

WEG CFW300 Series AC Drives – Introduction



WEG CFW300 Series AC Drives								
Motor Rating	hp	0.25	0.5	1	1.5	2	3	5
	kW	0.2	0.4	0.75	1.3	1.5	2.2	3.7
115V Single-Phase Input / 230V Three-Phase Output	✓	✓	✓	✓	✓			
230V Single-Phase Input / 230V Three-Phase Output	✓	✓	✓	✓	✓	✓	✓	
230V Three-Phase Input / 230V Three-Phase Output	✓	✓	✓	✓	✓	✓	✓	✓

Purpose of AC Drives

AC drives are known by many different names: AC Drives, Adjustable Frequency Drives (AFDs), Variable Frequency Drives (VFDs), and Inverters. Drives are used primarily to vary the speed of three phase AC induction motors. They also provide non-emergency start and stop control, acceleration and deceleration, and overload protection. By gradually accelerating the motor, drives can reduce inrush current during motor startup.

AC drives operate by rectifying incoming AC power to DC, which is then inverted back into three-phase output power. The voltage and frequency of this inverted output power is controlled by the drive, in order to vary the speed of the three phase AC induction motor.

WEG CFW300 Overview

WEG CFW300 variable frequency drives are high-performance VFDs for three-phase induction motors. They are ideal for applications on machines or equipment that require precise variable-speed control with easy setup and operation.

The CFW300 series features compact size with contactor-style electrical connections (top in / bottom out). The CFW300's performance can be scaled to match the application by selecting WEG vector control (VWV) or scalar control (V/F).

CFW300s include built-in operator interface (HMI) and SoftPLC with free WPS programming software for custom-tailored control schemes. A variety of plug-in option modules for additional I/O and communications protocols may be added to provide extended capabilities, making the CFW300 a flexible and cost effective solution for your variable-speed requirements.

Features

- Single-phase and three-phase voltage supply
- DIN rail (35mm) or surface mounting with screws
- Side-by-side mounting; no heat dissipation space required beside/between the drives
- Voltage range:
 - 1-phase models: 110–127 VAC & 200–240 VAC
 - 3-phase models: 200–240 VAC
- Current/Power range: up to 15.2A/3.7kW (5hp)
- Control mode: Scalar (V/Hz) or Voltage Vector (VWV)
- Switching frequency: 2.5, 5, 10, or 15kHz
- Output frequency range: 0–400 Hz; 0.1Hz resolution
- Overload capacity: 150% for 60sec every 10min; 200% for 3 sec every 10min
- Degree of protection: IP20
- Operating temperature: 14 to 122°F (50°C); up to 140°F (60°C) with current derating (2% per 1°C above 50°C)
- Altitude: 0 to 3300ft (1000m); up to 13,200 ft (4000m) with current derating (1% per 100m above 1000m)
- Humidity: 5 to 95% non-condensing
- Integrated brake chopper for frame size B (not available for size A)
- Local keypad supplied as standard
- cULus, CE

Accessories

- Remote keypad with mounting kit and cable
- RS-232 serial communication module (Modbus RTU)
- RS-485 serial communication module (Modbus RTU)
- USB communication module and cable
- IODR expansion module – Insulated inputs (NPN or PNP)
- IOAR expansion module (1AI, 1AO, and 3RO)
- IOADR expansion module (1 PTC, 3RO, and 1 infrared input)
- Incremental encoder module (A/A - B/B)
- Flash memory module and cable
- RFI Filter

Typical Applications

- Blenders / Mixers
- Centrifugal pumps
- Centrifuges
- Commercial Dryers
- Compressors
- Conveyors
- Fans / Blowers
- Granulators
- Roller Tables
- Rotary Filters

WEG CFW300 AC Drives – Selection Specifications

CFW300 Drive Model Selection Tables

CFW300A (Frame Size A)

CFW300B (Frame Size B)



Modular design with easy-to-install accessories



Zero-Stack Mounting
(no side-to-side heat dissipation space required)



WEG CFW300 AC Drives Selection Specifications														
Drive Model #	Price	Applicable Motor 1) 2)		Drive Output			Drive Input		Input Protection		Drive			
		Maximum Power (hp)	(kW)	Nominal Phase / Voltage	Rated Current 3) (A)	Nominal Phase / Voltage	Nominal Phase / Voltage	Rated Current (A)	Circuit Breaker (A)	Fuse 4) (A)	Power Loss (W)	Weight	Frame Size	
CFW300A01P6S1NB20	\$156.00	0.25	0.18	3Ø / 230VAC	1.6	3Ø / 230VAC	1Ø / 115VAC	7.1	10	20	30	0.90 kg [1.98 lb]	A	
CFW300A02P6S1NB20	\$169.00	0.50	0.37					2.6	11.5	16	20			45
CFW300A04P2S1NB20	\$179.00	1.00	0.75					4.2	17.7	20	35			60
CFW300A06P0S1NB20	\$218.00	1.50	1.32					6.0	26.5	32	40			75
CFW300A01P6S2NB20	\$138.00	0.25	0.18					1.6	3.5	6.3	20			30
CFW300A02P6S2NB20	\$149.00	0.50	0.37					2.6	5.7	10	20			35
CFW300A04P2S2NB20	\$159.00	1.00	0.75				4.2	9.2	16	20	50			
CFW300A06P0S2NB20	\$199.00	1.50	1.32				6.0	13.2	16	20	75			
CFW300A07P3S2NB20	\$234.00	2.00	1.50				7.3	16.1	20	25	90			
CFW300B10P0B2DB20 5)	\$279.00	3.00	2.20				10.0	22.0	25	35	100	1.34 kg [2.95 lb]	B	
CFW300A01P6T2NB20	\$148.00	0.25	0.18				1.6	2.0	2.5	20	30	0.90 kg [1.98 lb]	A	
CFW300A02P6T2NB20	\$163.00	0.50	0.37				2.6	3.1	6.3	20	35			
CFW300A04P2T2NB20	\$172.00	1.00	0.75				4.2	5.0	10	20	50			
CFW300A06P0T2NB20	\$207.00	1.50	1.32				6.0	7.2	10	20	75			
CFW300A07P3T2NB20	\$245.00	2.00	1.50				7.3	8.8	16	20	90			
CFW300B10P0B2DB20 5)	\$279.00	3.00	2.20				10.0	12.0	25	35	100			1.34 kg [2.95 lb]
CFW300B15P2T2DB20	\$341.00	5.00	3.70				15.2	18.2	25	35	160			

1) For Use With Three-Phase Motors Only.

2) The power values for the maximum applicable motor shown are reference values and are valid for WEG three-phase, four-pole induction motors with power supply of 230VAC. The proper sizing of the CFW300 drive must be determined as a function of the rated current of the motor being used.

3) Motor FLA may vary with speed and manufacturer. ALWAYS compare motor FLA to Nominal AMPS of drive.

4) For UL508C compliance, use UL fuse type J.

5) Model CFW300B10P0B2DB20 is capable of Single-Phase input without derating.

WEG CFW300 AC Drives – General Specifications

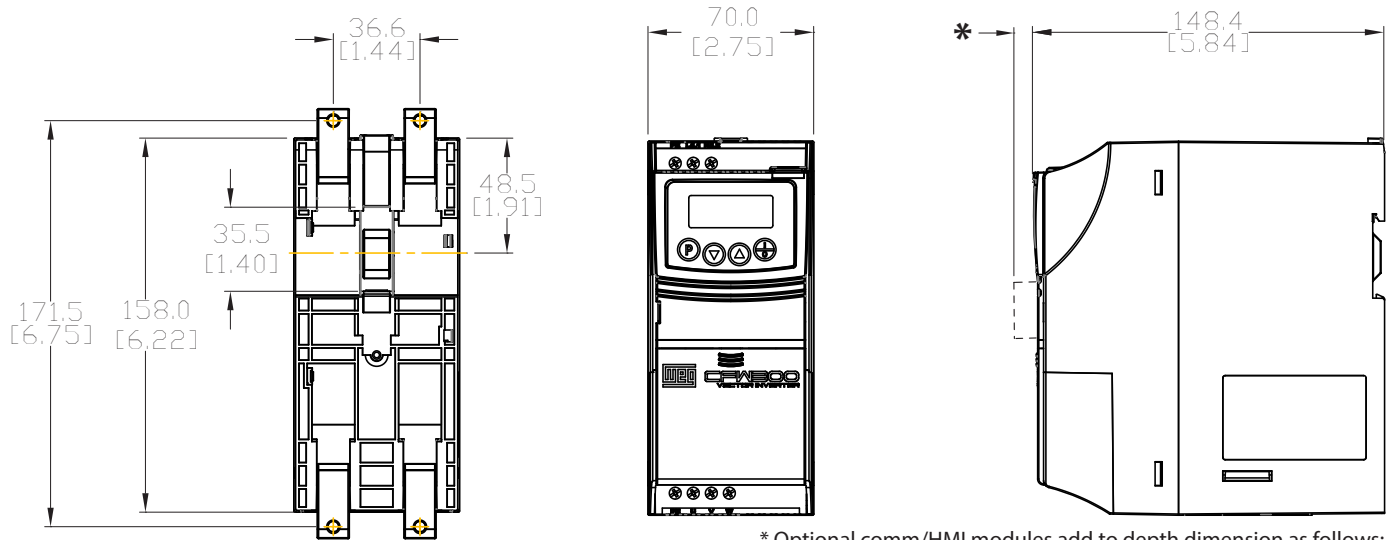
CFW300 General Specifications (Applicable to All Models)		
Control	Method	scalar (V/Hz) or voltage vector (V/VV)
	Output Frequency Range	0–400 Hz; 0.1Hz resolution
Performance	V/Hz Control	Speed regulation: 1% of the rated speed (with slip compensation) Speed variation range: 1:20
	V/VV Control	Speed regulation: 1% of the rated speed Speed variation range: 1:30
Inputs	Analog	1 insulated input; Levels: 0–10V or 0–20mA or 4–20mA Linearity error $\leq 0.25\%$ Impedance: 100k Ω for voltage input; 500 Ω for current input Programmable functions Maximum voltage permitted in the input: 30VDC
	Digital	4 isolated inputs Programmable functions • active high (PNP): maximum low level of 10VDC minimum high level of 20VDC • active low (NPN): maximum low level of 5VDC minimum high level of 10VDC Maximum input voltage of 30VDC Input current: 11mA Maximum input current: 20mA
Outputs	Relay	1 relay with NO/NC contact Maximum voltage: 250VAC Maximum current: 0.5A Programmable functions
	Power Supply	10VDC power supply; maximum capacity: 50mA
Safety	Protection	Overcurrent/Phase-Phase short circuit in the output Under/Overvoltage Motor overload Overtemperature in the power module (IGBTs) Fault / External alarm Programming error
Keypad	Integral (HMI)	4 keys: Start/Stop, Up arrow, Down arrow, and Programming LCD Display View/Edit all parameters Indication accuracy: • current: 5% of the rated current • speed resolution: 0.1Hz
Rated/Default Carrier Frequency		5kHz (selectable 2.5, 5, 10, or 15 kHz)
Input Voltage Range		1-phase 115V models: 110–127 VAC (-15%, +10%) 1-phase & 3-phase 230V models: 200–240 VAC (-15%, +10%)
Input Frequency Range		50/60Hz (48 to 62 Hz)
Allowable Input Phase Imbalance		$\leq 3\%$ of rated phase-to-phase input voltage
Overload Capacity		150% for 60sec every 10min; 200% for 3 sec every 10min
Braking		Frame size A models: Not available Frame size B models: Integrated brake chopper
Ambient Operating Temperature		14 to 122 °F (-10 to 50°C); up to 140°F (60°C) with current derating (2% per 1°C above 50°C)
Altitude		0 to 3300ft (1000m); up to 13,200 ft (4000m) with current derating (1% per 100m above 1000m)
Humidity		5 to 95% non-condensing
Mounting		DIN rail or surface mounting with screws
Mounting Orientation		Vertical and upright; can be mounted side-to-side (zero stack)
Environmental Protection Rating		IP20
Agency Approvals *		cULus [NMMS.E184430,NMMS7.E184430] (except CFW300-IOADR temperature combo module, CFW300-KFx-xx EMI Filters) CE (except CFW300-IOADR)
* To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.		

WEG CFW300 AC Drives – Dimensions

(mm [in])

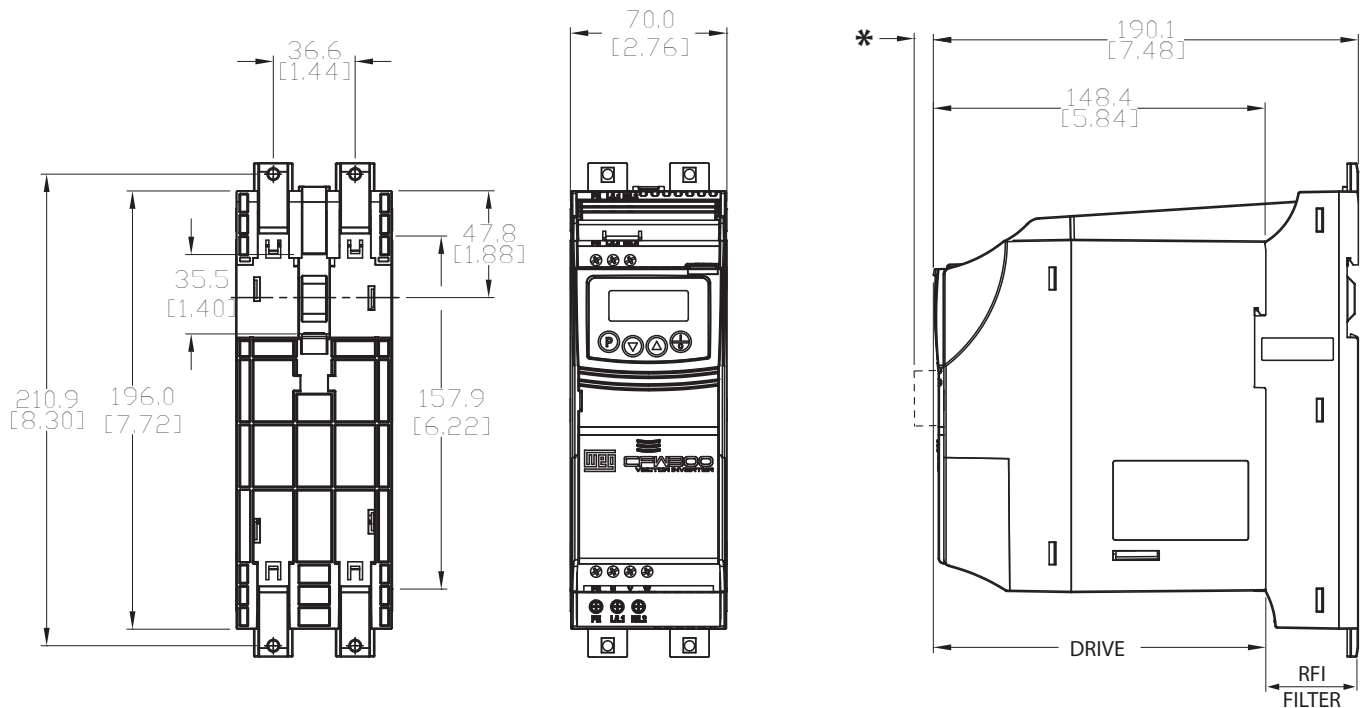
See our website (www.AutomationDirect.com) for complete engineering drawings.

CFW300 Drive Frame Size A (without RFI Filter)



* Optional comm/HMI modules add to depth dimension as follows:
 CFW300-KHMIR, -RS232, or -RS485 adds: 21.2 [0.84]
 CFW300-CUSB adds: 14.6 [0.58]

CFW300 Drive Frame Size A (with RFI Filter CFW300-KFA-S1-S2)



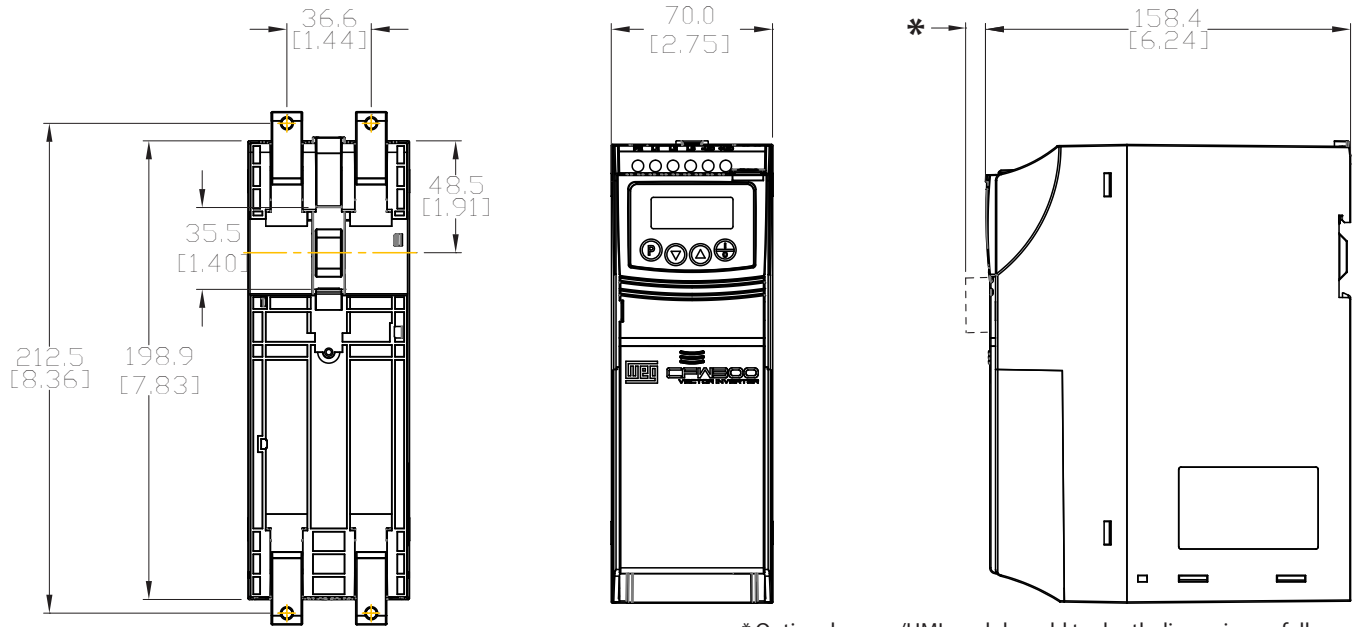
* Optional comm/HMI modules add to depth dimension as follows:
 CFW300-KHMIR, -RS232, or -RS485 adds: 21.2 [0.84]
 CFW300-CUSB adds: 14.6 [0.58]

WEG CFW300 AC Drives – Dimensions

(mm [in])

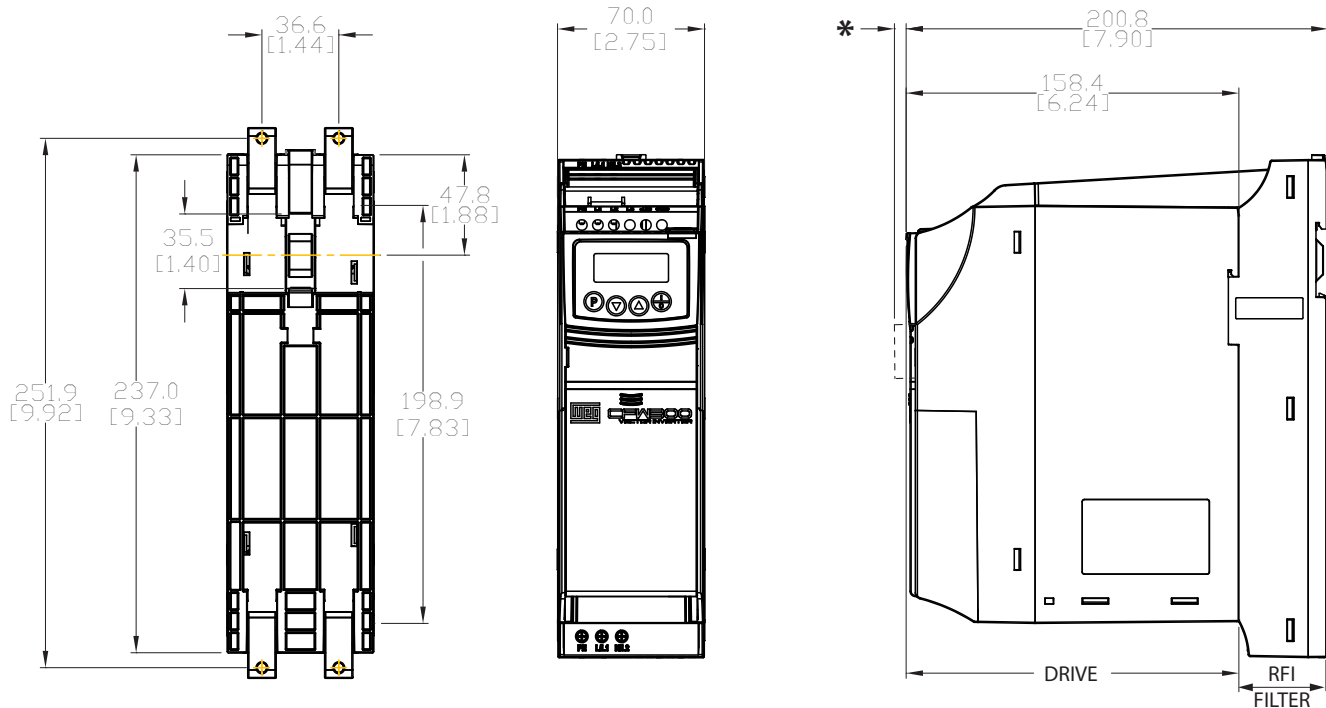
See our website (www.AutomationDirect.com) for complete engineering drawings.

CFW300 Drive Frame Size B (without RFI Filter)



* Optional comm/HMI modules add to depth dimension as follows:
 CFW300-KHMIR, -RS232, or -RS485 adds: 21.2 [0.84]
 CFW300-CUSB adds: 14.6 [0.58]

CFW300 Drive Frame Size B (with RFI Filter CFW300-KFB-S2)



* Optional comm/HMI modules add to depth dimension as follows:
 CFW300-KHMIR, -RS232, or -RS485 adds: 21.2 [0.84]
 CFW300-CUSB adds: 14.6 [0.58]