

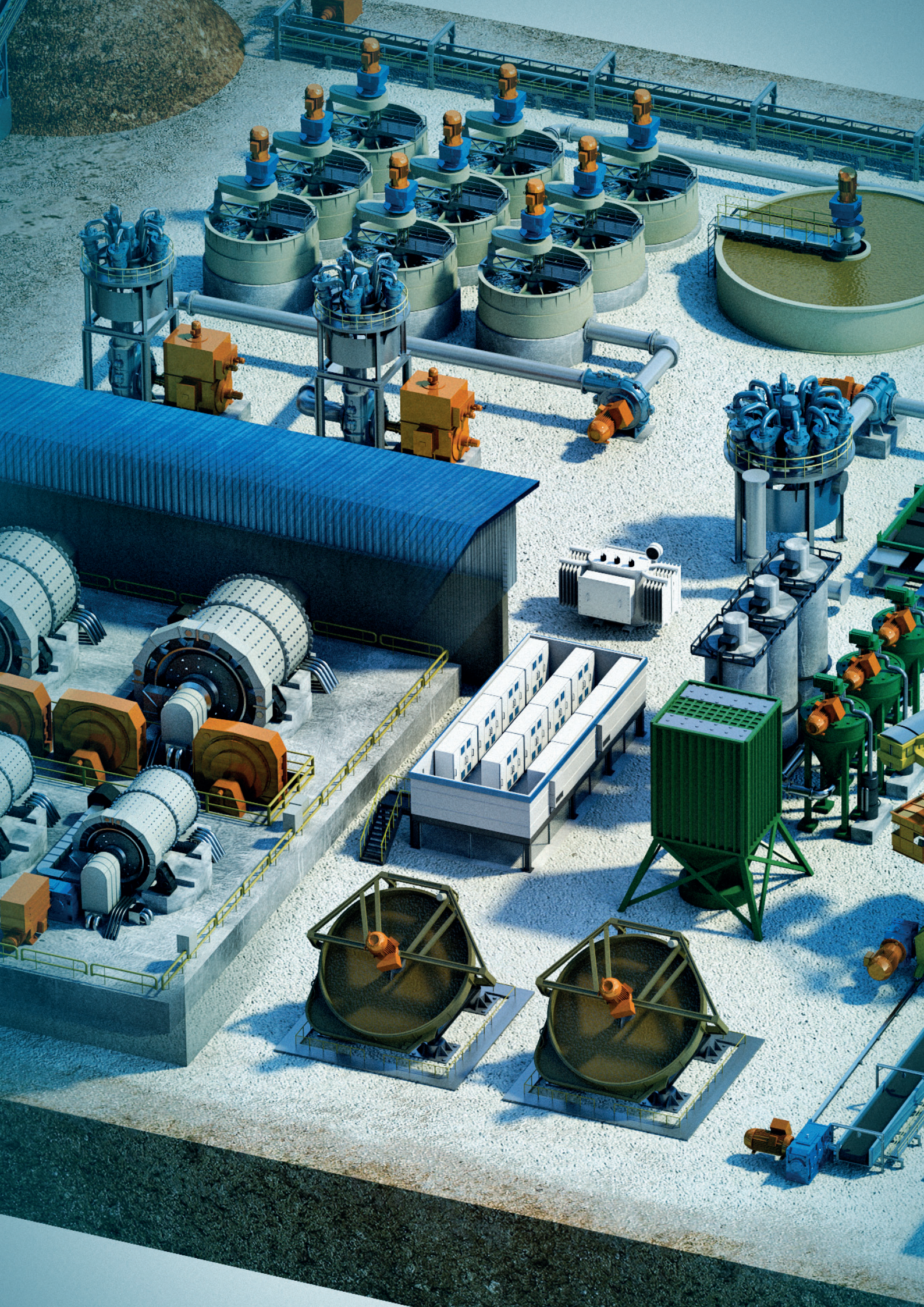
AFW11

VARIABLE SPEED DRIVE

Complete solution to drive three-phase induction motors



Motors | Automation | Energy | Transmission & Distribution | Coatings





AFW11

Variable Speed Drive

Summary

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Note: manufacturing location Spain



COMPLETE SOLUTION TO DRIVE THREE-PHASE INDUCTION MOTORS

The AFW11 is a drive solution for three-phase induction motors assembled in electrical panels with a built-in CFW11 variable speed drive. Its design, manufacturing and assembly rely on **WEG's experience, quality assurance, safety and excellent cost-benefit.**

Offering convenience and flexibility, it can be mounted with optional accessories, according to the application requirements. In addition, the resources, special functions, and hardware and software features of the CFW11 inverter are also available for this solution.



Benefits



Optimized dimensions



Robustness: available in IP42 and IP54 versions



High performance and efficiency



Excellent cost effectiveness



Full drive, ready for use in the application



Several optional items available to customize the project



In compliance with the main international standards



WEG quality and know-how

Applications



Cement & Mining



Water and Wastewater



Sugar & Alcohol



Oil & Gas



Ventilation Systems



Pulp & Paper

Main Characteristics

- Panel mounting with protection rating IP42 or IP54
- Standard Color: RAL 7035 - Light Gray
- Rated voltage and current output in Normal Duty:
 - 380-480V --> 3 up to 1.141A
 - 500-600V --> 2 up to 804A
 - 660-690V --> 2 up to 703A
- Power range: 1,5 up to 630kW
- Control voltage: 230 V - 50/60 Hz¹⁾
- Harmonic mitigation:
 - Low harmonics level, according to 61000-3-12 standard related to low order current harmonics in the power grid
 - No installation restrictions and no minimum impedance required
- RFI filter (included in the CFW11)

Basic Components

- Main Switch:
 - Load switch and high speed fuses
- Variable Frequency Drive:
 - Rectifier 6 pulses
 - DC-link chokes or AC Input reactor built-in the Drive
- Assembled on the panel door:
 - Rotary handle of load switch
 - Human Machine Interface - HMI
 - Voltage pilot light indicator
- Control Transformer for fans and controlgear
- Documentation pocket
- Plinth with 100mm (H)
- Packing for road transportation

Optional Items

- Molded Case Circuit Breaker
- Variable Frequency Drive:
 - Safety Torque Off Function - STO
 - External Power Supply 24VDC (CFW11 - Option W)
 - I/O Expansion Modules, Temperature Transducers, Encoder interface and Communication
- Safety Stop Relay
- Load Reactor for VFD output
- Lighting and built-in Outlet by External auxiliary supply 230Vac
- Motor and Panel Heating Circuit by External Auxiliary Power Supply
- DOL (MPCB+Contactor) for power ratings up to 2,2kW
- Seaworthy Packing

Notes: 1) The control voltage is derived internally through the control transformer.

To add the optional items to the AFW11 or for applications with other accessories, contact your local representative or the sales department.



Resources

- Safety Stop Function - Safe Torque Off (STO)
- Multi-speed: up to 8 pre-programmed speeds
- PLC functions integrated (SoftPLC)
- PID regulator: automatic control of level, pressure, flow, weight, etc.
- Ride-through: operation during momentary loss of the power supply
- Skip frequency: rejection of critical or resonant speeds
- S ramp: smooth acceleration / deceleration
- Optimal braking
- Built-in DC link reactors
- Built-in RFI/EMC filters
- Brake System: integrated brake chopper up to frame size D. Built-in option for frame size E
- Control mode: scalar (V/Hz), open loop vector sensorless and closed loop with encoder

Protections (memorized and indicated on display)

- Overcurrent / short circuit
- Under / overvoltage in the power circuit
- Phase loss
- Overtemperature in the VSD
- Overtemperature in the motor (extra card necessary)
- Overload in the braking resistor
- Overload in the IGBTs
- Overload in the motor
- Fault / external alarm
- Fault in the CPU or memory
- Phase-to-ground short circuit at the output
- Fault in the heatsink fan
- Motor overspeed
- Incorrect connection of encoder

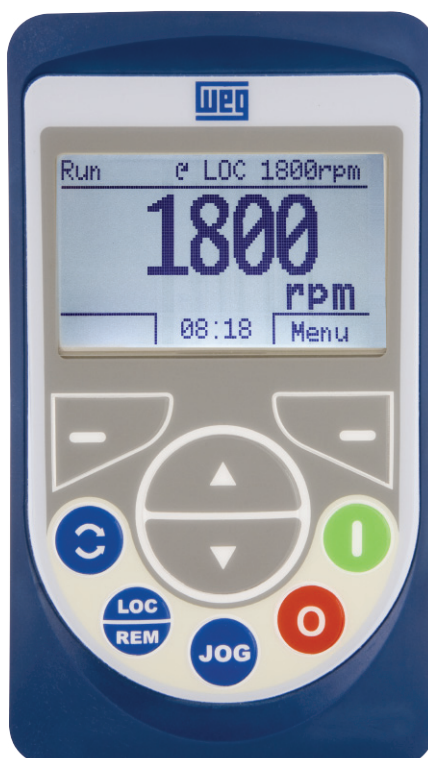
Graphic keypad on panel door

The graphic HMI (Human Machine Interface) provides a series of resources such as:

- Graphic display with backlight
- Soft-keys for easy operation
- Real time clock (RTC)
- Copy function
- Plug-in (connection with CFW11 turned on)
- Language selection
- Oriented Start-Up

Main keypad readings

- Run
- Ready
- Configuration
- Last alarm
- Local / Remote indication
- FWD/REV indication
- Speed Reference
- Motor Speed
- Motor Current
- DC Link Voltage
- Motor Frequency
- Motor Voltage
- Motor Torque
- Output Power
- Process Variable
- PID Setpoint



Coding

1	AFW11	2	0370	3	T	4	4	5	S	6	---	7	---	8	IP42
---	-------	---	------	---	---	---	---	---	---	---	-----	---	-----	---	------

1 – Drive with CFW11 variable speed drive

2 – Rated output current for normal duty

Power supply		Three-phase (T)		
Voltage		380-480 V ac	500-600 V ac	660-690 V ac
Current		0003 = 3 A	0002 = 2.9 A	0002 = 2.9 A
		0005 = 5 A	0004 = 4.2 A	0004 = 4.2 A
		0007 = 7 A	0007 = 7 A	0007 = 7 A
		0010 = 10 A	0010 = 10 A	0010 = 8.5 A
		0013 = 13 A	0012 = 12 A	0012 = 11 A
		0017 = 17 A	0017 = 17 A	0017 = 15 A
		0024 = 24 A	0022 = 22 A	0022 = 20 A
		0031 = 31 A	0027 = 27 A	0027 = 24 A
		0038 = 38 A	0032 = 32 A	0032 = 30 A
		0045 = 45 A	0044 = 44 A	0044 = 35 A
		0058 = 58 A	0053 = 53 A	0053 = 46 A
		0070 = 70 A	0063 = 63 A	0063 = 54 A
		0088 = 88 A	0080 = 80 A	0080 = 73 A
		0105 = 105 A	0107 = 107 A	0107 = 100 A
		0142 = 142 A	0125 = 125 A	0125 = 108 A
		0180 = 180 A	0150 = 150 A	0150 = 130 A
		0211 = 211 A	0170 = 170 A	0170 = 147 A
		0242 = 242 A	0216 = 216 A	0216 = 195 A
		0312 = 312 A	0289 = 289 A	0289 = 259 A
		0370 = 370 A	0315 = 315 A	0315 = 259 A
		0477 = 477 A	0365 = 365 A	0365 = 312 A
		0515 = 515 A	0435 = 435 A	0435 = 365 A
		0601 = 601 A	0472 = 472 A	0472 = 427 A
		0720 = 720 A	0584 = 584 A	0584 = 478 A
		0760 = 760 A	0625 = 625 A	0625 = 518 A
		0795 = 795 A	0758 = 758 A	0758 = 628 A
		0877 = 877 A	0804 = 804 A	0804 = 703 A
		1062 = 1.062 A		
		1141 = 1.141 A		

3 - Number of phases

T	Three-phase
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4 - Voltage

4	380-480 V
5	500-600 V
6	660-690 V

5 - Optional accessories

S	Factory default model
0	Product with optional items

6 - RFI filter

FA	380-480 V	Frames A, B, C and D: built-in internal RFI filter
Blank	380-480 V	Frames E, F, G and H: built-in internal RFI filter (FA is not required in the smart code)
	500-600 V	Any frame: built-in RFI filter (FA is not required in the smart code)
	660-690 V	

7 - Safety stop Safe Torque Off (STO)

Blank	Not built-in
Y ¹⁾	Built-in internal STO module included (standard on frame H models)

8 - Protection rating

IP42	IP42 protection rating
IP54	IP54 protection rating

Specifications

AFW11 Cabinet-Built Drive with CFW11 Variable Speed Drive³⁾

380-480 V

Cabinet-built drive with CFW11 variable speed drive								Maximum applicable motor ¹⁾			
Reference	Three phase power supply	Dimensions and weights ²⁾			Rated output current (A)		Power supply (V)	Normal duty ND		Heavy duty HD	
		CFW11 frame	Panel size HxWxD	Panel weight (kg)	ND	HD		cv	kW	cv	kW
AFW110003T4	380-480 V ac	A	2100x400x600 mm	240 kg	3,6	3,6	400	2	1,5	2	1,5
AFW110005T4				240 kg	5	5		3	2,2	3	2,2
AFW110007T4				240 kg	7	5,5		4	3	3	2,2
AFW110010T4				240 kg	10	10		6	4	6	4
AFW110013T4				240 kg	13,5	11		7.5	5,5	6	5,5
AFW110017T4		B		240 kg	17	13,5		10	9,2	7.5	5,5
AFW110024T4				240 kg	24	19		15	11	12.5	9,2
AFW110031T4				240 kg	31	25		20	15	15	11
AFW110038T4				240 kg	38	33		25	18,5	20	15
AFW110045T4		C		240 kg	45	38		30	22	25	18,5
AFW110058T4				240 kg	58,5	47		40	30	30	22
AFW110070T4				240 kg	70,5	61		50	37	40	30
AFW110088T4		D		240 kg	88	73		60	45	50	37
AFW110105T4				E	2100x600x600 mm	266 kg		105	88	75	55
AFW110142T4		266 kg	142			115		100	75	75	55
AFW110180T4		268 kg	180			142		125	90	100	75
AFW110211T4		271 kg	211			180		150	110	125	90
AFW110242T4		F	2100x800x600 mm	401 kg	242	211		150	132	150	110
AFW110312T4				403 kg	312	242		200	160	150	132
AFW110370T4				403 kg	370	312		270	200	200	160
AFW110477T4				472 kg	477	370		350	280	270	200
AFW110515T4		G	2200x1000x600 mm	554 kg	515	477		350	280	300	280
AFW110601T4				557 kg	601	515		400	330	350	280
AFW110720T4				559 kg	720	560		500	400	400	315
AFW110760T4				560 kg	760	600		550	400	400	330
AFW110795T4		H	2300x1600x800 mm	777 kg	795	637		550	450	450	370
AFW110877T4				826 kg	877	691		650	500	500	400
AFW111062T4				827 kg	1062	855		750	560	600	450
AFW111141T4				835 kg	1141	943		800	630	700	500

Notes:

1) Motor powers are referential values valid for WEG W22 IE2 or HGF three-phase, 4-pole, 50 or 60 Hz induction motors. The proper size must be determined according to the motor rated current, which must be lower than or equal to the inverter rated output current.

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) Panel with Plinth and Without Rooftop Fans.

3) Other configurations available under request.

Specifications

AFW11 Cabinet-Built Drive with CFW11 Variable Speed Drive³⁾

500-600 V

Cabinet-built drive with CFW11 variable speed drive								Maximum applicable motor ¹⁾			
Reference	Three phase power supply	Dimensions and weights ²⁾			Rated output current (A)		Power supply (V)	Normal duty ND		Heavy duty HD	
		CFW11 frame	Panel size HxWxD	Panel weight (kg)	ND	HD		cv	kW	cv	kW
AFW110002T5	500-600 V ac	B	2100x400x600 mm	240 kg	2,9	2,7	575	2.0	1.5	2.0	1.5
AFW110004T5				240 kg	4,2	3,8		3.0	2.2	3.0	2.2
AFW110007T5				240 kg	7	6,4		5.0	4.0	5.0	4.0
AFW110010T5				240 kg	10	9		7.5	5.5	7.5	5.5
AFW110012T5				240 kg	12	10		10	7.5	7.5	5.5
AFW110017T5				240 kg	17	17		15	11	15	11
AFW110022T5		C	2100x400x600 mm	240 kg	22	19		20	15	20	11
AFW110027T5				240 kg	27	22		25	18.5	20	15
AFW110032T5				240 kg	32	27		30	22	25	18.5
AFW110044T5				240 kg	44	36		40	30	30	22
AFW110053T6				271 kg	53	44		50	37	40	30
AFW110063T6				E	2100x600x600 mm	271 kg		63	53	60	45
AFW110080T6		271 kg	80			66		75	55	75	45
AFW110107T6		271 kg	107			90		100	75	100	55
AFW110125T6		271 kg	125			107		125	90	100	75
AFW110150T6		271 kg	150			122		150	110	125	90
AFW110170T6		F	2100x800x600 mm			403 kg		170	150	175	110
AFW110216T6				403 kg	216	180		200	160	175	132
AFW110289T6				403 kg	289	240		300	200	250	160
AFW110315T6		G	2100x1000x600 mm	560 kg	315	289		350	220	300	200
AFW110365T6				560 kg	365	315		380	260	350	220
AFW110435T6				560 kg	435	357		450	300	380	260
AFW110472T6				560 kg	472	418		500	330	430	300
AFW110584T6		H	2300x1600x800 mm	777 kg	584	504		600	400	550	370
AFW110625T6	777 kg			625	540	650	450	550	370		
AFW110758T6	835 kg			758	614	750	560	680	450		
AFW110804T6	835 kg			804	682	850	560	750	500		

Notes:

1) Motor powers are referential values valid for WEG W22 IE2 or HGF three-phase, 4-pole, 50 or 60 Hz induction motors. The proper size must be determined according to the motor rated current, which must be lower than or equal to the inverter rated output current.

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) Panel with Plinth and Without Rooftop Fans.

3) Other configurations available under request.

Specifications

AFW11 Cabinet-Built Drive with CFW11 Variable Speed Drive³⁾

660-690 V

Cabinet-built drive with CFW11 variable speed drive							Maximum applicable motor ¹⁾				
Reference	Three phase power supply	Dimensions and weights ²⁾			Rated output current (A)		Power supply (V)	Normal duty ND		Heavy duty HD	
					ND	HD					
		CFW11 frame	Panel size HxWxD	Panel weight (kg)				cv	kW	cv	kW
AFW110002T6	660-690 V ac	D	2100x400x600 mm	240 kg	2,9	2,7	690	3.0	3.0	3.0	1.5
AFW110004T6				240 kg	4,2	3,8		4.0	4.0	4.0	2.2
AFW110007T6				240 kg	7	6,5		7.5	7.5	7.5	4.0
AFW110010T6				240 kg	8,5	7		10	10	7.5	5.5
AFW110012T6				240 kg	11	9		12.5	12.5	10	7.5
AFW110017T6				240 kg	15	13		15	15	15	11
AFW110022T6				240 kg	20	17		25	25	20	15
AFW110027T6				240 kg	24	20		30	30	25	15
AFW110032T6				240 kg	30	24		30	30	30	18.5
AFW110044T6				240 kg	35	30		40	40	30	22
AFW110053T6		E	2100x600x600 mm	271 kg	46	39		60	60	50	30
AFW110063T6				271 kg	54	46		60	60	60	37
AFW110080T6				271 kg	73	61		75	75	75	55
AFW110107T6				271 kg	100	85		125	125	100	75
AFW110125T6				271 kg	108	95		125	125	125	75
AFW110150T6				271 kg	130	108		150	150	125	90
AFW110170T6		F	2100x800x600 mm	403 kg	147	127		180	180	150	110
AFW110216T6				403 kg	195	165		250	250	200	132
AFW110289T6				403 kg	259	225		300	300	250	185
AFW110315T6		G	2100x1000x600 mm	560 kg	259	225		300	300	300	200
AFW110365T6				560 kg	312	259		400	400	300	220
AFW110435T6				560 kg	365	312		450	450	400	280
AFW110472T6				560 kg	427	365		500	500	400	355
AFW110584T6		H	2300x1600x800 mm	777 kg	478	410		610	610	550	370
AFW110625T6				777 kg	518	447		680	680	550	400
AFW110758T6				835 kg	628	518		750	750	680	500
AFW110804T6				835 kg	703	594		850	850	750	560

Notes:

1) Motor powers are referential values valid for WEG W22 IE2 or HGF three-phase, 4-pole, 50 or 60 Hz induction motors. The proper size must be determined according to the motor rated current, which must be lower than or equal to the inverter rated output current.

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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) Panel with Plinth and Without Rooftop Fans.

3) Other configurations available under request.

Accessories

Internal Cards

CFW11 - SLOT1

Coding	Control accessories for installation in the slot 1	Slot
	Description	
AFW11XXX-STD0-64	I/O expansion (slot 1) module IOA-01	1
AFW11XXX-STD0-56	I/O expansion (slot 1) module IOB-01	
AFW11XXX-STD0-65	I/O expansion (slot 1) module IOC-01	
AFW11XXX-STD0-66	I/O expansion (slot 1) module IOC-02	
AFW11XXX-STD0-67	I/O expansion (slot 1) module IOC-03	
AFW11XXX-STD0-68	Temperature transducers (slot 1) module IOE-01 - 5x PTC type (slot 1)	
AFW11XXX-STD0-52	Temperature transducers (slot 1) module IOE-02 - 5x PT-100 type (slot 1)	
AFW11XXX-STD0-69	Temperature transducers (slot 1) module IOE-03 - 5x KTY84 type	

CFW11 - SLOT2

Coding	Control accessories for installation in the slot 2	Slot
	Description	
AFW11XXX-STD0-70	Interface with encoder (slot 2) module ENC-01	2
AFW11XXX-STD0-71	Interface with encoder (slot 2) module ENC-02	

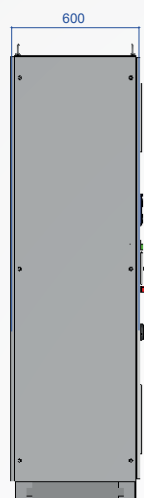
CFW11 - SLOT3

Coding	Control accessories for installation in the slot 3	Slot
	Description	
AFW11XXX-STD0-72	Communication (slot 3) module RS485-01	3
AFW11XXX-STD0-73	Communication (slot 3) module RS232-01	
AFW11XXX-STD0-74	Communication (slot 3) module CAN/RS485-01	
AFW11XXX-STD0-75	Communication (slot 3) module CAN-01	
AFW11XXX-STD0-76	Communication (slot 3) module PROFIBUSDP-01	

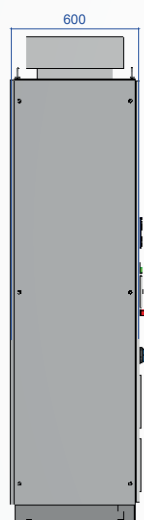
CFW11 - SLOT4

Coding	Control accessories for installation in the slot 4	Slot
	Description	
AFW11XXX-STD0-53	Communication (slot 4) module PROFDP-05	4
AFW11XXX-STD0-54	Communication (slot 4) module DeviceNet-05	
AFW11XXX-STD0-78	Communication (slot 4) module RS232-05	
AFW11XXX-STD0-79	Communication (slot 4) module RS485-05	
AFW11XXX-STD0-80	Communication (slot 4) module Modbus-TCP-05 - 1 port	
AFW11XXX-STD0-82	Communication (slot 4) module PROFINETIO-05	
AFW11XXX-STD0-83	Communication (slot 4) module EtherNet IP-1P-05	
AFW11XXX-STD0-55	Communication (slot 4) module EtherNet IP-2P-05	
AFW11XXX-STD0-63	Communication (slot 4) module EtherCAT	

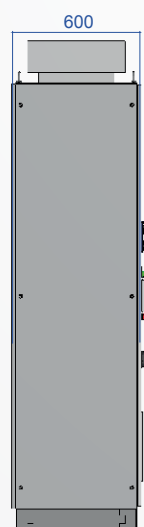
Frames A, B, C and D



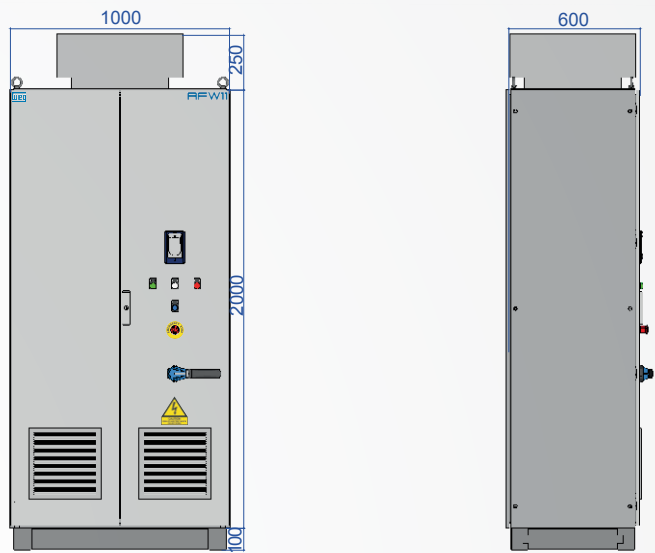
Frames E



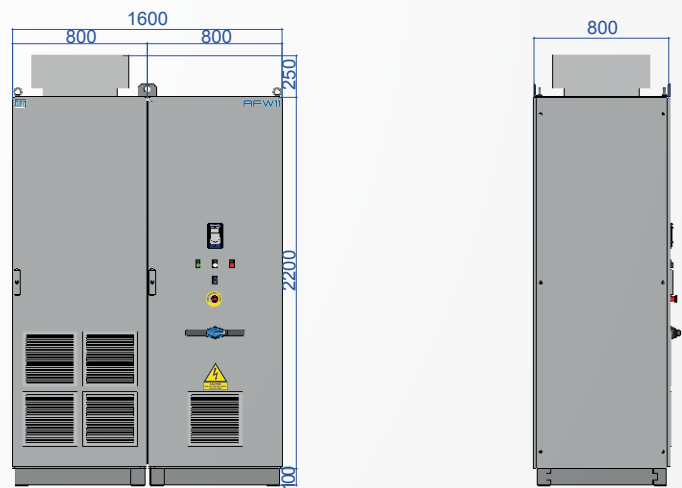
Frames F



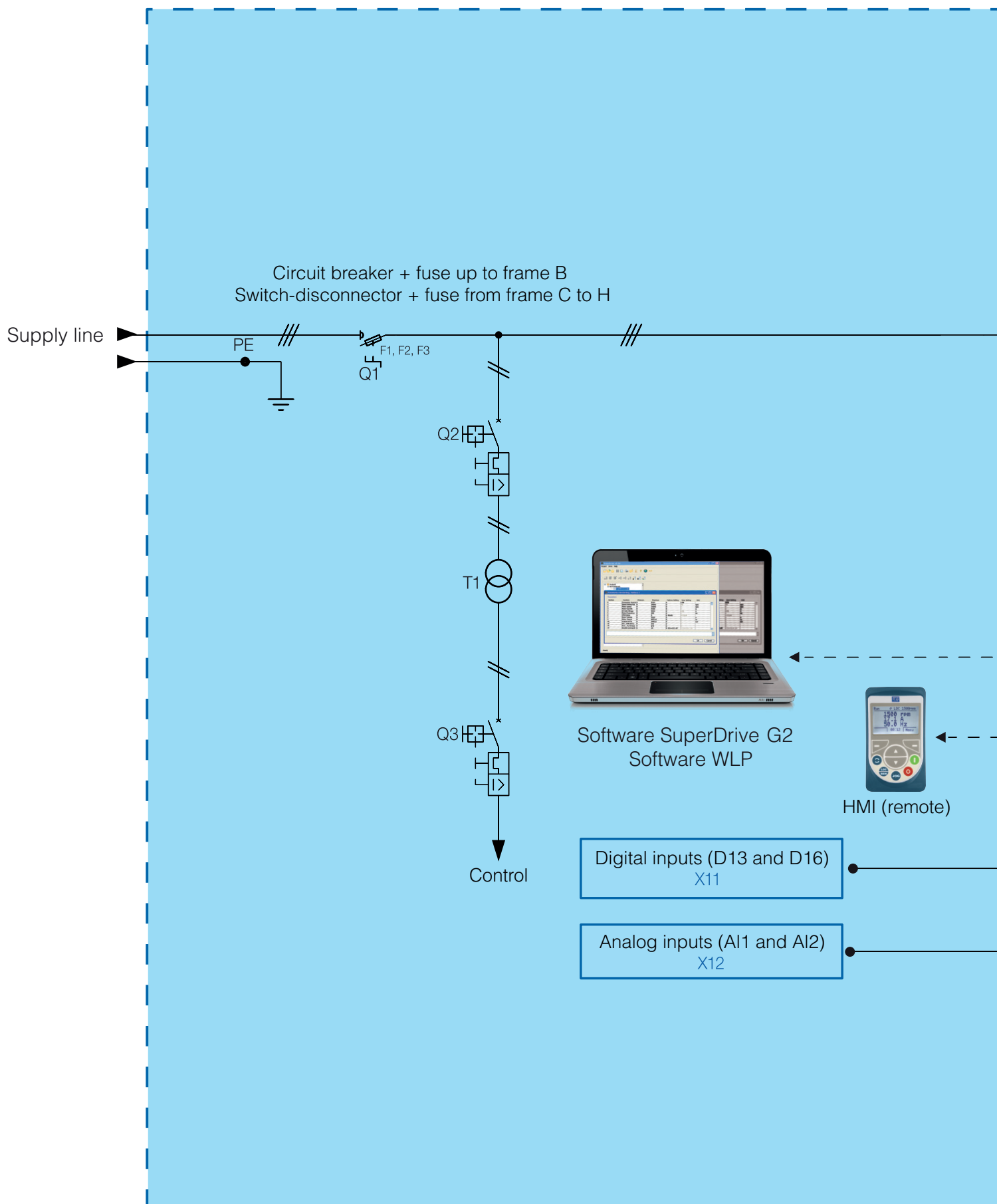
Frames G

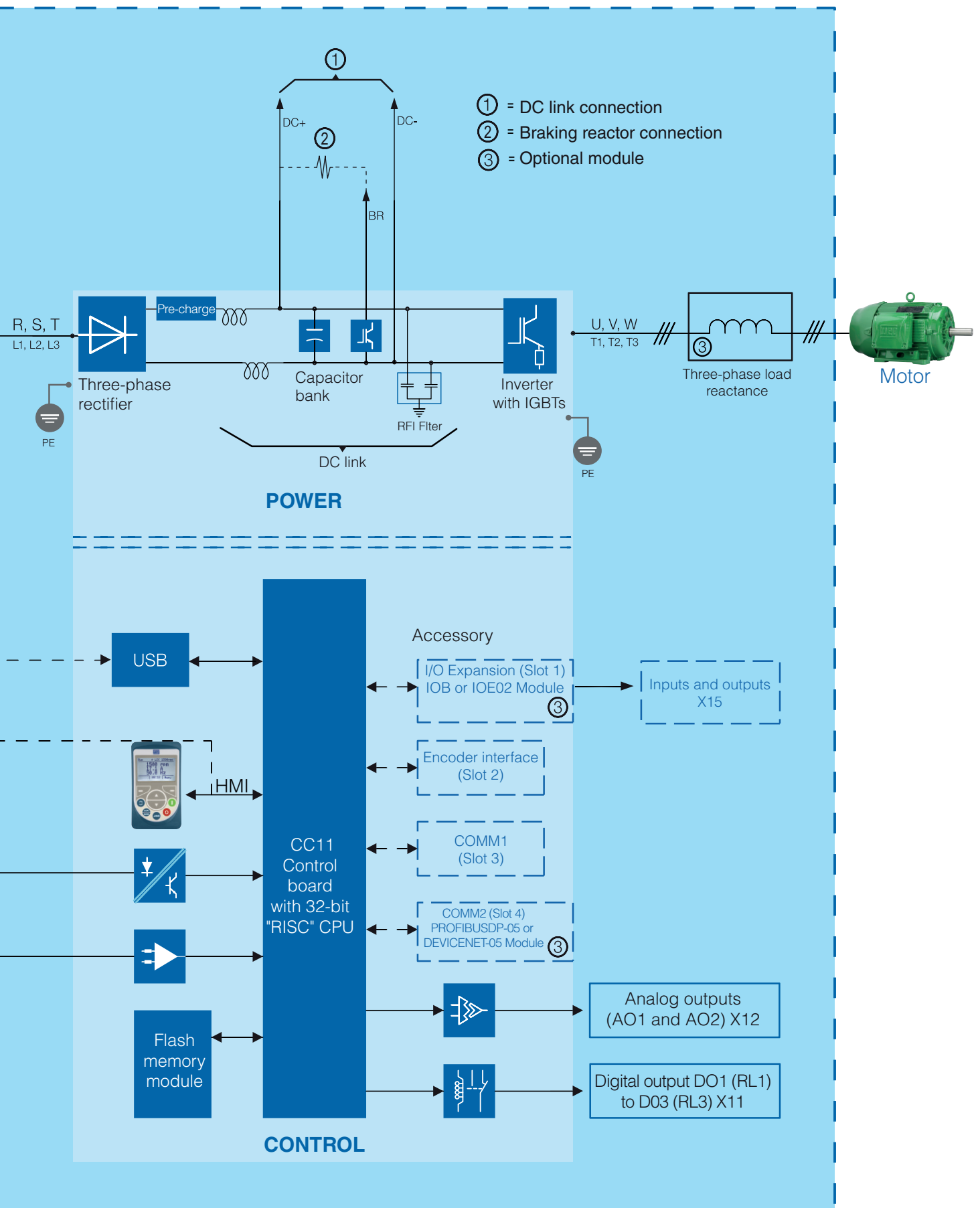


Frames H



Electrical Diagram







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

Global Presence

With more than 30,000 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 - Drive with Variable Speed Drive** is the right choice for your application and business, assuring safety, efficiency and reliability.



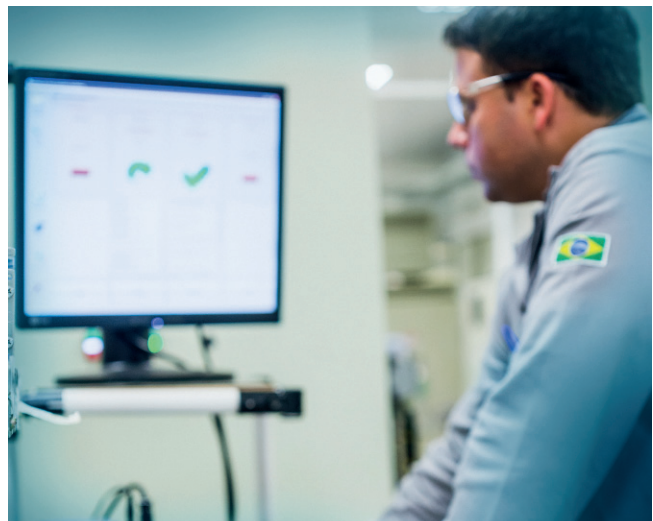
Availability is to have a global support network



Partnership is to create solutions that suit your needs



Competitive edge is to unite technology and innovation



Know More



High performance and reliable products to improve your production process.



AFW11C



AFW11M

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 +34 961 37 92 96

 info@autrial.es

 P.I. Fuente del Jarro, Villa de Madrid, 69
Paterna - Valencia - Spain

Cod: WAUT150222-01

The values shown are subject to change without prior notice.
The information contained is reference values.