

CFW100

Variable Speed Drive

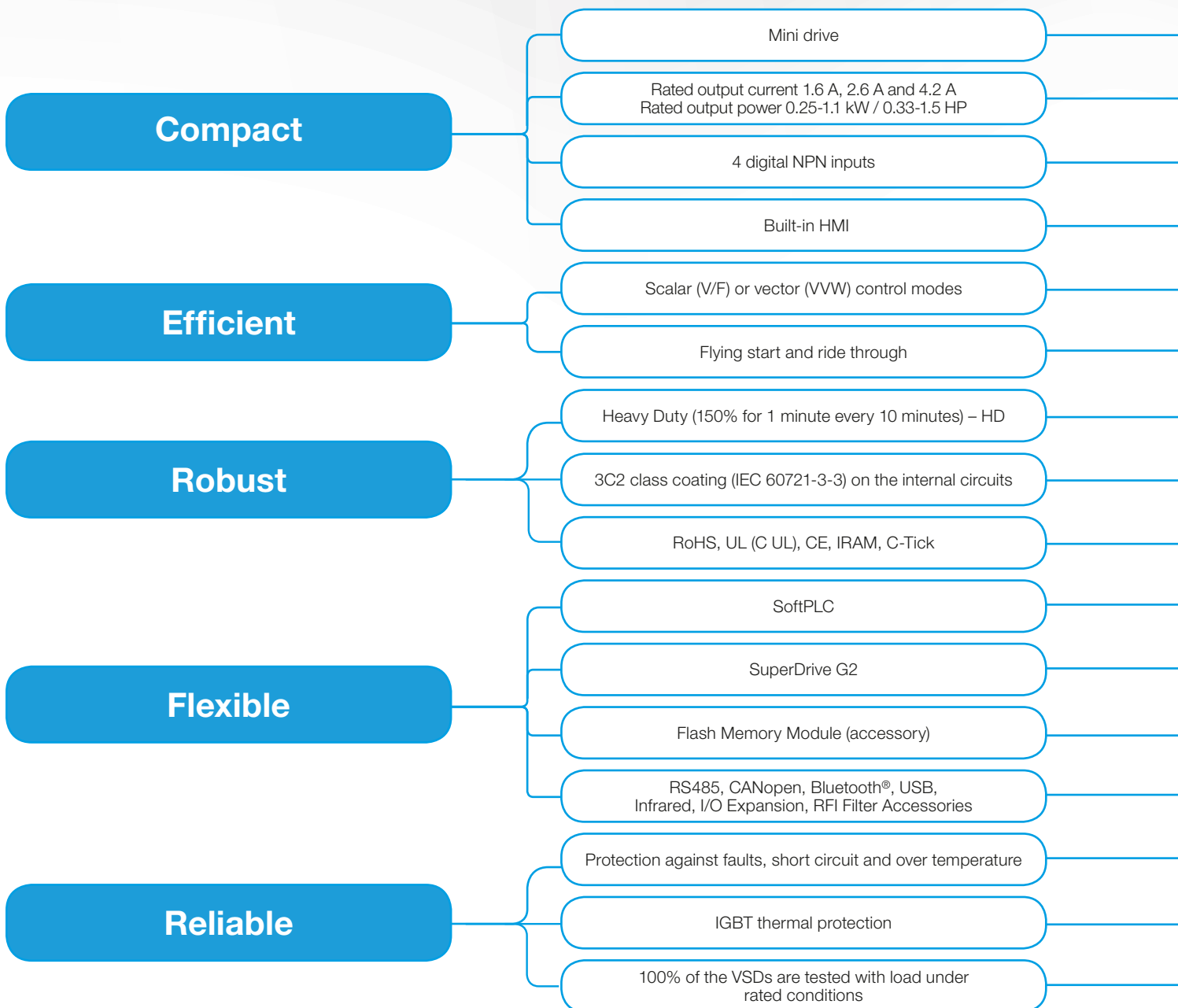


WEQ

CFW100

Mini Drive

The CFW100 is an extremely small, high performance variable speed drive for three-phase induction motors suitable for manufacturers of small machines. It features selectable scalar (V/F) or voltage vector (VVW) control, HMI, and plug and play philosophy for fast and simple accessory installation. It also offers SoftPLC, which adds the functionalities of PLC to the drive, and free programming and monitoring software applications.





Many applications...

at your fingertips!

- The smallest VSD on the market
- Single-phase power supply 200-240 V
- Built-in inputs and outputs in the standard version
- CFW100 status information is easily viewed on the screen
- Selectable modes
- Functions for improved performance
- High overload capacity
- Greater protection for aggressive environments
- Lead free, international certifications
- Built-in software resource, equivalent to a small PLC
- On-line monitoring, programming and configuration
- Used to copy the CFW100 original programming and download it to others, with the VSDs off
- Plug and Play accessories can be easily installed
- It prevents unexpected stoppages and damages to the equipment
- It prevents damages to the CFW100
- High reliability
- Able to operate in up to 50 °C ambient temperature without derating
- Ideal for small industrial, commercial or home applications
- 1 slot for functions or I/O expansion accessory
- Simple operation, reliable displays, remote operating interface (accessory)
- Suitable for simple or complex applications
- Easy configuration and high performance
- No oversized VSDs
- No extra costs
- Green product, it contributes to the environment conservation and complies with national and international standards
- It customizes and integrates the CFW100 to the application
- Easy and intuitive environment, free software
- Faster setting and configuration and quick start up
- Flexibility, according to the application requirements
- Less downtime
- It increases the VSD useful life
- It prevents exchanges due to defects or assembly errors

Simple Configuration

Compact and innovative design. Flexible selection.

Footprint RFI Filter¹⁾
Category C2 or C3 to reduce the electromagnetic interference level

Operating Interface (HMI)

Plug-In Module (Accessories)
Plug and Play Philosophy

DIN Rail

Easily Removable Fan (Frames B and C)

Greater Protection in Aggressive Environments
Standard coating classified as 3C2 according to IEC 60721-3-3 on all versions, ensuring greater protection of the internal circuits against corrosive atmospheres



Flash Memory Module
Download/Upload of the programming from/to other CFW100 units without having to power them up

CFW100-MMF Accessory

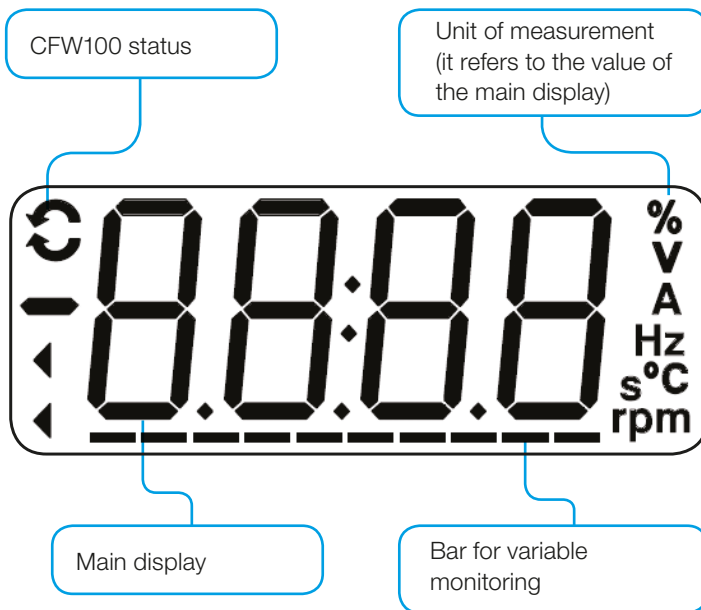
Remote HMI

CFW100-KHMIR Accessory

Note: 1) The CFW100 is mounted on the surface of the external footprint RFI filter. See more details in accessories or in the installation guide available at www.weg.net.

HMI

- Simultaneous indication of up to two selected parameters. The only one in this VSD category.
- Included in the standard version of the CFW100 (non-detachable).



Friendly Programming

- Oriented start-up: step by step programming.

Remote HMI - Accessory

Solution for panel door or machine console.

Easy Installation

- Ideal to replace contactors or similar products.
- The standard CFW100 (without accessory) has 4 DIs ready to run.

- 1 - Power supply terminals
- 2 - Slot for plug-in modules¹⁾
- 3 - Digital inputs
- 4 - Motor terminals

Note: 1) Internal USB connector for plug-in modules only. Do not connect the cables directly.



Connectivity

SuperDrive G2

Free application software to program, control and monitor the CFW100¹⁾.

- Monitoring of the operation status in lists, which can be saved as a computer file
- On-line parameter operation
- Transfer of parameters from the PC to the CFW100
- Off-line edition of the parameters stored on the PC



Free download at: www.weg.net



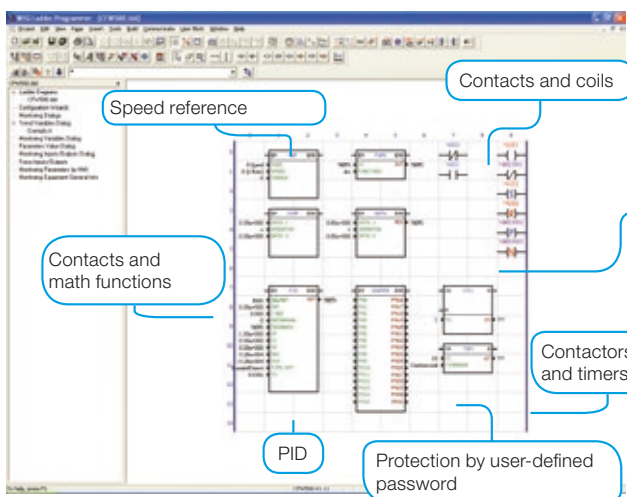
Trend Function

- On-line graphic monitoring of parameters/variables
- Able to export an image with the respective graph according to the selected period

SoftPLC

Built-in tool in all the CFW100 versions which is equivalent in resources to a PLC. It has free programming software which enables the user to develop and implant logic projects, customizing the applications.

The SoftPLC is the simplest and smartest way to make your CFW100, motor and application work together. For the operation of the SoftPLC, it is necessary to use a CFW100-CUSB plug-in module.



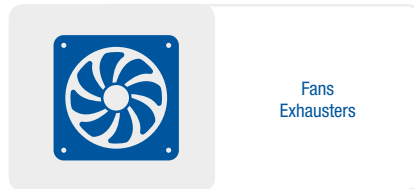
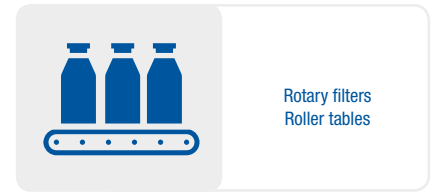
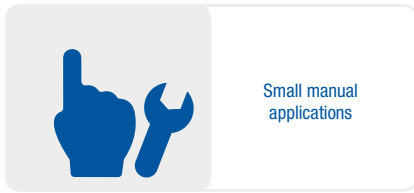
Bluetooth®



Infrared Remote Control



Applications



OEM and Small Industrial and Commercial Processes

The CFW100 with integrated SoftPLC is particularly suitable for small machines or small industrial processes due to its flexibility to meet the requirements of different applications, easy operation and compact size, perfectly fitting even small electrical panels. It can also be used in commercial applications such as lifting garage doors and opening automatic gates.



Certifications



Coding

1	2	3	4	5	6	7	8
CFW100	A	01P6	S	2	20	-	-

1 - CFW100 variable speed drive

2 - CFW100 size according to table 1 below

3 - Rated output current as shown in table 1

Rated output current	Number of phases	Rated voltage	Size	Degree of protection
01P6 = 1.60 A	Single-phase	200-240 V	A	IP20
02P6 = 2.60 A			B	
04P2 = 4.20 A			C	

4 - Number of phases

S	Single-phase power supply
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5 - Rated voltage

2	200-240 V
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6 - Degree of protection

20	Degree of protection IP20
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7 - Special hardware version²⁾

Blank	Standard hardware
Hx	Special hardware

8 - Special software version²⁾

Blank	Standard software
Sx	Special software

Specification

Reference	Power supply (V)		Frame size	Rated output current (A)	Maximum applicable motor ¹⁾					
					IEC				uL	
					Power supply (V) 50 Hz	kW	Power supply (V) 60 Hz	HP	Power supply (V) 60 Hz	HP
CFW100A01P6S220	Single-phase	200-240	A	1.6	230	0.25	220	0.33	230	0.33
CFW100B02P6S220			B	2.6		0.55		0.75		0.75
CFW100C04P2S220			C	4.2		0.75		1.0		1.5

Notes: 1) The power values for maximum applicable motor shown in the table 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 or 230 V. uL motor power are based on WEG four pole W22 Premium. Motor rated currents may vary with speed and manufacturer, use the motor power ratings below only as a guidance. The proper sizing of the CFW100 to be used must be determined as a function of the rated current of the motor used.


2) For versions with special hardware (Hx) and software (Sx), contact WEG Automation sales department or your sales representative.

3) Designed for exclusive industrial or professional use.



Accessories

They are hardware resources that can be added to the CFW100:

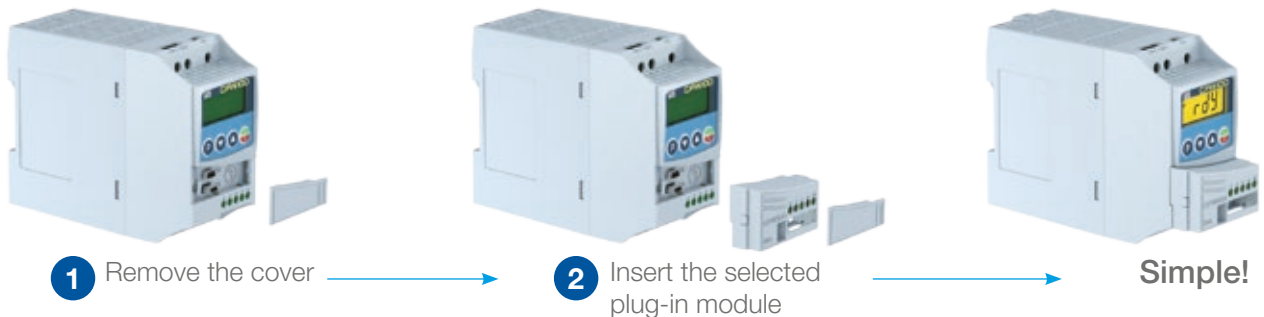
Reference	Description	Illustrative figures
Control accessories		
CFW100-CRS485	RS485 communication module	
CFW100-CUSB	USB communication module with 2 m cable	
CFW100-IOA	I/O expansion module with 1 analog input and 1 analog output	
CFW100-IOADR	I/O expansion and infrared remote control module ¹⁾	
CFW100-IOAR	I/O expansion module with 1 analog input and 1 relay output	
CFW100-IOD	I/O expansion module with 4 isolated (configurable) NPN or PNP digital inputs	
CFW100-CCAN	CANopen communication module	
CFW100-CBLT	Bluetooth® communication module	
Flash memory		
CFW100-MMF	Flash memory module (3 m cable included)	
External HMI		
CFW100-KHMIR	CFW100 remote interface kit (CFW100-CRS485 + 1 m cable included)	
RFI filter		
CFW100-KFABC	Footprint ²⁾ radiofrequency kit, category C2, for frames A, B or C	
Others		
PLMP	Adapter kit for surface mounting, fastening with screws, set with two units	

Notes: 1) I/O expansion and infrared remote control module contains: 1 NTC sensor with 1 m cable, 1 infrared (IR) remote control, 1 infrared receiver cable with 1.5 m, 1 NTC sensor input, 1 analog current input (0-10 or 2-20 mA), 1 analog voltage input (0-10 V dc), 3 NO digital outputs (240 V ac);
 2) The footprint radiofrequency filter is an external accessory on whose surface the VSD is mounted, and the electrical connection between the filter and the CFW100 is done through the coupling guide that accompanies the filter. After mounted on the filter surface, the set can be fastened to a DIN rail.
 I/O = Inputs and outputs.

Configuration of the Plug-In Modules

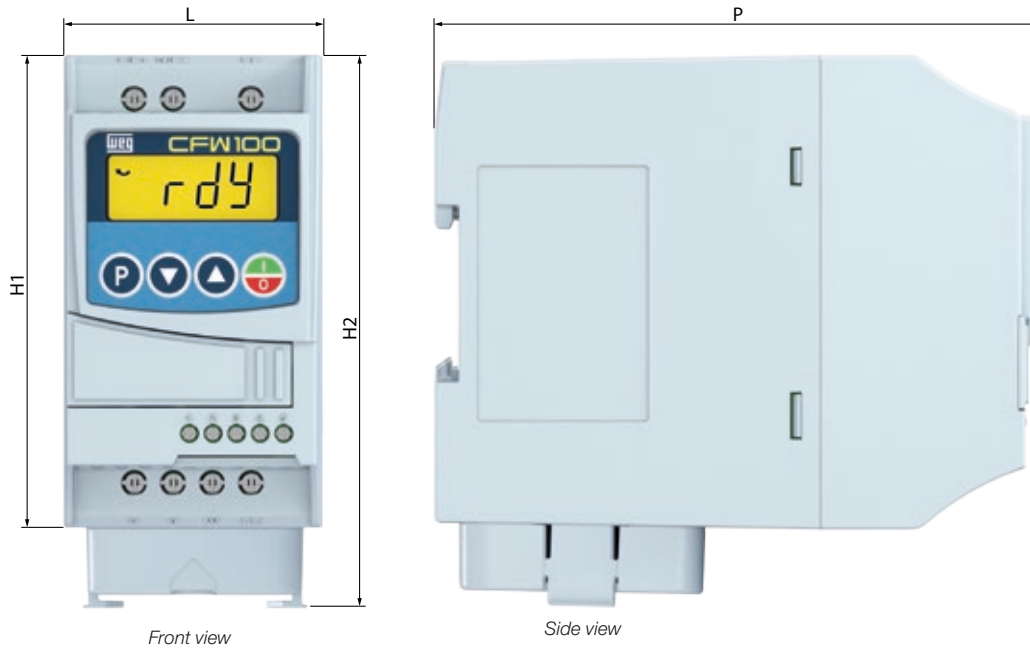
Reference	Function								
	Inputs		Output		USB	Bluetooth®	Infrared	Network communication	
	Analog	Digital ¹⁾	Analog	Relay digital				RS485	CANopen
CFW100-CRS485	-	-	-	-	-	-	-	1	-
CFW100-CCAN	-	-	-	-	-	-	-	-	1
CFW100-CBLT	-	-	-	-	-	1	-	-	-
CFW100-CUSB	-	-	-	-	1	-	-	-	-
CFW100-IOA	1	-	1	-	-	-	-	-	-
CFW100-IOADR	1	-	-	3	-	-	1	-	-
CFW100-IOAR	1	-	-	1	-	-	-	-	-
CFW100-IOD ²⁾	-	4	-	-	-	-	-	-	-

Notes: 1) The standard version of the CFW100 comes with 4 isolated NPN digital inputs.
 2) The digital inputs of the CFW100-IOD module are configurable (NPN or PNP) isolated digital inputs.



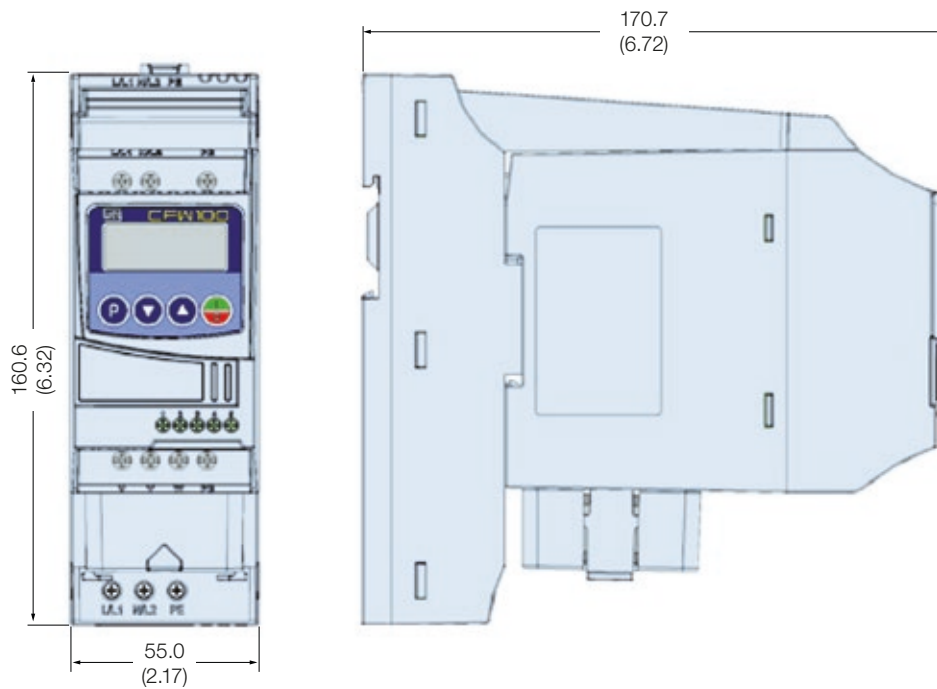
Dimensions

Standard Version



Size	H1	H2	L	P	Weight
	mm (in)	mm (in)	mm (in)	mm (in)	kg (lb)
A	100.0 (3.94)	-	55.0 (2.17)	129.0 (5.08)	0.48 (1.05)
B	-	117.0 (4.60)	55.0 (2.17)	129.0 (5.08)	0.57 (1.25)
C	-	125.6 (4.94)	55.0 (2.17)	129.0 (5.08)	0.61 (1.34)

With RFI Filter



Note: Dimensions in millimeters (mm).

In the version with RFI filter, the dimensions are valid for the footprint RFI filter + the CFW100 frame A, B or C.

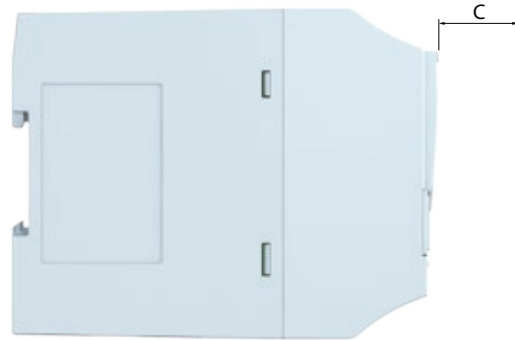
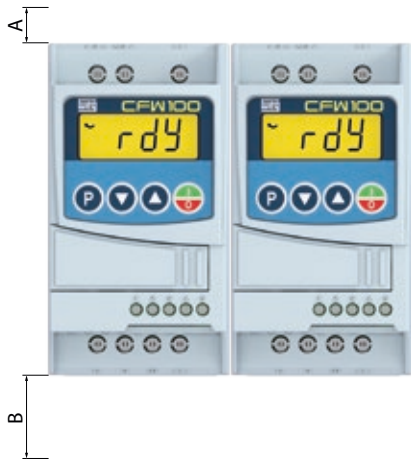
Mounting



a) Surface mounting



b) DIN rail mounting



Minimum clearances for ventilation

Size	A	B	C	D	E	F	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	Screw	Torque (N.m)
A	15 (0.59)	40 (1.57)	30 (1.18)	41.3 (1.62)	113.4 (4.46)	M4	2.5
B	35 (1.38)	50 (1.97)	40 (1.57)				
C	50 (1.97)	50 (1.97)	50 (1.97)				

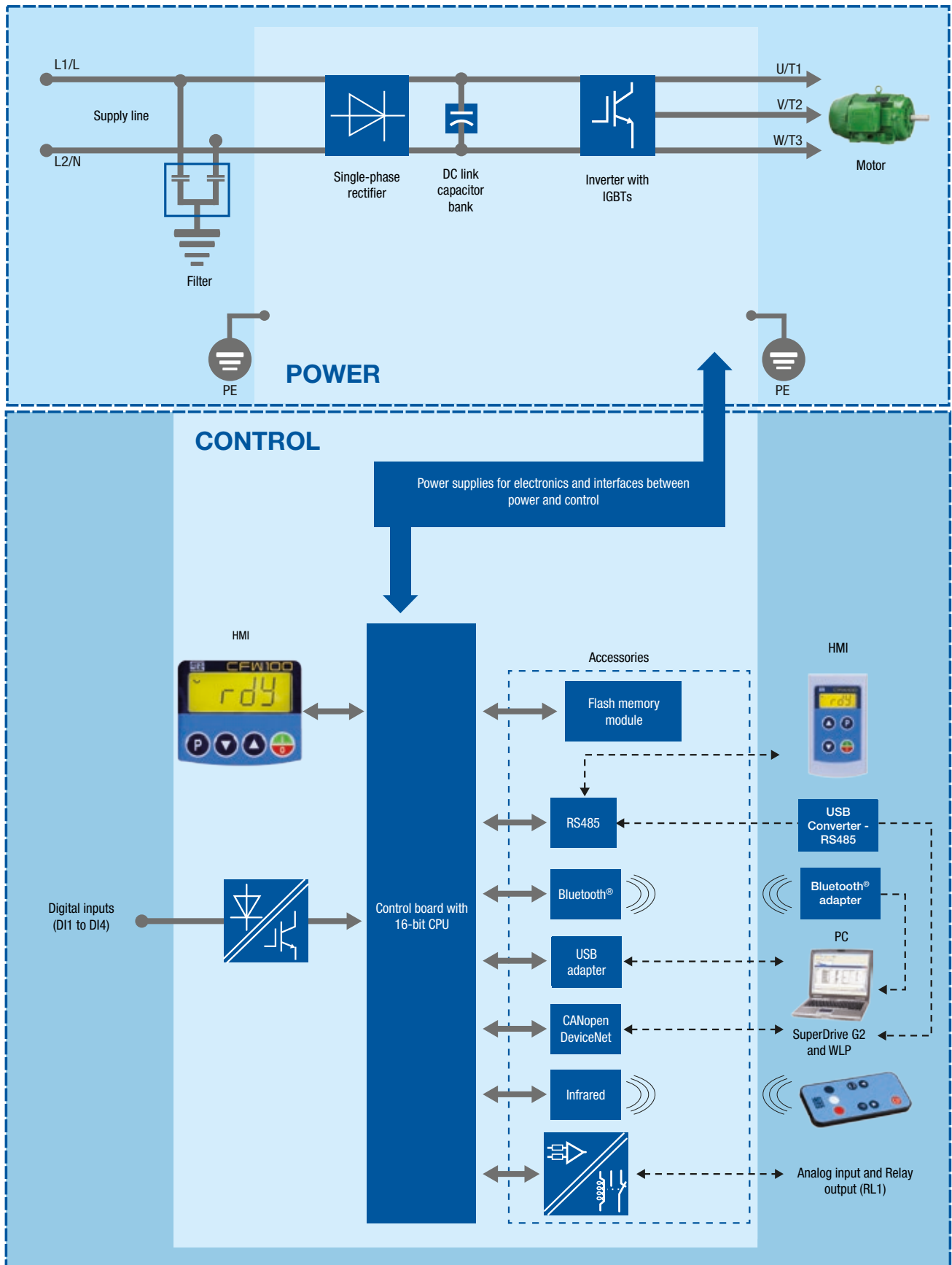
Note: tolerance of the dimensions ± 1.0 mm (± 0.039 in).



Technical Specifications

Power supply	Power and voltage range	Single-phase, 200-240 V (+10% - 15%)
		0.25 a 0.75 kW / 0.33 a 1.0 HP
	Power supply frequency	50/60 Hz (48 Hz to 62 Hz)
Motor connection	Voltage	Three-phase, 0-100% of the power supply voltage
	Output frequency	0 to 300 Hz, control of 0.1 Hz
	Power factor	>0.97
	Overload capacity	1.5 x In (drive) for 1 minute every 6 minutes
	Switching frequency	Standard 5 kHz (selectable 2.5 to 15 kHz)
	Acceleration time	0.1 to 999 s
	Deceleration time	0.1 to 999 s
Ambient	Temperature	50 °C - IP20 without RFI filter Current derating of 2% for each °C above the rated operating temperature, limited to 60 °C
	Air relative humidity	5% to 90% non-condensing
	Altitude	Up to 1,000 m 1,000 to 4,000 m - current derating of 1% for each 100 m above 1,000 m
	Degree of protection	IP20
Performance	V/F control	Speed control: 1% of the rated speed (with sleep compensation) Speed variation range: 1:20
	Vector control (VW)	Speed control: 1% of the rated speed Speed variation range: 1:30
Safety	Protection	Overcurrent/phase-phase short circuit in the output
		Overcurrent/phase-ground short circuit in the output
		Under/overvoltage
		Heatsink overheating
		Motor overload
		Power module (IGBTs) overload
		External fault / alarm Configuration error
Communication protocol	Modbus-RTU	RS485 plug-in modules
	CANopen	CFW100-CCAN plug-in module
Connectivity	USB	CFW100-CUSB plug-in modules
	Bluetooth®	CFW100-CBLT plug-in modules
	Infrared	CFW100-IOADR plug-in modules
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: for the machine to comply with this standard, the manufacturer of the machine is responsible for installing an emergency stop device and equipment to disconnect the input power supply.
	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 (EMC) standards (with external filter)	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 (EMC) - Part 4: Testing and measurement techniques - Section 3: Radiated, radio-frequency, electromagnetic field immunity test.
	EN 61000-4-4	Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 4: Electrical fast transient/burst immunity test.
	EN 61000-4-5	Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 5: Surge immunity test.
EN 61000-4-6	Electromagnetic compatibility (EMC) - 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.

Block Diagram



Note: 1) Available soon!



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 **CFW100 variable speed drives** is 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 suits your needs



Competitive edge is to unite technology and inovation



Know More



High performance and reliable products to improve your production process.



Excellence is to provide a whole solution in industrial automation that improves our customers productivity.

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