Industrial Motors

Commercial & Appliance Motors

Automation

Digital & Systems

Energy

Transmission & Distribution

Coatings

AFW900 Cabinet Built Variable Speed Drive

Complete and **compact** solution with **high performance** and **safety** combined with flexibility and connectivity

Driving efficiency and sustainability

SUMMARY

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AFW900
Bluetooth
60.0 Hz
3.5 A
380 V
CFW900
SYSTEM DRIVE
TRIPPED
ON
OFF
RESET

COMPLETE AND COMPACT SOLUTION WITH HIGH PERFORMANCE AND SAFETY,

COMBINED WITH FLEXIBILITY AND CONNECTIVITY

The AFW900 is a Cabinet Built Variable Speed Drive solution in accordance with IEC 61439-1/2 requirements, providing reliability, safety and guarantee to the assembled set.

Available in different sizes covering a large power range with IP42 or IP55 protection degrees option, anticorrosion painting and internal parts with anticorrosion treatment, providing greater durability of the assembled set and complying with the requirements of different environments and power range requirements.

The solution has high static and dynamic performance and is used for speed control, torque or positioning control of three-phase AC electric motors or permanent magnet motors.

Composed of the CFW900 high-performance VSD, which provides energy savings, safety, increased productivity and quality in the process network in which it is implemented, it allows easy access to the information on the application and configuration adjustments in a simple and fast way.

Using a menu structure, the new interface of the CFW900 line offers an unprecedented user interactive experience, providing settings and configurations with detailed description of the parameters right on the HMI, in addition to event logs with date and time and a setup wizard.

For more convenience and flexibility, the AFW900 can be configured with or without optional accessories that are selectable and compatible with the CFW900, as well as in customized versions according to the application requirements.

Certifications

CE UKCA

Product overview

- Power range: from 1.1 to 400 kW (1.5 to 550 HP)
- Voltages: from 220 to 480 V at 50/60 Hz
- Output currents in ND mode:
  - 220 V version: 4.6 to 370 A
  - 380 to 480 V version: 2.8 to 760 A
- Optimized design
- Built-in CFW900
- Built-in RFI suppressor filter
- STO and SS1 safety stop functions built into the drive
- Built-in DC link inductor providing harmonic mitigation
- Real time clock (RTC)
- Connectivity: double Ethernet port, Bluetooth®, USB and industrial microSD. WPS desktop and mobile platforms. IoT - Ready with MQTT protocol
- Built-in control and power input protection
- Allows the installation of CFW900 accessories
- Allows the installation of output filters
- Flexible solution, option for customized projects
- Robust structure with rigorous treatment and painting process
- Guarantee of performance and reliability with IEC 61439-1/2 tests
- Compact new version AFW900C, with external rear heatsink, without forced ventilation for the VSD

In line with Industry 4.0

With the constant evolution and search for higher productivity, industries are increasingly investing in the automation and digitization of their processes. The AFW900 VSD has native integration and is easy to implement with the **WEG Motion Fleet Management** (MFM) solution, which allows online monitoring and maintenance management of the industrial drive fleet.

Using the Ethernet port available on the standard product, your drive can publish the relevant drive data on the MFM and thus provide a way to optimize the operation and maintenance resources, increasing performance and reducing costs by means of the preventive and predictive maintenance of your application.

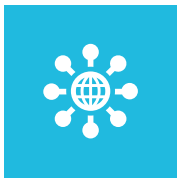
Access the MFM catalog or **click here.**

Note: for further information about the WEG Motor Fleet Management, see the catalog of the solution.

Benefits

Easy operation

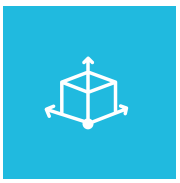
Efficiency and high performance



Connectivity

Advanced energy saving function

High power density

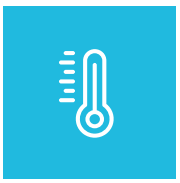


Reduced size

Functional safety

Excellent cost effectiveness

Modern graphic HMI



Connection for motor thermistor-PTC

WEG Quality and know-how

Robustness: available with IP42 and IP55 protection rating

Conformal coating or tropicalization level 3C2 in the standard product or 3C3 as customized item, according to IEC 60721-3-3

Full drive, ready for use in the application

Several optional items available to customize the project

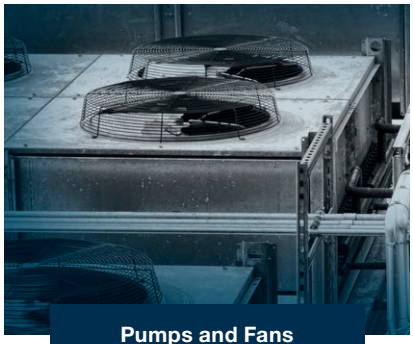
In compliance with the main international standards

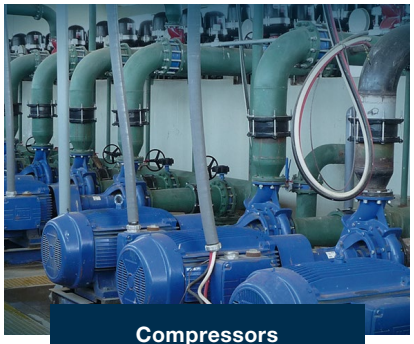
VSD compatible with WEG WPS and MFM programming and asset management software[1)]

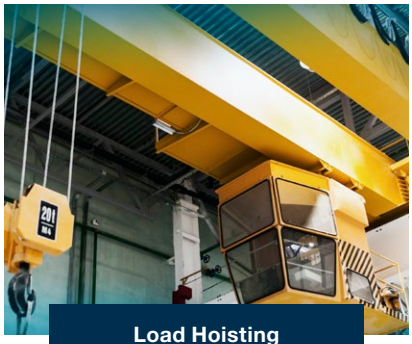
Note: 1) MFM - Upon acquisition of the license.

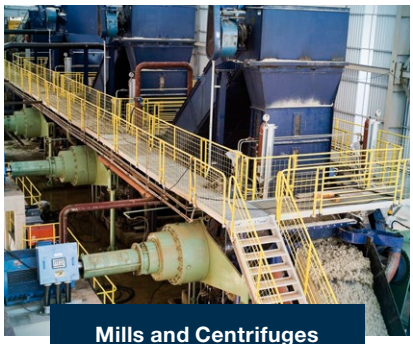
Applications

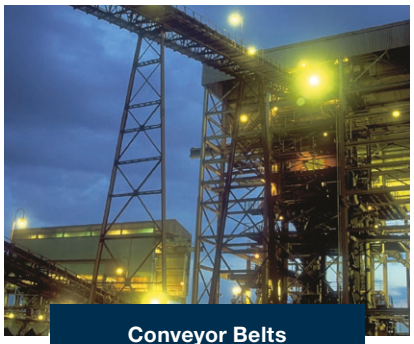
The AFW900 was designed to meet the widest range of applications and segments.


Pumps and Fans

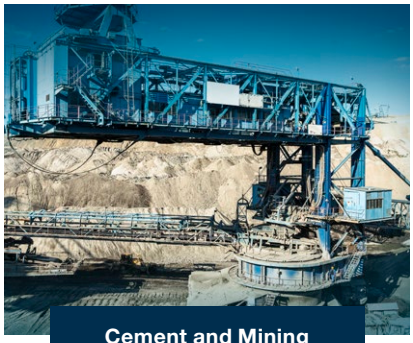

Compressors


Load Hoisting

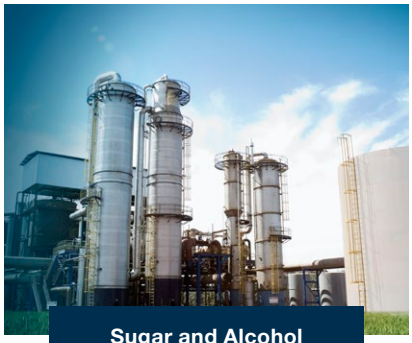

Mills and Centrifuges


Conveyor Belts


Machines and Processes in General


Cement and Mining


Water & Wastewater Treatment

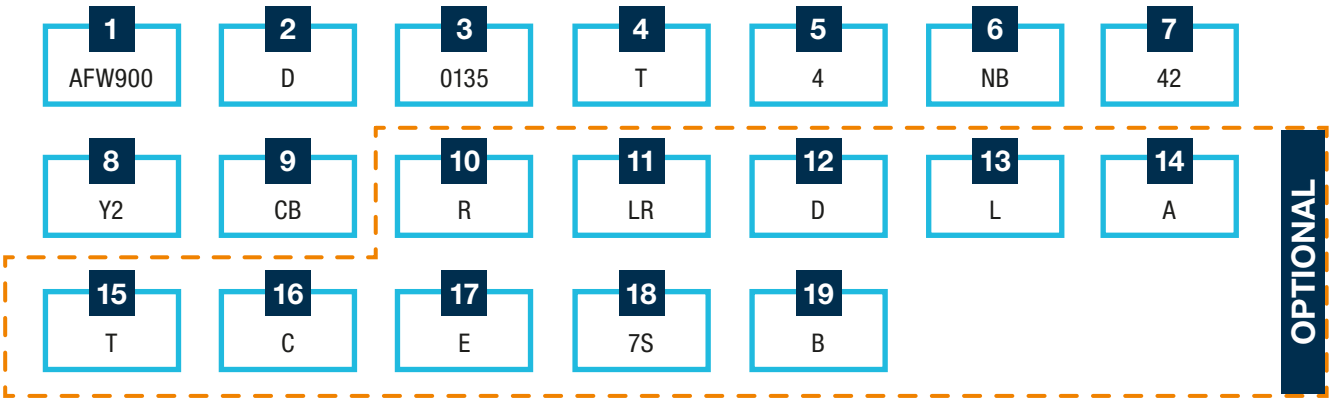

Sugar and Alcohol


Oil & Gas


Agribusiness


Pulp and Paper

Coding



1 – Drive type

AFW900	Standard
AFW900C	Compact version

2 – Frame

	AFW900		
	200 - 240 V	208 - 240 V	380 - 440 V
A	4.6... 19 A		2.8... 17 A
B	26... 45 A		26... 39 A
C	56... 80 A		50... 74 A
D		110... 150 A	96... 146 A
E		172... 250 A	172... 242 A
F		315... 370 A	315... 370 A
G			430... 601 A
H			760 A

3 – Rated current in normal duty (ND)

AFW900				
200 - 240 V		208 - 240 V	380 - 440 V	
04P6 = 4.6 A 06P0 = 6 A 07P5 = 7.5 A 10P6 = 10.6 A 13P0 = 13 A 19P0 = 19 A	26P0 = 26 A 34P0 = 34 A 45P0 = 45 A 56P0 = 56 A 70P0 = 70 A 80P0 = 80 A	0110 = 110 A 0135 = 135 A 0150 = 150 A 0172 = 172 A 0195 = 195 A 0250 = 250 A 0315 = 315 A 0370 = 370 A	02P8 = 2.8 A 03P6 = 3.6 A 04P8 = 4.8 A 06P5 = 6.5 A 09P6 = 9.6 A 14P0 = 14 A 17P0 = 17 A 26P0 = 26 A 33P0 = 33 A 39P0 = 39 A 50P0 = 50 A 62P0 = 62 A 74P0 = 74 A	96P0 = 96 A 0124 = 124 A 0146 = 146 A 0172 = 172 A 0203 = 203 A 0242 = 242 A 0315 = 315 A 0370 = 370 A 0430 = 430 A 0480 = 480 A 0540 = 540 A 0601 = 601 A 0760 = 760 A

4 – Number of phases

T	Three-phase power supply

5 – Power supply 50/60 Hz

2	200 to 240 V (A, B and C), 208 to 240 V (D, E, F, G and H)
4	380 to 480 V

6 – Dynamic braking[1)]

NB	Without braking IGBT (standard D and E)
DB	With braking IGBT (standard A, B and C)

7 – Cabinet protection rating

42	IP42 protection rating
54	IP54 protection rating (only in the compact version)
55	IP55 protection rating

8 – Safety functions

Y2	With STO and SS1-t functions

9 – Power input protection[2)]

CB	With circuit breaker
DS	With switch-disconnector

10 – Output filter (optional)[3)]

---	No output filter
R	With output reactor

11 – Local-remote selector switch (optional)

---	No local-remote selector switch
LR	With local-remote selector switch

12 – Digital input and output module (optional)[4)]

---	No expansion module
D	With IOD-01

13 – Relay output module (optional)[4)5)]

---	No expansion module
L	With additional REL-01

14 – Analog input and output module (optional)[4)]

---	No expansion module
A	With IOAI-01

15 – Temperature sensor module (optional)[4)]

---	No expansion module
T	With TEMP-01

16 – Communication module (optional)[4)]

---	No expansion module
C	With CCAN-W

17 – Encoder module (optional)[4)]

---	No expansion module
E	With ENC-01

18 – Backplane for installing additional expansions (optional)[4)]

---	With 4 slots backplane
7S	With 7 slots backplane

19 – HMI version

---	HMI without Bluetooth®
B	HMI with Bluetooth® (standard)

Notes: 1) In the standard version, the braking module is available in frame sizes A, B and C and is optional for frame sizes D to H, but does not include protection and terminal connection, it also does not incorporate the braking resistor.
2) For the A mechanics and all compact versions, the only input protection option is a circuit breaker.
3) Other filter options in customized versions. The compact version does not allow the installation of any type of output filter.
4) It is possible to add to the standard VSD cabinet up to 3 selectable options in fields 12 to 17. For configurations with more options, it is necessary to add the 7-slot backplane for up to 6 optional items.
5) In the standard drive, one unit of the REL-01 module is included, if you select the "L" option in field 13, an additional unit of the REL-01 module will be inserted.

Optional items

Description of selectable optional items in the coding

Optional item type	Reference in the AFW900 code	Description	Selectable options in the AFW900 coding	Selectable options in the AFW900C coding
Output filter	R	Output reactor, for applications with cable distances between the drive and motor from 200 to 500 meters	√	-
Control	LR	Local-remote selector switch installed on the panel door	√	√

Optional item type	Reference in the AFW900 code	Separate reference as CFW900 accessory[1)]	Description	Selectable options in the AFW900 coding	Selectable options in the AFW900C coding[3)]
I/O and temperature expansion	D	CFW900-IOD-01	Module with 8 isolated digital inputs and 8 isolated digital outputs	√	√
	L	CFW900-REL-01	Module with 3 relay digital outputs	√	√
	A	CFW900-IOAI-01	Module with 3 analog inputs and 2 isolated analog outputs	√	√
	T	CFW900-TEMP-01	Module with 6 isolated inputs for PTC/Pt-100/Pt-1000 sensors	√	√
Communication	C	CFW900-CCAN-W	CAN interface module (CANopen / DeviceNet)	√	√
Encoder interface	E	CFW900-ENC-01	Module for connection of incremental encoder with signal up to 310 kHz	√	√
4-slot backplane	-	CFW900-4SLOTS	Standard backplane with 4 accessory slots[2)]	Standard	Standard
7-slot backplane	7S	CFW900-7SLOTS	Optional backplane with 7 accessory slots[2)]	√	√
HMI with Bluetooth®	B	CFW900-IHM-BLT H	HMI with Bluetooth® interface	Standard	Standard
HMI	-	CFW900-IHM	HMI	√	√
MicroSD	-	CFW900-SDC	8GB industrial temperature compatible microSD card	Separated only	Separated only

Notes: 1) The items are accessories common to the CFW900. If they are not configured in the AFW900, the user can add them separately; however, in this condition, the terminal block interconnection cables (when applicable) will not be provided or indicated in the electrical schematic drawings.
The CFW900 VSD allows the installation of up to 4 accessories on the standard backplane or up to 7 accessories with the optional backplane. For further details, refer to the CFW900 VSD manual.
2) One of the slots is already occupied in the standard drive.
3) The compact version AFW900C does not allow the connection of accessories to the panel terminal block.

Characteristics

The AFW900 Cabinet Built Variable Speed Drive provides high performance, connectivity, flexibility, space optimization and safety in line with the requirements of IEC 61439-1/2.

The AFW900 is available in two options:
- Standard configuration with the options provided in the product coding seciton[1)]
- Customized configuration according to project requirements[2)]

The standard configuration includes in the basic version without the optional items, the following features:

On the cabinet:
- Power protection against short-circuit currents through high speed fuses
- Power disconnection with external handle through circuit breaker or switch-disconnector, according to coding
- *On*, *Off* and *Emergency* buttons. The emergency button is connected to the monitored safety inputs
- Panel energized, motor running and alarm panel signaling
- Internal lighting and dehumidifier module 220 VAC 50/60 Hz
- Cabinet ventilation system on the door or ceiling extractor depending on the frame
- Panel door-mounted HMI with connectivity via mini USB type B port and Bluetooth®

On the drive:
- 2 differential analog inputs of -10/0 to 10 V or 0/4 to 20 mA
- 6 digital inputs of 24 VDC
- 2 analog outputs from 0 to 10 V or 0/4 to 20 mA
- 2 transistor digital outputs (NPN) of 40 mA, 24 VDC
- 2 NO relay outputs and 1 NO/NC relay output (in module REL-01 supplied as standard)
- Inputs for safety stop with STO and SS1-t functions
- RS485 Modbus-RTU communication port
- Ethernet Dual Port with EtherNet/IP, Modbus-TCP and MQTT protocols
- Industrial microSD card slot (optional card)
- Standard braking IGBT in frame sizes A, B and C and optional selectable in coding for frame sizes D to H
- DC link inductor for harmonic mitigation in compliance with IEC 61000 3-2/4 and unrestricted for low impedance networks
- Class C3 RFI filter to reduce electromagnetic interference
- Conformal coating class 3C2 for greater protection of electronic boards

Notes: 1) For other features not specified above, check the Optional Items section for selecting them.
2) For additional features not specified above and not available in the Optional Items section, contact your sales representative to analyze a customized version.

Illustrative images of the Standard version

Specification

Standard version

AFW900 voltage 380-480 V - basic version without optional items

AFW900 cabinet built variable speed drive								Maximum applicable IEC motor [6]					
Basic reference[1]	Three-phase supply voltage (V)	Frame	IGBT braking	Cabinet dimension H x W x D (mm)[5]	Cabinet weight (kg)	Rated output current (A)		Normal duty overload (ND)			Heavy duty overload (HD)		
								60 Hz	50 Hz	60 Hz	60 Hz	50 Hz	60 Hz
								380 V	400 V	440 V	380 V	400 V	380 V
						(ND) [2]	(HD) [3] [4]	(cv)	(kW)	(cv)	(cv)	(kW)	(cv)
AFW900A02P8T4DB□Y2♦	380-440	A	Built-in	1,000 x 400 x 300	60	2.8	2.4	1.5	1.1	1.5	1	1.1	1.5
AFW900A03P6T4DB□Y2♦						3.6	2.8	2	1.5	2	1.5	1.1	1.5
AFW900A04P8T4DB□Y2♦						4.8	3.9	3	2.2	3	2	1.5	2
AFW900A06P5T4DB□Y2♦						6.5	5.3	3	3	4	3	2.2	3
AFW900A09P6T4DB□Y2♦						9.6	8	6	4	6	4	3	5
AFW900A14P0T4DB□Y2♦						14	12	7.5	7.5	10	6	5.5	7.5
AFW900A17P0T4DB□Y2♦						17	17	10	7.5	12.5	10	7.5	12.5
AFW900B26P0T4DB□Y2♦		B		1,620 x 400 x 600	140	26	21	15	11	20	12.5	11	12.5
AFW900B33P0T4DB□Y2♦						33	28	20	15	25	15	11	20
AFW900B39P0T4DB□Y2♦						39	33	25	18.5	30	20	15	25
AFW900C50P0T4DB□Y2♦		C			150	50	40	30	22	30	25	18.5	30
AFW900C62P0T4DB□Y2♦						62	50	40	30	40	30	22	30
AFW900C74P0T4DB□Y2♦						74	62	50	37	60	40	30	40
AFW900D96P0T4NB□Y2♦		D	Not built-in	2,020 x 400 x 600	200	96	75	60	45	75	50	37	60
AFW900D0124T4NB□Y2♦						124	103	75	55	100	60	55	75
AFW900D0146T4NB□Y2♦						146	124	100	75	100	75	55	100
AFW900E0172T4NB□Y2♦		E			250	172	146	125	90	125	100	75	100
AFW900E0203T4NB□Y2♦						203	161	150	110	150	100	90	125
AFW900E0242T4NB□Y2♦						242	190	175	132	200	125	90	150
AFW900F0315T4NB□Y2♦		F		2,320 x 450 x 600	380	315	263	200	185	250	200	150	200
AFW900F0370T4NB□Y2♦						370	315	250	185	300	200	185	250
AFW900G0430T4NB□Y2♦		G		2,320 x 850 x 600	560	430	370	300	220	350	250	220	300
AFW900G0480T4NB□Y2♦						480	430	350	260	400	300	220	350
AFW900G0540T4NB□Y2♦						540	480	400	300	450	350	260	400
AFW900G0601T4NB□Y2♦						601	515	450	355	500	350	300	400
AFW900H0760T4NB□Y2♦		H		2,320 x 1,000 x 600	605	760	601	550	440	650	450	355	500

Notes: 1) Replace □ with 42 for IP42 protection rating or 55 for IP55 protection rating.
Replace ♦ with CB for circuit breaker at the input or DS for switch-disconnector at the input. Note: for currents up to 17 A (ND), only circuit breaker.
Add the optional code at the end of the code according to the Coding section from field 10 to 19.
2) ND = Normal Duty (normal overload = 110% of rated current for one minute or 150% of rated current for 3 seconds with an overload every 10 minutes).
3) HD = Heavy Duty (heavy overload = 150% of rated current for one minute or 200% of rated current for 3 seconds with an overload every 10 minutes).
4) In the standard version, circuit breakers, power switch-disconnectors or output reactors (if added) are configured according to the ND current.
5) The cabinet dimensions do not consider the lifting lugs, roof exhaust, or cabinet door controls. Refer to the dimensional section for details.
6) Motor power ratings are based on WEG W22 IR3 Premium 3-phase, 4-pole motors, at the respective voltages and frequencies. Motor currents may vary according to speed and manufacturer, so use the above references as a guide only. Correct sizing of the AFW900 must be based on the current of the motor to be used.

Specification

Compact version

AFW900C voltage 220 V - basic version without optional items

AFW900 cabinet built variable speed drive								Maximum applicable IEC motor [6]			
Basic reference[1]	Three-phase supply voltage (V)	Frame	IGBT braking	Cabinet dimension H x W x D (mm)[5]	Cabinet weight (kg)	Rated output current (A)		Normal duty overload (ND)		Heavy duty overload (HD)	
								60 Hz	50 Hz	60 Hz	50 Hz
								220 V	230 V	220 V	230 V
						(ND) [2]	(HD) [3] [4]	(cv)	(kW)	(cv)	(kW)
AFW900CC0080T2DB54Y2CBB	220-240	C	Built-in	1,580 x 400 x 400	54	80	70	30	22	25	19
AFW900CD0110T2NB54Y2CBB		D	Not built-in	1,580 x 400 x 400	62	110	92	40	30	30	22
AFW900CD0135T2NB54Y2CBB						135	110	50	37	40	30
AFW900CD0150T2NB54Y2CBB						150	124	60	45	50	37
AFW900CE0172T2NB54Y2CBB		E		1,620 x 400 x 600	89	172	150	60	55	60	45
AFW900CE0195T2NB54Y2CBB						195	160	75	55	60	45
AFW900CE0250T2NB54Y2CBB						250	211	100	75	75	55
AFW900CF0315T2NB54Y2CBB		F		2,020 x 450 x 600	112	315	263	125	90	100	90
AFW900CF0370T2NB54Y2CBB						370	315	150	110	125	90

Notes: 1) The compact version is only available with an IP54 protection rating and an input circuit breaker.
Add the optional code at the end of the code according to the Coding section from field 11 to 19.
2) ND = Normal Duty (normal overload = 110% of rated current for one minute or 150% of rated current for 3 seconds with an overload every 10 minutes).
3) HD = Heavy Duty (heavy overload = 150% of rated current for one minute or 200% of rated current for 3 seconds with an overload every 10 minutes).
4) In the standard version, the input circuit breaker is configured based on the ND current.
5) The cabinet dimensions do not consider the lifting lugs, roof exhaust, or cabinet door controls. Refer to the dimensional section for details. The compact version features an external heatsink located at the rear of the panel. To ensure proper operation and thermal dissipation, a minimum spacing of 200 mm must be maintained between the rear of the panel and the wall behind it.
6) Motor power ratings are based on WEG W22 IR3 Premium 3-phase, 4-pole motors, at the respective voltages and frequencies. Motor currents may vary according to speed and manufacturer, so use the above references as a guide only. Correct sizing of the AFW900 must be based on the current of the motor to be used.

Specification

Compact version

AFW900C voltage 380-480 V - basic version without optional items

AFW900 cabinet built variable speed drive								Maximum applicable IEC motor [6]					
Basic reference[1]	Three-phase supply voltage (V)	Frame	IGBT braking	Cabinet dimension H x W x D (mm)[5]	Cabinet weight (kg)	Rated output current (A)		Normal duty overload (ND)			Heavy duty overload (HD)		
								60 Hz	50 Hz	60 Hz	60 Hz	50 Hz	60 Hz
								380 V	400 V	440 V	380 V	400 V	380 V
						(ND) [2]	(HD) [3] [4]	(cv)	(kW)	(cv)	(cv)	(kW)	(cv)
AFW900CC0074T4DB54Y2CBB	380-440	C	Built-in	1,580 x 400 x 400	54	74	62	50	37	60	40	30	40
AFW900CD0096T4NB54Y2CBB		D	Not built-in	1,580 x 400 x 400	62	96	75	60	45	75	50	37	60
AFW900CD0124T4NB54Y2CBB						124	103	75	55	100	60	55	75
AFW900CD0146T4NB54Y2CBB						146	124	100	75	100	75	55	100
AFW900CE0172T4NB54Y2CBB		E		1,620 x 400 x 600	89	172	146	125	90	125	100	75	100
AFW900CE0203T4NB54Y2CBB						203	161	150	110	150	100	90	125
AFW900CE0242T4NB54Y2CBB						242	190	175	132	200	125	90	150
AFW900CF0315T4NB54Y2CBB		F		2,020 x 450 x 600	112	315	263	200	185	250	200	150	200
AFW900CF0370T4NB54Y2CBB						370	315	250	185	300	200	185	250
AFW900CG0430T4NB54Y2CBB		G		2,020 x 850 x 600	184	430	370	300	220	350	250	220	300
AFW900CG0480T4NB54Y2CBB						480	430	350	260	400	300	220	350
AFW900CG0540T4NB54Y2CBB						540	480	400	300	450	350	260	400
AFW900CG0601T4NB54Y2CBB						601	515	450	355	500	350	300	400
AFW900CH0760T4NB54Y2CBB		H		2,020 x 1,000 x 600	196	760	601	550	440	650	450	355	500

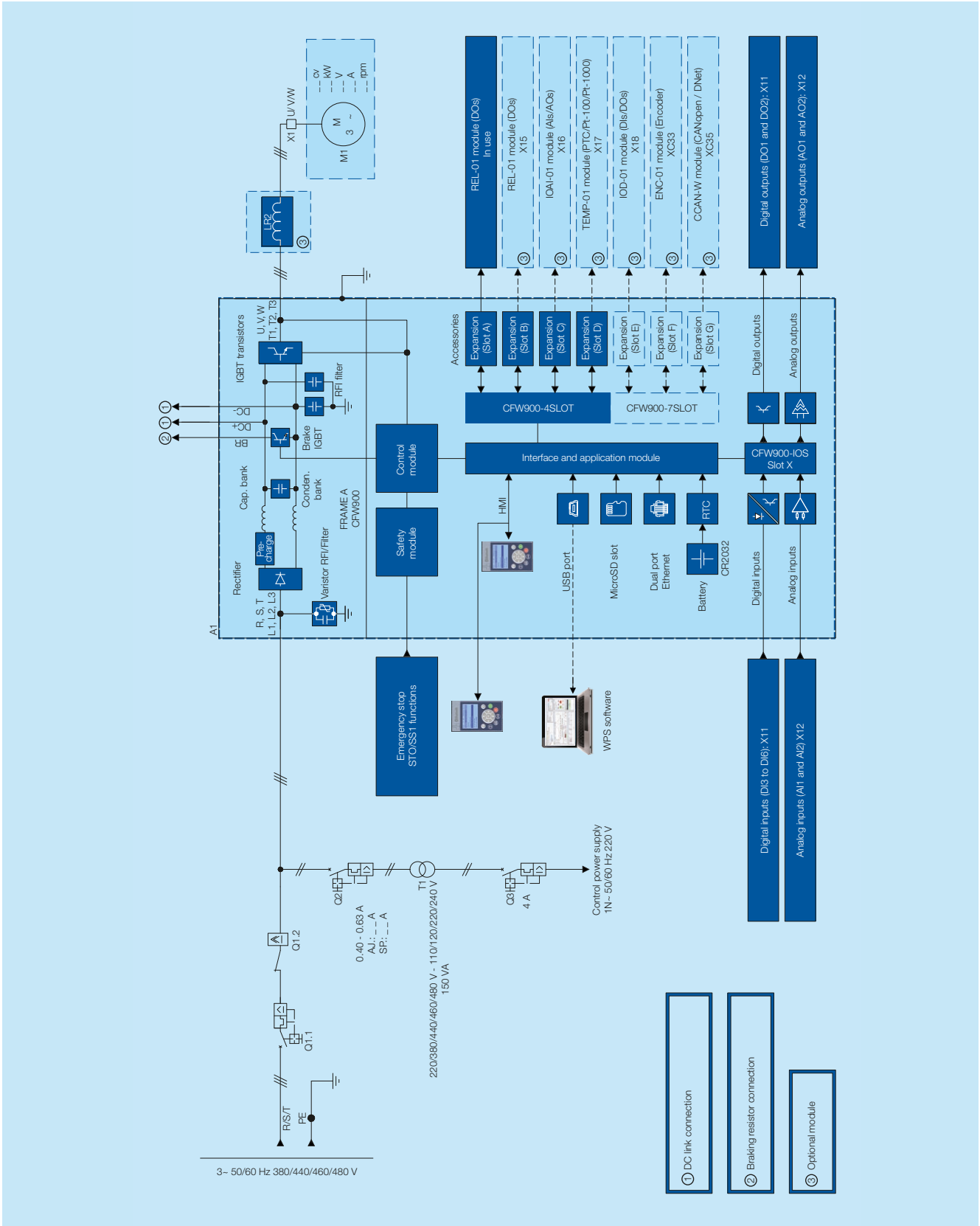
Notes: 1) The compact version is only available with an IP54 protection rating and an input circuit breaker.
Add the optional code at the end of the code according to the Coding section from field 11 to 19.
2) ND = Normal Duty (normal overload = 110% of rated current for one minute or 150% of rated current for 3 seconds with an overload every 10 minutes).
3) HD = Heavy Duty (heavy overload = 150% of rated current for one minute or 200% of rated current for 3 seconds with an overload every 10 minutes).
4) In the standard version, the input circuit breaker is configured based on the ND current.
5) The cabinet dimensions do not consider the lifting lugs, roof exhaust, or cabinet door controls. Refer to the dimensional section for details. The compact version features an external heatsink located at the rear of the panel. To ensure proper operation and thermal dissipation, a minimum spacing of 200 mm must be maintained between the rear of the panel and the wall behind it.
6) Motor power ratings are based on WEG W22 IR3 Premium 3-phase, 4-pole motors, at the respective voltages and frequencies. Motor currents may vary according to speed and manufacturer, so use the above references as a guide only. Correct sizing of the AFW900 must be based on the current of the motor to be used.

Illustrative images of the Compact version

Diagrams

Typical block diagram of the AFW900 standard version - frame A

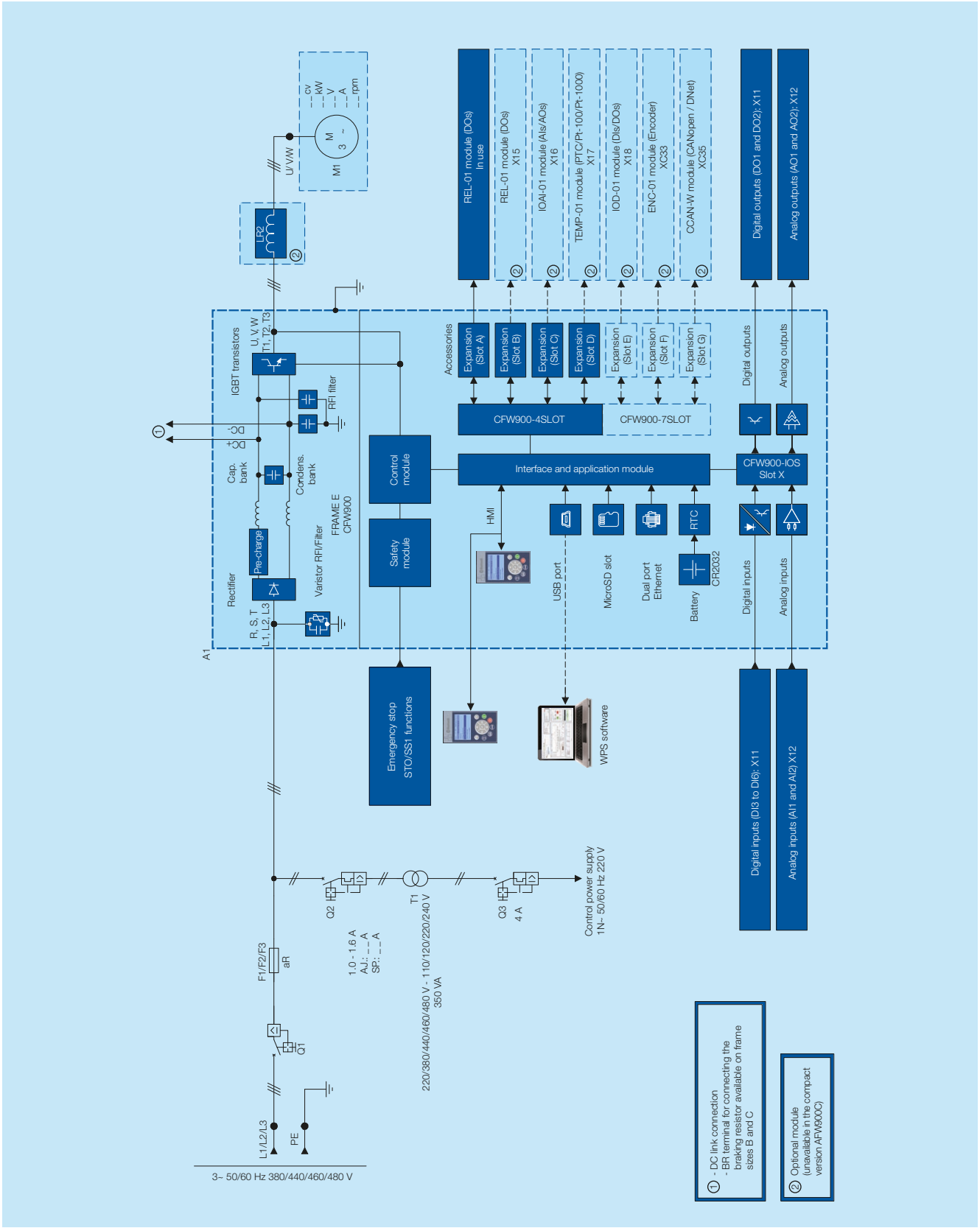
Single-line AFW900 2 A to 17 A (motor protector)



Diagrams

Typical block diagram of the AFW900 standard version - frames B, C, D, E, F, G and H

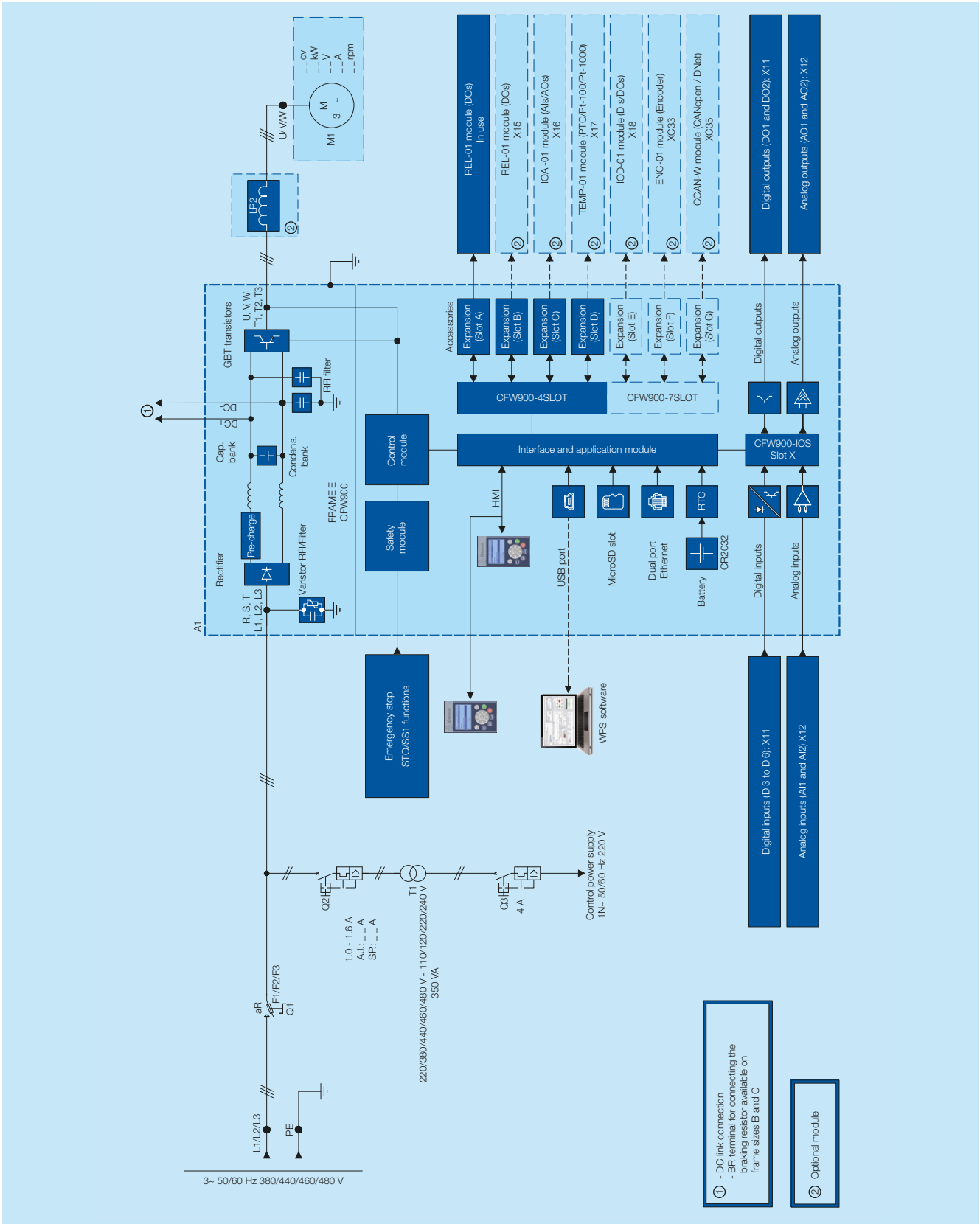
Single-line AFW900 26 A to 760 A (circuit breaker + fuses)



Diagrams

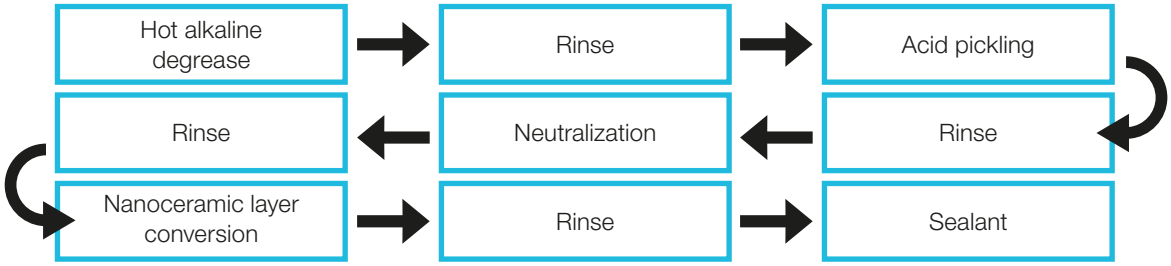
Typical block diagram of the AFW900 standard version - frames B, C, D, E, F, G and H

Single-line AFW900 26 A to 760 A (switch-disconnector + fuses)



Structure preparation and painting

Executed within strict quality control, it follows the procedure:



The quality, strength and durability of the coating are guaranteed by the following tests:

Adhesion degree

Testing reference and standard:
NBR 11003
Acceptance criteria evaluated:
X1Y1
Purpose: identify paint adhesion flaws

Resistance to salt spray environment

Testing reference and standard:
ASTM B117
Acceptance criteria:
500 hours
Purpose: evaluate the paint performance under accelerated corrosion condition

Resistance to immersion in distilled water

Testing reference and standard:
ASTM D870
Acceptance criteria:
24 hours
Purpose: evaluate the resistance of the paint in deionized water

Resistance to UV-A

Testing reference and standard:
ASTM D4587
Acceptance criteria:
500 hours
Purpose: evaluate the resistance of the painting to sun exposure

Topcoat

Cabinet type	Structure	Door	Walls	Mounting plate	Accidental touch protection
Self-supported	RAL 7035	RAL 7035	RAL 7035	Galvanized metal plate	Galvanized metal plate

Notes: It is recommended to install the cabinet in a sheltered, normal to slightly harsh industrial environment with an average relative humidity of up to 90%. Not recommended for direct exposure to alkalis, solvents and acidic vapors.
For installation in aggressive environments, with the presence of SO2, for example, contact WEG to evaluate the appropriate treatment for both the cabinet and the VSD (extra coating treatment on electronic circuit boards).

Tests

To ensure safety, performance and reliability, electrical panels must be subjected to type testing, verification procedures and routine testing according to the guidelines of IEC 61439-1/2. Type tests, which are carried out by the original manufacturer and are mostly destructive, check the structure and performance of the panel. Routine tests, which are conducted after the assembly, check that the panel meets the requirements established in the design.

Type tests

No.	Characteristic to be checked
1	Resistance of materials and parts:
	- Corrosion resistance
	Properties of the insulating materials:
	- Thermal stability
	- Resistance of the insulating material to abnormal heat and fire due to the internal electrical effects
	Resistance to ultraviolet radiation (UV)[1)]
	Lifting
	Mechanical impact
	Marking
2	Enclosure protection rating
3	Clearance distances
4	Creepage distances
5	Protection against electric shock and integrity of the protection circuits:
	- Effective continuity between exposed conductive parts of the ASSEMBLY and the protection circuit
	- Short circuit withstand capacity of the protection circuit
6	Switchgear and component integration
7	Internal electrical circuits and connections
8	Terminals for external conductors
9	Dielectric properties:
	- Withstand voltage at industrial frequency
	- Impulse withstand voltage
10	Temperature rise limits
11	Short circuit withstand capacity
12	Electromagnetic compatibility (EMC)

Routine tests

No.	Characteristic to be checked	
1	Construction verifications	Protection rating check
		Check of clearance and creepage distances
		Check of protections against electric shock and integrity of the protection circuits
2	Protection	Check of the built-in component integration
		Internal electrical circuit and connection check
		Check of the terminals for external conductors
		Mechanical operation check
3	Electrical checks	Dielectric properties
		Cabling, operating performance and function

Note: 1) Not applicable to metallic panels.

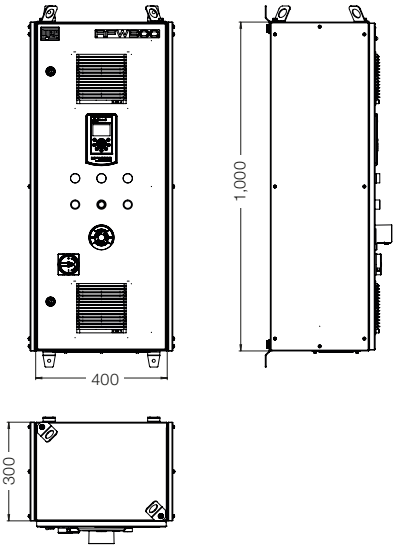
Technical data[1)]

Supply voltage (Ue)	220/380/440/460/480 V
Frequency	50/60 Hz
Rated insulation voltage (Ui)	690 V
Rated conditional short-circuit current of a set (Icc sim)	50 kA @ 1s
Control voltage[3)]	220 V
Auxiliary service voltage (heating/outlet and lighting)	220 V
Maximum rated impulse-withstand voltage	6 kV
Protection rating[2)]	IP42 or IP55 (according to selected product)
Operating temperature	-5 to 40 °C
Storage and transportation temperature	-25 to 60 °C
Altitude	Up to 1,000 m at rated conditions Above 1,000 m up to 2,000 m, derate the rated current by 1% for each 100 m increment Above 2,000 m on request
Humidity conditions	5% to 90% (non-condensing)
Painting scheme[2)]	WAU 05 - Phosphating and polyester powder coating
Cabinet color	Gray RAL 7035
Minimum paint layer thickness[2)]	80 µm
Mounting plates	Zinc-plated steel (unpainted)
Protection against touch	Zinc-plated steel (unpainted)
Overload	1.1 x rated current for 1 minute or 1.5 x rated current for 3 seconds (normal duty)
Installation type	Sheltered environment
Pollution degree	2 (IP42) / 3 (IP55)
Installation	Fixed sheltered
Cable entry/exit	Lower
Mounting	1
Diversity factor	1
Electromagnetic compatibility classification	C3
Planned grounding scheme	TT (grounded neutral)
Package for shipment type	Land
Standards	IEC 61439-1/2
	NR10
Plate thickness	Frame: #16 (1.5 mm) – 1,600 and 2,000 mm heights
	#14 (1.9 mm) – 2,300 mm height or 1,000 mm width
	Side and frame bracket: #14 (1.9 mm)
	Metal protection plate: #20 (0.9 mm)
	Mounting plate: #14 (1.9 mm)
	Bottom: #20 (0.9 mm)
	Door: #14 (1.9 mm)
	Rear wall: #20 (0.9 mm)
	Side: #16 (1.5 mm)
	Top: #16 (1.5 mm)
	Roof: #20 (0.9 mm)
	Ventilation bracket: #16 (1.5 mm)

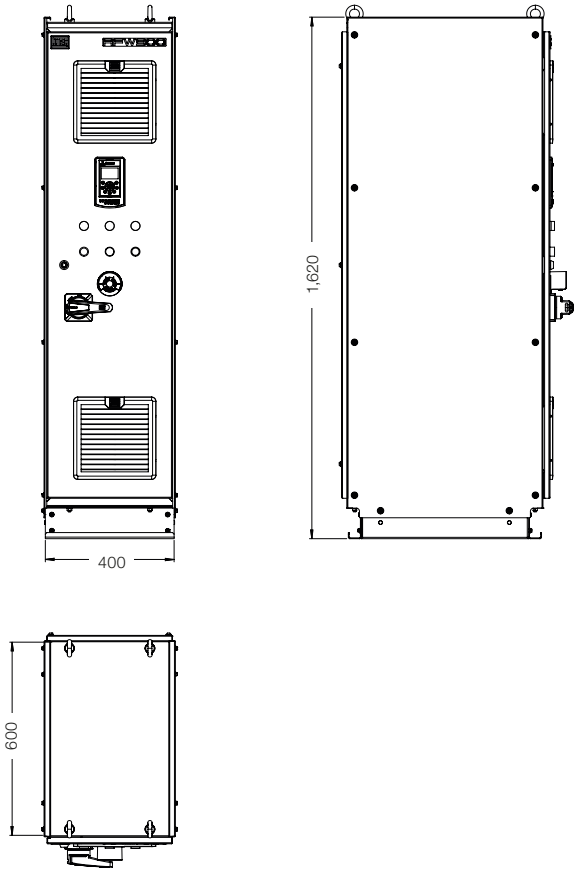
Notes: 1) For environments and specifications other than those presented, contact WEG.
2) For aggressive environments, for example, with the presence of SO2, contact WEG for versions with special treatment for the cabinet and electronic boards.
3) For different control voltages, contact WEG.
For further information, consult the AFW900 User Manual.

Dimension drawings

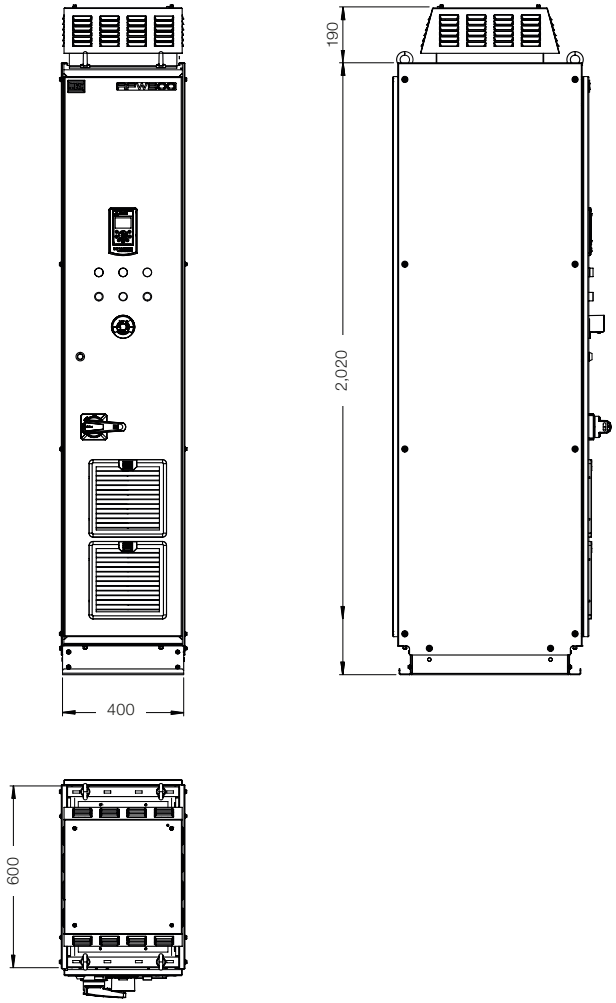
AFW900 - Frame A



AFW900 - Frames B and C



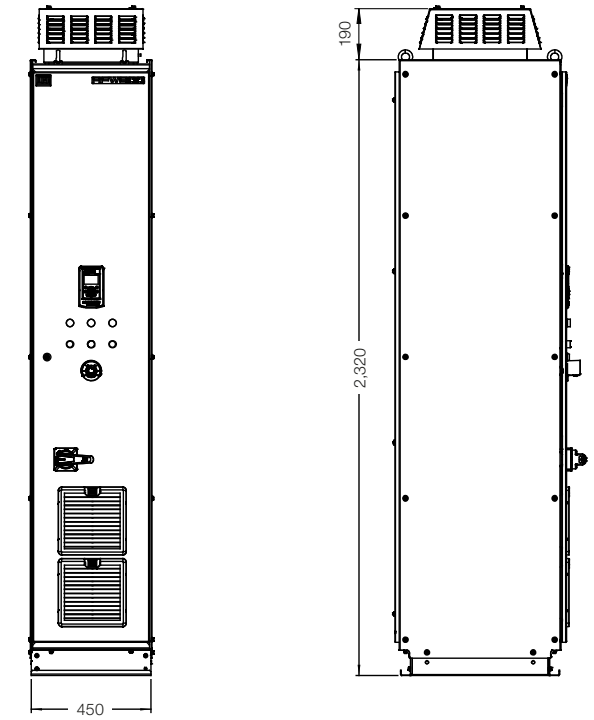
AFW900 - Frames D and E



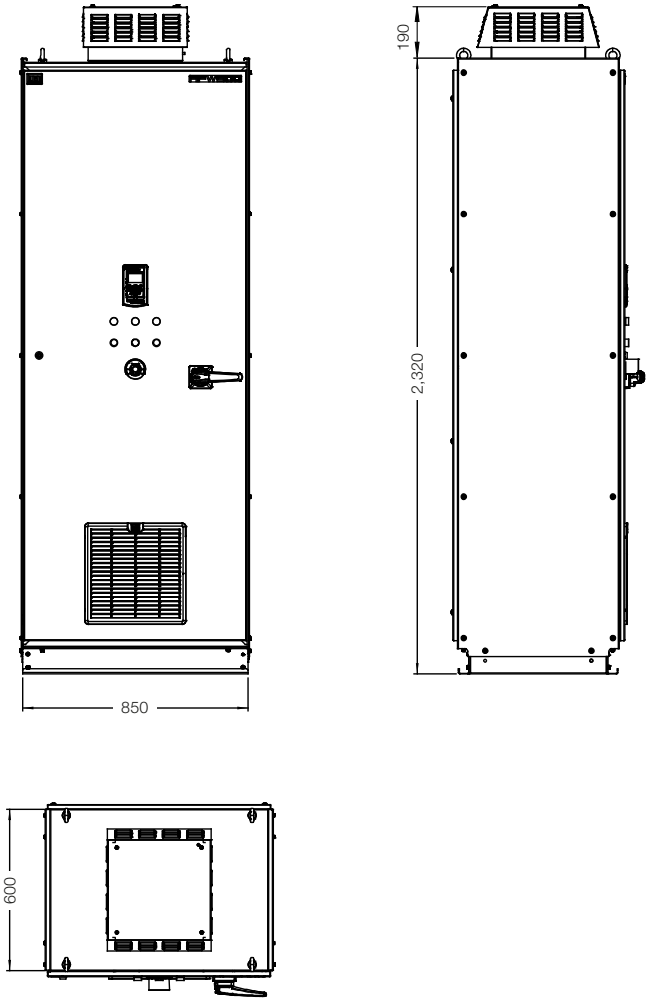
Note: dimensions in milimeters.

Dimension drawings

AFW900 - Frame F



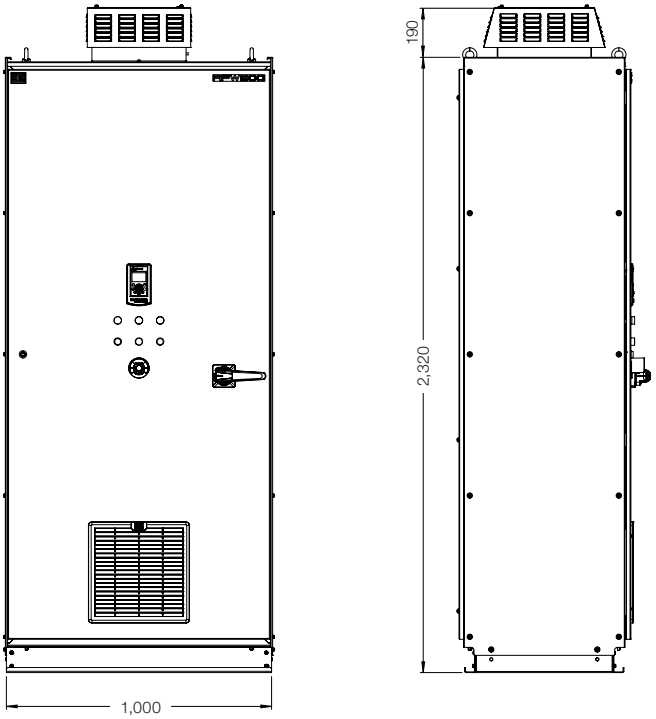
AFW900 - Frame G



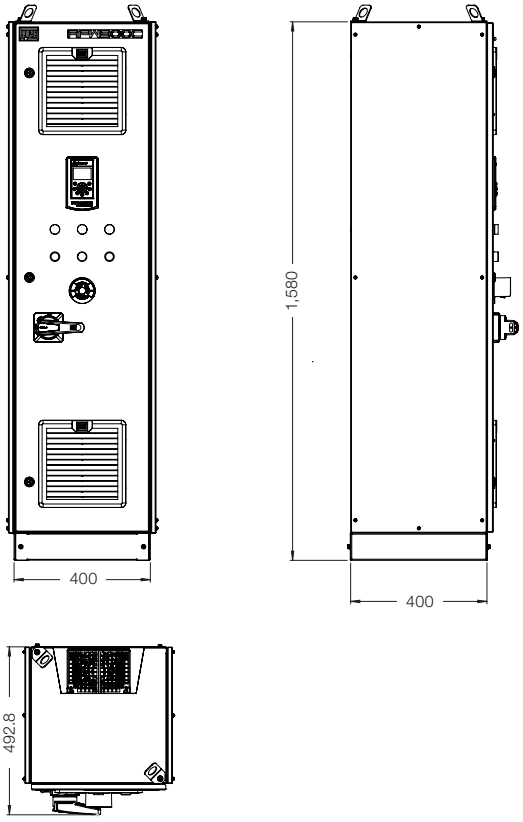
Note: dimensions in milimeters.

Dimension drawings

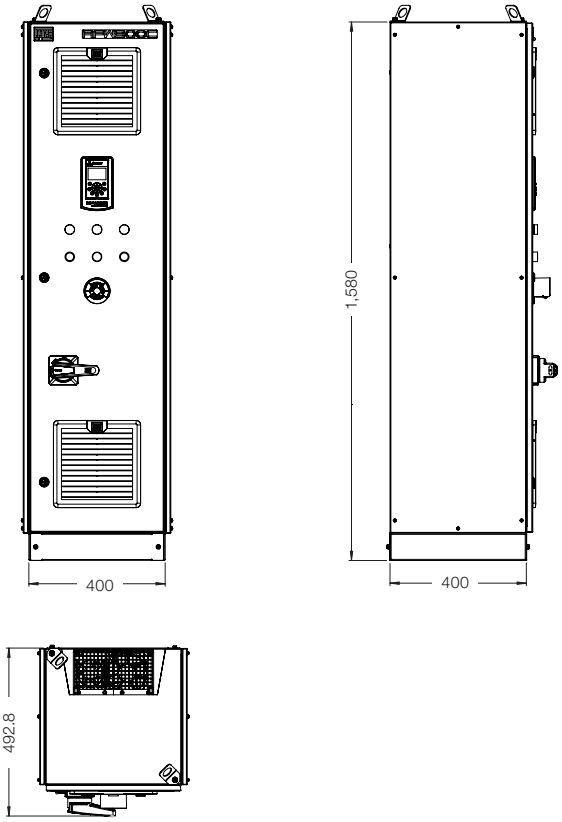
AFW900 - Frame H



AFW900C (compact) - Frame C



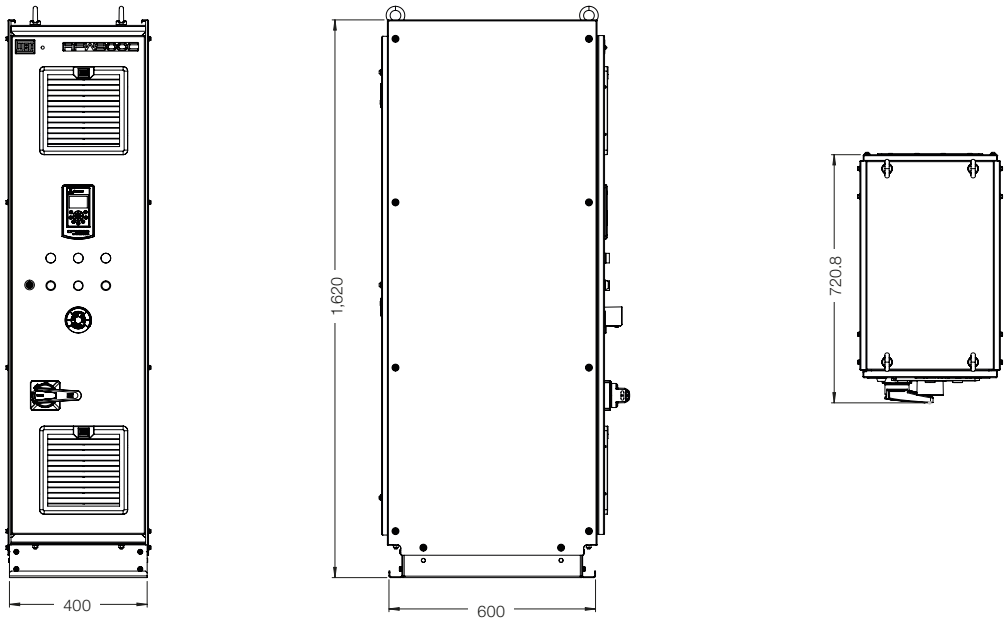
AFW900C (compact) - Frame D



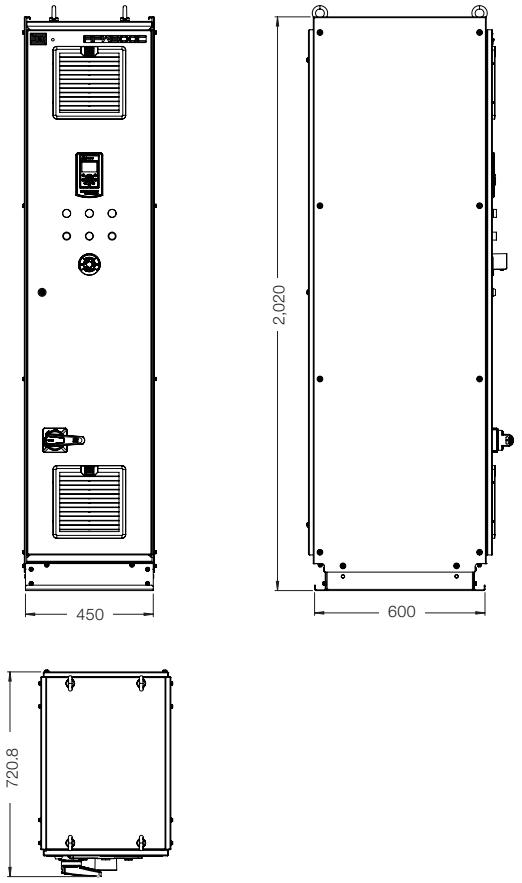
Notes: In the Compact version provide a minimum rear spacing of 200 mm between the panel and the wall.
Dimensions in milimeters.

Dimension drawings

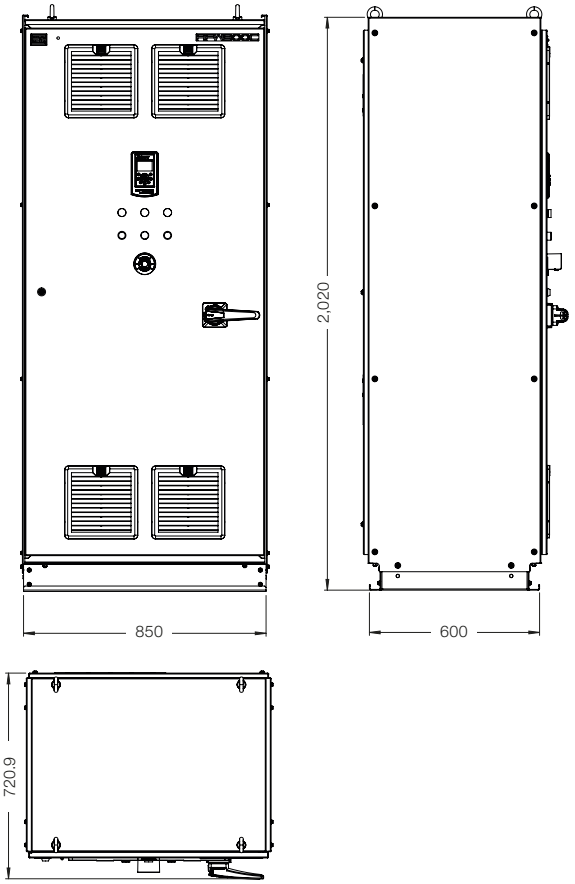
AFW900C (compact) - Frame E



AFW900C (compact) - Frame F



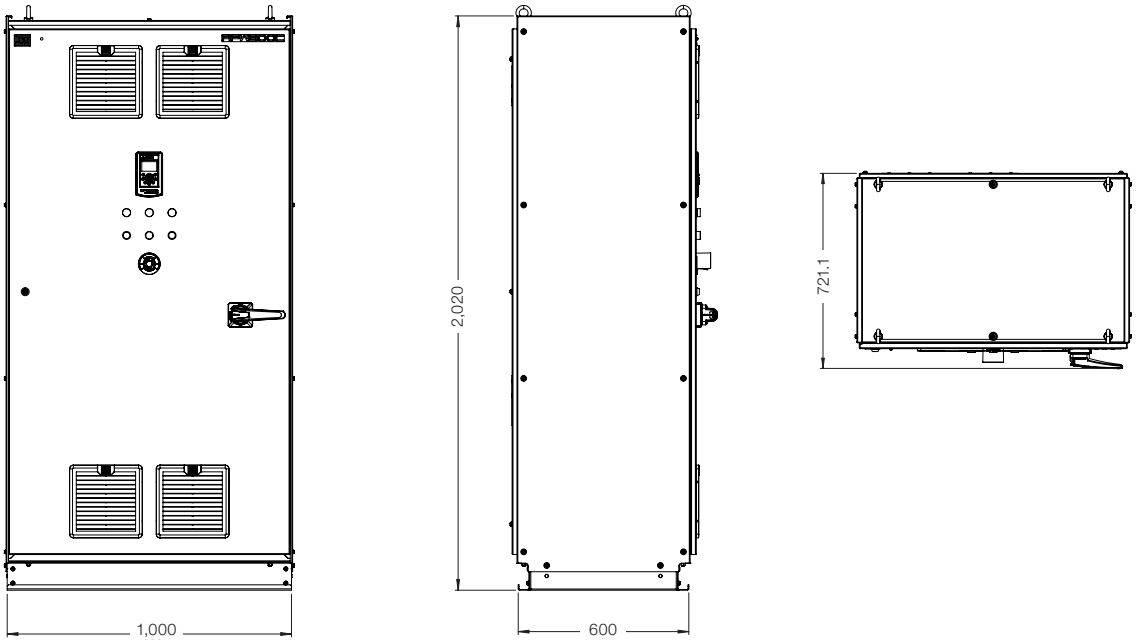
AFW900C (compact) - Frame G



Notes: In the Compact version provide a minimum rear spacing of 200 mm between the panel and the wall.
Dimensions in milimeters.

Dimension drawings

AFW900C (compact) - Frame H



Notes: In the Compact version provide a minimum rear spacing of 200 mm between the panel and the wall.
Dimensions in milimeters.

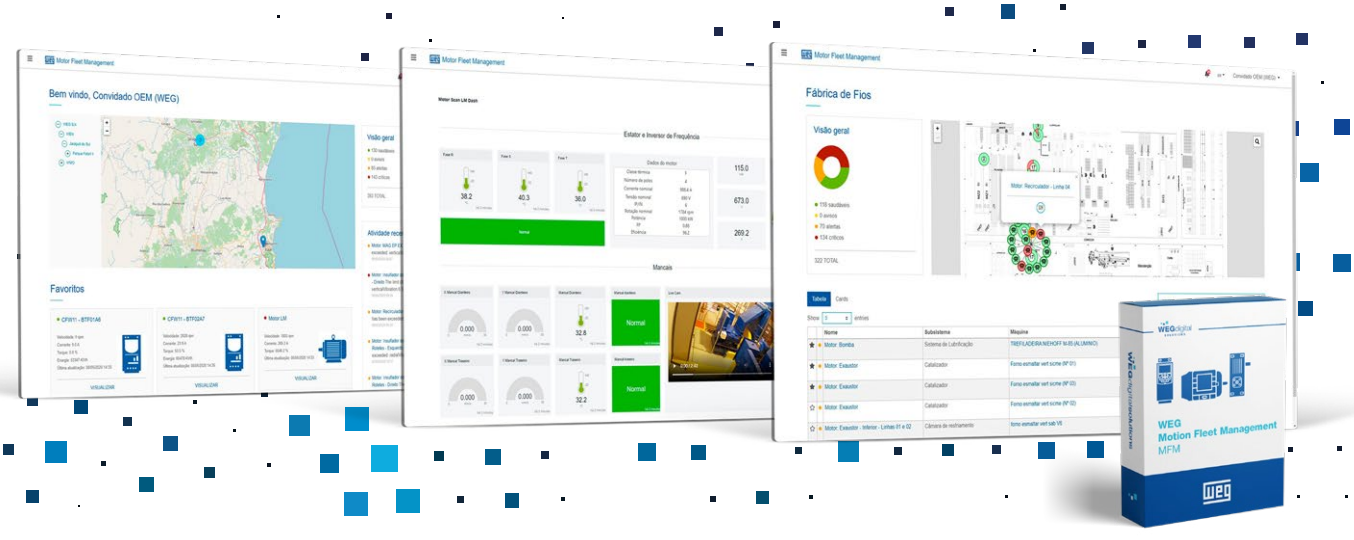
Customized solutions

In addition to the standard AFW900 featured in this catalogue, WEG offers an ideal solution for your application, including other options and customizations on the AFW900 and AFW11 platforms. We have a project engineering team to develop the best solution according to the characteristics of different industrial applications. Some optional items and customizations that can be added to the VSD cabinet are presented below:

- Passive harmonic filter at the high-efficiency input
- Active harmonic filter
- Regenerative units (AFE - Low Harmonic Active Front End Solution)
- Output dV/dt filter
- Sinusoidal output filter
- Multipulse rectifiers
- Dynamic braking
- Cabinet with water-cooled VSDs
- Cabinet with multiple VSDs
- Auxiliary starters (VSDs, soft-starters, direct-online)
- Controllers and communication systems
- Digital asset management solutions
- Instrumentation
- Top cables entry position
- Treatment for harsh environments
- Outdoor installation

Among other possibilities according to the need of the installation.

For any optional item other than those determined in the coding or in the necessary customizations, please contact your WEG sales representative.



Global presence is essential, as much as understanding your needs.

Global Presence

With more than 47,000 employees worldwide, WEG is one of the largest electric motors, electronic equipments and systems manufacturers. We are constantly expanding our portfolio of products and services with expertise and market knowledge. We create integrated and customized solutions ranging from innovative products to complete after-sales service.

WEG's know-how guarantees our ***AFW900 - Cabinet Built Variable Speed Drive*** is the right choice for your application and business, assuring safety, efficiency and reliability.

- **Availability** is to have a global support network
- **Partnership** is to create solutions that suits your needs
- **Competitive edge** is to unite technology and inovation

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Excelence is to provide a whole solution in industrial automation that improves our customers productivity.

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