Industrial Motors

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Automation

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Coatings

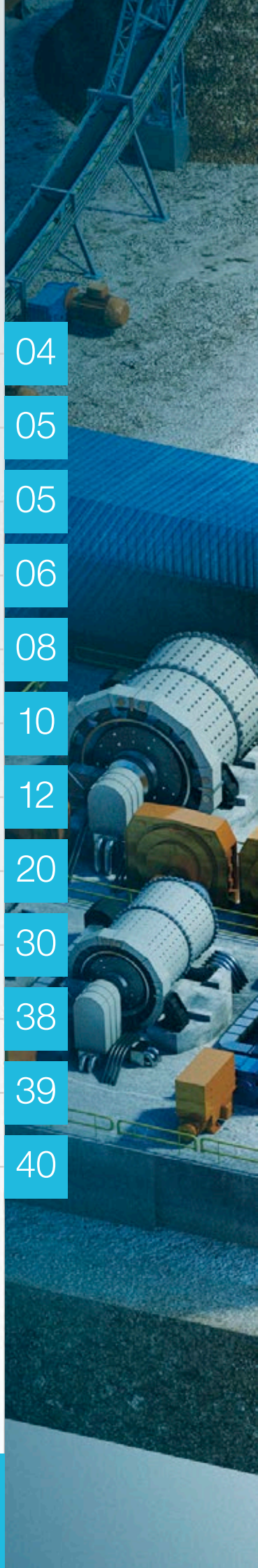
AFW11 Cabinet Built Variable Speed Drives

Complete solution to drive three-phase electric motors

Driving efficiency and sustainability

SUMMARY

Note: the products herein mentioned can be supplied from different locations. Check with your sales representative.



COMPLETE SOLUTION
TO DRIVE THREE-PHASE ELECTRIC MOTORS

CFW11 variable speed drive (VSD) solutions built in panels are costumized solution in accordance with **IEC 61439-1/2**. construction requirements. Their optimized and reliable design, production and assembly are based on **WEG's long experience in application using three-phase variable speed drives for electric motors**.

Offering convenience and flexibility, the **AFW11** can be mounted with optional accessories and engineered special customizations, according to the application requirements. The **AFW11C** is a compact and Self-Cooled version with simplified design to bring a simple and effective solution for three-phase electric motors control. **AFW11M G2** modular drive is ideal solution to drive higher power motors. In addition, the resources, special functions, hardware and software features of the CFW11 VSD are available for the complete line: AFW11, AFW11C and AFW11M G2 Solutions.

Product general overview

AFW11C

- Power range from 3 to 500 kW
- Voltage range from 380 to 690 V
- Compact design
- Self-standing CFW11 unit
- Self-Cooled version. No additional fans are installed in the cabinet, uses only VSD unit fans (flange mounted drive)
- Input protection included - Switch disconnector + fuses
- Basic optionals available

AFW11

- Power range from 2.2 to 630 kW
- Voltage range from 380 to 690 V
- Optimized design
- Self-standing CFW11 unit
- Input protection included plus additional accessories
- Allow instalation for optional items like input and output filters
- Flexible solution: allow customization (check optionals section)
- Available in Active Front End (regenerative) or Multi Pulse rectifier (check availability)

AFW11M G2

- Power range from 750 to 2,000 kW
- Voltage range from of 380 to 690 V
- Optimized design
- Self-standing CFW11M unit (modular power units)
- Input protection included plus additional accessories
- Allow instalation for optional items like input and output filters
- Flexible solution: allow customization (check optionals section)
- Available in Active Front End (regenerative) or Multi Pulse rectifier

Benefits

Optimized dimensions

Robustness: available in IP42 and IP54 versions

High performance and efficiency

Excellent cost-benefit

Complete assembly, ready for use in many applications

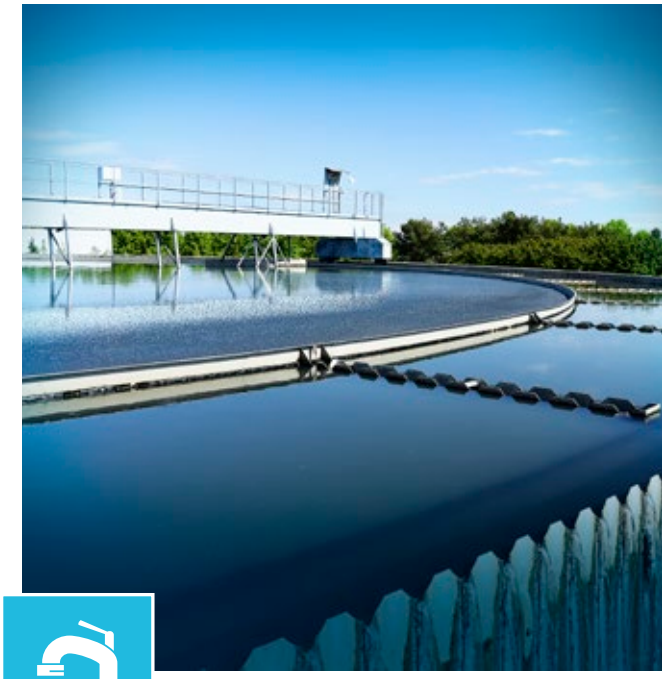
Several optional items available to customize the project

In compliance with the main international standards

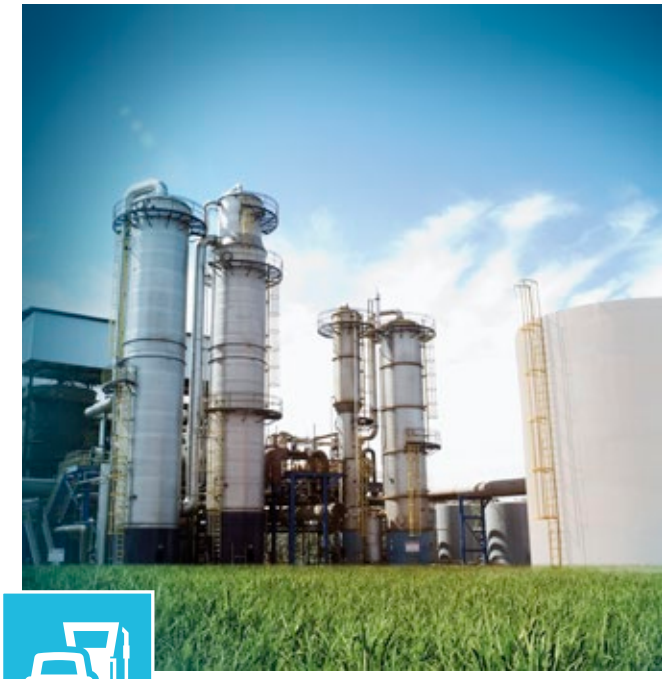
WEG quality and know-how

Applications

Cement & Mining



Water & Wastewater treament

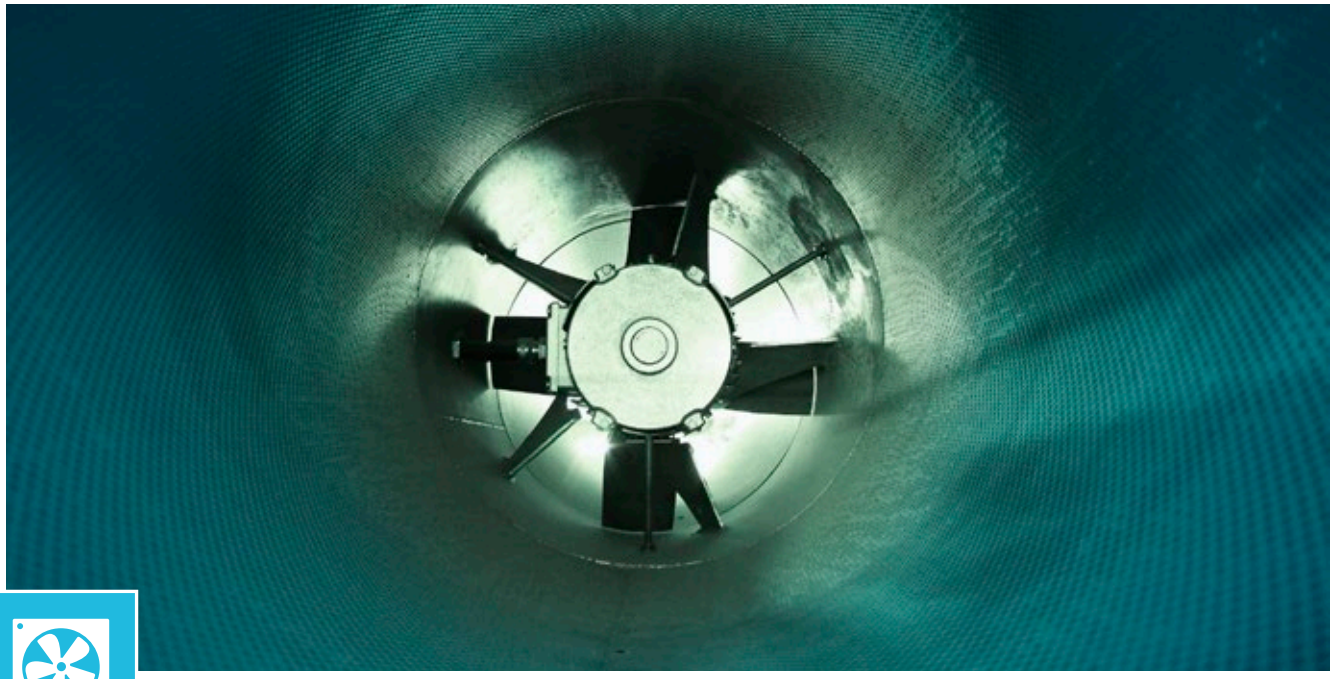


Sugar & Alcohol

Pulp & Paper

Applications

Oil & Gas



Ventilation systems

Coding section

Coding

The following coding applies to the three cabinet models with the CFW11 VSD – Type AFW11C, AFW11 or AFW11M G2.

1	2	3	4	5	6	7	8	9
AFW11	0242	T	4	S	---	---	---	Z

10	11	12	13	14	15	16
R	LR	RS4	ETH	IOB1	ENC1	IP42

1 - Type of AFW

AFW11C	Compact self cooled
AFW11	Standard
AFW11M G2	Modular drive

2 - Rated output current for Normal Duty (ND)

AFW11C				AFW11						AFW11M G2		
380-480 Vac	500-600 Vac[3]	660-690 Vac[3]		380-480 Vac		500-600 Vac		660-690 Vac		380-480 Vac	500-600 Vac	660-690 Vac
0070 = 70 A	0053 = 53 A	0002 = 2.9 A	0073 = 73 A	0003 = 3 A	0180 = 180 A	0002 = 2.9 A	0125 = 125 A	0002 = 2.9 A	0100 = 100 A	0634 = 634 A	0496 = 496 A	0439 = 439 A
0088 = 88 A	0063 = 63 A	0004 = 4.2 A	0100 = 100 A	0005 = 5 A	0211 = 211 A	0004 = 4.2 A	0150 = 150 A	0004 = 4.2 A	0108 = 108 A	1205 = 1,205 A	0942 = 942 A	0834 = 834 A
0105 = 105 A	0080 = 80 A	0007 = 7 A	0108 = 108 A	0007 = 7 A	0242 = 242 A	0007 = 7 A	0170 = 170 A	0007 = 7 A	0130 = 130 A	1807 = 1,807 A	1414 = 1,414 A	1251 = 1,251 A
0142 = 142 A	0107 = 107 A	0008 = 8.5 A	0130 = 130 A	0010 = 10 A	0312 = 312 A	0010 = 10 A	0216 = 216 A	0008 = 8.5 A	0147 = 147 A	2409 = 2,409 A	1885 = 1,885 A	1668 = 1,668 A
0180 = 180 A	0125 = 125 A	0011 = 11 A	0147 = 147 A	0013 = 13 A	0370 = 370 A	0012 = 12 A	0289 = 289 A	0011 = 11 A	0195 = 195 A	3012 = 3,012 A	2356 = 2,356 A	2085 = 2,085 A
0211 = 211 A	0150 = 150 A	0015 = 15 A	0195 = 195 A	0017 = 17 A	0477 = 477 A	0017 = 17 A	0315 = 315 A	0015 = 15 A	0259 = 259 A			
0242 = 242 A	0170 = 170 A	0020 = 20 A	0259 = 259 A	0024 = 24 A	0515 = 515 A	0022 = 22 A	0365 = 365 A	0020 = 20 A	0312 = 312 A			
0312 = 312 A	0216 = 216 A	0024 = 24 A	0312 = 312 A	0031 = 31 A	0601 = 601 A	0027 = 27 A	0435 = 435 A	0024 = 24 A	0365 = 365 A			
0370 = 370 A	0289 = 289 A	0030 = 30 A	0365 = 365 A	0038 = 38 A	0720 = 720 A	0032 = 32 A	0472 = 472 A	0030 = 30 A	0427 = 427 A			
0477 = 477 A	0315 = 315 A	0035 = 35 A	0427 = 427 A	0045 = 45 A	0760 = 760 A	0044 = 44 A	0584 = 584 A	0035 = 35 A	0478 = 478 A			
0515 = 515 A	0365 = 365 A	0046 = 46 A		0058 = 58 A	0795 = 795 A	0053 = 53 A	0625 = 625 A	0046 = 46 A	0518 = 518 A			
0601 = 601 A	0435 = 435 A	0054 = 54 A		0070 = 70 A	0877 = 877 A	0063 = 63 A	0758 = 758 A	0054 = 54 A	0628 = 628 A			
0720 = 720 A	0472 = 472 A			0088 = 88 A	1062 = 1,062 A	0080 = 80 A	0804 = 804 A	0073 = 73 A	0703 = 703 A			
0760 = 760 A				0105 = 105 A	1141 = 1,141 A	0107 = 107 A						
				0142 = 142 A								

3 - Number of phases

T	Three-phase

4 - Supply voltage 50/60 Hz

2	200..240 V[2]
4	380..480 V
5	500..600 V[3]
6	660..690 V[3]

5 - Optionals

S	Without optionals (factory default model)
0	With optionals items (fill in fields 6 to 8)

6 - RFI filter

---	Blank = Without RFI filter (factory default model)
FA	Built-in RFI Filter[6]

7 - Safety stop: Safe Torque Off (STO)

---	Blank = Not built-in STO (factory default model)
Y	BUILT-IN STO (Safe Toque Off)[4]

8 - External power supply of the electronics at 24 Vdc

---	Blank = Without external power supply of the electronics at 24 Vdc (factory default model)
W	With external power supply of the electronics at 24 Vdc[2]

9 – End of basic coding indicator digit

Z	End-of-code indicator (internal VSD)

Coding section

10 - Output afilter (load reactor)

---	Blank = Without load reactor (factory default model)
R	With load reactor[1)]

11 - Local-remote selector switch

---	Blank = Without selector
LR	Selector switch

12 - First communication module

---	Blank = Without communication module (factory default model)
RS2	RS232-01 (Modbus)
RS4	CAN/RS485-01 (CANopen or DeviceNet and Modbus-RTU)
DP1	Profibus-DP-01

13 - Second communication module (anybus slot)

---	Blank = Without communication module (factory default model)
DP5	Profibus-DP-05
DN5	DeviceNet-05
ETH	EtherNet/IP (Dual Port)
ETM	Modbus-TCP (Dual Port)
ETP	PROFINET IO (Dual Port)

14 - I/Os expantion module

---	Blank = Without I/Os expantion module (factory default model)
IOA1	I/Os expantion module IOA-01
IOB1	I/Os expantion module IOB-01
IOC1	I/Os expantion module IOC-01
IOC2	I/Os expantion module IOC-02
IOC3	I/Os expantion module IOC-03
IOE1	I/Os expantion module IOE-01
IOE2	I/Os expantion module IOE-02

15 - Encoder module

---	Blank = Without encoder module (factory default model)
ENC1	Encoder expantion module with repeater
ENC2	Encoder expantion module

16 - Cabinet degree of protection[5)]

IP42	Degree of protection IP42
IP54	Degree of protection IP54

Notes: 1) AFW11C line does not have the option with load reactor.
2) On request, customized version.
3) Standard for AFW11 frame size H and AFW11MG2. Other models on request.
4) Standard for AFW11 frame size H, see AFW11 specification table.
5) AFW11C Standard IP54.
AFW11 Standard IP42 or IP54, except frame size H which has only IP54.
AFW11M G2 Standard IP42, for IP54 customized version.
6) The option with or without "FA" is valid only for AFW11C and AFW11 versions from 3 A up to 105 A and supply voltage T4; on all other models, the RFI filter is built in as standard without "FA" in the coding.

Coding example

AFW110016T4SZRETHIOB1IP42:
VSD in panel model AFW11; rated current 16 A (0016); three-phase (T); 380 to 480 V (4); standard without optionals (S); end of VSD coding (Z); with load reactor (R); EtherNet/IP communication module (ETH); expansion module type IOB-01 (IOB1); degree of protection (IP42).

Accessories and optionals

The subitem “accessories” refer to internal plug-in modules that can be installed directly in the VSD unit, while “optionals” refer to items that must be installed from factory in the VSD unit or in the VSD cabinet. Below are tables with the available options.

Accessories – internal installation in CFW11 (VSD unit)

The table below lists the internal accessories available for application in the CFW11 VSD unit, showing the standard options available in the general coding and the options under request (customized).

	Module Reference[1) 2)]	Description	Slot[3) 4)]	Options selectable in AFW product coding	Options only avaliable for customized AFW
I/O expansion	IOA-01	1 14-bit voltage or current analog input; 2 digital inputs; 2 14-bits voltage or current analog outputs; 2 open collector digital outputs	1	√	
	IOB-01	2 isolated 12-bit analog inputs; 2 digital inputs; 2 14-bits voltage or current analog outputs; 2 open collector digital outputs	1	√	
	IOC-01	8 digital inputs; 4 digital outputs; (use with SoftPLC)	1	√	
	IOC-02	8 digital inputs; 8 open collector digital outputs (use with SoftPLC)	1	√	
	IOC-03	8 digital inputs; 7 open collector external 24 VDC; digital outputs; (use with SoftPLC)	1	√	
Temperature	IOE-01	5 PTC temperature sensor inputs	1	√	
	IOE-02	5 Pt-100 temperature sensor inputs	1	√	
	IOE-03	5 KTY84 temperature sensor inputs	1		√
Encoder interface	ENC-01	Incremental encoder module; 5 to 12 VDC (built-in power supply) 100 kHz; with encoder signal repeater (external power supply required)	2	√	
	ENC-02	Incremental encoder module; 5 to 12 VDC (built-in power supply); 100 kHz	2	√	
Communication	RS485-01	RS485 serial communication module (Modbus-RTU)	3		√
	RS232-01	RS232 serial communication module (Modbus-RTU)	3	√	
	CAN/RS485-01	CAN/RS485 interface module (CANopen, DeviceNet, Modbus-RTU and BACnet)	3	√	
	CAN-01	CAN interface module (CANopen and DeviceNet)	3		√
	PROFIBUS-DP-01	Profibus-DP-V1 interface module	3	√	
	ETHERCAT-05	EtherCAT interface module	4		√
	PROFDP-05	Profibus-DP-V1 module (Anybus-CC)	4	√	
	DEVICENET-05	DeviceNet module (Anybus-CC)	4	√	
	RS232-05	RS232 interface module (passive) (Modbus-RTU)	4		√
	RS485-05	RS485 interface module (passive) (Modbus-RTU)	4		√
	MODBUS-TCP-05	Interface module Modbus-TCP - 1 port	4		√
		Interface module Modbus-TCP - 2 ports	4	√	
	PROFINET IO-05	PROFINET IO interface module (Anybus-CC) - 1 port	4		√
		PROFINET IO interface module (Anybus-CC) - 2 ports	4	√	
	ETHERNET/IP-05	EtherNet/IP interface module - 1 port	4		√
		EtherNet/IP interface module - 2 ports	4	√	
PLC	PLC11-01	Module with PLC functions	1, 2 and 3		√
	PLC11-02	Module with PLC functions			√

Notes: 1) Refer to CFW11 product documentation for more information about the accessories.
2) Accessories can be installed at factory or can be ordered separatelly to be installed after assembly, if ordered separetelly will not appear in the wiring diagram of the cabinet and will not be connected to the terminal strip.
3) Slot - Place and mounting position in the CFW11 VSD unit. Refer to CFW11 product manual for more details.
4) Accessories that use the same drive slot for installation cannot be used together.

Accessories and optionals

Optionals – cabinet installation

Reference[1) 2)]	Description	Available[3)]		
		AFW11C	AFW11	AFW11M G2
RFI suppressor filter (compliant with EN 61800-3 and EN 55011)	CFW11 Models with built-in RFI filter, when properly installed, meet the requirements of the EMC Directive 2004/108/EC, as they attenuate high frequency noise (>150 kHz) generated by the variable speed drive and injected in the power line Example: CFW11 0007 T 2 O FA Z. For frames A to D, the RFI filter is optional. For frames E, F, G and H as standard	√	√	√
Safe Torque Off (STO) Module[5)]	Category 3/PLd and SIL CL2, according to EN ISO 61800-5-2, EN ISO 13849-1, IEC 62061 and IEC 61508 Parts 1-7 and IEC 60204-1. When the function is activated, the PWM pulses are blocked. Since torque is not applied to the motor, it is ensured that it remains still, providing safety to the system	√	√	√
Control external power supply at 24 VDC	Used with communication networks (Profibus-DP, DeviceNet, EtherNet/IP, etc.) so that the control circuit and interface to the communication network still work, even in the event of power loss (AC power supply)	√	√	NA[6)]
Load reactor	Load reactor for applications with longer cable length between VSD and motor. The optional item must be used with WEG motors installed between 100 and 300 m; when using motors from other manufacturers it must be installed between 0 and 300 m. Contact your sales representative for more details	NA	√	√
Local-remote selector switch	Selector switch installed on the panel door	√	√	√
Degree of protection[4)]	Set the panel protection degree - IP42 or IP54	√	√	√
CE-CFW11-M	Extraction trolley for power modules - AFW11M G2 line	NA	NA	√

Notes: 1) Refer to CFW11 product documentation for more information about the optionals.
2) Optional items must be installed at the factory and the orders must specify the desired option in the product coding.
3) NA = Not applicable.
4) When using the "SAFE Torque Off (STO)" accessory, the degree of protection available for the panel is IP54.
5) STO Module standard for AFW11 frame size H.
6) The AFW11M G2 has a built-in 24 VDC control power supply.

AFW11C – Compact low voltage variable speed drive

The AFW11C Compact Cabinet Built Variable Speed Drive provides space optimization and high performance. Its construction eliminates the need for fans on cabinet door and uses the VFD heatsink unit fans installed in open back flange mounting and the structure itself for thermal dissipation. By meeting the requirements of IEC 61439-1/2 it guarantees the safety and reliability for the application.

The AFW11C is available in standard configuration only.[1)]

The configurations includes the following:
- Input protection switch-disconnector and fuses
- CFW11 VSD without accessories[2)]
- RFI filter (if selected in the product coding from 3 A up to 105 A, T4 voltage versions; others RFI built-in as standard)
- Harmonic mitigation (Built-in DC Link Inductor):
  - It allows the inverter to be installed in any network (without minimum impedance restrictions)
  - It reduces VSD Line Harmonic Distortion. The AFW11C up to frame G are equipped with internal DC link inductor, providing compliance with the requirements of IEC 61000 parts 3-2 and 3-4
- Operating interface (HMI) mounted on the panel door
- ON, OFF and emergency pushbuttons
- Running, fault and panel energized pilot lights
- Illumination and dehumidifier module

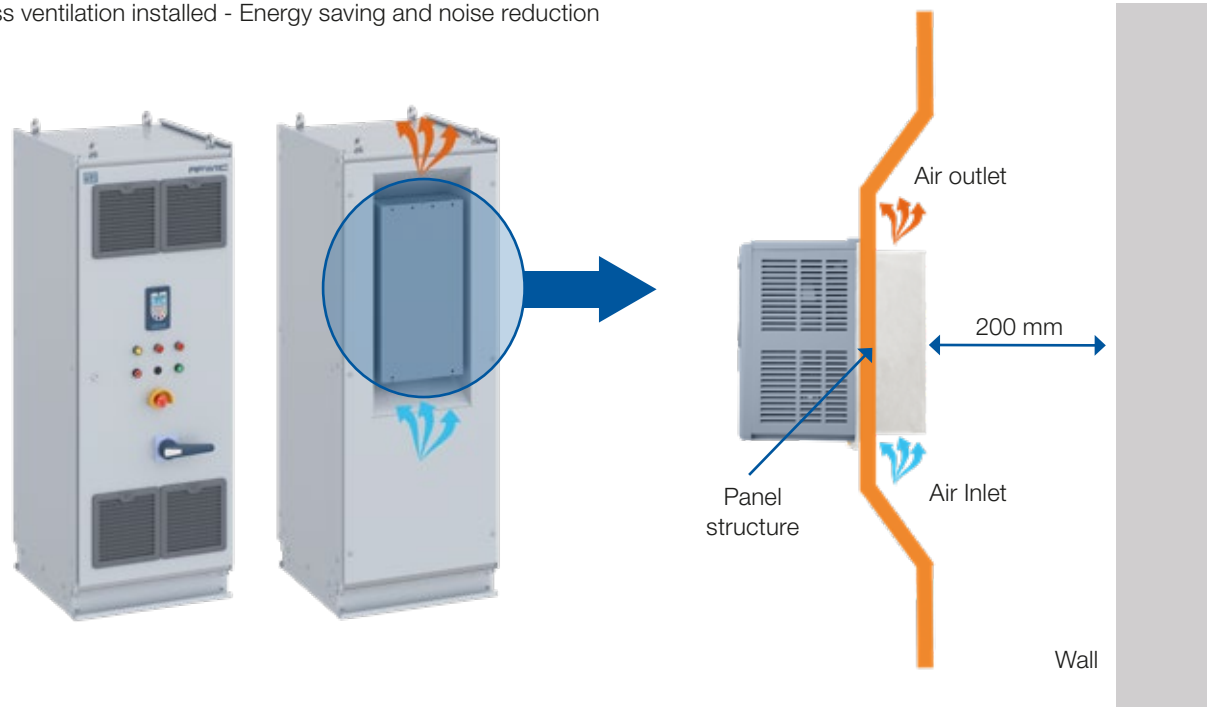
Standard AFW11C drive

Notes: 1) Due to its compact construction, optionals such as line and load reactors can't be installed inside the cabinet, if its required, choose AFW11 product line.
2) Internal accessories for the CFW11 such as plug-in communication or I/O expansion modules can be included from factory or later on, check "accessories" section and contact your local sales representative.

Compact self-cooled solution

The AFW11C self-cooling system is a cooling method where the heat generated by the VSD is dissipated by convection through the louvers installed in the panel door and through the panel structure itself by using flange mouting for the VSD unit as shown in the images below. In this way the following gains are obtained:

- Compact design
- Separate power and control parts - Reduces contamination in eletronic parts
- Lower costs for additional ventilation - Reduces filters maintenance
- Less ventilation installed - Energy saving and noise reduction



AFW11C – Compact low voltage variable speed drive

Specification

The following tables shows AFW11C in standard configuration, separated by voltage level and presenting its current range and main physical characterístics. The codes below does not bring any internal VSD accessories or optionals items, refer to coding section if required.

380-480 V (standard)

Cabinet-built drive with CFW11 variable speed drive[2]						
Reference[3]	Three-phase power supply (V)	Dimensions and weights			Rated output current (A)[1]	
		CFW11 frame	Panel size HxWxD (mm)	Panel weight (kg)	ND	HD
AFW11C 0070 T4 OFAZ IP54	380-480	D	1,180x600x420	80	70.5	61
AFW11C 0088 T4 OFAZ IP54					88	73
AFW11C 0105 T4 SZ IP54		E	1,600x600x650	280	105	88
AFW11C 0142 T4 SZ IP54					142	115
AFW11C 0180 T4 SZ IP54					180	142
AFW11C 0211 T4 SZ IP54					211	180
AFW11C 0242 T4 SZ IP54		F	2,300x600x650	300	242	211
AFW11C 0312 T4 SZ IP54					312	242
AFW11C 0370 T4 SZ IP54					370	312
AFW11C 0477 T4 SZ IP54					477	370
AFW11C 0515 T4 SZ IP54		G	2,300x800x650	400	515	477
AFW11C 0601 T4 SZ IP54					601	515
AFW11C 0720 T4 SZ IP54					720	560
AFW11C 0760 T4 SZ IP54					760	600

500-600 V (on request)

Cabinet-built drive with CFW11 variable speed drive						
Reference[3]	Three-phase power supply (V)	Dimensions and weights			Rated output current (A)[1]	
		CFW11 frame	Panel size HxWxD (mm)	Panel weight (kg)	ND	HD
AFW11C 0053 T5 OYZ IP54	500-600	E	1,600x600x650	200	53	44
AFW11C 0063 T5 OYZ IP54					63	53
AFW11C 0080 T5 OYZ IP54					80	66
AFW11C 0107 T5 OYZ IP54					107	90
AFW11C 0125 T5 OYZ IP54					125	107
AFW11C 0150 T5 OYZ IP54					150	122
AFW11C 0170 T5 OYZ IP54		F	2,300x600x650	300	170	150
AFW11C 0216 T5 OYZ IP54					216	180
AFW11C 0289 T5 OYZ IP54					289	240
AFW11C 0315 T5 OYZ IP54		G	2,300x800x650	400	315	289
AFW11C 0365 T5 OYZ IP54					365	315
AFW11C 0435 T5 OYZ IP54					435	357
AFW11C 0472 T5 OYZ IP54					472	418

Notes: 1) ND = Normal Duty (normal overload = 110% of the rated current for one minute or 150% of the rated current for 3 seconds; one overload every 10 minutes).
HD = Heavy Duty (heavy overload = 150% of the rated current for one minute or 200% of the rated current for 3 seconds; one overload every 10 minutes).
2) Maximum ambient temperature: 40 °C (except for 211, 720 and 760 A, which is 35 °C). In case of applications with maximum temperatures above the informed, the derating factor must be applied according to CFW11 manuals.

AFW11C – Compact low voltage variable speed drive

Specification

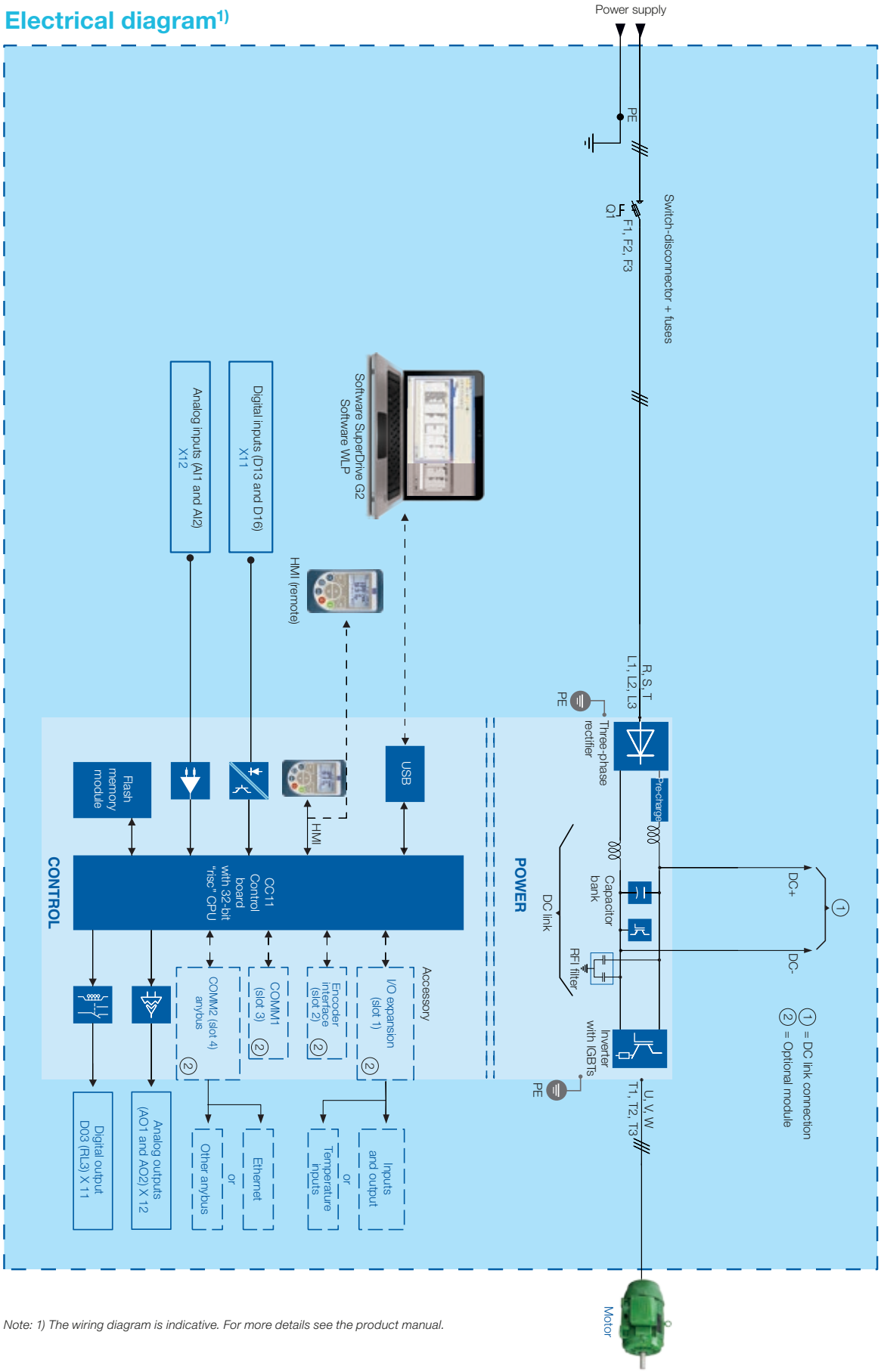
600-690 V (on request)

Cabinet-built drive with CFW11 variable speed drive						
Reference[3]	Three-phase power supply (V)	Dimensions and weights			Rated output current (A)[1]	
		CFW11 frame	Panel size HxWxD (mm)	Panel weight (kg)	ND	HD
AFW11C 0002 T6 OYZ IP54	600-690	D	1,180x600x420	80	2.9	2.7
AFW11C 0004 T6 OYZ IP54					4.2	3.8
AFW11C 0007 T6 OYZ IP54					7	6.5
AFW11C 0008 T6 OYZ IP54					8,5	7
AFW11C 0011 T6 OYZ IP54					11	9
AFW11C 0015 T6 OYZ IP54					15	13
AFW11C 0020 T6 OYZ IP54					20	17
AFW11C 0024 T6 OYZ IP54					24	20
AFW11C 0030 T6 OYZ IP54					30	24
AFW11C 0035 T6 OYZ IP54					35	30
AFW11C 0046 T6 OYZ IP54		E	1,600x600x650	200	46	39
AFW11C 0054 T6 OYZ IP54					54	46
AFW11C 0073 T6 OYZ IP54					73	61
AFW11C 0100 T6 OYZ IP54					100	85
AFW11C 0108 T6 OYZ IP54					108	95
AFW11C 0130 T6 OYZ IP54					130	108
AFW11C 0147 T6 OYZ IP54		F	2,300x600x650	300	147	127
AFW11C 0195 T6 OYZ IP54					195	165
AFW11C 0259 T6 OYZ IP54					259	225
AFW11C 0312 T6 OYZ IP54		G	2,300x800x650	400	312	259
AFW11C 0365 T6 OYZ IP54					365	312
AFW11C 0427 T6 OYZ IP54					427	365

Notes: 1) ND = Normal Duty (normal overload = 110% of the rated current for one minute or 150% of the rated current for 3 seconds; one overload every 10 minutes).
HD = Heavy Duty (heavy overload = 150% of the rated current for one minute or 200% of the rated current for 3 seconds; one overload every 10 minutes).
2) Maximum ambient temperature: 40 °C (except for 211, 720 and 760 A, which is 35 °C). In case of applications with maximum temperatures above the informed, the derating factor must be applied according to CFW11 manuals.

AFW11C – Compact low voltage variable speed drive

Electrical diagram[1)]



Note: 1) The wiring diagram is indicative. For more details see the product manual.

AFW11C – Compact low voltage variable speed drive

Technical data

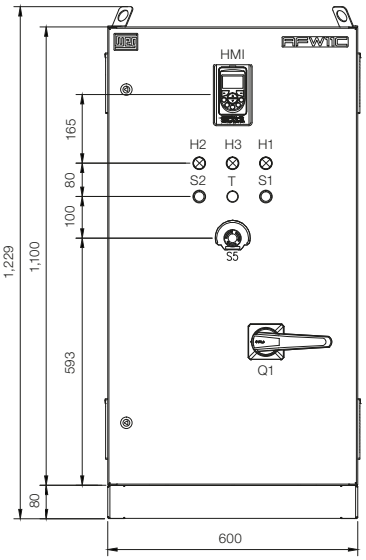
Supply voltage	380 to 480 V
	500 to 600 V
	600 to 690 V
Frequency	50/60 Hz
Rated output current@voltage (ND-normal duty)	70.5 to 760 A @ 380 to 480 V
	53 to 472 A @ 500 to 600 V
	2.9 to 427 @ 600 to 690 V
Rated insulation voltage (Ui)	690 V
Rated short-circuit current (Icc)	50 kA
Control supply	220 V[3)]
Degree of protection	IP42/IP54
Ambient temperature	-5 °C to 40 °C (35 ºC for 211; 720; 760 A @ 380 - 480 V models)
Altitude	<2,000 m
Relative humidity	5 to 90% (non condensing)
Topcoat[2)]	Gray RAL 7035
Mounting plate	Zinc-plated steel (unpainted)
Touch protection	Zinc-plated steel (unpainted)
Overload	1.1 x rated current for 1 minute or 1.5 x rated current for 3s (operating mode: ND-normal mode)
Pollution degree	3
Instalation[1)2)]	Indoor
Standards	IEC 61439-1/2 (pending for 500-600 and 660-690 V versions)

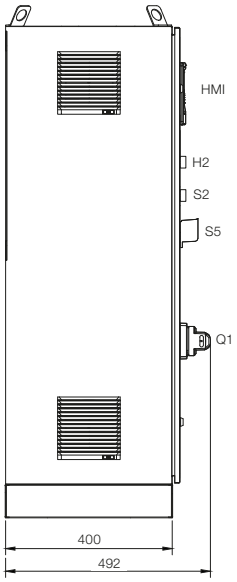
Notes: 1) For installation in aggressive environments, with the presence of SO_2 for example, consult WEG to evaluate the appropriate treatment for both the panel and the VSD (extracoating treatment on the electronic circuit boards).
2) The AFW11C should be installed at least 200 mm away from the wall.
3) Other control voltage under request. Control transformer not included in compact model.

AFW11C – Compact low voltage variable speed drive

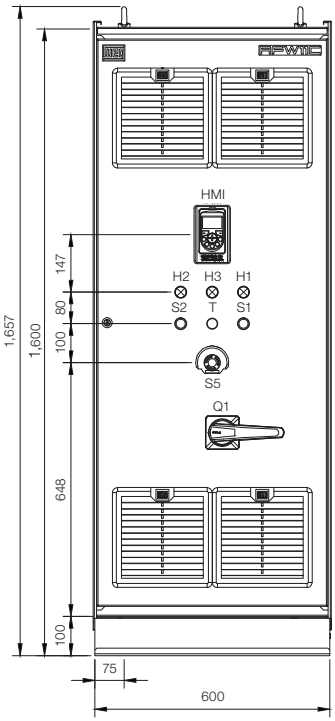
Dimensions

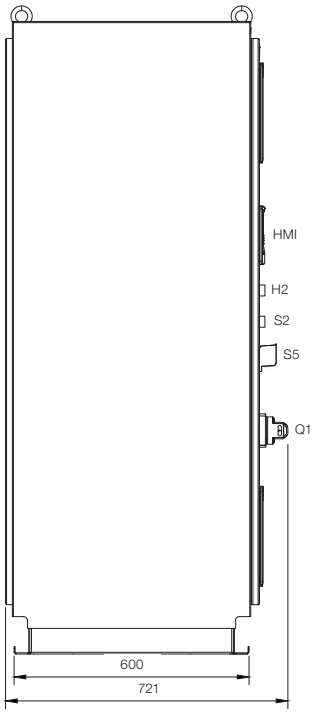
AFW11C – frame size D





AFW11C – frame size E

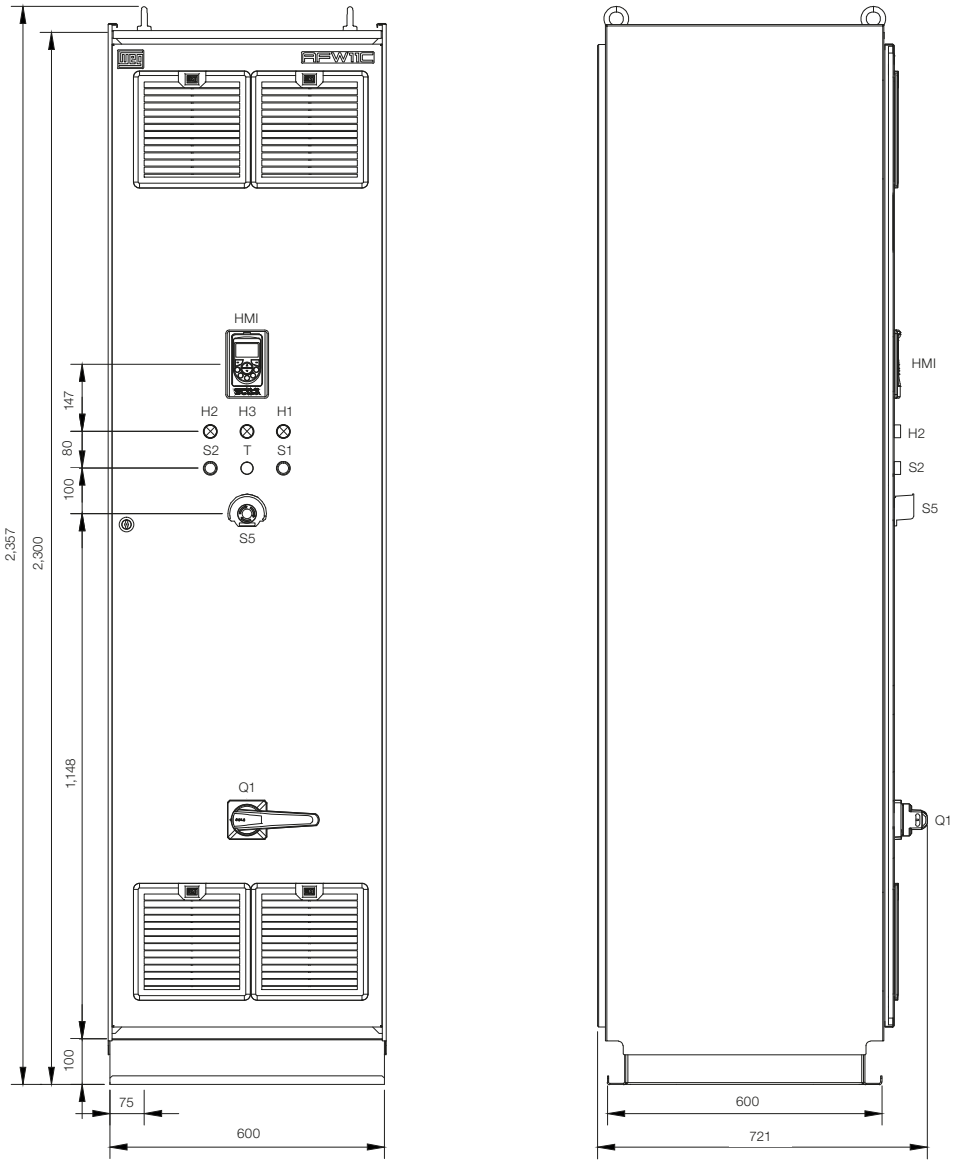




AFW11C – Compact low voltage variable speed drive

Dimensions

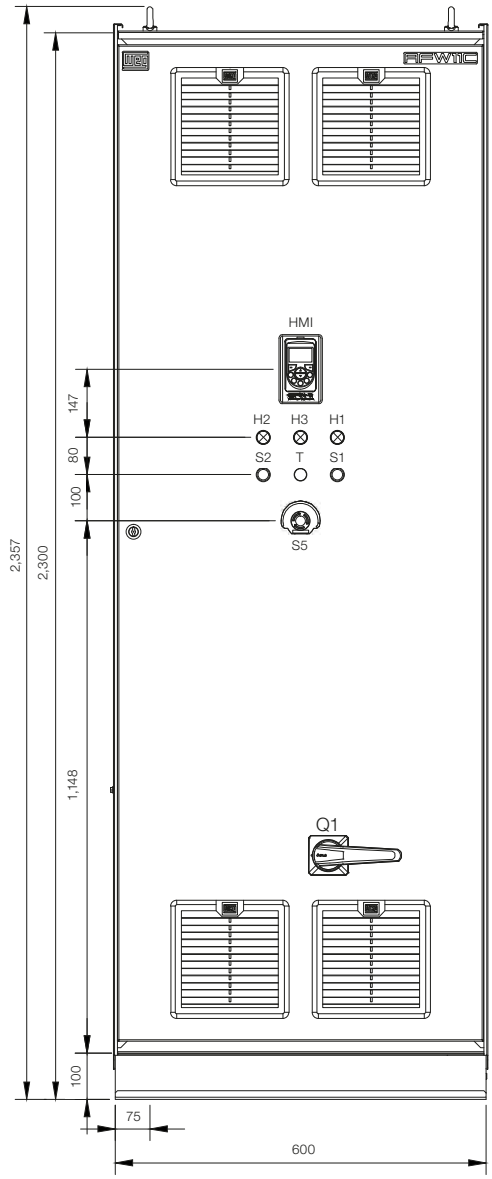
AFW11C – frame size F

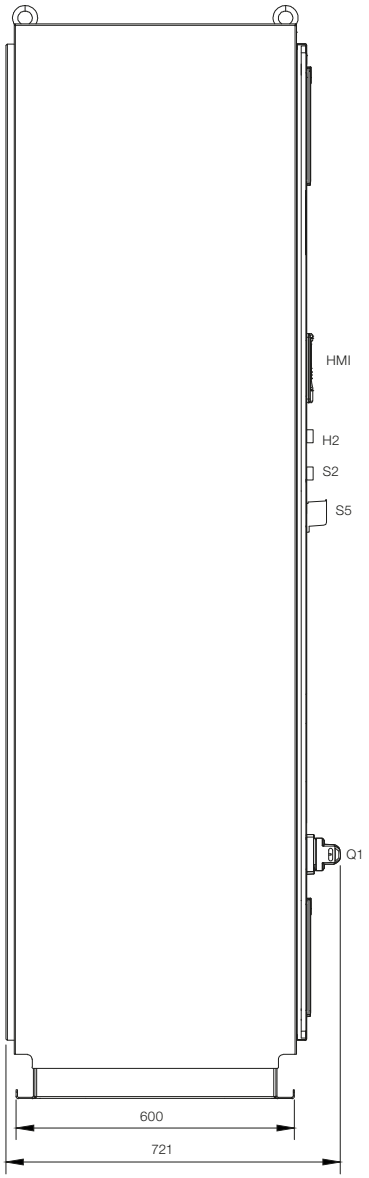


AFW11C – Compact low voltage variable speed drive

Dimensions

AFW11C – frame size G





AFW11 – Standard low voltage variable speed drive

The AFW11 Standard Cabinet Built Variable Speed Drive provides space optimization and high performance. Its construction and structure in compliance with IEC 61439-1/2 requirements guarantee safety and reliability for the application.

The AFW11 is available in two different configurations:
- Standard configuration[1)].
- Customized configuration (contact your local sales representative)[2)].

The standard configurations includes the following:
- Input protection by using switch-disconnector and fuses.
- CFW11 VSD without accessories[1)].
- RFI filter (if selected in the product coding from 3 A up to 105 A, T4 voltage versions; others RFI built-in as standard).
- Extraction movement kit for Frame size E, F, G and H.
- Harmonic mitigation (Built-in DC Link Inductor or line reactor):
  - It allows the inverter to be installed in any network (without minimum impedance restrictions).
  - It reduces VSD Line Harmonic Distortion. The AFW11 up to frame G are equipped with internal DC link inductor, frame H is equipped with a line reactor, providing compliance with the requirements of IEC 61000 parts 3-2 and 3-4.
- Control power supply for the CFW11 VSD unit.
- Operating interface (HMI) mounted on the panel door.
- ON, OFF and emergency pushbuttons.
- Running, fault and panel energized pilot lights.
- Illumination and dehumidifier module (220 VAC 50/60 Hz).

Notes: 1) Internal and external accessories for the CFW11 can be included in the standard supply of the panel, according to the options in the "accessories and optionals" section.
2) To add any accessory for the AFW11 or request a different characteristic than herein mentioned, or in the "accessories and optionals" section, contact your local sales representative.

Standard AFW11 drive

AFW11 – Standard low voltage variable speed drive

Specification

The following tables shows AFW11 in standard configuration, separated by voltage level and presenting its current range and main physical characteristics. The codes below does not bring any internal VSD accessories or optionals items, refer to coding section if required.

380-480 V (standard)

Cabinet-built drive with CFW11 variable speed drive[2]						
Reference[3]	Three-phase power supply (V)	Dimensions and weights			Rated output current (A)[1]	
		CFW11 frame	Panel size HxWxD (mm)	Panel weight (kg)	ND	HD
AFW11 0003 T4 OFAZ	380-480	A	929x600x425	52	3.6	3.6
AFW11 0005 T4 OFAZ					5	5
AFW11 0007 T4 OFAZ					7	5.5
AFW11 0010 T4 OFAZ					10	10
AFW11 0013 T4 OFAZ					13.5	11
AFW11 0017 T4 OFAZ		B	929x600x425	66	17	13.5
AFW11 0024 T4 OFAZ					24	19
AFW11 0031 T4 OFAZ					31	25
AFW11 0038 T4 OFAZ		C	1,229x600x425	105	38	33
AFW11 0045 T4 OFAZ					45	38
AFW11 0058 T4 OFAZ					58.5	47
AFW11 0070 T4 OFAZ		D	1,629x600x425	150	70.5	61
AFW11 0088 T4 OFAZ					88	73
AFW11 0105 T4 SZ		E	1,715x600x650	200	105	88
AFW11 0142 T4 SZ					142	115
AFW11 0180 T4 SZ					180	142
AFW11 0211 T4 SZ					211	180
AFW11 0242 T4 SZ		F	2,058x800x650	300	242	211
AFW11 0312 T4 SZ					312	242
AFW11 0370 T4 SZ					370	312
AFW11 0477 T4 SZ					477	370
AFW11 0515 T4 SZ		G	2,556x1,000x650	550	515	477
AFW11 0601 T4 SZ					601	515
AFW11 0720 T4 SZ					720	560
AFW11 0760 T4 SZ					760	600
AFW11 0795 T4 SZ OYZ IP54		H[4]	2,556x1,600x850	1,240	795	637
AFW11 0877 T4 SZ OYZ IP54				1,280	877	715
AFW11 1062 T4 SZ OYZ IP54				1,325	1,062	855
AFW11 1141 T4 SZ OYZ IP54				1,425	1,141	943

Notes: 1) ND = Normal Duty (normal overload = 110% of the rated current for one minute or 150% of the rated current for 3 seconds; one overload every 10 minutes).
HD = Heavy Duty (heavy overload = 150% of the rated current for one minute or 200% of the rated current for 3 seconds; one overload every 10 minutes).
2) Maximum ambient temperature: 40 °C (except for 211, 720 and 760 A and all H frame models, which is 35 °C). In case of applications with maximum temperatures above the informed, the derating factor must be applied according to CFW11 manuals.
3) Insert the degree of protection code after the reference, see the coding section.
4) For the AFW11 frame H, the standard is IP54 and already includes the optional "Y" STO.

AFW11 – Standard low voltage variable speed drive

Specification

500-600 V (standard for the frame H, other sizes on request)

Cabinet-built drive with CFW11 variable speed drive						
Reference[3]	Three-phase power supply (V)	Dimensions and weights			Rated output current (A)[1]	
		CFW11 frame	Panel size HxWxD (mm)	Panel weight (kg)	ND	HD
AFW11 0002 T5 OYZ IP54	500-600	D	1,629x600x425	150	2.9	2.7
AFW11 0004 T5 OYZ IP54					4.2	3.8
AFW11 0007 T5 OYZ IP54					7	6.4
AFW11 0010 T5 OYZ IP54					10	9
AFW11 0012 T5 OYZ IP54					12	10
AFW11 0017 T5 OYZ IP54					17	17
AFW11 0022 T5 OYZ IP54					22	19
AFW11 0027 T5 OYZ IP54					27	22
AFW11 0032 T5 OYZ IP54					32	27
AFW11 0044 T5 OYZ IP54					44	36
AFW11 0053 T5 OYZ IP54		E	1,715x600x650	200	53	44
AFW11 0063 T5 OYZ IP54					63	53
AFW11 0080 T5 OYZ IP54					80	66
AFW11 0107 T5 OYZ IP54					107	90
AFW11 0125 T5 OYZ IP54					125	107
AFW11 0150 T5 OYZ IP54					150	122
AFW11 0170 T5 OYZ IP54		F	2,062x800x650	300	170	150
AFW11 0216 T5 OYZ IP54					216	180
AFW11 0289 T5 OYZ IP54					289	240
AFW11 0315 T5 OYZ IP54		G	2,556x1,000x650	550	315	289
AFW11 0365 T5 OYZ IP54					365	315
AFW11 0435 T5 OYZ IP54					435	357
AFW11 0472 T5 OYZ IP54					472	418
AFW11 0584 T5 OYZ IP54		H	2,556x1,600x850	980	584	504
AFW11 0625 T5 OYZ IP54				1,000	625	540
AFW11 0758 T5 OYZ IP54				1,000	758	614
AFW11 0804 T5 OYZ IP54				1,000	804	682

Notes: 1) ND = Normal Duty (normal overload = 110% of the rated current for one minute or 150% of the rated current for 3 seconds; one overload every 10 minutes).
HD = Heavy Duty (heavy overload = 150% of the rated current for one minute or 200% of the rated current for 3 seconds; one overload every 10 minutes).
2) Maximum ambient temperature: 40 °C (except for 211, 720 and 760 A and all H frame models, which is 35 °C). In case of applications with maximum temperatures above the informed, the derating factor must be applied according to CFW11 manuals.

AFW11 – Standard low voltage variable speed drive

Specification

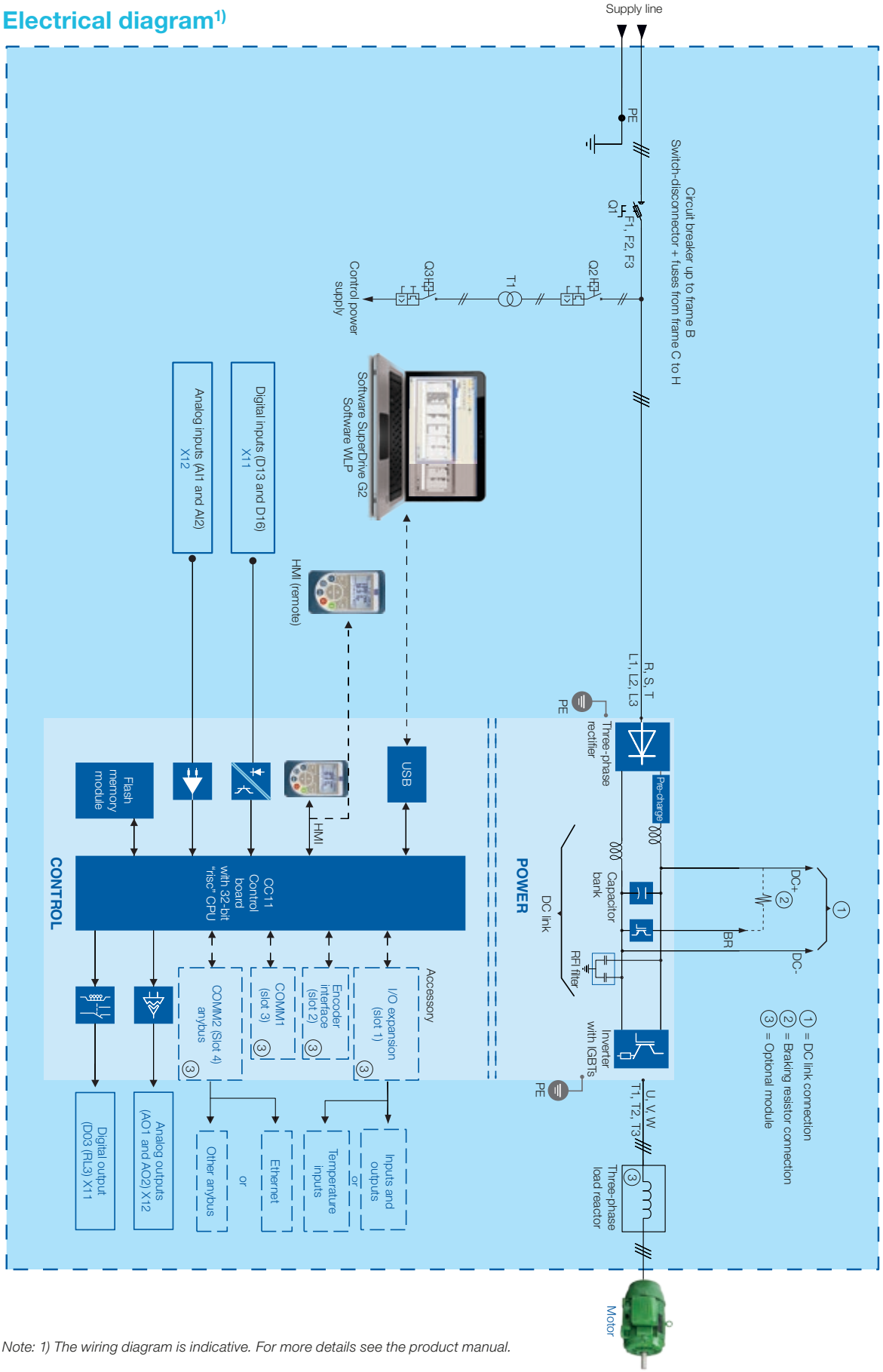
600-690 V (standard for the frame H, other sizes on request)

Cabinet-built drive with CFW11 variable speed drive						
Reference[3]	Three-phase power supply (V)	Dimensions and weights			Rated output current (A)[1]	
		CFW11 frame	Panel size HxWxD (mm)	Panel weight (kg)	ND	HD
AFW11 0002 T6 OYZ IP54	600-690	D	1,629x600x425	150	2.9	2.7
AFW11 0004 T6 OYZ IP54					4.2	3.8
AFW11 0007 T6 OYZ IP54					7	6.5
AFW11 0008 T6 OYZ IP54					8.5	7
AFW11 0011 T6 OYZ IP54					11	9
AFW11 0015 T6 OYZ IP54					15	13
AFW11 0020 T6 OYZ IP54					20	17
AFW11 0024 T6 OYZ IP54					24	20
AFW11 0030 T6 OYZ IP54					30	24
AFW11 0035 T6 OYZ IP54					35	30
AFW11 0046 T6 OYZ IP54		E	1,715x600x650	200	46	39
AFW11 0054 T6 OYZ IP54					54	46
AFW11 0073 T6 OYZ IP54					73	61
AFW11 0100 T6 OYZ IP54					100	85
AFW11 0108 T6 OYZ IP54					108	95
AFW11 0130 T6 OYZ IP54					130	108
AFW11 0147 T6 OYZ IP54		F	2,062x800x650	300	147	127
AFW11 0195 T6 OYZ IP54					195	165
AFW11 0259 T6 OYZ IP54					259	225
AFW11 0312 T6 OYZ IP54		G	2,556x1,000x650	550	312	259
AFW11 0365 T6 OYZ IP54					365	312
AFW11 0427 T6 OYZ IP54					427	365
AFW11 0478 T6 OYZ IP54		H	2,556x1,600x850	980	478	410
AFW11 0518 T6 OYZ IP54				1,000	518	447
AFW11 0628 T6 OYZ IP54				1,000	628	518
AFW11 0703 T6 OYZ IP54				1,000	703	594

Notes: 1) ND = Normal Duty (normal overload = 110% of the rated current for one minute or 150% of the rated current for 3 seconds; one overload every 10 minutes).
HD = Heavy Duty (heavy overload = 150% of the rated current for one minute or 200% of the rated current for 3 seconds; one overload every 10 minutes).
2) Maximum ambient temperature: 40 °C (except for 211, 720 and 760 A and all H frame models, which is 35 °C). In case of applications with maximum temperatures above the informed, the derating factor must be applied according to CFW11 manuals.

AFW11 – Standard low voltage variable speed drive

Electrical diagram[1)]



Note: 1) The wiring diagram is indicative. For more details see the product manual.

AFW11 – Standard low voltage variable speed drive

Technical data[1)]

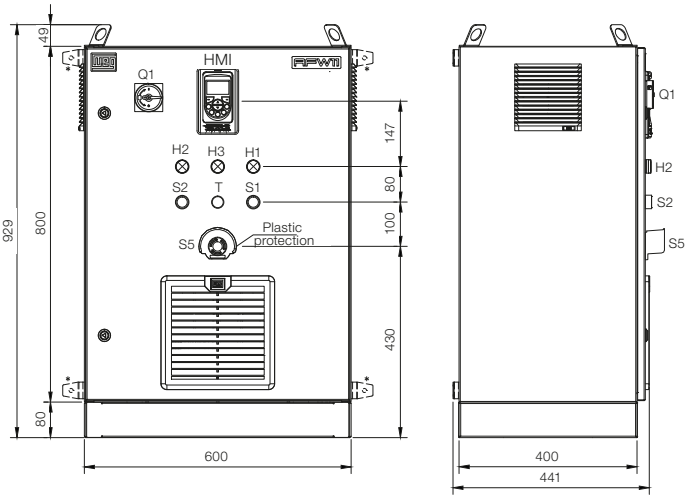
Supply voltage	380 to 480 V
	500 to 600 V
	600 to 690 V
Frequency	50/60 Hz
Rated output current@voltage (ND-normal duty)[1)]	3.6 to 1141 A @ 380 to 480 V
	2.9 to 804 A @ 500 to 600 V
	2.9 to 703 @ 600 to 690 V
Rated insulation voltage (Ui)	690 V
Rated short-circuit current (Icc)	50 kA
Control supply	220 V[3)]
Degree of protection	IP42/IP54
Ambient temperature	-5 °C to 40 °C
Altitude	<2,000 m
Relative humidity	5 to 90% (non condensing)
Topcoat[2)]	Gray RAL 7035
Mounting plate	Zinc-plated steel (unpainted)
Touch protection	Zinc-plated steel (unpainted)
Overload	1.1 x rated current for 1 minute or 1.5 x rated current for 3s (operating mode: ND-normal mode)
Pollution degree	3
Instalation[2)]	Indoor
Standards	IEC 61439-1/2 (pending for frame H versions)

Notes: 1) For environments and specifications out of the standard presented, consult WEG.
2) For installation in aggressive environments, with the presence of SO_2 for example, consult WEG to evaluate the appropriate treatment for both the panel and the VSD (extracoating treatment on the electronic circuit boards).
3) Other control voltage under request. Control transformer included as standard.

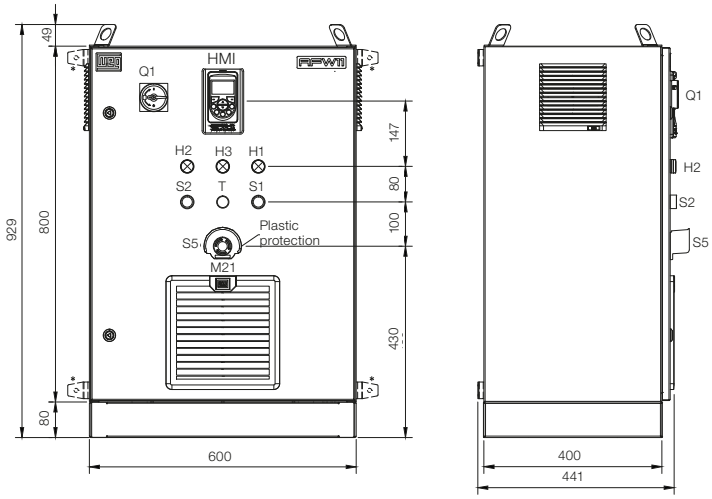
AFW11 – Standard low voltage variable speed drive

Dimensions

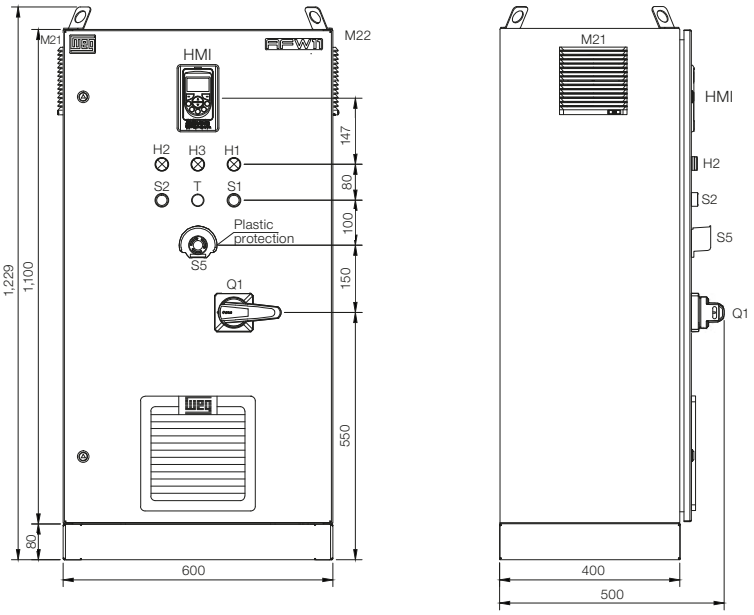
AFW11 – frame size A



AFW11 – frame size B



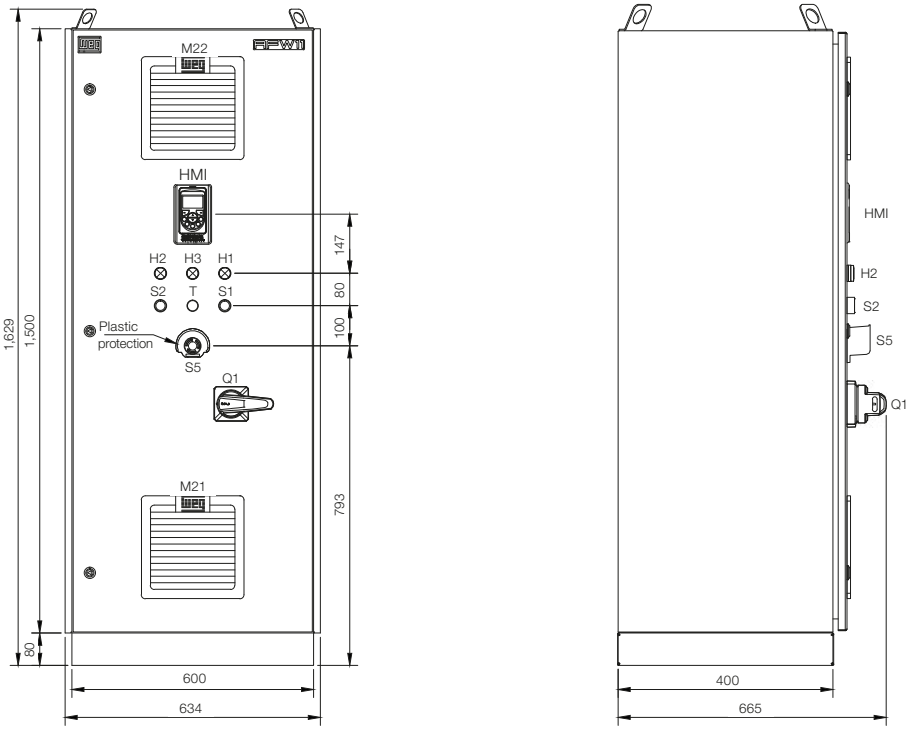
AFW11 – frame size C



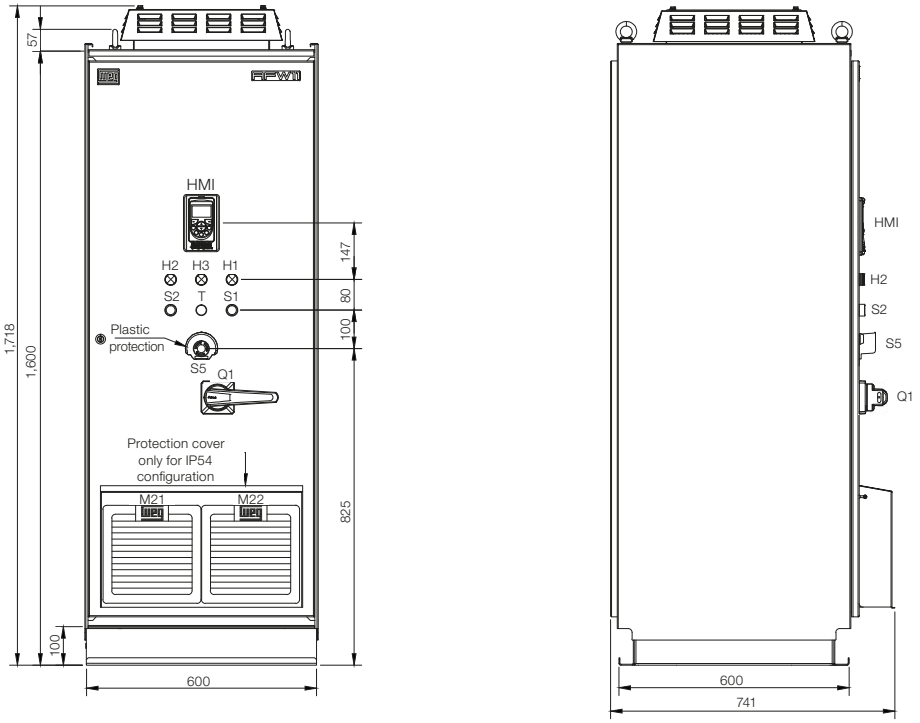
AFW11 – Standard low voltage variable speed drive

Dimensions

AFW11 – frame size D



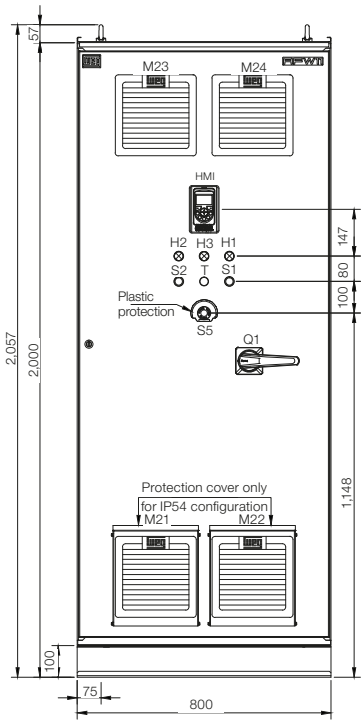
AFW11 – frame size E

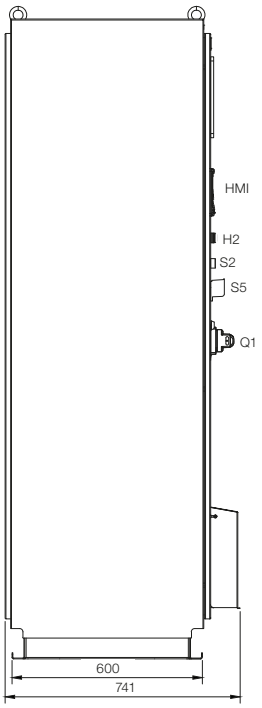


AFW11 – Standard low voltage variable speed drive

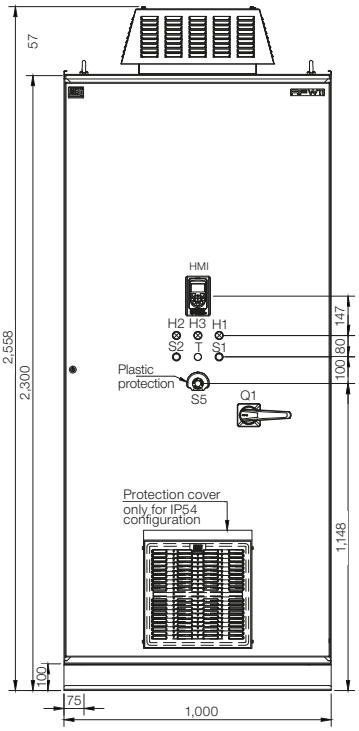
Dimensions

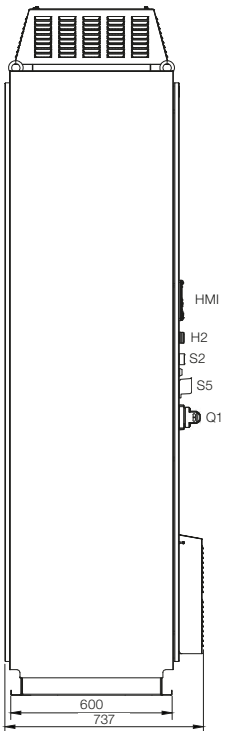
AFW11 – frame size F





AFW11 – frame size G

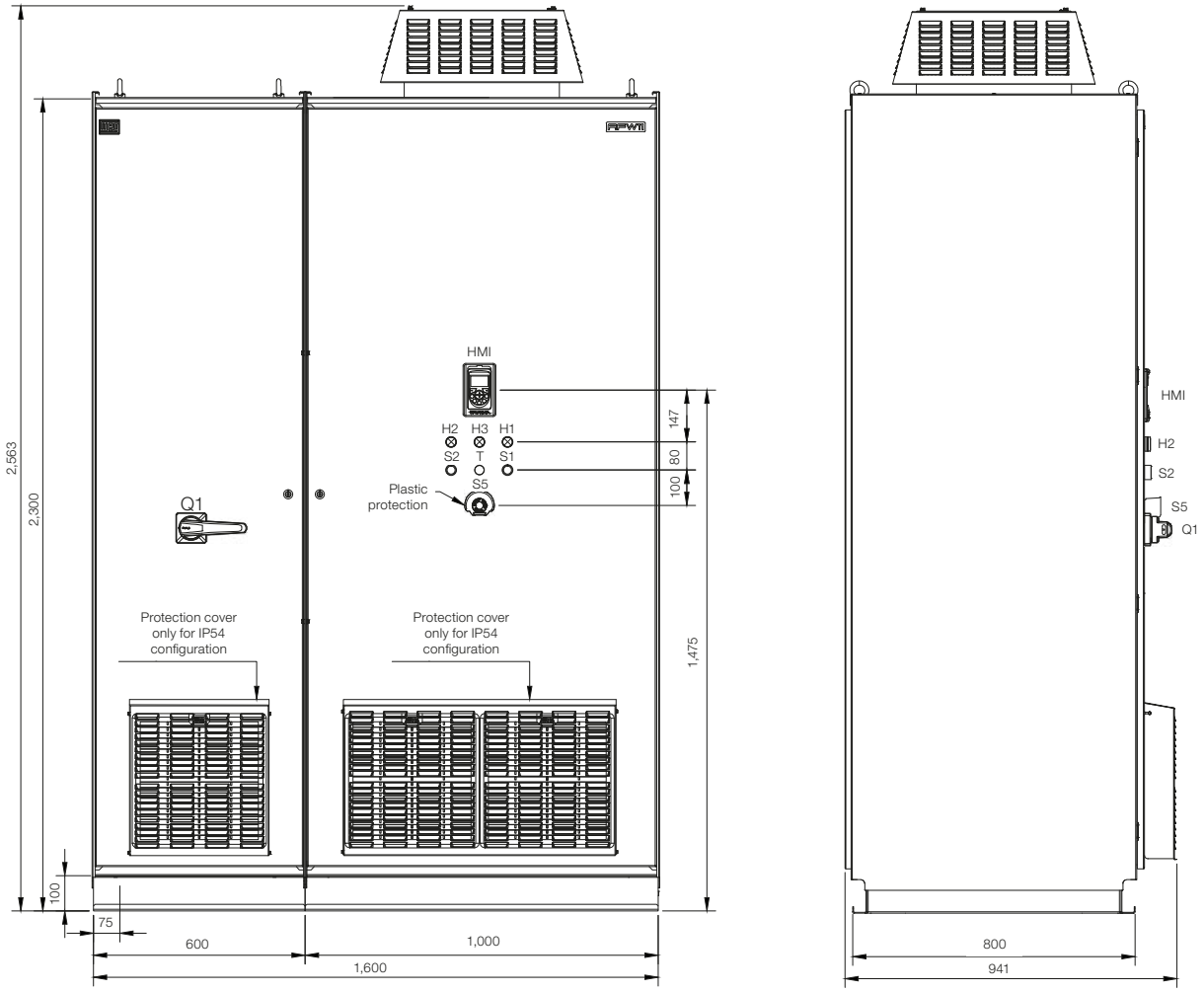




AFW11 – Standard low voltage variable speed drive

Dimensions

AFW11 – frame size H

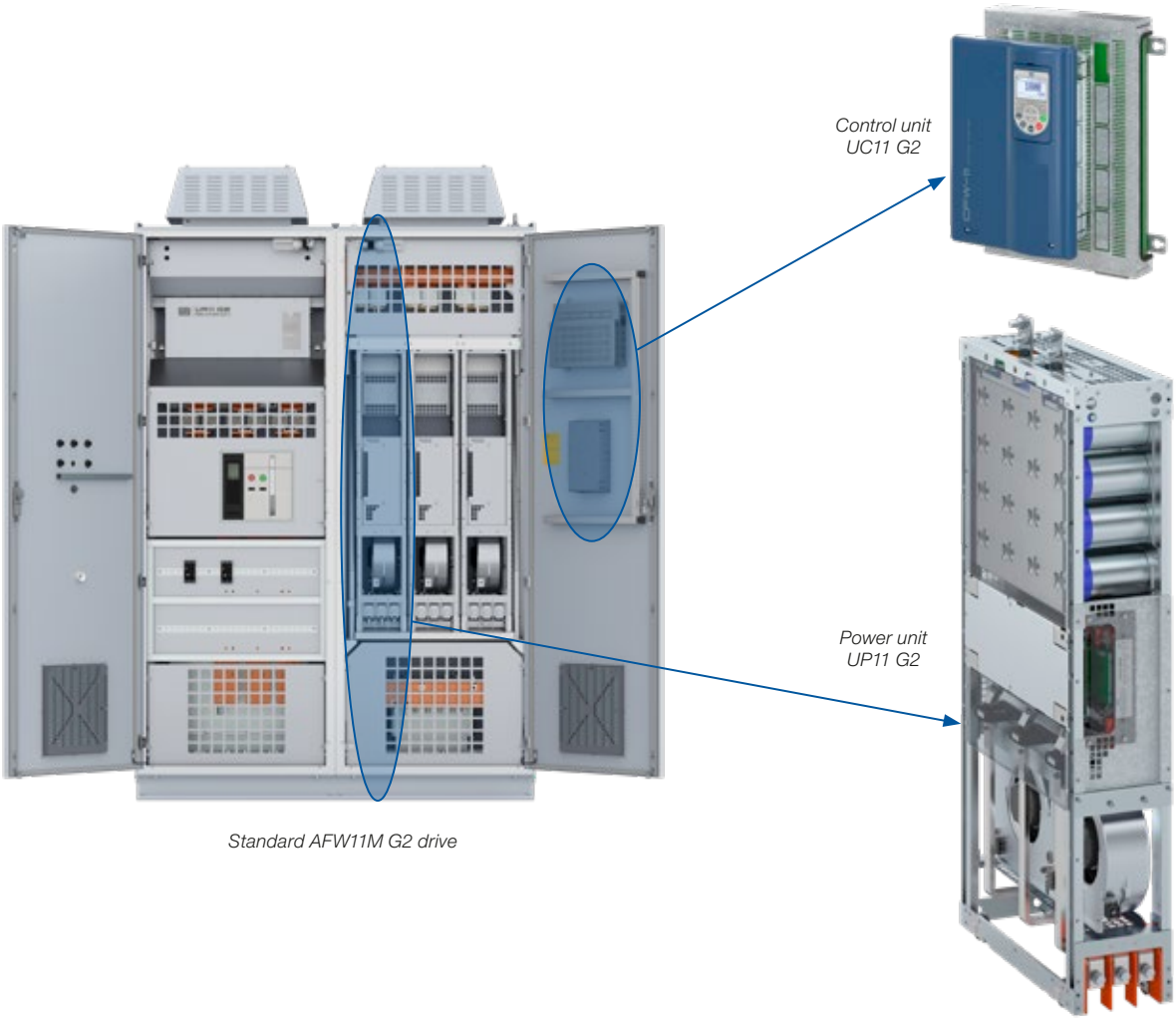


AFW11M G2 – Modular low voltage variable speed drive

The AFW11M Modular Cabinet Built Variable Speed Drive, are designed to serve high-power induction electric motors, provides reliability, space optimization, and high performance. Its assembly and structure in compliance with IEC 61439-1/2 requirements ensure safety and robustness for the application.
It is a new generation of this VSD product line with excellent static and dynamic performance. With a modular design, it offers configurations from one to five power units (UP11 G2) and are perfect for processes that require high power capacity. A single control unit (UC11 G2) can control up to 5 UP11 G2 power units.

Benefits

- Compact solution and high power density.
- Sensorless or closed loop Vector, Scalar (V/f) or VVW control.
- The sensorless vector control allows high torque and fast response, even at very low speeds or at the start.
- Many configurations are possible: 6, 12 or 18 pulses (under request) bringing low harmonic levels.
- The vector with encoder control enables high precision in the drive throughout the speed range (even stopped motor).
- *Optimal Braking* function for vector control, allowing the controlled braking of the motor, eliminating the use of braking resistor in some applications.
- *Self-tuning* function for vector control: allows the automatic setting of control parameters and regulators based on the identification (also automatic) of the motor parameters and load.
- Same platform of CFW11 series, sharing features and most of accessories.
- Built-in SoftPLC, equivalent to a small PLC, that allows to customize and integrate the VSD to the application.
- Communication protocols: Modbus-RTU, Modbus-TCP, Profibus-DP, DeviceNet, EtherNet/IP and PROFINET IO.



Standard AFW11M G2 drive

AFW11M G2 – Modular low voltage variable speed drive

The AFW11M is available in two different configurations:
- Standard configuration[1)].
- Customized configuration (contact your local sales representative)[2)].

The standard configuration includes the following:
- Input protection by using air circuit breaker.
- CFW11M VSD without accessories[1)].
- Built-in RFI filter.
- Harmonic mitigation (line reactor):
  - It allows the inverter to be installed in any network (without minimum impedance restrictions).
  - It reduces VSD Line Harmonic Distortion. AFW11M G2 is equipped with a line reactor or line reactor combined multipulse rectifier, providing compliance with the requirements of IEC 61000-3-4.
  - No installation restrictions, no minimum impedance required.
- Control power supply for the CFW11 VSD unit.
- Operating interface (HMI) mounted on the panel door.
- ON, OFF and emergency pushbuttons.
- Running, fault and panel energized pilot lights.
- Illumination and dehumidifier module (220 Vac 50/60 Hz).

Notes: 1) Internal and external accessories for the CFW11 can be included in the standard supply of the panel, according to the options in the "accessories and optionals" section.
2) To add any accessory for the AFW11 or request a different characteristic than herein mentioned, or in the "accessories and optionals" section, contact your local sales representative.

Standard AFW11M G2 drive

AFW11M G2 – Modular low voltage variable speed drive

Specification

The following tables shows AFW11M G2 in standard configuration, separated by voltage level and presenting its current range and main physical characteristics. The codes below does not bring any internal VSD accessories or optionals items, refer to coding section if required.

380-480 V

Cabinet-built drive with CFW11 variable speed drive							
Reference[2)3)]	Three-phase power supply (V)	Dimensions and weights				Rated output current (A)[1)]	
		Frame size	Pulses	Panel size HxWxD (mm)	Panel weight (kg)	ND	HD
AFW11M G2 0634 T4 SZ	380-480	M1	6	2,563x1,400x850	1,166	634	515
AFW11M G2 1205 T4 SZ		M2	6	2,563x1,400x850	1,296	1,205	979
AFW11M G2 1807 T4 SZ		M3	6	2,563x1,600x850	1,440	1,807	1,468
AFW11M G2 2409 T4 SZ		M4	12	2,563x2,800x850	2,170	2,409	1,957
AFW11M G2 3012 T4 SZ		M5	12	2,563x3,000x850	2,500	3,012	2,446

Notes: 1) ND = Normal Duty (normal overload = 110% of the rated current for one minute or 150% of the rated current for 3 seconds; one overload every 10 minutes).
HD = Heavy Duty (heavy overload = 150% of the rated current for one minute or 200% of the rated current for 3 seconds; one overload every 10 minutes).
2) The 0634 and 1205 A models have IEC 61439 tests pending.
3) Insert the degree of protection code after the reference, see the coding section.

500-600 V

Cabinet-built drive with CFW11 variable speed drive							
Reference[2)3)]	Three-phase power supply (V)	Dimensions and weights				Rated output current (A)[1)]	
		Frame size	Pulses	Panel size HxWxD (mm)	Panel weight (kg)	ND	HD
AFW11M G2 0496 T5 SZ	500-600	M1	6	2,563x1,400x850	1,170	496	380
AFW11M G2 0942 T5 SZ		M2	6	2,563x1,400x850	1,301	942	722
AFW11M G2 1414 T5 SZ		M3	6	2,563x1,600x850	1,445	1,414	1,083
AFW11M G2 1885 T5 SZ		M4	6	2,563x2,800x850	2,054	1,885	1,444
AFW11M G2 2356 T5 SZ		M5	12	2,563x3,000x850	2,555	2,356	1,805

Notes: 1) ND = Normal Duty (normal overload = 110% of the rated current for one minute or 150% of the rated current for 3 seconds; one overload every 10 minutes).
HD = Heavy Duty (heavy overload = 150% of the rated current for one minute or 200% of the rated current for 3 seconds; one overload every 10 minutes).
2) The 0496 and 0942 A models have IEC 61439 tests pending.
3) Insert the degree of protection code after the reference, see the coding section.

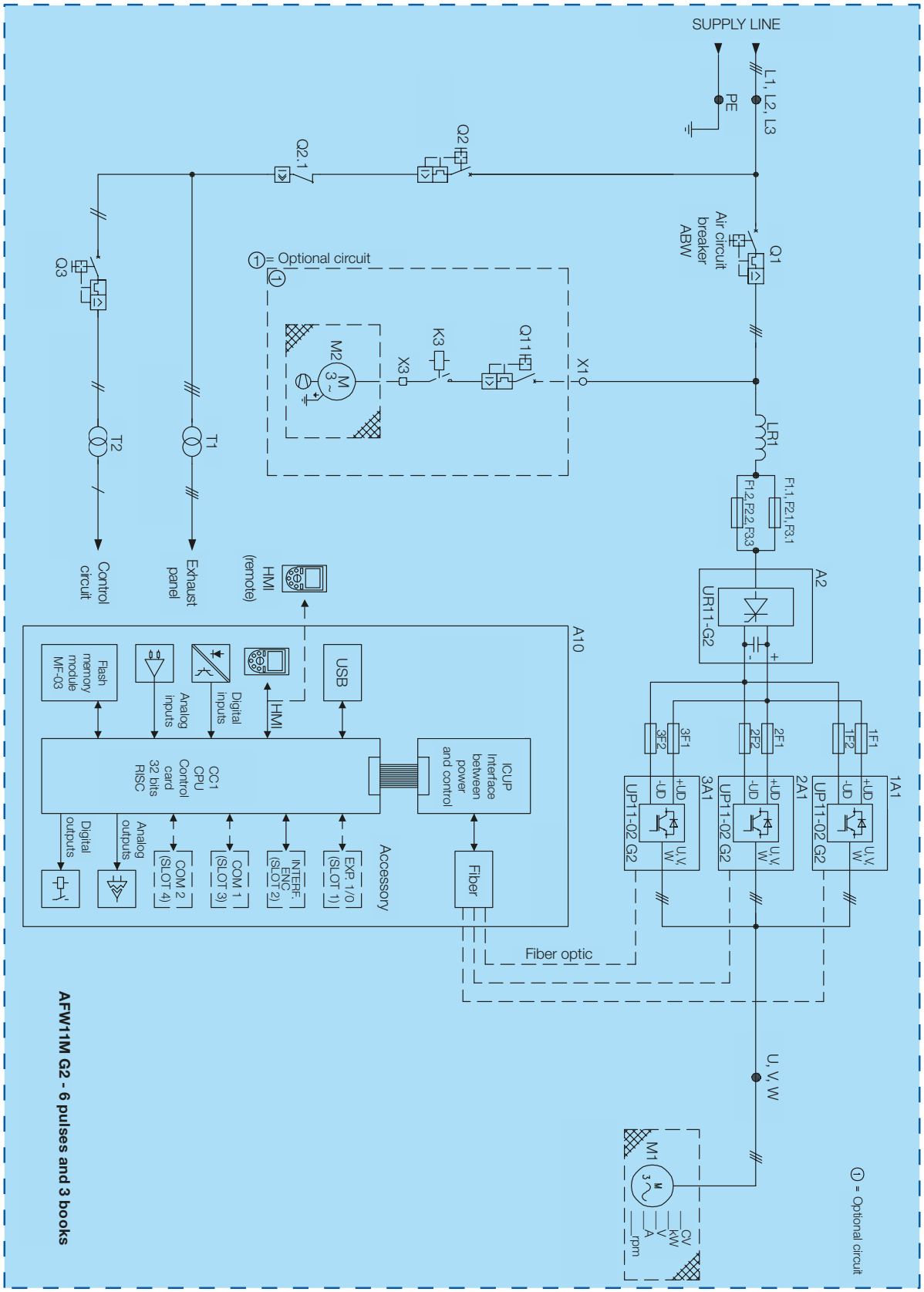
600-690 V

Cabinet-built drive with CFW11 variable speed drive							
Reference[2)3)]	Three-phase power supply (V)	Dimensions and weights				Rated output current (A)[1)]	
		Frame size	Pulses	Panel size HxWxD (mm)	Panel weight (kg)	ND	HD
AFW11M G2 0439 T6 SZ	600-690	M1	6	2,563x1,400x850	1,207	439	340
AFW11M G2 0834 T6 SZ		M2	6	2,563x1,400x850	1,341	834	646
AFW11M G2 1251 T6 SZ		M3	6	2,563x1,600x850	1,490	1,251	969
AFW11M G2 1668 T6 SZ		M4	6	2,563x2,800x850	2,181	1,668	1,292
AFW11M G2 2085 T6 SZ		M5	12	2,563x3,000x850	2,638	2,085	1,615

Notes: 1) ND = Normal Duty (normal overload = 110% of the rated current for one minute or 150% of the rated current for 3 seconds; one overload every 10 minutes).
HD = Heavy Duty (heavy overload = 150% of the rated current for one minute or 200% of the rated current for 3 seconds; one overload every 10 minutes).
2) The 0439 and 0834 A models have IEC 61439 tests pending.
3) Insert the degree of protection code after the reference, see the coding section.

AFW11M G2 – Modular low voltage variable speed drive

Electrical diagram[1)]



Note: 1) The wiring diagram is indicative. For more details see the product manual.

AFW11M G2 – Modular low voltage variable speed drive

Technical data[1)]

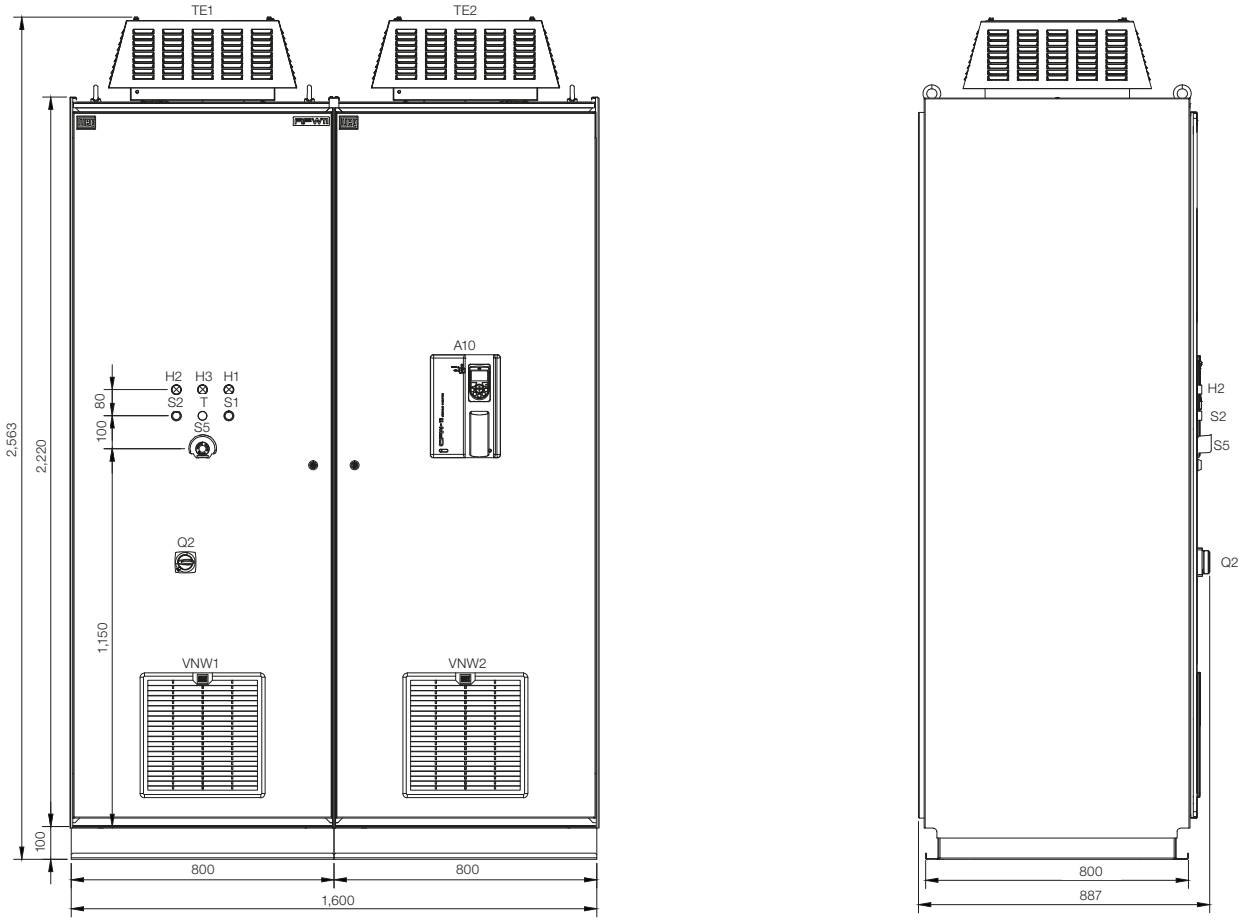
Supply voltage	380 to 480 V
	500 to 600 V
	600 to 690 V
Frequency	50/60 Hz
Rated output current@voltage (ND-normal duty)[1)]	634 to 3,012 A @ 380 to 480 V
	496 to 2,356 A @ 500 to 600 V
	439 to 2,085 A @ 600 to 690 V
Rated insulation voltage (Ui)	690 V
Rated short-circuit current (Icc)	50 kA
Control supply	220 V[3)]
Degree of protection	IP42/IP54
Ambient temperature	-5 °C to 40 °C
Altitude	<2,000 m
Relative humidity	5 to 90% (non condensing)
Topcoat[2)]	Gray RAL 7035
Mounting plate	Zinc-plated steel (unpainted)
Touch protection	Zinc-plated steel (unpainted)
Overload	1.1 x rated current for 1 minute or 1.5 x rated current for 3s (operating mode: ND-normal mode)
Pollution degree	3
Instalation[2)]	Indoor
Standards	IEC 61439-1/2 (pending for frame M1 and M2 versions)

Notes: 1) For environments and specifications out of the standard presented, consult WEG.
2) For installation in aggressive environments, with the presence of SO_2 for example, consult WEG to evaluate the appropriate treatment for both the panel and the VSD (extracoating treatment on the electronic circuit boards).
3) Other control voltage under request. Control transformer included as standard.

AFW11M G2 – Modular low voltage variable speed drive

Dimensions

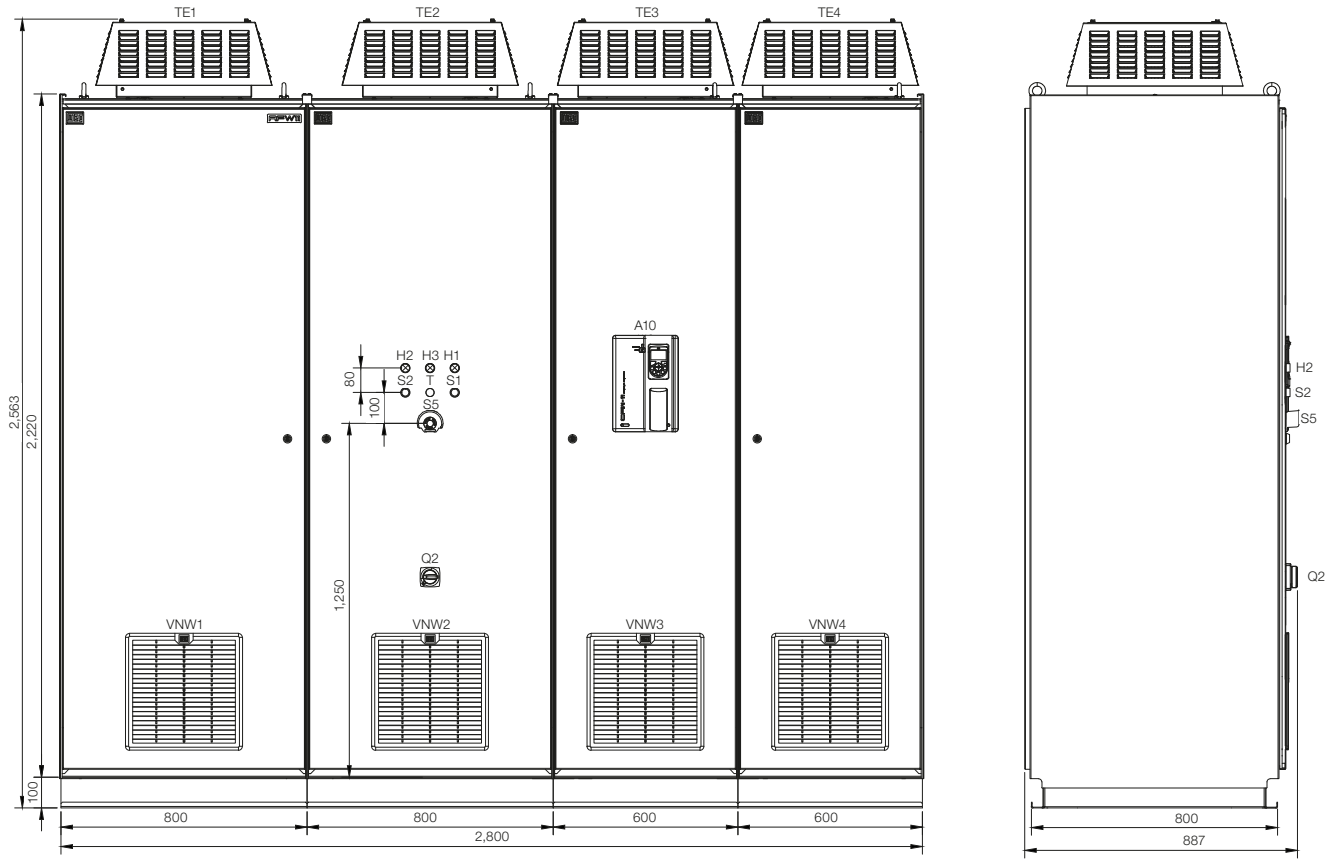
AFW11M G2 – 3 books (power unit - UP11 G2) – frame size M3



AFW11M G2 – Modular low voltage variable speed drive

Dimensions

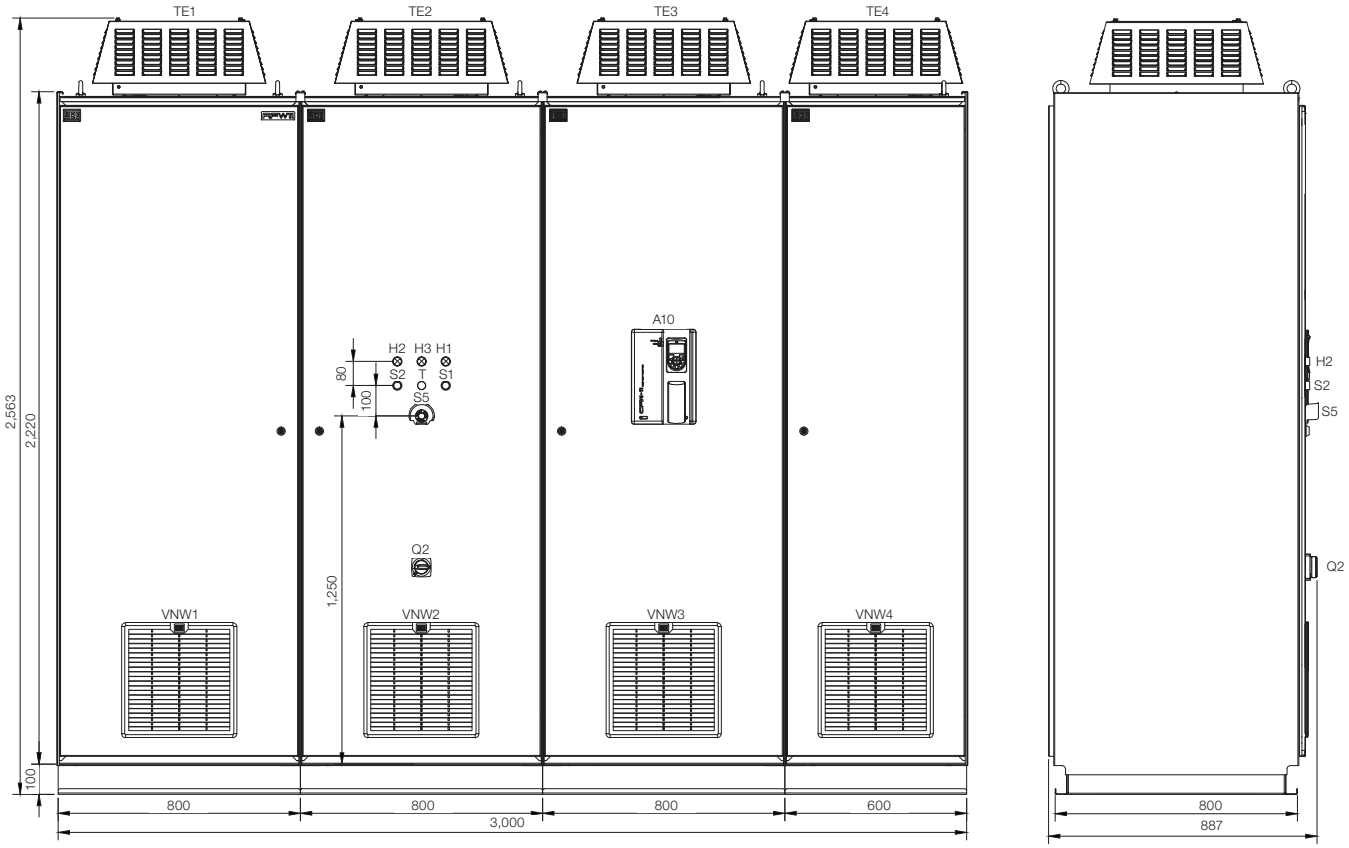
AFW11M G2 – 4 books (power unit - UP11 G2) – frame size M4



AFW11M G2 – Modular low voltage variable speed drive

Dimensions

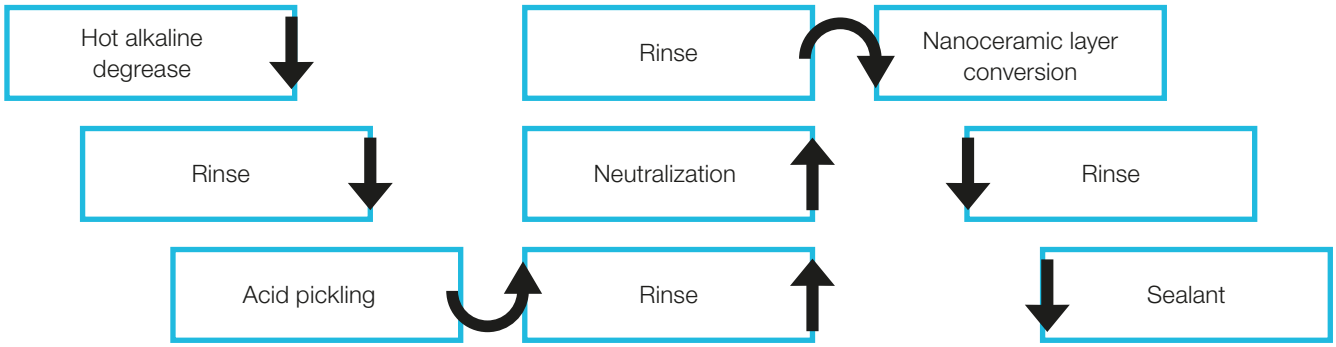
AFW11M G2 – 5 books (power unit - UP11 G2) – frame size M5



Structure preparation and painting

Structure preparation[1)2)]

Executed within strict quality control, it follows the procedure:



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

Adhesion degree

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

Salt spray test

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

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

Panel type	Frame	Door	Walls	Mounting kits	Protection against accidental touch
Self-supported	RAL 7035	RAL 7035	RAL 7035	Galvanized metal plate	Galvanized metal plate

Notes: 1) The place for panel installation is recommended in normal to slightly harsh industrial environments, sheltered, with average relative humidity of up to 90%. Not recommended for direct exposure to alkalis, solvent and acid vapors.
2) For installation in aggressive environments, with the presence of SO_2 for example, consult WEG to evaluate the appropriate treatment for both the panel and the VSD (extracoating treatment on the electronic circuit boards).

Assembly verification

To ensure safety, performance and reliability of the VSD assembled in electrical panels, type and routine tests are performed according to the guidelines of the IEC 61439-1/2 standard.
The type tests, which are mostly destructive, verify the structure and performance of the panel.
The routine tests, which are performed after the end of the assembly, verify that the assembly complies with the requirements requested in the electrical project.
The following are the tests that the panels are submitted to in order to meet the requirements requested in the standard.

Type tests

No.	Characteristic to be checked
1	Resistance of materials and parts:
	- Corrosion resistance
	Properties of the insulating materials:
	- Thermal stability[1)]
	- 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	Insulation distance
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 checks	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
		Check of internal electrical circuits and connections
		Check of the terminals for external conductors
		Check of the mechanical operation
3	Electrical checks	Dielectric properties
		Cabling, operating performance and function

Note: 1) Not applicable for metal panels.

Customized solutions

In addition to the AFW Standard line presented in this document, WEG can also offer the most suitable solution for your application including a variety of other options and customizations. We have an engineering team prepared to design the best solution to meet the technical characteristics of the various industry application. It's presented below some options that can be included with your factory assembled cabinet VSD.

- Input passive harmonic filter
- Input active harmonic filter
- Low harmonic Active Front End solution
- Output dV/dt Filter
- Output sinusoidal filter
- Multipulse rectifier solution
- Dinamic breaking solution
- Liquid cooled variable speed drive
- Multi drive solution
- Additional auxiliary starters (VSD, DOL and soft-starters)
- Agressive environment application
- Top or bottom cables entry positions
- Outdoor solution
- Instrumentation

For any different optional or customization necessity, please contact your sales representative.

Notas

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

Global Presence

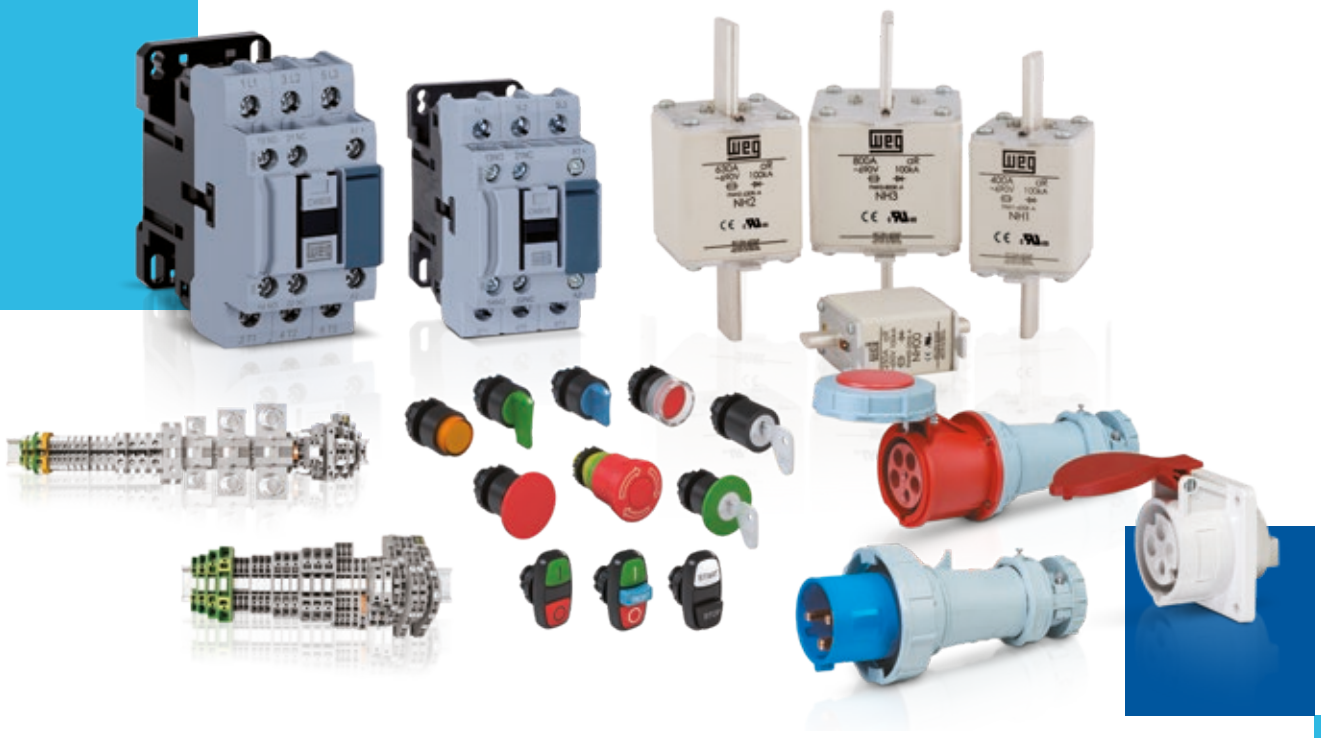
With more than 40,000 employees worldwide, WEG is one of the largest electric motors, electronic equipments and systems manufacturers. We are constantly expanding our portfolio of products and services with expertise and market knowledge. We create integrated and customized solutions ranging from innovative products to complete after-sales service.

WEG's know-how guarantees our ***AFW11 - Cabinet Built Variable Speed Drives*** are 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

Know More

High performance and reliable products to improve your production process.



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

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