DATASHEET
Variable Speed Drives

Main Features

Product coding	: CFW300A01P6T2NB20
Product code	: 13059422
Reference	: CFW300

Basic data

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

	Range 1	Range 2
	200-240 V	Not applicable
Duty cycle	Heavy (HD)	Heavy (HD)
Rated current (HD)	1.6	Not applicable
Overload current for 60 s (HD)	2,4 A	Not applicable
Single-phase input current (HD) [1]	Not applicable	Not applicable
Three-phase / DC input current (HD) [1]	2,0 A	Not applicable

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

Dynamic braking [3]	: Standard without braking
External RFI filter	: CFW300-KFA-T2
Link Inductor	: No
Memory card	: Not included in the product
USB port	: Yes, by CFW300-CUSB
Line frequency	: 50Hz
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	: 0,83
Displacement factor	: 0,98
Rated efficiency	: ≥ 97%
Maximum connections (power up cycles - on/off) per hour	: 10 (1 each 6 minutes)
DC power supply	: Not allow
Switching frequency [4]:	: 5 kHz
Selectable switching frequency	: 2,5 and 15 kHz
Real-time clock	: Not available
COPY Function	: Yes, by CFW100-CFW300-MMF
Dissipated power [5]:	: 30 W

Source available to the user

Output voltage	: 10 Vdc
Maximum capacity	: 50 mA

Control/performance data

Power supply	: Switched-mode power supply
Control method	: V/f (escalar) and VVW
Encoder interface	: Available with CFW300-IOAENC
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

V/F Control

- Speed range	: Not applicable

Vector control with Encoder

- Speed resolution	: Not applicable

Analog Inputs

Quantity (standard)	: 1
Levels	: 0-10V, 0-20mA and 4-20mA
Impedance for voltage input	: 100 kΩ
Impedance for current input	: 500 Ω
Function	: Programmable
Maximum allowed voltage	: 30 Vcc

Digital inputs

Digital inputs - Quantity (standard)	: 4
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)	: 1 NO/NC relay
Maximum voltage	: 250 Vac
Maximum current	: 0.5 A
Function	: Programmable

Communication

- Modbus-RTU (with accessory: CFW300-CRS485; CFW300-CRS322, CFW300-CUSB or CFW300-CBLT)
- Modbus/TCP (Not available)
- Profibus DP (with accessory: CFW300-CPDP)
- Profibus DPV1 (with accessory: CFW300-CPDP)
- Profinet (Not available)
- CANopen (with accessory: CFW300-CCAN)
- DeviceNet (with accessory: CFW300-CCAN)
- EtherNet/IP (Not available)
- EtherCAT (Not available)
- Bluetooth (with accessory: CFW300-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 CFW300-KHMIR
Remote HMI frame	: Not applicable
Remote HMI degree of protection	: IP54

Ambient conditions

Enclosure	: IP20

Ambient conditions

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

Sustainability policies

RoHS : Yes
Conformal Coating : 3C2

Dimensions and weigth

- Size : A
- Height : 157.9 mm / 6.2 in
- Width : 70 mm / 2.76 in
- Depth : 148.4 mm / 5.8 in
- Weight : 0.9 kg / 2 lb

Mechanical Installation

Mounting position : Surface or DIN rail
Fixing screw : M4
Tightening torque : 2 N.m / 1.48 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)	0,8 N.m / 0,6 lb.ft
Braking	Not applicable	0,8 N.m / 0,6 lb.ft
Grounding	2,5 mm² (14 AWG)	0.8 N.m / 0.6 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
Recommended circuit breaker [6] : MPW40-3-D025

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	- 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.

Standards

	- 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

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) Braking resistor is not included;
4) For operation with a switching frequency above nominal, apply derating to the output current (refer to the user manual).
5) Surface mounting, HD overload.
6) Only for electrical circuit protection. For protection of inverters, use aR fuses indicated.
7) Only with external filter.