DATASHEET
Variable Speed Drives

Main Features

Product coding	: CFW100A01P6S220G2
Product code	: 14248096
Reference	: CFW100

Basic data

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

	Heavy (HD)
Rated current (HD)	1.6
Overload current for 60 s (HD)	2,4 A
Single-phase input current (HD) [1]	

Maximum applicable motor:

Voltage/Frequency	Normal Overload (ND)	Heavy Overload (HD)
220V / 50Hz	Not applicable	0,33 / 0,25
220V / 60Hz	Not applicable	0,33 / 0,25
230V / 50Hz	Not applicable	0,33 / 0,25
230V / 60Hz	Not applicable	0,33 / 0,25
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
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
	: 20 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	: V/f (escalar) and VVW
Encoder interface	: Not applicable
Control output frequency	: 0-400 Hz
Frequency resolution	: 0.1 Hz

V/F Control

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

V/F Control

- Speed range	: Not applicable

Analog Inputs

Quantity (standard)	: Not available
Levels	: Not applicable
Impedance for voltage input	: Not applicable
Impedance for current input	: Not applicable
Function	: Not applicable
Maximum allowed voltage	: Not applicable

Digital inputs

Quantity (standard)	: Not available
Activation	: Active low and high
Maximum low level	: 5 V (low) and 10 V (high)
Minimum high level	: 10 V (low) and 20 V (high)
Input current	: 11 mA
Maximum input current	: 20 mA
Function	: Programmable
Maximum allowed voltage	: 30 Vcc

Analog outputs

Analogic outputs - Quantity (standard)	: Only with plug-in
Levels	: Not applicable
RL for voltage output	: Not applicable
RL for current output	: Not applicable
Function	: Not applicable

Digital outputs

Digital outputs - Quantity (standard)	: 3 NO relay and 1 transistor
Maximum voltage	: Not applicable
Maximum current	: Not applicable
Function	: 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 overcurrente/Short
- Not applicable
- Under/Overvoltage in power
- Heat sink overtemperature
- Motor overload
- Not applicable
- Fault/External alarm
- Programming error
- CPU or memory failure

Operation interface (HMI)

Avaliability	: Included in the product
Installation	: Fixed HMI
Number of HMI buttons	: 4
Display	: Numeric LCD
Indication accuracy	: 10% of rated current
Speed resolution	: 0,1 Hz
Standard HMI degree of protection	: IP20
HMI battery type	: Not applicable
HMI battery life expectancy	: Not applicable
Remote HMI type	: Accessory CFW100-KHMIR
Remote HMI frame	: Not applicable
Remote HMI degree of protection	: IP54

Ambient conditions

Enclosure	: IP20
Degree of pollution (EN50178 and UL508C or UL61800-5-1)	: 2

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 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 of 2000 m.

Sustainability policies

RoHS	: Yes
Conformal Coating	: 3C2

Dimensions and weigth

- Size	: A
- Height	: 100 mm / 3.9 in
- Width	: 55 mm / 2.17 in
- Depth	: 129 mm / 5.08 in
- Weight	: 0.48 kg / 1.05 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	: 40 mm / 1.57 in
- Front	: 30 mm / 1.18 in
- Side	: Not applicable

Electrical connections

Cable gauges and tightening torques:

	Recommended cable gauge	Recommended tightening torque
Power	1,5 mm² (16 AWG)	1,4 N.m / 1,03 lb.ft
Braking	Not applicable	1,4 N.m / 1,03 lb.ft
Grounding	2,5 mm² (14 AWG)	1.4 N.m / 1.03 lb.ft
Control	0,5 to 1,5 mm² (20 to 14 AWG)	0,5 N.m / 0.37 lb.ft

Additional especifications

SoftPLC	: Yes, incorporated
Maximum breaking current	: Not available
Minimum resistance for the brake resistor	: Not available
Recommended fuse	: FNH00-20K-A
	: MPW40-3-D063

Standards

Safety	- 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]	- 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.

Standards

	- 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	- 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 IV 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.