CFW501 Series – Frequency Inverter

The WEG CFW501 series of variable frequency drives for heating, ventilation, air conditioning and refrigeration was designed with the features and functions required for modern HVAC systems. The CFW501 is designed with the same reliability, robustness and energy-efficient control known in our industrial lines. WEG now brings this technology to office buildings, hospitals, airports, hotels, shopping centers or other similar facilities.



Standard Features

- CFW501 Ratings: 1/3–7 1/2 HP at 230 VAC; 1/2–25 HP at 480 VAC
- Conformal Coated Circuit Boards: provides protection against dust, humidity, high temperature and chemicals
- Plenum Rated with NEMA 1 Kit: Meets UL94 Requirements
- IP20 enclosure with NEMA 1 conversion kits available
- Harmonics: Meets IEC 61000-3-12 requirements
  - No line reactor required
  - No restrictions for installation, no minimum line impedance required
- Communications: Native support for BACnet MS/TP, Metasys N2, and Modbus RTU
- Heat sink and internal temperature monitoring provides protection for critical components such as IGBTs and circuit boards
- Fan operation is controlled based on the temperature of power modules
- Reduces energy consumption when drive is not supplying power to the motor

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Applications

- Hospitals
- Airports
- Shopping malls
- Sports facilities
- Schools and universities
- Hotels and restaurants
- Condominium and residential
- Municipal and commercial buildings
- Chillers and compressors
- Cooling towers
- Boiler circulation pumps
- Chill water circulation pumps
- Exhaust fans
- Clean room air handling
- Tunnel Ventilation

Variable Frequency Drives

CFW501 Series

CFW501 Catalog Number Sequence

CFW501	B	24P0	T	2	NB	20	20

Frame Size
A, B, C, D

O/P Current
01P6 = 1.6 Amps
02P6 = 2.6 Amps
04P2 = 4.2 Amps
07P0 = 7.0 Amps
10P0 = 10.0 Amps
16P0 = 16.0 Amps
19P4 = 19.4 Amps
24P0 = 24.0 Amps
31P0 = 31.0 Amps

Supply Phases
T = Three-phase

Supply Voltage
2 = 200–240 VAC
4 = 380–480 VAC

Options
NB = No Internal DB
DB = With Internal DB
20 = IP20 (Std.)
N1 = NEMA1
C2/C3 = RFI Filter (Std.)

Chart intended as reference only and not to create part numbers.

Data is subject to change without notice.

CFW501

IP20 Enclosure

Motor Voltage	ND / VT[1]		Catalog Number[5]	Braking Transistor	Frame Size	Dimensions (in) H x W x D[4]	Approx. Weight (lbs)	List Price	Multiplier
	Motor HP[2]	Drive Amps[3]							
230 VAC	**Input Power Supply: Three-Phase 220–230 VAC without Dynamic Braking Transistor**								
	1/3	1.6	CFW501A01P6T2NB20C3	No	A	7.5 x 3.0 x 5.9	1.8	**$563**	V3
	3/4	2.6	CFW501A02P6T2NB20C3	No	A	7.5 x 3.0 x 5.9	1.8	**$601**	V3
	1 1/2	4.3	CFW501A04P3T2NB20C3	No	A	7.5 x 3.0 x 5.9	1.8	**$652**	V3
	2	7.0	CFW501A07P0T2NB20C3	No	A	7.5 x 3.0 x 5.9	1.8	**$736**	V3
	3	9.6	CFW501A09P6T2NB20C3	No	A	7.5 x 3.0 x 5.9	1.8	**$804**	V3
	4	12.2	CFW501A12P2T2NB20C3[6]	No	A	7.5 x 3.0 x 5.9	1.8	**$873**	V3
	Input Power Supply: Three-Phase 200–240 VAC with Dynamic Braking Transistor								
	5	16.0	CFW501B16P0T2DB20C3	Yes	B	7.9 x 4.0 x 6.3	2.7	**$1,009**	V3
	7 1/2	19.4	CFW501B19P4T2DB20C3[6]	Yes	B	7.9 x 4.0 x 6.3	2.7	**$1,111**	V3
	7 1/2	24.0	CFW501C24P0T2DB20C3	Yes	C	8.3 x 5.3 x 6.5	4.4	**$1,552**	V3
460 VAC	**Input Power Supply: Three-Phase 380–480 VAC without Dynamic Braking Transistor**								
	1/2	1.0	CFW501A01P0T4NB20C3	No	A	7.5 x 3.0 x 5.9	1.8	**$745**	V3
	1	1.6	CFW501A01P6T4NB20C3	No	A	7.5 x 3.0 x 5.9	1.8	**$761**	V3
	1 1/2	2.6	CFW501A02P6T4NB20C3	No	A	7.5 x 3.0 x 5.9	1.8	**$799**	V3
	3	4.3	CFW501A04P3T4NB20C3	No	A	7.5 x 3.0 x 5.9	1.8	**$917**	V3
	5	6.1	CFW501A06P1T4NB20C3	No	A	7.5 x 3.0 x 5.9	1.8	**$1,051**	V3
	Input Power Supply: Three-Phase 380–480 VAC with Dynamic Braking Transistor								
	1 1/2	2.6	CFW501B02P6T4DB20C3	Yes	B	7.9 x 4.0 x 6.3	2.7	**$835**	V3
	3	4.3	CFW501B04P3T4DB20C3	Yes	B	7.9 x 4.0 x 6.3	2.7	**$958**	V3
	5	6.5	CFW501B06P5T4DB20C3	Yes	B	7.9 x 4.0 x 6.3	2.7	**$1,092**	V3
	7 1/2	10.0	CFW501B10P0T4DB20C3	Yes	B	7.9 x 4.0 x 6.3	2.7	**$1,299**	V3
	10	14.0	CFW501C14P0T4DB20C2	Yes	C	8.3 x 5.3 x 6.5	4.4	**$1,609**	V3
	10	16.0	CFW501C16P0T4DB20C2	Yes	C	8.3 x 5.3 x 6.5	4.4	**$1,886**	V3
	15	24.0	CFW501D24P0T4DB20C3	Yes	D	12.1 x 7.1 x 6.6	9.5	**$2,321**	V3
	25	31.0	CFW501D31P0T4DB20C3	Yes	D	12.1 x 7.1 x 6.6	9.5	**$2,716**	V3

Notes:
1) VT (Variable Torque, Quadratic Load): 110% overload for 60 seconds.
2) "HP" rating based on "average FLA values." Use as a guide only.
3) Motor FLA may vary with speed and manufacturer. ALWAYS compare motor FLA to nominal amps of drive.
4) Dimensions are provided for estimating purposes only. For other technical data please refer to WEG product manual.
5) CFW500-CRS485 Card is included as standard with CFW501 Drives. It will provide four (4) DIs, 1 DO, 2 ROs, 2 AIs, 1 AO and 2 RS-485 com. Port as a standard.
6) Not UL listed.

CFW501 Options & Accessories

Type	Catalog Number	Description	Apprx. Shpg. Wt. (lbs)	List Price	Multiplier Symbol
Flash Memory Module	CFW500-MMF	CFW500/501 Flash Memory Module	0.2	**$189**	V1G
Non-Text Remote Keypad	CFW501-HMIR[1]	Non-Text Remote Keypad with Mounting Frame kit	0.6	**$150**	V3
HMI Cable 1M	CFW500-CCHMIR01M	3.3 ft (1 m) Remote Keypad Cable	0.5	**$23**	V1G
HMI Cable 2M	CFW500-CCHMIR02M	6.6 ft (2 m) Remote Keypad Cable	0.7	**$31**	V1G
HMI Cable 3M	CFW500-CCHMIR03M	9.9 ft (3 m) Remote Keypad Cable	1.0	**$41**	V1G
HMI Cable 5M	CFW500-CCHMIR05M	16 ft (5 m) Remote Keypad Cable	1.2	**$51**	V1G
HMI Cable 7.5M	CFW500-CCHMIR075M	25 ft (7.5 m) Remote Keypad Cable	1.5	**$61**	V1G
HMI Cable 10M	CFW500-CCHMIR010M	33 ft (10 m) Remote Keypad Cable	2.0	**$72**	V1G
NEMA 1 Conduit Kit	CFW501-KN1A	NEMA 1 kit: Frame Size A	0.7	**$25**	V3
NEMA 1 Conduit Kit	CFW501-KN1B	NEMA 1 kit: Frame Size B	1.0	**$30**	V3
NEMA 1 Conduit Kit	CFW501-KN1C	NEMA 1 kit: Frame Size C	1.0	**$39**	V3
NEMA 1 Conduit Kit	CFW501-KN1D	NEMA 1 kit: Frame Size D	1.0	**$52**	V3

Notes:
1) CFW501-HMIR (non-text Remote Keypad) will require Qty. (1) CFW500-CCHIR0xM cable. ("x" represents the cable length in meters).

Variable Frequency Drives

CFW501 Series

Technical Data

Power Supply	Voltage	Single-phase or three-phase	200–240 VAC (+10%, -15%)
		Three-phase	380–480 VAC (+10%, -15%)
	Frequency	50/60 Hz +/- 2 Hz	
Enclosure	Degree of Protection	IP 20	
	Mounting	Surface mounting with screws or DIN rail mounting	
Control	Control Modes	Volts per Hertz (Scalar)	
		Sensorless Voltage Vector	
	Power Output	Sinusoidal PWM (Space Vector Modulation)	
		IGBT Transistors	
	Switching Frequency	2.5, 5, 10 or 15 kHz	
	Frequency Range	0–300 Hz	
	Overload Capacity	110% for 60 seconds, repeatable every 10 minutes	
Control Inputs	4 programmable isolated digital inputs, NPN or 24 VDC logic (PNP)		
	2 programmable differential analog inputs; programmable for current or voltage Can be set as DI or as PTC input (0–10V, 4–20 mA or 0–20 mA)		
Control Outputs	2 Programmable relay Outputs: Form C (240V / 0.5 A). 1 Programmable Transistor Output (Maximum 150 mA @ 24 VDC). 1 Programmable differential analog Output; Programmable for current or voltage.		
Communication	Serial	2 x RS-485 Ports (Modbus RTU, BACnet and Metasys N2 as a standard)	
Safety	Protections	Motor over current	DC link over voltage
		Motor overload	DC link under voltage
		Output phase-to-phase short circuit	Drive over temperature
		Output phase-to-ground short circuit	External fault
		Programming error	
Ambient	Temperature	32–122°F (50°C), up to 140°F (60°C) with 2% / 1.8°F (1°C) output current derating	
	Humidity	5–95% Non-condensing	
	Altitude	0–3,300 ft (1,000 m), up to 13,200 ft (4,000 m) with 1% / 330 ft (100 m) output current derating	
Regulatory Conformance	EMC Directive 89 / 336 / EEC	Electromagnetic compatibility: Industrial Environment EMC Emission and Immunity with optional filter	
	ENC61800-3		
	LVD 73/23/EEC	Low Voltage Directive	
	UL 508 C	Power Conversion Equipment	
Special Functions	Linear and “S” ramp accel and decel, local/remote control, FWD/REV selection, DC braking, manual and auto torque boost, motor slip compensation, electronic pot, two skip frequencies, maximum and minimum adjustable frequency limits, adjustable output current		
Keypad	4 digit display, two (2) indicator LEDs and 8 keys		
	Readouts for: output frequency (Hz), output current (A), output voltage (V), motor torque (%) in vector mode, DC bus voltage (V), value proportional to frequency (Ex.: RPM), heatsink temperature, fault and status messages		

Data is subject to change without notice.

Notes