

ADV200 AC DRIVE FAMILY

High performances **AC** drives,
AC/DC mono directional and
regenerative power supply units

Industrial Motors
Commercial &
Appliance Motors
Automation
Digital &
Systems
Energy
Transmission &
Distribution
Coatings



Driving efficiency and sustainability



S U M M A R Y

Applications sectors

ADV200 - Field-oriented vector inverter

Description

General characteristics

ADV200-4 - Choosing the inverter - input and output data

ADV200-6 - Choosing the inverter - input and output data

ADV200-DC - Choosing the inverter - input and output data

Weights and dimensions

AFE200 - Regenerative Active Front End power supply

Description

General characteristics

Choosing the power supply unit

FFE200 - Regenerative Fundamental Front End power supply

Description

General characteristics

Choosing the power supply unit

SMB200 - Mono-directional AC/DC power supply

Description

General characteristics

Choosing the power supply unit

Tools & software

WEG_eXpress programming software

"MDPLC" advanced development environment

Standard applications

WEG_SoftScope 3

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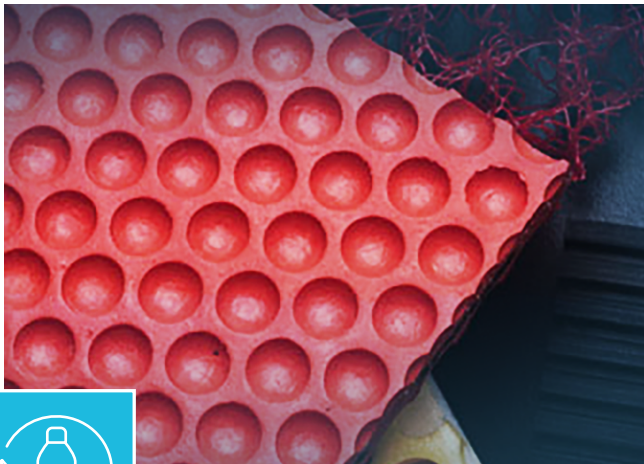
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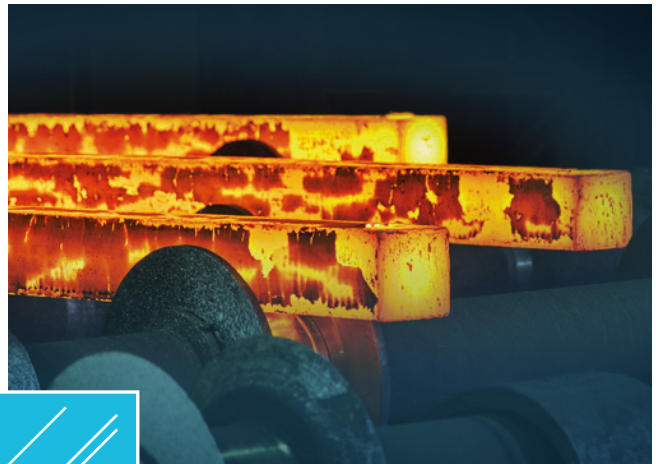




Applications sectors



Plastic



Metal



Textile



Industrial hoisting



Test benches



Glass



Conveyors



Material recycling machinery



Mixer/centrifugee



Lifts for mines



Amusement parks



Cableway



Stone

ADV200

Field-oriented vector inverter

Description

The **ADV200 AC** drive family has been designed and engineered to empower system integrators and OEMs with a complete solution for high-demanding industrial applications. This drive is the result of WEG's strong passion for innovation, combined with decades of expertise in serving a wide spectrum of industrial sectors with reliability and outstanding performances. Its modular mechanical design, combined with a powerful, intuitive, and fully open programming platform, ensures seamless integration and outstanding results within today's most advanced industrial environments.



Power range - Heavy Duty

Models	Power (kW)																															
	0.75	1.5	2.2	3.0	4.0	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	250	315	355	400	500	630	710	900	1,000	1,350	1,650
ADV200-4	Size 1			Size 2			Size 3			Size 4			Size 5			Size 6			Size 7			Parallel size 7 ^[1] [2]										
ADV200-DC										Size 3			Size 4			Size 5			Size 6			Size 7			Parallel size 7 ^[1] [2]							
ADV200-6																			Size 7			Parallel size 7 ^[1] [2]										

Notes: [1] Higher power ratings on request.

[2] Inverters of over 400 kW comprise one master MASTER unit and one or more SLAVE units.

General characteristics

Power supply	■ ADV200-4: 3 x 380 Vac -15%...480 Vac +10%; 50-60 Hz ±5% ■ ADV200-4-DC: 450...750 Vdc ■ ADV200-6: 3 x 500 Vac -10%...690 Vac +10%; 50-60 Hz ±5% ■ ADV200-6-DC: 600...1,120 Vdc
Power ratings	■ ADV200-4 / ADV200-4-DC: from 0.75 kW to 1.65 MW ■ ADV200-6 / ADV200-6-DC: from 160 kW to 1.65 MW
Maximum output voltage	0.98 x Vin
Maximum output frequency f2	■ 500 Hz (1007...72000) ■ 200 Hz (72500...1,650 kW)
IGBT braking unit	■ Sizes 1007...5550: internal (with external resistor) ■ Sizes ≥5750: external optional (BUy series)
Overload (for asynchronous motor)	■ Heavy duty: 150% x In (1' each 5'), 180% x In (for 0.5") ■ Light duty: 110% x In (1' each 5')
Overload (for synchronous motor)	■ Heavy duty: 160% x In (1' each 5'), 200% x In (for 3") ■ Light duty: 110% x In (1' each 5')
Control mode	■ Open-loop vector control ■ Vector control with feedback ■ Open loop V/f and V/f with feedback
Optional cards	Integration of up to 3 options cards onboard the drive
Integrated Safe Torque Off function	"Safety STO" PL=e under EN ISO 13849-1 and SIL 3 under IEC 61508 (for ADV200-...+SI models)
Multi-language programming SW	WEG_eXpress (5 languages)
PLC Integrated	PLC with advanced IEC 61131-3 programming environment
Rated protection	IP20-rated protection (IP00 size 7 and parallel)
Fieldbus management	■ RS485, Modbus-RTU. ■ Optional: EtherNet/IP, PROFINET, DeviceNet, Profibus-DP, CANopen, EtherCAT, Modbus-RTU to Modbus-TCP gateway

Precision [1]	Asynchronous	Control mode	Speed control precision ^[1]	Control range
		FOC with feedback	±0.01 % motor speed rating	1:1000
		Open-loop FOC	±30% motor slip rating	1:100
		V/f	±60% motor slip rating	1:30
	Synchronous	FOC with feedback	±0.01 % motor speed rating	1:1500
		Open-loop FOC	±0.1 % motor speed rating	1:20

Standard supply configuration	Programming keypad	Integrated KB_ADV
	Regulation	■ 2 bipolar analog inputs (voltage/current) ■ 2 bipolar analog outputs (1: voltage/current, 1: voltage) ■ 6 digital inputs (PNP/NPN) ■ 2 digital outputs (PNP/NPN) ■ 2 relay outputs, single contact ■ RS485 serial line (Modbus-RTU)
	Power	■ Integrated choke DC side (up to 132 kW) ■ Integrated mains filter ■ Integrated dynamic braking module (up to 55 kW)
	Reference resolution	■ Digital = 15bit + sign ■ Analog input = 11-bit + sign ■ Analog output = 11-bit + sign
Conformity	Immunity/Emissions	CEE - EN 61800-3
	Safety standards	■ EN 50178, EN 61800-5-1, UL 508C, UL 840 degree of pollution 2 ■ STO (Safe Torque Off): IEC 61508 ■ SIL 3, EN 954-1 Cat. 3 ■ EN 61508 and EN 61800-5-2
Environmental conditions	Ambient temperature	-10°C...+40°C (+14°F...+104°F), +40°C...+50°C (+104°F...+122°F) with derating
	Altitude	Max 4,000 m (up to 1,000 m without current and voltage derating)
Markings		

Notes: [1] For standard 4-pole motor.

[2] With power supply ≤600 Vac and except configurations above 1 MW.

General characteristics

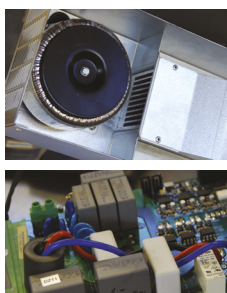
Modularity

A state-of-the-art concept of integrated technology that offers full modularity. The drives can be installed side-by-side in the cabinet. Specific accessories simplify the installation of single and parallel modules, allowing full flexibility in the power architecture.



Integrated quality

ADV200 integrates all components required to ensure high levels of quality and reliability, including the DC choke and input filter, in compliance with EMC standard EN 61800-3.



Fast access

Designed to offer simple and fast management of the product in any situation of installation and mounting. Terminals of the control card and the options are always removable. Power terminals are removable up to Size 3.

Programming keypad

The KB-ADV programming keypad (supplied as standard) makes the man-machine interface simple, immediate and highly functional. The parameter setting is available in 2 modes, Easy and Expert, suitable for users of any level and all programming requirements, however complex. The powerful platform also features a menu/parameter structure that is easy to access through the intuitive keys and the high-contrast display. Additionally, the "Wizard" tool ensures user-friendly start-up procedure. Standard features of the KB-ADV include programming in 10 languages (English, Italian, French, German, Spanish, Polish, Romanian, Russian, Turkish and Portuguese).

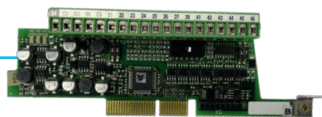
- LCD display with 4 lines x 20 characters
- Clear alphanumeric text
- Full information for any parameters
- Fast navigating keys
- Custom key for displaying the last 10 parameters that have been changed
- DISP key for immediate display of operating parameters
- Upload - download and storage of 5 complete sets of drive parameters
- Remotable up to 10 meters



Options

ADV200 manages up to 3 option cards:

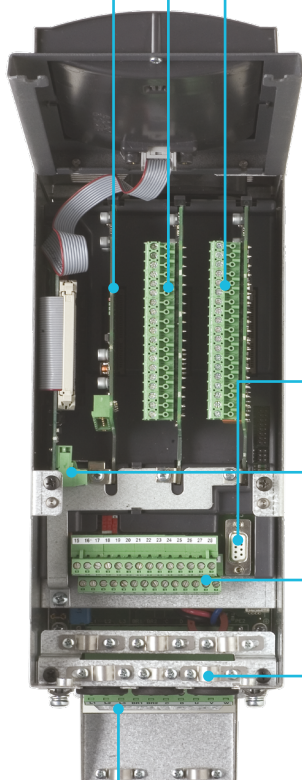
Encoder interface



Fieldbus interface



I/O expansions



Smart connections

Dedicated accessories and fully removable terminals, ensure simple and fast installation and startup in compliance with the EMC normative.

Option	Code	Description
EXP-DE-I1R1F2-ADV	S5L30	TTL/HTL digital increm. encoder expansion card 1 enc. input, 1 enc. output, 2 freeze channels
EXP-DE-I2R1F2-ADV	S5L35	TTL/HTL digital increm. encoder expansion card 2 enc. inputs, 1 enc. output, 2 freeze channels
EXP-SE-I1R1F2-ADV	S5L31	Sinusoidal incremental encoder expansion card 1 enc. input, 1 enc. output, 2 freeze channels
EXP-SESC-I1R1F2-ADV	S5L32	Sincos increm. encoder expansion card 1 enc. input, 1 enc. output, 2 freeze channels
EXP-EN/SSI-I1R1F2-ADV	S5L33	Absolute EnDat/SSI encoder expansion card 1 enc. input, 1 encoder output, 2 freeze channels
EXP-HIP-I1R1F2-ADV	S5L34	Absolute hipface encoder expansion card 1 enc. input, 1 encoder output, 2 freeze channels
EXP-ASC-I1-ADV	S5L42	Absolute SinCos expansion card 1 encoder input
EXP-RES-I1R1-ADV	S5L43	Resolver expansion card 1 Resolver input - 1 Resolver repetition output

EXP-ETH2-IP-ADV200	S5L92	Industrial EtherNet/IP interface expansion card
EXP-ETH2-PN-ADV200	S5L93	PROFINET interface expansion card
EXP-CAN-ADV	S527L	Expansion card for CANopen® and DeviceNet interface
EXP-PDP-ADV	S530L	Expansion card for Profibus-DP interface
EXP-ETH-CAT-ADV200	S5L09	EtherCAT interface expansion card

EXP-IO-D5R8-ADV	S5L38	4 digital inputs/1 digital output/8 relay output
EXP-IO-D6A4R1-ADV	S526L	4 digital inputs/2 digital outputs/2 analog inputs/ 2 analog outputs/2 double contact relays
EXP-FL-XCAN-ADV	S5L41	Master CAN controller and fast link interface
EXP-IO-SENS-100-ADV	S5L40	To acquire signals from Pt-100 (Pt-1000), (NI1000), 0-10 V, 0/4...20 mA, KTY84, PTC
EXP-IO-SENS-1000-ADV	S5L37	

Safe Torque Off (STO) card



The STO card can be installed in the factory as the 4th option, (+SI in the product description).

EXP- SFTy card allows the motor to be disabled without the use of a safety contactor on the drive output. It guarantees compliance with the machine safety directive and meets the following standards:

- **PL=e** under EN ISO 13849-1
- **SIL 3** under IEC 61508

Serial interface

Integrated standard RS485 serial line with Modbus-RTU protocol, for peer-to-peer or multidrop connections (with OPT-485-ADV card). A Modbus RTU/TCP converter kit is available to enable Modbus-TCP communication.

Backup supply

ADV200 can be supplied through an external +24 Vdc supply in order to remain active in case of mains power loss, ensuring seamless operation of all monitoring functions, programming and any connected fieldbus network.

Cables shield

OMEGA clamp for 360° grounding of shielded cables.

Choosing the inverter - input and output data

The combinations of motor power ratings and inverters listed in the table shows the use of motors in which the voltage rating is equal to that of the mains power.

For motors with different voltage ratings the inverter must be chosen according to the current rating of the motor.

The combinations listed in the table show the current that can be delivered by the drive during continuous operation and overload conditions, according to the mains voltage.

The same engineering criteria apply for operations with additional derating factors (see drive instruction manual).

ADV200-4

Sizes ADV200-4	AC input current for continuous operation I _n		Inverter output		P _n mot (recommended asynchronous motor rating, f _{sw} = default)			
	Heavy duty (150% overload)	Light duty (110% overload)	Heavy duty	Light duty	Heavy duty (150% overload)		Light duty (110% overload)	
	@400 Vac [Arms]	@400 Vac [Arms]	[kVA]	[kVA]	@400 Vac [kW]	@460 Vac [HP]	@400 Vac [kW]	@460 Vac [HP]
1007	2.1	3.7	1.7	3	0.75	1	1.5	2
1015	3.7	4.9	3	4	1.5	2	2.2	3
1022	4.9	6.5	4	5.3	2.2	3	3	5
1030	6.5	8.1	5.3	6.6	3	5	4	5
1040	8.1	11.1	6.6	9	4	5	5.5	7.5
2055	11.1	14	9	11.4	5.5	7.5	7.5	10
2075	14	19.6	11.4	15.9	7.5	10	11	15
2110	19.6	26.4	15.9	21.5	11	15	15	20
3150	26.4	32.3	21.5	26.3	15	20	18.5	25
3185	32.3	39	26.3	32	18.5	25	22	30
3220	39	53	32	43	22	30	30	40
4300	53	64	43	52	30	40	37	50
4370	64	74	52	60	37	50	45	60
4450	74	100	60	73	45	60	55	75
5550	100	143	73	104	55	75	75	100
5750	143	171	104	125	75	100	90	125
5900	171	200	125	145	90	125	110	150
61100	200	238	145	173	110	150	132	175
61320	238	285	173	208	132	175	160	200
71600	300	350	208	267	160	200	200	250
72000	350	420	267	319	200	250	250	300
72500	420	580	319	409	250	300	315	400
73150	580	640	409	450	315	400	355	450
73551	640	710	450	506	355	450	400	500
400 kW	665	800	506	603	400	500	500	650
500 kW	800	1,100	603	776	500	650	630	850
630 kW	1,100	1,215	776	852	630	850	710	950
710 kW	1,215	1,350	852	956	710	950	800	1,100
900 kW	1,650	1,800	1,108	1,247	900	1,200	1,000	1,300
1 MW	1,800	2,020	1,247	1,420	1,000	1,300	1,200	1,600
1.35 MW	2,210	2,460	1,566	1,760	1,350	1,800	1,500	2,000
1.65 MW	2,780	3,080	1,919	2,148	1,650	2,200	1,800	2,500

Sizes ADV200-4	Rated output current In (fsw = default)								Switching frequency fsw	
	Heavy duty				Light duty					
	For asynchronous motors (150% overload)		For synchronous motors (160% overload)		For asynchronous motors (110% overload)		For synchronous motors (110% overload)		Default	Higher
	@400 Vac [A]	@460 Vac [A]	@400 Vac [A]	@460 Vac [A]	@400 Vac [A]	@460 Vac [A]	@400 Vac [A]	@460 Vac [A]		
1007	2.5	2.3	2.3	2.1	4.3	3.9	3.9	3.5	8	10, 12
1015	4.3	3.9	3.9	3.5	5.8	5.2	5.2	4.7	8	10, 12
1022	5.8	5.2	5.2	4.7	7.6	6.8	6.8	6.1	4	6, 8, 10, 12
1030	7.6	6.8	6.8	6.1	9.5	8.6	8.6	7.7	4	6, 8, 10, 12
1040	9.5	8.6	8.6	7.7	13	11.7	11.7	10.5	4	6, 8, 10, 12
2055	13	11.7	11.7	10.5	16.5	14.9	15	13.5	4	6, 8, 10, 12
2075	16.5	14.9	15	13.5	23	20.7	21	18.9	4	6, 8, 10, 12
2110	23	20.7	21	18.9	31	27.9	28	25.2	4	6, 8, 10, 12
3150	31	27.9	28	25.2	38	34.2	34	30.6	4	6, 8, 10, 12
3185	38	34.2	34	30.6	46	41.4	41	36.9	4	6, 8, 10, 12
3220	46	41.4	41	36.9	62	55.8	56	50.4	4	6, 8, 10, 12
4300	62	55.8	56	50.4	75	67.5	68	61.2	4	6, 8, 10, 12
4370	75	67.5	68	61.2	87	78.3	78	70.2	4	6, 8, 10, 12
4450	87	78	78	70.2	105	94.5	95	85.5	4	6, 8
5550	105	94.5	95	85.5	150	135	135	121.5	4	6, 8
5750	150	135	135	122	180	162	162	146	4	6, 8
5900	180	162	162	146	210	189	189	170	4	6, 8
61100	210	189	189	170	250	225	225	203	4	6, 8
61320	250	225	225	203	300	270	270	243	4	6, 8
71600	300	270	270	243	385	347	347	312	4	-
72000	385	347	347	312	460	414	414	373	4	-
72500	460	414	414	373	590	531	521	469	2	4
73150	590	531	521	469	650	585	585	527	2	-
73551	650	585	585	527	730	657	657	591	2	-
400 kW	730	657	657	591	870	783	783	705	4	-
500 kW	870	783	783	705	1,120	1,008	1,008	907	2	4
630 kW	1,120	1,008	1,008	907	1,230	1,107	1,107	996	2	-
710 kW	1,230	1,107	1,107	996	1,380	1,242	1,242	1,118	2	-
900 kW	1,600	1,440	1,440	1,296	1,800	1,620	1,620	1,458	2	-
1 MW	1,800	1,620	1,620	1,458	2,050	1,845	1,845	1,661	2	-
1.35 MW	2,260	2,034	2,034	1,830	2,540	2,286	2,286	2,057	2	-
1.65 MW	2,770	2,493	2,493	2,243	3,100	2,790	2,790	2,511	2	-

ADV200-6

Input and output data

Sizes ADV200-6	AC input current		Pn mot (Recommended asynchronous motor rating, fsw = default)				Rated output current In (for Asynchronous motor) (fsw = default)		Rated output current In (For Synchronous motors) (fsw = default)		Switching frequency “Fixed frequency” mode (PAR 568 Switch freq. mode=0, default)	
	Heavy duty	Light duty	Heavy duty		Light duty		Heavy duty	Light duty	Heavy duty	Light duty	Maximum (default)	Minimum
	@690 Vac [Arms]	@690 Vac [Arms]	@690 Vac [kW]	@575 Vac [kW]	@690 Vac [kW]	@575 Vac [kW]	[A]	[A]	[A]	[A]	(kHz)	(kHz)
71600	172	210	160	150	200	200	170	210	153	189	4	2
72000	214	263	200	200	250	250	210	265	189	238	2	2
72500	263	336	250	250	315	350	265	330	238	297	2	2
73150	336	382	315	350	355	400	330	375	297	337	2	2
73550	382	420	355	400	400	450	375 ^[1]	415	337 ^[1]	373	2	2
400 kW	420	520	400	450	500	500	400	500	360	450	2	2
500 kW	533	651	500	550	630	700	500	630	450	567	2	2
630 kW	665	755	630	700	710	800	630	710	567	639	2	2
710 kW	756	843	710	800	800	900	710 ^[1]	790 ^[1]	639 ^[1]	711	2	2
900 kW	1,009	1,180	900	1,000	1,000	1,100	900	1,000	810	900	2	2
1 MW	1,180	1,259	1,000	1,100	1,150	1,300	1,000 ^[1]	1,150 ^[1]	900 ^[1]	1,035	2	2
1.35 MW	1,375	1,515	1,350	1,500	1,500	1,600	1,300 ^[1]	1,450	1,170 ^[1]	1,305	2	2
1.65 MW	1,680	1,840	1,650	1,800	1,800	2,000	1,600	1,770	1,440	1,593	2	2

Notes: [1] Current values with an ambient temperature of 35°C.

ADV200-DC

Input and output data

Sizes ADV200-DC	DC input current for continuous operation I _n				Inverter output		P _n mot (recommended asynchronous motor rating, fsw = default)					
	Heavy duty (150% overload)		Light duty (110% overload)		Heavy duty	Light duty	Heavy duty (150% overload)			Light duty (110% overload)		
	-4 @540 Vdc [Arms]	-6 @ 930 Vdc [Arms]	-4 @540 Vdc [Arms]	-6 @ 930 Vdc [Arms]	@400 V [kVA]	@ 400 V [kVA]	[1] [kW]	[2] [HP]	[3] [HP]	[1] [kW]	[2] [HP]	[3] [HP]
3185	39	-	48	-	26.3	32	18.5	25	-	22	30	-
3220	48	-	65	-	32	43	22	30	-	30	40	-
4300	65	-	80	-	43	52	30	40	-	37	50	-
4370	80	-	90	-	52	60	37	50	-	45	60	-
4450	90	-	125	-	60	73	45	60	-	55	75	-
5550	125	-	175	-	73	104	55	75	-	75	100	-
5750	175	-	210	-	104	125	75	100	-	90	125	-
5900	210	-	240	-	125	145	90	125	-	110	150	-
61100	240	-	290	-	145	173	110	150	-	132	175	-
61320	290	-	350	-	173	208	132	175	-	160	200	-
71600	370	211	430	257	208	267	160	200	150	200	250	200
72000	430	262	510	322	267	319	200	250	200	250	300	250
72500	510	322	710	405	319	409	250	300	250	315	400	350
73150	710	412	780	468	409	450	315	400	350	355	450	400
73550 / 73551	780	468	850	514	450	506	355	450	400	400	500	450
400 kW	860	514	1,020	637	506	603	400	500	450	500	650	500
500 kW	1,020	653	1,420	797	603	776	500	650	550	630	850	700
630 kW	1,420	814	1,560	925	776	852	630	850	700	710	950	800
710 kW	1,560	926	1,700	1,032	852	956	710	950	800	800	1,100	900
900 kW	2,130	1,236	2,610	1,445	1,108	1,247	900	1,200	1,000	1,000	1,300	1,100
1 MW	2,340	1,445	2,550	1,542	1,247	1,420	1,000	1,300	1,100	1,200	1,600	1,300
1.35 MW	3,120	1,684	3,400	1,855	1,566	1,760	1,350	1,800	1,500	1,500	2,000	1,600
1.65 MW	3,900	2,058	4,250	2,254	1,919	2,148	1,650	2,200	1,800	1,800	2,500	2,000

Notes: [1] ADV200-...-4-DC = @400 Vac. ADV200-...-6-DC = @690 Vac.

[2] ADV200-...-4-DC = @460 Vac.

[3] ADV200-...-6-DC = @575 Vac.

ADV200-DC

Input and output data

Sizes ADV200-DC	Rated output current I _n (fsw = default)							
	Heavy duty				Light duty (110% overload)			
	For asynchronous motors (150% overload)		For synchronous motors (160% overload)		(For asynchronous motors)		(For synchronous motors)	
	@540 Vdc [A]	@650 Vdc [A]	@540 Vdc [A]	@650 Vdc [A]	@540 Vdc [A]	@650 Vdc [A]	@540 Vdc [A]	@650 Vdc [A]
3185	38	34.2	34	30.6	46	41.4	41	36.9
3220	46	41.4	41	36.9	62	55.8	56	50.4
4300	62	55.8	56	50.4	75	67.5	68	61.2
4370	75	67.5	68	61.2	87	78.3	78	70.2
4450	87	78	78	70.2	105	94.5	95	85.5
5550	105	94.5	95	85.5	150	135	135	121.5
5750	150	135	135	122	180	162	162	146
5900	180	162	162	146	210	189	189	170
61100	210	189	189	170	250	225	225	203
61320	250	225	225	203	300	270	270	243
71600	300	270	270	243	385	347	347	312
72000	385	347	347	312	460	414	414	373
72500	460	414	414	373	590	531	521	469
73150	590	531	521	469	650	585	585	527
73550 / 73551	650	585	585	527	730	657	657	591
400 kW	730	657	657	591	870	783	783	705
500 kW	870	783	783	705	1,120	1,008	1,008	907
630 kW	1,120	1,008	1,008	907	1,230	1,107	1,107	996
710 kW	1,230	1,107	1,107	996	1,380	1,242	1,242	1,118
900 kW	1,600	1,440	1,440	1,296	1,800	1,620	1,620	1,458
1 MW	1,800	1,620	1,620	1,458	2,050	1,845	1,845	1,661
1.35 MW	2,260	2,034	2,034	1,830	2,540	2,286	2,286	2,057
1.65 MW	2,770	2,493	2,493	2,243	3,100	2,790	2,790	2,511

ADV200-DC-4	Switching frequency fsw	
	Default	Higher
3185...4370	4 kHz	6, 8, 10, 12 kHz
4450...61320	4 kHz	6, 8 kHz
71600...72000	4 kHz	-
72500...73551	2 kHz	- [2]
400 kW	4 kHz [1]	-
500 kW	2 kHz	4 kHz [1]
630 kW...1.65 MW	2 kHz	-

ADV200-DC-6	Switching frequency fsw
	Default
71600	4 kHz
72000	2 kHz / 4 kHz [3]
72500...73550	2 kHz
400 kW...1.65 MW	2 kHz

Notes: [1] from fw 6.03.

[2] 72500 = 4 kHz.

[3] 4 kHz in "variable frequency" mode (PAR 568 Switch freq. mode =1).

Weights and dimensions

Sizes ADV200-4	Dimensions: Width x Height x Depth		Weight	
	mm	inches	kg	lbs
1007...1040	118 x 322 x 235	4.65 x 12.7 x 9.25	5.8	12.8
2055...2110	150 x 392 x 250	5.91 x 15.43 x 9.84	10.2	22.5
3150...3185	180 x 517 x 250	7.09 x 20.35 x 9.84	16.4	36.2
3220	180 x 517 x 250	7.09 x 20.35 x 9.84	22	48.5
4300...4450	268 x 616 x 270	10.55 x 24.25 x 10.63	32	70.6
5550...5900	311 x 767 x 325	12.24 x 30.19 x 12.8	60	132.3
61100...61320	422 x 878 x 360	16.61 x 34.6 x 14.2	90	198.4
71600...72000	417 x 1,407 x 485	16.42 x 55.4 x 19.1	130	286.6
72500	417 x 1,407 x 485	16.42 x 55.4 x 19.1	140	308.7
73150...73551	417 x 1,407 x 485	16.42 x 55.4 x 19.1	150	330.7
400 kW	837 x 1,407 x 485	33.0 x 55.4 x 19.1	260	573.2
500 kW	837 x 1,407 x 485	33.0 x 55.4 x 19.1	280	617.4
630 - 710 kW	837 x 1,407 x 485	33.0 x 55.4 x 19.1	450	992.1
900 kW - 1 MW	1,257 x 1,407 x 485	49.5 x 55.4 x 19.1	450	992.1
1.35 MW	1,677 x 1,407 x 485	66.02 x 55.4 x 19.1	600	1,322.7
1.65 MW	2,097 x 1,407 x 485	82.56 x 55.4 x 19.1	750	1,653.5

Sizes ADV200-6	Dimensions: Width x Height x Depth		Weight	
	mm	inches	kg	lbs
71600...72000	417 x 1,407 x 485	16.42 x 55.4 x 19.1	135	298
72500	417 x 1,407 x 485	16.42 x 55.4 x 19.1	145	320
73150...73550	417 x 1,407 x 485	16.42 x 55.4 x 19.1	155	342
400 kW	837 x 1,407 x 485	33.0 x 55.4 x 19.1	270	595
500 kW	837 x 1,407 x 485	33.0 x 55.4 x 19.1	290	639
630 - 710 kW	837 x 1,407 x 485	33.0 x 55.4 x 19.1	310	683
900 kW - 1 MW	1,257 x 1,407 x 485	49.5 x 55.4 x 19.1	465	1025
1.35 MW	1,677 x 1,407 x 485	66.02 x 55.4 x 19.1	600	1,322.7
1.65 MW	2,097 x 1,407 x 485	82.56 x 55.4 x 19.1	750	1,653.5

Sizes ADV200-DC	Dimensions: Width x Height x Depth		Weight	
	mm	inches	kg	lbs
3185	180 x 517 x 250	7.09 x 20.35 x 9.84	12	26.5
3220	180 x 517 x 250	7.09 x 20.35 x 9.84	18	39.7
4300...4450	268 x 616 x 270	10.55 x 24.25 x 10.63	24	52.9
5550	311 x 777 x 325	12.24 x 30.59 x 12.8	40	88.2
5750-5900	311 x 801 x 325	12.24 x 31.53 x 12.8	40	88.2
61100	421 x 888 x 360	16.57 x 34.96 x 14.17	68	149.9
61320	421 x 924.5 x 360	16.57 x 36.4 x 14.17	68	149.9
71600...72000	417 x 1,407 x 485	16.42 x 55.4 x 19.1	120	267
72500	417 x 1,407 x 485	16.42 x 55.4 x 19.1	130	287
73150...73550 / 73551	417 x 1,407 x 485	16.42 x 55.4 x 19.1	140	307
400 kW	837 x 1,407 x 485	33.0 x 55.4 x 19.1	240	529
500 kW	837 x 1,407 x 485	33.0 x 55.4 x 19.1	260	573
630 - 710 kW	837 x 1,407 x 485	33.0 x 55.4 x 19.1	420	926
900 kW - 1 MW	1,257 x 1,407 x 485	49.5 x 55.4 x 19.1	420	926
1.35 MW	1,677 x 1,407 x 485	66.02 x 55.4 x 19.1	-	-
1.65 MW	2,097 x 1,407 x 485	82.56 x 55.4 x 19.1	-	-

AFE200

Regenerative Active Front End power supply

Description

The **AFE200** regenerative power supply provides a reliable and efficient solution for industrial systems requiring stable DC bus voltage and high performance. Equipped with Active Front End (AFE) technology, it ensures precise control and low harmonic distortion. Its regenerative functionality allows unused energy to be recovered and returned to the grid, leading to significant energy savings and improved overall system efficiency.



The **AFE200** offers a number of advantages:

- “Clean Power” thanks to the unit power factor and reduced harmonic distortion ($\leq 3\%$)
- Enhanced system dynamics during motoring and regenerating operations
- Considerable energy savings during regeneration transients
- Improved stability of the DC Bus circuit under load changes
- Significant cost-effectiveness with a single power supply system
- Elimination of uneconomical conventional braking systems and braking resistors

The **AFE200** range covers power ratings from 11 kW up to 1.65 MW, supporting three-phase supplies at 400 Vac and 690 Vac. Designed with user-friendliness in mind, it features intuitive programming that allows operators at any skill level to fully harness the advantages of Active Front End technology across a wide variety of applications requiring high efficiency and tangible energy savings.

Power range (Heavy Duty)

Models	Power (kW)																	
	11	22	45	90	132	160	200	250	315	355	400	500	630	710	900	1000	1350	1650
AFE200-4	S.2	S.3	S.4	S.5	S.6	Size 7					Parallel size 7 ^[2]							
AFE200-6	-					Size 7					Parallel size 7 ^[2]							

Notes: [1] Higher power ratings on request.

[2] AFE200 of over 400 kW comprise one MASTER unit and one or more SLAVE units.

General characteristics

Management of optional cards

The **AFE200** uses an intelligent rack system that allows Fieldbus interface cards and I/O expansion cards to be installed at the same time.

Backup power supply

The **AFE200** can be supplied by a separate +24 Vdc external power supply. This feature makes it possible to maintain the display and all the drive functions and the connected fieldbus in the event of a power failure.

Serial line

Integrated standard RS485 serial line with Modbus-RTU protocol, for peer-to-peer or multidrop connections (with OPT-485-ADV card). A Modbus RTU/TCP converter kit is available to enable Modbus-TCP communication.

Dedicated accessories

The dedicated accessories guarantee mitigation of high-frequency harmonics, simple wiring and cable shielding to achieve immediate, EMC-compliant startups:

- Dedicated pre-charge kit (mandatory)
- Mains filter EMI type
- Mains filter LCL type (mandatory)



Flexible modular technology

The **AFE200** is based on a fully modular hardware with power structures that can be installed side by side.

The **AFE200** is available in 5 hardware sizes and covers the following power range:

- From 11 kW to 355 kW in the stand-alone configuration
- From 400 kW to 1.65 MW in "parallel" configuration

Pre-charge system

External management of the DC bus pre-charge is a feature of the entire range.

The dedicated AFE pre-charge kits are supplied complete with fuses, resistors and contactor.

Ease of use

The **AFE200** is designed to enable simple, quick, connections to the system to be powered.

All structures are extremely easy to handle and the terminal strips and optional card racks are readily accessible.

Programming keypad

The KB-ADV programming keypad (supplied as standard) makes the man-machine interface simple, immediate and highly functional.

The parameter setting is available in 2 modes, Easy and Expert, suitable for users of any level and all programming requirements, however complex.

The powerful platform also features a menu/parameter structure that is easy to access through the intuitive keys and the high-contrast display.

Additionally, the "Wizard" tool ensures user-friendly start-up procedure. Standard features of the KB-ADV include programming in 10 languages (English, Italian, French, German, Spanish, Polish, Romanian, Russian, Turkish and Portuguese).

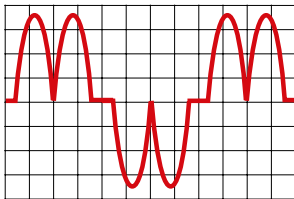
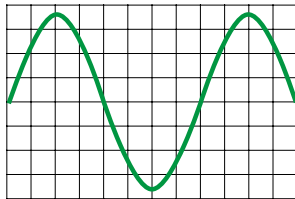
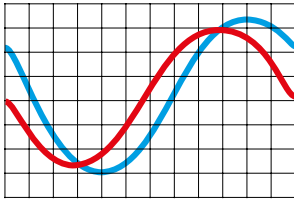
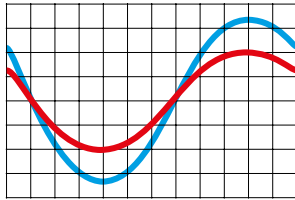
- LCD display with 4 lines x 20 characters
- Clear alphanumeric text
- Full information for any parameters
- Fast navigating keys
- Custom key for displaying the last 10 parameters that have been changed
- DISP key for immediate display of operating parameters
- Upload - download and storage of 5 complete sets of drive parameters
- Remotable up to 10 meters



General characteristics

Power supply	- AFE200-...-4: 380 Vac -15%...480 Vac +10%, 50/60 Hz - AFE200-...-6: 500 Vac -10%...690 Vac +10%, 50/60 Hz
DC-link rated voltage	- AFE200-...-4: 650...780 Vdc - AFE200-...-6: 820...1,120 Vdc
Power ratings	From 11 kW to 1.65 MW
Cosphi	≥0.99
THD	≤3% (considering a network with voltage THD of less than 2%)
Overload	- Heavy duty: 150% for 60 sec every 300 sec, 180% 0.5 sec - Light duty: 110% for 60 sec every 300 sec
Optional cards	Integration of up to 2 options onboard the drive
Multi-language programming SW	WEG_eXpress (5 languages)
Rated protection	IP20-rated protection (IP00 size 7 and parallel)
Reference resolution	- Digital = 15bit + sign - Analog input = 11-bit + sign - Analog output = 11-bit + sign
Fieldbus management	- RS485, Modbus-RTU. - Optional: EtherNet/IP, PROFINET, DeviceNet, Profibus-DP, CANopen, EtherCAT, Modbus-RTU to Modbus-TCP gateway

Standard supply configuration	Programming keypad	Integrated KB_ADV
	Regulation	2 bipolar analog inputs (voltage/current) 2 bipolar analog outputs (1: voltage/current, 1: voltage) 6 digital inputs (PNP/NPN) 2 digital outputs (PNP/NPN) 2 relay outputs, single contact - RS485 serial line (Modbus-RTU)
Options		LCL type line input filter, is composed by one input choke and one LC filter (mandatory)
		Pre-charge kit, includes fuses, resistors and pre-load contactor (mandatory)
		External EMI mains filter
Conformity	Climatic conditions	EN 60721-3-3
	Electrical safety	EN 50178, EN 61800-5-1, UL 508C, UL 840 pollution level 2
	Vibrations	EN 60068-2-6, test Fc
	EMC	EN 61800-3
Environmental conditions	Ambient temperature	-10°C...+40°C +40°C...+50°C with derating
	Altitude	Max 2,000 m
Markings		

Input current THD “Clean Power” Technology. The AFE200 integrates cutting-edge energy recovery and energy efficiency technology.	 From AC inverter	 From AFE200 power supply unit
Mains input power factor The AFE200 uses advanced control algorithms to maintain the input current in phase with voltage.	 From AC inverter	 From AFE200 power supply unit

Note: [1] Except types AFE200-...-11 above 1 MW, types AFE-...-6 and accessories

Choosing the power supply unit

Input data

The same engineering criteria apply for operations with additional derating factors (see drive instruction manual).

Sizes AFE200-4	AC Input current for continuous operation In		Switching frequency fsw	
	Heavy duty (150% overload)	Light duty (110% overload)	Default	Higher
	@400 Vac [A]	@400 Vac [A]		
2110	20	27	8	-
3220	40	60	8	-
4450	80	100	8	-
5900	160	200	4	6, 8
61320	230	280	4	6, 8
71600	280	340	4	-
72000	340	400	2	4
72500	400	500	2	4
73150	500	560	2	-
73550	560	600	2	-
400 kW	600	760	2	-
500 kW	760	950	2	-
630 kW	950	1,060	2	-
710 kW	1,060	1,050	2	-
900 kW	1,400	1,500	2	-
1 MW	1,500	1,730	2	-
1.35 MW	2,010	2,160	2	-
1.65 MW	2,520	2,700	2	-

Sizes AFE200-...-6	AC Input current for continuous operation In		Switching frequency fsw	
	Heavy duty (150% overload)	Light duty (110% overload)	Default	Higher
	@690 Vac [A]	@690 Vac [A]		
71600	150	190	4	-
72000	190	240	2	-
72500	240	300	2	-
73150	300	340	2	-
73550	340 ^[1]	380	2	-
400 kW	360	455	2	-
500 kW	455	570	2	-
630 kW	570	645	2	-
710 kW	645 ^[1]	720	2	-
900 kW	850	920	2	-
1 MW	920 ^[1]	1,150	2	-
1.35 MW	1,200 ^[1]	1,350	2	-
1.65 MW	1,470 ^[1]	1,645	2	-

Note: [1] Current values with an ambient temperature of 35°C.

Choosing the power supply unit

Output data

Sizes AFE200-4	Output				Output current rating In (DC) (fsw = default)			
	Heavy duty		Light duty		Heavy duty		Light duty	
	@400 Vac [kW]	@460 ac [kW]	@400 Vac [kW]	@460 Vac [kW]	650 Vdc [A]	750 Vdc [A]	650 Vdc [A]	750 Vdc [A]
2110	13.9	12.5	18.7	16.8	21	19	29	26
3220	28	29	42	43	43	39	64	57
4450	55	57	69	72	85	76	107	96
5900	110	115	139	143	171	153	213	191
61320	159	165	194	201	245	220	298	268
71600	194	201	236	244	298	268	363	325
72000	236	244	277	287	363	325	426	383
72500	277	287	346	358	426	383	532	477
73150	346	358	388	402	532	477	597	536
73550	388	402	416	430	597	536	640	573
400 kW	416	430	527	545	640	551	811	699
500 kW	527	545	658	681	811	699	1,012	873
630 kW	658	681	734	760	1,012	873	1,129	974
710 kW	734	760	797	825	1,129	974	1,226	1,058
900 kW	970	1,004	1,039	1,075	1,492	1,287	1,598	1,378
1 MW	1,039	1,075	1,200	1,242	1,598	1,378	1,846	1,592
1.35 MW	1,392	1,441	1,496	1,548	2,142	1,928	2,302	2,072
1.65 MW	1,746	1,807	1,870	1,935	2,686	2,417	2,877	2,589

Sizes AFE200-...-6	Output		Output current rating In (DC) (fsw = default)	
	Heavy duty	Light duty	Heavy duty	Light duty
	@690 Vac [kW]	@690 Vac [kW]	[A]	[A]
71600	179	227	165	210
72000	227	287	210	265
72500	287	358	265	330
73150	358	406	330	375
73550	406	454	375	420
400 kW	430	544	396	500
500 kW	544	681	500	627
630 kW	681	771	627	711
710 kW	771	860	711	792
900 kW	1,015	1,100	935	1,012
1 MW	1,100	1,255	1,012	1,155
1.35 MW	1,434	1,613	1,320	1,485
1.65 MW	1,757	1,966	1,615	1,810

Weights and dimensions

Sizes AFE200	Dimensions: Width x Height x Depth		Weight	
	mm	inches	kg	lbs
2110	152 x 392 x 250	5.98 x 15.43 x 9.84	10.2	22.5
3220	180 x 517 x 250.1	7.09 x 20.35 x 9.85	18	39.7
4450	268 x 616 x 270	10.55 x 24.25 x 10.63	24	52.9
5900	311 x 801 x 325	12.24 x 31.53 x 12.8	40	88.2
61320	421 x 924.5 x 360	16.57 x 36.4 x 14.17	68	149.9
71600...72000	417 x 1,407 x 485	16.42 x 55.4 x 19.1	130	286.6
72500	417 x 1,407 x 485	16.42 x 55.4 x 19.1	140	308.7
73150...73550	417 x 1,407 x 485	16.42 x 55.4 x 19.1	150	330.7

FFE200

Regenerative fundamental front end power supply

Description

FFE200 is the **Fundamental Front End** WEG solution for regenerative power supply to be used as an alternative to traditional braking resistors.

It is designed to feed a common DC bus where one single or more ADV200-DC inverter module are connected. Everytime the plant doesn't need harmonic distortion mitigation,

FFE200 is the right solution to feed the regenerative energy from the motors back to the AC power line, eliminating the use of expensive and inefficient braking resistors.

How the **FFE200** application can benefit the users:

- Cabinet size reduced
- No need of complex filtering strategy; just a AC choke required on the input.
- Lower internal thermal losses



Configuration FFE200-...-4

550	730	880	2x 550	2x 730	2x 880	3x 730	3x 880	4x 730	4x 880	5x 730	5x 880	[1]
550	730	880	550 MS 550 SL	730 MS 730 SL	880 MS 880 SL	730 MS 730 SL 730 SL	880 MS 880 SL 880 SL	730 MS 730 SL 730 SL 730 SL2	880 MS 880 SL 880 SL 880 SL2	730 MS 730 SL 730 SL 730 SL2	880 MS 880 SL 880 SL 880 SL2	[1]
Parallel [2]												

Notes: [1] Higher sizes on request.

[2] FFE200 of 2x500 and over comprise one MASTER unit and one or more SLAVE units.

Configuration FFE200-...-6

500	690	760	2x 500	2x 690	2x 760	3x 690	3x 760	4x 690	4x 760	5x 690	5x 760	[1]
500	690	760	500 MS 500 SL	690 MS 690 SL	760 MS 760 SL	690 MS 690 SL 690 SL	760 MS 760 SL 760 SL	690 MS 690 SL 690 SL 690 SL2	760 MS 760 SL 760 SL 760 SL2	690 MS 690 SL 690 SL 690 SL2	760 MS 760 SL 760 SL 760 SL2	[1]
Parallel [2]												

Notes: [1] Higher sizes on request.

[2] FFE200 of 2x500 and over comprise one MASTER unit and one or more SLAVE units.

General characteristics

Flexible modular technology

The **FFE200** is based on a fully modular hardware with power structures that can be installed side by side.

FFE200 is available in one unique mechanical size:

- From 500 A to 880 A in the stand-alone configuration
- Currents higher than 1000 A can be obtained with power configurations where up to 5 parallel modules are allowed

Pre-charge system

In the **FFE200-...+PRC** the pre-charge circuit is integrated.

Ease of use

The **FFE200** is designed to simplify the power connections.

All structures are extremely easy to handle and the terminal strips and optional card racks are readily accessible.

Management of optional cards

The **FFE200** uses an intelligent rack system that allows Fieldbus interface cards and I/O expansion cards to be installed at the same time



Backup power supply

The **FFE200** can be supplied by a separate +24 V dc external power supply. This feature makes it possible to maintain the display and all the drive functions active, as well as the connected fieldbuses in the event of a power failure.

Dedicated accessories

During the pre-charge transient, the current is reduced by means of specific pre-charge units. EMI filters are available for making the installations compliant with the EMC regulations.

Serial line

Integrated standard RS485 serial line with Modbus-RTU protocol, for peer-to-peer or multidrop connections (with OPT-485-ADV card).

A Modbus RTU/TCP converter kit is available to enable Modbus-TCP communication.

Programming keypad

The KB-ADV programming keypad (supplied as standard) makes the man-machine interface simple, immediate and highly functional.

The parameter setting is available in 2 modes, Easy and Expert, suitable for users of any level and all programming requirements, however complex.

The powerful platform also features a menu/parameter structure that is easy to access through the intuitive keys and the high-contrast display.

Additionally, the “Wizard” tool ensures user-friendly start-up procedure. Standard features of the KB-ADV include programming in 10 languages (English, Italian, French, German, Spanish, Polish, Romanian, Russian, Turkish and Portuguese).

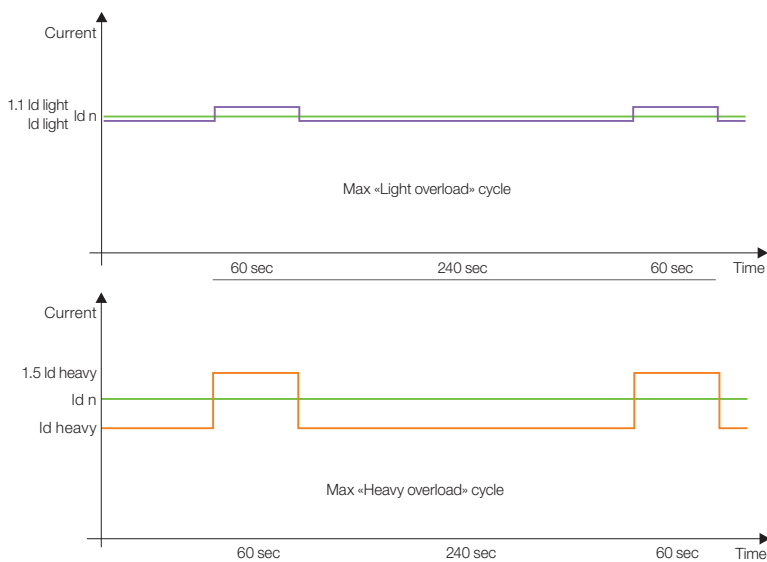
- LCD display with 4 lines x 20 characters
- Clear alphanumeric text
- Full information for any parameters
- Fast navigating keys
- Custom key for displaying the last 10 parameters that have been changed
- DISP key for immediate display of operating parameters
- Upload - download and storage of 5 complete sets of drive parameters
- Remotable up to 10 meters



Power supply	■ FFE200-...-4: 380 Vac -15%...480 Vac +10%, 50/60 Hz ■ FFE200-...-6: 500 Vac -10%...690 Vac +10%, 50/60 Hz ■ Systems TT, TN and IT
DC-link rated voltage	Power supply $U_{In} \times 1.35$
Power ratings	■ FFE200-...-4: 300...475 kW (size 7). Up to 2.1 MW by parallel configurations ■ FFE200-...-6: 475...700 kW (size 7). Up to 3.2 MW by parallel configurations
Cosphi	≥ 0.99
THD	$< 45\%$
Overload	■ Heavy duty: 150% for 60 sec every 300 sec ■ Light duty: 110% for 60 sec every 300 sec
Optional cards	Integration of up to 2 options onboard the drive
Multi-language programming SW	WEG_eXpress (5 languages)
Rated protection	Standard IP00
Fieldbus management	RS485, Modbus-RTU. Optional: Modbus-RTU to Modbus-TCP gateway, DeviceNet, Profibus-DP, CANopen, EtherCAT, EtherNet/IP, PROFINET

Standard supply configuration	Programming keypad	Integrated KB_ADV
	Regulation	■ 2 bipolar analog inputs (voltage/current) ■ 2 bipolar analog outputs (1: voltage/current, 1: voltage) ■ 6 digital inputs (PNP/NPN) ■ 2 digital outputs (PNP/NPN) ■ 2 relay outputs, single contact ■ RS485 serial line (Modbus-RTU)
Options		Pre-charge and line choke EMI filter
Conformity	Climatic conditions	EN 60721-3-3
	Electrical safety	EN 50178, EN 61800-5-1, UL 508C, UL 840 pollution level 2
	Vibrations	EN 60068-2-6, test Fc
	EMC	EN 61800-3
Environmental conditions	Ambient temperature	■ $-10^{\circ}\text{C} \dots +40^{\circ}\text{C}$ ■ $+40^{\circ}\text{C} \dots +50^{\circ}\text{C}$ with derating
	Altitude	■ Max 4,000 m a.s.l. (FFE200-4) ■ Max 3,500 m a.s.l. (FFE200-6) ■ Above 2,000 m a.s.l. with derating
Markings		

Overload curves



Choosing the power supply unit

The same engineering criteria apply for operations with additional derating factors (see drive instruction manual).

Input data

Sizes FFE200-4	Heavy duty		Light duty		Sizes FFE200-6	Heavy duty		Light duty	
	An	In	An	In		An	In	An	In
	@380...500 Vac [kVA]	@380...500 Vac [Arms]	@380...500 V ac [kVA]	@380...500 Vac [Arms]		@500...690 Vac [kVA]	@500...690 Vac [Arms]	@500...690 Vac [kVA]	@500...690 Vac [Arms]
550	322	465	382	552	500	514	430	588	492
730	429	619	501	724	690	696	582	816	682
880	516	746	617	890	760	763	639	889	744
x 2 FFE200-550-4	596	860	708	1,021	x 2 FFE200-500-6	950	795	1,087	910
x 2 FFE200-730-4	793	1,145	927	1,339	x 2 FFE200-690-6	1,287	1,077	1,509	1,262
x 2 FFE200-880-4	956	1,379	1,141	1,647	x 2 FFE200-760-6	1,412	1,182	1,645	1,377
x 3 FFE200-730-4	1,190	1,717	1,391	2,008	x 3 FFE200-690-6	1,931	1,616	2,263	1,894
x 3 FFE200-880-4	1,433	2,069	1,711	2,470	x 3 FFE200-760-6	2,118	1,772	2,468	2,065
x 4 FFE200-730-4	1,587	2,290	1,855	2,677	x 4 FFE200-690-6	2,575	2,155	3,018	2,525
x 4 FFE200-880-4	1,911	2,758	2,282	3,294	x 4 FFE200-760-6	2,824	2,363	3,291	2,754
x 5 FFE200-730-4	1,983	2,862	2,319	3,347	x 5 FFE200-690-6	3,219	2,693	3,772	3,156
x 5 FFE200-880-4	2,389	3,448	2,852	4,117	x 5 FFE200-760-6	3,530	2,954	4,113	3,442

Output data

Sizes FFE200-4	Heavy duty		Light duty		Sizes FFE200-6	Heavy duty		Light duty	
	Pdcn	Idcn	Pdcn	Idcn		Pdcn	Idcn	Pdcn	Idcn
	[kW]	@400 Vac [A]	[kW]	@400 Vac [A]		[kW]	@690 Vac [A]	[kW]	@690 Vac [A]
550	297	550	356	660	500	476	511	549	589
730	396	733	467	865	690	644	691	761	817
880	475	880	574	1,063	760	705	757	829	890
x 2 FFE200-550-4	549	1,018	659	1,221	x 2 FFE200-500-6	881	945	1,015	1,090
x 2 FFE200-730-4	732	1,356	864	1,600	x 2 FFE200-690-6	1,191	1,278	1,408	1,511
x 2 FFE200-880-4	879	1,628	1,062	1,967	x 2 FFE200-760-6	1,304	1,400	1,534	1,647
x 3 FFE200-730-4	1,098	2,034	1,296	2,400	x 3 FFE200-690-6	1,786	1,918	2,112	2,267
x 3 FFE200-880-4	1,319	2,442	1,593	2,950	x 3 FFE200-760-6	1,957	2,101	2,300	2,470
x 4 FFE200-730-4	1,464	2,712	1,728	3,201	x 4 FFE200-690-6	2,382	2,557	2,816	3,023
x 4 FFE200-880-4	1,758	3,256	2,124	3,933	x 4 FFE200-760-6	2,609	2,801	3,067	3,293
x 5 FFE200-730-4	1,831	3,390	2,160	4,001	x 5 FFE200-690-6	2,977	3,196	3,520	3,779
x 5 FFE200-880-4	2,198	4,070	2,655	4,916	x 5 FFE200-760-6	3,261	3,501	3,834	4,116

Weights and dimensions

Sizes FFE200	Dimensions: Width x Height x Depth		Weight	
	mm	inches	kg	lbs
Size 7	417 x 1,407 x 485	16.42 x 55.4 x 19.1	140	309

SMB200

Mono-directional AC/DC power supply

Description

SMB200 is a 3-phase mono-directional AC/DC power supply, designed to supply a common DC Bus configuration where one or more drives can be connected. To the same bus one or more braking units and braking resistors can be wired.

How the **SMB200** can benefit the users:

- In applications where several drives are connected to the same DC bus, the motors can exchange energy with each other
- Where c filters are not required being the only AC choke enough to guarantee a sufficient harmonic distortion



Configuration SMB200-...-4

[1]	1250	1600	2500	2x 1250	2x 1600	2x 2500	3x 1250	3x 1600	3x 2500	4x 1250	4x 1600	5x 2500	[1]
[1]	1250	1600	2500	1250 1250	1600 1600	2500 2500	1250 1250 1250	1600 1600 1600	2500 2500 2500	1250 1250 1250 1250	1600 1600 1600 1600	2500 2500 2500 2500	[1]
-				Parallel									

Note: [1] Lower/higher sizes on request.

Configuration SMB200-...-6

[1]	1000	1600	2500	2x 1000	2x 1600	2x 2500	3x 1000	3x 1600	3x 2500	4x 1000	4x 1600	4x 2500	[1]
[1]	1000	1600	2500	1000 1000	1600 1600	2500 2500	1000 1000 1000	1600 1600 1600	2500 2500 2500	1000 1000 1000 1000	1600 1600 1600 1600	2500 2500 2500 2500	[1]
-				Parallel									

Note: [1] Lower/higher sizes on request.

General characteristics



Flexible modular technology

The SMB200 is based on a fully modular hardware with power structures that can be installed side by side. Up to 4 power modules can be connected in parallel.

Dedicated accessories

Pre-charge and line choke (mandatory)
 ■ M/S Communication cable for parallel configurations

Ease of use

The SMB200 modules are extremely easy to handle and the terminal strips are readily accessible.

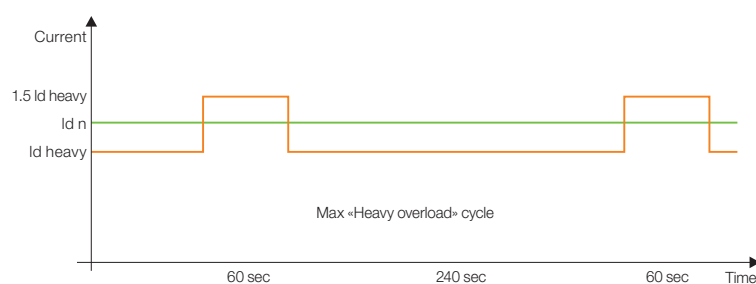
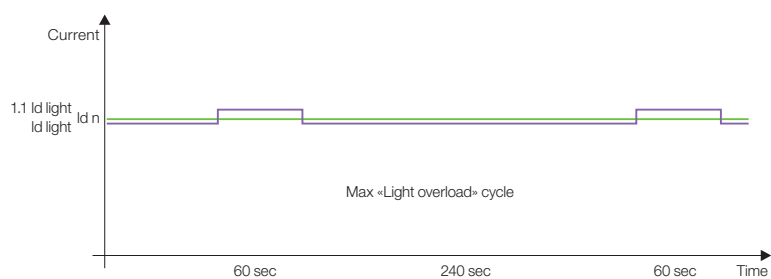
Pre-charge system

In the SMB200-...+PRC versions the pre-charge circuit is integrated. With the SMB200-...-T the smooth charge of the DC-Link capacitor is controlled by an integrated auxiliary rectifier SCR circuit.

Power supply	■ SMB200-...-4: 230 Vac -10%...500 Vac +10% (configurable by dip switch) ■ SMB200-...-6: 230 Vac -10%...690 Vac +10% (configurable by dip switch)
Power supply frequencies	50 Hz or 60 Hz (configurable by dip switch), ±5%
Pre-charge time	■ 50 Hz: 8 pre-set times in the min/max window 1.9 to 17.4s, configurable by dip switch ■ 60 Hz: 8 pre-set times in the min/max window 2 to 24.1s, configurable by dip switch
DC-link rated voltage	Power supply U _{ln} x 1.35
Power ratings	SMB200-...-4: 490 kW...3.8 MW Heavy Duty SMB200-...-6: 700 kW...6.6 MW Heavy Duty
Overload	■ Heavy duty: 150% for 60 sec every 300 sec ■ Light duty: 110% for 60 sec every 300 sec
THD	≤40%
Overload	■ Heavy duty: 150% for 60 sec every 300 sec ■ Light duty: 110% for 60 sec every 300 sec
Protection functions (models -T and +PRC only)	Opening of the OK relay in case of: ■ Overtemperature ■ Power supply loss on the regulation card (±15 V) ■ Power supply loss ■ Completely discharged DC link
Rated protection	IP20 casing, excluded top and lower power connections where protection degree is IP00 (according to EN 60529)

Standard supply configuration	Regulation	1 digital input (enable) 2 digital outputs: MLP signal (sum of the precharge and of the set undervoltage threshold) and ML signal (mains voltage monitoring) 1 relay outputs: 1 drive OK contact (normally open, closed after the precharge)
Options		- Input choke - M/S Communication cable for parallel configurations
Conformity	Climatic conditions	EN 60721-3-3 class 3K3, EN 60068-2-2
	Electrical safety	EN 50178, EN 61800-5-1
	Vibrations	EN 60068-2-6, test Fc; EN 60721-3-3 class 3M1
	EMC	- Immunity: EN 61800-3, 2nd environment - Conducted emissions: EN 61800-3, cat. C3
Environmental conditions	Ambient temperature	-10°C...+40°C +40°C...+50°C with derating
	Altitude	Max 4,000 m. a.s.l. (derating above 2,000 m)
Markings		

Overload curves



Choosing the power supply unit

The same engineering criteria apply for operations with additional derating factors (see drive instruction manual).

Input data

Sizes SMB200-4	U _{in}	I _n [Aac]	
	@50/60 Hz [V]	(Rated for heavy duty)	(Rated for light duty)
SMB200-T-1250	230...500	746	984
SMB200-D-1600	230...500	984	1,271
SMB200-D-2500	230...500	1,574	1,984
2 x SMB200-T-1250-4	230...500	1,378	1,820
2 x SMB200-D-1600-4	230...500	1,820	2,345
2 x SMB200-D-2500-4	230...500	2,911	3,665
3 x SMB200-T-1250-4	230...500	2,066	2,731
3 x SMB200-D-1600-4	230...500	2,731	3,518
3 x SMB200-D-2500-4	230...500	4,367	5,498
4 x SMB200-T-1250-4	230...500	2,755	3,641
4 x SMB200-D-1600-4	230...500	3,641	4,690
4 x SMB200-D-2500-4	230...500	5,822	7,331

Output data

Sizes SMB200-4	P _{dn} (Rated for continuous load)	DC link rated voltage	U _{dn} (Rated)	I _{dn} (Rated for continuous load)	I _d SP (Rated for heavy duty) 150% I _d HD for 60s each 300s	I _d SL (Rated for light duty) 110% I _d LD for 60s each 300s
	[kW]		[Vdc]	[Adc]	[Adc]	[Adc]
SMB200-T-1250	844	U _{in} x 1.35	675	1,250	910	1,200
SMB200-D-1600	1,080		675	1,600	1,200	1,550
SMB200-D-2500	1,688		675	2,500	1,920	2,420
2 x SMB200-T-1250-4	1,553		675	2,300	1,680	2,220
2 x SMB200-D-1600-4	1,998		675	2,960	2,220	2,860
2 x SMB200-D-2500-4	3,119		675	4,620	3,550	4,470
3 x SMB200-T-1250-4	2,329		675	3,450	2,520	3,330
3 x SMB200-D-1600-4	2,997		675	4,440	3,330	4,290
3 x SMB200-D-2500-4	4,678		675	6,930	5,325	6,705
4 x SMB200-T-1250-4	3,105		675	4,600	3,360	4,440
4 x SMB200-D-1600-4	3,996		675	5,920	4,440	5,720
4 x SMB200-D-2500-4	6,237		675	9,240	7,100	8,940

Input data

Sizes SMB200-6	U _{ln}	I _n [Aac]	
	@50/60 Hz [V]	(Rated for heavy duty)	(Rated for light duty)
SMB200-T-1000	230...690	615	779
SMB200-D-1600	230...690	984	1,271
SMB200-D-2500	230...690	1,574	1,984
2 x SMB200-T-1000-6	230...690	1,132	1,435
2 x SMB200-D-1600-6	230...690	1,820	2,345
2 x SMB200-D-2500-6	230...690	2,911	3,665
3 x SMB200-T-1000-6	230...690	1,697	2,153
3 x SMB200-D-1600-6	230...690	2,731	3,518
3 x SMB200-D-2500-6	230...690	4,367	5,498
4 x SMB200-T-1000-6	230...690	2,263	2,870
4 x SMB200-D-1600-6	230...690	3,641	4,690
4 x SMB200-D-2500-6	230...690	5,822	7,331

Output data

Sizes SMB200-6	P _{dn} (Rated for continuous load)	DC link rated voltage	U _{dn} (Rated)	I _{dn} (Rated for conti- nuous load)	I _d SP (Rated for heavy duty) 150% I _d HD for 60s each 300s	I _d SL (Rated for light duty) 110% I _d LD for 60s each 300s
	[kW]		[Vdc]	[Adc]	[Adc]	[Adc]
SMB200-T-1000	930	U _{ln} x 1.35	930	1,000	750	950
SMB200-D-1600	1,488		930	1,600	1,200	1,550
SMB200-D-2500	2,325		930	2,500	1,920	2,420
2 x SMB200-T-1000-6	1,711		930	1,840	1,380	1,750
2 x SMB200-D-1600-6	2,753		930	2,960	2,220	2,860
2 x SMB200-D-2500-6	4,297		930	4,620	3,550	4,470
3 x SMB200-T-1000-6	2,567		930	2,760	2,070	2,625
3 x SMB200-D-1600-6	4,129		930	4,440	3,330	4,290
3 x SMB200-D-2500-6	6,445		930	6,930	5,325	6,705
4 x SMB200-T-1000-6	3,422		930	3,680	2,760	3,500
4 x SMB200-D-1600-6	5,506		930	5,920	4,440	5,720
4 x SMB200-D-2500-6	8,593		930	9,240	7,100	8,940

Weights and dimensions

Sizes SMB200	Dimensions: Width x Height x Depth		Weight	
	mm	inches	kg	lbs
SMB200-T-1000	421 x 628 x 360	16.6 x 24.7 x 14.2	70	154
SMB200-T-1250	421 x 628 x 360	16.6 x 24.7 x 14.2	70	154
SMB200-D-1600	421 x 628 x 360	16.6 x 24.7 x 14.2	70	154
SMB200-D-2500	417 x 1,243 x 360	16.6 x 48.9 x 14.2	165	364

Tools & software

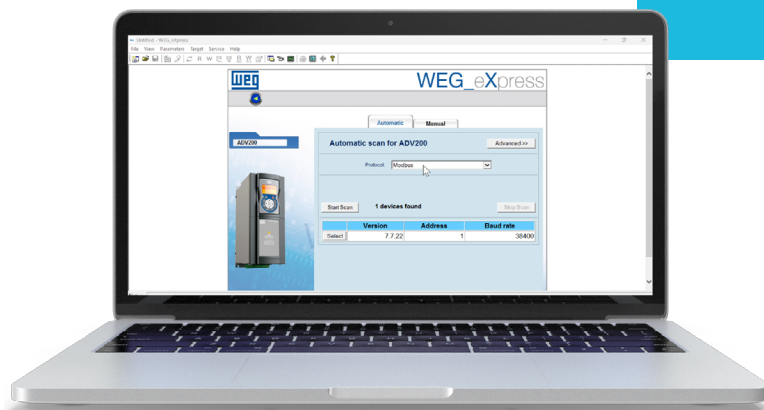
WEG_eXpress programming software

Applications

- Parameter configuration of the ADV200 drive family
- Tuning of control parameters with online tests and graphic trends
- Management of parameter archive for multiple configuration

Features

- Guided product selection
- Multiple languages
- Creation and storage of customized parameter lists (recipes)
- Graphic tool for troubleshooting
- Simplified settings through wizard procedure
- Parameter printout
- Network autoscan

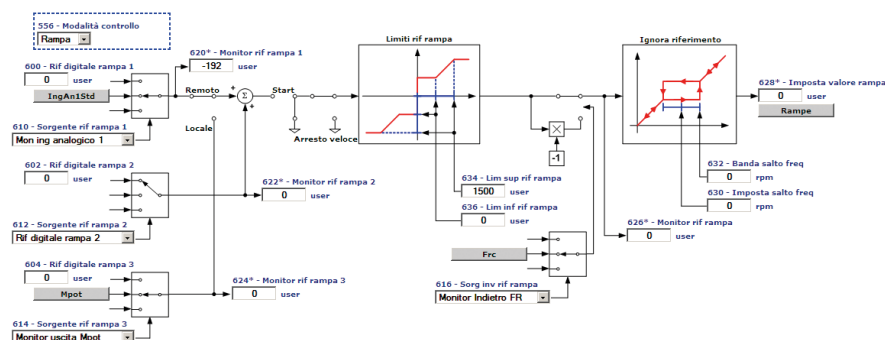


WEG_eXpress is the software used to configure the parameters of the **ADV200 drive family** from WEG.

The procedures for selecting and configuring parameters are easy and intuitive, thanks to the graphic interface; devices are shown according to product type and functions and parameters are grouped into menus and submenus for intuitive organization.

Context search and a visual selection from actual images of the products simplify the user experience.

All details for configuration of each single device are set out in XML format to facilitate expansion of the catalogue and parameters.



“MDPLC” advanced development environment

The Motion Drive Programmable logic controller (MDPLC) environment is a tool for the development of industrial applications based on the PLC integrated into the ADV200 drives.

It allows code writing, compiling, downloading and debugging of the applications.

MDPLC allows complete personalisation of the drives according to the application requirements using a “friendly” and powerful graphic interface. The application is written in the MDPLC environment with PLC languages in compliance with the IEC 61131-3 international standard.

When using an MDPLC application with the ADV200, the drive's basic functions continue to be executed.

Two MDPLC application programs can be stored on the drive. One of the two applications (1 or 2) is enabled via a parameter.

The languages that can be used to program specific custom applications are:

- Instruction List (IL)
- Structured Text (ST)
- Ladder Diagram (LD)
- Function Block Diagram (FBD)
- Sequential Flow Chart (SFC)

Standard applications

The experience WEG has acquired in the major application sectors has also produced an extensive range of specific and/or custom solutions for managing the most complex configurations in different industries.

The following applications are available in the WEG eXpress software catalog:

PID

Generic controller for regulating temperature, pressure, material tension etc.

PID IMM

PID controller with functions dedicated to hybrid injection molding machines

Torque Winder (TW)

Winding/unwinding torque control in open-loop or closed-loop with load cell.

Positioning control (POS)

Single axis standard positioning with absolute encoder management.

Electric line shaft (ELS)

Electronic line shaft control.

Hoist & Crane (HC)

Specific functionalities for the Hoist & Crane industry

Flyng Share (FLSH)

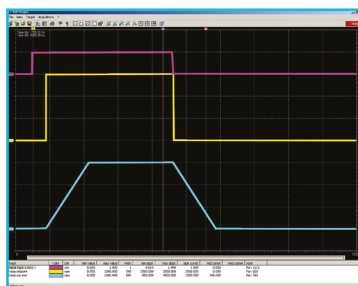
Cutting of continuous material into set lengths without stopping the production line

WEG_SoftScope 3

WEG_SoftScope 3 is a software oscilloscope with synchronous sampling (minimum sampling time 1ms). Using SoftScope the user can easily display in a very fast way some specific variables, for commissioning the drive, testing the performance or tuning the control loops.

SoftScope allows the following:

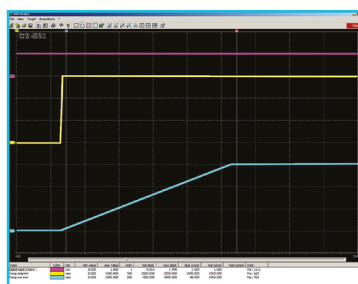
- Trigger conditions (e.g. rising edge of a specific signal)
- Recording quality (a multiple of the basic clock at 1 ms)
- Recording duration period
- System sizes to be recorded



Speed cycle

Start, ramp reference 1,500 rpm, ramp output reaches 1,500 rpm, Stop, ramp reference 0 rpm, ramp output reaches 0 rpm.

- 1) start command
- 2) ramp input speed reference
- 3) ramp output



Zoom

Ramp output phase from 0 rpm to 1,500 rpm of the previous cycle.

- 1) start command
- 2) ramp input speed reference
- 3) ramp output

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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 **ADV200 AC Drive Family** 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 innovation



Know More

High performance and reliable products to improve your production process.



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

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is not limited to products and solutions
presented in this catalogue.
To see our portfolio, contact us.

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