DATASHEET
Variable Speed Drives



Main Features

Reference	: CFW701B10P0T4DB55C3DS
Product code	: 13478900
Product line	: CFW701 HVAC IP54

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]	: With filter (C3 category)
External filter	: Not available
Link Inductor	: Yes
Memory card	: Not included in the product
USB port	: 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)	: 10 A
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

Control/performance data

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

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

Analogic 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

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 acessory: 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)

Avaliability	: Included in the product
Installation	: Local
Number of HMI buttons	: 9
Display	: Graphic LCD

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

WDC_GRAU_PROTECAO	:
Degree of pollution	: 2
Temperature	
- Minimum	: -10 °C / 14 °F
- Nominal [4]	: 40 °C / 104 °F
Current reduction factor [5]	: 2 % per °C of 40 (104) to 50 °C (122 °F)
Relative humidity (non-condensing)	
- Minimum	: 5%
- Maximum	: 95%
Altitude	
- Rated conditions	: 1000 m (3281 ft)
- Maximum altitude allowed for operation	: 4000 m (13123 ft)
Current Reduction factor[6]	
- Current derating factor (for altitudes above rated)	: 1% for each 100 m above
- Voltage derating factor (for altitudes above 2000 m / 6562 ft)	: 1,1% for each 100 m above

Sustainability policies

RoHS	: Yes
Conformal Coating	: 3C2

Dimensions

Size	: B (N12)
Height	: 529 mm / 20.8 in
Width	: 273 mm / 10.75 in
Depth	: 237 mm / 9.3 in
Weight	: 17 kg / 37.5 lb

Mechanical installation

Mounting position	: Surface or flange
Fixing screw	: M8
Tightening torque	: 5 N.m / 3.69 lb.ft
Allows side-by-side assembly	: No
Minimum spacing around the inverter	
- Top	: 40 mm / 1.57 in
- Bottom	: 45 mm / 1.77 in
- Front	: 10 mm / 0.39 in
- Side	: 30 mm / 1.18 in

Electrical connections

Cable gauges and tightening torque:

	Recommended cable gauge to 75 °C (167 °F)	Recommended tightening torque
Power	2,5 mm² (14 AWG)	1,1 N.m / 0,81 lb.ft
Braking	2,5 mm² (14 AWG)	1,1 N.m / 0,81 lb.ft
Grounding	2,5 mm² (14 AWG)	1,7 N.m / 1.25 lb.ft
Control	0,5 to 1,5 mm² (20 to 14 AWG)	0,5 N.m / 0.37 lb.ft

Additional especifications

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

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 instalations - 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.

	- EN 61800-2 - Adjustable speed electrical power drive systems - Part 2: General requirements - Rating especifications for low voltage adjustable frequency AC power drive systems.
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 - Eletromagnetic disturbance characteristics - Limits and methods of measurement. - EN 61000-4-2 - Eletromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 2: Eletrostatic discharge immunity test. - EN 61000-4-3 - Eletromagnetic compatibility (EMC) - Part4: Testing and measurement techniques - Section 3: Radiated, radio-frequency, electromagnetic field immunity test. - EN 61000-4-4 - Eletromagnetic compatibility (EMC) - Part4: Testing and measurement techniques - Section 4: Electrical fast transient/burst immunity test. - EN 61000-4-5 - Eletromagnetic compatibility (EMC) - Part4: Testing and measurement techniques - Section 5: Surge immunity test. - EN 61000-4-6 - Eletromagnetic compatibility (EMC) - Part4: Testing and measurement techniques - Section 6: Immunity to conducted disturbances, induced by radio-frequency fields.
Mechanical construction	- 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 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;
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 B (N12)).