Quick Start Guide

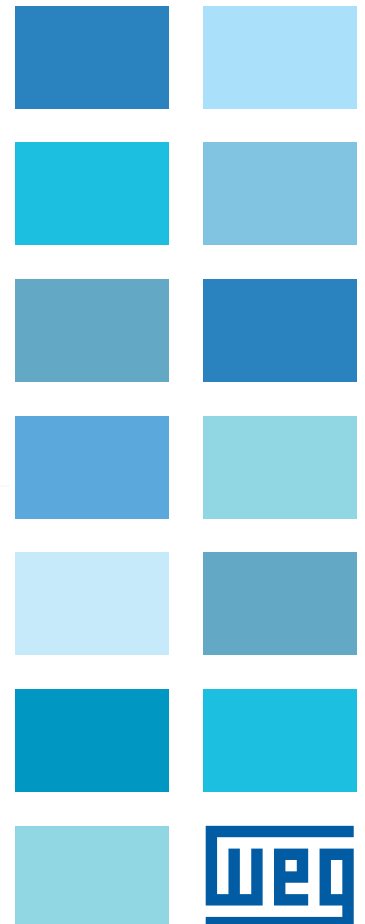## SSW06

- 25 to 150HP (85 to 365A) 230V
- 50 to 300HP (85 to 365A) 460V
- 75 to 365HP (85 to 365A) 575V

SSW 06

weg

Power Connections and Keypad Operation:

The SSW06 Quick Start Guide is a supplement to help get the SSW06 started quickly using the most common installation and configuration options. This SSW06 Quick Start Guide is not meant to replace the SSW06 User's Manual. For detailed instructions, safety precautions, proper mounting, installation, configuration, and operation please refer to the SSW06 User's Guide. **Warning:** Only qualified personnel should plan or implement the installation, start-up, operation and maintenance of this equipment. Personnel must read the entire SSW06 User's Guide before attempting to install, operate or troubleshoot the SSW06.
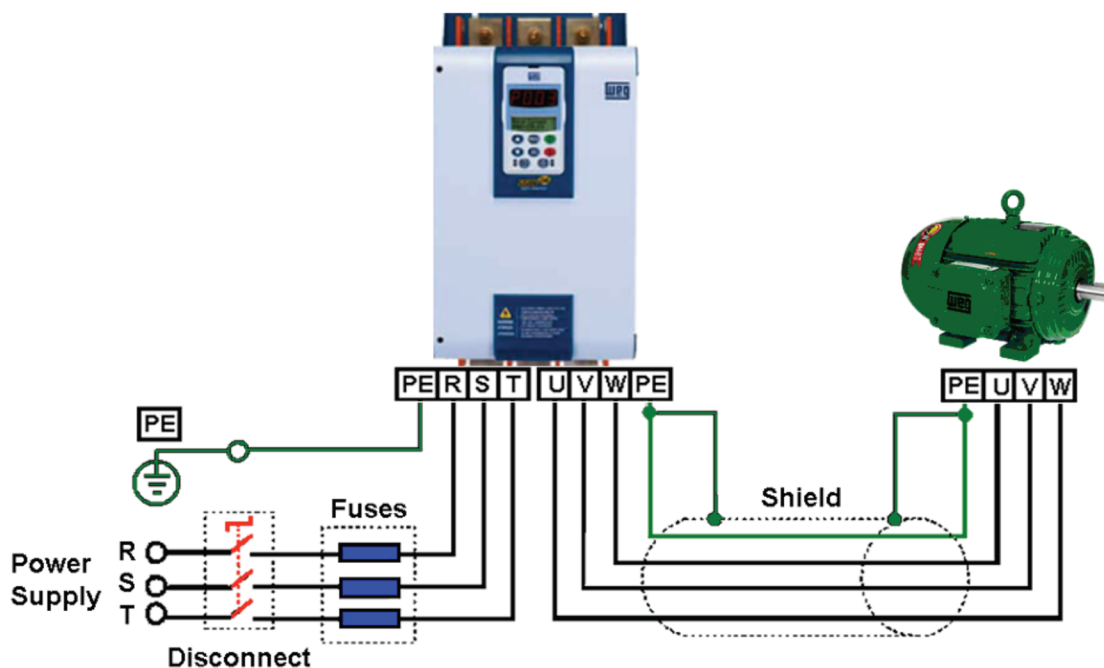

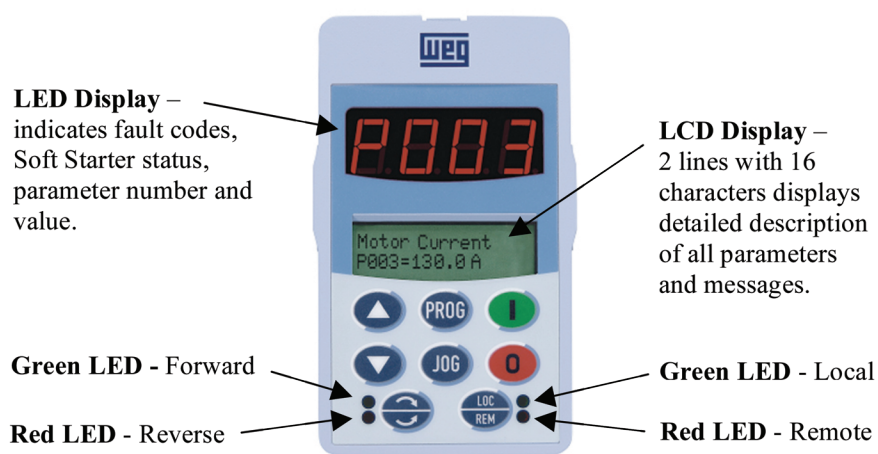*Figure 1* - *Power and Grounding Connections*

Figure 2 – *Keypad Operation*

Key	Description
PROG	Switches the display between parameter number and content.
JOG	Jogs motor when pressed
▲	Increases Parameter number/content
▼	Decreases Parameter number/content
⟳	Forward/Reverse Key Green LED = Forward Red LED = Reverse
I	Starts (Enable) the motor (start)
O	Stops (Disables) the motor (stop). Also resets the Soft Starter after a fault has occurred.
LOC REM	Local/Remote Key Green LED = Local Mode Red LED = Remote Mode
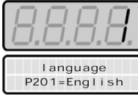
Display	Display Description
rdy	Soft Starter is Ready to be Enabled
ruP	Soft Starter is operated via acceleration ramp
FuLL	Soft Starter is operated "full voltage"
PASS	Soft Starter is operated with enabled By-pass
Rd0	Soft Starter is operated via deceleration ramp

Basic Wiring:

1. Mount the SSW06 to a flat vertical surface.
2. For three-phase input power connect the incoming power leads to the R, S, and T connections on the power terminal and connect the GROUND lead to PE on the chassis (Refer to Figure 1). Connect the motor leads to the U, V, and W connections on the power terminal and connect the GROUND lead to PE on the chassis (Refer to Figure 1). **Note:** Only three-phase AC motors can be used. Connect the control power leads to the connector X1A-1, 2, and PE Control voltage (94 to 253 Vac).
3. Apply power to the SSW06 soft starter and proceed to "Initial Start-up". The Soft Starter will display "P201" on the LED/LCD displays. This is the first parameter in the "Initial Start-up" mode.

Note: When the Soft Starter is powered up for the first time or when the factory default parameter values are loaded (P204=5), the "Initial Start-up" sub-routine is run. This sub-routine requests the user to program some basic parameters to ensure proper operation and motor protection. The motor and Soft Starter nameplate data is required in order to set these parameters. See page 6 for an example of motor nameplate data required (P400-P406).

Initial Start-up:

Action	LED/LCD Display	Description
After power-up, the display shows the following message.	`P201` language P201=English	Language Selection: 0=Portuguese, 1=English, 2=Spanish, 3=German
Press **PROG** to enter the programming mode.	`8.8.8.1.` language P201=English	Enter the programming mode.
Use ▲ and ▼ arrow keys to select the language.	`8.8.8.1.` language P201=English	Selected Language: Select language 1 = English
Press the **PROG** key to save the selected option and exit the programming mode.	`P201` language P201=English	Exit the programming mode.
Press the ▲ arrow key to go to the next parameter.	`P150` Delta Inside P150=OFF	Soft Starter Connection Type to the motor: 0=Inactive = standard 3 wires 1=Active = Delta inside 6 wires
Continue in this fashion programming the remaining parameters for the inverter. Press **PROG** to enter programming mode, Press ▲ and ▼ to select a parameter value. Press **PROG** again to store the value. Press ▲ to go to next parameter. **Repeat procedure** until the remaining motor parameters P202, P101, P102, P400, P401, P406, and P640 required in the "Initial Start-up" have been programmed.	`rdy` VFD ready	When the last parameter P406 has been stored and the "UP" key pressed, "RDY" is displayed on the keypad indicating the inverter is ready to operate. **Note:** To repeat the initial power-up procedure: Set parameter P204=5 (this loads the factory default parameters) and follow the "Initial Start-up" procedure again. **Password for parameter access P000=5**

Note: These are the minimum parameters for a perfect adaptation between soft starter and motor. With these parameter settings you can operate the soft starter in "Local" mode via the keypad. This operation mode is recommended for users who are operating the Soft Starter for the first time without additional control connections. For start-up according to this operation mode, proceed to step 5.

Start-up by Voltage Ramp

Start-up by Voltage Ramp: (The start by voltage ramp is the most used method and its programming and parameter setting is very easy to do).

4. The soft starter should be powered up with a display of "RDY". Having completed "Initial Start-up", keypad navigation should now be familiar. **Note:** To change the value of all the parameters, P000 must first be set to 5 (**Password Parameter P000=5**).

5. Press the ⬆ or ⬇ key to select P202.

6. Press the (PROG) key to enter the programming mode.

7. Press the ⬆ or ⬇ key to set to "0" for Voltage Ramp.

8. Press the (PROG) key to save the selected option and exit the programming mode.

9. Press the ⬆ or ⬇ key to select P003 (Motor Current).

10. Press the (PROG) . key to read Motor Current value.(This is a read parameter)

11. Press the (I) start key. The motor accelerates and a high value of current is reached.
   Note: If the direction of rotation is not correct, switch off the soft starter and swap any two wires at the motor output.

12. Press the (O) stop key. The motor decelerates until stopping by coast to rest. Time to stop depends on load inertia and friction.

Note: (1) For a complete description of Parameters and Error codes refer to Chapters 6 and 8 in the SSW06 User's Guide.

Local/Remote Modes:

In the previous section the soft starter was operated from the keypad (Local Mode). Note the green local indicator LED on the bottom right of the keypad (Fig.2). For the factory default programming, the selection of the operation mode (Local/Remote) is made via the "Local/Remote" key (default is Local). To pass default of the key to remote, set P220=3. With this setting the soft starter will power up in remote mode. Note the red remote indicator LED on the bottom right of keypad (Fig. 2). If you wish to use an external Local/Remote switch set P220=4, connect the switch to one of the Digital Inputs (DI2-DI5), and set the corresponding parameter (P264 to 268=0). To always run in Local mode set P220=0. To always run in Remote mode set P220=1.

2 Wire Start/Stop (Remote Mode):

Parameter:
1. Set P220=1 Always Remote
2. Set P230=1 Digital Inputs

Control Wiring: Verify there is a jumper between X1B-8 and X1B-10 or the soft starter will not work. Start/Stop switch is N.O. (normally open) and is connected as shown in Figure 3.
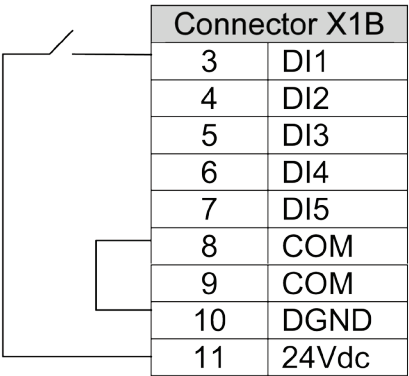
Connector X1B	
3	DI1
4	DI2
5	DI3
6	DI4
7	DI5
8	COM
9	COM
10	DGND
11	24Vdc

Figure 3 – *2 Wire Start/Stop*

3 Wire Start/Stop (Remote Mode):

Parameters:
1. Set P220=1 Always Remote
2. Set P230=1 Digital Inputs
3. Set P264=1 DI2 Stop

Control Wiring: Verify there is a jumper between X1B-8 and X1B-10 or the soft starter will not work. "Start" and "Stop" are momentary push button switches and are connected as shown in Figure 4. "Start" is a N.O. (normally open) contact and "Stop" is a N.C. (normally closed) contact.
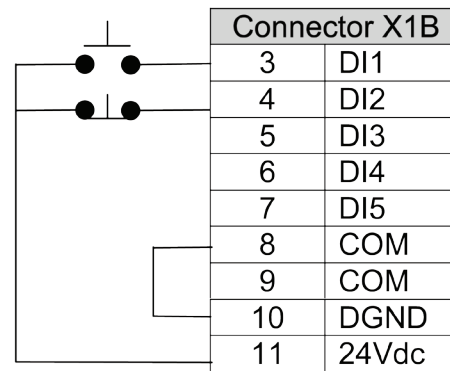
Connector X1B	
3	DI1
4	DI2
5	DI3
6	DI4
7	DI5
8	COM
9	COM
10	DGND
11	24Vdc

Figure 4 - 3 Wire Start/Stop

Signal and Control Connections:

Conector X1A		Description
1	Phase	
2	Neutral	Eletronic Supply
PE	Ground	
Connector X1B		**Factory Standard Function**
3	DI1	Motor Enable/Disable
4	DI2	Error Reset
5	DI3	Not Used
6	DI4	Not Used
7	DI5	Not Used
8	COM	Common point of the Digital Inputs
9	COM	Common point of the Digital Inputs
10	DGND	0V reference of the 24Vdc source
11	24Vcc	Digital Input Supply
12	PTCB	DI6 - Not Used
13	PTCA	
14	AGND	Input for motor Thermistor
15	AO1	
16	AGND	Analog Output 1 - Not used
17	AO2	
Conector X1C		**Factory Standard Function**
18	RL1 NA	Relay Output - Run
19	RL1 NA	
20	RL2 NA	Relay Output - Full Voltage
21	RL2 NA	
22	RL3 NA	Relay Output – No Error
23	RL3 C	
24	RL3 NF	
Conector X1D		**Description**
25	TERM.	Over-temperature thermostat
26	TERM.	
27	TC 1/R VER	Current transformer phase R
28	TC 1/R PRET	
29	TC 2/S VER	Current transformer phase S
30	TC 2/S PRET	
31	TC 3/T VER	Current transformer phase T
32	TC 3/T PRET	
Connector X1E		**Descrição**
33	Phase	Fan Supply (from model 255A)
34	Neutral	

Nota: NC = Normally Closed Contact
NO = Normally Open Contact
C = Common

Fault Codes:

When a fault is detected, the soft starter is disabled and the Fault Code is displayed (example E03). To restart the soft starter after a fault has occurred, the inverter must be reset. Resetting the soft starter can be done by disconnecting and reapplying AC power (power-on reset), by pressing the "O/RESET" key (manual reset), automatic reset, or via digital inputs. For details on Reset and a full list and description of Fault Codes please read Chapter 8 in the SSW06 User's Guide.

Parameters Exampels:

Soft Starter Data (Example)	Motor Data (Example)
Model: SSW060130T2257PSZ	Power: 75 HP
	Rated Speed: 1770 RPM
	Rated Current: 101A
	Rated Voltage: 380 V
	Service Factor: 1.15

- The following is a typical list of parameter changes needed using the Motor/Soft Starter data shown above.

  P000=5   Parameter Access (5 = Password)
  P201=1   Language Setting (1 = English)
  P150=0   Delta Inside (0 = Off)
  P=202=0   Type of Control (0 = Voltage Ramp)
  P101=35   Initial Selected Voltage (35%)
  P102=15   Voltage Ramp Time (15 seconds)
  P400=380   Motor Rated Voltage (380 volts)
  P401=101   Motor Rated Current (101 amps)
  P406=1.15   Motor Service Factor (1.15)
  P640=6   Thermal Motor Protection Class (Class 30)

- Local/Remote parameters allow the soft starter to be set up to operate from Keypad, Remote Terminal, or a programmed combination of keypad and terminal inputs.

  P220 – Local/Remote Selection
  P229 – Local Status Command
  P230 – Remote Status Command
  P231 – FWD/REV Selection
  P510 – Jog Selection

- Read Only Parameters (P001 – P085) can be used for monitoring and troubleshooting. For a full list and description please read the SSW06 User's Guide. By monitoring certain read only parameters, the status of inputs, outputs, and drive operational values can be determined without the use of any other test equipment.

  P001 - Soft Starter Current
  P003 - Motor Current
  P004 - Power Supply Voltage
  P006 - Soft Starter Status
  P007 - Output Voltage
  P012 - Digital Input Status
  P013 - (Relay Output Status) – used to monitor relay outputs.

These are just a few examples of the soft starter set-up and parameters. Please read the SSW06 User's Guide for additional information.

SOFT STARTER

ADVANTAGES – A **Dual Readout Digital Copy Keypad** allows maximum ease of operation by providing a high visibility red LED display and a 2-line by 16-character alpha-numeric display that virtually eliminates the need for an instruction manual during set-up and operation. The alpha-numeric readout can display in English, Spanish, German or Portuguese. The copy keypad function allows the storage of two unique sets of User Parameters for easy recall. This can also be used to download these parameters to other SSW06's for easy set-up and "cloning" of multiple soft starters.

"Oriented Start-Up" is a WEG exclusive advantage that simplifies the initial start-up of the SSW06. The SSW06 asks for operational and motor information via the keypad, thereby assuring correct operation and the motor overload protection is setup accurately.

The **Built-in Bypass Contactor** will automatically put the AC motor "across-the-line" once the SSW06 has smoothly accelerated the motor up-to-speed. The bypass contactor will minimize power losses and heat dissipation by removing the SCR's from the motor control and also provide energy savings and a smaller overall soft starter package. The user can mount the SSW06 inside of a more protective enclosure, NEMA1, NEMA3R, NEMA12, NEMA4 and NEMA4X with minimal cooling requirements.

Universal Source Voltage allows a single unit to be used in applications with voltages ranging from 220 to 575V AC three phase, 50/60Hz. The appropriate soft starter would be selected by the full load Amps of the AC motor.

QS003SSW06