

DATASHEET

Variable Speed Drives



Main Features



Reference	: CFW701A10P0T4DBN1C3
Product code	: 12113303
Product line	: CFW701 HVAC

Basic data

Power supply	: 380-480 V
Input minimum-maximum voltage	: 323-528 V
Number of phases	
Input	: 3
Output	: 3

Supply voltage range	380-480 V		380-480 V	
Overload regime	Normal (ND)	Heavy (HD)	Normal (ND)	Heavy (HD)
Rated current	10A	10		
Overload current at 60 s	11A	11A		
Overload current at 3 s	15A	20		

Maximum applicable motor

Voltage/Frequency	Power (HP / kW) [1]		
	Normal	Overload (ND)	Heavy Overload (HD)
380V / 50Hz		5,5 / 4	5,5 / 4
380V / 60Hz		6 / 4,5	6 / 4,5
400V / 50Hz		5,5 / 4	5,5 / 4
400V / 60Hz		6 / 4,5	6 / 4,5
440V / 50Hz		6 / 4,5	6 / 4,5
440V / 60Hz		6 / 4,5	6 / 4,5
460V / 60Hz		7,5 / 5,5	7,5 / 5,5
480V / 60Hz		7,5 / 5,5	7,5 / 5,5

Dynamic braking [2]	: Standard with braking
Electronic supply	: Internal
Safety Stop	: No
RFI internal filter [3]	: Optional filter C3
External filter	: Not available
Link Inductor	: Yes
Memory card	: Not included in the product
USB port	: Yes, available in HMI
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
Rated current of single-phase input	
- Overload (ND)	:
- Overload (HD)	:
Rated current of three-phase input	
- Overload (ND)	: 10A
- Overload (HD)	: 10A
Typical input power factor	: 0,94
Displacement factor	: 0,98
Rated efficiency	: ≥ 97%
Maximum connections (power up cycles - on/off) per hour	: 60
DC power supply	: Allow
Standard switching frequency	
- Overload ND	: 5 kHz
- Overload HD	: 5 kHz
Selectable switching frequency	: 1,25; 2; 2,5; 5 and 10 kHz
Real-time clock	: Not available
Copy Function	: Yes, by MMF
Dissipated power:	

Mounting type	Overload		Overload (*)	
	ND	HD	ND	HD
Surface	220 W	200 W	Not applicable	Not applicable
Flange	30 W	30 W	Not applicable	Not applicable

Source available to the user

Output voltage	: 24 Vcc
Maximum capacity	: 500 mA

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Control/performance data

Power supply	: Switched-mode power supply
Control method - induction motor	: V/f, VVW, Sensorless
Encoder interface	: Available in inverter
Control output frequency [5]	: 0 to 300 Hz
Frequency resolution	: Equivalent to 1 rpm
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	: 0,5% of rated speed
- Speed variation	: 1:100
Vector control with encoder	
- Speed regulation	: Not applicable
- Speed variation	: Not applicable

Analog inputs

Quantity (standard)	: 3
Levels	: 0-10V, 0/4-20mA and -10-+10V
Impedance	
- Impedance for voltage input	: 400 kΩ
- Impedance for current input	: 500 Ω
Function	: Programmable
Maximum allowed voltage	: ± 15 Vdc

Digital inputs

Quantity (standard)	: 8
Activation	: Active low and high
Maximum low level	: 2 V
Minimum high level	: 10 V
Input current	: 7.5 mA
Maximum input current	: 9.5 mA
Function	: Programmable
Maximum allowed voltage	: 30 Vcc

Analog outputs

Quantity (standard)	: 2
Levels	: 0 to 10V, 0 to 20mA and 4 to 20mA
RL for voltage output	: 10 kΩ
RL for current output	: 500 Ω
Function	: Programmable

Digital outputs

Quantity (standard)	: 2 NO/NC relay and 3 transistor
Maximum voltage	: 240 Vac and 30 Vdc
Maximum current	: 0.75 A and 80 mA
Function	: Programmable

Communication

- Modbus-RTU (Standard)	
- Modbus/TCP (Not available)	
- Profibus DP (with accessory: PROFIBUS DP-01)	
- Profibus DPV1 (Not available)	
- Profinet (Not available)	
- CANopen (with accessory: CAN-01)	
- DeviceNet (with accessory: CAN-01)	
- EtherNet/IP (Not available)	
- EtherCAT (Not available)	
- BACnet (Not available for CFW700 series. Available by default on the CFW701 series)	

Protections available

- Output overcurrent/short circuit	
- Power supply phase loss	
- Under/Overvoltage in power	
- Overtemperature	
- Motor overload	
- IGBT's modules overload	
- Fault/External alarm	
- Output phase-ground short-circuit	
- CPU or memory failure	

Operation interface (HMI)

Availability	: Included in the product
HMI installation	: Local
Number of HMI buttons	: 9
Display	: Graphic LCD

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Operation interface (HMI)

Indication accuracy	: 5% of rated current
Speed resolution	: 1 rpm
Standard HMI degree of protection	: IP56
HMI battery type	: Not applicable
HMI battery life expectancy	: Not applicable
Remote HMI type	: Detachable of the inverter
Remote HMI frame	: Accessory
Remote HMI degree of protection	: IP56

Ambient conditions

Enclosure	: NEMA1/IP20
Pollution degree	: 2 (EN50178 and UL508C)
Temperature	: -10 °C / 14 °F
- Minimum	:
- Nominal [4]	:
Current reduction factor [5]	:
Relative humidity (non-condensing)	:
- Minimum	: 5%
- Maximum	: 95%
Altitude	:
- Rated conditions	: 1000 m (3281 ft)
- Maximum allowed for operation (with derating factor)	: 4000 m (13123 ft)
Current Reduction factor[6]	: 1% for each 100 m above (0,3% for each 100 ft above)
- Current derating factor (for altitudes above rated)	: 1,1% for each 100 m above (0,33% for each 100 ft above)
- Voltage derating factor (for altitudes above 2000 m / 6562 ft)	:

Sustainability policies

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

Dimensions

Size	: A
Height	:
Width	:
Depth	:
Weight	:

Mechanical installation

Mounting position	: Surface or flange
Fixing screw	:
Tightening torque	: 5 N.m / 3.69 lb.ft
Allows side-by-side assembly	:
Minimum spacing around the inverter	:
- Top	:
- Bottom	:
- Front	:
- Between inverters (IP20)	:

Electrical connections

Cable gauges and tightening torque:

	Recommended cable gauge to 75 °C (167 °F)	Recommended tightening torque
Power	2,5 mm ² (14 AWG)	1,1 N.m / 0,81 lb.ft
Braking	2,5 mm ² (14 AWG)	1,1 N.m / 0,81 lb.ft
Grounding	2,5 mm ² (14 AWG)	1,7 N.m / 1,25 lb.ft
Control	0,5 to 1,5 mm ² (20 to 14 AWG)	0,5 N.m / 0,37 lb.ft

Additional specifications

Maximum breaking current	: 14,3 A
Minimum resistance for the brake resistor	: 56 Ω
Recommended aR fuse [6]	: FNH00-25K-A
Recommended aR fuse [6]	: Not applicable
Recommended circuit breaker [6]	: ACW100H-FMU20-3
Recommended circuit breaker [6]	: Not applicable

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 this standard, the machine manufacturer is responsible for installing an emergency stop device and supply disconnecting device. - EN 60146 (IEC 146) - Semiconductor converters.
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	<ul style="list-style-type: none">- EN 61800-2 - Adjustable speed electrical power drive systems - Part 2: General requirements - Rating specifications for low voltage adjustable frequency AC power drive systems.
Electromagnetic compatibility	<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.- 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.
Mechanical construction	<ul style="list-style-type: none">- EN 60529 - Degrees of protection provided by enclosures (IP code).- UL 50 - Enclosures for electrical equipment.- EN 60529 e UL 50

Certifications

Notes

- 1) Orientative motor power, valid for WEG Motors standard 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;
- 2) Braking resistor is not included;
- 3) With category for emission level conducted;
- 4) Without derating and with minimum spaces;
- 5) For temperatures above the nominal and maximum temperature (with derating of current and minimum spaces);
- 6) For altitude over of specified;
- 7) All images are merely illustrative;
- 8) For more information, see the users manual of the CFW700 (size A).