

CFW500 - VARIABLE SPEED DRIVE

High performance and reliability to improve your production process





WEG

PARAM LOC
600
600

BACK ESC MENU ENTER

LOG REM JOG

WEG CFW500
VECTOR CONVERTER

PARAM LOC
600
600

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WEG CFW500
VECTOR CONVERTER

WEG

WEG CFW500
VECTOR CONVERTER

WEG

CFW500

Variable Speed Drive

Summary

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CFW500

Machinery Drive

Endless possibilities

With modern design, the variable speed drive CFW500 is a **high performance** VSD for applications that require speed and torque control of three-phase induction motors. The equipment has **sensorless vector control, closed loop vector control or scalar V/f**. It also has SoftPLC, which adds PLC (programmable logic controller) functions, safety functions (STO and SS1) - making easier to comply the machine and application safety requirements, Pump Genius, which adds dedicated functions for pumping systems and selectable plug-in modules, that **provide a flexible and optimized solution** for any application.



High performance

Safety functions via accessory STO / SS1

Wide power range and high overload capacity

High performance control methods



Flexible

Connectivity

Advanced resources and functions

Assembly options



Robust

Version with IP66 / NEMA type 4x



Innovative

SoftPLC - built-in PLC functionalities

Free programming softwares



Reliable

WEG Quality

Protection against ground fault, short circuit, over temperature and others

Internal RFI filter to reduce high-frequency electromagnetic interference



Integrated STO (Safe Torque Off) and SS1 (Safe Stop 1) fulfils requirements for safety performance SIL 3 / PL e, according to IEC 61800-5-2, EN ISO 13849-1, EN 62061, IEC 61508 and IEC 60204-1

Provides machine builders a cost-effective solution to design protective measures to reduce the risk from unexpected and hazardous movement in industrial machines

Models from 1.0 to 211 A (0.25 kW / 0.33 HP to 132 kW / 175 HP) at supply voltages 200-240, 380-480 or 500-600 V

Allows the CFW500 to be used in a large variety of applications, improving their overall performance

Sensorless or closed loop vector control, VVW or Scalar V/f and permanent magnet motor control: VVW PM

USB and fieldbus communication modules for the most used industrial networks, like CANopen, DeviceNet, Profibus-DP, EtherNet/IP, PROFINET IO or Modbus-RTU

Full integration with process network

Pump Genius software

Dedicated functions ideal for pumping systems

Surface or DIN rail mounting, including side-by-side installation

Saves space and cabling, reducing installation costs

Complete protection against contact with internal live parts, avoiding the entrance of dust or water coming from jets

The high protection degree dispenses the panel, reducing installation costs

The VSD, motor and application can work in an interactive way, because it is possible to make customized logic and applications

Ideal for machinery manufacturer

WPS softwares available at www.weg.net

100% of the VSDs are tested at the factory under full load and maximum temperature

High reliability

Conformal Coating (Tropicalization) as standard, class 3C2 according to IEC 60721-3-3 and 3C3 as an option, to protect against corrosive gases in harsh environments

VSD lifetime is extended

It prevents damage to the inverter which can be caused by adverse situations, normally external factors

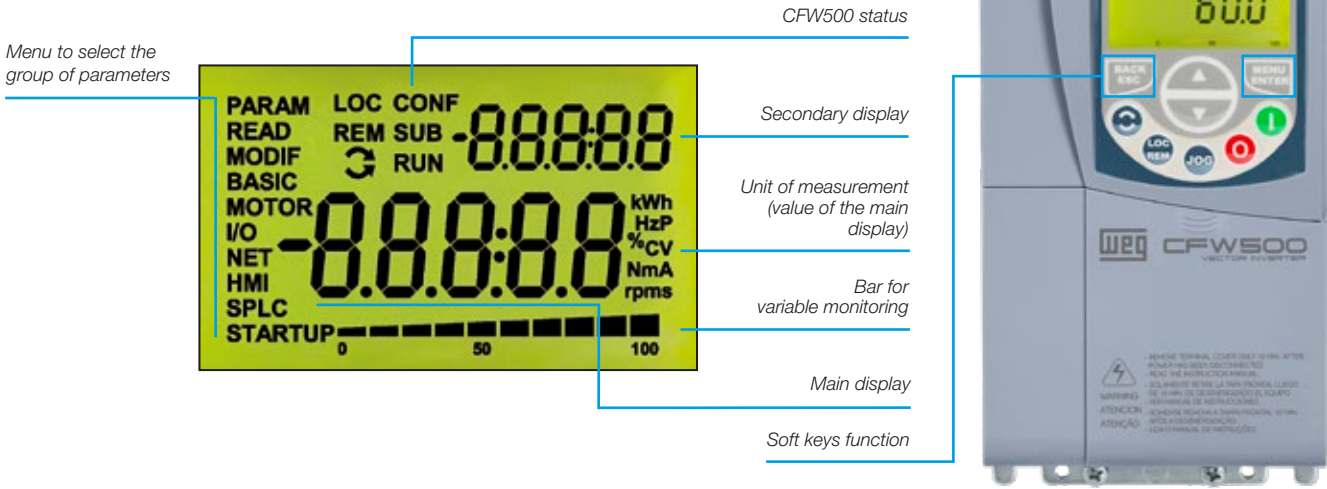
Certifications



Simplified Programming and Operation

Operating Interface (HMI)

- Monitoring, setting of all parameters as well as commands
- Up to three parameters indication on the display, according to user selection
- Oriented start-up and grouped parameters



Note: the operating interface (HMI) of the CFW500 is not removable. For remote operation of the HMI, use the CFW500-HMIR accessory, according to the accessory table on page 21.

Remote Operating Interface (HMI)¹⁾

Solutions for machine consoles and panels.



Accessory IHM-01

Interface Tools

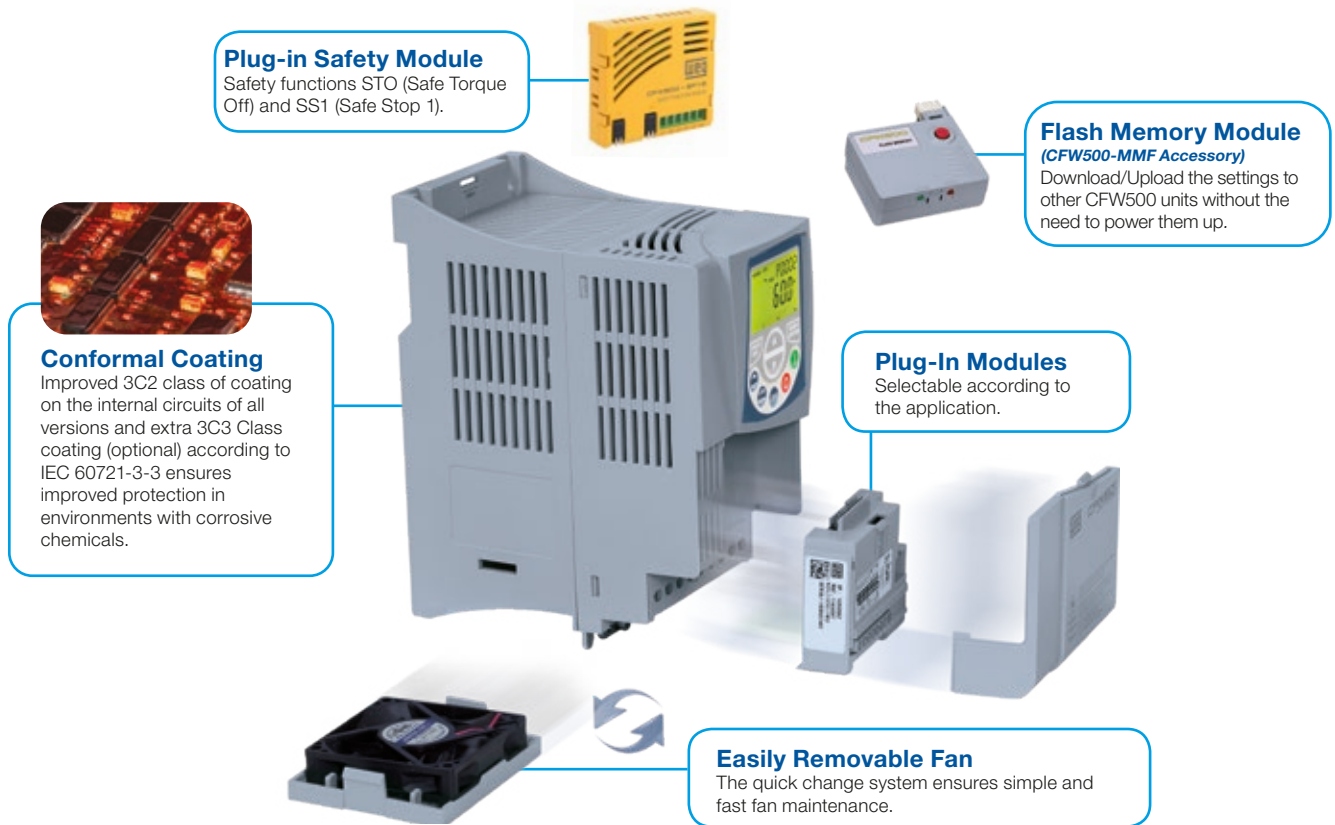
- Graphic display with backlight
- Soft Keys for easy operation
- Real time clock (RTC)
- Language selection
- Remote keypad

Note: 1) Accessories HMI-01 and CFW500-RHMIF must only be used with the main software version equal to or above version 3.5x.

Flexibility and Performance

The CFW500 has a modern design and it can be selected according to the application requirements, providing flexibility with excellent performance. The VSD gives the user the possibility to choose the plug-in module that best fits his application, or to use the standard version, that comes with the CFW500-IOS plug-in module. All plug-in modules comes with one RS485 port as standard.

The installation of the CFW500 is simple and its configuration and operation is intuitive with the navigation menus of the operating interface (HMI) with built-in LCD display. By using the flash memory module, it is possible to download the existing setting from one CFW500 to other units without powering them up.



SoftPLC

It is a software resource added to the CFW500 which allows the user to implement and debug logic projects equivalent to a small PLC (Programmable Logic Controller), customizing and integrating the CFW500 to the application. The free WPS programming software is available at: www.weg.net.

Connectivity



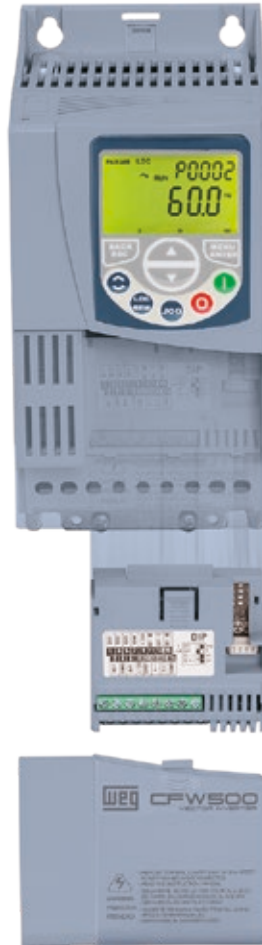
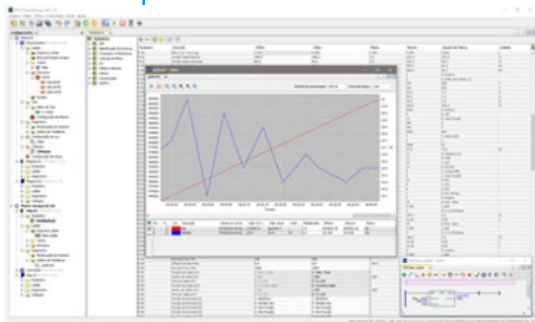
Remote operating interface (IHM-01 accessory)

Easy operation and view



Free at www.weg.net

Software WPS



The CFW500 can be connected to the main fast industrial Fieldbus communication networks, with protocols used worldwide such as CANopen, Profibus-DP, DeviceNet, PROFINET IO, EtherNet/IP and Modbus-TCP, according to the plug-in module selected.

In addition, all plug-in modules come with serial interface RS485 Modbus-RTU built-in.

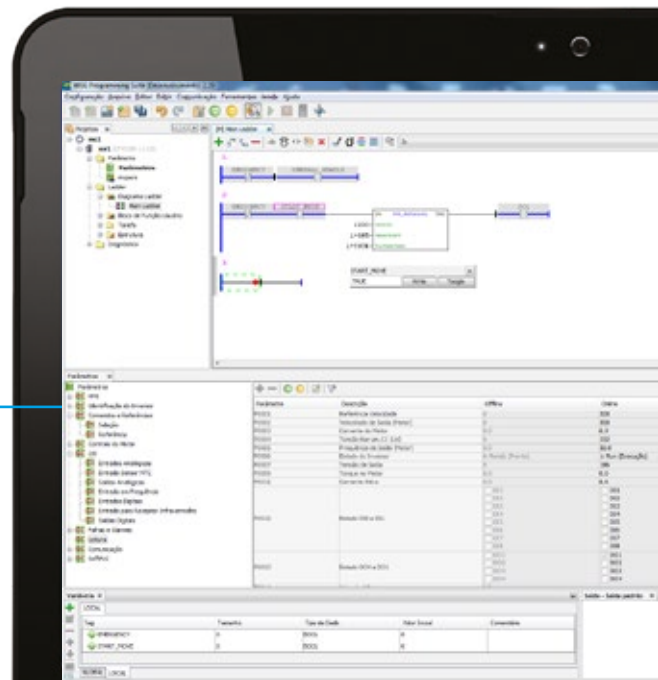
I/O expansion:
IOS (standard, included in the version with plug-in), IOD, IOAD, IOR

Functionality expansion:
Incremental encoder
USB

Fieldbus communication protocols:
CANopen
DeviceNet
RS232
RS485
Profibus-DP
EtherNet/IP
Modbus-TCP
PROFINET IO
BACnet
SymbiNet

Selectable plug-in modules

USB Connection (CFW500-CUSB accessory)



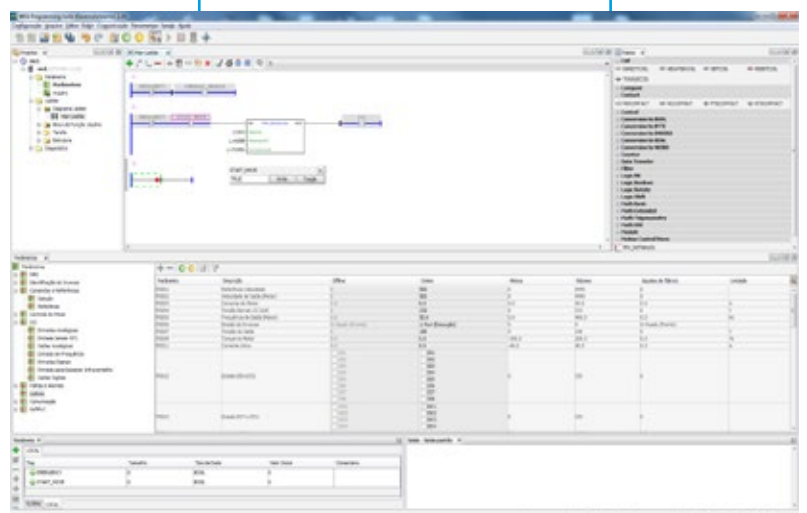
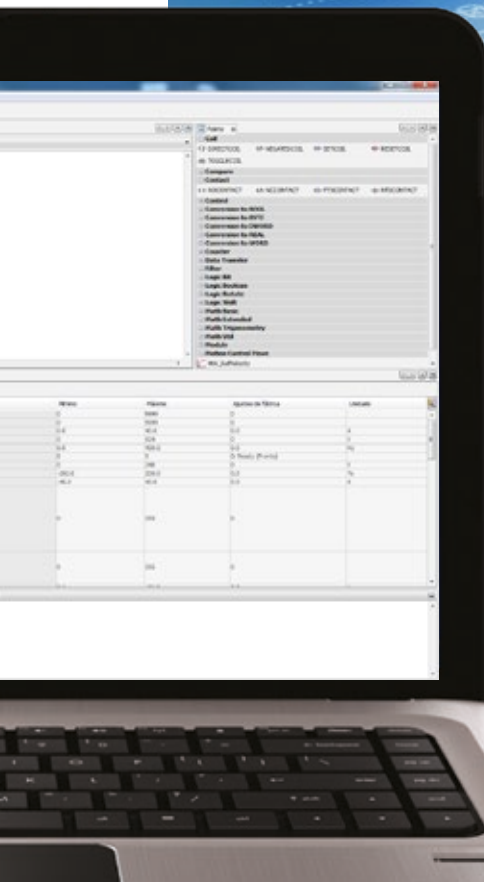
Features

- Special engineering units (RPM, °C, Nm, mA, %, kW, kWh, among others)
- Password to protect the parameters
- Backup of all parameters (via SuperDrive G2 software, or plugin memory MMF)
- Possibility to save up to two different settings on the memory of the CFW500
- Setting of the switching frequency according to the application requirements
- Speed reference via electronic potentiometer
- Multispeed with up to eight programmable speeds
- Slip compensation
- Manual or automatic torque boost (V/F scalar mode) or self-adjustment (VVW and vector modes)
- Permanent magnet motor control: VVW PM
- Acceleration/deceleration ramps
- "S" type ramp
- DC braking
- Internal dynamic braking (except frame size A)
- PID controller to control processes in closed loop
- Flying start / Ride-through
- Sleep mode
- Skip frequencies or frequency ranges function adjustable
- Overload and overtemperature protection
- Overcurrent protection
- DC link voltage supervision
- Fault log
- Safety functions: STO and SS1



Easy and intuitive environment

Free at www.weg.net



Embedded Safety Functions¹⁾

Used to reduce risk and to guarantee the safety of personnel and environment if there is a hazardous event due to a fault in operating machines. The embedded safety functions **STO** and **SS1** provide machine builders a cost-effective solution to design protective measures and reduce the risk from unexpected and hazardous movement in industrial machines and processes.

Advantages

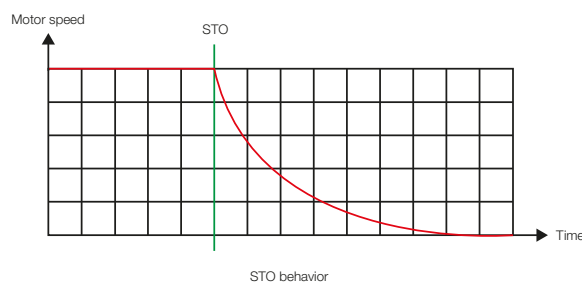
- Safety functions integrated in the CFW500 drive, making easier to comply with the machine and application safety requirements
- Less components, no need for additional wiring, saving space and installation costs
- Easier installation, commissioning and maintenance
- No electromechanical components, meaning faster responses and higher degree of productivity
- Due to the high safety performance level SIL3, the CFW500 with Safety module may avoid the use of external safety relays for cables and emergency pushbuttons monitoring



Safety Functions

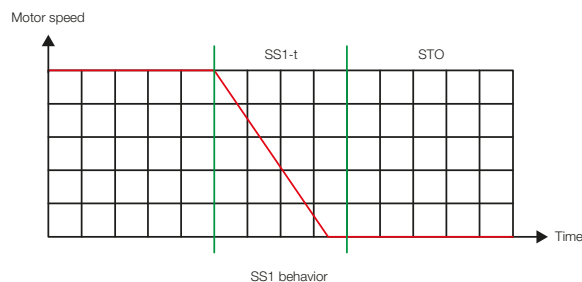
STO (Safe Torque Off)

This function immediately switches off the drive output to the motor, disabling the supply of torque-generating energy. STO is also used to prevent an unexpected startup of machinery or for an emergency stop, fulfilling stop category 0 (IEC 60204-1). It is applicable if the motor can be brought to a standstill in a sufficiently short time by the load torque or friction or where motor coast to a stop is not relevant to safety.



SS1 (Safe Stop 1)

This function enables motor deceleration and then, after a delay time, activates the STO function. SS1 can be used to implement a controlled stop and then removal of power, fulfilling stop category 1 according to IEC 60204-1. This function is used when, in the event of a safety related fault, the drive must stop as quickly as possible and then enter the STO state. The stopping of a drive by means of SS1 function reduces the risk of danger, eliminates the need of external safety timers, increases the productivity of a machine and allows safety clearances in a machine to be reduced. The reason is the active stopping of the drive as compared with the use of the STO function only.



Note: 1) Safety Functions STO and SS1 are available in CFW500 G2 with the CFW500-SFY2 plug-in module. It fulfils requirements for safety performance SIL 3 / PL e, according to IEC 61800-5-2, EN ISO 13849-1, EN 62061, IEC 61508 and IEC 60204-1.

Pump Genius

The Pump Genius is a customizable feature of WEG drives that enables your standard CFW500 to become dedicated for pumping systems. It ensures accurate pressure / flow control throughout the processing cycle, starting with raw water and its usage, ending on wastewater treatment. With an easy-to-use programming wizard, Pump Genius helps you to minimize downtime and maximize energy savings. Everything you need is selecting one option that best fits your application:

simplex

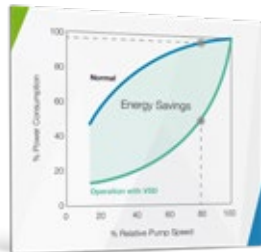
The Pump Genius Simplex software adds ideal features to the VSD for single pump control.

multipump

Pump Genius Multipump allows driving two or more pumps with only one inverter.

multiplex

Pump Genius Multiplex allows the VSDs to control, monitor and manage the entire system on their own, eliminating the need of external PLC.



Energy Savings

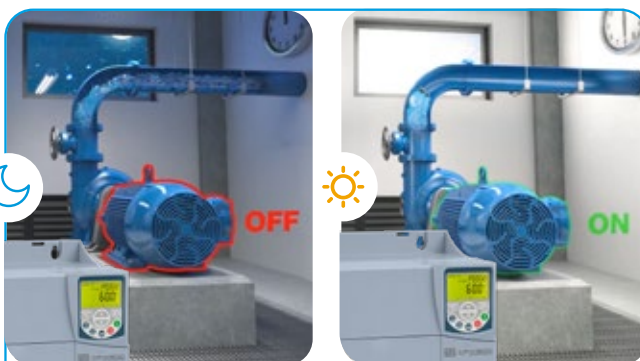
The use of the CFW500 with the Pump Genius Multipump improves the performance and provides electric energy savings.

Using this solution together with WEG W22 Premium motors, and reducing the pump speed even if slightly, it is possible to reduce the electric energy consumption by approximately 15%, thus contributing to the sustainable development of the planet.



Broken Pipe Alarm

Pump Genius detects when the pump is consuming more electric energy than it should, by means of information on the pump load and speed, automatically generating an alarm warning of leaky pipes. In addition, with the monitoring of the system pressure, a clogging condition may be detected by configuring the maximum pressure to trigger the alarm of clogged pipe.



Sleep and Wake up Function

The sleep function keeps the pump in the standby mode when the demand or flow is below the minimum, avoiding that it runs at low speed for long periods, providing electric energy savings and increasing the lifetime of the pump. The wake up function restarts the drive automatically when the pressure falls below the set point.



Pipe Charging Function

It allows lubrication and smooth initial charging of the pipes, making the pump operate at a lower preset speed for a certain time, avoiding "Water Hammers", which may damage the piping system.

Note: find out more about Pump Genius visiting our website www.weg.net.

Applications

Extruders



Conveyor belts



Roller tables



Fans / exhausters



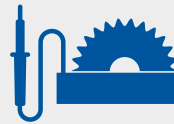
Centrifugal pumps



Granulators / palletizers



Cutting and welding machines



Dryers and rotary ovens



Process dosing pumps



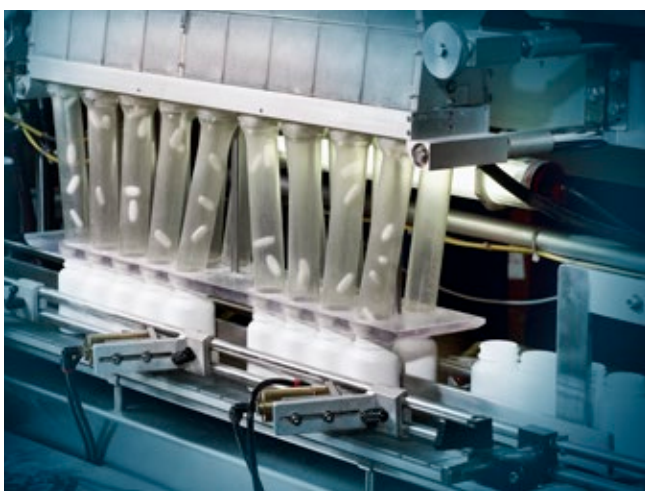
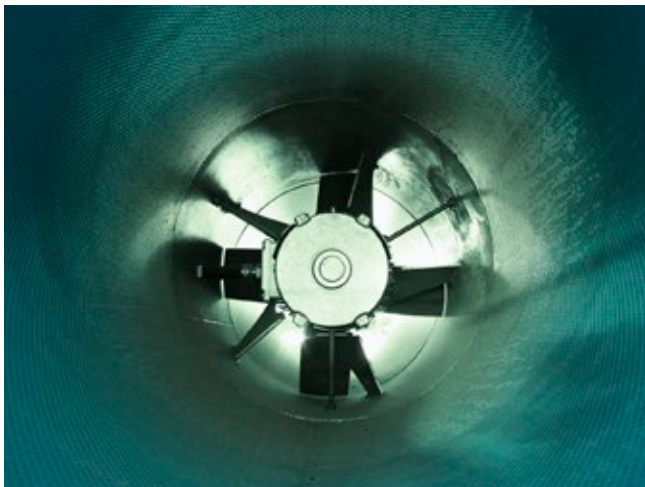
Stirrers / mixers



Rotary filters



Winding machines /
uncoiling machines



Coding¹⁾

- 1
- CFW500
- 2
- A
- 3
- 02P6
- 4
- T
- 5
- 4
- 6
- NB
- 7
- 20
- 8
- C2
- 9
-
- 10
-
- 11
-
- 12
-
- 13
-

- 1 - CFW500 variable speed drive**
- 2 - Size of the CFW500, according to table 1 below**
- 3 - Rated output current, according to table 1 below**

| Power supply | Single-phase (S) | Single-phase or three-phase (B) | Three-phase (T) | | |
|--------------|---|---|--|---|--|
| | 200-240 V ac | 200-240 V ac | 200-240 V ac | 380-480 V ac | 500-600 V ac |
| Voltage | 01P6 = 1.6 A 02P6 = 2.6 A 04P3 = 4.3 A 07P0 = 7.0 A 07P3 = 7.3 A 10P0 = 10.0 A | 01P6 = 1.6 A 02P6 = 2.6 A 04P3 = 4.3 A 07P3 = 7.3 A 10P0 = 10.0 A | 07P0 = 7.0 A 09P6 = 9.6 A 16P0 = 16 A 24P0 = 24 A 28P0 = 28 A 33P0 = 33 A 47P0 = 47 A 56P0 = 56 A 77P0 = 77 A 88P0 = 88 A 0105 = 105 A 0145 = 145 A 0180 = 180 A 0211 = 211 A | 01P0 = 1.0 A 01P6 = 1.6 A 02P6 = 2.6 A 04P3 = 4.3 A 06P1 = 6.1 A 02P6 = 2.6 A 04P3 = 4.3 A 06P5 = 6.5 A 10P0 = 10.0 A 14P0 = 14.0 A 16P0 = 16.0 A 24P0 = 24.0 A 31P0 = 31.0 A 39P0 = 39.0 A 49P0 = 49.0 A 77P0 = 77.0 A 88P0 = 88.0 A 0105 = 105 A 0142 = 142 A 0180 = 180 A 0211 = 211 A | 01P7 = 1.7 A 03P0 = 3.0 A 04P3 = 4.3 A 07P0 = 7.0 A 10P0 = 10.0 A 12P0 = 12.0 A |

4 - Number of phases

| | |
|---|------------------------------------|
| S | Single-phase power supply |
| B | Single or three-phase power supply |
| T | Three-phase power supply |

5 - Rated voltage

| | |
|---|-----------|
| 2 | 200-240 V |
| 4 | 380-480 V |
| 5 | 500-600 V |

6 - Internal dynamic braking²⁾

| | |
|----|---------------------------------------|
| NB | Without internal dynamic braking IGBT |
| DB | With internal dynamic braking IGBT |

7 - Protection degree

| | |
|----|----------------------------------|
| 20 | IP20 protection degree |
| N1 | Cabinet type 1 protection degree |
| 66 | IP66 protection degree (Type 4x) |

8 - RFI filter³⁾

| | |
|-------|---------------------------------------|
| Blank | Without internal RFI filter |
| C2 | With internal RFI filter - category 2 |
| C3 | With internal RFI filter - category 3 |

9 - Disconnect switch⁴⁾

| | |
|-------|---------------------------|
| Blank | Without disconnect switch |
| DS | With disconnect switch |

10 - Safety function⁵⁾

| | |
|-------|--|
| Blank | Without safety function |
| Y2 | With safety function (STO and SS1-l) as per EN 61800 |

11 - Special hardware versions - H xx

11.1 - Plug-in module

| | |
|-------|------------------------------|
| Blank | With standard plug-in module |
| H00 | Without plug-in module |

11.2 - Coating for harsh environments

| | |
|-------|--|
| Blank | Class 3C2 - Standard conformal coating |
| EC | Class 3C3 - Extra coating |

12 - Special software version - S xx

| | |
|-------|-------------------|
| Blank | Standard software |
| Sxx | Special software |

13 - Generation

| | |
|-------|-------------------|
| Blank | First generation |
| G2 | Second generation |

Notes: 1) Other configurations available upon request.

2) Braking resistor not included. Braking IGBT is available as standard for the whole CFW500 line, except for frame size A of IP20 version.

3) Conducted emission level (IEC 61800-3).

In order to minimize such problem, WEG variable speed drives contain common-mode capacitive filters, which are enough to avoid this type of interference in most cases. If necessary, our inverters also have radio frequency (RFI) filters to reduce even more those high-frequency electromagnetic interference signals. Item 8 of the table above shows how to select the models of internal RFI filters for the CFW500.

Definitions of IEC/EN 61800-3 standard. Categories:

Category C1: variable speed drives with voltage rating below 1,000 V and intended for application in the "First Environment".

Category C2: inverters with voltage rating below 1,000 V not provided with plugs or movable installations, and, when applied in the "First Environment", they must be installed and commissioned by a professional.

Category C3: inverters with voltage ratings below 1,000 V developed for application in the "Second Environment" and not designed for application in the "First Environment".
Environments: First Environment: environments that include domestic installations, such as establishments directly connected without intermediate transformers to the low voltage power line, which supplies buildings used for domestic purposes.

Second environment: environments that include all the buildings other than those directly connected to the low voltage power line, which supplies buildings used for domestic purposes.

4) Only for IP66 version.

Coding

CFW500 IP20 or NEMA 1 - 200-240 V

| Coding (available options for each model) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------|----------|-------------|----------|-------|--------------|-------------|--------------|----|----------|----------|-------|--------------|-------------|--------------|----|----------|-------|--------------|-------------|--------------|----|-------|-------|--------------|-------------|--------------|
| 1, 2, 3, 4 and 5 | 6 | 7 | 8 | 9 | 10 | 11.1 | 11.2 | 12 | 13 | | | | | | | | | | | | | | | | | | |
| CFW500A01P6S2 | NB | 20 or N1 | Blank or C2 | Blank | Blank | Blank or H00 | Blank or EC | Blank or Sxx | G2 | | | | | | | | | | | | | | | | | | |
| CFW500A02P6S2 | | | Blank or C3 | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500A04P3S2 | | | C2 | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500A07P0S2 | | | Blank | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500B07P3S2 | Blank or C3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500B10P0S2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500A01P6B2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500A02P6B2 | | | DB | | | | | | | 20 or N1 | Blank | Blank | Blank or H00 | Blank or EC | Blank or Sxx | G2 | | | | | | | | | | | |
| CFW500A04P3B2 | Blank or C3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500B07P3B2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500B10P0B2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500A07P0T2 | | | NB | | | | | | | | 20 or N1 | | | | | | Blank | Blank | Blank or H00 | Blank or EC | Blank or Sxx | G2 | | | | | |
| CFW500A09P6T2 | Blank or C3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500B16P0T2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500C24P0T2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500D28P0T2 | | | DB | | | | | | | | | | | | | | 20 or N1 | | | | | | Blank | Blank | Blank or H00 | Blank or EC | Blank or Sxx |
| CFW500D33P0T2 | Blank or C3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500D47P0T2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500E56P0T2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500F77P0T2 | | NB or DB | 20 or N1 | Blank | Blank | Blank or H00 | Blank or EC | Blank or Sxx | G2 | | | | | | | | | | | | | | | | | | |
| CFW500F88P0T2 | Blank or C3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500F0105T2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500G0145T2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500G0180T2 | | NB or DB | | 20 or N1 | | | | | | Blank | | Blank | Blank or H00 | Blank or EC | Blank or Sxx | G2 | | | | | | | | | | | |
| CFW500G0211T2 | Blank or C3 | | | | | | | | | | | | | | | | | | | | | | | | | | |

CFW500 IP20 or NEMA 1 - 380-480 V

| Coding (available options for each model) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------|----------|-------------|-------|-------|--------------|-------------|--------------|----|-------------|-------------|-------|-------|--------------|-------------|--------------|----|----------|-------|--------------|-------------|--------------|----|-------|-------|--------------|-------------|--------------|
| 1, 2, 3, 4 and 5 | 6 | 7 | 8 | 9 | 10 | 11.1 | 11.2 | 12 | 13 | | | | | | | | | | | | | | | | | | | |
| CFW500A01P0T4 | NB | 20 or N1 | Blank or C2 | Blank | Blank | Blank or H00 | Blank or EC | Blank or Sxx | G2 | | | | | | | | | | | | | | | | | | | |
| CFW500A02P6T4 | | | Blank or C3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500A04P3T4 | | | Blank or C2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500A06P1T4 | | | | | | | | | | Blank or C3 | | | | | | | | | | | | | | | | | | |
| CFW500B02P6T4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500B04P3T4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500B06P5T4 | DB | | 20 or N1 | | | | | | | | Blank or C2 | Blank | Blank | Blank or H00 | Blank or EC | Blank or Sxx | G2 | | | | | | | | | | | |
| CFW500B10P0T4 | | | | | | | | | | Blank or C3 | | | | | | | | | | | | | | | | | | |
| CFW500C14P0T4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500C16P0T4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500D24P0T4 | NB or DB | | | | | | | | | | 20 or N1 | | | | | | | Blank | Blank | Blank or H00 | Blank or EC | Blank or Sxx | G2 | | | | | |
| CFW500D31P0T4 | | | | | | | | | | Blank or C3 | | | | | | | | | | | | | | | | | | |
| CFW500E39P0T4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500E49P0T4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500F77P0T4 | NB or DB | | | | | | | | | | | | | | | | | 20 or N1 | | | | | | Blank | Blank | Blank or H00 | Blank or EC | Blank or Sxx |
| CFW500F88P0T4 | | | | | | | | | | Blank or C3 | | | | | | | | | | | | | | | | | | |
| CFW500F0105T4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500G0142T4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CFW500G0180T4 | NB or DB | 20 or N1 | | Blank | Blank | Blank or H00 | Blank or EC | Blank or Sxx | G2 | | | | | | | | | | | | | | | | | | | |
| CFW500G0211T4 | | | | | | | | | | Blank or C3 | | | | | | | | | | | | | | | | | | |

CFW500 IP20 or NEMA 1 - 500-600 V

| Coding (available options for each model) | | | | | | | | | |
|---|----|----------|-------|-------|-------|--------------|-------------|--------------|-------|
| 1, 2, 3, 4 and 5 | 6 | 7 | 8 | 9 | 10 | 11.1 | 11.2 | 12 | 13 |
| CFW500C01P7T5 | DB | 20 or N1 | Blank | Blank | Blank | Blank or H00 | Blank or EC | Blank or Sxx | Blank |
| CFW500C03P0T5 | | | | | | | | | |
| CFW500C04P3T5 | | | | | | | | | |
| CFW500C07P0T5 | | | | | | | | | |
| CFW500C10P0T5 | | | | | | | | | |
| CFW500C12P0T5 | | | | | | | | | |

Coding

CFW500 IP66 (NEMA 4x) - 200-240 V

| Coding (available options for each model) | | | | | | | | | |
|---|----|----|-------------|-------------|-------|--------------|-------------|--------------|----|
| 1, 2, 3, 4 and 5 | 6 | 7 | 8 | 9 | 10 | 11.1 | 11.2 | 12 | 13 |
| CFW500A01P6S2 | DB | 66 | C3 | Blank or DS | Blank | Blank or H00 | Blank or EC | Blank or Sxx | G2 |
| CFW500A02P6S2 | | | | | | | | | |
| CFW500A04P3S2 | | | | | | | | | |
| CFW500A07P3S2 | | | | | | | | | |
| CFW500A10P0S2 | | | Blank | | | | | | |
| CFW500A01P6B2 | | | | | | | | | |
| CFW500A02P6B2 | | | | | | | | | |
| CFW500A04P3B2 | | | | | | | | | |
| CFW500A07P3B2 | | | Blank or C3 | | | | | | |
| CFW500A10P0B2 | | | | | | | | | |
| CFW500A16P0T2 | | | | | | | | | |
| CFW500B24P0T2 | | | | | | | | | |
| CFW500B28P0T2 | | | | | | | | | |
| CFW500B33P0T2 | | | | | | | | | |

CFW500 IP66 (NEMA 4x) - 380-480 V

| Coding (available options for each model) | | | | | | | | | |
|---|----|----|-------------|-------------|-------|--------------|-------------|--------------|----|
| 1, 2, 3, 4 and 5 | 6 | 7 | 8 | 9 | 10 | 11.1 | 11.2 | 12 | 13 |
| CFW500A01P0T4 | DB | 66 | Blank or C3 | Blank or DS | Blank | Blank or H00 | Blank or EC | Blank or Sxx | G2 |
| CFW500A01P6T4 | | | | | | | | | |
| CFW500A02P6T4 | | | | | | | | | |
| CFW500A04P3T4 | | | | | | | | | |
| CFW500A06P1T4 | | | | | | | | | |
| CFW500A02P6T4 | | | | | | | | | |
| CFW500A04P3T4 | | | | | | | | | |
| CFW500A06P5T4 | | | | | | | | | |
| CFW500A10P0T4 | | | | | | | | | |
| CFW500B14P0T4 | | | | | | | | | |
| CFW500B16P0T4 | | | | | | | | | |
| CFW500B24P0T4 | | | | | | | | | |
| CFW500B31P0T4 | | | | | | | | | |

CFW500 IP66 (NEMA 4x) - 500-600 V

| Coding (available options for each model) | | | | | | | | | |
|---|----|----|-------|-------------|-------|--------------|-------------|--------------|-------|
| 1, 2, 3, 4 and 5 | 6 | 7 | 8 | 9 | 10 | 11.1 | 11.2 | 12 | 13 |
| CFW500B01P7T5 | DB | 66 | Blank | Blank or DS | Blank | Blank or H00 | Blank or EC | Blank or Sxx | Blank |
| CFW500B03P0T5 | | | | | | | | | |
| CFW500B04P3T5 | | | | | | | | | |
| CFW500B07P0T5 | | | | | | | | | |
| CFW500B10P0T5 | | | | | | | | | |
| CFW500B12P0T5 | | | | | | | | | |



Specification

CFW500 IP20 or NEMA Type 1 - 200-240 V

| CFW500 variable speed drive | | | | Maximum applicable motor ¹⁾ | | | | | | | | | | | |
|-----------------------------|-----------------------------|---------|-------------|--|-----|------------------|-----|----------|----|----------|-----------------|------|----------|------|----------|
| Reference | Power supply (V) | | Frame size | Rated current (A) | | Normal duty (ND) | | | | | Heavy duty (HD) | | | | |
| | | | | | | IEC | | | | UL | IEC | | | | UL |
| | | | | | | 60 Hz | | 50 Hz | | 60 Hz | 60 Hz | | 50 Hz | | 60 Hz |
| | | | | | | 220 V ac | | 220 V ac | | 230 V ac | 220 V ac | | 220 V ac | | 230 V ac |
| ND | HD | HP | kW | HP | kW | HP | HP | kW | HP | kW | HP | kW | HP | | |
| CFW500A01P6S2 | Single-phase | 220-240 | A | - | 1.6 | - | - | - | - | - | 0.25 | 0.18 | 0.33 | 0.25 | 0.33 |
| CFW500A02P6S2 | | | | - | 2.6 | - | - | - | - | - | 0.5 | 0.37 | 0.75 | 0.55 | 0.75 |
| CFW500A04P3S2 | | | | - | 4.3 | - | - | - | - | - | 1.0 | 0.75 | 1.5 | 1.1 | 1.5 |
| CFW500A07POS2 | | | - | 7.0 | - | - | - | - | - | 2.0 | 1.5 | 2.0 | 1.5 | 2.0 | |
| CFW500B07P3S2 | | | B | - | 7.3 | - | - | - | - | - | 2.0 | 1.5 | 2.0 | 1.5 | 2.0 |
| CFW500B10POS2 | | | | - | 10 | - | - | - | - | - | 3.0 | 2.2 | 3.0 | 2.2 | 3.0 |
| CFW500A01P6B2 | Single-phase or three-phase | 220-240 | A | - | 1.6 | - | - | - | - | - | 0.25 | 0.18 | 0.33 | 0.25 | 0.33 |
| CFW500A02P6B2 | | | | - | 2.6 | - | - | - | - | - | 0.5 | 0.37 | 0.75 | 0.55 | 0.75 |
| CFW500A04P3B2 | | | | - | 4.3 | - | - | - | - | - | 1.0 | 0.75 | 1.5 | 1.5 | 1.5 |
| CFW500B07P3B2 | | | B | - | 7.3 | - | - | - | - | - | 2.0 | 1.5 | 2.0 | 1.5 | 2.0 |
| CFW500B10POB2 | | | | - | 10 | - | - | - | - | - | 3.0 | 2.2 | 3.0 | 2.2 | 3.0 |
| CFW500A07POT2 | | | Three-phase | 220-240 | A | - | 7.0 | - | - | - | - | - | 2.0 | 1.5 | 2.0 |
| CFW500A09P6T2 | - | 9.6 | | | | - | - | - | - | - | 3.0 | 2.2 | 3.0 | 2.2 | 3.0 |
| CFW500B16POT2 | B | - | | | 16 | - | - | - | - | - | 5.0 | 3.7 | 5.5 | 4.0 | 5.5 |
| CFW500C24POT2 | | - | | | 24 | - | - | - | - | - | 7.5 | 5.5 | 7.5 | 5.5 | 7.5 |
| CFW500D28POT2 | D | - | | | 28 | - | - | - | - | - | 10 | 7.5 | 10 | 7.5 | 10 |
| CFW500D33POT2 | | - | | | 33 | - | - | - | - | - | 12.5 | 9.2 | 12.5 | 9.2 | 12.5 |
| CFW500D47POT2 | | - | | | 47 | - | - | - | - | - | 15 | 11 | 15 | 11 | 15 |
| CFW500E56POT2 | E | - | | | 56 | - | - | - | - | - | 20 | 15 | 20 | 15 | 20 |
| CFW500F77POT2 | | 77 | | | 64 | 30 | 22 | 30 | 22 | 30 | 25 | 18.5 | 25 | 18.5 | 25 |
| CFW500F88POT2 | F | 88 | | | 75 | 30 | 22 | 30 | 22 | 30 | 30 | 22 | 30 | 22 | 30 |
| CFW500F0105T2 | | 105 | | | 88 | 40 | 30 | 40 | 30 | 40 | 30 | 22 | 30 | 22 | 30 |
| CFW500G0145T2 | G | 145 | | | 115 | 50 | 37 | 50 | 37 | 50 | 40 | 30 | 40 | 30 | 40 |
| CFW500G0180T2 | | 180 | | | 145 | 60 | 45 | 60 | 45 | 60 | 50 | 37 | 50 | 37 | 50 |
| CFW500G0211T2 | | 211 | | | 180 | 75 | 55 | 75 | 55 | 75 | 60 | 45 | 60 | 45 | 60 |

Note: 1) The power values for maximum applicable motor shown in the tables above are reference values and valid for WEG motors. IEC motor powers are based on motor WEG four-pole W22 High Efficiency IE2 three-phase induction motors with power supply of 220 V, 230 V, 380, 400 V, 525 or 575 V. NEMA motor power are based on WEG four pole W22 Premium. Motor rated currents may vary with speed and manufacturer, therefore, use the motor power ratings above only as a guidance. The proper sizing of the CFW500 to be used must be determined as a function of the rated current of the motor used.



Specification

CFW500 IP20 or NEMA 1 - 380-480 V

| CFW500 variable speed drive | | | | Maximum applicable motor ¹⁾ | | | | | | | | | | | |
|-----------------------------|------------------|------------|-------------------|--|------------------|-----|----------|-----|----------|------|-----------------|------|----------|------|----------|
| Reference | Power supply (V) | Frame size | Rated current (A) | | Normal duty (ND) | | | | | | Heavy duty (HD) | | | | |
| | | | | | IEC | | | | UL | | IEC | | | | |
| | | | | | 60 Hz | | 50 Hz | | 60 Hz | | 60 Hz | | 50 Hz | | 60 Hz |
| | | | | | 380 V ac | | 400 V ac | | 460 V ac | | 380 V ac | | 400 V ac | | 460 V ac |
| ND | HD | HP | kW | HP | kW | HP | HP | kW | HP | kW | HP | kW | HP | | |
| CFW500A01P0T4 | Three-phase | 380-480 | - | 1.0 | - | - | - | - | - | 0.25 | 0.18 | 0.5 | 0.37 | 0.5 | |
| CFW500A01P6T4 | | | - | 1.6 | - | - | - | - | - | 0.5 | 0.37 | 0.75 | 0.55 | 0.75 | |
| CFW500A02P6T4 | | | - | 2.6 | - | - | - | - | - | 1.5 | 1.1 | 1.5 | 1.1 | 1.5 | |
| CFW500A04P3T4 | | | - | 4.3 | - | - | - | - | - | 2.0 | 1.5 | 2.0 | 1.5 | 3.0 | |
| CFW500A06P1T4 | | | - | 6.1 | - | - | - | - | - | 3.0 | 2.2 | 4.0 | 3.0 | 4.0 | |
| CFW500B02P6T4 | | | - | 2.6 | - | - | - | - | - | 1.5 | 1.1 | 1.5 | 1.1 | 1.5 | |
| CFW500B04P3T4 | | | - | 4.3 | - | - | - | - | - | 2.0 | 1.5 | 2.0 | 1.5 | 2.0 | |
| CFW500B06P5T4 | | | - | 6.5 | - | - | - | - | - | 3.0 | 2.2 | 4.0 | 3.0 | 5.0 | |
| CFW500B10P0T4 | | | - | 10 | - | - | - | - | - | 5.0 | 3.7 | 5.5 | 4.0 | 7.5 | |
| CFW500C14P0T4 | | | - | 14 | - | - | - | - | - | 7.5 | 5.5 | 7.5 | 5.5 | 10 | |
| CFW500C16P0T4 | | | - | 16 | - | - | - | - | - | 10 | 7.5 | 10 | 7.5 | 10 | |
| CFW500D24P0T4 | | | - | 24 | - | - | - | - | - | 15 | 11 | 15 | 11 | 15 | |
| CFW500D31P0T4 | | | - | 31 | - | - | - | - | - | 20 | 15 | 20 | 15 | 25 | |
| CFW500E39P0T4 | | | - | 39 | - | - | - | - | - | 25 | 18.5 | 30 | 22 | 30 | |
| CFW500E49P0T4 | | | - | 49 | - | - | - | - | - | 30 | 22 | 30 | 22 | 40 | |
| CFW500F77P0T4 | | | 77 | 61 | 50 | 37 | 60 | 45 | 60 | 40 | 30 | 40 | 30 | 50 | |
| CFW500F88P0T4 | | | 88 | 73 | 60 | 45 | 60 | 55 | 75 | 50 | 37 | 50 | 37 | 60 | |
| CFW500F105T4 | | | 105 | 88 | 75 | 55 | 75 | 55 | 75 | 60 | 45 | 60 | 45 | 75 | |
| CFW500G0142T4 | | | 142 | 115 | 100 | 75 | 100 | 75 | 125 | 75 | 55 | 75 | 55 | 75 | |
| CFW500G0180T4 | | | 180 | 142 | 150 | 110 | 150 | 110 | 150 | 100 | 75 | 100 | 75 | 125 | |
| CFW500G0211T4 | | | 211 | 180 | 175 | 132 | 175 | 132 | 175 | 150 | 110 | 150 | 110 | 150 | |

Note: 1) The power values for maximum applicable motor shown in the tables above are reference values and valid for WEG motors. IEC motor powers are based on motor WEG four-pole W22 High Efficiency IE2 three-phase induction motors with power supply of 220 V, 230 V, 380, 400 V, 525 or 575 V. NEMA motor power are based on WEG four pole W22 Premium. Motor rated currents may vary with speed and manufacturer, therefore, use the motor power ratings above only as a guidance. The proper sizing of the CFW500 to be used must be determined as a function of the rated current of the motor used.

CFW500 IP20 or NEMA 1 - 500-600 V

| CFW500 variable speed drive | | | | Maximum applicable motor ¹⁾ | | | |
|-----------------------------|------------------|-----|------------|--|-----------------|----------|----------|
| Reference | Power supply (V) | | Frame size | Rated current (A) | Heavy Duty (HD) | | |
| | | | | | IEC | | UL |
| | | | | | 60 Hz | 60 Hz | 60 Hz |
| | | | | | 575 V ac | 575 V ac | 575 V ac |
| HP | kW | HP | | | | | |
| CFW500C01P7T5 | Three-phase | 600 | C | 1.7 | 1.0 | 0.75 | 1.5 |
| CFW500C03P0T5 | | | | 3.0 | 2.0 | 1.5 | 2.0 |
| CFW500C04P3T5 | | | | 4.3 | 3.0 | 2.2 | 3.0 |
| CFW500C07P0T5 | | | | 7.0 | 5.0 | 3.7 | 5.0 |
| CFW500C10P0T5 | | | | 10 | 7.5 | 5.5 | 10 |
| CFW500C12P0T5 | | | | 12 | 10 | 7.5 | 10 |

Note: 1) The power values for maximum applicable motor shown in the tables above are reference values and valid for WEG motors. IEC motor powers are based on motor WEG four-pole W22 High Efficiency IE2 three-phase induction motors with power supply of 220 V, 230 V, 380, 400 V, 525 or 575 V. NEMA motor power are based on WEG four pole W22 Premium. Motor rated currents may vary with speed and manufacturer, therefore, use the motor power ratings above only as a guidance. The proper sizing of the CFW500 to be used must be determined as a function of the rated current of the motor used.

Specification

CFW500 IP66 (NEMA 4X) - 200-240 V

| CFW500 variable speed drive | | | | Maximum applicable motor ¹⁾ | | | | | | | | |
|-----------------------------|-----------------------------|---------|------------|--|-------|----------|-------|----------|-------|------|------|------|
| | | | | Heavy duty (HD) | | | | | | | | |
| Reference | Power supply (V) | | Frame size | Rated current (A) | IEC | | | | UL | | | |
| | | | | | 60 Hz | | 50 Hz | | 60 Hz | | | |
| | | | | 220 V ac | | 220 V ac | | 230 V ac | | | | |
| | | | | HD | HP | kW | HP | kW | HP | | | |
| CFW500A01P6S2DB66 | Single-phase | 200-240 | A | 1.6 | 0.25 | 0.18 | 0.33 | 0.25 | 0.33 | | | |
| CFW500A02P6S2DB66 | | | | 2.6 | 0.5 | 0.37 | 0.75 | 0.55 | 0.75 | | | |
| CFW500A04P3S2DB66 | | | | 4.3 | 1.0 | 0.75 | 1.50 | 1.10 | 1.5 | | | |
| CFW500A07P3S2DB66 | | | | 7.3 | 2.0 | 1.5 | 2.0 | 1.5 | 2.0 | | | |
| CFW500A10P0S2DB66 | | | | 10 | 3.0 | 2.2 | 3.0 | 2.2 | 3.0 | | | |
| CFW500A01P6B2DB66 | Single-phase or three-phase | | | 200-240 | A | 1.6 | 0.25 | 0.18 | 0.33 | 0.25 | 0.33 | |
| CFW500A02P6B2DB66 | | | | | | 2.6 | 0.5 | 0.37 | 0.75 | 0.55 | 0.75 | |
| CFW500A04P3B2DB66 | | | | | | 4.3 | 1.0 | 0.75 | 1.50 | 1.50 | 1.5 | |
| CFW500A07P3B2DB66 | | | | | | 7.3 | 2.0 | 1.5 | 2.0 | 1.5 | 2.0 | |
| CFW500A10P0B2DB66 | | | | | | 10 | 3.0 | 2.2 | 3.0 | 2.2 | 3.0 | |
| CFW500A16P0T2DB66 | Three-phase | 200-240 | A | | | 16 | 5.0 | 3.7 | 5.5 | 4.0 | 5.5 | |
| CFW500B24P0T2DB66 | | | | | | B | 24 | 7.5 | 5.5 | 7.5 | 5.5 | 7.5 |
| CFW500B28P0T2DB66 | | | | | | | 28 | 10 | 7.5 | 10.0 | 7.5 | 10 |
| CFW500B33P0T2DB66 | | | | | | | 33 | 12.5 | 9.2 | 12.5 | 9.2 | 12.5 |

Note: 1) The power values for maximum applicable motor shown in the tables above are reference values and valid for WEG motors. IEC motor powers are based on motor WEG four-pole W22 High Efficiency IE2 three-phase induction motors with power supply of 220 V, 230 V, 380, 400 V, 525 or 575 V. NEMA motor power are based on WEG four pole W22 Premium. Motor rated currents may vary with speed and manufacturer, therefore, use the motor power ratings above only as a guidance. The proper sizing of the CFW500 to be used must be determined as a function of the rated current of the motor used.



Specification



CFW500 IP66 (NEMA 4X) - 380-480 V

| CFW500 variable speed drive | | | | Maximum applicable motor ¹⁾ | | | | | |
|-----------------------------|------------------|---------|------------------|--|----------|----------|----------|----------|----------|
| | | | | Heavy duty (HD) | | | | | |
| Reference | Power supply (V) | | Power supply (V) | Rated current (A) | IEC | | | | UL |
| | | | | | 60 Hz | | 50 Hz | | 60 Hz |
| | | | | | 380 V ac | 380 V ac | 400 V ac | 400 V ac | 460 V ac |
| | | | | HD | HP | kW | HP | kW | HP |
| CFW500A01P0T4DB66 | Three-phase | 380-480 | A | 1.0 | 0.25 | 0.18 | 0.5 | 0.37 | 0.5 |
| CFW500A01P6T4DB66 | | | | 1.6 | 0.5 | 0.37 | 1.0 | 0.75 | 0.75 |
| CFW500A02P6T4DB66 | | | | 2.6 | 1.5 | 1.1 | 1.5 | 1.1 | 1.5 |
| CFW500A04P3T4DB66 | | | | 4.3 | 2.0 | 1.5 | 3.0 | 2.2 | 3.0 |
| CFW500A06P1T4DB66 | | | | 6.1 | 3.0 | 2.2 | 4.0 | 3.0 | 4.0 |
| CFW500BA02P6T4DB66 | | | | 2.6 | 1.5 | 1.1 | 1.5 | 1.1 | 1.5 |
| CFW500A04P3T4DB66 | | | | 4.3 | 2.0 | 1.5 | 3.0 | 2.2 | 2.0 |
| CFW500A06P5T4DB66 | | | | 6.5 | 3.0 | 2.2 | 4.0 | 3.0 | 5.0 |
| CFW500A10P0T4DB66 | | | 10 | 6.0 | 4.5 | 6.0 | 4.5 | 7.5 | |
| CFW500B14P0T4DB66 | | | B | 14 | 7.5 | 5.5 | 10 | 7.5 | 10 |
| CFW500B16P0T4DB66 | | | | 16 | 10 | 7.5 | 12.5 | 9.2 | 10 |
| CFW500B24P0T4DB66 | | | | 24 | 15 | 11 | 15 | 11 | 15 |
| CFW500B31P0T4DB66 | | | | 31 | 20 | 15 | 20 | 15 | 25 |

Note: 1) The power values for maximum applicable motor shown in the tables above are reference values and valid for WEG motors. IEC motor powers are based on motor WEG four-pole W22 High Efficiency IE2 three-phase induction motors with power supply of 220 V, 230 V, 380, 400 V, 525 or 575 V. NEMA motor power are based on WEG four pole W22 Premium. Motor rated currents may vary with speed and manufacturer, therefore, use the motor power ratings above only as a guidance. The proper sizing of the CFW500 to be used must be determined as a function of the rated current of the motor used.

CFW500 IP66 (NEMA 4X) - 500-600 V

| CFW500 variable speed drive | | | | Maximum applicable motor ¹⁾ | | | |
|-----------------------------|------------------|-----|------------------|--|----------|----------|----------|
| | | | | Heavy duty (HD) | | | |
| Reference | Power supply (V) | | Power supply (V) | Rated current (A) | IEC | | UL |
| | | | | | 60 Hz | 60 Hz | 60 Hz |
| | | | | | 575 V ac | 575 V ac | 575 V ac |
| | | | | HD | HP | kW | HP |
| CFW500B01P7T5DB66 | Three-phase | 600 | B | 1.7 | 1.0 | 0.75 | 1.5 |
| CFW500B03P0T5DB66 | | | | 3.0 | 2.0 | 1.5 | 2.0 |
| CFW500B04P3T5DB66 | | | | 4.3 | 3.0 | 2.2 | 3.0 |
| CFW500B07P0T5DB66 | | | | 7.0 | 5.0 | 3.7 | 5.0 |
| CFW500B10P0T5DB66 | | | | 10 | 7.5 | 5.5 | 10 |
| CFW500B12P0T5DB66 | | | | 12 | 10 | 7.5 | 10 |

Note: 1) The power values for maximum applicable motor shown in the tables above are reference values and valid for WEG motors. IEC motor powers are based on motor WEG four-pole W22 High Efficiency IE2 three-phase induction motors with power supply of 220 V, 230 V, 380, 400 V, 525 or 575 V. NEMA motor power are based on WEG four pole W22 Premium. Motor rated currents may vary with speed and manufacturer, therefore, use the motor power ratings above only as a guidance. The proper sizing of the CFW500 to be used must be determined as a function of the rated current of the motor used.

Specification

Optional Items

These are hardware resources added to the CFW500 in the manufacturing process, and they should be requested via smart code.

Internal Dynamic Braking (IGBT)

Used for quick stop of the motor with external¹⁾ braking resistor.

The braking IGBT is available as standard for the whole line, except for frame A of IP20 version.

Note: 1) External braking resistor not included. To specify the correct braking resistor, please refer to the CFW500 User's Manual.

NEMA1 Protection Kit³⁾ (N1)

Insert ".N1" in field 7 of the smart code frame sizes A, B, C, D, E, F or G.

According to the National Electrical Manufacturers Association (NEMA) standard, Type 1.

- Protects²⁾ against penetration of foreign solid objects (falling dust)
- Prevents access to hazardous parts
- Can also be acquired as an accessory (see accessories)

Notes: 2) Not recommended for external use, only indoor applications or inside enclosures. The models of frames A to E with protection degree NEMA type 1 are not compatible with safety function.

3) Image of frame size A with NEMA1 kit.



3)

Disconnect Switch⁴⁾

Built-in disconnect switch for in the product for easy and safe maintenance or switching the mains off.

Note: 4) Only available for models with IP66 protection degree.



Internal RFI Filter

Inverters with internal RFI filter (code C2 or C3) when installed, maintained and used on the application they were designed for, and in compliance with the relevant installation standards and manufacturer's instructions, reduce conducted disturbance from the inverter to the main power supply in high frequency band (>150 kHz), complying to the relevant EMC standards, such as EN 61800-3 and EN 55011.

Conformal Coating

The standard version of the CFW500 offers protection class 3C2 - according to IEC 60721-3-3, ensuring greater protection for applications in environments with corrosive chemicals.

It is possible to request an extra coating on the internal circuit boards, protection class 3C3 - according to IEC 60721-3-3, by adding EC to item 11.2 of the smart code, ensuring even greater protection for applications in harsh corrosive environment.

Note: in order to select the CFW500 without plug-in module (H00) and with extra coating on the internal circuit boards (HEC), H00EC must be filled in item 11 of the smart code.



Pump Genius

To use CFW500 with the Pump Genius contact WEG Automation sales department.

Accessories

Plug-In Module

On the CFW500, it is possible leave to choose later the model of the internal plug-in module by entering H00 in item 11 of the smart code. In this case, it is necessary to select the plug-in module as an accessory, according to the table bellow.

In case H00 is not selected in item 11 of the smart code, the CFW500 will be supplied with the CFW500-IOS plug-in. You must always use one plug-in module per CFW500.

Due to the different connections, when equipped with the plug-in module with the STO / SS1 safety functions, the inverter will still be able to connect another plug-in module at the user's choice.

| Reference | Description | Illustrative figures |
|--|---|---|
| | Input and output (I/O) expansion | |
| CFW500-IOS ¹⁾ | Standard plug-in module (included in the version with plug-in module) |  |
| CFW500-IOD | Digital input and output (I/O) expansion plug-in module | |
| CFW500-IOAD | Digital and analog input and output (I/O) expansion plug-in module | |
| CFW500-IOR-B | Relay output expansion plug-in module | |
| Functionality expansion | | |
| CFW500-ENC | Plug-in module with encoder input | |
| CFW500-CUSB | Plug-in module with USB port | |
| CFW500-SFY2 ²⁾ | Plug-in module with security function STO e SS1 | |
| Communication on Fieldbus network | | |
| CFW500-CCAN | CAN communication plug-in module (CANopen/DeviceNet) | |
| CFW500-CRS232 | RS232 communication plug-in module | |
| CFW500-CRS485-B | RS485 communication plug-in module | |
| CFW500-CPDP | Profibus-DP communication plug-in module | |
| CFW500-CETH-IP | EtherNet/IP communication plug-in module | |
| CFW500-CEMB-TCP | Modbus-TCP communication plug-in module | |
| CFW500-CEPN-IO | PROFINET IO communication plug-in module | |
| Memory | |  |
| CFW500-MMF | Flash memory module | |
| Interfaces | |  |
| CFW500-HMIR | Remote operating interface (HMI) | |
| HMI-01 | Alphanumeric HMI | |
| CFW500-RHMIF | Frame for remote HMI | |
| CFW500-CCHMIR1M | 1-meter cable set for remote operating interface (HMI) | |
| CFW500-CCHMIR2M | 2-meter cable set for remote operating interface (HMI) | |
| CFW500-CCHMIR3M | 3-meter cable set for remote operating interface (HMI) | |
| CFW500-CCHMIR5M | 5-meter cable set for remote operating interface (HMI) | |
| CFW500-CCHMIR75M | 7.5-meter cable set for remote operating interface (HMI) | |
| CFW500-CCHMIR10M | 10-meter cable set for remote operating interface (HMI) | |
| Description | |  |
| CFW500-KN1A | NEMA 1 Kit - size A (standard for option N1) | |
| CFW500-KN1B | NEMA 1 Kit - size B (standard for option N1) | |
| CFW500-KN1C | NEMA 1 Kit - size C (standard for option N1) | |
| CFW500-KN1D | NEMA 1 Kit - size D (standard for option N1) | |
| CFW500-KN1E | NEMA 1 Kit - size E (standard for option N1) | |
| CFW500-KN1F | NEMA 1 kit - frame F (standard for option N1) | |
| CFW500-KN1G | NEMA 1 kit - frame G (standard for option N1) | |
| CFW500-KPCSA | Shielding kit for the power cables - size A (standard for option C2 and C3) | |
| CFW500-KPCSB | Shielding kit for the power cables - size B (standard for option C2 and C3) | |
| CFW500-KPCSC | Shielding kit for the power cables - size C (standard for option C2 and C3) | |
| CFW500-KPCSD | Shielding kit for the power cables - size D (standard for option C2 and C3) | |
| CFW500-KPCSE | Shielding kit for the power cables - size E (standard for option C2 and C3) | |
| CFW500-KPCSF | Shielding kit for the power cables - size F (standard for option C3) | |
| CFW500-KPCSG | Shielding kit for the power cables - size G (standard for option C3) | |

Notes: 1) Accessory already included if the CFW500 version with the standard plug-in module is selected.

The plug-in modules can also be sold separately as an accessory item or spare part.

2) Due to the different connections, when equipped with the plug-in module with the STO / SS1 safety functions, the inverter will still be able to connect another plug-in module at the user's choice.

Accessories

Configuration of the Plug-In Modules¹⁾

| Plug-in module | Functions | | | | | | | | | | | | | | | | |
|---------------------------|-----------------|--------|---------|---------------|--------------------|---------|----------|---------------------------------|-------------------|-------|-------|-------------|-------------|------------|-------------|--------|------|
| | Inputs | | Outputs | | | STO/SS1 | USB port | Input for Encoder ³⁾ | Fieldbus networks | | | | | | | Supply | |
| | Digital | Analog | Analog | Digital relay | Digital transistor | | | | CANopen DeviceNet | RS232 | RS485 | Profibus-DP | EtherNet/IP | Modbus-TCP | PROFINET IO | 10 V | 24 V |
| CFW500-IOS | 4 | 1 | 1 | 1 | 1 | - | - | - | - | - | 1 | - | - | - | - | 1 | 1 |
| CFW500-IOD | 8 | 1 | 1 | 1 | 4 | - | - | - | - | - | 1 | - | - | - | - | 1 | 1 |
| CFW500-IOAD | 6 | 3 | 2 | 1 | 3 | - | - | - | - | - | 1 | - | - | - | - | 1 | 1 |
| CFW500-IOR-B | 5 ²⁾ | 1 | 1 | 4 | 1 | - | - | - | - | - | 1 | - | - | - | - | 1 | 1 |
| CFW500-ENC | 5 ²⁾ | 1 | 1 | 4 | 1 | - | - | 1 | - | - | 1 | - | - | - | - | 1 | 1 |
| CFW500-CUSB | 4 | 1 | 1 | 1 | 1 | - | 1 | - | - | - | 1 | - | - | - | - | 1 | 1 |
| CFW500-SFY2 ⁴⁾ | - | - | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - | - |
| CFW500-CCAN | 2 | 1 | 1 | 1 | 1 | - | - | - | 1 | - | 1 | - | - | - | - | 1 | - |
| CFW500-CRS232 | 2 | 1 | 1 | 1 | 1 | - | - | - | - | 1 | 1 | - | - | - | - | - | 1 |
| CFW500-CRS485-B | 4 | 2 | 1 | 2 | 1 | - | - | - | - | - | 2 | - | - | - | - | 1 | 1 |
| CFW500-CPDP | 2 | 1 | 1 | 1 | 1 | - | - | - | - | - | 1 | 1 | - | - | - | - | 1 |
| CFW500-CETH-IP | 2 | 1 | 1 | 1 | 1 | - | - | - | - | - | 1 | - | 1 | - | - | - | 1 |
| CFW500-CEMB-TCP | 2 | 1 | 1 | 1 | 1 | - | - | - | - | - | 1 | - | - | 1 | - | - | 1 |
| CFW500-CEPN-IO | 2 | 1 | 1 | 1 | 1 | - | - | - | - | - | 1 | - | - | - | 1 | - | 1 |

Notes: 1) All plug-in models have at least one RS485 port. The CFW500-CRS485 plug-in module has two RS485 ports. The CFW500 allows the installation of one plug-in module per unit.

2) The digital input DI5 is always NPN, and it cannot be configured for PNP like the others.

3) Incremental Encoder (A/A - B/B).

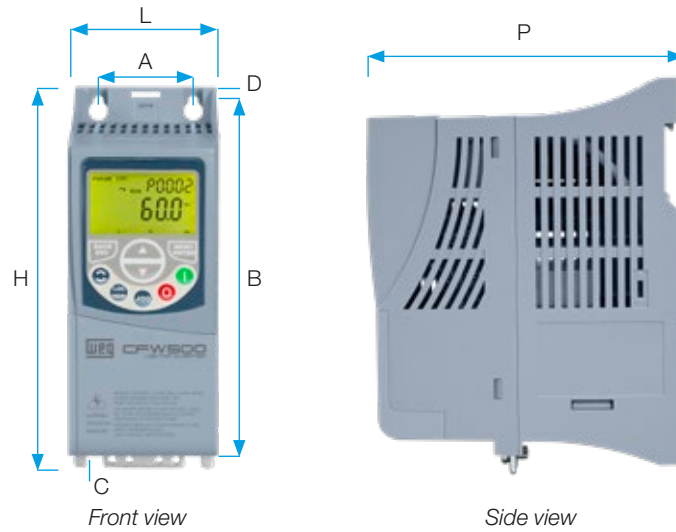
See the installation guides of the plug-in modules on the website www.weg.net.

4) Due to the different connections, when equipped with the plug-in module with the STO / SS1 safety functions, the inverter will still be able to connect another plug-in module at the user's choice.



Dimensions and Weights

IP20 Version



| Size | A | B | C | D | H | L | P | Weight |
|------|------------|-------------|-------------|------------|--------------|--------------|--------------|-------------|
| | mm [in] | mm [in] | mm [in] | mm [in] | mm [in] | mm [in] | mm [in] | |
| A | 50 [1.97] | 175 [6.89] | 11.9 [0.47] | 7.2 [0.28] | 189 [7.44] | 75 [2.95] | 150 [5.91] | 0.8 [1.76] |
| B | 75 [2.95] | 185 [7.3] | 11.8 [0.46] | 7.3 [0.29] | 199 [7.83] | 100 [3.94] | 160 [6.3] | 1.2 [2.65] |
| C | 100 [3.94] | 195 [7.7] | 16.7 [0.66] | 5.8 [0.23] | 210 [8.27] | 135 [5.31] | 165 [6.5] | 2 [4.4] |
| D | 125 [4.92] | 290 [11.41] | 27.5 [1.08] | 10.2 [0.4] | 306.6 [12.1] | 180 [7.08] | 166.5 [6.55] | 4.3 [9.48] |
| E | 150 [5.9] | 330 [13] | 34 [1.34] | 10.6 [0.4] | 350 [13.8] | 220 [8.7] | 191.5 [7.5] | 10 [22.05] |
| F | 200 [7.87] | 525 [20.67] | 42.5 [1.67] | 15 [0.59] | 550 [21.65] | 300 [11.81] | 254 [10] | 26 [57.3] |
| G | 200 [7.87] | 650 [25.59] | 57 [2.24] | 15 [0.59] | 675 [26.57] | 335.3 [13.2] | 314 [12.36] | 52 [114.64] |

Note: for the dimensions in the NEMA type 1 version, refer to the user manual.

IP66 Version



| Size | A | B | C | D | E | H | L | P | | Weight |
|------|------------|-------------|------------|-----------|-------------|-------------|------------|------------|--------------|------------|
| | mm [in] | mm [in] | mm [in] | mm [in] | mm [in] | mm [in] | mm [in] | P1 | P2 | |
| | | | | | | | | mm [in] | mm [in] | |
| A | 150 [5,9] | 250 [9,83] | 5,7 [0,22] | 7,5 [0,3] | 225 [8,86] | 265 [10,43] | 165 [6,5] | 227 [8,93] | 252,5 [9,94] | 10 [22,05] |
| B | 200 [7,86] | 325 [12,79] | 5,7 [0,22] | 7,5 [0,3] | 300 [11,82] | 340 [13,39] | 215 [8,46] | 227 [8,93] | 252,9 [9,96] | 12 [26,5] |

Notes: P1 = Measure without disconnect switch.
P2 = Measure with disconnect switch.

Standards

| | | |
|------------------|--|--|
| Standards | Safety standards | UL 508C - Power conversion equipment |
| | | UL 840 - Insulation coordination including clearances and creepage distances for electrical equipment |
| | | EN 61800-5-1 - Safety requirements electrical, thermal and energy |
| | | EN 50178 - Electronic equipment for use in power installations |
| | | EN 60204-1 - Safety of machinery. Electrical equipment of machines. Part 1: general requirements Note: In order to have a machine in accordance with this standard, the manufacturer of the machine is responsible for installing an emergency stop device and a device for disconnection from the power line |
| | | EN 60146 (IEC 146) - Semiconductor converters |
| | | EN 61800-2 - Adjustable speed electrical power drive systems - Part 2: general requirements - Rating specifications for low voltage adjustable frequency AC power drive systems |
| | Electromagnetic compatibility standards | EN 61800-3 - Adjustable speed electrical power drive systems - Part 3: EMC product standard including specific test methods |
| | | EN 55011 - Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment |
| | | CISPR 11 - Industrial, scientific and medical (ISM) radio-frequency equipment - Electromagnetic disturbance characteristics - Limits and methods of measurement |
| | | EN 61000-4-2 - Electromagnetic compatibility (EMC) - Part 4: testing and measurement techniques - Section 2: electrostatic discharge immunity test |
| | | EN 61000-4-3 - Electromagnetic compatibility - Part 4: testing and measurement techniques - Section 3: radiated, radio-frequency, electromagnetic field immunity test |
| | | EN 61000-4-4 - Electromagnetic compatibility - Part 4: testing and measurement techniques - Section 4: electrical fast transient/burst immunity test |
| | | EN 61000-4-5 - Electromagnetic compatibility - Part 4: testing and measurement techniques - Section 5: surge immunity test |
| | | EN 61000-4-6 - Electromagnetic compatibility - Part 4: testing and measurement techniques - Section 6: immunity to conducted disturbances, induced by radio-frequency fields |
| | Mechanical construction standards | EN 60529 - Degrees of protection provided by enclosures (IP code) |
| | | UL 50 - Enclosures for electrical equipment |
| | | IEC60721-3-3 - Classification of environmental conditions - part 3: classification of groups of environmental parameters and their severities - Section 3: stationary use at weather protected locations level 3M4. |



Technical Specifications

| | | |
|---------------------------|--------------------------------|--|
| Power rating | Power supply | Tolerance: -15 to +10% |
| | | Frequency: 50/60 Hz (48 Hz to 62 Hz) |
| | | Phase imbalance: ≤3% of the rated phase-phase input voltage |
| | | Transient voltages and overvoltages according to Category III (EN 61010/UL 508C) |
| | | Maximum of 10 (line) connections per hour (1 every 6 minutes) |
| | | Typical efficiency: ≥97% |
| Control | Method | V/F (scalar) VWV: voltage vector control Vector without encoder (sensorless) and closed loop vector with encoder VWV PM vector control for permanent magnet motors |
| | Output frequency | 0 to 500 Hz, resolution of 0.015 Hz |
| Performance | V/F Control | Speed regulation: 1% of the rated speed (with slip compensation) Speed variation range: 1:20 |
| | Vector control (VWV) | Speed regulation: 1% of the rated speed Speed variation range: 1:30 |
| | Sensorless | Speed regulation: 0.5% of the rated speed Speed variation range: 1:100 |
| | Vector control with Encoder | Speed regulation: 0.1% of the rated speed Speed variation range: 1:100 |
| | PM VWV Control ⁴⁾ | Regulation: 0.1 % of the rated speed Speed variation range: 1:20 |
| Environment conditions | Temperature around the CFW500 | -10 °C to 40 °C - NEMA type 1 (sizes A to E) -10 °C to 40 °C - IP20 (sizes A to E) when installed by side and / or with RFI filter -10 °C to 50 °C - IP20 (sizes A to E) without RFI filter 0 °C to 40 °C - IP20 (size F) with or without RFI filter 0 °C to 45 °C - IP20 (size G) with or without RFI filter 0 °C to 40 °C - IP66 with or without RFI filter For sizes A to E, when operating temperatures are above the specification, it is necessary to apply 2% of current derating for each Celsius degree (°C), limited to an increase of 10 °C. For mechanics F and G: for temperatures surrounding the inverter higher than the specifications, it is necessary to apply of 1% of current derating for each Celsius degree, until 50 °C (122 °F) and 2% of current derating for each Celsius degree, until 60 °C (140 °F). |
| | Aggressive environments | Protection Class 3C2 - Standard coating on the internal circuits, according to IEC 60721-3-3 (standard model) Protection Class 3C3 - Extra coating - optional, according to IEC 60721-3-3 (optional) |
| | Air relative humidity | 5% to 95% non-condensing |
| | Altitude | Up to 1,000 m (maximum altitude under normal conditions) 1,000 to 4,000 m: current derating of 1% for each 100 m above 1,000 m of altitude |
| | Pollution degree | 2 (EN 50178 and UL 508C), with non-conductive pollution Condensation must not cause conduction of the accumulated residues |
| Inputs ¹⁾ | Analog | 1 isolated input. Levels: (0 to 10) V or (0 to 20) mA or (4 to 20) mA Linearity error ≤0.25% Impedance: 100 kΩ for voltage input, 500 Ω for current input Programmable functions, including PTC input Maximum voltage accepted in the inputs: 30 V dc |
| | Digital | 4 isolated inputs Programmable functions: Active high (PNP): maximum low level of 15 V dc; minimum high level of 20 V dc Active low (NPN): maximum low level of 5 V dc; minimum high level of 9 V dc Maximum input voltage of 30 V dc Input current: 4.5 mA Maximum input current: 5.5 mA |
| Outputs ¹⁾ | Analog | 1 isolated output. Levels (0 to 10) V or (0 to 20) mA or (4 to 20) mA Linearity error ≤0.25% Programmable functions RL ≥10 kΩ (0 to 10 V) or RL ≤500 Ω (0 to 20 mA / 4 to 20 mA) |
| | Relay | 1 relay with NO/NC contact Maximum voltage: 240 V ac Maximum current of 0.5 A Programmable functions |
| | Transistor | 1 isolated open sink digital output (using as reference the 24 V dc power supply) Maximum current of 150 mA (maximum capacity of the 24 V dc power supply) ²⁾ Programmable functions |
| | Power supply | 24 V dc power supply. Maximum capacity: 150 mA ³⁾ Power supply of 10 V dc. Maximum capacity: 2 mA |
| Communication | Selectable plug-in | Fieldbus: Modbus-RTU, CANopen, DeviceNet, Profibus-DP, EtherNet/IP, Modbus-TCP, PROFINET IO, BACnet, SybilNet USB, RS485 and RS232 ports |
| Safety | Protection | Phase-phase overcurrent/short circuit in the output Phase-ground overcurrent/short circuit in the output Undervoltage/overvoltage in the power Overtemperature of the heatsink Motor overload Overload on the power module (IGBTs) External fault / alarm Programming error |
| Operating interface (HMI) | Standard (built in the CFW500) | 9 keys: Run/Stop, Increment, Decrement, Direction of rotation, Jog, Local/Remote, Back/ESC and Enter/Menu LCD Display It allows accessing/changing all the parameters Accuracy of the indications: Current: 5% of the rated current Speed resolution: 0.1 Hz |
| Protection degree | IP20 | Sizes A, B, C, D, E, F and G |
| | NEMA1/IP20 | Sizes A, B, C, D, E, F and G with NEMA1 kit |
| | IP66 | Sizes A and B (from 1.0 A to 31 A) |

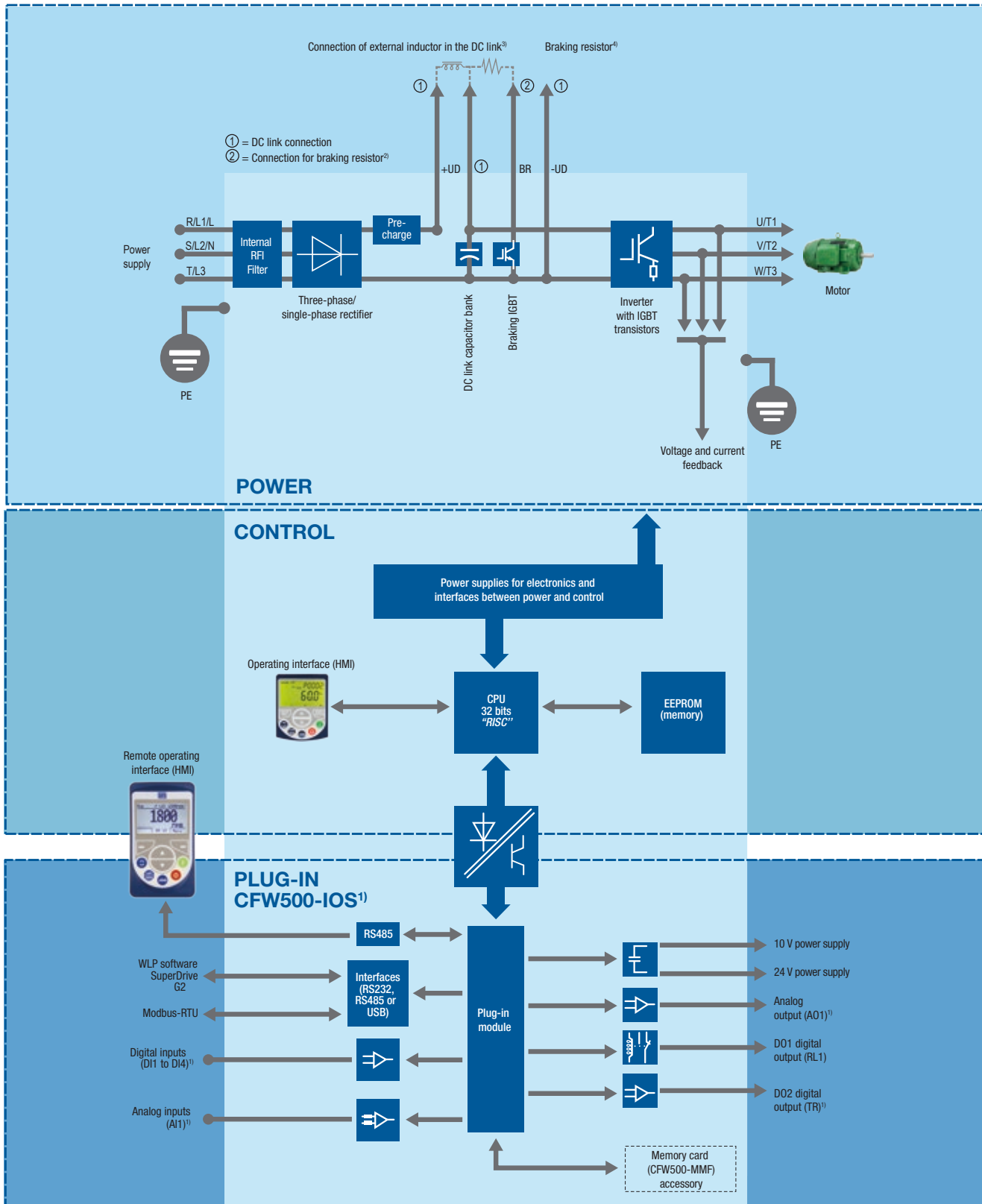
Notes: 1) The number and/or types of analog/digital inputs/outputs may vary according to the plug-in module (accessory) used. In the table above, the standard plug-in module (CFW500-IOS) was taken into account. For further information, refer to the CFW500 user manual.

2) The maximum capacity of 150 mA considers the load of the 24 V power supply plus the transistor output, that is, the sum of the consumption of both must not exceed 150 mA.

3) Designed for exclusive industrial or professional use.

4) The VWV PM function is available for all inverters with firmware version V2.2x or higher, except for size A models in IP20.

Block Diagram of IP20 or NEMA Type 1 Version



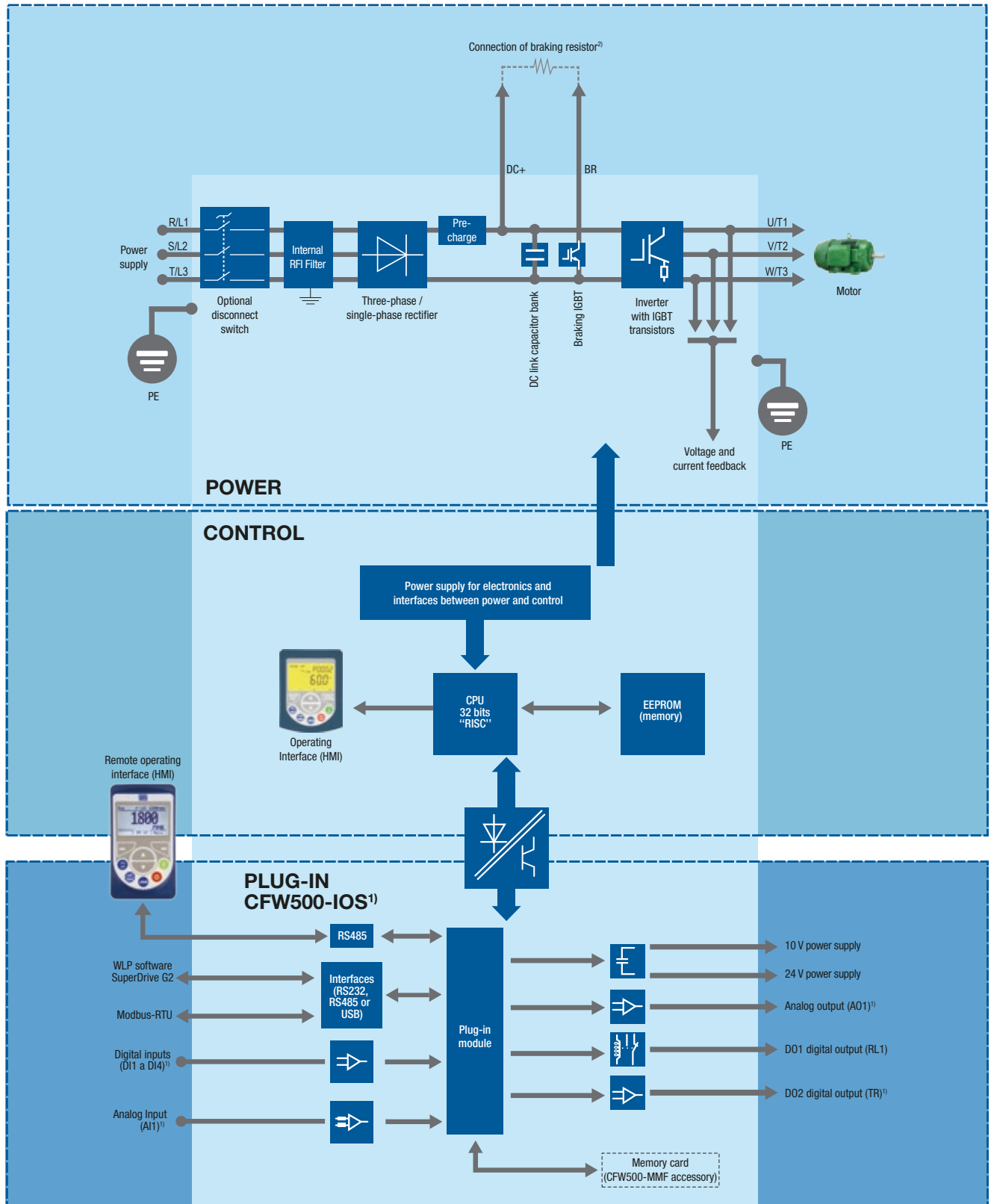
Notes: 1) The number of inputs and outputs (analog and digital), as well as other resources, may vary according to the plug-in module used. For further information, refer to the CFW500 user manual.

2) Not available for size A.

3) Connection available for sizes D and E only. Inductor on the DC link not included. Sizes F and G have DC link inductor built-in as standard, to protect the drive against current spikes.

4) Resistor not included. Internal dynamic braking (IGBT) built-in the whole line, except for frame size A of IP20 version. Optional for size G of IP20 version.

Block Diagram of IP66 / NEMA Type 4x Version



Notes: 1) The number of inputs and outputs (analog and digital), as well as other resources, may vary according to the plug-in module used. For further information, refer to the CFW500 user manual.
 2) Resistor not included. Internal dynamic braking (IGBT) built-in in the whole CFW500 IP66 version.




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

Global Presence

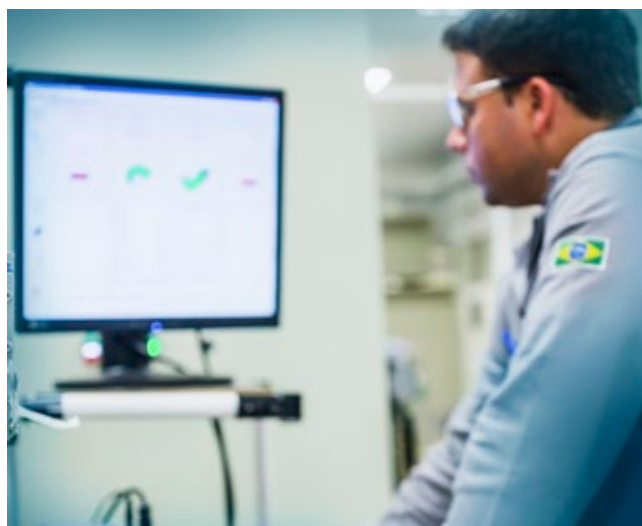
With more than 30,000 employees worldwide, WEG is one of the largest electric motors, electronic equipments and systems manufacturers. We are constantly expanding our portfolio of products and services with expertise and market knowledge. We create integrated and customized solutions ranging from innovative products to complete after-sales service.

WEG's know-how guarantees our **CFW500** are 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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The values shown are subject to change without prior notice.
The information contained is reference values.