

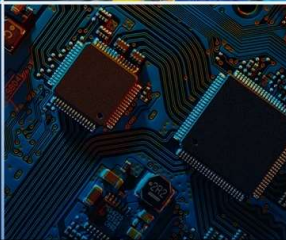
CFW320 Overview



Driving efficiency and sustainability



Class: CFW321
Version: 01.2025



Automation Training

MAIN FEATURES



CFW320 - MINI DRIVES

- Meets the UL 61800-5-1 standard
- Degree of Protection: IP20
- Same frame sizes as the CFW300, Frame-A, B and C.
- Same current range as the CFW300-120VAC/230VAC:
 - 1.6...6.0 A @ 110-127 Vac – 0.75...2 HP
 - 1.6...15.2 A @ 200-240 Vac – 0.25...5 HP
 - 1.1...14.0 A @ 480 Vac – 0.5...10 HP
- Control methods: Scalar (V/F) & Voltage Vector WEG (VFW) control
- Ambient temperature of 50°C for 120Vac/230Vac models; 40° for 460Vac models.
- Built-in standard - 4 Digital Inputs, 1 Analog Input and 1 Relay output
- 2 independent slots for function expansion – Slot#1 (upper Slot) for Communication and Slot #2 (lower Slot) for I/O expansion
- Plug-in modules: RS485 (Modbus RTU / BACnet), RS232, CANopen, Profibus-DP, dual Ethernet, Potentiometer, USB, Encoder, Infrared, I/O expansion, RFI filter
- SoftPLC: adds the functionalities of a PLC
- Power supply through DC link (standard in frames B and C)



Introducing the CFW320 Mini Drives by WEG, designed to meet the UL 61800-5-1 standard with an IP20 protection rating. These drives share the same frame sizes as the CFW300.

The CFW320 Mini Drives offer Scalar and Voltage Vector control methods. They can operate at an ambient temperature of 50°C for 120Vac/230Vac models and 40°C for 460Vac models. Standard built-in features include 4 digital inputs, 1 analog input, and 1 relay output. Additionally, there are 2 independent slots for function expansion: Slot #1 for communication and Slot #2 for I/O expansion.

Plug-in modules available for these drives include RS485, RS232, CANopen, Profibus-DP, dual Ethernet, Potentiometer, USB, Encoder, Infrared, I/O expansion, and RFI filter. The SoftPLC feature adds the functionalities of a PLC, and power supply through DC link is standard in frames B and C.

The CFW320 Mini Drives are a versatile and reliable solution for your industrial automation needs and we will be going over them in detail in this presentation.

INDUSTRIES AND APPLICATIONS



CFW320 – MINI DRIVES



- Food and beverage industry (packaging machines, mixing machines, container filling, pumping (ingredient), ingredient blending/mixing, etc.)
- Small handling applications (process feeders, car washes, conveyors, laundry machines, door/gate openers, etc.)
- Air circulation (kitchen ventilation, parking garages, greenhouses, clean rooms, etc.)
- The medical and health sector (medical beds, fitness machines)
- Machines with a single-phase power source (woodworking machines, surface polishing and cleaning machines, swimming pool or irrigation pumps, etc.)
- New markets (solar applications, etc.)
- Simple mechanical applications

The CFW320 is a versatile solution for a wide range of industries and applications. In the food and beverage sector, these drives are essential for operating packaging machines, mixing machines, container filling, ingredient pumping, and blending or mixing processes. They are also suitable for small handling applications such as process feeders, car washes, conveyors, laundry machines, and door or gate openers.

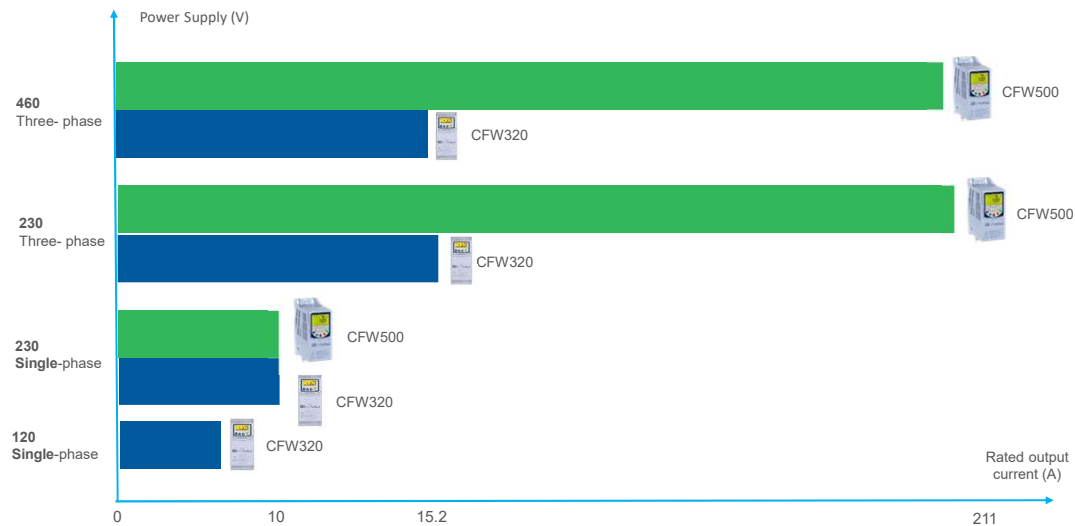
When it comes to air circulation, the CFW320 Drives are used in kitchen ventilation, parking garages, greenhouses, and clean rooms. The medical and health sector benefits from these drives in equipment like medical beds and fitness machines. Additionally, machines with a single-phase power source, including woodworking machines, surface polishing and cleaning machines, and swimming pool or irrigation pumps, can effectively utilize these drives.

The CFW320 Mini Drives also open up new markets, such as solar applications, and are ideal for simple mechanical applications.

PRODUCT POSITIONING



CFW320 - MINI DRIVES



The CFW320 and CFW500 drives share some overlap in power supply voltage capabilities. However, the CFW500 generally offers a larger output capacity, particularly for three-phase drives. On the other hand, the CFW320 stands out by providing a single-phase 120V output, a feature not available in the CFW500.

Both drives offer unique advantages, allowing users to select the best option based on their specific power requirements and application needs.

POWER RANGE



CFW320 - MINI DRIVES

AC Power Supply

FRAME	VOLTAGE	HP	KW
A	110-127 Vac / 1Ph	0.25 – 2.0	0.18 - 1.5
	200-240 Vac / 1Ph	0.25 – 2.0	0.18 – 1.5
	200-240 Vac / 3Ph	0.25 – 2.0	0.18 – 1.5
	380-415 Vac / 3Ph	0.5 – 3.0	0.37 – 2.2
	440 - 480 Vac / 3Ph	0.5 – 3.0	0.37 – 2.2
B	200-240 Vac / 1Ph or 3Ph	3.0	2.2
	200-240 Vac / 3Ph	3.0 – 5.0	2.2 – 3.7
	380-415 Vac / 3Ph	0.5 – 5.0	0.37 – 3.7
	440 - 480 Vac / 3Ph	0.5 – 5.0	0.37 – 3.7
C	380-415 Vac / 3Ph	5.0 – 10.0	3.7 – 7.5
	440 - 480 Vac / 3Ph	5.0 – 10.0	3.7 – 7.5



The CFW320 drive is available in three distinct frame sizes, catering to a variety of power requirements. For single-phase 120V applications, the CFW320 offers options ranging from 1/4 horsepower (hp) to 2 hp. If you need single-phase 230V, the drive supports a range from 1/4 hp to 3 hp. For more demanding applications, the CFW320 provides three-phase 230V options from 1/4 hp to 5 hp, and three-phase 460V options from 1/2 hp to 10 hp.

POWER RANGE



CFW320 - MINI DRIVES

230V AC

Motor Voltage	HP	Rated O/P Current	Catalog #	Max. Temp.	Brake Chopper
230 Vac Three Phase	Input Power Supply: 1/120 Vac				
	1/3	1.6	CFW320A01P6S1NB20	50°C	No
	1/2	2.6	CFW320A02P6S1NB20	50°C	No
	1	4.2	CFW320A04P2S1NB20	50°C	No
	1 1/2	6	CFW320A06P0S1NB20	50°C	No
	Input Power Supply: 1/200-240 Vac				
	1/3	1.6	CFW320A01P6S2NB20	50°C	No
	1/2	2.6	CFW320A02P6S2NB20	50°C	No
	1	4.2	CFW320A04P2S2NB20	50°C	No
	1 1/2	6	CFW320A06P0S2NB20	50°C	No
	2	7.3	CFW320A07P3S2NB20	50°C	No
	Input Power Supply: 3/200-240 Vac				
	1/3	1.6	CFW320A01P6T2NB20	50°C	No
	1/2	2.6	CFW320A02P6T2NB20	50°C	No
	1	4.2	CFW320A04P2T2NB20	50°C	No
	1 1/2	6	CFW320A06P0T2NB20	50°C	No
	2	7.3	CFW320A07P3T2NB20	50°C	No
	3	10	CFW320B10P0B2DB20	50°C	Yes
	5	15.2	CFW320B15P2T2DB20	50°C	Yes

460V AC

Motor Voltage	WEG Motor HP	Rated O/P Current	Catalog #	Max. Temp.	Brake Chopper
460 Vac Three Phase	Input Power Supply: 3/460-480 Vac (w/o DB Chopper)				
	1/2	1.1	CFW320A01P1T4NB20	40°C	No
	1	1.8	CFW320A01P8T4NB20	40°C	No
	1 1/2	2.6	CFW320A02P6T4NB20	40°C	No
	2	3.5	CFW320A03P5T4NB20	40°C	No
	3	4.8	CFW320A04P8T4NB20	40°C	No
	3	5.6	CFW320B05P6T4NB20	40°C	No
	5	7.6	CFW320B07P6T4NB20	40°C	No
	5	8.3	CFW320C08P3T4NB20	40°C	No
	7 1/2	11	CFW320C11P0T4NB20	40°C	No
	10	14	CFW320C14P0T4NB20	40°C	No
	Input Power Supply: 3/460-480 Vac (with DB Chopper)				
	1/2	1.1	CFW320B01P1T4DB20	40°C	Yes
	1	1.8	CFW320B01P8T4DB20	40°C	Yes
	1 1/2	2.6	CFW320B02P6T4DB20	40°C	Yes
	2	3.5	CFW320B03P5T4DB20	40°C	Yes
	3	4.8	CFW320B04P8T4DB20	40°C	Yes
	3	5.6	CFW320B05P6T4DB20	40°C	Yes
	5	7.6	CFW320B07P6T4DB20	40°C	Yes
	5	8.3	CFW320C08P3T4DB20	40°C	Yes
	7 1/2	11	CFW320C11P0T4DB20	40°C	Yes
	10	14	CFW320C14P0T4DB20	40°C	Yes

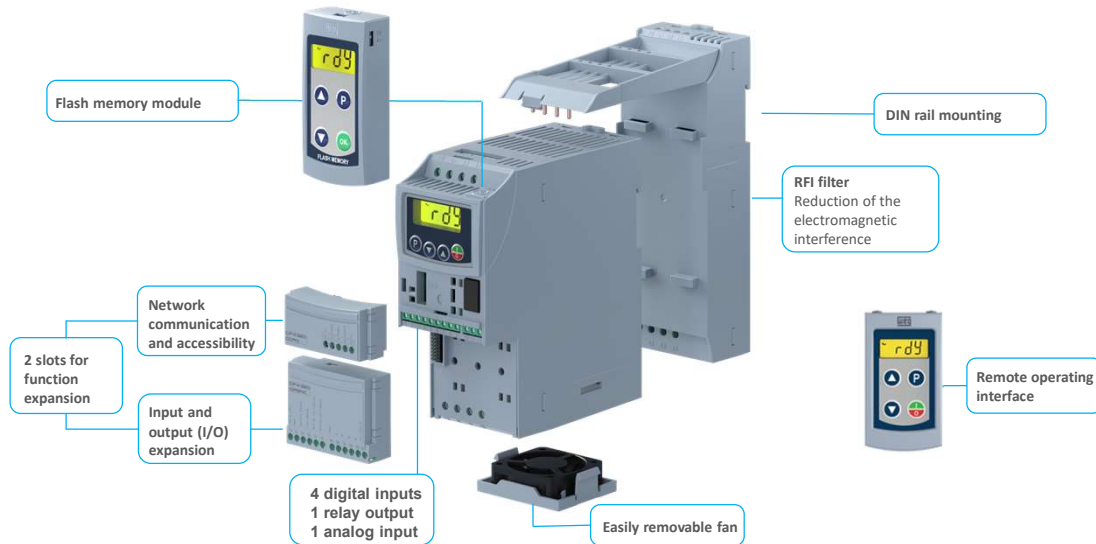
The CFW320 drive offers versatile options for both single-phase and three-phase applications. The single-phase and three-phase 230V versions are compatible with 230V three-phase motors and can operate at temperatures up to 122 degrees Fahrenheit. For higher voltage requirements, the three-phase 460V drives are designed to work with 460V three-phase motors and are rated for temperatures up to 104 degrees Fahrenheit. Additionally, the three-phase 460V drives are available with or without a brake chopper, providing flexibility for various applications.

On this slide, you can see the variety of part numbers available for the CFW320. For the most up-to-date list, be sure to check out the WEG Automation Catalog. This ensures you have the latest information on the available options and can select the best drive for your specific needs.

SIMPLE INSTALLATION



CFW320 - MINI DRIVES



The CFW320 drive unit is equipped with a user-friendly display screen and intuitive buttons, making operation a breeze. To the left, you'll see the flash memory module, perfect for seamless backup and transfer of drive settings. Below the main unit, you will see two expansion slots offer enhanced versatility with network communication and I/O expansion capabilities, including digital inputs, relay outputs, and analog inputs.

On the right side, the DIN rail mounting feature ensures a hassle-free installation process. The RFI filter minimizes electromagnetic interference, guaranteeing reliable performance. The remote operating interface allows for convenient control and monitoring outside the control cabinet, allowing operators to utilize the unit without the PPE required to be in a live control cabinet.

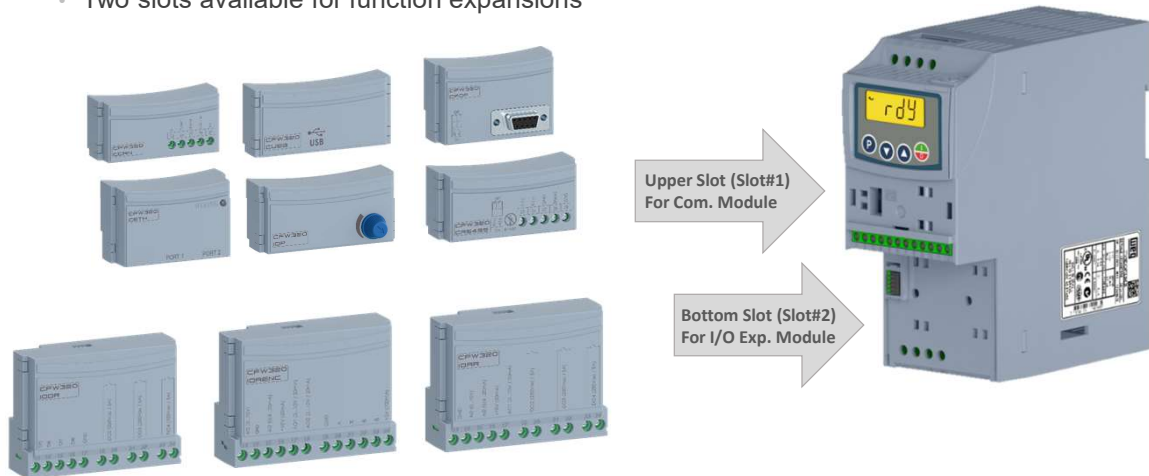
At the bottom, the easily removable fan highlights the drive's user-friendly maintenance design.

FLEXIBILITY



CFW320 - MINI DRIVES

- Wide range of plug-in modules allows you to meet the application requirements
- Two slots available for function expansions



The CFW320 Mini Drives are designed with flexibility in mind, offering a wide range of plug-in modules to meet various application requirements. With two slots for function expansions, users can easily customize their setup. Slot #1 is designated for communication modules, while Slot #2 is intended for I/O expansion modules. This adaptability makes the CFW320 Mini Drives an ideal choice for a wide range of industrial applications, ensuring that users can expand and modify their systems as needed.

PLUG-IN MODULES



CFW320 - MINI DRIVES

- The CFW320 includes 4 DI, 1AI, and 1 DOR as standard
- The following table provides details on additional IO options available using the lower slot of the drive (slot 2)

Reference	Slots ⁵⁾	Inputs			Outputs			Potentiometer for speed reference	USB ⁴⁾	Infrared sensors and NTC ⁵⁾	Bluetooth ⁶⁾	Encoder input ⁷⁾	Network communication		
		Analog	Digital	Frequency	Analog	Relay digital	Frequency						RS485	RS232	Others
CFW320-CRS485	Upper slot	-	-	-	-	-	-	-	-	-	-	1	-	-	
CFW320-CRS232		-	-	-	-	-	-	-	-	-	-	-	1	-	
CFW320-CCAN		-	-	-	-	-	-	-	-	-	-	-	-	CANopen or DeviceNet	
CFW320-CPDP		-	-	-	-	-	-	-	-	-	-	-	-	Profibus-DP	
CFW320-CUSB		-	-	-	-	-	-	-	1	-	-	-	-	-	
CFW320-IOP		-	-	-	-	-	-	1	-	-	-	-	-	-	
CFW320-CETH		-	-	-	-	-	-	-	-	-	-	-	-	Ethernet/IP or Modbus TCP	
CFW320-CBLT ⁷⁾	Lower slot	-	-	-	-	-	-	-	-	-	1	-	-	-	
CFW320-IOAR		1	-	-	1	3	-	-	-	-	-	-	-	-	
CFW320-IOOR ¹⁾		-	4	-	-	3	-	-	-	-	-	-	-	-	
CFW320-IOAENC		1	-	-	2	-	-	-	-	-	-	1	-	-	
CFW320-IOADR		1	-	-	-	3	-	-	-	1	-	-	-	-	
CFW320-IOADR-D		-	-	-	-	3	-	-	-	1	-	-	-	-	
CFW320-IODF		-	-	3	-	-	3	-	-	-	-	-	-	-	



CCAN



CUSB



IOAR



CETH



IOP

The CFW320 drive can have a variety of plug-in modules to enhance the functionality. By default, these drives include four digital inputs, one analog input, and one digital output relay. However, users can expand their capabilities by utilizing the lower slot, to add additional input/output options.

The upper slot can be used for a potentiometer for speed reference, USB, Bluetooth, and various network communication options such as RS485, RS232, CANopen, DeviceNet, Profibus-DP, and Ethernet/IP or Modbus TCP.

BUILT-IN DISPLAY



CFW320 - MINI DRIVES

Easy to Program

- Oriented start-up standard with step-by-step programming
- Soft keys allow easy access to parameters
- LCD operating interface with 4 digits



The CFW320 is designed with user-friendliness in mind. These drives are incredibly easy to program, thanks to their oriented start-up standard that guides you through step-by-step programming. The soft keys on the device provide quick access to parameters, making the programming process straightforward and intuitive.

The LCD operating interface features a 4-digit display, offering clear and concise information at a glance. The display includes various indicators such as the direction of rotation, the main display, the unit of measurement, and a bar for variable monitoring.

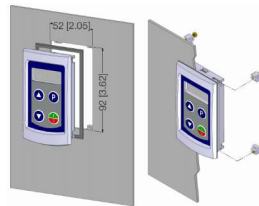
REMOTE HMI



CFW320 - MINI DRIVES



- Intuitive and easy-to-use HMI with the same functions as the CFW320 built-in HMI
- Remote installation on panel or close to the operator
- NEMA12 (IP54) protection rating
- Installation up to 3 meters away from the inverter without external power supply
- Kit: remote interface + CRS485 + 3 m cable



The Remote HMI for the CFW320 is designed to be intuitive and user-friendly, offering the same functions as the built-in HMI of the CFW320. It can be installed remotely on a panel or close to the operator, providing flexibility in its placement. With a NEMA12 protection rating, it ensures durability and reliability in various environments. One of its standout features is the ability to be installed up to 3 meters away from the inverter without the need for an external power supply.

FLASH MEMORY MODULE - MMF



CFW320 - MINI DRIVES



- Provides ability to copy parameters and programming in ladder using the SoftPLC
- Internal battery with back up time for at least 5,000 procedures
- No need to power up the VFD to copy parameters
- Buttons to copy/download parameters between the MMF module and the inverter
- Password to access the user program written on the SoftPLC



The Flash Memory Module for the CFW320 is a versatile tool designed to enhance the functionality of the mini drive by allowing users to copy parameters and perform programming in ladder using the SoftPLC. One of the standout features of this module is its internal battery, which provides backup power for at least 5,000 procedures, ensuring reliability and convenience. Additionally, the MMF eliminates the need to power up the Variable Frequency Drive (VFD) to copy parameters, making the process more efficient. The module is equipped with buttons that facilitate the copying and downloading of parameters between the MMF and the inverter. For added security, a password is required to access the user program written on the SoftPLC.

FLASH MEMORY MODULE - MMF



CFW320 - MINI DRIVES



- The MMF-uDrives can be used to upload the original parameter settings of the CFW320, including via WPS Software
- It can be used to download the parameter settings of several CFW320
- It downloads the original parameter setting to several CFW320 VFDs turned off

With the Flash Memory Modules, you can easily upload the original parameter settings of the CFW320, including through WPS Software. Additionally, the flash memory module facilitates the downloading of parameter settings to multiple CFW320 drives. This capability is particularly useful as it allows the original parameter settings to be transferred to several CFW320 Variable Speed Drives (VSDs) even when they are turned off. This feature helps users reduce setup time.

FEED-THROUGH WIRING



CFW320 - MINI DRIVES

- Convenient and easy to install, replace direct online starters or start-delta starters
- Error-proof Installation
- Quick identification of the wiring in the electrical panel
- Easy maintenance
- Reduction of electrical wiring cost and mounting time



The CFW320 is designed with feed-through wiring capabilities, making them the perfect replacements for direct online starters or start-delta starters. The installation process is straightforward and error-proof, ensuring a smooth setup every time. With the CFW320 Drive, identifying wiring in the electrical panel becomes a breeze, simplifying maintenance tasks. Plus, you'll enjoy significant reductions in electrical wiring costs and mounting time. The image on the slide clearly shows the power input at the top and the output to the motor at the bottom, illustrating how seamlessly these drives integrate into your electrical system.

SIDE BY SIDE MOUNTING



CFW320 - MINI DRIVES

- Zero spacing required between the sides of the drives
- Minimum space on top, bottom, and front
- Significant space savings and potential reduction in panel costs

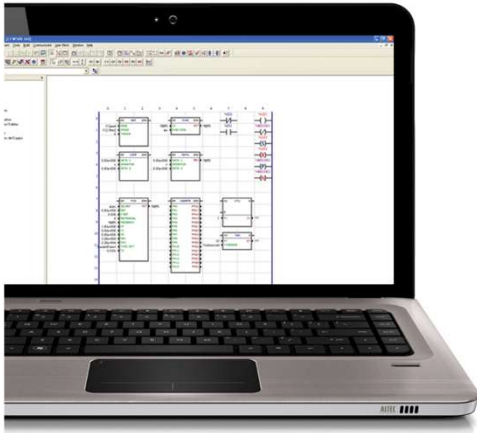


Space is a premium, and every inch counts. The CFW320 can be mounted side-by-side with zero spacing between them, maximizing your available space and potentially reducing panel costs. With minimal space required on the top, bottom, and front. These drives offer a smart, space-saving solution that doesn't compromise on performance.

SOFTPLC FUNCTION



CFW320 - MINI DRIVES



- PLC function in the VFD, no extra cost or hardware required
- Programmable through FREE WEG WPS software
- A single software application to set the CFW320 parameters and program the SoftPLC
- Quick diagnostics and copy of parameter settings on PC
- Online programming transfer and monitoring via RS232 or RS485 or CUSB plug-in module
- Ladder programming language
- Ability to copy, save, and upload parameters

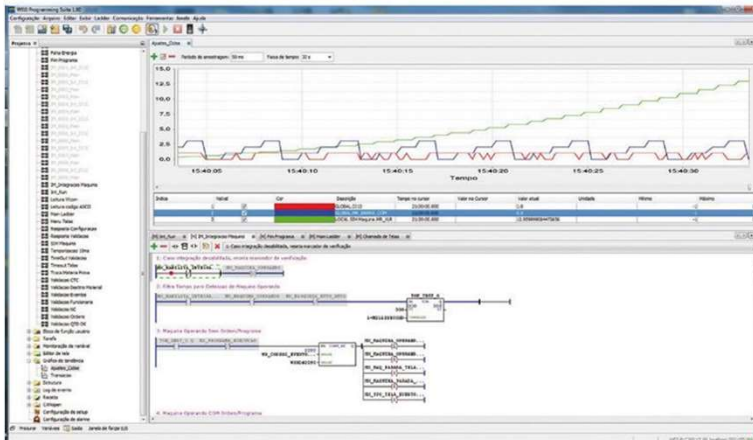
Free software! Access: www.weg.net

The CFW320 has a SoftPLC function available! This feature integrates PLC capabilities directly into the Variable Frequency Drive, eliminating the need for additional hardware or costs. Users can program the Soft PLC using the free WEG WPS software, which provides a single application to set the CFW320 parameters and program the SoftPLC. This software also facilitates quick diagnostics and the ability to copy parameter settings to a PC. Online programming transfer and monitoring can be achieved via RS232 or RS485 connections, or through a USB plug-in module.

WEG Programming Software



CFW320 – MINI DRIVES



Connect, Configure,
Program, and Monitor
using WEG WPS
Software.

Free software! Access:
www.weg.net



The WPS software also gives you the ability to copy, save, and upload parameters. With WPS you also have the ability to monitor your program in real time. WPS is a free software available on WEG dot net.



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Thank you for your
time and attention.



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Thank you for watching our presentation on the CFW320 drive.