

DATASHEET

Variable Speed Drives



Main Features

Reference	: CFW100B02P6S220G2
Product code	: 14248097
Product line	: CFW100

Basic data

Power supply	: 200-240 V
Input minimum-maximum voltage	: 170-264 V
Input phases	: Single-phase
- Input	: 1
- Output	: 3

	Heavy (HD)
Rated current (HD)	2.6 A
Overload current for 60 s (HD)	3.9 A
Single-phase input current (HD) [1]	

Maximum applicable motor:

Voltage/Frequency	Normal Overload (ND)	Heavy Overload (HD)
220V / 50Hz	Not applicable	0,75 / 0,55
220V / 60Hz	Not applicable	0,5 / 0,37
230V / 50Hz	Not applicable	0,75 / 0,55
230V / 60Hz	Not applicable	0,5 / 0,37
Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable

External RFI filter	: CFW100-KFABC-S2
Link Inductor	:
Memory card	: Not included in the product
USB port	: Yes, by CFW100-CUSB
Line frequency	: 50/60Hz
Line frequency range (minimum - maximum)	: 48-62 Hz
Phase unbalance	: Less or equal to 3% of input rated line voltage
Transient voltage and overvoltage	: Category III
Typical input power factor	: 0,70
Displacement factor	: 0,98
Rated efficiency	: ≥ 97%
Maximum connections (power up cycles - on/off) per hour	: 10 (1 each 6 minutes)
DC power supply	:
Switching frequency [3]:	: 5 kHz
Selectable switching frequency	: 2,5 and 15 kHz
Real-time clock	: Not available
Copy Function	: Yes, by CFW100-CFW300-MMF : 30 W

Source available to the user

Output voltage	: Not applicable
Maximum capacity	: Not applicable

Control/performance data

Power supply	: Switched-mode power supply
Control method - induction motor	: V/f (escalar) and VVW
Encoder interface	: Not applicable
Control output frequency [5]	: 0-400 Hz
Frequency resolution	: 0.1 Hz

V/F Control

- Speed regulation	: 1% of rated speed
- Speed variation	: 1:20
VVW Control	
- Speed regulation	: 1% of rated speed
- Speed variation	: 1:30
Sensorless vector control	
- Speed regulation	: Not applicable
- Speed variation	: Not applicable
Vector control with Encoder	
- Speed regulation	: Not applicable

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V/F Control

- Speed variation

: Not applicable

Analog Inputs

- Quantity (standard)
- Levels
- Impedance for voltage input
- Impedance for current input
- Function
- Maximum allowed voltage

: Not available
: Not applicable
: Not applicable
: Not applicable
: Not applicable
: Not applicable

Digital inputs

- Quantity (standard)
- Activation
- Maximum low level
- Minimum high level
- Input current
- Maximum input current
- Function
- Maximum allowed voltage

: Not available
: Active low and high
: 5 V (low) and 10 V (high)
: 10 V (low) and 20 V (high)
: 11 mA
: 20 mA
: Programmable
: 30 Vcc

Analog outputs

- Quantity (standard)
- Levels
- RL for voltage output
- RL for current output
- Function

: Only with plug-in
: Not applicable
: Not applicable
: Not applicable
: Not applicable

Digital outputs

- Quantity (standard)
- Maximum voltage
- Maximum current
- Function

: 3 NO relay and 1 transistor
: Not applicable
: Not applicable
: Not applicable

Communication

- Modbus-RTU (with accessory: CFW100-CRS485, CFW100-CUSB or CFW100-CBLT)
- Modbus/TCP (Not available)
- Profibus DP (Not available)
- Profibus DPV1 (Not available)
- Profinet (Not available)
- CANopen (with accessory: CFW100-CCAN)
- DeviceNet (with accessory: CFW100-CCAN)
- EtherNet/IP (Not available)
- EtherCAT (Not available)
- Bluetooth (with accessory: CFW100-CBLT)
- BACnet (Not available)

Available protection

- Output phase-phase overcurrent/Short
- Not applicable
- Under/Overtime voltage in power
- Heat sink overtemperature
- Motor overload
- Not applicable
- Fault/External alarm
- Programming error
- CPU or memory failure

Operation interface (HMI)

- Availability
- HMI installation
- Number of HMI buttons
- Display
- Indication accuracy
- Speed resolution
- Standard HMI degree of protection
- HMI battery type
- HMI battery life expectancy
- Remote HMI type
- Remote HMI frame
- Remote HMI degree of protection

: Included in the product
: Fixed HMI
: 4
: Numeric LCD
: 10% of rated current
: 0,1 Hz
: IP20
: Not applicable
: Not applicable
: Accessory CFW100-KHMIR
: Not applicable
: IP54

Ambient conditions

- Enclosure
- Degree of pollution (EN50178 and UL508C)

: IP20
: 2 (EN50178 and UL508C)

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Ambient conditions

Temperature around the inverter: of 0 °C / 32 °F to 50 °C / 122 °F. For temperatures above the specified is necessary to apply current reduction of 2 % per °C of 50 (122) o 60 °C (140 °F).

Relative humidity: 5% to 95% without condensation.

Altitude: up to 1000 m (3281 ft) under normal conditions. Of 1000 m (3281 ft) to 4000 m (13123 ft) reduce the current in 1% for each 100 m above (0,3% for each 100 ft above) of 1000 m (3281 ft). Reduce the maximum voltage (127 V for models 110...127 V and 240 V for models 200...240 V) in 1,1% for each 100 m above (0,33% for each 100 ft above) of 2000 m.

Sustainability policies

RoHS	: Yes
Conformal Coating	: 3C2 (IEC 60721-3-3:2002)

Dimensions and weight

- Size	: B
- Height	: 117 mm / 4.6 in
- Width	: 55 mm / 2.17 in
- Depth	: 129 mm / 5.08 in
- Weight	: 0.57 kg / 1.26 lb

Mechanical Installation

Mounting position	: DIN rail
Fixing screw	: M4 with PLMP kit
Tightening torque	: 2,5 N.m / 1.84 lb.ft
Allows side-by-side assembly	: Yes, without derating
Minimum spacing around the inverter:	
- Top	: 15 mm / 0.59 in
- Bottom	: 50 mm / 1.97 in
- Front	: 40 mm / 1.57 in
- Between inverters (IP20)	: Not applicable

Electrical connections

Cable gauges and tightening torques:

	Recommended cable gauge	Recommended tightening torque
Power	1,5 mm ² (16 AWG)	1,4 N.m / 1.03 lb.ft
Braking	Not applicable	1,4 N.m / 1.03 lb.ft
Grounding	2,5 mm ² (14 AWG)	1,4 N.m / 1.03 lb.ft
Control	0,5 to 1,5 mm ² (20 to 14 AWG)	0,5 N.m / 0.37 lb.ft

Additional specifications

SoftPLC	: Yes, incorporated
Maximum breaking current	: Not available
Minimum resistance for the brake resistor	: Not available
Recommended fuse	: FNH00-20K-A : MPW40-3-U010

Standards

Safety	<ul style="list-style-type: none"> - 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: To have a machine in accordance with that standard, the manufacturer of the machine is responsible for the installation of an emergency-stop device and a network switching equipment. - 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. - UL 508C - Power conversion equipment.
Electromagnetic Compatibility [6]	<ul style="list-style-type: none"> - 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.

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Standards

	<ul style="list-style-type: none">- 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.- With external filter only
Mechanical Construction	<ul style="list-style-type: none">- EN 60529 - degrees of protection provided by enclosures (IP code).- UL 50 - enclosures for electrical equipment.- IEC 60721-3-3 - 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.- EN 60529 e UL 50

Certifications

Notes

- 1) Considering minimum impedance of 1%;
- 2) Motor power is orientative, valid for standard WEG Motors of 4 poles. The correct sizing must be done according to the nominal current of the motor used, which must be less than or equal to the rated output current of the inverter;
- 3) For operation with a switching frequency above nominal, apply derating to the output current (refer to the user manual).
- 4) Surface mounting, HD overload.
- 5) Only for electrical circuit protection. For protection of inverters, use aR fuses indicated.
- 6) Only with external filter.
- 7) For more information, refer to the user manual of CFW100;
- 8) All images are merely illustrative.