CFW11

Variable Frequency Drives

WEG's CFW11 uses state-of-the-art technology to control motors up to 600HP. Aimed at increasing customers productivity, the CFW11 offers the following innovations:

Applications

- Pumps
- Fans / Blowers
- Conveyors
- Compressors
- Agitators and Mixers
- Extruders
- Grizzly Feeders
- Centrifuges
- Cranes and Hoists
- Rollout Tables
- Presses
- Saws

Options

- Safety stop in compliance with EN 954 - 1 / category III**
- External control feed with 24 Vdc
- RFI filter in compliance with EN 61800 - 3 (internal)**
- DB Resistors available upon request

** Factory ordered

Standard Features

- Same programming as all other WEG VFD's
- Plug and play philosophy (connect and use) enables quick and easy installation of accessories and options.
- USB for microcomputer connection for using SUPERDRIVE programming and monitoring software as well as updating inverter firmware.
- Human-Machine Interface (HMI) with backlit graphic display and soft-keys, greatly facilitates inverter programming and operation.
- DC link inductors (symetrically connected to positive and negative DC link terminals) enable compliance with IEC61000-3-12 standard requirements regarding harmonics, (no need for external line reactance)
- Intelligent thermal management enables full protection of IGBTs, monitoring of heatsink and internal air temperature.
- Conformal coated circuit boards.
- 50° C Ambient
- Automatic control of the heatsink fan with speed sensor (additional protection) and easily detachable from the unit for cleaning and maintenance.
- Normal Duty and Heavy Duty ratings to adapt optimally to all kinds of loads.
- Protection with failure and alarm warnings.
- Motor overload protection in compliance with IEC 60947-4-2/UL 508 C.
- Memory card built into the standard product allows user to create functions without the need to use an external PLC (soft-PLC via IEC61131-3 programming software)
- Guided start-up simplifies initial user programming.
- Real time clock with time and date stamped fault log.
- TRACE / SCOPE function to assist with the start-up and system diagnostics.
- SuperDrive G2 compatible

Mounting Options

CFW11

Variable Frequency Drives
1.5 to 600 HP

Coding

1. CFW11	2 0006	3 T	4 4	5 0	6 N1	7	8 Z

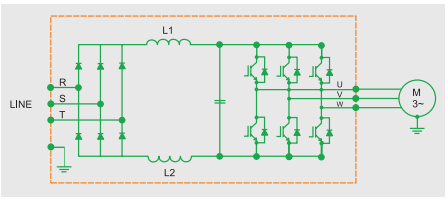
1. CFW11 series		
2. Frame Size:	**= A, B, C, D or E**	**0006 = 6 Amps**
		0024 = 24Amps
		0242 = 242Amps
		0601 = 601 Amps
3. Number of Phase:	**B = Single phase or Three phase**	
	S = Single phase	
	T = Three Phase	
4. Input Voltage:	**2 = 200...240VAC**	
	4 = 380...480VAC	
5. Options:	**S = Standard**	
	O = An option function built-in (Ex. ON1 - NEMA1 included)	
6. Enclosure:	**N1 = NEMA 1**	
7. Options:	**Blank = Standard**	
	DB = Dynamic Braking	
8. End of Code:	**Z**	

Variable Frequency Drives
CFW11

Technical Features

Built-in DC link Reactor

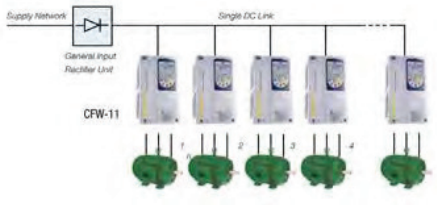
- Allows the VSD to be installed in any network (there is no minimum impedance restriction).
- Typical power factor (PF) for rated condition:
  0.94 for models with three-phase supply
  0.70 for models with single-phase supply
- Displacement Power factor > 0,98
- Meets the 61000-3-12 standard, related to low order current harmonics in the network.



No need for external line reactor

Intelligent Thermal Management

- Monitoring of the heatsink and internal air temperatures of the electronic boards provide total protection of the IGBTs and the CFW-11 as a whole.
- The heatsink fan is turned on and off automatically, depending on the temperature of the power modules.
- The speed and the number of hours of operation of the fan are monitored and indicated in corresponding parameters. Alarm or fault messages are generated related to these variables.
- The fan is easily removed for cleaning or replacement.



Common Bus available

Usually used in multi-motor systems, common DC bus confguration is a good solution for energy savings.

In this confguration, individual VSD rectifer bridges are replaced with a common input rectifer unit.Each VSD is then directly fed from the DC bus to its DC link terminals.

This solution allows the energy in the DC bus to be shared among the VSDs connected to it, thus optimizing the power consumption in the system. The standard CFW-11 can be connected to a DC bus system. (When required the factory should be consulted for further details). Regenerative front ends are also available.

Note: An extra pre-charge circuit must be added to each of the VSDs.

Functions

- Multi-speed: up to 8 pre-programmed speeds.
- PID regulator: automatic control of level, pressure, flow, weight, etc.
- Ride-Through: operation during momentary Loss of the power supply.
- Skip Frequency: rejection of critical or resonant speeds.
- S Ramp: smooth acceleration / deceleration.

- All CFW-11 models from size A to D have optionally braking IGBT in as standard;
- CFW-11 size E the braking IGBT is optional built-in;
- CFW-11 sizes F and G, Breaking IGBT is optionally with the external DBW module;
- CFW-11 can monitor the temperature probes of the motor (PTC, PT100 KTY84), providing thermal protection to the motor (optional accessory is necessary);
- Operating air temperature up to 50° C (122° F) for sizes A to D, and up to 45° C (113° F) for size E, 45° C (113° F) for sizes F and G up to 601A, 40° C (104° F) for size G with 720A;
- Motor overload protection according to IEC 60497-4-2 and UL 508 C

Variable Frequency Drives
CFW11

Drive Ratings

Normal Duty (ND) Cycle:

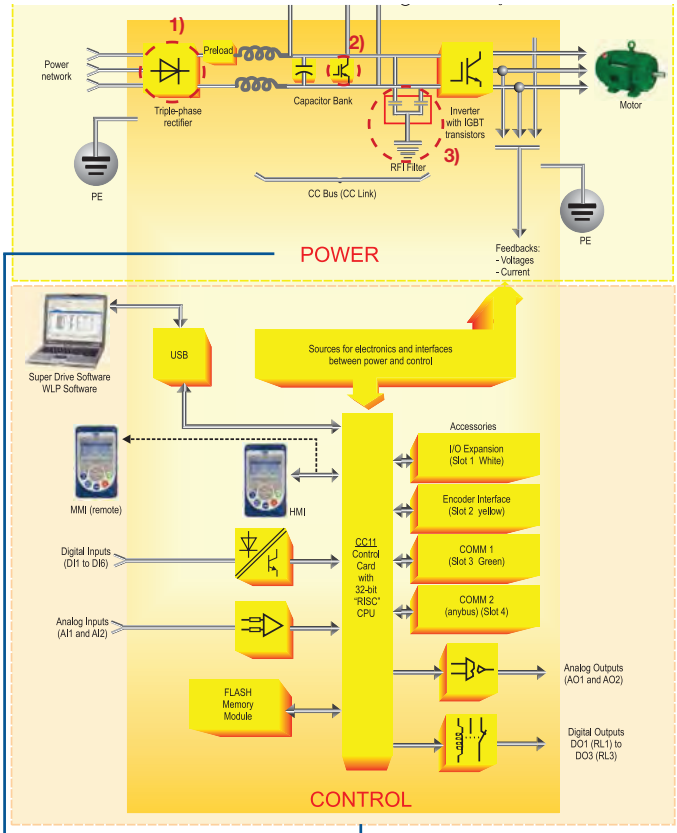
- 110% for 60 seconds every 10 minutes
- 150% for 3 seconds every 10 minutes

Heavy Duty (HD) Cycle:

- 150% for 60 seconds every 10 minutes
- 200% for 3 seconds every 10 minutes

Frame A Frame B Frame C Frame D Frame E Frame F Frame G

Sizing the drive The correct way to select a VSD is to match its output current with the motor rated current. However, the tables in this catalog also present the expected motor horsepower for each VSD model. Use the motor power ratings only as a guide. Motor rated currents may vary with speed and manufacturer. IEC motor powers are based on WEG 4-pole motors, NEMA motor powers are based on NEC table 430-150.



Notes:
1) Half controlled bridge rectiifer for sizes F and G;
2) Standard for sizes A to D;
3) Standard RFI filter for sizes E, F and G;
Please refer to the user manual for more information.

Variable Frequency Drives
CFW11

Plug and Play

The CFW11 inverter incorporates Plug and Play technology, automatically recognizing and configuring accessories and options used, enabling easy installation and safe operation while eliminating manual configuration.

Accessories

Name	Description	Slot
IOA-01	IOA Module for CFW11: 1 analog input (AI4 - 14 bits, voltage or current); 2 digital inputs; 2 analog outputs (AO3 and AO4 -14 bits, voltage or current); 2 digital outputs (open-collector). All analog input and output are galvanic isolated.	1
IOB-01	IOB Module for CFW11: 2 isolated analog inputs (AI3 and AI4 - 12 bits, voltage or current); 2 digital inputs; Provides Galvanic Isolation for AO1 and AO2 - 11 bits, voltage or current); 2 digital outputs (open-collector). All analog inputs and outputs are galvanically isolated.	1
IOC-01 (*)	8 digital inputs and 4 relays	1
IOC-02	8 digital inputs and 8 digital outputs	1
IOE-01 (*)	6 - PT100 or KTY 84 - thermistor inputs	1
ENC-01	Interface for incremental encoder 5 to 12Vdc, 100kHz (1) with repeater	2
ENC-02	Interface for incremental encoder 5 to 12Vdc, 100kHz(1)	2
RS485-01	Interface for RS-485 serial communication (modbus)	3
RS232-01	Interface for RS-232C serial communication	3
CAN/RS485-01	CAN interface (CANopen, DeviceNet); RS-485	3
CAN-01	CAN interface (CANopen, DeviceNet)	3
PROFIBUS DP-01 (*)	Profibus DP interface	3
PLC11-01 (*)	PLC functions; IEC programming; electronic gear box	1, 2 and 3
	9 digital inputs; 3 relay outputs; 3 digital outputs	
	14-bit analog input; 2 analog outputs with 14-bit resolution	
	2 encoder interfaces; RS-485 MODBUS-RTU; CAN	
	(CANopen, DeviceNet, CANopen master/slave)	
PROFIBUS DP-05*	Profibus DP interface (Anybus)	4
Devicenet-05*	Devicenet 4 interface (Anybus)	4
EtherNet IP-05 (*)	Ethernet IP interface (Anybus)	4
HMID - 01	Blind cover for slot HMI	-
RHMIF - 01	Frame for remote HMI	-
KN1A - 01	Conduit kit for size A	-
KN1B - 01	Conduit kit for size B	-
KN1C - 01	Conduit kit for size C	-

Note: * Anybus card goes in slot 4 and allows the user to combine PLC11 board with Profibus DP-05, Devicenet-05 or Ethernet IP-05

Variable Frequency Drives
CFW11

Superdrive Programming Software

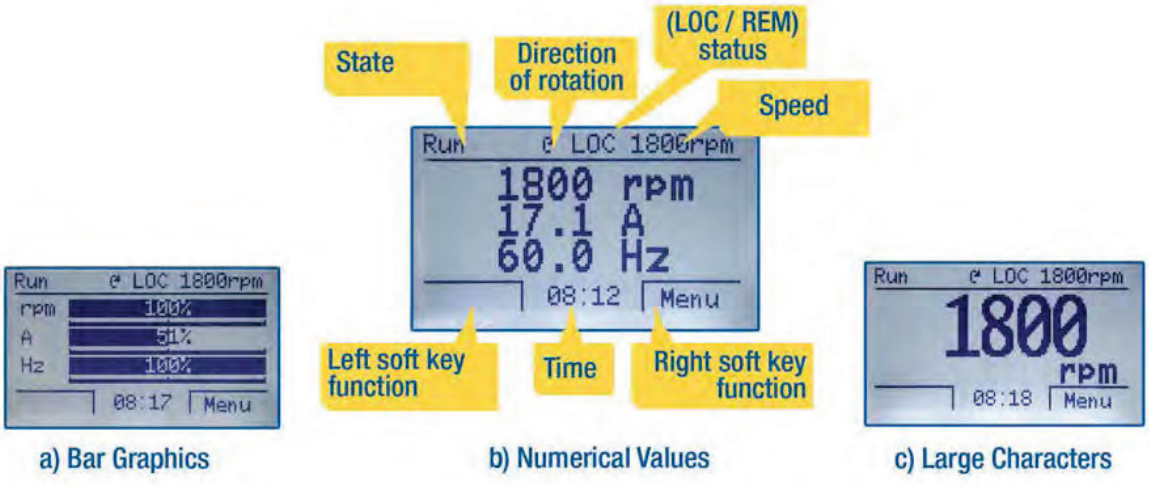
Programming software for PC (USB connection), Windows™ environment for setpoint, command and monitoring of CFW11 inverters.

Human/Machine Interface

Left soft key: function defined by the text in the display

Right soft key: function defined by the text in the display.

Monitoring Modes



Variable Frequency Drives
CFW11

(NEMA1 / Frame size A – E IP20 Frame Size F and G)

	Normal Duty VT - 110% / 1min		Heavy Duty CT - 150% / 1min									
Motor Volts	ND HP	ND Amps	HD HP	HD Amps	CATALOG NUMBER	Frame Size	Enclosure	DB	DIMENSIONS H x W x D	App. Shpg. Wt. (lbs.)	List Price	Multiplier Symbol
	INPUT POWER SUPPLY: SINGLE OR THREE PHASE - 200…240V											
	1.5	6	1.5	5	CFW110006B2ON1Z	A	NEMA 1	YES	12.04 x 5.71 x 8.94	19.9	$1,644	V1
	2	7	2	7	CFW110007B2ON1Z	A	NEMA 1		12.04 x 5.71 x 8.94	20.8	$1,716	V1
	INPUT POWER SUPPLY: SINGLE PHASE - 200…240V											
	3	10	3	10	CFW110010S2ON1Z	A	NEMA 1	YES	12.04 x 5.71 x 8.94	20.8	$1,812	V1
	INPUT POWER SUPPLY: THREE PHASE - 200…240V											
	2	7	1.5	5.5	CFW110007T2ON1Z	A	NEMA 1	YES	12.04 x 5.71 x 8.94	19.9	$1,620	V1
	3	10	2	8	CFW110010T2ON1Z	A	NEMA 1		12.04 x 5.71 x 8.94	19.9	$1,692	V1
	5	13	3	11	CFW110013T2ON1Z	A	NEMA 1		12.04 x 5.71 x 8.94	20.8	$1,728	V1
	5	16	5	13	CFW110016T2ON1Z	A	NEMA 1		12.04 x 5.71 x 8.94	21.2	$1,850	V1
	7.5	24	7.5	20	CFW110024T2ON1Z	B	NEMA 1		13.82 x 7.45 x 8.94	28.5	$2,424	V1
230V	10	28	10	24	CFW110028T2ON1Z	B	NEMA 1		13.82 x 7.45 x 8.94	28.5	$2,641	V1
	10	33.5	10	28	CFW110033T2ON1Z	B	NEMA 1		13.82 x 7.45 x 8.94	28.5	$3,190	V1
	15	45	15	36	CFW110045T2ON1Z	C	NEMA 1		17.64 x 8.66 x 11.51	44.1	$3,641	V1
	20	54	20	45	CFW110054T2ON1Z	C	NEMA 1		17.64 x 8.66 x 11.51	45	$4,400	V1
	25	70	20	56	CFW110070T2ON1Z	C	NEMA 1		17.64 x 8.66 x 11.51	49.2	$6,600	V1
	30	86	25	70	CFW110086T2ON1Z	D	NEMA 1		19.82 x 11.81 x 12	115.9	$7,222	V1
	40	105	30	86	CFW110105T2ON1Z	D	NEMA 1		19.82 x 11.81 x 12	120.2	$9,000	V1
	50	142	40	115	CFW110142T2ON1Z	E	NEMA 1	NO	26.6 x 13.2 x 14.1	150	$11,649	V1
	60	180	50	142	CFW110180T2ON1Z	E	NEMA 1		26.6 x 13.2 x 14.1	150	$15,125	V1
	75	211	60	180	CFW110211T2ON1Z	E	NEMA 1		26.6 x 13.2 x 14.1	150	$21,560	V1
	50	142	40	115	CFW110142T2ON1DBZ	E	NEMA 1	YES	26.6 x 13.2 x 14.1	150	$12,720	V1
	60	180	50	142	CFW110180T2ON1DBZ	E	NEMA 1		26.6 x 13.2 x 14.1	150	$17,555	V1
	75	211	60	180	CFW110211T2ON1DBZ	E	NEMA 1		26.6 x 13.2 x 14.1	150	$24,380	V1
	INPUT POWER SUPPLY: THREE PHASE - 380…480V											
	2	3.6	2	3.6	CFW110003T4ON1Z	A	NEMA 1	YES	12.04 x 5.71 x 8.94	19.9	$1,616	V1
	3	5	3	5	CFW110005T4ON1Z	A	NEMA 1		12.04 x 5.71 x 8.94	20.3	$1,650	V1
	5	7	3	5.5	CFW110007T4ON1Z	A	NEMA 1		12.04 x 5.71 x 8.94	20.3	$1,712	V1
	7.5	10	5	10	CFW110010T4ON1Z	A	NEMA 1		12.04 x 5.71 x 8.94	20.8	$1,969	V1
	10	13.5	7.5	11	CFW110013T4ON1Z	A	NEMA 1		12.04 x 5.71 x 8.94	21.2	$2,068	V1
	10	17	10	13.5	CFW110017T4ON1Z	B	NEMA 1		13.82 x 7.45 x 8.94	28.5	$2,530	V1
	15	24	10	19	CFW110024T4ON1Z	B	NEMA 1		13.82 x 7.45 x 8.94	29.8	$2,992	V1
	20	31	15	25	CFW110031T4ON1Z	B	NEMA 1		13.82 x 7.45 x 8.94	31.3	$3,873	V1
	25	38	20	33	CFW110038T4ON1Z	C	NEMA 1		17.64 x 8.66 x 11.51	45.9	$4,300	V1
	30	45	25	38	CFW110045T4ON1Z	C	NEMA 1		17.64 x 8.66 x 11.51	52.9	$5,400	V1
	40	58.5	30	47	CFW110058T4ON1Z	C	NEMA 1		17.64 x 8.66 x 11.51	54.9	$6,633	V1
	50/60	70.5	40	61	CFW110070T4ON1Z	D	NEMA 1		19.82 x 11.81 x 12	119.5	$7,500	V1
	75	88	50	73	CFW110088T4ON1Z	D	NEMA 1		19.82 x 11.81 x 12	122.8	$8,900	V1
480V	75	105	75	88	CFW110105T4ON1Z	E	NEMA 1	NO	26.6 x 13.2 x 14.1	150	$10,650	V1
	100/125	142	75	115	CFW110142T4ON1Z	E	NEMA 1		26.6 x 13.2 x 14.1	150	$12,500	V1
	150	180	100	142	CFW110180T4ON1Z	E	NEMA 1		26.6 x 13.2 x 14.1	150	$17,500	V1
	175	211	150	180	CFW110211T4ON1Z	E	NEMA 1		26.6 x 13.2 x 14.1	150	$21,000	V1
	75	105	75	88	CFW110105T4ON1DBZ	E	NEMA 1	YES	26.6 x 13.2 x 14.1	150	$13,600	V1
	100/125	142	75	115	CFW110142T4ON1DBZ	E	NEMA 1		26.6 x 13.2 x 14.1	150	$15,900	V1
	150	180	100	142	CFW110180T4ON1DBZ	E	NEMA 1		26.6 x 13.2 x 14.1	150	$23,115	V1
	175	211	150	180	CFW110211T4ON1DBZ	E	NEMA 1		26.6 x 13.2 x 14.1	150	$27,020	V1
	200	242	150	211	CFW110242T4SZ	F	IP20	NO	48.6 x 16.9 x 14.2	267	$23,000	V1
	250	312	200	242	CFW110312T4SZ	F	IP20		48.6 x 16.9 x 14.2	271	$29,366	V1
	300	370	250	312	CFW110370T4SZ	F	IP20		48.6 x 16.9 x 14.2	277	$31,314	V1
	350	477	300	370	CFW110477T4SZ	F	IP20		48.6 x 16.9 x 14.2	287	$41,027	V1
	400	515	350	477	CFW110515T4SZ	G	IP20	NO	50 x 21.1 x 16.8	420	$43,970	V1
	500	601	450	515	† CFW110601T4SZ	G	IP20		50 x 21.1 x 16.8	425	$50,088	V1
	600	720	500	601	† CFW110720T4SZ	G	IP20		50 x 21.1 x 16.8	441	$59,330	V1

Notes: "HP" rating based on FLA values from WEG W22, 2 and 4 poles, 460VAC, NEMA Premium motors".
Use as a guide only. Motor FLA may vary with speed and manufacturer.
ALWAYS compare motor FLA to Nominal AMPS of VFD and overload conditions.

† HD current rating with 140% O/L

Variable Frequency Drives
CFW11

Options and Accessories

	DESCRIPTION	CATALOG NUMBER	List Price	Multiplier Symbol
I/O Exp Modules	IOA Module for CFW11: 1 analog input (AI4 - 14 bits, voltage or current); 2 digital inputs; 2 analog outputs (AO3 and AO4 -14 bits, voltage or current); 2 digital outputs (open-collector). All analog input and output are galvanic isolated.	IOA-01	$1,100	V1
	IOB Module for CFW11: 2 isolated analog inputs (AI3 and AI4 - 12 bits, voltage or current); 2 digital inputs; Provides Galvanic Isolation for AO1 and AO2 - 11 bits, voltage or current); 2 digital outputs (open-collector). All analog inputs and outputs are galvanically isolated.	IOB-01	$600	V1
	IOC-01: Module for SoftPLC : 8 x Isolated Digital Inputs; 4 x Relay output (240V/1A)	IOC-01	$447	V1
	IOC-02: Module for SoftPLC : 8 x Isolated Digital Inputs; 8 x open collector digital outputs	IOC-02	$411	V1
Encoder Modules	Incremental encoder module, 5 to 12 VDC at 100 kHZ, with encoder signal repeater	ENC-01	$500	V1
	Incremental encoder module, 5 to 12 VDC at 100 kHZ, without encoder signal repeater	ENC-02	$430	V1
Communication Modules	RS-485 serial communication module (Modbus-RTU)	RS485-01	$240	V1
	RS-232C serial communication module (Modbus-RTU)	RS232-01	$180	V1
	RS232C serial commuication module with DIP-switches for microcontroller's flash memory programming	RS232-02	$180	V1
	CAN and RS-485 communication module (CANopen / Modbus / DeviceNet)	CAN/RS485-01	$480	V1
	CAN interface module (CANopen / DeviceNet) (Same as CFW700)	CAN-01	$410	V1
	Profibus DP interface module - Anybus card*	PROFDP-05	$1,100	V1
	DeviceNet interface module - Anybus card*	DEVICENET-05	$1,100	V1
	Ethernet/IP interface module - Anybus card*	ETHERNET/IP-05	$1,100	V1
	RS-232 serial communication module (Modbus-RTU)	RS232-05	$290	V1
	RS-485 serial communication module (Modbus-RTU)	RS485-05	$360	V1
PLC & Flash Memory Modules	PLC functions; Ladder programming; electronic gear box; 9 digital inputs; 3 dry-contact digital outputs; 3 open-collector digital outputs; 1 analog input (14 bits); 2 analog outputs (14 bits); 2 encoder interfaces; RS-485 Mobus-RTU interface; CAN interface (CANopen, CANopen master/slave)	PLC11-01	$1,876	V1
	Flash Memory Module for CFW11	MMF-01	$71	V1
Keypad Accessories and Remote Keypad Cables	CFW11 keypad	HMI-01	$320	V1
	Frame for keypad remote assembly	RHMIF-01	$69	V1
	Blank cover for keypad slot	HMID-01	$54	V1
	1m (3.3ft) remote keypad cable	IHM-CAB-RS-1M	$54	V1
	2m (6.6ft) remote keypad cable	IHM-CAB-RS-2M	$60	V1
	3m (10ft) remote keypad cable	IHM-CAB-RS-3M	$66	V1
	5m (16ft) remote keypad cable	IHM-CAB-RS-5M	$75	V1
	7.5m (25ft) remote keypad cable	IHM-CAB-RS-7.5M	$90	V1
	10m (33ft) remote keypad cable	IHM-CAB-RS-10M	$102	V1
	Remote Station-includes Start PB, Stop PB, 1-NC and 1-NO contact block, Potentiometer 5k and legends (22mm) replaces CFW-REM	CSW-SP3PBS	$460	Z5
	Remote Station-includes Start PB, Stop PB, 1-NC and 1-NO contact block, Potentiometer 5k and legends (30mm) replaces CFW-REM	CSW30-SP3PBS	$535	Z5
Conduit Kit	Conduit Kit for frame size A	KN1A-01	$69	V1
	Conduit Kit for frame size B	KN1B-01	$82	V1
	Conduit Kit for frame size C	KN1C-01	$94	V1
	IP21 Kit for frame size D	KIP21D-01	$100	V1
Shielding Kit	Power Cables Shielding Kit for frame size A	PCSA-01	$40	V1
	Power Cables Shielding Kit for frame size B	PCSB-01	$42	V1
	Power Cables Shielding Kit for frame size C	PCSC-01	$45	V1
	Power cables shielding kit for frame size D	PCSD-01	$56	V1
	Power cables shielding kit for frame size E	PCSE-01	$76	V1
	External Dynamic Braking Module (frame F & G)	DBW03-CFW11 F & G	$6,822	V1

*Anybus card goes in slot 4 and allows the user to combine the PLC11 board with DeviceNet, Profibus, or Enternet/IP.

Variable Frequency Drives
CFW11

Accessories and Options

Blank cover **HMID - 01**

Blank cover to replace the standard VSD keypad when not used.

Remote keypad frame **RHMIF-01**

Frame for Keypad installation on panel door or machine console. Degree of protection IP56.

CFW11 - Dynamic Braking module **DBW03-CFW11 F & G**

The DBW03 external brake module allows for energy dissipation during regenerative cycles or when running high inertia loads requiring short deceleration times. Resistors priced seperately (see page **A-57 and A-58**)

This breaking unit was developed especially for VSDs that do not have a built-in brake chopper, e.g. CFW11 frame sizes F, G and Modular Drive. Its voltage ranges from 380 to 480V and its main function is to limit DC bus voltage in order to avoid tripping the VSD due to overvoltage caused by applications where breaking is required.

Maximum Output Current: 378Amps

Minimum Resistor: 1.8Ohms

External power supply for fans: 220Vca +/- 5%@250mA

Thermally Protected

Safety stop in accordance with EN-954-1, category III

With the activation of the safety stop function, the gate pulses to the IGBTs are disabled. With no voltage available at VSD output, no torque is applied to the motor. This ensures that the motor remains safely stopped.

Enclosures

Standard	Accessory	Composition
NEMA Type 1	KN1A-01	Conduit kit frame size A
	KN1B-01	Conduit kit frame size B
	KN1C-01	Conduit kit frame size C
	KN1E-01	Top cover size E models 105 and 142
	KN1E-02	Top Cover + Conduit kit size E models 180 and 211
	KN1F-01	Conduit kit for frame size
	KN1G-01	Conduit kit for frame size G
IEC	KIP21A-01	Top cover kit frame size A
	KIP21B-01	Top cover kit frame size B
	KIP21C-01	Top cover kit frame size C
	KIP21D-01	Top cover kit frame size D

(X) Standard (-) N/A

Standards	Ratings	Frame Sizes					
		A	B	C	D	E	F & G
IEC	IP20	-	-	-	X	X	X
	IP21	X	X	X	KIP21D-01	-	-
NEMA	TYPE 1	KN1A-01	KN1B-01	KN1C-01	X	KN1E-01 / KN1E-02	KN1F-01 / KN1G-01

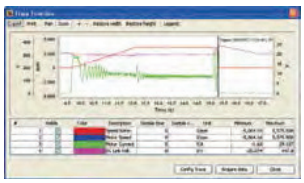
Note: In the KN1X-01 Conduit kit (frame sizes A,B and C) power cable shielding is also provided. Kits KN1F-01 and KN1G-01 are under UL certification process

Variable Frequency Drives
CFW11

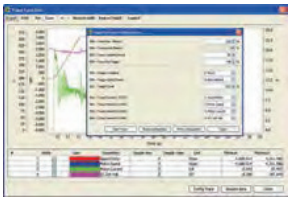
USB Connection

SuperDrive

Trace Function Trace function is used to register CFW-11 variables (like current, voltage, speed, etc.) when a given event occurs in the system (e.g.: alarm / fault, overload, overvoltage, etc.). When a given event takes place the trigger function activates data storage process. The stored variables can be displayed in the form of graphs by using the SuperDrive G2 software. Trace function simulates a 4-channel oscilloscope. It is a very powerful tool to be used on start-up procedures of systems and on diagoses of faults.



Example of graph display screen

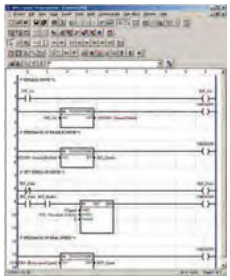


Trace function configuration in the SuperDrive G2

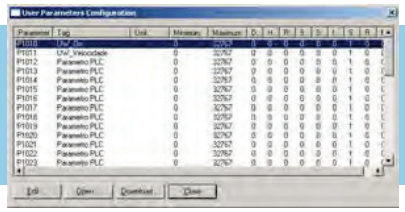
WEG SoftPLC

WEG SoftPLC is a resource that provides PLC features to the CFW-11 without the addition of any accessories. It provides flexibility to the product, allowing the user to create his/her own application software (user's program). The SoftPLC main features are:

- Ladder language programming using WLP software
- Access to all VSD parameters and I/Os
- Configurable PLC, mathematical and control blocks
- Application software download, upload and online monitoring via USB connection
- Storage of user application in the CFW-11 Flash Memory Module (see below)
- Memory capacity of 15kB for storage of a user application



Simple and practical programming environment



- 49 User parameter settings that can be individually programmed allowing tags, units, minimum and maximum values, number of decimal digits and other characteristics to be changed.

Flash Memory Module

- It stores CFW-11 parameters. It ensures that the programming will not be lost as there is a backup of the parameters.
- It permits the transfer of parameters stored in the flash Memory Module to the CFW-11 and vice versa. It is a useful function for machine manufacturers or in processes where parameter settings are repeated (Copy Function).
- It stores the application software generated by the SoftPLC function.

The Flash Memory Module comes as standard on CFW11 series.

Variable Frequency Drives
CFW11

DB Resistors 100% Braking Torque - 20% Duty Cycle - NEMA 1 Enclosure

Motor Volts	Motor HP	For Use with CFW11 Model Number:	Catalog Number	Rated OHM	WATTS	Dimensions (in.) W x D x H	Max. Braking Time	List Price	Multiplier Symbol
230V	1.5	CFW110006B2ONIZ	CFDB2-125-224	125	224	12x5x5	12s	$520	V1
	2	CFW11007B2ON1Z	CFDB2-95-298	95	298	12x7x5	12s	$749	V1
	2	CFW110007T2ON1Z	CFDB2-95-298	95	298	12x7x5	12s	$749	V1
	3	CFW110010S2ON1Z	CFDB2-63-448	63	448	12x7x5	12s	$749	V1
	3	CFW110010T2ON1Z	CFDB2-63-448	63	448	12x7x5	12s	$749	V1
	5	CFW110013T2ON1Z	CFDB2-38-746	38	746	12x10x5	12s	$941	V1
	5	CFW110016T2ON1Z	CFDB2-38-746	38	746	12x10x5	12s	$941	V1
	7.5	CFW110024T2ON1Z	CFDB2-26-1119	26	1,119	12x13x5	12s	$1,130	V1
	10	CFW11028T2ON1Z	CFDB2-19-1492	19	1,492	12x16x5	12s	$1,322	V1
	10	CFW110033T2ON1Z	CFDB2-19-1492	19	1,492	12x16x5	12s	$1,322	V1
	15	CFW110045T2ON1Z	CFDB2-13-2238	12.6	2,238	19x10x5	12s	$1,644	V1
	20	CFW110054T2ON1Z	CFDB2-10-2984	9.6	2,984	19x10x5	12s	$1,644	V1
	25	CFW11070T2ON1Z	CFDB2-8-3730	7.5	3,730	19x13x5	12s	$1,997	V1
	30	CFW110086T2ON1Z	CFDB2-7-4476	6.3	4,476	26.5x13x5	12s	$2,588	V1
	40	CFW110105T2ON1Z	CFDB2-5-5968	4.9	5,968	26.5x16x5	12s	$3,269	V1
	50	CFW110142T2ON1Z	CFDB2-4-7460	3.9	7,460	28x10x10	12s	$3,820	V1
	60	CFW110180T2ON1Z	CFDB2-4-8952	3.3	8,952	28x10x10	12s	$3,820	V1
	75	CFW110211T2ON1Z	CFDB2-3-11190	2.7	11,190	28x13x10	12s	$5,622	V1
480V	2	CFW110003T4ON1Z	CFDB2-375-298	375	298	12x7x5	12s	$749	V1
	3	CFW110005T4ON1Z	CFDB2-250-448	250	448	12x7x5	12s	$749	V1
	5	CFW110007T4ON1Z	CFDB2-150-746	150	746	12x10x5	12s	$941	V1
	7.5	CFW110010T4ON1Z	CFDB2-100-1119	100	1,119	12x13x5	12s	$1,130	V1
	10	CFW110013T4ON1Z	CFDB2-75-1492	75	1,492	12x16x5	12s	$1,322	V1
	10	CFW110017T4ON1Z	CFDB2-75-1492	75	1,492	12x16x5	12s	$1,322	V1
	15	CFW110024T4ON1Z	CFDB2-50-2238	50	2,238	19x13x5	12s	$1,820	V1
	20	CFW110031T4ON1Z	CFDB2-38-2984	38	2,984	19x16x5	12s	$2,201	V1
	25	CFW110038T4ON1Z	CFDB2-30-3730	30	3,730	26.5x13x5	12s	$2,511	V1
	30	CFW110045T4ON1Z	CFDB2-25-4476	25	4,476	26.5x13x5	12s	$2,511	V1
	40	CFW110058T4ON1Z	CFDB2-19-5968	19	5,968	26.5x16x5	12s	$2,938	V1
	50/60	CFW110070T4ON1Z	CFDB2-15-8952	15	8,952	28x13x10	12s	$4,328	V1
	75	CFW110088T4ON1Z	CFDB2-10-11190	10	11,190	28x16x10	12s	$5,659	V1
	75	CFW110105T4ON1Z	CFDB2-10-11190	10	11,190	28x16x10	12s	$5,659	V1
	100/125	CFW110142T4ON1Z	CFDB2-8-18650	8	18,650	30x18x24	12s	$9,560	V1
	150	CFW110180T4ON1Z	CFDB2-5-22380	5	22,380	30x18x24	12s	$11,854	V1
	175	CFW110211T4ON1Z	CFDB2-5-29840	5	29,840	30x18x24	12s	$11,854	V1
	200	CFW110242T4ON1Z	CFDB2-4-29840	4	29,840	30x18x32	12s	$11,854	V1
	250	CFW110312T4ON1Z	CFDB2-3-37300	3	37,300	30x18x32	12s	$12,533	V1
	300	CFW110370T4ON1Z	CFDB2-3-44760	2.5	44,760	30x18x32	12s	$15,393	V1
	350	CFW110477T4ON1Z	CFDB2-3-52220	2.2	52,220	30x18x48	12s	$21,406	V1
	400	CFW110515T4ON1Z	CFDB2-2-59680	1.9	59,680	30x18x48	12s	$22,167	V1
	500	CFW110601T4ON1Z	CFDB2-2-74600	1.5	74,600	30x18x64	12s	$32,077	V1
	600	CFW110720T4ON1Z	*Consult with WEG*						

Notes: These are non-stocked items, consult WEG for availability.
NEMA 1 Enclosure
Maximum Braking time based on cycle of 60 seconds.

Variable Frequency Drives
CFW11

DB Resistors 100% Braking Torque - 50% Duty Cycle – NEMA 1 Enclosure

Motor Volts	Motor HP	For Use with CFW11 Model Number:	Catalog Number	Rated OHM	WATTS	Dimensions (in.) W x D x H	Braking time per minute	List Price	Multiplier Symbol
230V	1.5	CFW110006B20NIZ	CFDB5-125-560	125	560	12x10x5	30s	$941	V1
	2	CFW11007B20N1Z	CFDB5-95-746	95	746	12x10x5	30s	$941	V1
	2	CFW110007T20N1Z	CFDB5-95-746	95	746	12x10x5	30s	$941	V1
	3	CFW110010S20N1Z	CFDB5-63-1119	63	1,119	12x10x5	30s	$1,130	V1
	3	CFW110010T20N1Z	CFDB5-63-1119	63	1,119	12x10x5	30s	$1,130	V1
	5	CFW110013T20N1Z	CFDB5-38-1865	38	1,865	19x13x5	30s	$1,820	V1
	5	CFW110016T20N1Z	CFDB5-38-1865	38	1,865	19x13x5	30s	$1,820	V1
	7.5	CFW110024T20N1Z	CFDB5-26-2798	26	2,798	26.5x13x5	30s	$2,511	V1
	10	CFW11028T20N1Z	CFDB5-19-3730	19	3,730	26.5x13x5	30s	$2,511	V1
	10	CFW110033T20N1Z	CFDB5-19-3730	19	3,730	26.5x13x5	30s	$2,511	V1
	15	CFW110045T20N1Z	CFDB5-13-5595	12.6	5,595	26.5x16x5	30s	$2,938	V1
	20	CFW110054T20N1Z	CFDB5-10-7460	9.6	7,460	28x13x10	30s	$4,663	V1
	25	CFW11070T20N1Z	CFDB5-8-9325	7.5	9,325	28x13x10	30s	$4,663	V1
	30	CFW110086T20N1Z	CFDB5-7-11190	6.3	11,190	28x16x11	30s	$5,254	V1
	40	CFW110105T20N1Z	CFDB5-5-14920	4.9	14,920	26.5x16x5	30s	$6,762	V1
	50	CFW110142T20N1Z	CFDB5-4-18650	3.9	18,650	30x18x24	30s	$10,325	V1
	60	CFW110180T20N1Z	CFDB5-4-22380	3.3	22,380	30x18x24	30s	$10,325	V1
	75	CFW110211T20N1Z	CFDB5-3-27975	2.7	27,975	30x18x32	30s	$15,393	V1
480V	2	CFW110003T40N1Z	CFDB5-375-746	375	746	12x13x5	30s	$1,130	V1
	3	CFW110005T40N1Z	CFDB5-250-1119	250	1,119	12x16x5	30s	$1,511	V1
	5	CFW110007T40N1Z	CFDB5-150-1865	150	1,865	19x13x5	30s	$1,703	V1
	7.5	CFW110010T40N1Z	CFDB5-100-2798	100	2,798	19x16x5	30s	$1,892	V1
	10	CFW110013T40N1Z	CFDB5-75-3730	75	3,730	26.5.5x16x5	30s	$2,938	V1
	10	CFW110017T40N1Z	CFDB5-75-3730	75	3,730	26.5.5x16x5	30s	$2,938	V1
	15	CFW110024T40N1Z	CFDB5-50-5595	50	5,595	28x13x10	30s	$4,254	V1
	20	CFW110031T40N1Z	CFDB5-38-7460	38	7,460	28x13x10	30s	$4,254	V1
	25	CFW110038T40N1Z	CFDB5-30-9325	30	9,325	28x16x10	30s	$4,715	V1
	30	CFW110045T40N1Z	CFDB5-25-11190	25	11,190	28x16x10	30s	$5,071	V1
	40	CFW110058T40N1Z	CFDB5-19-14920	19	14,920	30x18x24	30s	$8,858	V1
	50/60	CFW110070T40N1Z	CFDB2-15-22380	15	22,380	30x18x24	30s	$10,176	V1
	75	CFW110088T40N1Z	CFDB5-10-27975	10	27,975	30x18x32	30s	$14,625	V1
	75	CFW110105T40N1Z	CFDB5-10-27975	10	27,975	30x18x32	30s	$14,625	V1
	100/125	CFW110142T40N1Z	CFDB5-8-46625	8	46,625	30x18x32	30s	$16,923	V1
	150	CFW110180T40N1Z	CFDB5-5-55950	5	55,950	30x18x48	30s	$18,814	V1
	175	CFW110211T40N1Z	CFDB5-5-74600	5	74,600	30x18x72	30s	$31,678	V1
	200	CFW110242T40N1Z	CFDB5-4-74600	4	74,600	30x18x72	30s	$31,678	V1
	250	CFW110312T40N1Z	CFDB5-3-93250	3	93,250	30x18x72	30s	$31,678	V1
	300	CFW110370T40N1Z	CFDB5-3-111900	2.5	111,900	(2)30x18x56	30s	$54,028	V1
	350	CFW110477T40N1Z	CFDB5-3-130550	2.2	130,550	(2)30x18x56	30s	$54,028	V1
	400	CFW110515T40N1Z	CFDB5-2-149200	1.9	149,200	(2)30x18x56	30s	$73,288	V1
	500	CFW110601T40N1Z	CFDB5-2-186500	1.5	186,500	(2)30x18x56	30s	$73,288	V1
	600	CFW110720T40N1Z	*Consult with WEG*						

Notes: These are non-stocked items, consult WEG for availability.
NEMA 1 Enclosure
Braking time based on cycle of 60 seconds.

Variable Frequency Drives
CFW11

Technical Data

Supply	200...240V: +10% ...-15% of rated voltage
	380...480V: +10% ...-15% of rated voltage
Supply frequency	50/60Hz, +/-2Hz
Output frequency	0 to 300Hz
Types of control	Vector with encoder
	Vector sensorless
	V V W: voltage vector
	V/F (scalar)
Ambient temperature	-10 ...50ºC
	up to 60º with output current reduction (2%/ºC above 50ºC)
Humidity	5 to 90% without condensation
Altitude	0 to 1000m
	Up to 4000m without current reduction (1%n for each 100m above 1000m)
Braking methods	Dynamic braking up to 75HP built in
	Dynamic braking option: 100HP and up
	DC braking
Efficiency	Greater than 97%
Degree of protection	NEMA for models A through E
	IP20 finger safe for models F & G
Possibility of flange mounting	Available in all standard models, rear part of heatsink with IP54 degree of protection
Overload	Normal Duty: 110%, 60s
	Heavy Duty: 150%, 60s
Analog inputs	2 differential, resolution 11 bits + signal, 0 to +/- 10V/(0)4 to 20mA
Analog outputs	2 non-isolated, resolution 10 bits, 0 to 10V/(0)4 to 20mA
Digital inputs	8 optoisolated, bi-directional, 24Vdc
Relay outputs	1 reverse contact output (NO/NC), 240Vac 30Vdc 0.75 A
Transistor output	Transistor output / 4 isolated output 24Vdc & 100mA
Motor thermistor	PTC/PT100/KTY84, use 1 analog output programmed for contstant current + 1 analog input programmed for voltage
Supply + 24Vdc available for user	24Vdc +\-20%, 500mA
Certifications	IEC 60146 – Semiconductor convertors
	UL508C – Safety for power conversion equipment
	EN 50178 – Electronic equipment for use in power installations
	EN 61800-2 – General requirements adjustable speed electrical power drive systems
	EN 61800-5-1 – Safety requirements adjustable speed electrical power drive systems
	EN 61800-3 – EMC product standard including specific test methods adjustable speed electrical power drive systems
	EN 60204 – Electronic equipment of machines
	RoHS and WEEE Guidelines

Variable Frequency Drives
Communication Options & Superdrive

Profibus, Modbus and Device Net

Description	Catalog Number	List Price	Multiplier Symbol
SUPERDRIVE Software + USB Cable	SUPERDRIVE+USB	$301	V1
SUPERDRIVE KIT - CFW08 (KCS-CFW08 - RS232 PC Cable + CD Software)	KSD-CFW08	$97	V1
SUPERDRIVE KIT - CFW09 (KCS-CFW09 - RS232 PC Cable + CD Software)	KSD-CFW09	$156	V1
SUPERDRIVE G2 KIT - SSW06	KSDG2-SSW06	$62	V1
SUPERDRIVE G2 KIT - SSW07 (KRS-232-SSW07 + CAB-RS-3 + CD Software)	KSDG2-SSW07	$225	V1
RS-232/485 Converter (mounted externally)	MIW-02	$221	V1
RS-485 Kit for PC	417102506	$900	V1

Communication Options

The table below shows the hardware options required to provide WEG VFD's and Soft Starters with different serial communications or networking capabilities.

	RS-232	RS-485	Profibus-DP	DeviceNet	Modbus-RTU
CFW08	KCS-CFW08	KCS-CFW08 MIW-02	KCS-CFW08 MIW-02 MFW-01/PD	KCS-CFW08 MIW-02 MFW-01/DN	KCS-CFW08 MIW-02
CFW09	See CFW09 accessories				
CFW11	See CFW11 accessories				
SSW03	Standard	MIW-02	MIW-02 MFW-01/PD	MIW-02 MFW-01/DN	MIW-02 MFW-01/MR
SSW04	Standard	MIW-02	MIW-02 MFW-01/PD	MIW-02 MFW-01/DN	MIW-02 MFW-01/MR
SSW05	Standard	MIW-02	MIW-02 MFW-01/PD	MIW-02 MFW-01/DN	MIW-02 MFW-01/MR
SSW06	Standard	KRS-485-SSW06	KFB-PD-SSW06	KFB-DN-SSW06	MIW-02 MFW-01/MR
SSW07	See SSW07 Accessories				

"RS-485 Kit for PC" is required when SUPERDRIVE communicates with a multi drive RS-485 network. It is composed of a RS-232/RS-485 converter and a cable to connect to PC.

Superdrive

WEG Superdrive is a windows based software program that allows serial (RS - 232 or RS - 485) communication between a PC and all WEG Soft Starters and Variable Frequency Drives. Superdrive is an excellent programming, documentation, and troubleshooting tool for WEG Soft Starters and VFD's. Superdrive is available for free download at www.weg.net
Hardware accessories may be required depending on the Soft Starter or VFD line.

Standard Features

- Online and Offline Soft Starter or VFD programming
- Command and Monitoring
- Parameter set storage in a computer file format