Industrial Motors

Commercial & Appliance Motors

**Automation**

Digital & Systems

Energy

Transmission & Distribution

Coatings

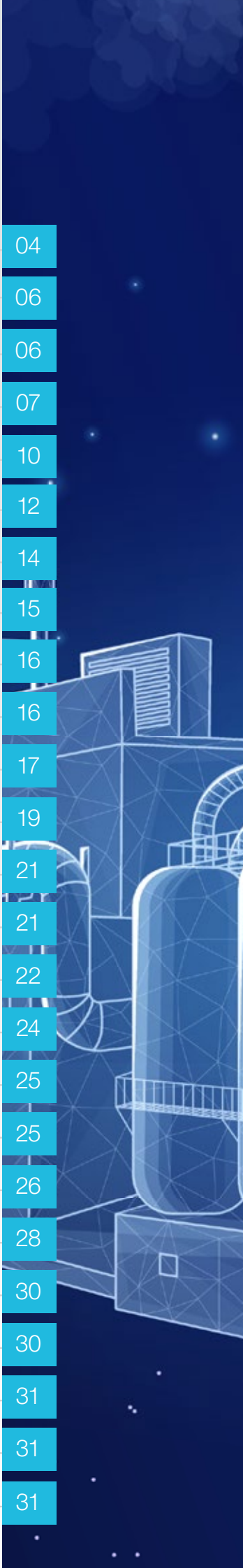
# ADV200 AC DRIVE FAMILY

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

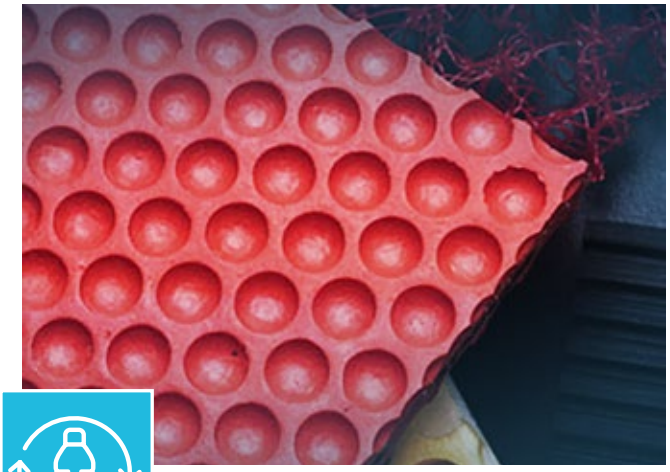
Driving efficiency and sustainability

# SUMMARY





# 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 new inverter series ADV200 represents an innovative concept in drive technology, as a result of the constant technological research and of the experience that the WEG has acquired keeping a constant presence aside that of the major sector players.
The new range has been engineered and developed to satisfy the real needs of system integrators and OEM's in order to provide them the best innovations and economical competitiveness in the international markets. Based on full mechanical modularity and on a powerful, intuitive and "fully open" programming platform, ADV200 offers absolute integration flexibility with high-end performance in any system architectures of the most advanced automation environments.

### Power range

| 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 V ac -15%...480 V ac +10%; 50-60 Hz ±5%<br>ADV200-4-DC: 450...750 V dc<br>ADV200-6: 3 x 500...690 V ac ±10%; 50-60 Hz ±5%<br>ADV200-6-DC: 600...1,120 V dc |
| Power ratings | ADV200-4 / ADV200-4-DC: from 0.75 kW to 1.65 MW<br>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)<br>200 Hz (72500...1,650 kW) |
| IGBT braking unit | Sizes 1007...5550: internal (with external resistor); braking torque 150% MAX<br>Sizes ≥5750: external optional (BUy series) |
| Overload (for synchronous motor) | Heavy duty: 160% x In (1' each 5'), 200% x In (for 3")<br>Light duty: 110% x In (1' each 5') |
| Overload (for asynchronous motor) | Heavy duty: 150% x In (1' each 5'), 180% x In (for 0.5")<br>Light duty: 110% x In (1' each 5') |
| Control mode | Open-loop vector control<br>Vector control with feedback<br>Open loop V/f and V/f with feedback |
| Optional cards | Integration of up to 3 options onboard the drive<br>"Safety STO" card compliant with SIL3 machine safety directive (for ADV200-...+SI models) |
| Multi-language programming SW | WEG_eXpress (5 languages) |
| PLC | PLC with advanced IEC 61131-3 programming environment |
| Rated protection | IP20-rated protection (IP00 size 7 and parallel) |
| Fieldbus management | RS485, Modbus-RTU.<br>Optional: Modbus-RTU to Modbus-TCP gateway, DeviceNet, Profibus-DP, CANopen, EherCAT, Ethernet, PROFINET |

| | | Control mode | Speed control precision[2)] | Control range |
|---|---|---|---|---|
| Precision | Asynch. | 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 |
| | Synch. | 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)<br>- 2 bipolar analog outputs (1: voltage/current, 1: voltage)<br>- 6 digital inputs (PNP/NPN)<br>- 2 digital outputs (PNP/NPN)<br>- 2 relay outputs, single contact<br>- RS485 serial line (Modbus-RTU) |
| | Power | - Integrated choke DC side (up to 132 kW)<br>- Integrated mains filter<br>- Integrated dynamic braking module (up to 55 kW) |
| | Reference resolution | - Digital = 15bit + sign<br>- Analog input = 11-bit + sign<br>- 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<br>STO (Safe Torque Off): IEC 61508<br>SIL 3, EN 954-1 Cat. 3<br>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 | CE | Complies with the EC directive concerning low voltage equipment<br>(Directives LVD 2014/35/EU, EMC 2014/30/EU, RoHs 2011/65/EU) |
| | UL c UL us | UL and cULus, complies with directives for the American and Canadian markets (with power supply ≤600 V ac) |

*Notes: 1) Compatible to industry standards.*
*2) For standard 4-pole motor.*

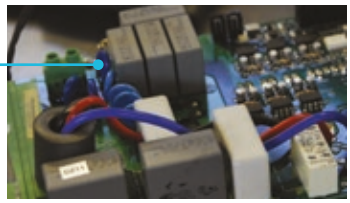
# General characteristics

## Modularity

An innovative concept of integrated technology that offers full modularity. Mountable side by side and with accessories specifically dedicated to system solutions, ADV200 has been engineered to make installation easy for any operator, both in existing systems and in specific machine solutions, always offering a real reduction of required space in the cabinet and the best manageability.


## Integrated quality

ADV200 integrates the fundamental devices for an absolute quality level, such as the DC choke that ensures maximum reliability in any conditions of working and the input filter that renders the drive in compliance with the EMC normative EN 61800-3.



## Fast access

Structured to offer simple and fast management of the product in any situation of installation and mounting. From the terminal access to the rack assembling of the options, each operation is quick and easy.

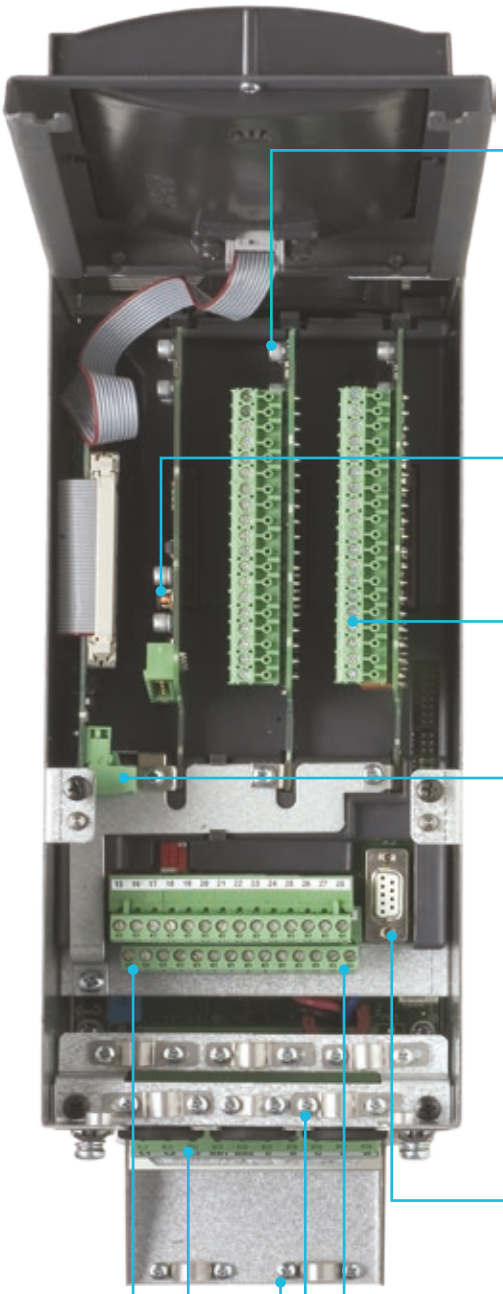
## Programming keypad

Structured with 2 setting modes Easy and Expert, to satisfy each level of user's skill and programming needs both for complex or easy installation.
A powerful platform but at the same time with a structure of menu/parameters that offers quick understanding, also facilitated by functionality of the keypad and the display.
Intuitive navigation and easy start-up function thanks to the "Wizard" tool.
ADV200 offers as standard 10 language programming (English, Italian, French, German, Spanish, Polish, Romanian, Russian, Turkish and Portuguese).

- 4 lines display for 21 characters
- Clear alphanumeric text
- Full information of any parameters
- Fast navigating keys
- Key for displaying the last 10 parameters that have been changed
- DISP key for rapid 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

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

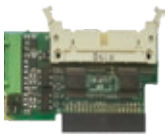
Fieldbus interface

| | | |
|---|---|---|
| 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-ETH-IP-ADV200 | S5L19 | Industrial Ethernet[1] interface expansion card |
| EXP-ETH-PN-ADV | S5L60 | PROFINET interface expansion card |

I/O expansions

| | | |
|---|---|---|
| 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/<br>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),<br>0-10 V, 0/4...20 mA, KTY84, PTC |
| EXP-IO-SENS-1000-ADV | S5L37 | |

### Safety card



Integrated on board the drive as the 4th option, the 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
- EN 954-1 Cat. 3

### Serial line

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

### Backup supply

ADV200 can be supplied through an external +24 V dc supply in order to be kept active in case of mains input loss, ensuring in this situation the operation of all monitoring functions, programming and any connected fieldbus network.

### Smart connections

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

### Cables shield

OMEGA clamp to grounding 360° of shielded cables.

# ADV200-4

## 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 thus 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).

| Sizes ADV200-4 | AC input current for continuous operation In | | Inverter output | | Pn 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) | |
| | @400 V ac [Arms] | @400 V ac [Arms] | [kVA] | [kVA] | @400 V ac [kW] | @460 V ac [HP] | @400 V ac [kW] | @460 V ac [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 V ac [A] | @460 V ac [A] | @400 V ac [A] | @460 V ac [A] | @400 V ac [A] | @460 V ac [A] | @400 V ac [A] | @460 V ac [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-DC

## 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 thus 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).

| Sizes ADV200-DC | DC input current for continuous operation In | | | | Inverter output | | Pn 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 V dc [Arms] | -6 @ 930 V dc [Arms] | -4 @540 V dc [Arms] | -6 @ 930 V dc [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 V ac. ADV200-...-6-DC = @690 Vac.*
*2) ADV200-...-4-DC = @460 V ac.*
*3) ADV200-...-6-DC = @575 V ac.*

| Sizes ADV200-DC | Rated output current In (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 V dc [A] | @650 V dc [A] | @540 V dc [A] | @650 V dc [A] | @540 V dc [A] | @650 V dc [A] | @540 V dc [A] | @650 V dc [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 | - [3] |
| 400 kW | 4 kHz [2] | - |
| 500 kW | 2 kHz | 4 kHz [2] |
| 630 kW...1.65 MW | 2 kHz | - |

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

*Notes: 1) Current values with an ambient temperature of 35 °C.*
*2) from fw 6.03.*
*3) 72500 = 4 kHz.*
*4) 4 kHz in "variable frequency" mode (PAR 568 Switch freq. mode =1).*

# ADV200-6

## 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 thus 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).

| Sizes ADV200-6 | AC input current | | Pn mot (Recommended asyncronous motor rating, fsw = default) | | | | Rated output current In (for Asyncronous 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 V ac [Arms] | @690 V ac [Arms] | @690 V ac [kW] | @575 V ac [kW] | @690 V ac [kW] | @575 V ac [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.*

# 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-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 | - | - |

| 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 |

# AFE200
# Regenerative active front end power suppliers

## Description

AFE200 is the range of regenerative power supply units incorporating Active Front End technology.
Ideal for powering the batteries of drives connected on the same DC Bus or even for managing single-drive configurations.

The AFE200 offers a number of advantages:

- "Clean Power" thanks to the unit power factor and reduced harmonic distortion (≤3%)
- Enhanced system dynamics during drive and regeneration
- Considerable energy savings during regeneration transients
- Improved stability of the DC Bus circuit under load changes
- Significant cost-effectiveness with the single power supply system
- Elimination of uneconomical conventional braking systems and braking resistors

The AFE200 range has power ratings of 22 kW to 1.65 MW for three-phase power supplies of 400 V ac to 690 V ac. Ease of use and intuitive programming make it possible for users of any level to exploit the high-level performance of Active Front End technology for a broad range of applications where there is a need for real energy saving.

### Power range

| Models | Power (kW) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 22 | 45 | 90 | 132 | 160 | 200 | 250 | 315 | 355 | 400 | 500 | 630 | 710 | 900 | 1000 | 1350 | 1650 | 1) |
| AFE200-4 | S.2 | S.3 | S.4 | S.5 | S.6 | Size 7 | | | | | Parallel size 7[2)] | | | | | | | | 1) |
| AFE200-6 | - | | | | | Size 7 | | | | | Parallel size 7[2)] | | | | | | | | 1) |

*Notes: 1) Higher power ratings on request.*
*2) AFE200 of over 400 kW comprise one MASTER unit and one or more SLAVE units.*

### 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 |

# General characteristics

### Flexible modular technology

The AFE200 is also based on a fully modular hardware with power structures that can be installed side by side.
Designed to facilitate installation and guarantee ease of use, project flexibility, optimisation of space and reduction of wiring costs.

The AFE200 is available in 5 hardware sizes:
- From 11 kW to 355 kW in the stand-alone configuration
- From 400 kW to 1.65 MW in “parallel” configurations

### Pre-load system

External management of the intermediate circuit pre-load is a feature of the entire range. The dedicated AFE pre-charge kits are supplied complete with fusibles, resistors and contactor.

### Total ease of use

The AFE200 is designed to enable simple, quick, economical 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.

### Management of optional cards

The AFE200 uses an intelligent rack system that allows the following optional cards to be installed at the same time:

- Fieldbus interface card
- I/O expansion card

### Backup power supply

The AFE200 is compatible with a separate +24 V dc external power supply. This solution makes it possible to maintain all display and drive configuration functions and manage the connected fieldbuses in the event of a power failure.

### Dedicated accessories

The dedicated accessories guarantee elimination 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)

### Serial line

The RS485 serial line is incorporated as standard across the range to enable peer-to-peer or multidrop connections using Modbus-RTU protocol.

### Programming keypad

The KB_ADV programming keypad (supplied as standard) makes the man-machine interface simple, immediate and highly functional.
The programming software 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 interpret and is facilitated by the keypad functions and display.
The “Wizard” tool ensures totally user-friendly immediate start-up functions. Standard features of the AFE200 include programming in 10 languages (English, Italian, French, German, Spanish, Polish, Romanian, Russian, Turkish and Portuguese).

- 4 line x 21 character display
- Alphanumeric plaintext
- Complete information regarding each parameter
- Fast navigation keys
- Key for displaying the last 10 parameters that have been changed
- DISP key for rapid display of operating parameters
- Uploading-downloading and saving of 5 complete sets of drive parameters
- Remote control from a distance of up to 10 metres

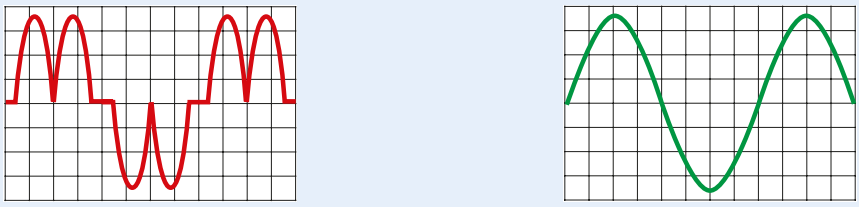
# General characteristics

| | |
|---|---|
| Power supply | AFE200-...-4: 380 V ac -15%...480 V ac +10%, 50/60 Hz<br>AFE200-...-6: 500 V ac -10%...690 V ac +10%, 50/60 Hz |
| DC-link rated voltage | AFE200-...-4: 650...780 V dc<br>AFE200-...-6: 820...1,120 V dc |
| 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<br>- 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<br>Analog input = 11-bit + sign<br>Analog output = 11-bit + sign |
| Fieldbus management | RS485, Modbus-RTU.<br>Optional: Modbus-RTU to Modbus-TCP gateway, DeviceNet, Profibus-DP, CANopen, EherCAT, Ethernet, PROFINET |

| | | |
|---|---|---|
| Standard supply configuration | Programming keypad | Integrated KB_ADV |
| | Regulation | - 2 bipolar analog inputs (voltage/current)<br>- 2 bipolar analog outputs (1: voltage/current, 1: voltage)<br>- 6 digital inputs (PNP/NPN)<br>- 2 digital outputs (PNP/NPN)<br>- 2 relay outputs, single contact<br>- 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<br>+40 °C...+50 °C with derating |
| | Altitude | Max 2,000 m |
| Markings | CE | Complies with the EC directive concerning low voltage equipment<br>(Directives LVD 2014/35/EU, EMC 2014/30/EU, RoHs 2011/65/EU) |
| | cULus | Complies with directives for the American and Canadian market (except types AFE200...-4 above 1 MW, types AFE...-6 and accessories) |

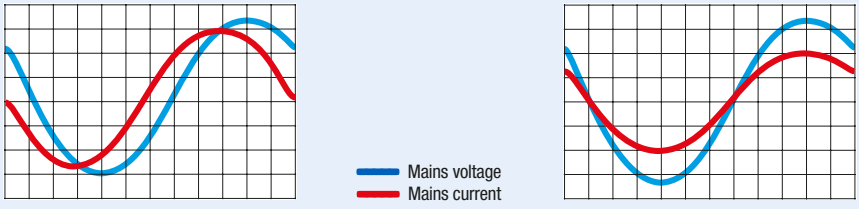
**Input current THD**

**"Clean Power" Technology. The AFE200 integrates cutting-edge energy recovery and energy efficiency technology.**




**Mains input power factor**

**The AFE200 uses advanced control algorithms to maintain the input current in phase with voltage.**




*Note: 1) Compatible to industry standards.*

# 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) @400 V ac [A] | Light duty (110% overload) @400 V ac [A] | Default | Higher |
| 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) @690 V ac [A] | Light duty (110% overload) @690 V ac [A] | Default | Higher |
| 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 V ac [kW] | @460 V ac [kW] | @400 V ac [kW] | @460 V ac [kW] | 650 V dc [A] | 750 V dc [A] | 650 V dc [A] | 750 V dc [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 V ac [kW] | @690 V ac [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 |

# FFE200

## Regenerative fundamental front end power suppliers

## Description

FFE200 series is the WEG solution for regenerative power supply to be used as an alternative to traditional braking resistors.
Everytime there is no stringent harmonic distortion requirements, which by the way can be addressed by the AFE200 series, the Fundamental Front End technology allows to supply the high power drive through the DC bus.

How the FFE application can benefit:

- Cabinet size reduced
- No complex filters required being the sole AC choke enough to guarantee a sufficient level of harmonic distortion
- Limited internal dissipative losses

### Power range

#### 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<br>550 SL | 730 MS<br>730 SL | 880 MS<br>880 SL | 730 MS<br>730 SL<br>730 SL | 880 MS<br>880 SL<br>880 SL | 730 MS<br>730 SL<br>730 SL<br>730 SL2 | 880 MS<br>880 SL<br>880 SL<br>880 SL2 | 730 MS<br>730 SL<br>730 SL<br>730 SL2<br>730 SL2 | 880 MS<br>880 SL<br>880 SL<br>880 SL2<br>880 SL2 | 1) |
| - | | | Parallel[2)] | | | | | | | | | |

*Notes: 1) Higher sizes on request.*
*2) FFE200 of over 2x500 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 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 550 | 690 | 760 | 500 MS<br>500 SL | 690 MS<br>690 SL | 760 MS<br>760 SL | 690 MS<br>690 SL<br>690 SL | 760 MS<br>760 SL<br>760 SL | 690 MS<br>690 SL<br>690 SL<br>690 SL2 | 760 MS<br>760 SL<br>760 SL<br>760 SL2 | 690 MS<br>690 SL<br>690 SL<br>690 SL2<br>690 SL2 | 760 MS<br>760 SL<br>760 SL<br>760 SL2<br>760 SL2 | 1) |
| - | | | Parallel[2)] | | | | | | | | | |

*Notes: 1) Higher sizes on request.*
*2) FFE200 of over 2x500 comprise one MASTER unit and one or more SLAVE units.*

### 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 |

# General characteristics

### Flexible modular technology

The FFE200 is also 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
- Requests from 940 A can be addressed by parallel configuration where up to 5 power modules are allowed

### Pre-load system

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

### Total ease of use

The FFE200 is designed to enable simple, quick, economical 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.

### Management of optional cards

The FFE200 uses an intelligent rack system that allows the following optional cards to be installed at the same time:

- Fieldbus interface card
- I/O expansion card

### Backup power supply

The FFE200 is compatible with a separate +24 V dc external power supply. This solution makes it possible to maintain all display and drive configuration functions and manage 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 accessories. Thanks to this technology it's possible to install the cablings and shielding easier and faster, making the installations compliant with the EMC regulations.

- EMI line filter (external)
- Pre-charge and line choke (mandatory)

### Serial line

The RS485 serial line is incorporated as standard across the range to enable peer-to-peer or multidrop connections using Modbus-RTU protocol.

### Programming keypad

The KB_ADV programming keypad (supplied as standard) makes the man-machine interface simple, immediate and highly functional.
The programming software 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 interpret and is facilitated by the keypad functions and display.
The "Wizard" tool ensures totally user-friendly immediate startup functions. Standard features of the FFE200 include programming in 10 languages (English, Italian, French, German, Spanish, Polish, Romanian, Russian, Turkish and Portuguese).

- 4 line x 21 character display
- Alphanumeric plaintext
- Complete information regarding each parameter
- Fast navigation keys
- Key for displaying the last 10 parameters that have been changed
- DISP key for rapid display of operating parameters
- Uploading-downloading and saving of 5 complete sets of drive parameters
- Remote control from a distance of up to 10 metres.

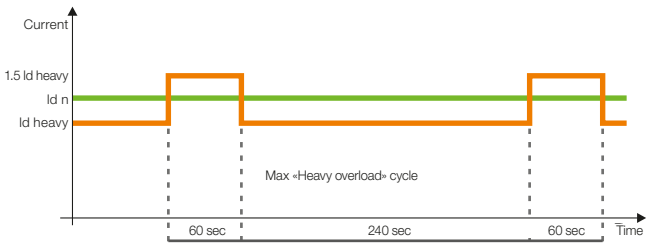
# General characteristics

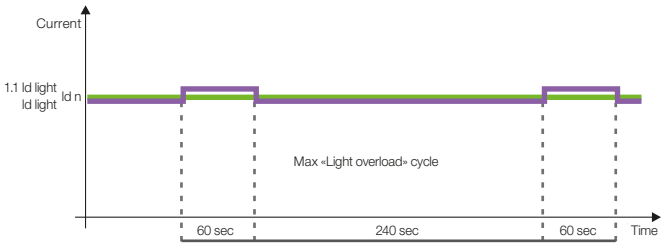
| | |
|---|---|
| Power supply | FFE200-...-4: 380 V ac -15%...500 V ac +5%, 50/60 Hz<br>FFE200-...-6: 500 V ac -10%...690 V ac +10%, 50/60 Hz<br>Systems TT, TN and IT |
| DC-link rated voltage | Power supply Uln x 1.35 |
| Power ratings | FFE200-...-4: 300...475 kW (size 7). Up to 2.1 MW by parallel configurations<br>FFE200-...-6: 475...700 kW (size 7). Up to 3.8 MW by parallel configurations |
| Cosphi | ≥0.99 |
| THD | <45% |
| Overload | - Heavy duty: 150% for 60 sec every 300 sec<br>- 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.<br>Optional: Modbus-RTU to Modbus-TCP gateway, DeviceNet, Profibus-DP, CANopen, EherCAT, Ethernet, PROFINET |

| | | |
|---|---|---|
| Standard supply configuration | Programming keypad | Integrated KB_ADV |
| | Regulation | - 2 bipolar analog inputs (voltage/current)<br>- 2 bipolar analog outputs (1: voltage/current, 1: voltage)<br>- 6 digital inputs (PNP/NPN)<br>- 2 digital outputs (PNP/NPN)<br>- 2 relay outputs, single contact<br>- RS485 serial line (Modbus-RTU) |
| Options | | Pre-charge and line choke<br>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 °C...+40 °C<br>+40 °C...+50 °C with derating |
| | Altitude | Max 4,000 m a.s.l. (FFE200-4)<br>Max 3,500 m a.s.l. (FFE200-6)<br>Above 2,000 m a.s.l. with derating |
| Markings | CE | Complies with the EC directive concerning low voltage equipment<br>(Directives LVD 2014/35/EU, EMC 2014/30/EU, RoHs 2011/65/EU) |

*Note: 1) Compatible to industry standards.*

## 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 V ac [kVA] | @380...500 V ac [Arms] | @380...500 V ac [kVA] | @380...500 V ac [Arms] | | @500...690 V ac [kVA] | @500...690 V ac [Arms] | @500...690 V ac [kVA] | @500...690 V ac [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 V ac [A] | [kW] | @400 V ac [A] | | [kW] | @690 V ac [A] | [kW] | @690 V ac [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 |

# SMB200
## AC/DC power suppliers

## Description

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

How the SMB application can provide benefits:

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

### Power range

#### 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.*

### 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 |

# General characteristics

### Flexible modular technology

The SMB200 is also 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

During the pre-charge transient, the current is reduced by means of specific accessories.

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

### Total ease of use

The SMB200 is designed to enable simple, quick, economical connections to the system to be powered.
All structures are extremely easy to handle and the terminal strips are readily accessible.

### Pre-load system

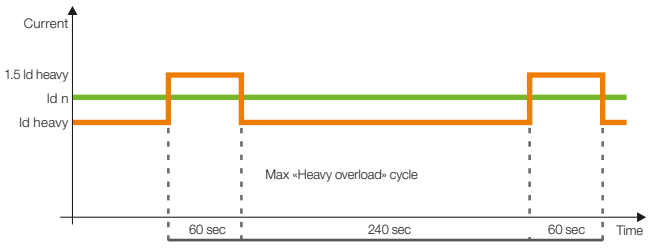
In the SMB200-…+PRC versions the pre-charge circuit is integrated.
With the SMB200-…-T the smooth charge of the DC-Link capacitor is controlled by an integrated auxiliary rectifier SCR circuit.

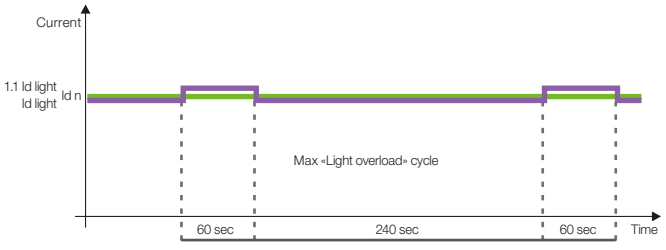
# General characteristics

| | |
|---|---|
| Power supply | SMB200-...-4: 230 V ac -10%...500 V ac +10% (configurable by dip switch)<br>SMB200-...-6: 230 V ac -10%...690 V ac +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<br>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 Uln x 1.35 |
| Power ratings | SMB200-...-4: 490 kW...3.8 MW Heavy Duty<br>SMB200-...-6: 700 kW...6.6 MW Heavy Duty |
| Overload | - Heavy duty: 150% for 60 sec every 300 sec<br>- Light duty: 110% for 60 sec every 300 sec |
| THD | ≤40% |
| Overload | - Heavy duty: 150% for 60 sec every 300 sec<br>- Light duty: 110% for 60 sec every 300 sec |
| Protection functions<br>(models -T and +PRC only) | Opening of the OK relay in case of:<br>- Overtemperature<br>- Power supply loss on the regulation card (±15 V)<br>- Power supply loss<br>- 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)<br>- 2 digital outputs: MLP signal (sum of the precharge and of the set undervoltage threshold) and ML signal (mains voltage monitoring)<br>- 1 relay outputs: 1 drive OK contact (normally open, closed after the precharge) |
| Options | | Input choke<br>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<br>Conducted emissions: EN 61800-3, cat. C3 |
| Environmental conditions | Ambient temperature | -10 °C...+40 °C<br>+40 °C...+50 °C with derating |
| | Altitude | Max 4,000 m. a.s.l. (derating above 2,000 m) |
| Markings | CE | Complies with the EC directive concerning low voltage equipment<br>(Directives LVD 2014/35/EU, EMC 2014/30/EU, RoHs 2011/65/EU) |

## 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 | Uln @50/60 Hz [V] | In [Aac] (Rated for heavy duty) | In [Aac] (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 | Pdn (Rated for continuous load) | DC link rated voltage | Udn (Rated) | Idn (Rated for continuous load) | Id SP (Rated for heavy duty) 150% Id HD for 60s each 300s | Id SL (Rated for light duty) 110% Id LD for 60s each 300s |
|---|---|---|---|---|---|---|
| | [kW] | [V dc] | [V dc] | [Adc] | [Adc] | [Adc] |
| SMB200-T-1250 | 844 | Uln 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 |

# Choosing the power supply unit

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

## Input data

| Sizes SMB200-6 | Uln | In [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 | Pdn (Rated for continuous load) | DC link rated voltage | Udn (Rated) | Idn (Rated for continuous load) | Id SP (Rated for heavy duty) 150% Id HD for 60s each 300s | Id SL (Rated for light duty) 110% Id LD for 60s each 300s |
|---|---|---|---|---|---|---|
| | [kW] | [V dc] | [V dc] | [Adc] | [Adc] | [Adc] |
| SMB200-T-1000 | 930 | Uln 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 |

# Tools & software

## WEG_eXpress programming software

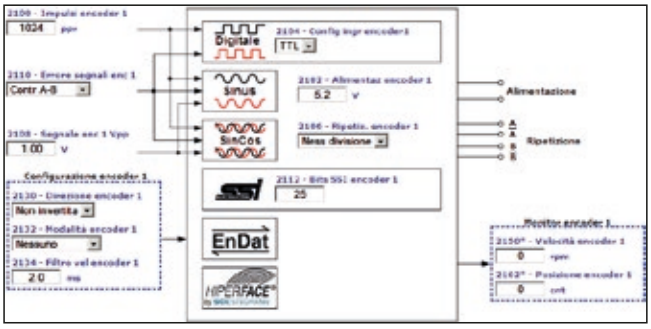
### Applications

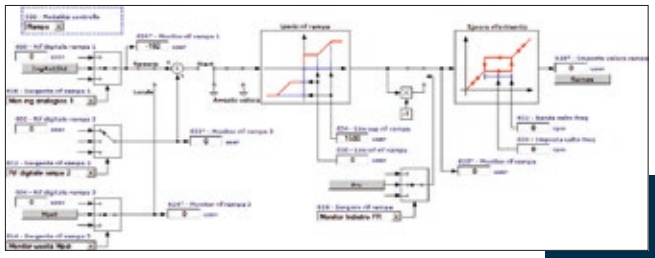
- Parameter configuration of WEG devices (instruments, drives, sensors)
- Tuning of control parameters with online tests and trends
- Management of parameter archive for multiple configuration

### Features

- Guided product selection
- Multiple languages
- Creation and storage of recipes
- Oscilloscope
- Simplified settings
- Parameter printout
- Network autoscan


WEG_eXpress is the software used to configure the parameters of the automation components, drives and sensors in the WEG catalogue.
The procedures for selecting and configuring parameters are easy and intuitive, thanks to the graphic interface and devices are grouped according to product type and functions.
Product searches are performed by means of a context search and a visual selection from among actual images of the products.
This makes it possible to have a single library of devices for all WEG products.
All details for configuration of each single device are set out in XML format to facilitate expansion of the catalogue and parameters.



# Tools & software

## “MDPLC” advanced development environment

The Motion Drive Programmable logic controller (MDPlc) environment is a tool for the development of industrial applications based on the ADV200 series of drives.
It is an integrated tool that allows 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 importance of the MDPlc’s performance is particularly evident when defining advanced applications.
The primary feature of MDPlc is its ability to create an application code for the drives in assembly language, by compiling the application 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

Following applications are available on *www.weg.net* web site:

**Torque Winder (TW)**
Standard winding/un-winding control, torque control in open-loop or closed-loop with load cell.

**Positioning control (POS)**
Single axis standard positioning with absolute encoder management.

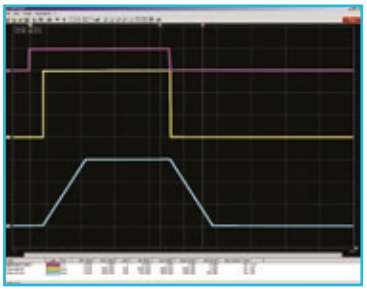
**Electric line shaft (ELS)**
Standard electronic line shaft control.
The experience WEG has acquired in the major application sectors has also produced an extensive range of specific and/or custom solutions for managing the most complex configurations in machines.

## SoftScope

SoftScope is a software oscilloscope with synchronous sampling (buffered with a minimum sampling time of 1ms). Using SoftScope the user can easily display in a fast way some specific variables, for example commissioning variables, variables to test performance levels achieved or to tune the control loops.

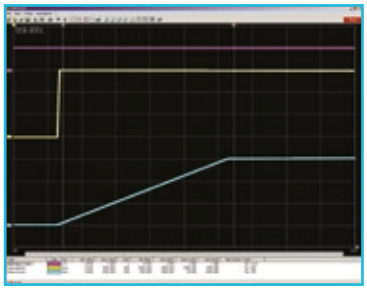
SoftScope allows the definition of the following parameters:

- Trigger conditions (e.g. climbing leading edge of a specific signal)
- Recording quality (a multiple of the basic clock at 1ms)
- 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

# Notes

# Notes

# **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 ***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 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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The scope of WEG Group solutions
is not limited to products and solutions
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**www.weg.net**

+39 02 967601
info.motion@weg.net
Gerenzano (VA) Italy

Cod: 50126868 | Rev: 01 | Date (m/y): 04/2023.