

WEG SSW7000 Medium Voltage Soft Starter



Driving efficiency and sustainability



Class: SSW701
Version: 01.2025



Automation Training

WEG Medium Voltage Solutions



Overview

- Variable Speed Drives and Soft Starters from 1,000V to 13,800V.
- Available US Inventory and Assembly.
- Two Variable Speed Drive topologies, range of cooling / installation configurations.

MVW01

MVW01-G3
Up to 6.9 kV

46,000 HP



MVW01-W Water Cooled
Up to 6.9 kV

50,000 HP



MVW3000

MVW3000
Up 13.8 kV

30,000 HP



SSW7000

SSW7000C
Up to 6.9 kV

8,000 HP



SSW7000
Up 13.8 kV

20,000 HP



Soft Starter Definition



- A motor soft starter is a device used with AC electrical motors to temporarily reduce the motor torque during starting. Soft starters work by reducing the voltage and / or current during starting while the frequency remains constant
- Also known as Reduced Voltage Soft Starter (RVSS), Solid State Starter, Variable Voltage Fixed Frequency starter (VVFF)

Advantages:

- + Reduces voltage sag in the supply network during starting due to reduced starting current
- + Reduces mechanical stresses on the motor and driven equipment
- + Reduces electrodynamic stresses in cabling and upstream switchgear

Disadvantages:

- Motor torque is reduced during starting
- Soft Starters cannot be used on all applications
 - Constant torque applications requiring fully loaded starting
 - High inertial loads like large fans
- Not able to vary motor speed

Frames and Ratings



Frame C:

- 2.3kV – 4.16kV
- 125A, 180A, 250A, 360A
- NEMA 12 & NEMA 3R



Frame B:

- 2.3kV – 6.9kV
- 500A & 600A
- NEMA 12



Frame D:

- 10.0kV – 13.8kV
- 70A – 600A
- IP41

Assembled in the US

SSW7000C Features

Assembled & stocked in Duluth, GA

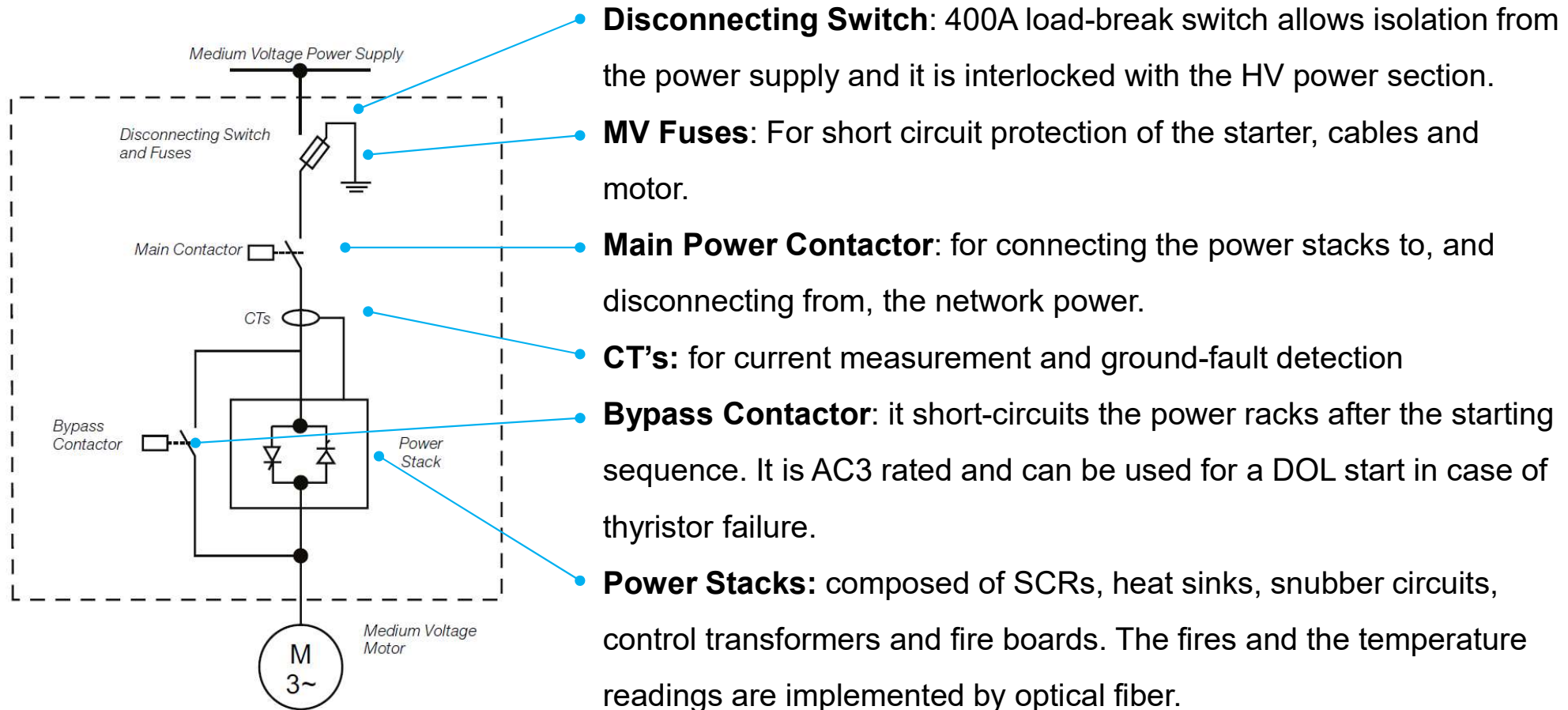
- 2300VAC and 4160VAC
- NEMA 12 and NEMA 3R enclosures
- UL 347 listed
- Direct replacement for most competitors
- Emergency direct-on-line start capability
- Active motor protections in bypass and DOL operation
- Fused control power transformer included
- Ground fault protection is a standard feature
- Service entrance rated
- Built-in soft PLC function (license-free software)
- 5 starting modes available
- Oriented Startup-Up (guided setup sequence)



SSW7000C Features



Main Components



SSW7000 Features



Main Components

Line Connections

Medium Voltage to
120V Control Power
Transformer

Medium Voltage
Measurement Board

400A load-break
switch, mechanically
interlocked with lower
compartment

Current Measurement
and Ground Fault
Current Transformers

Power Fuses (R rated)

Main & Bypass
Contactors

Power Stacks

Motor Connections



SSW7000 Dimensions and Protection Features



Dimensions

same for NEMA 12 & NEMA 3R



Protections

ANSI/IEEE C37.2	Function/Protection Feature	Standard	Option
19	Reduced Voltage Starting and Bypass	<input checked="" type="checkbox"/>	<input type="checkbox"/>
27	Undervoltage protection	<input checked="" type="checkbox"/>	<input type="checkbox"/>
37	Undercurrent protection	<input checked="" type="checkbox"/>	<input type="checkbox"/>
46	Phase-Balance Current protection	<input checked="" type="checkbox"/>	<input type="checkbox"/>
47	Phase Sequence	<input checked="" type="checkbox"/>	<input type="checkbox"/>
48	Incomplete Sequence	<input checked="" type="checkbox"/>	<input type="checkbox"/>
50	Instantaneous Overcurrent trip	<input checked="" type="checkbox"/>	<input type="checkbox"/>
51	Overcurrent trip	<input checked="" type="checkbox"/>	<input type="checkbox"/>
55	Power Factor check	<input checked="" type="checkbox"/>	<input type="checkbox"/>
59	Overvoltage	<input checked="" type="checkbox"/>	<input type="checkbox"/>
81	Frequency check	<input checked="" type="checkbox"/>	<input type="checkbox"/>
86	Lockout Relay - electronic	<input checked="" type="checkbox"/>	<input type="checkbox"/>
50N/51G	Ground fault detection instantaneous and fault-current	<input checked="" type="checkbox"/>	<input type="checkbox"/>
49 & 38	Winding Temperature and Bearing Temperature	<input type="checkbox"/>	<input type="checkbox"/>

MV Soft Starters: Sales Tips



Great places to supply WEG Medium Voltage Motor Control

- Every Motor is Started by Something
 - Include WEG MV Soft Starters or Drives with every MV Motor Quote
- Facilities with antiquated motor control (wye-delta, auto transformer, direct on-line (DOL) starters)
- Customers dealing with voltage drop issues or peak demand utility costs
- Instances of motor failure / equipment damage due to the use of DOL starters
- Replacement of existing Soft Starters

Selling Soft Starters is the same whether Medium Voltage or Low Voltage

Consideration	LV	MV
Current / Power & Voltage	✓	✓
Application	✓	✓
Environment / Enclosure	✓	✓
Features / Accessories	✓	✓

Important note: Motor rated current must be at least 20% of the starter rated current

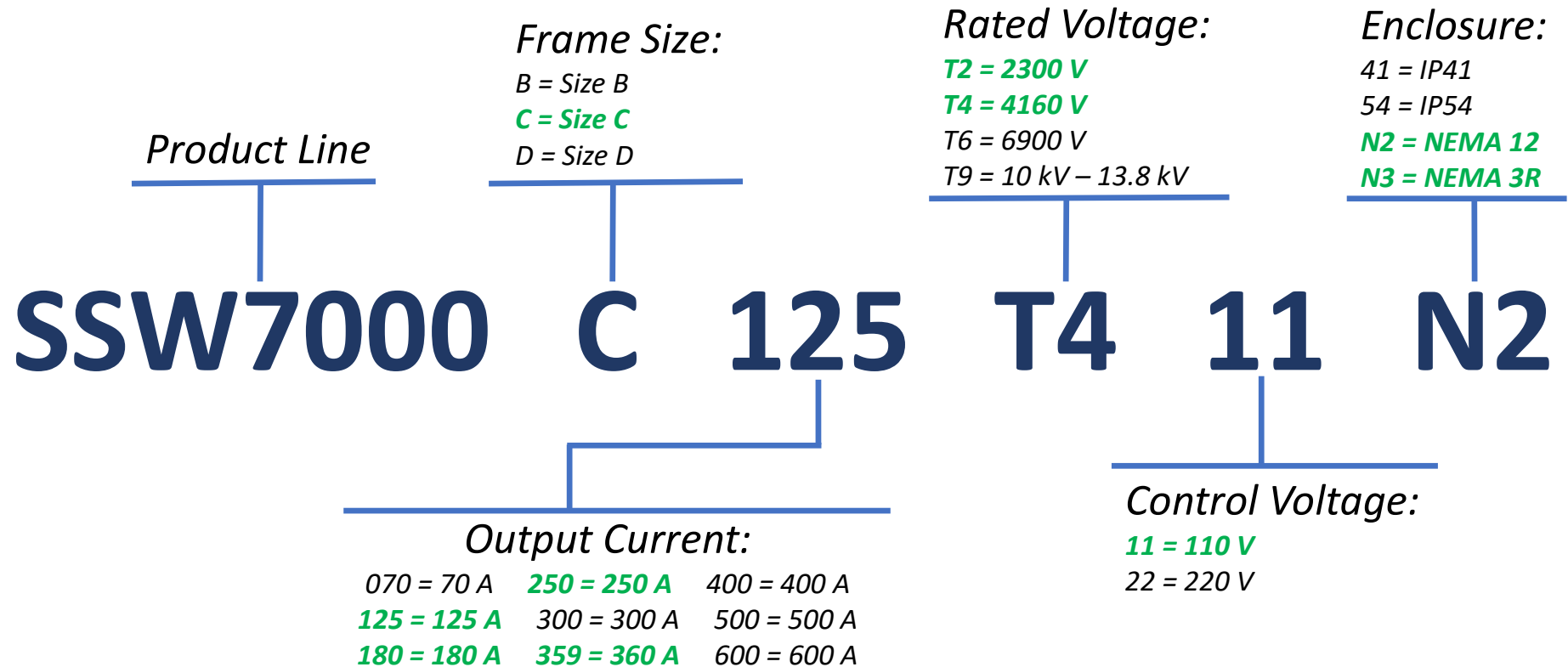
EXAMPLE:

Starter Model:	SSW7000C250T411N2
Rated motor power:	1,000HP
Rated continuous current:	up to 250A
Minimum motor current:	50A (250 * 0.2)
Equivalent motor power:	450HP

Catalog Number Definition



Specific to US Built Product



SSW7000C Catalog Numbers in Stock



Power Supply	Model	Rated Current	Motor Power	
			HP	kW
NEMA 12				
2300V, 3PH, 60Hz	SSW7000C125T211N2	125A	550	410
	SSW7000C180T211N2	180A	750	560
	SSW7000C250T211N2	250A	1,100	800
	SSW7000C360T211N2	360A	1,500	1,100
4160V, 3PH, 60Hz	SSW7000C125T411N2	125A	1,000	750
	SSW7000C180T411N2	180A	1,500	1,100
	SSW7000C250T411N2	250A	2,000	1,500
	SSW7000C360T411N2	360A	3,000	2,250
NEMA 3R				
2300V, 3PH, 60Hz	SSW7000C125T211N3	125A	550	410
	SSW7000C180T211N3	180A	750	560
	SSW7000C250T211N3	250A	1,100	800
	SSW7000C360T211N3	360A	1,500	1,100
4160V, 3PH, 60Hz	SSW7000C125T411N3	125A	1,000	750
	SSW7000C180T411N3	180A	1,500	1,100
	SSW7000C250T411N3	250A	2,000	1,500
	SSW7000C360T411N3	360A	3,000	2,250

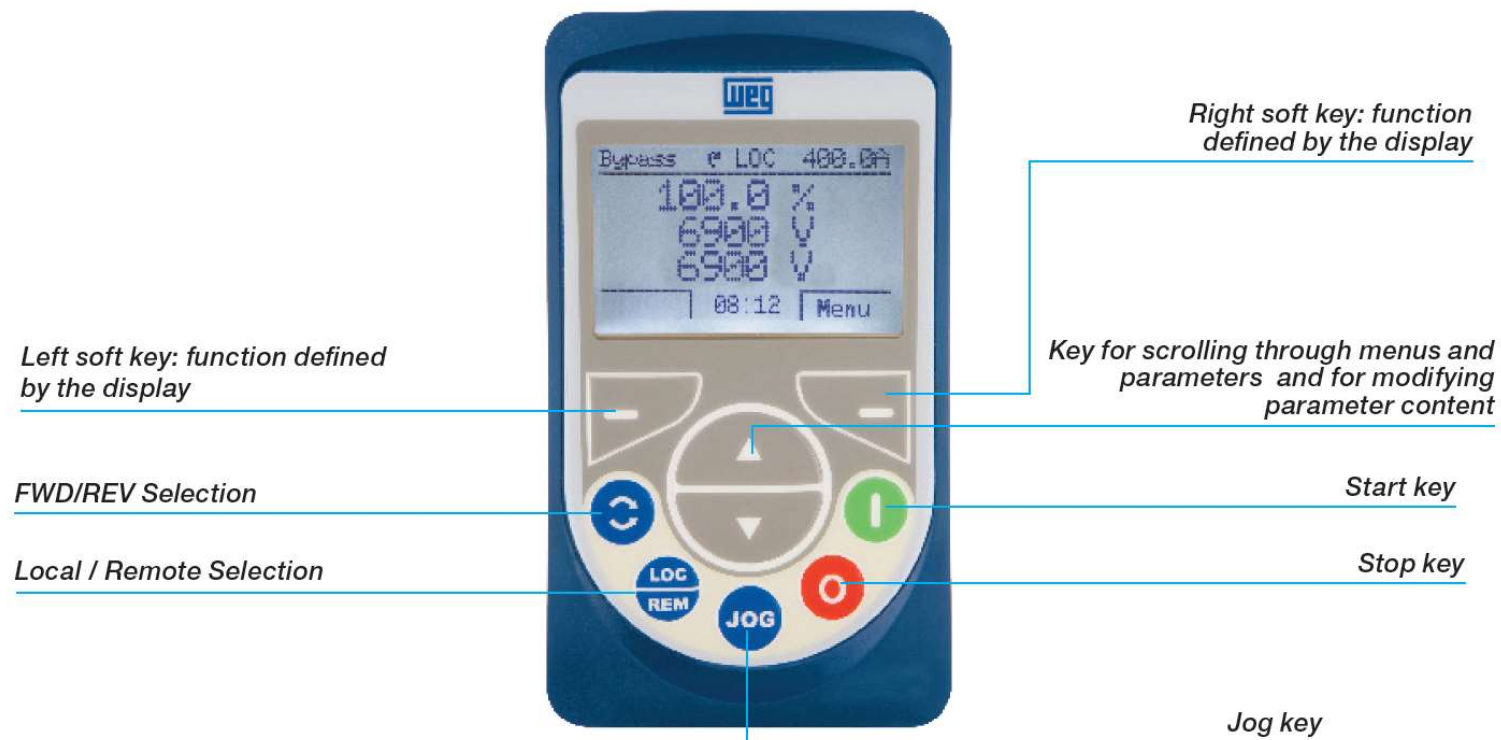


SSW7000C Features



Human Machine Interface – HMI

Navigation is similar to the logic used in cell phones, with the option of sequential access to the parameters or through the groups (Menu) by means of the function access keys on the display (soft keys).



SSW7000C Features



Plug and play philosophy

The installation of the accessories is based on the plug-and-play philosophy, that is, they are automatically configured when connected to the SSW7000, ensuring a faster and easier process.



SSW7000C Options and Accessories



Reference	Description	Slot
Control accessories to install in slots 1, 2 and 3		
IOE-04	Module for 8 temperature sensors Pt-100	1 and 2
RS 485-01	RS 485 serial communication module (Modbus)	3
RS 232-01	RS 232C serial communication module (Modbus)	
RS 232-02	RS 232C serial communication module with switch to program the microcontroller Flash memory	
Anybus-CA accessories to install in slots 4		
PROFDP-05	Profibus-DP interface module	4
DEVICENET-05	DeviceNet interface module	
ETHERNET/IP-05	Ethernet/IP interface module	
RS232-05	RS 232 interface module (passive) (Modbus)	
RS485-05	RS 485 interface module (passive) (Modbus)	
Flash memory module to install in slot 5 - included in standard models		
MMF-01	Flash memory module	5
Other accessories		
HMI-01	Man Machine Interface - MMI (sold separately)	-
RHMIF-01	Frame kit for MMI (protection rate IP56)	

SSW7000C Options and Accessories



RTD Module (IOE-04)

- Allows for monitoring of up to 8x PT100s
- Programmable ALARM & TRIP temperatures
- Dedicated parameters for reading and programming each channel independently

P0063	Ch1 Motor Temperature	-20 to 260 °C
P0064	Ch2 Motor Temperature	-20 to 260 °C
P0065	Ch3 Motor Temperature	-20 to 260 °C
P0066	Ch4 Motor Temperature	-20 to 260 °C
P0067	Ch5 Motor Temperature	-20 to 260 °C
P0068	Ch6 Motor Temperature	-20 to 260 °C
P0069	Ch7 Motor Temperature	-20 to 260 °C
P0070	Ch8 Motor Temperature	-20 to 260 °C





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Thank you for your
time and attention.



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