
SSW900-CRS485-W	Modbus-RTU communication plug-in module	
SSW900-CDN-N	DeviceNet - Anybus communication plug-in module	
SSW900-CPDP-N	Profibus-DP - Anybus communication plug-in module	
SSW900-CETH-IP-N	EtherNet/IP - Anybus communication plug-in module	
SSW900-CMB-TCP-N	Modbus-TCP - Anybus communication plug-in module	
SSW900-CPN-IO-N	PROFINET IO - Anybus communication plug-in module	
SSW900-CETH-W[1)	Ethernet/IP communication plug-in module	
SSW900-HMI-BLT	Remote operating interface with Bluetooth communication	
SSW900-PT100-W	Temperature plug-in module for PT100 sensors - 6 channels	
Accessories for mechanical installation		
SSW900-KVT-02	Ventilation kit for frame B (currents from 45 to 105 A)	
SSW900-KVT-03	Ventilation kit for frame C (currents from 130 to 200 A)	
SSW900-KIP-03	IP20 kit for frame C (currents from 130 to 200 A)	
SSW900-KIP-04	IP20 kit for frame D (currents from 255 to 412 A)	
SSW900-PROT-M3	Front cover kit for power terminals of frame C (currents from 130 to 200 A)	
SSW900-PROT-M4	Front cover kit for power terminals of frame D (currents from 255 to 412 A)	
SSW900-PROT-M5	Front cover kit for power terminals of frame E (currents from 480 to 670 A)	
Other accessories		
SSW900-KMD-CB01	Frame kit for HMI + 1 m cable	-
SSW900-KMD-CB02	Frame kit for HMI + 2 m cable	-
SSW900-KMD-CB03	Frame kit for HMI + 3 m cable	-
SSW900-KMD-CB05	Frame kit for HMI + 5 m cable	-
SSW900-KMD-CB07	Frame kit for HMI + 7,5 m cable	-
SSW900-KMD-CB10	Frame kit for HMI + 10 m cable	-
SSW900-KMD-CB20	Frame kit for HMI + 20 m cable	-
SSW900-KECA-10	Current acquisition kit for 10 A	-
SSW900-KECA-17	Current acquisition kit for 17 A	-
SSW900-KECA-24	Current acquisition kit for 24 A	-
SSW900-KECA-30	Current acquisition kit for 30 A	-
SSW900-KECA-45	Current acquisition kit for 45 A	-
SSW900-KECA-61	Current acquisition kit for 61 A	-
SSW900-KECA-85	Current acquisition kit for 85 A	-
SSW900-KECA-105	Current acquisition kit for 105 A	-
SSW900-KECA-130	Current acquisition kit for 130 A	-
SSW900-KECA-171	Current acquisition kit for 171 A	-
SSW900-KECA-200	Current acquisition kit for 200 A	-
SSW900-KECA-255	Current acquisition kit for 255 A	-
SSW900-KECA-312	Current acquisition kit for 312 A	-
SSW900-KECA-365	Current acquisition kit for 365 A	-
SSW900-KECA-412	Current acquisition kit for 412 A	-
SSW900-6BAR-E	Kit with six bars for frame E (currents from 480 to 670 A)	-
SSW900-6BAR-F	Kit with six busbars for frame F (currents of 820 and 950 A)	-
SSW900-3BAR-G	Kit with three busbars for frame G (currents of 1,100 and 1,400 A)	-

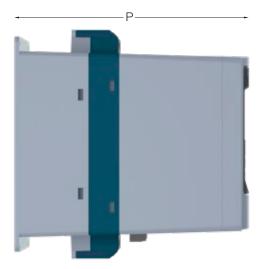*Note: 1) Please check availability with your sales representative.*

Accessory Installation

| 1 | 2 | 3 | 4 |

Dimmensions

Frame size	Height (H) mm (in)	Width (W) mm (in)	Depth (P) mm (in)	(A) mm (in)	(B) mm (in)	(C) mm (in)	(D) mm (in)	Fastening screw	Weight (kg) (lb)	Degree of protection
A	200 (7.87)	127 (5)	203 (7.99)	110 (7.33)	175 (6.88)	8.5 (0.33)	4.3 (0.16)	M4	1.93 (4.25)	IP20
B	208 (8.18)	144 (5.66)	260 (10.23)	132 (5.19)	148 (5.82)	6 (0.23)	3.4 (0.13)	M4	4.02 (8.86)	IP20
C	276 (10.86)	223 (8.77)	261 (10.27)	208 (8.18)	210 (8.26)	7.5 (0.29)	5 (0.19)	M5	6.55 (14.44)	IP20[1]
D	331 (13.03)	227 (8.93)	282 (11.10)	200 (7.87)	280 (11.02)	15 (0.59)	9 (0.35)	M8	12.83 (28.28)	IP20[1]
E	575 (22.63)	390 (15.35)	260 (10.23)	270 (10.62)	480 (18.89)	56 (2.20)	10 (0.40)	M8	38 (83.75)	IP00
F	760 (29.92)	464 (18.27)	316 (12.44)	320 (12.60)	625 (24.61)	72 (2.83)	10 (0.39)	M8	75.40 (166.23)	IP00
G	914 (35.98)	539 (21.22)	316 (12.44)	369 (14.53)	732 (28.82)	85 (3.35)	12 (0.47)	M10	107.20 (236.34)	IP00

Note: IP20 with optional kit.

Comparison

Comparison		SSW05	SSW06	SSW07	SSW08	SSW900
Current range		3 - 85 A	10 - 1,400 A	17 - 412 A	17 - 412 A	10 - 1,400 A
Power supply	Power voltage	220 - 460 V ac (+10%, -15%) 460 - 575 V ac (+10%, -15%)	220 - 575 V ac (+10%, -15%) 220 - 690 V ac (+10%, -15%)	220 - 575 V ac (+10%, -15%)	220 - 575 V ac (+10%, -15%)	220 - 575 V ac (+10%, -15%)
	Frequency	50 / 60 Hz	50 / 60 Hz (±10%)	50 / 60 Hz (±10%)	50 / 60 Hz (±10%)	50 / 60 Hz (±10%)
	Control voltage	90 - 250 V ac	110 - 230 V ac (+10%, -15%)	110 - 240 V ac (+10%, -15%)	110 - 240 V ac (+10%, -15%)	110 - 240 V ac (+10%, -15%)
Protection rating		IP00	IP00 (optional IP20 kit)	IP20 up to 85 A IP00 above 85 A (optional IP20 kit)	IP20 up to 85 A IP00 above 85 A (optional IP20 kit)	IP20 up to 85 A IP00 above 85 A (optional IP20 kit for frames C and D)
Overload duty	Normal	300% for 10 s, 4 starts per hour	Up to 670 A: 300% for 30s, 10 starts per hour Above 820 A: 300% for 30s, 5 starts per hour	300% for 30s, 10 starts per hour (frames A and D standard or frames B and C with ventilation kit)	300% for 20s, 10 starts per hour (frames A and D standard or frames B and C with ventilation kit)	Up to 412 A: 300% for 30s, 10 starts per hour (frames A and D standard or B and C with ventilation kit) Above 480 A: 300% for 30s, 5 starts per hour.
Controlled phases		2 phases	3 phases	3 phases	2 phases	3 phases
Built-in bypass		Yes	Yes, up to 820 A	Yes	Yes	Yes
Inside delta connection		No	Yes, above 30 A	No	No	Yes, above 105 A
Initial voltage		30 - 80%	25 - 90%	30 - 90%	30 - 90%	25 - 90%
Starting time		Yes, 1 to 20s	Yes, 1 to 999s	Yes, 1 to 999s	Yes, 1 to 999s	Yes, 1 to 999s
Stoppage time		Yes, 1 to 20s	Yes, 1 to 999s	Yes, 1 to 240s	Yes, 1 to 240s	Yes, 1 to 999s
Braking methods	Reverse braking	No	Yes (requires two external contactors)	No	No	Yes (requires two external contactors)
	DC braking	No	Yes	No	No	Yes
	Optimal braking	No	Yes	No	No	Yes
Control types	Voltage ramp	Yes	Yes	Yes	Yes	Yes
	Current ramp	No	Yes	No	No	Yes
	Current limit	No	Yes	Yes	Yes	Yes
	Kick-start	No	Yes	Yes	Yes	Yes
	Torque control	No	Yes	No	No	Yes
	Pump control	No	Yes	No	No	Yes
Inputs	Digital	2 (110 - 230 V ac), one of those is programmable	6 (24 V dc) programmable	3 (110 - 240 V ac) programmable	3 (110 - 240 V ac) programmable	5 (24 V dc) programmable
	PTC input	No	Yes (standard)	Yes (optional kit)	Yes (optional kit)	Yes (standard)
Outputs	Relay	1 relay output with NO contact, 250 V ac, 1 A, programmable	2 relay outputs with NO contact and 1 with NO/NC contact, 240 V ac, 1 A, programmable	2 relay outputs with NO contact, 240 V ac, 1 A, programmable	2 relay outputs with NO contact, 240 V ac, 1 A, programmable	2 relay outputs with NO contact and 1 with NO/NC contact, 240 V ac, 1 A, programmable
	Analog	No	1 programmable (1x 0-10 V dc) 1 programmable (1x 4-20 mA)	No	No	1 programmable (1 x 0-10 V dc or 1 x 4-20 mA)
Interfaces		RS232C[1]	USB[2], CAN[2], RS232[3], Ethernet[2] or RS485[2]	CAN[2], RS232[2] or RS485[2]	CAN[2], RS232[2] or RS485[2]	USB[3], CAN[2], Ethernet[2], RS485[2] or Bluetooth[2]
Fieldbus Protocols		Modbus-RTU	DeviceNet, Profibus DP, Profibus DP-V1, EtherNet/IP, Modbus-TCP and Modbus-RTU	Modbus-RTU and DeviceNet	Modbus-RTU and DeviceNet	DeviceNet, Profibus DP, Profibus DP-V1, EtherNet/IP, Modbus-TCP, PROFINET IO, CANopen and Modbus-RTU
HMI		Optional, remote LED display	Built-in 7-segment LED display Optional: local or remote LCD display	Optional, local or remote LED display	Optional, local or remote LED display	Built-in detachable local HMI with graphic LCD display. HMI with Bluetooth connectivity available as an accessory item.

Notes: 1) Built-in interface for conection with external HMI or with RS485 network (using MIW02 accessory).
     2) Available with an accessory.
     3) Available as standard.

Comparison

Comparison		SSW05	SSW06	SSW07	SSW08	SSW900
Protections		Phase loss	Phase loss in the power supply and in the motor	Phase loss in the power supply and in the motor	Phase loss in the power supply and in the motor	Phase loss in the power supply and in the motor
		Locked rotor	Locked rotor	Locked rotor	Locked rotor	Locked rotor
		Motor overload	Motor overload	Motor overload	Motor overload	Motor overload
		Overcurrent	Over and undercurrent in the motor	Over and undercurrent in the motor	Over and undercurrent in the motor	Over and undercurrent in the motor
		-	Overtemperature in the motor and in the soft-starter	Overtemperature in the motor and in the soft-starter	Overtemperature in the motor and in the soft-starter	Overtemperature in the motor and in the soft-starter
		-	Fault in the thyristor	Fault in the thyristor (overheating)	Fault in the thyristor (overheating)	Fault in the thyristor
		Phase sequence	Phase sequence	Phase sequence	Phase sequence	Phase sequence
		-	Undervoltage in the electronics	Undervoltage in the electronics	Undervoltage in the electronics	Undervoltage in the electronics
		-	Fault in the bypass	Fault in the bypass	Fault in the bypass	Fault in the bypass
		-	Under and overcurrent before the bypass closes	Overcurrent before the bypass closes	Overcurrent before the bypass closes	Under and overcurrent before the bypass closes
		-	Supply line frequency out of the range	Supply line frequency out of the range	Supply line frequency out of the range	Supply line frequency out of the range
		-	Voltage and current imbalance	Voltage and current imbalance	Voltage and current imbalance	Voltage and current imbalance
		Internal fault	Internal fault	Internal fault	Internal fault	Internal fault
		-	Warning for alarms before going into fault	-	-	Warning for alarms before going into fault
		-	Under and overvoltage in the power	-	-	Under and overvoltage in the power
		-	Ground fault	-	-	Ground fault
		-	Motor not connected	-	-	Motor not connected
		-	Motor wrong connection	-	-	Motor wrong connection
		-	Under and overtorque	-	-	Under and overtorque
		-	Over and underpower	-	-	Over and underpower
		-	Starting time exceeded	-	-	Starting time exceeded
Ambient conditions	Temperature	0 - 55 °C without derating	Up to 820 A: 0 - 55 °C without derating Above 820 A: 0 - 40 °C without derating	0 - 55 °C without derating	0 - 55 °C without derating	0 - 55°C without derating (frames A to D) 0 - 40 °C without derating (frames E, F and G)
	Humidity	0...90% non-condensing	20...90% non-condensing	5...90% non-condensing	5...90% non-condensing	5...90% non-condensing
	Altitude	Up to 1,000 m without derating	Up to 1,000 m without derating	Up to 1,000 m without derating	Up to 1,000 m without derating	Up to 1,000 m without derating
		1,000 - 4,000 m with 1% derating every 100 m	1,000 - 4,000 m with 1% derating every 100 m	1,000 - 4,000 m with 1% derating every 100 m	1,000 - 4,000 m with 1% derating every 100 m	1,000 - 4,000 m with 1% derating every 100 m
Other resources	Communication with PC	Yes	Yes	Yes	Yes	Yes
	SoftPLC function	No	Yes	No	No	Yes

Global presence is essential,
as much as understanding your needs.

Global Presence

With more than 30.000 employees worldwide, WEG is one of the largest electric motors, electronic equipments and systems manufacturers. We are constantly expanding our portfolio of products and services with expertise and market knowledge. We create integrated and customized solutions ranging from innovative products to complete after-sales service.

WEG's know-how guarantees the *line of Soft-Starters* is the right choice for your application and business, assuring safety, efficiency and reliability.

Availability is to have a global support network

Partnership is to create solutions that suit your needs

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