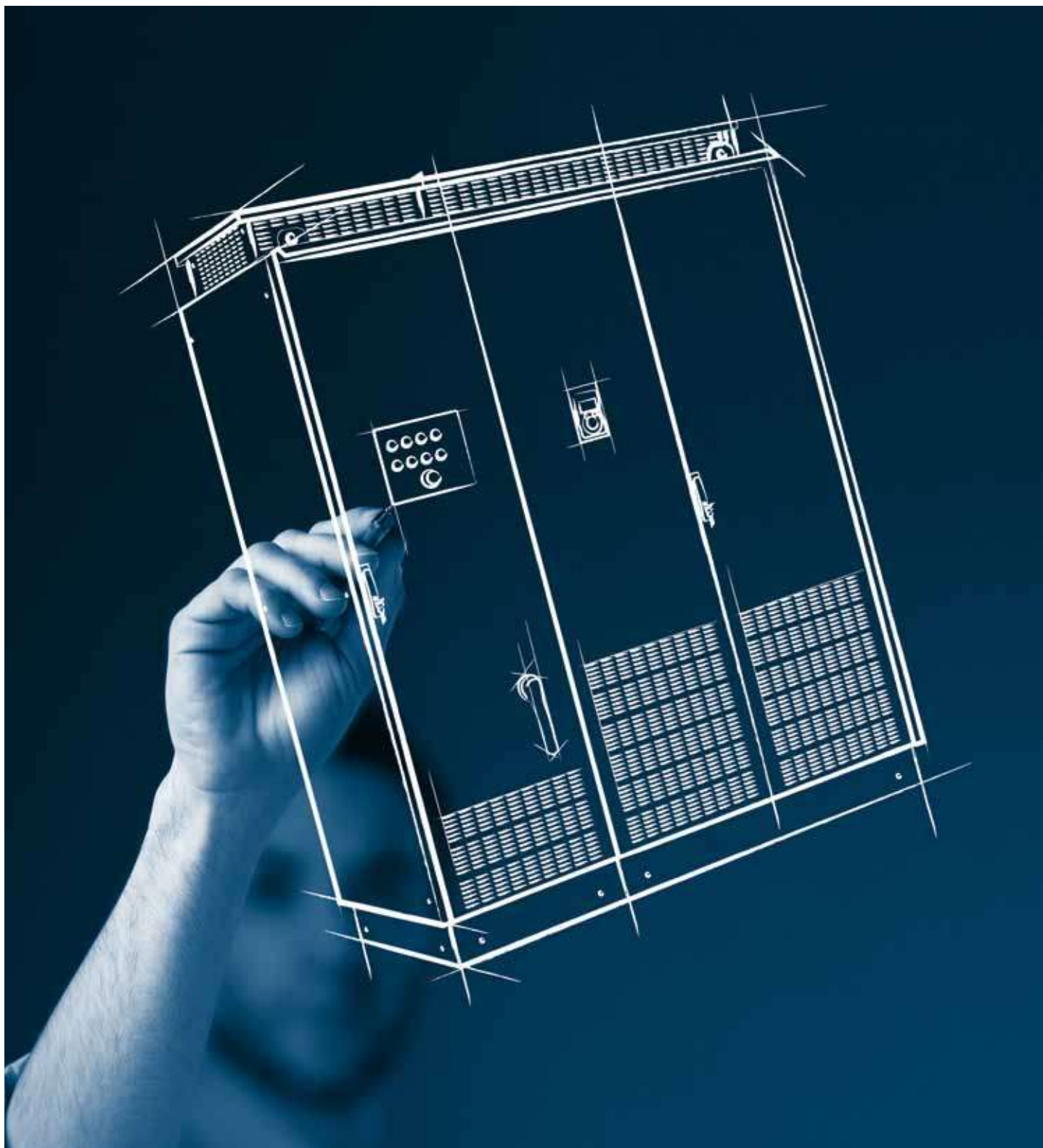


DRIVE CABINET SOLUTION

SIEDrive ADV200 & AFE200

AC DRIVES & ACTIVE FRONT END

GEFRAN





Forty-five years of experience, an extensive know-how, a structure precisely geared to our customers' requirements and continued investment in R&D, make Gefran a leader in the field of components for automation and industrial process control systems.

Customers know they can always depend on Gefran to provide the best solution for all their needs in terms of sensors, components, automation and motion control.



By working in partnership with **qualified Research Centres and Universities** and continuously **investing in R&D**, the GEFran Group is at the forefront of technology, developing products that anticipate its customers' needs.



GEFfran is based in Italy, where it has three engineering and production facilities. The Group has some 800 employees. It is directly present in 12 countries with 7 production plants and a global sales network with more than 70 authorised dealers around the world.

GEFfran Spa has been listed on the Milan Stock Exchange since 1998 and has been traded on the Star segment of high requirement shares since 2002.



The **GEFfran Drive & Motion Control Unit**, based in Gerenzano (Varese, Italy), designs, develops and manufactures **electric drives and power regeneration systems** used to control motors and application systems in the main industrial sectors, including: plastics, civil lift engineering, water treatment and ventilation, as well as control architectures for renewable energy systems.

The **ADV and AFE200 series of drives**, a complete range of solutions dedicated to the most advanced industrial automation systems, are the fruit of this experience.



ADV200 panel-mounted inverters

Ideal for controlling high-power systems

The ADV200 is a range of panel-mounted inverters designed as a compact, ready-for-use solution fully compatible with the maximum operating conditions of the drive.

During conformance testing, we therefore paid particular attention to ensuring absolute **compliance of the panels with all legal requirements**.

Savings in terms of installation space and assembly and commissioning times, the guarantee of functionality and certified compliance with legal requirements are the main **advantages** of the Gefran panel-mounted solution.

Special care was also taken in designing the HW to meet the requirements of the applicable standards relating to the servicing and maintenance of electrical panels.

These specify the need to perform inspections at regular intervals and, in particular, to check the tightness of all power connection bolts and screws.

All power sections and the relative connections on Gefran panels can be accessed from the front. There is therefore no need for access from the back or for the use of any special tools.

Approval and technical standards

CE: compliant with the EEC low voltage equipment directive

EMC: compliant with EEC directive – EN 61800-3

Panels built in accordance with IEC EN 50178 and IEC EN 60204-1

Versions

Panels are available with power ratings from 90 kW to 1.2 MW with standard input bridge or the “**Active Front End**” solution, in two main versions:

- **Ready to use**
- **Basic**

The “**Ready to use**” version is supplied as a complete panel ready to be installed. It includes the entire power section, from the automatic line circuit breaker to the motor connection bars, all the auxiliary circuits and controls needed to start a single-motor system, all



- » Certified quality**
(Quality Management System complies with the requirements of ISO 9001:2008)
- » Italian Technology**
- » User Friendly Performance up to 1.2 MW**
- » All in One design with integrated EMC filters and choke**
- » "Clean Power" platform for energy efficiency of automation systems**

of which are supplied as standard.

In the "Basic" version, the entire power section, from the automatic line circuit breaker to the output bars for connecting the motor, is supplied with the panel as standard. The appropriate auxiliary circuits can be added by the customer as required.

The "Ready to use" and "Basic" solutions are **both** equipped with a side panel with the auxiliary circuits installed. With the "Ready to use" version these include all the control circuits. With the "Basic" version they only include the automatic line circuit breaker tripping coil control circuit.

The latter version allows you to equip the plate with your own circuitry.

The side plate slides along a specific track on the outside of the panel. This makes it easy to access the auxiliary circuits, especially control devices that need setting, for example for overload switches.

This also means there is more free room inside the panel, which can be used for any additional optional equipment.

Light Duty and High Duty

Light Duty panels are designed to guarantee the rated current of the motor and an overload of 110% for 60 seconds every 300 seconds.

High Duty panels are designed to guarantee the rated current of the motor and an overload of 150% for 60 seconds every 300 seconds.



Detail of the auxiliary circuit plate (left-opening panel).

ADV200 panel-mounted series

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ADV200 Cabinet



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GEFRAN SERVICE

ADV200 panel-mounted series

Introduction



Panels are available with power ratings from 90 kW to 1.2 MW with standard input bridge or the "Active Front End" solution, in two main versions: "Ready to use" and "Basic".

Configuration

	ADV200		AFE200	
	Ready to use	Basic	Ready to use	Basic
Automatic line circuit breaker with minimum voltage coil	•	•	•	•
Emergency circuit with safety relay	•		•	
ADV200 inverters with integrated EMC filter (compliant with EEC Directive - EN61800-3)	•	•	•	•
Line choke (integrated in the ADV200 inverter up to panel size 132 kW in the High Duty version and 160 kW in the Light Duty version, panel-mounted for bigger sizes and AFE systems)	•	•	•	•
Fast-acting fuses to protect inverter modules for sizes from 400 kW in the High Duty version and 500 kW in the Light Duty version.	•	•	•	•
Inverter fan unit power supply with overload switch from size 160 kW in the High Duty version and 200 kW in the Light Duty version	•	•	•	•
Motor fan unit power supply with overload switch	•	•	•	•
Auxiliary circuits with relative protection	•		•	
Flashing “doors open” indicators	•		•	
Inverter programming keypad on panel door	•	•	•	•
Controls and indicators on door:	•		•	
 - power indicator lamps - motor running indicator lamp - alarm indicator lamp - reset alarm button, - Local/Remote selector - Run and Stop buttons with terminal connectors - Emergency reset button (safety relay reset), - Emergency mushroom pushbutton.				



General characteristics of panels and inverters

Connection to the mains

Supply voltage	380 Vac -15% ... 500 Vac +5% (specify with order) 380 Vac -10% ... 500 Vac +10% (specify with order)
Supply frequency	50/60 Hz +/- 2%
Type of system	Standard panels suitable for connection to TT/TN systems Solutions for IT systems are available

General characteristics of panels

Structure	Press formed sheet metal
Hoisting	Use eyebolts or bars suitable for the weight of the panel
Baseboard	Standard 100 mm - optional 200 mm
Line entry	Standard from bottom
Motor cable exit	Standard from bottom
Interconnection terminal board	Standard from bottom
Access to panel	Front
Colour	Standard RAL 7035
Protection rating	Standard IP31 - IP54
Applicable standards	CE: complies with the EEC low voltage directive EMC: complies with EEC directive EN61800-3 (second environment, category C3) Panels built in accordance with IEC EN 50178 and IEC EN 60204-1
Installation environment	Standard 1,000 m above sea level (max 2,000 m). Above 1,000 m the current must be reduced by 1.2% for every increase of 100 m
Operating temperature	Standard 0 ... +40°C (32° ... +104°F) (*) Above 40 °C the current must be reduced by 1% for every increase of 1 °C - Max 50 °C (122 °F). (*) depending on size and version, see the Technical specifications section.
Storage temperature	-20° ... +55 °C (-4° ... +131 °F)
Relative humidity	From 5% to 85% without condensation or freezing
Vibration	according to EN 60068-2-8, test Fc.

General characteristics of inverters

Control mode	V/F scalar control Vector control with encoder feedback FOC Open-loop vector control FOC OL
Control accuracy	Speed control accuracy in V/F: $\pm 60\%$ of motor slip rating Speed control accuracy in FOC: $\pm 30\%$ of motor slip rating Speed control accuracy in FOC: $\pm 0.01\%$ of motor slip rating Torque control accuracy in FOC: $\pm 5\%$
Maximum output frequency	380 Vac ... 500 Vac mains: 500 Hz up to size 200KW HD - 200 Hz for bigger sizes 690 Vac mains: 400 Hz for size 90 KW - 200 Hz for bigger sizes
Switching frequency	From 2 to 8 KHz depending on size and program
Overload	High Duty HD = 150% In * 60" every 300" Light Duty HD = 110% In * 60" every 300"
Protection	Overvoltage, Undervoltage, Ground connection fault, Overcurrent, IGBT desaturation No input phase, Heat sink overtemperature, Intake air overtemperature, Motor overtemperature, Drive overload, Brake resistor overload, Overspeed, Option fault, Loss of feedback
Keypad	Alphanumeric 4 lines x 25 characters, back-lit Program languages: Italian - English - French - Spanish - German Portuguese - Romanian - Turkish - Russian - Polish
Serial line	RS485 with Modbus RTU protocol
Configuration software	Gefran, GF eXpress
SW oscilloscope	Softscope (synchronous sampling buffered with minimum sampling time = 1 ms)

EXP-SFTY-ADV safety card

The EXP-SFTY-ADV safety card is designed to implement the STO (Safety Torque Off) function to prevent unexpected motor start-up.

The card meets the requirements of the following new directives: Safety Integrity Level SIL 3 according to EN 61508 and EN 61800-5-2.

The safety card can be used to implement a Category 0 emergency stop function when the drive is connected to the power supply, according to EN 60204-1.

The card is always present in panels where several inverters are linked via a parallel connection* and optional in smaller sizes.

The terminal block includes card command and feedback connectors for safety circuits outside the panel. The panels are supplied with a jumper wired on the terminal board which allows the Safety card to be enabled so that the motor can be operated without the external safety circuitry.

Panels can be supplied already fitted with all the appropriate circuitry to implement the STO (Safety Torque Off) safety function according to level 3. The external circuitry must, of course, be engineered to meet the same criteria.

* Inverter panels: starting from size 400 kW in the High Duty version or 500 kW in the Light duty version.

* Panels with AFE supply unit: starting from size 355 kW in the High Duty version or 400 kW in the Light duty version.

Input bridge according to system requirements

Standard panels:

- 6-impulse input bridge
- Input bridge with AFE regenerative power supply module

Optional solutions

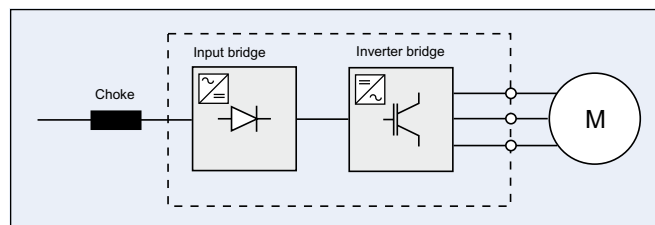
- 12-impulse input bridge
- 6-impulse input bridge with passive LC filter

6-impulse input bridge

This is the typical and most economical inverter configuration.

The input section consists of a diode rectifier bridge and a choke on the DC side up to size 132 kW, and a semi-controlled bridge from size 160 kW with three-phase line choke.

(Power ratings refer to the use of the inverter in High Duty mode - overload = 150%).



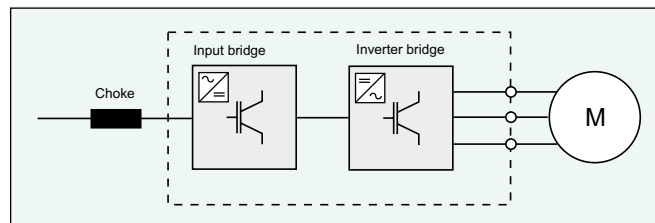
Mains harmonic distortion (THDi) of a 6-impulse bridge is 35%. This value must be taken into consideration in the dimensioning of the lines and the inverter panel power supply transformer, if used.

The tables show the RMS input current values.

"AFE" regenerative input bridge

The input section consists of an IGBT bridge. This type of bridge enables two-way operation so that the braking energy generated by the motor can be fed back into the grid when a moving load has to be stopped or when the motor is driven by the load.

The energy fed into the grid is directly available for other loads in the system to achieve better energy efficiency than is possible with conventional systems.

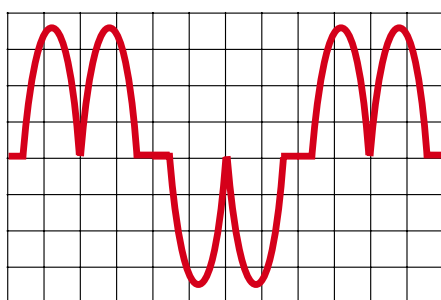


"Clean Power" solution

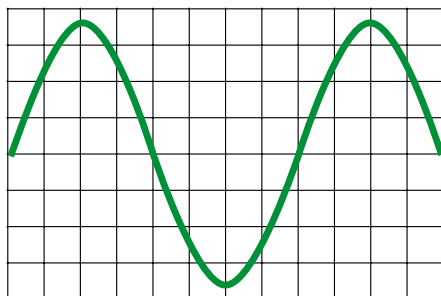
The basic characteristics of the ADV200 inverter with "AFE" input bridge are listed below:

- Sinusoidal line current with low harmonic content: 4% with full load.
- Unit power factor
- Possibility of generating reactive power to correct the power factor of any other loads on the same network
- Increased DC link voltage and thus of AC voltage available at the motor terminals. This guarantees control of the motor up to its maximum output even in case of a power supply line with less than the rated voltage.

These characteristics make it possible to reduce the size of the power supply lines, transformer (if present) and protection devices.



Waveform of the panel input current if using an inverter with 6-impulse rectifier

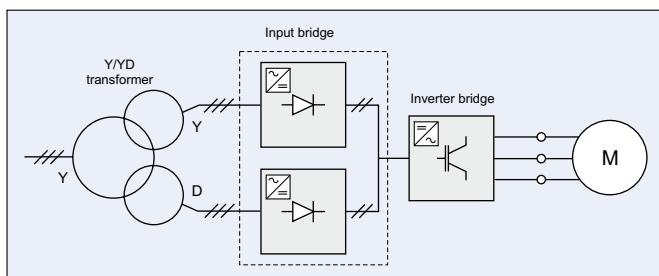


Waveform of the panel input current if using an AFE regenerative bridge.

Alternative optional solutions for lowering harmonic distortion

12-impulse input bridge

The 12-impulse input bridge is implemented by creating a parallel connection between two 6-impulse rectifiers powered by a transformer with two secondary windings, one with a star connection and the other with a delta connection to obtain a difference of 30 electric degrees between the two three-phase power supplies.



The advantage of this configuration is that some harmonic components on the mains side cancel each other out, lowering the total THDi to 12% and reducing the size of the power supply lines compared to a conventional bridge.

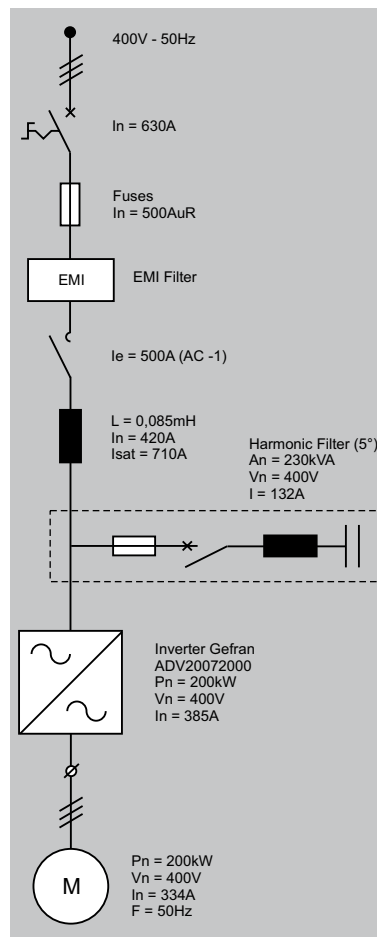
That is why a 12-impulse rectifier bridge is often used in high-power inverters.

6-impulse input bridge with passive LC filter

Passive filters are an economical solution for reducing harmonic distortion. They consist of one or more LC branches, each

comprising a group of capacitors and a choke connected in series and designed to be tuned to a specific harmonic content. In industrial systems with inverters, the filter is normally tuned to the 5th level harmonic component.

The efficacy of the filters and thus the actual reduction of harmonic distortion depends not only on the actual filter and load downstream, but also on the characteristics of the power mains.



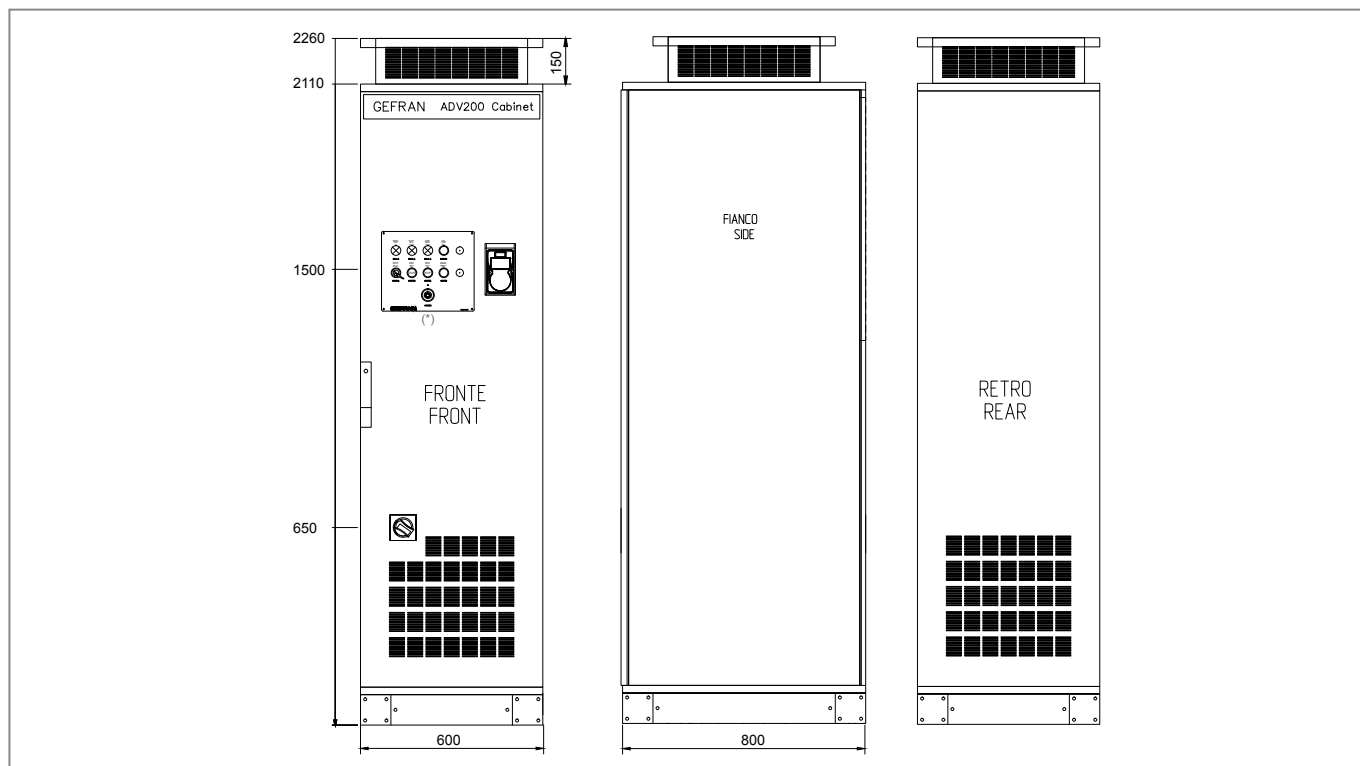
Below are the single-wire connection diagram and a photo of the electrical panel in the system to remove CO₂ from combustion fumes at the ENEL FEDERICO II power station in Brindisi.



Dimensions, weight and dissipation

ADV110090-HD-4..-IP31

ADV110110-LD-4..-IP31

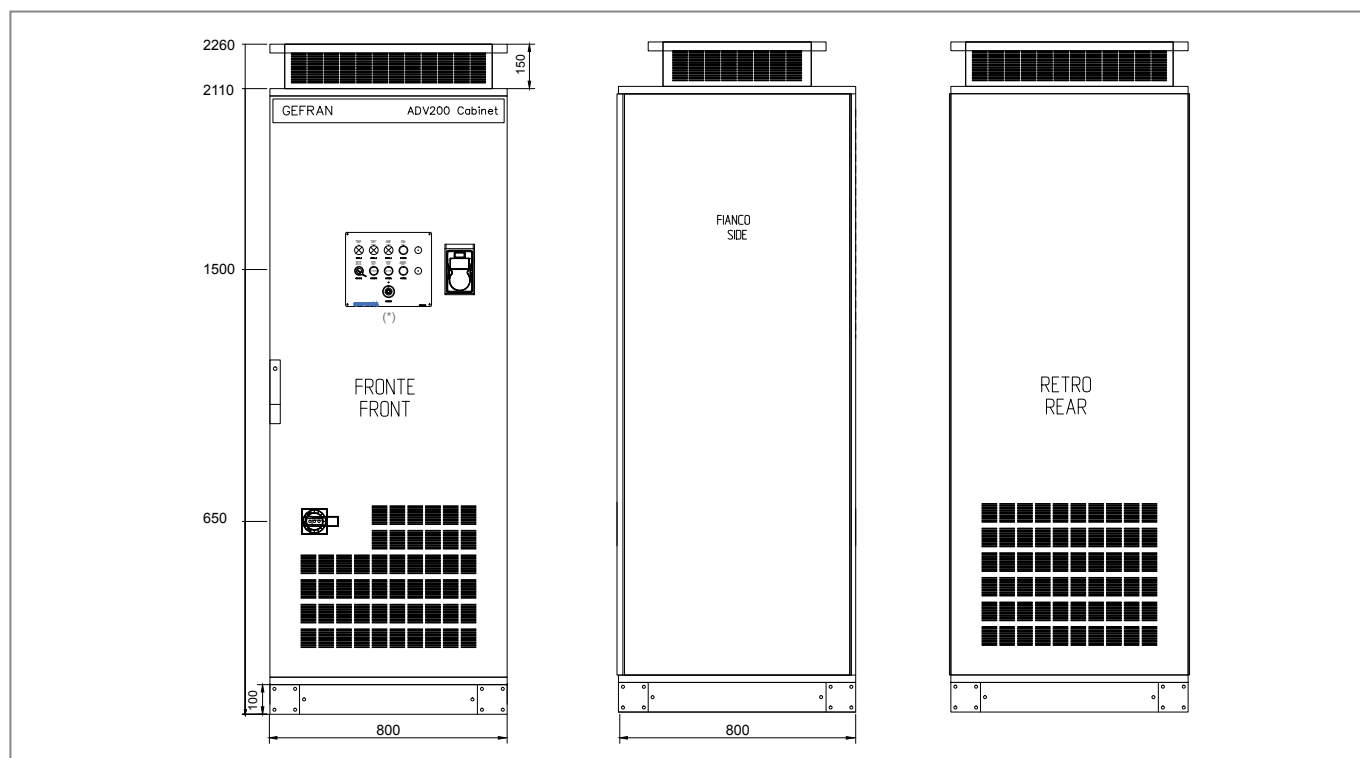


ADV110110 ...110355-HD-4..-IP31

ADV110132 ...110400-LD-4..-IP31

ADV110160 ...110355-HD-6..-IP31

ADV110200 ...110335-LD-6..-IP31

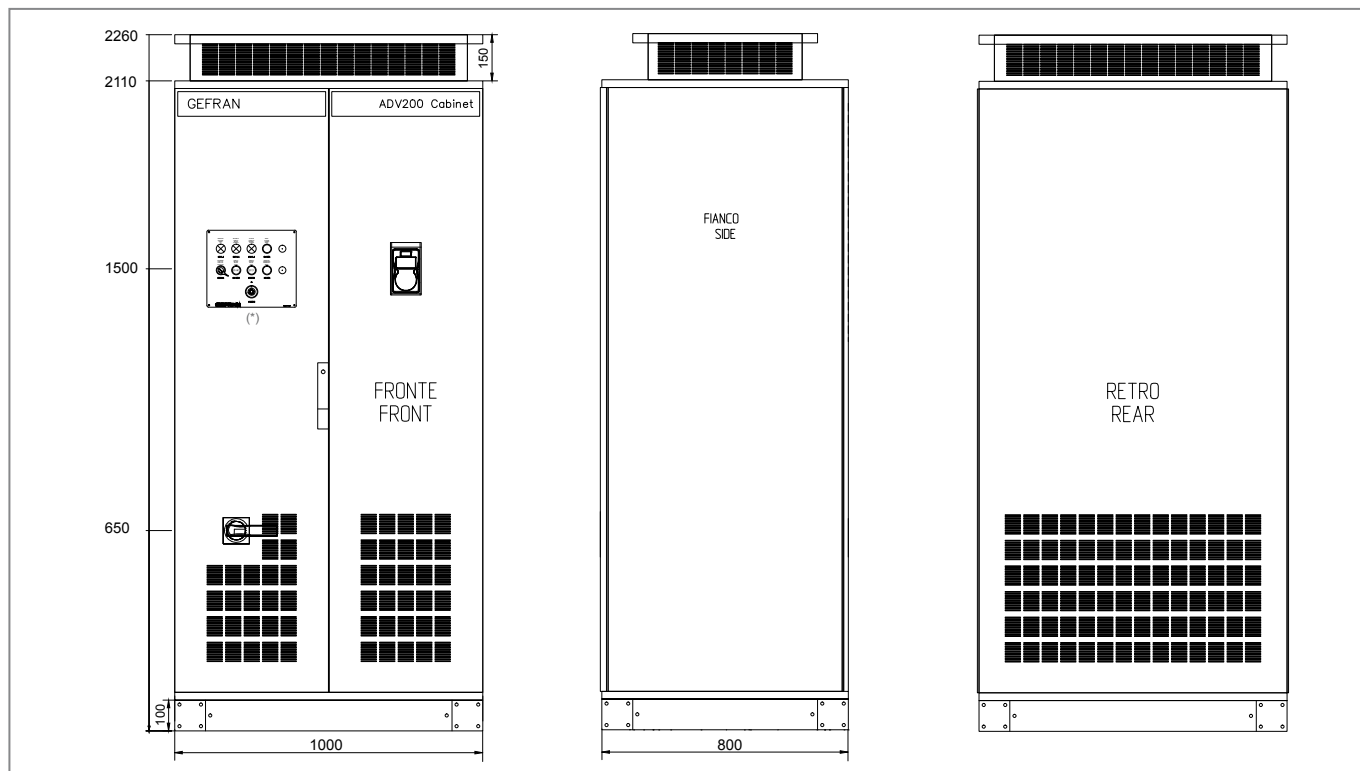


values in mm.

[*] Controls and indicators for models in the Ready to use version only (-RD)

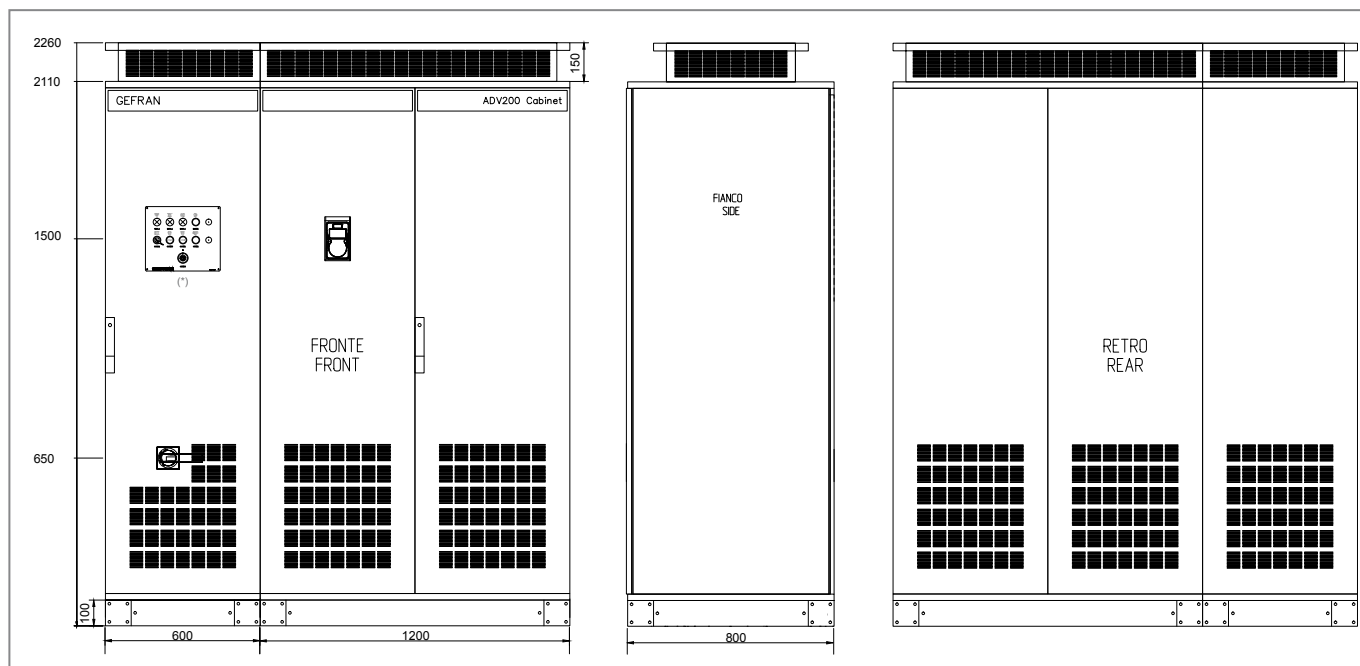
ADV110400-LD-4..-IP31

ADV110400-LD-6..-IP31



ADV110400 ...110710-HD-4/6..-IP31

ADV110500 ...110800-LD-4/6..-IP31

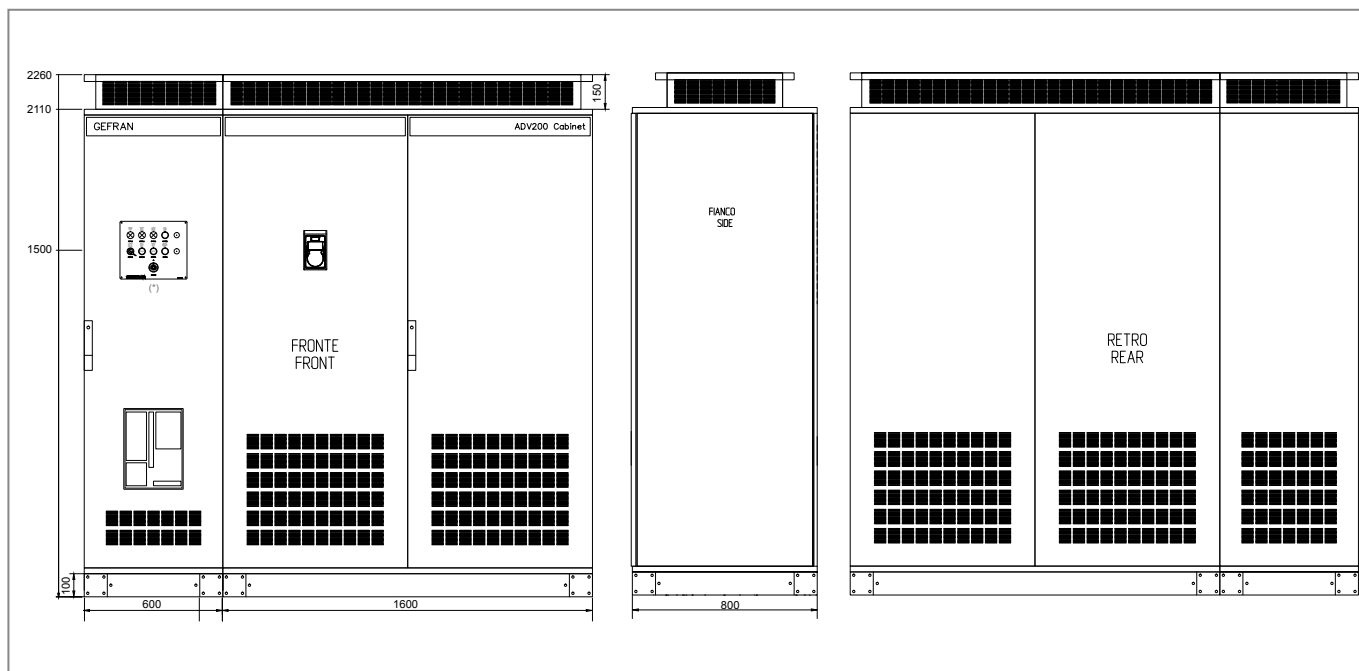


values in mm.

[*] Controls and indicators for models in the Ready to use version only (-RD)

ADV110900 ...111000-HD-4/6..IP31

ADV111000 ...111200-LD-4/6..IP31



ADV200 Cabinet

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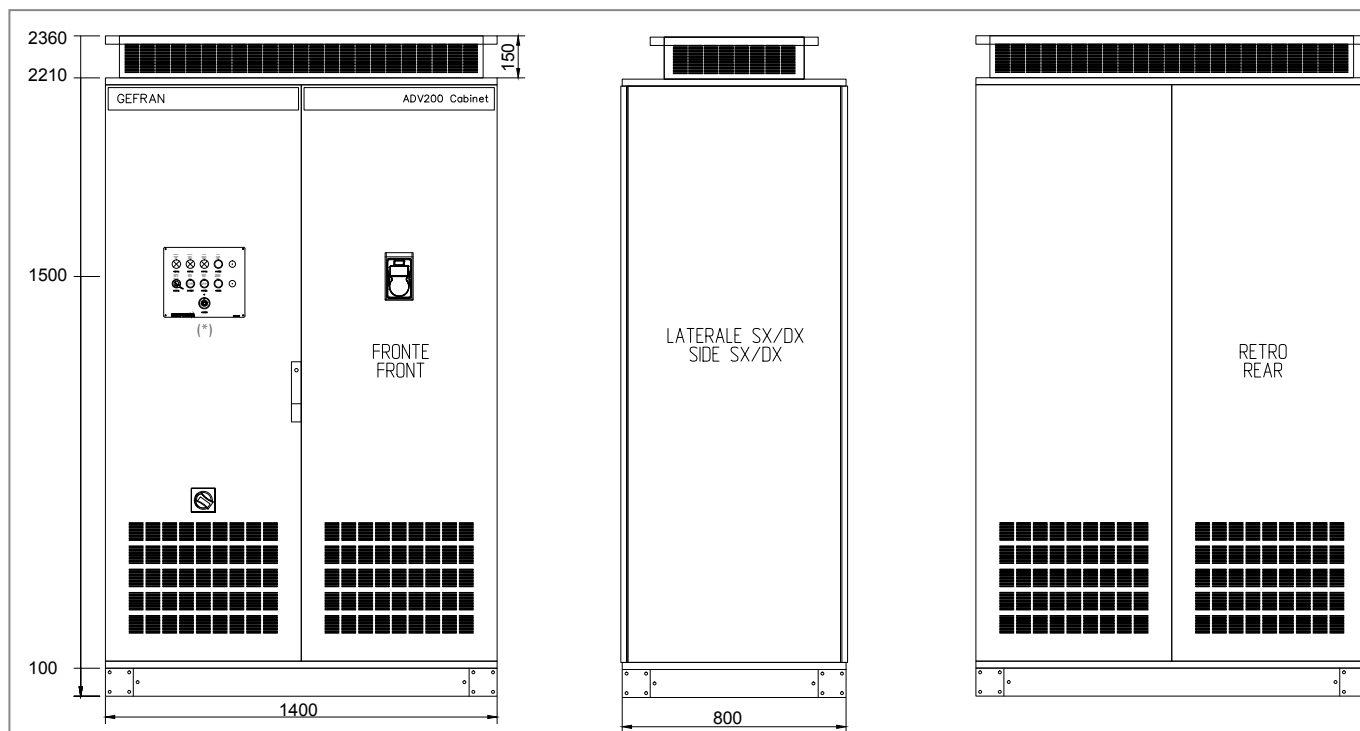
values in mm.

[*] Controls and indicators for models in the Ready to use version only (-RD)

AFE110090 ...110132-HD-4..IP31

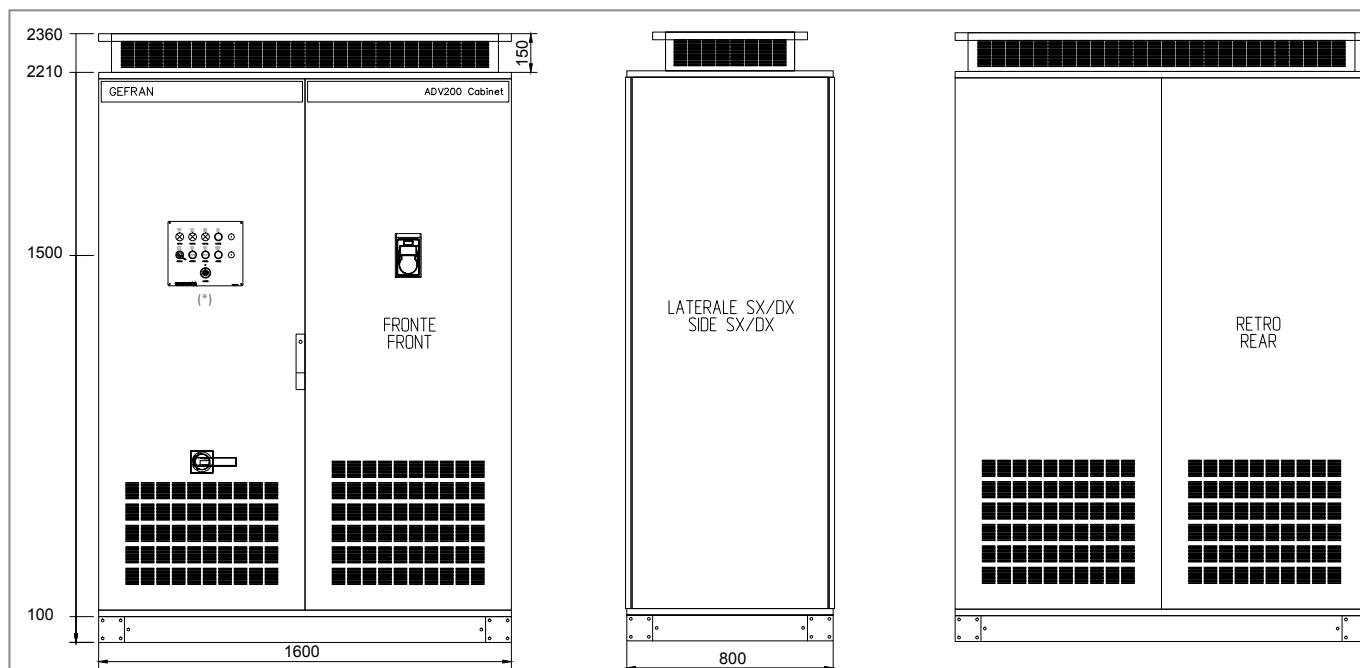
AFE110110 ...110160-LD-4..IP31

AFE110160-LD-6..IP31



AFE110160 ...110315-HD-4/6..IP31

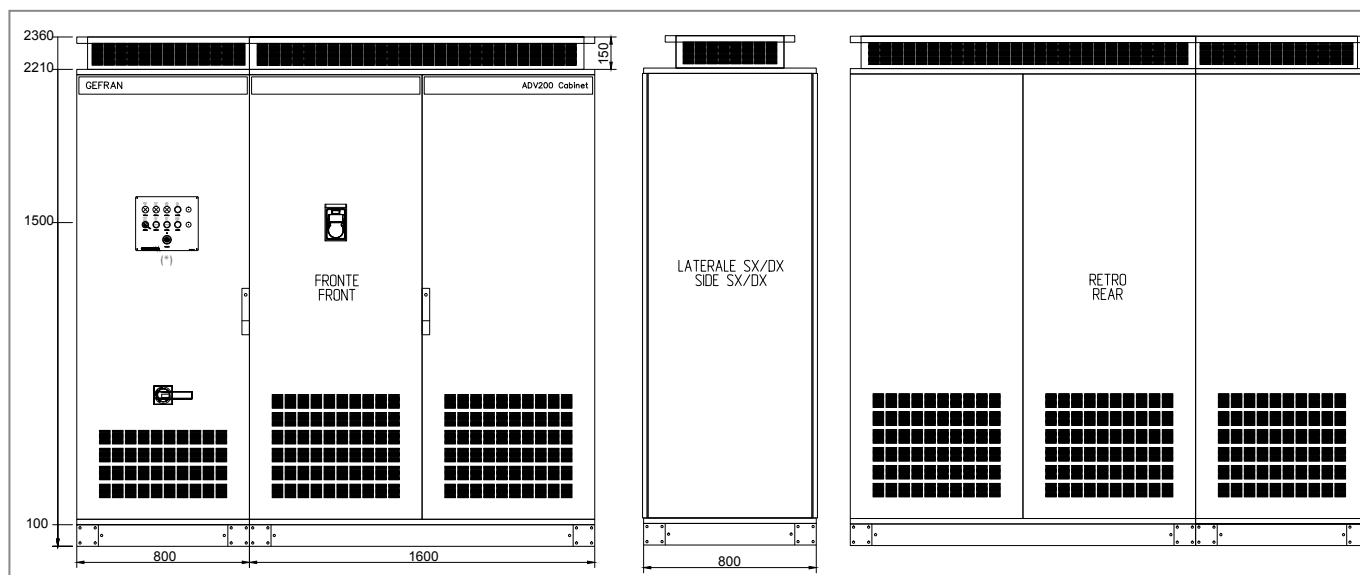
AFE110200 ...110355-LD-4/6..IP31



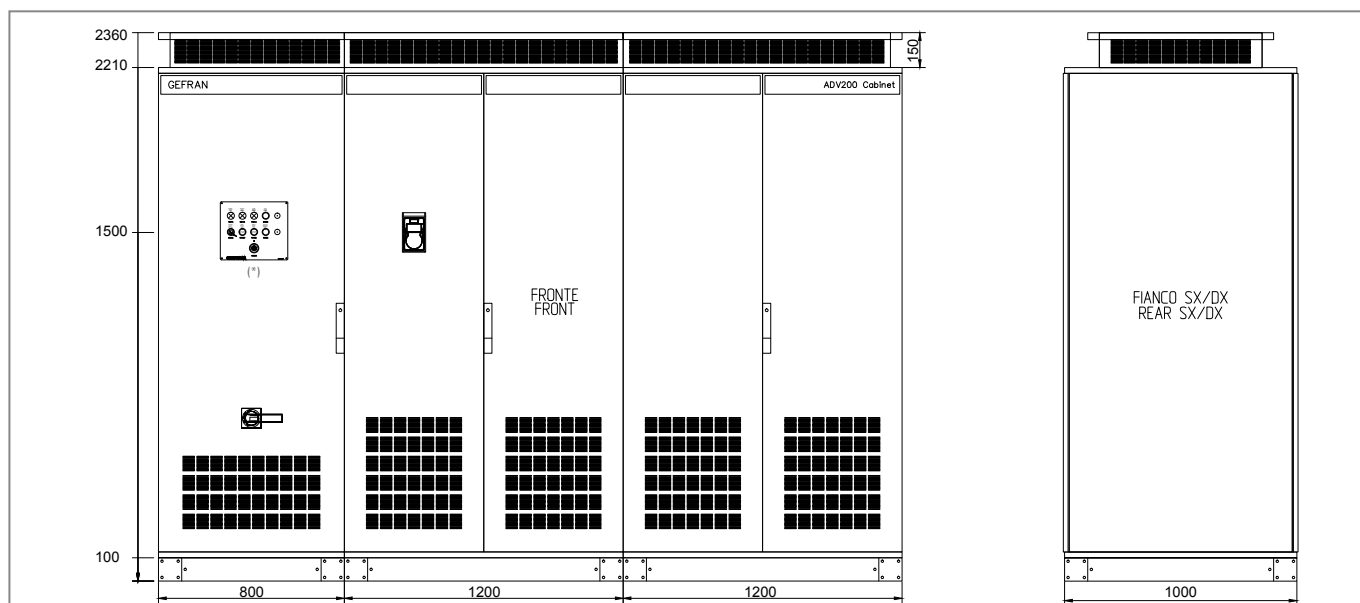
values in mm.

[*] Controls and indicators for models in the Ready to use version only (-RD)

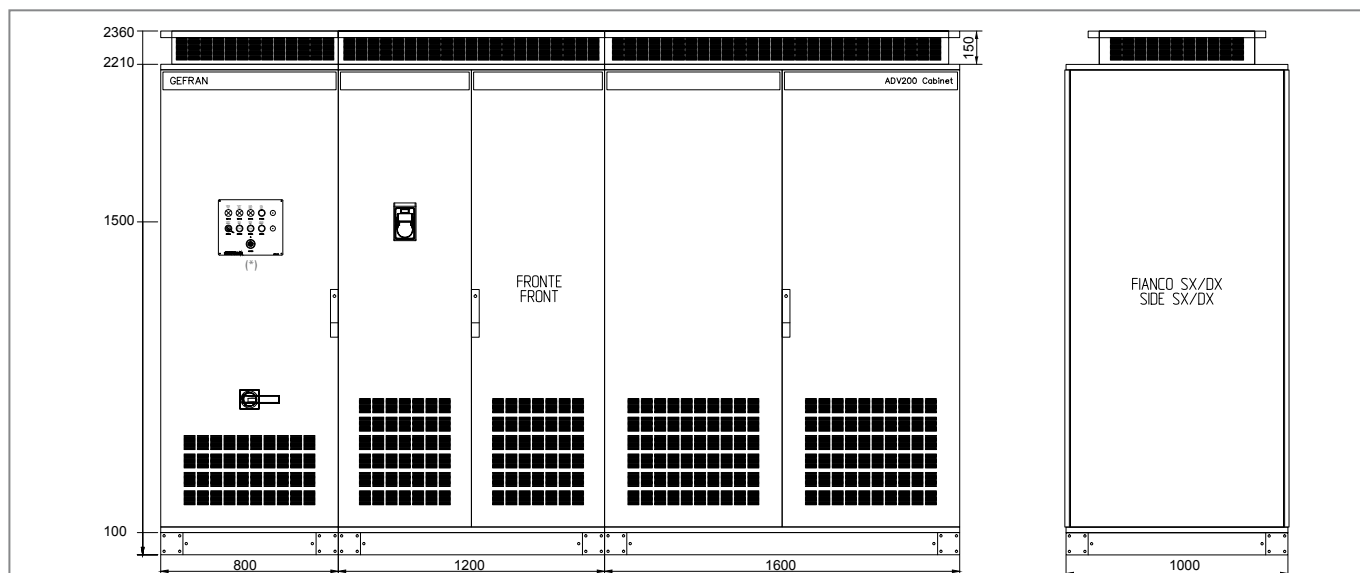
AFE110355-HD-4/6..-IP31, AFE110400-LD-4/6..-IP31



AFE110400 ...110630-HD-4/6..-IP31, AFE110500 ...110710-LD-4/6..-IP31



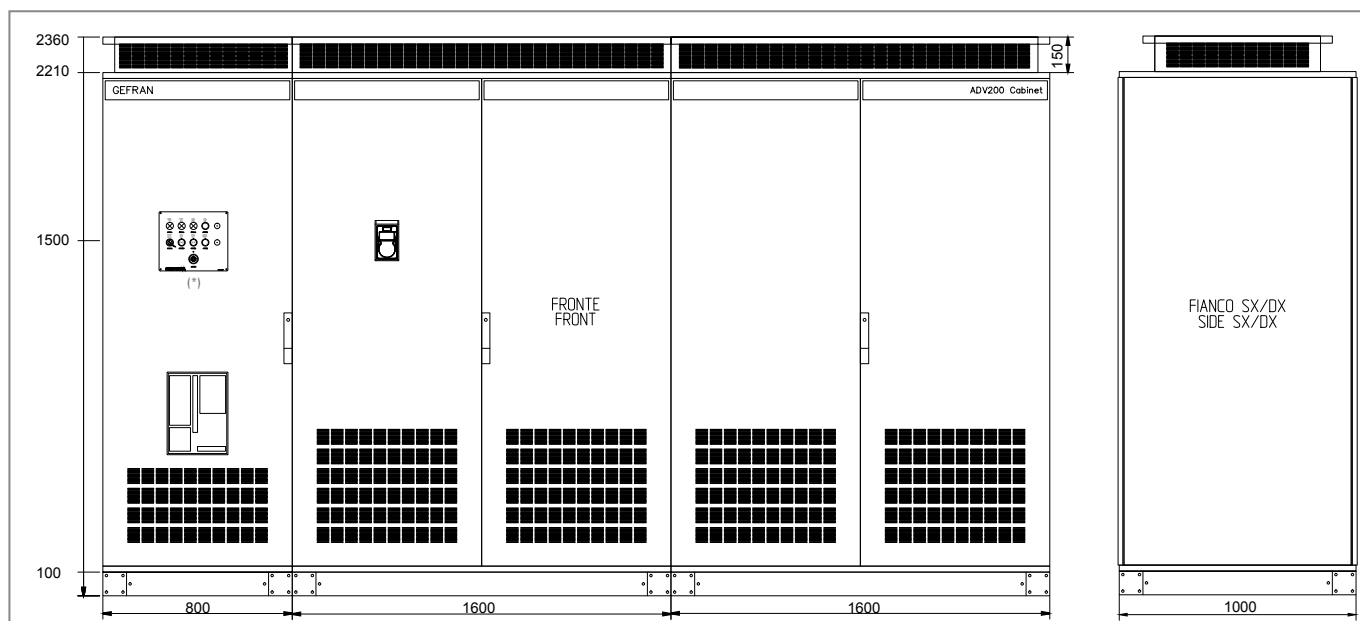
AFE110710-HD-4/6..-IP31, AFE110900-LD-4..-IP31



AFE110900-HD-4/6..-IP31

AFE111000-LD-4..-IP31

AFE110900-LD-6..-IP31 ... AFE111000-LD-6..-IP31



values in mm.

(*) Controls and indicators for models in the Ready to use version only (-RD)

ADV 11.... - 4 • 6-impulse input bridge

- 400 Vac, 50/60 Hz mains, Motor with rated voltage = 400 Vac
- 460 Vac, 50/60 Hz mains, Motor with rated voltage = 460 Vac
- **High Duty (HD)**

Model	Motor size (@400Vac) [kW]	Dimensions IP31			Dimensions IP54V			Dimensions IP54C			Weight			Dissipation [W]
		Height mm [in.]	Width mm [in.]	Depth mm [in.]	Height mm [in.]	Width mm [in.]	Depth mm [in.]	Height mm [in.]	Width mm [in.]	Depth mm [in.]	IP31 kg [lbs]	IP54V kg [lbs]	IP54C kg [lbs]	
ADV-110090-HD-4	90	2260 [89]	600 [24]	800 [24]	3260 [128]	600 [24]	800 [24]	2360 [93]	975 [38]	800 [24]	230 [507]	295 [650]	345 [761]	2450
ADV-110110-HD-4	110	2260 [89]	800 [24]	800 [24]	3260 [128]	800 [24]	800 [24]	2360 [93]	1175 [46]	800 [24]	300 [661]	335 [739]	385 [849]	2900
ADV-110132-HD-4	132	2260 [89]	800 [24]	800 [24]	3260 [128]	800 [24]	800 [24]	2360 [93]	1175 [46]	800 [24]	300 [661]	335 [739]	385 [849]	3700
ADV-110160-HD-4	160	2260 [89]	800 [24]	800 [24]	3260 [128]	800 [24]	800 [24]	2360 [93]	1175 [46]	800 [24]	400 [882]	435 [959]	485 [1069]	4100
ADV-110200-HD-4	200	2260 [89]	800 [24]	800 [24]	3260 [128]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	420 [926]	455 [1003]	515 [1135]	4520
ADV-110250-HD-4	250	2260 [89]	800 [24]	800 [24]	3260 [128]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	490 [1080]	525 [1157]	585 [1290]	5400
ADV-110315-HD-4	315	2260 [89]	800 [24]	800 [24]	3260 [128]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	490 [1080]	520 [1146]	590 [1301]	7150
ADV-110355-HD-4	355	2260 [89]	800 [24]	800 [24]	3260 [128]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	500 [1102]	535 [1179]	605 [1334]	7550
ADV-110400-HD-4	400	2260 [89]	1800 [24]	800 [24]	3260 [128]	1800 [24]	800 [24]	2360 [93]	2200 [87]	800 [24]	850 [1874]	930 [2050]	1000 [2205]	9650
ADV-110500-HD-4	500	2260 [89]	1800 [24]	800 [24]	3260 [128]	1800 [24]	800 [24]	2360 [93]	2450 [96]	800 [24]	1000 [2205]	1070 [2359]	1185 [2613]	11160
ADV-110630-HD-4	630	2260 [89]	1800 [24]	800 [24]	3260 [128]	1800 [24]	800 [24]	2360 [93]	2600 [24]	800 [24]	1000 [2205]	1065 [2348]	1235 [2723]	14950
ADV-110710-HD-4	710	2260 [89]	1800 [24]	800 [24]	-	-	-	-	-	-	1000 [2205]	-	-	15670
ADV-110900-HD-4	900	2260 [89]	2200 [87]	800 [24]	-	-	-	-	-	-	1400 [3086]	-	-	21700
ADV-111000-HD-4	1000	2260 [89]	2200 [87]	800 [24]	-	-	-	-	-	-	1400 [3086]	-	-	24000

- 400 Vac, 50/60 Hz mains, Motor with rated voltage = 400 Vac
- 460 Vac, 50/60 Hz mains, Motor with rated voltage = 460 Vac
- **Light Duty (LD)**

Model	Motor size (@400Vac) [kW]	Dimensions IP31			Dimensions IP54V			Dimensions IP54C			Weight			Dissipation [W]
		Height mm [in.]	Width mm [in.]	Depth mm [in.]	Height mm [in.]	Width mm [in.]	Depth mm [in.]	Height mm [in.]	Width mm [in.]	Depth mm [in.]	IP31 kg [lbs]	IP54V kg [lbs]	IP54C kg [lbs]	
ADV-110110-LD-4	110	2260 [89]	600 [24]	800 [24]	2360 [93]	600 [24]	800 [24]	2360 [93]	975 [38]	800 [24]	260 [573]	295 [650]	345 [761]	2900
ADV-110132-LD-4	132	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1175 [46]	800 [24]	300 [661]	335 [739]	385 [849]	3600
ADV-110160-LD-4	160	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	300 [661]	335 [739]	395 [871]	4400
ADV-110200-LD-4	200	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	415 [915]	455 [1003]	515 [1135]	5200
ADV-110250-LD-4	250	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	416 [917]	455 [1003]	515 [1135]	5300
ADV-110315-LD-4	315	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	500 [1102]	535 [1179]	605 [1334]	6700
ADV-110355-LD-4	355	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	500 [1102]	535 [1179]	605 [1334]	7800
ADV-110400-LD-4	400	2260 [89]	1000 [39]	800 [24]	2360 [93]	1000 [39]	800 [24]	2360 [93]	1400 [55]	800 [24]	500 [1102]	580 [1279]	650 [1433]	8400
ADV-110500-LD-4	500	2260 [89]	1800 [24]	800 [24]	2360 [93]	1800 [24]	800 [24]	2360 [93]	2450 [96]	800 [24]	855 [1885]	930 [2050]	1050 [2315]	11100
ADV-110630-LD-4	630	2260 [89]	1800 [24]	800 [24]	2360 [93]	1800 [24]	800 [24]	2360 [93]	2575 [101]	800 [24]	995 [2194]	1070 [2359]	1230 [2712]	13800
ADV-110710-LD-4	710	2260 [89]	1800 [24]	800 [24]	2360 [93]	1800 [24]	800 [24]	2360 [93]	2600 [24]	800 [24]	995 [2194]	1055 [2326]	1225 [2701]	16200
ADV-110800-LD-4	800	2260 [89]	1800 [24]	800 [24]	-	-	-	-	-	-	1010 [2227]	-	-	17300
ADV-111000-LD-4	1000	2260 [89]	2200 [87]	800 [24]	-	-	-	-	-	-	1380 [3042]	-	-	24000
ADV-111200-LD-4	1200	2260 [89]	2200 [87]	800 [24]	-	-	-	-	-	-	1380 [3042]	-	-	26000

ADV 11.... - 6 • Ponte di ingresso a 6 impulsi

- 500 Vac, 50/60 Hz mains, Motor with rated voltage = 500 Vac
- 690 Vac, 50/60 Hz mains, Motor with rated voltage = 690 Vac
- **High Duty (HD)**

Model	Motor size (@690Vac) [kW]	Dimensions IP31			Dimensions IP54V			Dimensions IP54C			Weight			Dissipation [W]
		Height mm [in.]	Width mm [in.]	Depth mm [in.]	Height mm [in.]	Width mm [in.]	Depth mm [in.]	Height mm [in.]	Width mm [in.]	Depth mm [in.]	IP31 kg [lbs]	IP54V kg [lbs]	IP54C kg [lbs]	
ADV-110160-HD-6	160	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	410 [904]	450 [992]	1200 [2645]	4260
ADV-110200-HD-6	200	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	430 [948]	470 [1036]	1200 [2645]	4645
ADV-110250-HD-6	250	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	455 [1003]	495 [1091]	1200 [2645]	5040
ADV-110315-HD-6	315	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	490 [1080]	530 [1168]	1200 [2645]	6290
ADV-110355-HD-6	355	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	490 [1080]	530 [1168]	1200 [2645]	6920
ADV-110400-HD-6	400	2260 [89]	1800 [24]	800 [24]	2360 [93]	1800 [24]	800 [24]	2360 [93]	2200 [87]	800 [24]	870 [1918]	950 [2094]	1200 [2645]	9605
ADV-110500-HD-6	500	2260 [89]	1800 [24]	800 [24]	2360 [93]	1800 [24]	800 [24]	2360 [93]	2450 [96]	800 [24]	925 [2039]	1005 [2216]	1450 [3197]	10680
ADV-110630-HD-6	630	2260 [89]	1800 [24]	800 [24]	2360 [93]	1800 [24]	800 [24]	2360 [93]	2515 [99]	800 [24]	980 [2160]	1060 [2337]	1575 [3472]	13410
ADV-110710-HD-6	710	2260 [89]	1800 [24]	800 [24]	2360 [93]	1800 [24]	800 [24]	2360 [93]	2600 [24]	800 [24]	1000 [2205]	1080 [2381]	1575 [3472]	14525
ADV-110900-HD-6	900	2260 [89]	2200 [87]	800 [24]	-	-	-	-	-	-	1375 [3031]	-	-	21340
ADV-111000-HD-6	1000	2260 [89]	2200 [87]	800 [24]	-	-	-	-	-	-	1375 [3031]	-	-	20785

- 500 Vac, 50/60 Hz mains, Motor with rated voltage = 500 Vac
- 690 Vac, 50/60 Hz mains, Motor with rated voltage = 690 Vac
- **Light Duty (LD)**

Model	Motor size (@690Vac) [kW]	Dimensions IP31			Dimensions IP54V			Dimensions IP54C			Weight			Dissipation [W]
		Height mm [in.]	Width mm [in.]	Depth mm [in.]	Height mm [in.]	Width mm [in.]	Depth mm [in.]	Height mm [in.]	Width mm [in.]	Depth mm [in.]	IP31 kg [lbs]	IP54V kg [lbs]	IP54C kg [lbs]	
ADV-110200-LD-6	200	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	420 [926]	460 [1014]	540 [1190]	5055
ADV-110250-LD-6	250	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	430 [948]	470 [1036]	550 [1213]	5605
ADV-110315-LD-6	315	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	465 [1025]	505 [1113]	585 [1290]	6015
ADV-110355-LD-6	355	2260 [89]	800 [24]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	490 [1080]	530 [1168]	625 [1378]	6975
ADV-110400-LD-6	400	2260 [89]	1000 [39]	800 [24]	2360 [93]	800 [24]	800 [24]	2360 [93]	1200 [47]	800 [24]	500 [1102]	540 [1190]	635 [1400]	7525
ADV-110500-LD-6	500	2260 [89]	1800 [24]	800 [24]	2360 [93]	1800 [24]	800 [24]	2360 [93]	2200 [87]	800 [24]	865 [1907]	945 [2083]	1100 [2425]	11450
ADV-110630-LD-6	630	2260 [89]	1800 [24]	800 [24]	2360 [93]	1800 [24]	800 [24]	2360 [93]	2450 [96]	800 [24]	924 [2037]	1005 [2216]	1210 [2668]	12720
ADV-110710-LD-6	710	2260 [89]	1800 [24]	800 [24]	2360 [93]	1800 [24]	800 [24]	2360 [93]	2515 [99]	800 [24]	995 [2194]	1075 [2370]	1225 [2701]	14700
ADV-110800-LD-6	800	2260 [89]	1800 [24]	800 [24]	2360 [93]	1800 [24]	800 [24]	2360 [93]	2600 [24]	800 [24]	1020 [2249]	1100 [2425]	1295 [2855]	15800
ADV-111000-LD-6	1000	2260 [89]	2200 [87]	800 [24]	-	-	-	-	-	-	1375 [3031]	-	-	23240
ADV-111200-LD-6	1200	2260 [89]	2200 [87]	800 [24]	-	-	-	-	-	-	1375 [3031]	-	-	23240

AFE 11.... - 4 • Input bridge with AFE power supply module

- 400 Vac, 50/60 Hz mains, Motor with rated voltage = 400 Vac
- 460 Vac, 50/60 Hz mains, Motor with rated voltage = 460 Vac
- **High Duty (HD)**

Model	Motor size (@400Vac) [kW]	Dimensions IP31			Dimensions IP54V			Dimensions IP54C			Weight			Dissipation [W]
		Height mm [in.]	Width mm [in.]	Depth mm [in.]	Height mm [in.]	Width mm [in.]	Depth mm [in.]	Height mm [in.]	Width mm [in.]	Depth mm [in.]	IP31 kg [lbs]	IP54V kg [lbs]	IP54C kg [lbs]	
AFE-110090-HD-4	90	2360 [93]	1400 [55]	800 [24]	2460 [97]	1400 [55]	800 [24]	2360 [93]	1800 [24]	800 [24]	445 [981]	525 [1157]	545 [1202]	5100
AFE-110110-HD-4	110	2360 [93]	1400 [55]	800 [24]	2460 [97]	1400 [55]	800 [24]	2360 [93]	1800 [24]	800 [24]	450 [992]	530 [1168]	550 [1213]	5900
AFE-110132-HD-4	132	2360 [93]	1400 [55]	800 [24]	2460 [97]	1400 [55]	800 [24]	2360 [93]	1800 [24]	800 [24]	580 [1279]	660 [1455]	690 [1521]	6600
AFE-110160-HD-4	160	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2000 [79]	800 [24]	650 [1433]	730 [1609]	760 [1675]	7600
AFE-110200-HD-4	200	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2000 [79]	800 [24]	710 [1565]	790 [1742]	860 [1896]	9600
AFE-110250-HD-4	250	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2250 [89]	800 [24]	725 [1598]	805 [1775]	920 [2028]	11400
AFE-110315-HD-4	315	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2375 [93]	800 [24]	770 [1698]	850 [1874]	1010 [2227]	12400
AFE-110355-HD-4	355	2360 [93]	2400 [94]	800 [24]	2460 [97]	2400 [94]	800 [24]	2360 [93]	3200 [126]	800 [24]	1075 [2370]	1095 [2414]	1325 [2921]	14800
AFE-110400-HD-4	400	2360 [93]	3200 [126]	1000 [39]	-	-	-	-	-	-	1550 [3417]	-	-	19600
AFE-110500-HD-4	500	2360 [93]	3200 [126]	1000 [39]	-	-	-	-	-	-	1600 [3527]	-	-	24100
AFE-110630-HD-4	630	2360 [93]	3200 [126]	1000 [39]	-	-	-	-	-	-	1660 [3660]	-	-	26150
AFE-110710-HD-4	710	2360 [93]	3600 [24]	1000 [39]	-	-	-	-	-	-	1900 [4189]	-	-	32800
AFE-110900-HD-4	900	2360 [93]	4000 [157]	1000 [39]	-	-	-	-	-	-	2330 [5137]	-	-	39400

- 400 Vac, 50/60 Hz mains, Motor with rated voltage = 400 Vac
- 460 Vac, 50/60 Hz mains, Motor with rated voltage = 460 Vac
- **Light Duty (LD)**

Model	Motor size (@400Vac) [kW]	Dimensions IP31			Dimensions IP54V			Dimensions IP54C			Weight			Dissipation [W]
		Height mm [in.]	Width mm [in.]	Depth mm [in.]	Height mm [in.]	Width mm [in.]	Depth mm [in.]	Height mm [in.]	Width mm [in.]	Depth mm [in.]	IP31 kg [lbs]	IP54V kg [lbs]	IP54C kg [lbs]	
AFE-110110-LD-4	110	2360 [93]	1400 [55]	800 [24]	2460 [97]	1400 [55]	800 [24]	2360 [93]	1800 [24]	800 [24]	445 [981]	525 [1157]	545 [1202]	5900
AFE-110132-LD-4	132	2360 [93]	1400 [55]	800 [24]	2460 [97]	1400 [55]	800 [24]	2360 [93]	1800 [24]	800 [24]	445 [981]	525 [1157]	545 [1202]	6800
AFE-110160-LD-4	160	2360 [93]	1400 [55]	800 [24]	2460 [97]	1400 [55]	800 [24]	2360 [93]	1800 [24]	800 [24]	580 [1279]	660 [1455]	690 [1521]	8000
AFE-110200-LD-4	200	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2000 [79]	800 [24]	655 [1444]	735 [1620]	805 [1775]	8900
AFE-110250-LD-4	250	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2250 [89]	800 [24]	705 [1554]	785 [1731]	899 [1982]	11400
AFE-110315-LD-4	315	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2375 [93]	800 [24]	735 [1620]	815 [1797]	975 [2149]	12800
AFE-110355-LD-4	355	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2375 [93]	800 [24]	770 [1698]	850 [1874]	1010 [2227]	13700
AFE-110400-LD-4	400	2360 [93]	2400 [94]	800 [24]	2460 [97]	2400 [94]	800 [24]	2360 [93]	3200 [126]	800 [24]	1080 [2381]	1200 [2645]	1330 [2932]	16510
AFE-110500-LD-4	500	2360 [93]	3200 [126]	1000 [39]	-	-	-	-	-	-	1550 [3417]	-	-	21000
AFE-110630-LD-4	630	2360 [93]	3200 [126]	1000 [39]	-	-	-	-	-	-	1650 [3637]	-	-	26800
AFE-110710-LD-4	710	2360 [93]	3200 [126]	1000 [39]	-	-	-	-	-	-	1730 [3814]	-	-	27700
AFE-110900-LD-4	900	2360 [93]	3600 [24]	1000 [39]	-	-	-	-	-	-	2230 [507]	-	-	41000
AFE-111000-LD-4	1000	2360 [93]	4000 [157]	1000 [39]	-	-	-	-	-	-	2400 [5291]	-	-	43000

AFE 11.... - 6 • 6-impulse input bridge

- 500 Vac, 50/60 Hz mains, Motor with rated voltage = 500 Vac
- 690 Vac, 50/60 Hz mains, Motor with rated voltage = 690 Vac
- **High Duty (HD)**

Model	Motor size (@690Vac) [kW]	Dimensions IP31			Dimensions IP54V			Dimensions IP54C			Weight			Dissipation [W]
		Height	Width	Depth	Height	Width	Depth	Height	Width	Depth	IP31	IP54V	IP54C	
		mm [in.]	mm [in.]	mm [in.]	mm [in.]	mm [in.]	mm [in.]	mm [in.]	mm [in.]	mm [in.]	kg [lbs]			
AFE-110160-HD-6	160	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2000 [79]	800 [24]	655 [1444]	735 [1620]	835 [1841]	9260
AFE-110200-HD-6	200	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2250 [89]	800 [24]	810 [1786]	890 [1962]	1045 [2304]	10885
AFE-110250-HD-6	250	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2375 [93]	800 [24]	870 [1918]	950 [2094]	1155 [2546]	12520
AFE-110315-HD-6	315	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2375 [93]	800 [24]	915 [2017]	995 [2194]	1200 [2645]	13405
AFE-110355-HD-6	355	2360 [93]	2400 [94]	800 [24]	2460 [97]	2400 [94]	800 [24]	2360 [93]	3200 [126]	800 [24]	1245 [2745]	1365 [3009]	1545 [3406]	17475
AFE-110400-HD-6	400	2360 [93]	3200 [126]	1000 [39]	-	-	-	-	-	-	1805 [3979]	-	-	22570
AFE-110500-HD-6	500	2360 [93]	3200 [126]	1000 [39]	-	-	-	-	-	-	1925 [4244]	-	-	26070
AFE-110630-HD-6	630	2360 [93]	3200 [126]	1000 [39]	-	-	-	-	-	-	2000 [4409]	-	-	27940
AFE-110710-HD-6	710	2360 [93]	3600 [24]	1000 [39]	-	-	-	-	-	-	2285 [5038]	-	-	35120
AFE-110900-HD-6	900	2360 [93]	4000 [157]	1000 [39]	-	-	-	-	-	-	2785 [6140]	-	-	41450

- 500 Vac, 50/60 Hz mains, Motor with rated voltage = 500 Vac
- 690 Vac, 50/60 Hz mains, Motor with rated voltage = 690 Vac
- **Servizio Leggero (LD)**

Model	Motor size (@690Vac) [kW]	Dimensions IP31			Dimensions IP54V			Dimensions IP54C			Weight			Dissipation [W]
		Height	Width	Depth	Height	Width	Depth	Height	Width	Depth	IP31	IP54V	IP54C	
		mm [in.]	mm [in.]	mm [in.]	mm [in.]	mm [in.]	mm [in.]	mm [in.]	mm [in.]	mm [in.]	kg [lbs]			
AFE-110160-LD-6	160	2360 [93]	1400 [55]	800 [24]	2460 [97]	1400 [55]	800 [24]	2360 [93]	1800 [24]	800 [24]	655 [1444]	735 [1620]	735 [1620]	8825
AFE-110200-LD-6	200	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2000 [79]	800 [24]	665 [1466]	745 [1642]	745 [1642]	9285
AFE-110250-LD-6	250	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2250 [89]	800 [24]	810 [1786]	890 [1962]	1045 [2304]	10900
AFE-110315-LD-6	315	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2375 [93]	800 [24]	880 [1940]	960 [2116]	1165 [2568]	12490
AFE-110355-LD-6	355	2360 [93]	1600 [24]	800 [24]	2460 [97]	1600 [24]	800 [24]	2360 [93]	2375 [93]	800 [24]	915 [2017]	995 [2194]	1200 [2645]	13425
AFE-110400-LD-6	400	2360 [93]	2400 [94]	800 [24]	2460 [97]	2400 [94]	800 [24]	2360 [93]	3200 [126]	800 [24]	1245 [2745]	1365 [3009]	1545 [3406]	17505
AFE-110500-LD-6	500	2360 [93]	3200 [126]	1000 [39]	-	-	-	-	-	-	1795 [3957]	-	-	22265
AFE-110630-LD-6	630	2360 [93]	3200 [126]	1000 [39]	-	-	-	-	-	-	1915 [4222]	-	-	25675
AFE-110710-LD-6	710	2360 [93]	3200 [126]	1000 [39]	-	-	-	-	-	-	2020 [4453]	-	-	27990
AFE-110900-LD-6	900	2360 [93]	4000 [157]	1000 [39]	-	-	-	-	-	-	2700 [4453]	-	-	41365
AFE-111000-LD-6	1000	2360 [93]	4000 [157]	1000 [39]	-	-	-	-	-	-	2785 [6140]	-	-	41520

Technical specifications • 6-impulse input bridge

- 400 Vac, 50/60 Hz mains, Motor with rated voltage = 400 Vac
- High Duty (HD)**

Model	Motor size [kW]	Rated current In		Output overload		Ambient temperature		
		Input [A]	Output [A]	150% x In (1' every 5')	180% x In (for 0.5")	IP31 °C [°F]	IP54 V °C [°F]	IP54 C °C [°F]
ADV-110090-HD-4	90	171	180	270	307.8	40 [104]	35 [95]	40 [104]
ADV-110110-HD-4	110	200	210	315	360	40 [104]	35 [95]	40 [104]
ADV-110132-HD-4	132	238	250	375	428.4	40 [104]	35 [95]	40 [104]
ADV-110160-HD-4	160	300	300	450	540	40 [104]	35 [95]	40 [104]
ADV-110200-HD-4	200	350	385	578	630	40 [104]	35 [95]	40 [104]
ADV-110250-HD-4	250	420	460	690	756	40 [104]	35 [95]	40 [104]
ADV-110315-HD-4	315	580	590	885	1044	40 [104]	35 [95]	40 [104]
ADV-110355-HD-4	355	640	650	975	1152	40 [104]	35 [95]	40 [104]
ADV-110400-HD-4	400	665	730	1095	1197	40 [104]	35 [95]	40 [104]
ADV-110500-HD-4	500	800	870	1305	1440	40 [104]	35 [95]	40 [104]
ADV-110630-HD-4	630	1100	1120	1680	1980	40 [104]	35 [95]	40 [104]
ADV-110710-HD-4	710	1215	1230	1845	2187	40 [104]	35 [95]	n.a.
ADV-110900-HD-4	900	1600	1600	2400	2880	40 [104]	35 [95]	n.a.
ADV-111000-HD-4	1000	1800	1800	2700	3240	40 [104]	35 [95]	n.a.

- 400 Vac, 50/60 Hz mains, Motor with rated voltage = 400 Vac
- Light Duty (LD)**

Model	Motor size [kW]	Rated current In		Output overload	Ambient temperature		
		Input [A]	Output [A]	110% x In (1' every 5')	IP31 °C [°F]	IP54 V °C [°F]	IP54 C °C [°F]
ADV-110110-LD-4	110	200	210	231	40 [104]	35 [95]	40 [104]
ADV-110132-LD-4	132	238	250	275	40 [104]	35 [95]	40 [104]
ADV-110160-LD-4	160	285	300	330	40 [104]	35 [95]	40 [104]
ADV-110200-LD-4	200	350	385	424	40 [104]	35 [95]	40 [104]
ADV-110250-LD-4	250	420	460	506	40 [104]	35 [95]	40 [104]
ADV-110315-LD-4	315	580	590	649	40 [104]	35 [95]	40 [104]
ADV-110355-LD-4	355	640	650	715	40 [104]	35 [95]	40 [104]
ADV-110400-LD-4	400	710	730	803	40 [104]	35 [95]	40 [104]
ADV-110500-LD-4	500	800	870	957	40 [104]	35 [95]	40 [104]
ADV-110630-LD-4	630	1100	1120	1232	40 [104]	35 [95]	40 [104]
ADV-110710-LD-4	710	1215	1230	1353	40 [104]	35 [95]	40 [104]
ADV-110800-LD-4	800	1350	1380	1518	40 [104]	35 [95]	n.a.
ADV-111000-LD-4	1000	1800	1800	1980	40 [104]	35 [95]	n.a.
ADV-111200-LD-4	1200	2020	2050	2255	40 [104]	35 [95]	n.a.

AFE 11... - 4 panels are available for 400 Vac-10%...480 Vac+10% 50/60 Hz power mains

Please specify the need for panels for use with mains supply voltages or frequencies other than those listed in the table when placing your order.

- 460 Vac, 50/60 Hz mains, Motor with rated voltage = 460 Vac
- **High Duty (HD)**

Model	Motor size [kW]	Rated current In		Output overload		Ambient temperature		
		Input [A]	Output [A]	150% x In (1' every 5')	180% x In (for 0.5")	IP31 °C [°F]	IP54 V °C [°F]	IP54 C °C [°F]
ADV-110090-HD-4	90	150	162	270	270	40 [104]	35 [95]	40 [104]
ADV-110110-HD-4	110	175	189	315	315	40 [104]	35 [95]	40 [104]
ADV-110132-HD-4	132	210	225	375	378	40 [104]	35 [95]	40 [104]
ADV-110160-HD-4	160	260	270	450	468	40 [104]	35 [95]	40 [104]
ADV-110200-HD-4	200	305	347	578	549	40 [104]	35 [95]	40 [104]
ADV-110250-HD-4	250	365	414	690	657	40 [104]	35 [95]	40 [104]
ADV-110315-HD-4	315	505	531	885	909	40 [104]	35 [95]	40 [104]
ADV-110355-HD-4	355	555	585	975	999	40 [104]	35 [95]	40 [104]
ADV-110400-HD-4	400	580	657	1095	1044	40 [104]	35 [95]	40 [104]
ADV-110500-HD-4	500	700	783	1305	1260	40 [104]	35 [95]	40 [104]
ADV-110630-HD-4	630	960	1008	1680	1728	40 [104]	35 [95]	40 [104]
ADV-110710-HD-4	710	1060	1107	1845	1908	40 [104]	35 [95]	n.a.
ADV-110900-HD-4	900	1390	1440	2400	2502	40 [104]	35 [95]	n.a.
ADV-111000-HD-4	1000	1565	1620	2700	2817	40 [104]	35 [95]	n.a.

- 460 Vac, 50/60 Hz mains, Motor with rated voltage = 460 Vac
- **Light Duty (LD)**

Model	Motor size [kW]	Rated current In		Output overload	Ambient temperature		
		Input [A]	Output [A]	110% x In (1' every 5')	IP31 °C [°F]	IP54 V °C [°F]	IP54 C °C [°F]
ADV-110110-LD-4	110	175	189	231	40 [104]	35 [95]	40 [104]
ADV-110132-LD-4	132	210	225	275	40 [104]	35 [95]	40 [104]
ADV-110160-LD-4	160	250	270	330	40 [104]	35 [95]	40 [104]
ADV-110200-LD-4	200	305	347	424	40 [104]	35 [95]	40 [104]
ADV-110250-LD-4	250	365	414	506	40 [104]	35 [95]	40 [104]
ADV-110315-LD-4	315	505	531	649	40 [104]	35 [95]	40 [104]
ADV-110355-LD-4	355	560	585	715	40 [104]	35 [95]	40 [104]
ADV-110400-LD-4	400	620	657	803	40 [104]	35 [95]	40 [104]
ADV-110500-LD-4	500	695	783	957	40 [104]	35 [95]	40 [104]
ADV-110630-LD-4	630	960	1008	1232	40 [104]	35 [95]	40 [104]
ADV-110710-LD-4	710	1060	1107	1353	40 [104]	35 [95]	40 [104]
ADV-110800-LD-4	800	1175	1242	1518	40 [104]	35 [95]	n.a.
ADV-111000-LD-4	1000	1565	1620	1980	40 [104]	35 [95]	n.a.
ADV-111200-LD-4	1200	1760	1845	2255	40 [104]	35 [95]	n.a.

ADV 11... - 4panels are available for 400 Vac-10%...480 Vac+10% 50/60 Hz power mains

Please specify the need for panels for use with mains supply voltages or frequencies other than those listed in the table when placing your order.

- 690 Vac, 50/60 Hz mains, Motor with rated voltage = 690 Vac
- **High Duty (HD)**

Model	Motor size [kW]	Rated current In		Output overload		Ambient temperature		
		Input [A]	Output [A]	150% x In (1' every 5')	180% x In (for 0.5")	IP31 °C [°F]	IP54 V °C [°F]	IP54 C °C [°F]
ADV-110160-HD-6	160	170	170	255	306	40 [104]	35 [95]	40 [104]
ADV-110200-HD-6	200	210	210	315	378	40 [104]	35 [95]	40 [104]
ADV-110250-HD-6	250	265	265	398	477	40 [104]	35 [95]	40 [104]
ADV-110315-HD-6	315	329	330	495	594	40 [104]	35 [95]	40 [104]
ADV-110355-HD-6	355	370	375	563	675	35 [95]	30 [86]	35 [95]
ADV-110400-HD-6	400	400	400	600	720	40 [104]	35 [95]	40 [104]
ADV-110500-HD-6	500	500	500	750	900	40 [104]	35 [95]	40 [104]
ADV-110630-HD-6	630	628	630	945	1134	40 [104]	35 [95]	40 [104]
ADV-110710-HD-6	710	691	700	1050	1260	35 [95]	30 [86]	n.a.
ADV-110900-HD-6	900	900	900	1350	1620	40 [104]	35 [95]	n.a.
ADV-111000-HD-6	1000	1000	1000	1500	1800	35 [95]	30 [86]	n.a.

- 690 Vac, 50/60 Hz mains, Motor with rated voltage = 690 Vac
- **Light Duty (LD)**

Model	Motor size [kW]	Rated current In		Output overload	Ambient temperature		
		Input [A]	Output [A]	110% x In (1' every 5')	IP31 °C [°F]	IP54 V °C [°F]	IP54 C °C [°F]
ADV-110200-LD-6	200	205	210	231	40 [104]	35 [95]	40 [104]
ADV-110250-LD-6	250	260	265	292	40 [104]	35 [95]	40 [104]
ADV-110315-LD-6	315	325	330	363	40 [104]	35 [95]	40 [104]
ADV-110355-LD-6	355	370	375	413	40 [104]	35 [95]	40 [104]
ADV-110400-LD-6	400	405	415	457	35 [95]	30 [86]	35 [95]
ADV-110500-LD-6	500	491	500	550	40 [104]	35 [95]	40 [104]
ADV-110630-LD-6	630	620	630	693	40 [104]	35 [95]	40 [104]
ADV-110710-LD-6	710	701	710	781	40 [104]	35 [95]	40 [104]
ADV-110800-LD-6	800	771	790	869	35 [95]	30 [86]	n.a.
ADV-111000-LD-6	1000	981	1000	1100	40 [104]	35 [95]	n.a.
ADV-111150-LD-6	1150	1133	1150	1265	35 [95]	30 [86]	n.a.

ADV 11... - 6panels are available for 400 Vac-10%...480 Vac+10% 50/60 Hz power mains

Please specify the need for panels for use with mains supply voltages or frequencies other than those listed in the table when placing your order.

Technical specifications • Input bridge with AFE power supply module

- 400 Vac, 50/60 Hz mains, Motor with rated voltage = 400 Vac
- High Duty (HD)**

Model	Motor size [kW]	Rated current In		Output overload		Ambient temperature		
		Input [A]	Output [A]	150% x In (1' every 5')	180% x In (for 0.5")	IP31 °C [°F]	IP54 V °C [°F]	IP54 C °C [°F]
AFE-110090-HD-4	90	145	180	270	324	40 [104]	35 [95]	40 [104]
AFE-110110-HD-4	110	178	210	315	378	40 [104]	35 [95]	40 [104]
AFE-110132-HD-4	132	213	250	375	450	40 [104]	35 [95]	40 [104]
AFE-110160-HD-4	160	258	300	450	540	40 [104]	35 [95]	40 [104]
AFE-110200-HD-4	200	323	385	578	693	40 [104]	35 [95]	40 [104]
AFE-110250-HD-4	250	404	460	690	828	40 [104]	35 [95]	40 [104]
AFE-110315-HD-4	315	509	585	885	1053	40 [104]	35 [95]	40 [104]
AFE-110355-HD-4	355	573	650	975	1170	40 [104]	35 [95]	40 [104]
AFE-110400-HD-4	400	646	730	1095	1314	40 [104]	35 [95]	n.a.
AFE-110500-HD-4	500	807	870	1305	1566	40 [104]	35 [95]	n.a.
AFE-110630-HD-4	630	1017	1107	1680	1993	40 [104]	35 [95]	n.a.
AFE-110710-HD-4	710	1146	1230	1845	2214	40 [104]	35 [95]	n.a.
AFE-110900-HD-4	900	1453	1600	2400	2880	40 [104]	35 [95]	n.a.

- 400 Vac, 50/60 Hz mains, Motor with rated voltage = 400 Vac
- Light Duty (LD)**

Model	Motor size [kW]	Rated current In		Output overload	Ambient temperature		
		Input [A]	Output [A]	110% x In (1' every 5')	IP31 °C [°F]	IP54 V °C [°F]	IP54 C °C [°F]
AFE-110110-LD-4	110	178	210	231	40 [104]	35 [95]	40 [104]
AFE-110132-LD-4	132	213	250	275	40 [104]	35 [95]	40 [104]
AFE-110160-LD-4	160	258	300	330	40 [104]	35 [95]	40 [104]
AFE-110200-LD-4	200	323	385	424	40 [104]	35 [95]	40 [104]
AFE-110250-LD-4	250	404	460	506	40 [104]	35 [95]	40 [104]
AFE-110315-LD-4	315	509	590	649	40 [104]	35 [95]	40 [104]
AFE-110355-LD-4	355	573	650	715	40 [104]	35 [95]	40 [104]
AFE-110400-LD-4	400	646	730	803	40 [104]	35 [95]	40 [104]
AFE-110500-LD-4	500	807	870	957	40 [104]	35 [95]	n.a.
AFE-110630-LD-4	630	1017	1120	1232	40 [104]	35 [95]	n.a.
AFE-110710-LD-4	710	1146	1230	1353	40 [104]	35 [95]	n.a.
AFE-110900-LD-4	900	1453	1380	1518	40 [104]	35 [95]	n.a.
AFE-111000-LD-4	1000	1615	1800	1980	40 [104]	35 [95]	n.a.

Rated and overload input and output currents refer to the rated power of the motor and of the panel.

AFE 11... - 4 panels are available for 400 Vac-10%...480 Vac+10% 50/60 Hz power mains.

Please specify the need for panels for use with mains supply voltages or frequencies other than those listed in the table when placing your order.

- 460 Vac, 50/60 Hz mains, Motor with rated voltage = 460 Vac
- **High Duty (HD)**

Model	Motor size [kW]	Rated current In		Output overload		Ambient temperature		
		Input [A]	Output [A]	150% x In (1' every 5')	180% x In (for 0.5")	IP31 °C [°F]	IP54 V °C [°F]	IP54 C °C [°F]
AFE-110090-HD-4	90	138	162	243	292	40 [104]	35 [95]	40 [104]
AFE-110110-HD-4	110	169	189	284	340	40 [104]	35 [95]	40 [104]
AFE-110132-HD-4	132	202	225	338	405	40 [104]	35 [95]	40 [104]
AFE-110160-HD-4	160	245	270	405	486	40 [104]	35 [95]	40 [104]
AFE-110200-HD-4	200	307	347	521	625	40 [104]	35 [95]	40 [104]
AFE-110250-HD-4	250	384	414	621	745	40 [104]	35 [95]	40 [104]
AFE-110315-HD-4	315	483	531	797	956	40 [104]	35 [95]	40 [104]
AFE-110355-HD-4	355	545	585	878	1053	40 [104]	35 [95]	40 [104]
AFE-110400-HD-4	400	614	657	986	1183	40 [104]	35 [95]	n.a.
AFE-110500-HD-4	500	767	783	1175	1409	40 [104]	35 [95]	n.a.
AFE-110630-HD-4	630	966	1008	1512	1814	40 [104]	35 [95]	n.a.
AFE-110710-HD-4	710	1089	1107	1661	1993	40 [104]	35 [95]	n.a.
AFE-110900-HD-4	900	1381	1440	2160	2592	40 [104]	35 [95]	n.a.
AFE-111000-HD-4	1000	1534	1620	2430	2916	40 [104]	35 [95]	n.a.

- 460 Vac, 50/60 Hz mains, Motor with rated voltage = 460 Vac
- **Light Duty (LD)**

Model	Motor size [kW]	Rated current In		Output overload	Ambient temperature		
		Input [A]	Output [A]	110% x In (1' every 5')	IP31 °C [°F]	IP54 V °C [°F]	IP54 C °C [°F]
AFE-110110-LD-4	110	169	189	208	40 [104]	35 [95]	40 [104]
AFE-110132-LD-4	132	202	225	248	40 [104]	35 [95]	40 [104]
AFE-110160-LD-4	160	245	270	297	40 [104]	35 [95]	40 [104]
AFE-110200-LD-4	200	307	347	382	40 [104]	35 [95]	40 [104]
AFE-110250-LD-4	250	384	414	455	40 [104]	35 [95]	40 [104]
AFE-110315-LD-4	315	483	531	584	40 [104]	35 [95]	40 [104]
AFE-110355-LD-4	355	545	585	644	40 [104]	35 [95]	40 [104]
AFE-110400-LD-4	400	614	657	723	40 [104]	35 [95]	40 [104]
AFE-110500-LD-4	500	767	783	861	40 [104]	35 [95]	n.a.
AFE-110630-LD-4	630	966	1008	1109	40 [104]	35 [95]	n.a.
AFE-110710-LD-4	710	1089	1107	1218	40 [104]	35 [95]	n.a.
AFE-110800-LD-4	800	1227	1242	1366	40 [104]	35 [95]	n.a.
AFE-111000-LD-4	1000	1534	1620	1782	40 [104]	35 [95]	n.a.
AFE-111200-LD-4	1200	1841	1845	2030	40 [104]	35 [95]	n.a.

Rated and overload input and output currents refer to the rated power of the motor and of the panel.

AFE 11... - 4 panels are available for 400 Vac-10%...480 Vac +10% 50/60 Hz power mains.

Please specify the need for panels for use with mains supply voltages or frequencies other than those listed in the table when placing your order.

- 690 Vac, 50/60 Hz mains, Motor with rated voltage = 690 Vac
- **High Duty (HD)**

Model	Motor size [kW]	Rated current In		Output overload		Ambient temperature		
		Input [A]	Output [A]	150% x In (1' every 5')	180% x In (for 0.5")	IP31 °C [°F]	IP54 V °C [°F]	IP54 C °C [°F]
AFE-110160-HD-6	160	150	210	315	378	40 [104]	35 [95]	40 [104]
AFE-110200-HD-6	200	187	233	350	419	40 [104]	35 [95]	40 [104]
AFE-110250-HD-6	250	234	290	435	522	40 [104]	35 [95]	40 [104]
AFE-110315-HD-6	315	295	330	495	594	35 [95]	30 [86]	35 [95]
AFE-110355-HD-6	355	332	400	600	720	40 [104]	35 [95]	40 [104]
AFE-110400-HD-6	400	374	440	660	792	40 [104]	35 [95]	n.a.
AFE-110500-HD-6	500	468	554	831	997	40 [104]	35 [95]	n.a.
AFE-110630-HD-6	630	590	624	936	1123	35 [95]	30 [86]	n.a.
AFE-110710-HD-6	710	665	792	1188	1426	35 [95]	30 [86]	n.a.
AFE-110900-HD-6	900	842	880	1320	1584	35 [95]	30 [86]	n.a.

- 690 Vac, 50/60 Hz mains, Motor with rated voltage = 690 Vac
- **Light Duty (LD)**

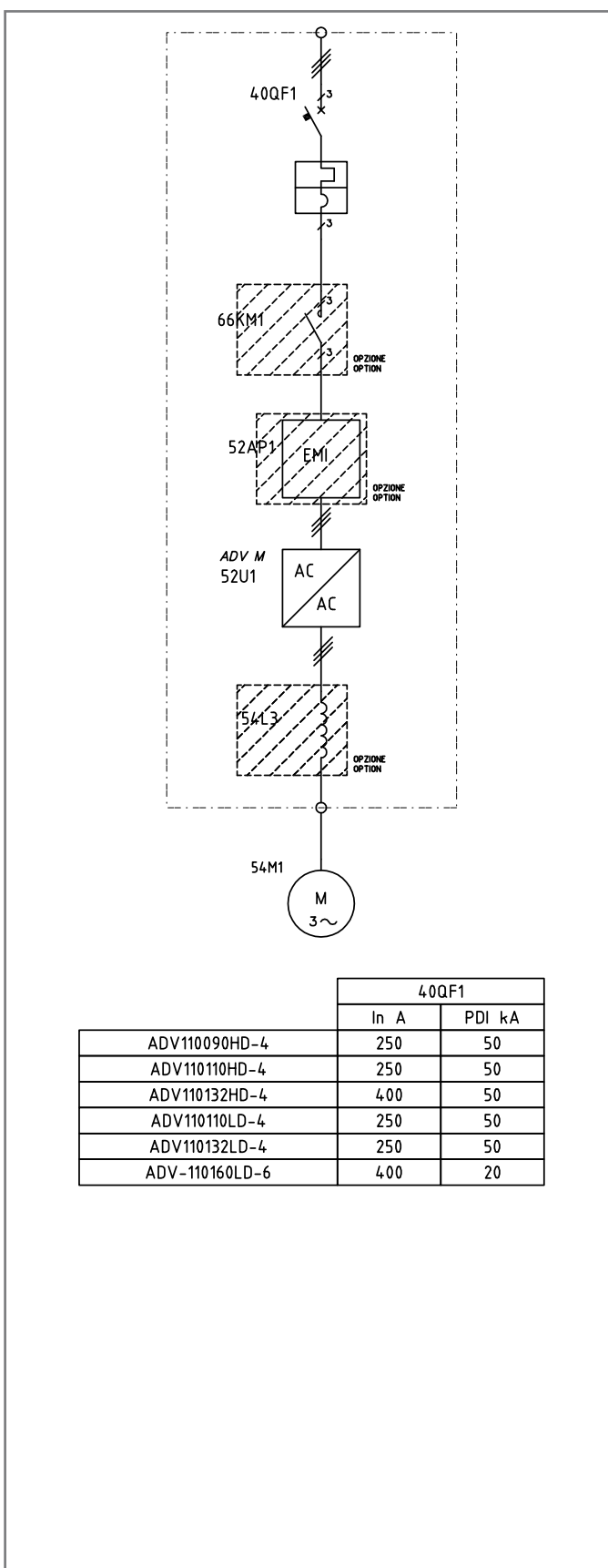
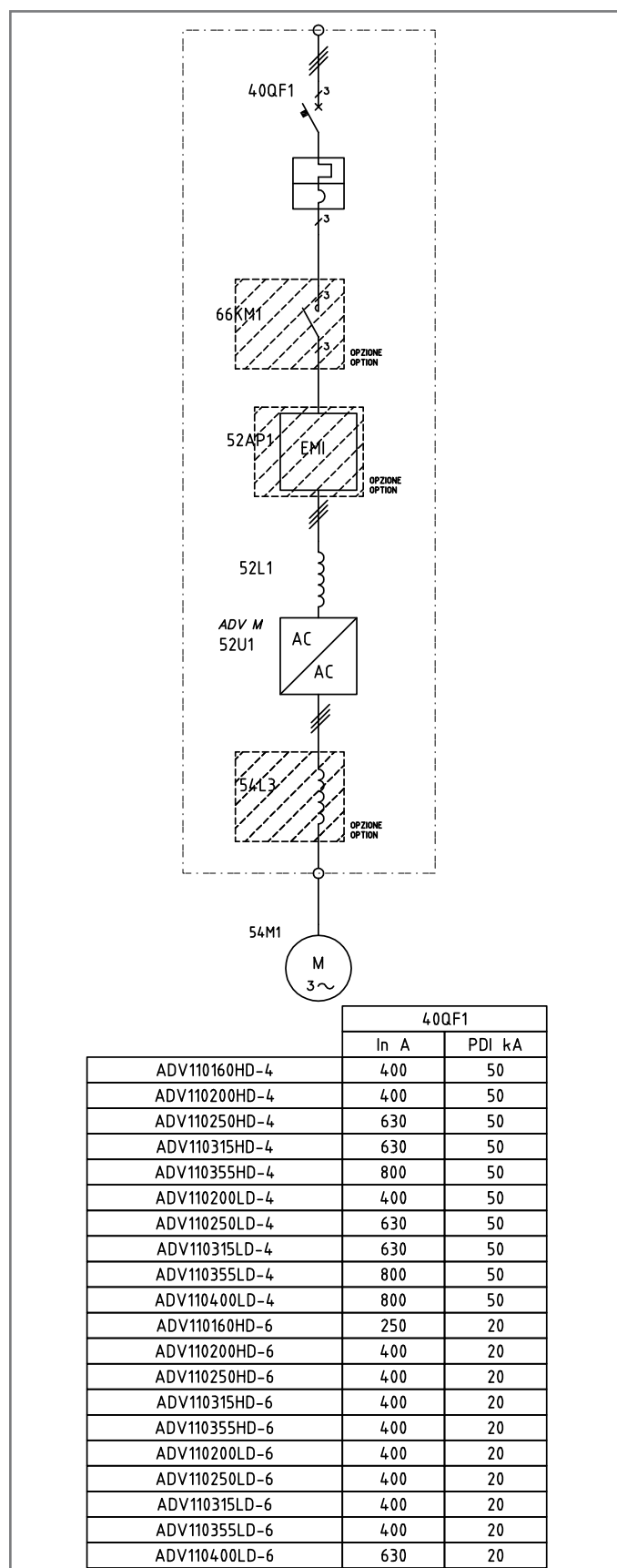
Model	Motor size [kW]	Rated current In		Output overload 110% x In (1' every 5')	Ambient temperature		
		Input [A]	Output [A]		IP31 °C [°F]	IP54 V °C [°F]	IP54 C °C [°F]
AFE-110160-LD-6	160	150	182	200.2	40 [104]	35 [95]	40 [104]
AFE-110200-LD-6	200	187	265	291.5	40 [104]	35 [95]	40 [104]
AFE-110250-LD-6	250	234	290	319	40 [104]	35 [95]	40 [104]
AFE-110315-LD-6	315	295	330	363	40 [104]	35 [95]	40 [104]
AFE-110355-LD-6	355	332	365	401.5	35 [95]	30 [86]	35 [95]
AFE-110400-LD-6	400	374	500	550	35 [95]	30 [86]	n.a.
AFE-110500-LD-6	500	468	554	609.4	40 [104]	35 [95]	n.a.
AFE-110630-LD-6	630	590	624	686.4	40 [104]	35 [95]	n.a.
AFE-110710-LD-6	710	665	695	764.5	35 [95]	30 [86]	n.a.
AFE-110900-LD-6	900	842	880	968	40 [104]	35 [95]	n.a.
AFE-111000-LD-6	1000	936	1012	1113.2	35 [95]	30 [86]	n.a.

AFE 11... - 6 panels are available for 500 Vac-10%..690 Vac+ 10% 50/60 Hz power mains

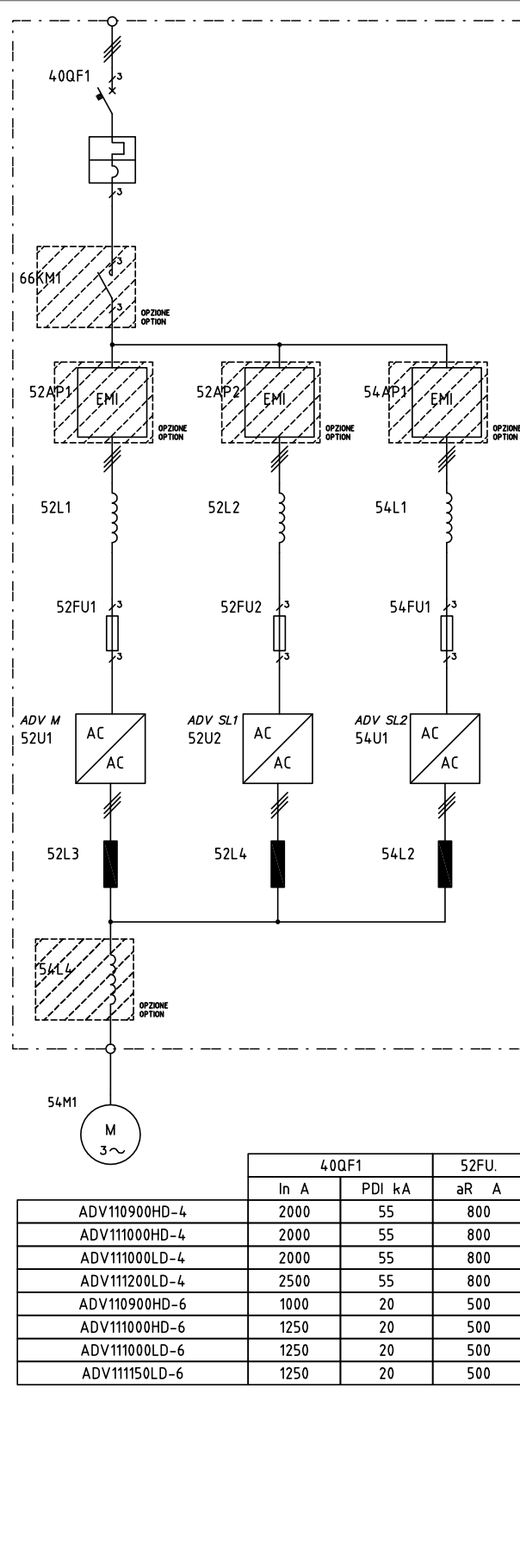
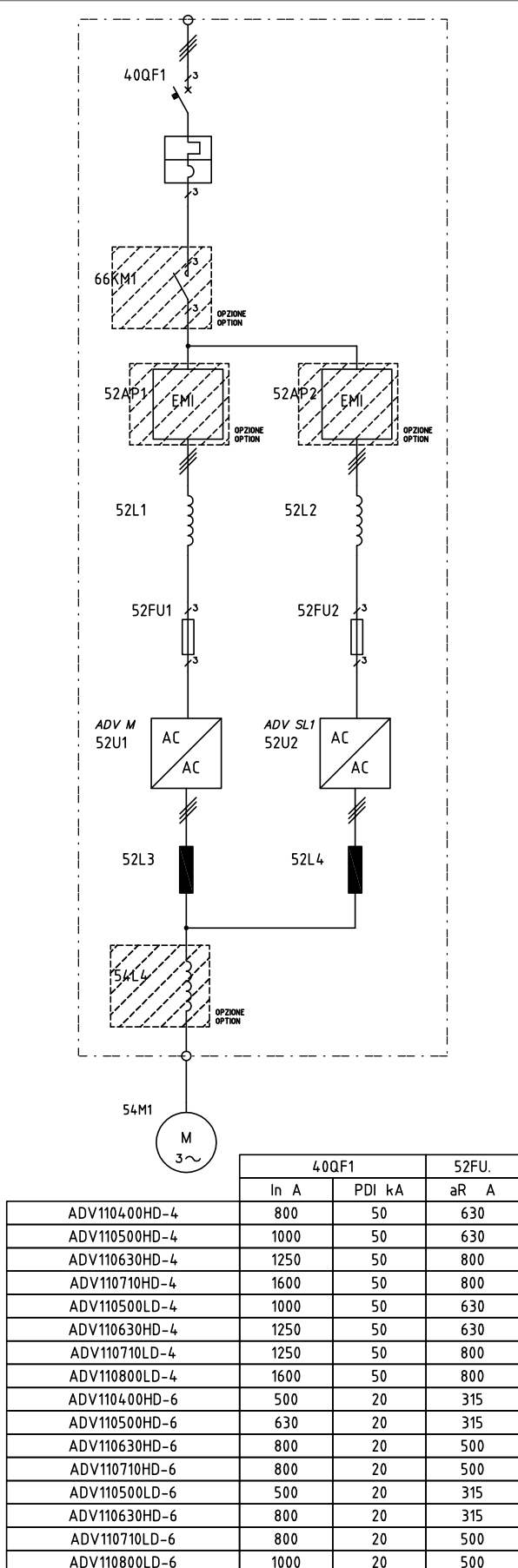
Please specify the need for panels for use with mains supply voltages or frequencies other than those listed in the table when placing your order.

Single-wire connection diagram

ADV200 panel-mounted inverter

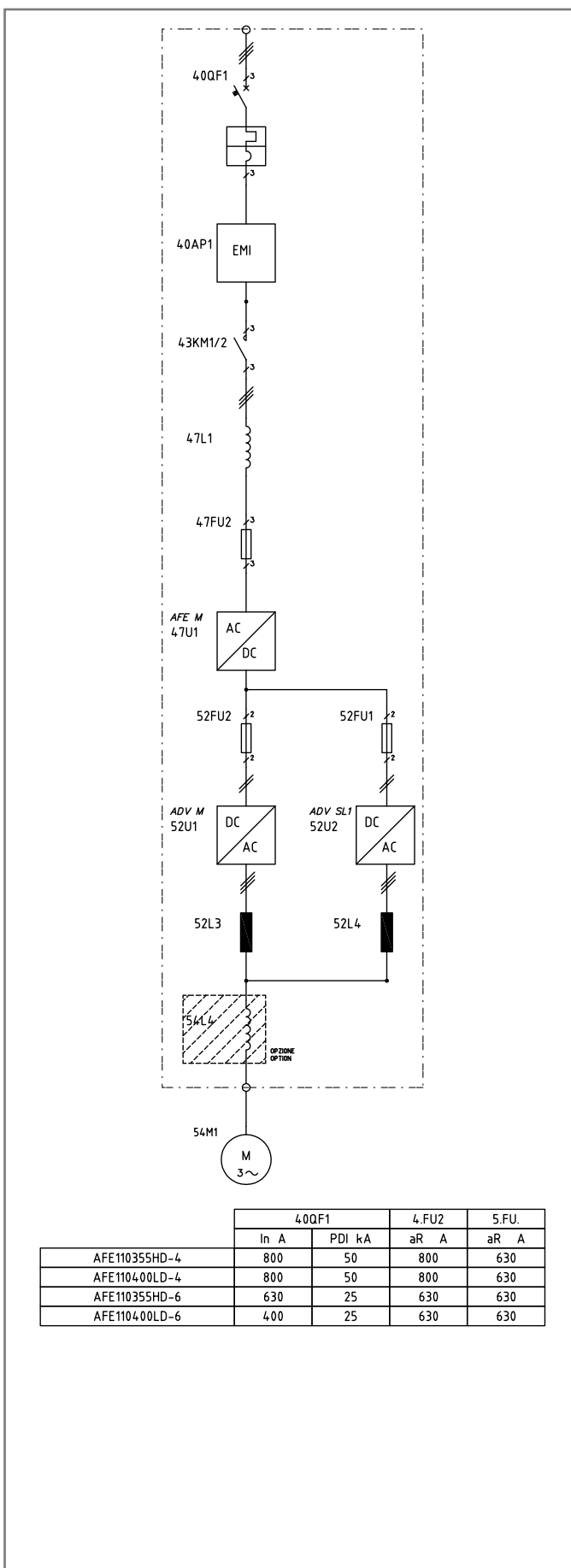
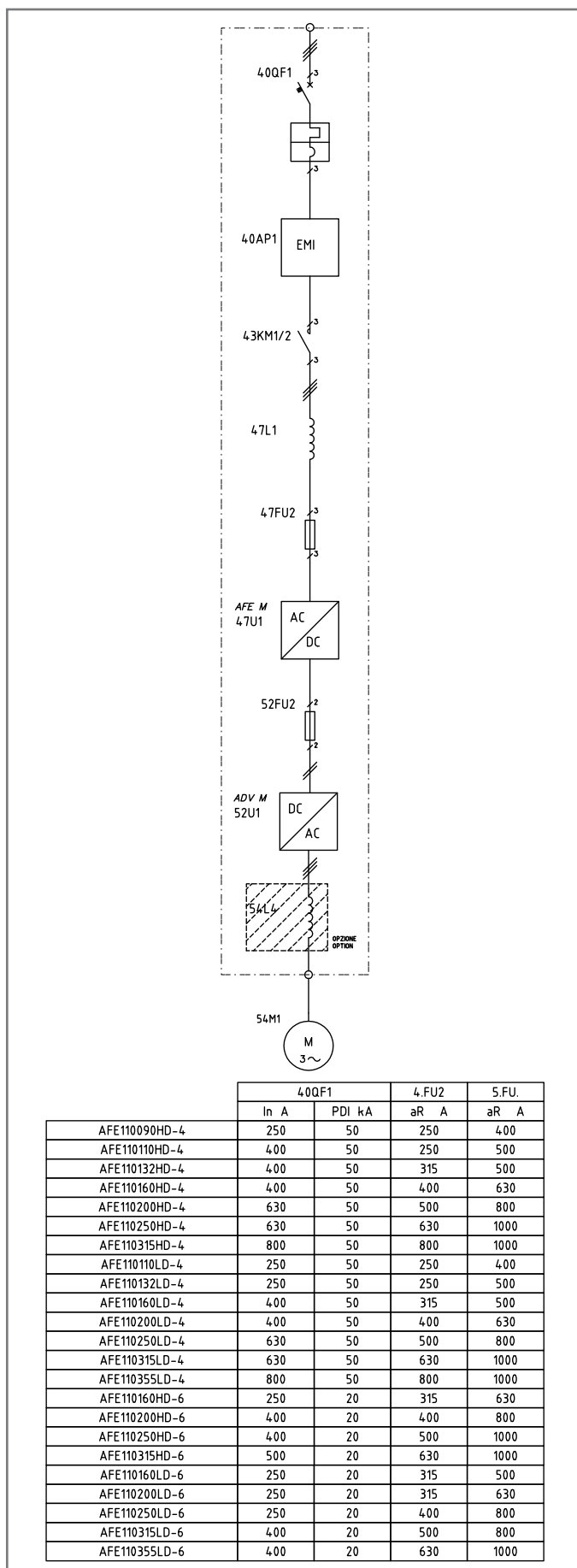


40QF1 = Automatic three-pole line overload switch (In A : Rated current; PDI kA: Breaking power).

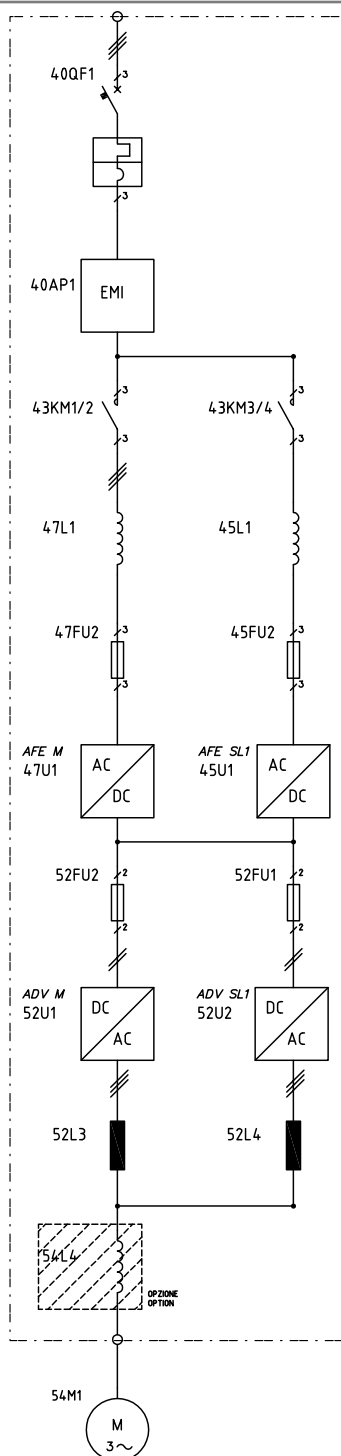


40QF1 = Automatic three-pole line overload switch (In A : Rated current; PDI kA: Breaking power).

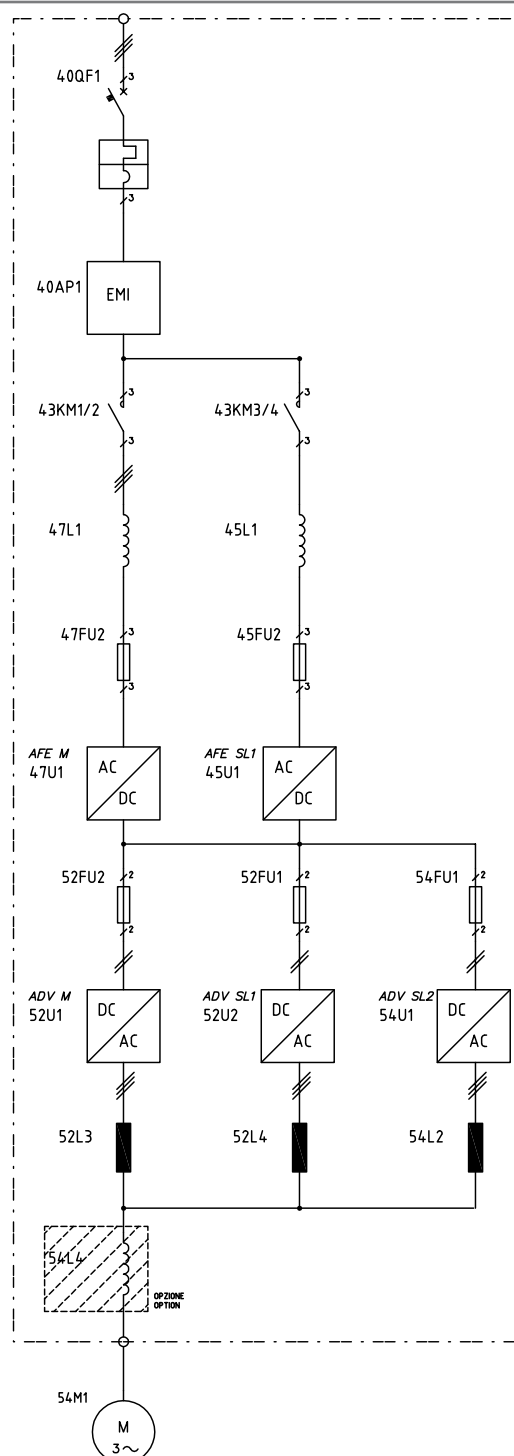
Inverter in ADV200 panel with AFE200 regenerative module



40QF1 = Automatic three-pole line overload switch (In A : Rated current; PDI kA: Breaking power).

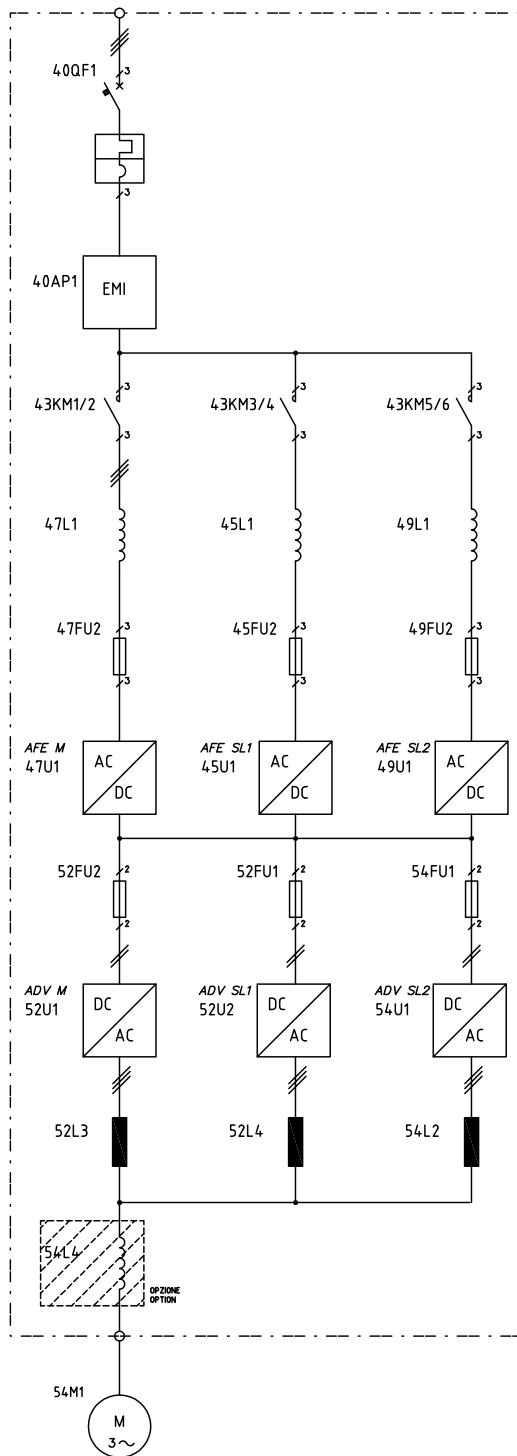


	40QF1		4.FU2	5.FU.
	In A	PDI kA	aR A	aR A
AFE110400HD-4	800	50	500	800
AFE110500HD-4	1000	50	630	1000
AFE110630HD-4	1250	50	800	1000
AFE110500LD-4	800	50	500	800
AFE110630LD-4	1000	50	630	1000
AFE110710LD-4	1250	50	800	1000
AFE110400HD-6	630	20	400	800
AFE110500HD-6	800	20	500	1000
AFE110630HD-6	1000	20	630	1000
AFE110500LD-6	400	20	400	800
AFE110630LD-6	630	20	500	1000
AFE110710LD-6	630	20	630	1000



	40QF1		4.FU2	5.FU.
	In A	PDI kA	aR A	aR A
AFE110710HD-4	1250	50	800	1000
AFE110710HD-6	1000	20	630	1000

40QF1 = Automatic three-pole line overload switch (In A : Rated current; PDI kA: Breaking power).



	40QF1		4.FU2	5.FU.
	In A	PDI kA	aR A	aR A
AFE110900HD-4	2000	55	800	1000
AFE110900LD-4	1600	50	800	1000
AFE111000LD-4	2000	55	800	1000
AFE110900HD-6	1250	20	500	1000
AFE110900LD-6	1250	20	630	1000
AFE111000LD-6	1250	20	630	1000

40QF1 = Automatic three-pole line overload switch (In A : Rated current; PDI kA: Breaking power).

Order codes

Model identification

ADV - 1 1 - 0 0 9 0 - HD - 4 - X - RD - IP31 + - - -

ADV

Type of input bridge

ADV = one-way, 6-impulse

AFE = "Clean power" regenerative

1 1

In cabinet

0 0 9 0

Output power rating

0090 = 90kW, 0110 = 110 kW, 0132 = 132 kW, 0250 = 250 kW, 0315 = 315 kW, 0355 = 355 kW, 0400 = 400 kW, 0500 = 500 kW, 0630 = 630 kW, 0710 = 710 kW, 0800 = 800 kW, 0900 = 900 kW, 1000 = 1000 kW, 1200 = 1200 kW.

HD

Overload

HD = High Duty (150% for 60 s every 300 s)

LD = Low Duty (110% for 60 s every 300 s)

4

Supply voltage(*)

4 = 400V_{AC}; 6 = 690V_{AC}

X

Safety Card

X=optional, S= Integrated

RD

Configuration

RD = Ready to use, B = Basic

IP31

Protection rating

IP31;; IP54V = IP54 with filters and fan units;

IP54C = IP54 with air-conditioning unit

- - -

+ Options and expansion cards

(*) When placing your order please specify the three-phase supply voltage and mains frequency

ADV200 panel-mounted inverter - Series 400 Vac, 50 Hz

- High Duty (HD)
- **Ready to use**
- IP31

CODE	PRODUCT IDENTIFICATION	Pn @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110090-HD-4-X-RD-IP31	90KW HD	-	40 [104]
"	ADV 110110-HD-4-X-RD-IP31	110KW HD	-	40 [104]
"	ADV 110132-HD-4-X-RD-IP31	132KW HD	-	40 [104]
"	ADV 110160-HD-4-X-RD-IP31	160KW HD	-	40 [104]
"	ADV 110200-HD-4-X-RD-IP31	200KW HD	-	40 [104]
"	ADV 110250-HD-4-X-RD-IP31	250KW HD	-	40 [104]
"	ADV 110315-HD-4-X-RD-IP31	315KW HD	-	40 [104]
"	ADV 110355-HD-4-X-RD-IP31	355KW HD	-	40 [104]
"	ADV 110400-HD-4-S-RD-IP31	400KW HD	integrated	40 [104]
"	ADV 110500-HD-4-S-RD-IP31	500KW HD	integrated	40 [104]
"	ADV 110630-HD-4-S-RD-IP31	630KW HD	integrated	40 [104]
"	ADV 110710-HD-4-S-RD-IP31	710KW HD	integrated	40 [104]
"	ADV 110900-HD-4-S-RD-IP31	900KW HD	integrated	40 [104]
"	ADV 111000-HD-4-S-RD-IP31	1000KW HD	integrated	40 [104]

- High Duty (HD)
- **Basic**
- IP31

CODE	PRODUCT IDENTIFICATION	Pn @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110090-HD-4-X-B-IP31	90KW HD	-	40 [104]
"	ADV 110110-HD-4-X-B-IP31	110KW HD	-	40 [104]
"	ADV 110132-HD-4-X-B-IP31	132KW HD	-	40 [104]
"	ADV 110160-HD-4-X-B-IP31	160KW HD	-	40 [104]
"	ADV 110200-HD-4-X-B-IP31	200KW HD	-	40 [104]
"	ADV 110250-HD-4-X-B-IP31	250KW HD	-	40 [104]
"	ADV 110315-HD-4-X-B-IP31	315KW HD	-	40 [104]
"	ADV 110355-HD-4-X-B-IP31	355KW HD	-	40 [104]
"	ADV 110400-HD-4-S-B-IP31	400KW HD	integrated	40 [104]
"	ADV 110500-HD-4-S-B-IP31	500KW HD	integrated	40 [104]
"	ADV 110630-HD-4-S-B-IP31	630KW HD	integrated	40 [104]
"	ADV 110710-HD-4-S-B-IP31	710KW HD	integrated	40 [104]
"	ADV 110900-HD-4-S-B-IP31	900KW HD	integrated	40 [104]
"	ADV 111000-HD-4-S-B-IP31	1000KW HD	integrated	40 [104]

ADV200 panel-mounted inverter - Series 400 Vac, 50 Hz

- High Duty (HD)
- **Ready to use**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110090-HD-4-X-RD-IP54 V	90KW HD	-	35 [95]
"	ADV 110110-HD-4-X-RD-IP54 V	110KW HD	-	35 [95]
"	ADV 110132-HD-4-X-RD-IP54 V	132KW HD	-	35 [95]
"	ADV 110160-HD-4-X-RD-IP54 V	160KW HD	-	35 [95]
"	ADV 110200-HD-4-X-RD-IP54 V	200KW HD	-	35 [95]
"	ADV 110250-HD-4-X-RD-IP54 V	250KW HD	-	35 [95]
"	ADV 110315-HD-4-X-RD-IP54 V	315KW HD	-	35 [95]
"	ADV 110355-HD-4-X-RD-IP54 V	355KW HD	-	35 [95]
"	ADV 110400-HD-4-S-RD-IP54 V	400KW HD	integrated	35 [95]
"	ADV 110500-HD-4-S-RD-IP54 V	500KW HD	integrated	35 [95]
"	ADV 110630-HD-4-S-RD-IP54 V	630KW HD	integrated	35 [95]
"	ADV 110710-HD-4-S-RD-IP54 V	710KW HD	integrated	35 [95]
"	ADV 110900-HD-4-S-RD-IP54 V	900KW HD	integrated	35 [95]
"	ADV 111000-HD-4-S-RD-IP54 V	1000KW HD	integrated	35 [95]

- High Duty (HD)
- **Basic**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110090-HD-4-X-B-IP54 V	90KW HD	-	35 [95]
"	ADV 110110-HD-4-X-B-IP54 V	110KW HD	-	35 [95]
"	ADV 110132-HD-4-X-B-IP54 V	132KW HD	-	35 [95]
"	ADV 110160-HD-4-X-B-IP54 V	160KW HD	-	35 [95]
"	ADV 110200-HD-4-X-B-IP54 V	200KW HD	-	35 [95]
"	ADV 110250-HD-4-X-B-IP54 V	250KW HD	-	35 [95]
"	ADV 110315-HD-4-X-B-IP54 V	315KW HD	-	35 [95]
"	ADV 110355-HD-4-X-B-IP54 V	355KW HD	-	35 [95]
"	ADV 110400-HD-4-S-B-IP54 V	400KW HD	integrated	35 [95]
"	ADV 110500-HD-4-S-B-IP54 V	500KW HD	integrated	35 [95]
"	ADV 110630-HD-4-S-B-IP54 V	630KW HD	integrated	35 [95]
"	ADV 110710-HD-4-S-B-IP54 V	710KW HD	integrated	35 [95]
"	ADV 110900-HD-4-S-B-IP54 V	900KW HD	integrated	35 [95]
"	ADV 111000-HD-4-S-B-IP54 V	1000KW HD	integrated	35 [95]

ADV200 panel-mounted inverter - Series 400 Vac, 50 Hz

- High Duty (HD)
- **Ready to use**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	Pn @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110090-HD-4-X-RD-IP54 C	90KW HD	-	40 [104]
"	ADV 110110-HD-4-X-RD-IP54 C	110KW HD	-	40 [104]
"	ADV 110132-HD-4-X-RD-IP54 C	132KW HD	-	40 [104]
"	ADV 110160-HD-4-X-RD-IP54 C	160KW HD	-	40 [104]
"	ADV 110200-HD-4-X-RD-IP54 C	200KW HD	-	40 [104]
"	ADV 110250-HD-4-X-RD-IP54 C	250KW HD	-	40 [104]
"	ADV 110315-HD-4-X-RD-IP54 C	315KW HD	-	40 [104]
"	ADV 110355-HD-4-X-RD-IP54 C	355KW HD	-	40 [104]
"	ADV 110400-HD-4-S-RD-IP54 C	400KW HD	integrated	40 [104]
"	ADV 110500-HD-4-S-RD-IP54 C	500KW HD	integrated	40 [104]
"	ADV 110630-HD-4-S-RD-IP54 C	630KW HD	integrated	40 [104]
"	ADV 110710-HD-4-S-RD-IP54 V	710KW HD	integrated	35 [95]
"	ADV 110900-HD-4-S-RD-IP54 V	900KW HD	integrated	35 [95]
"	ADV 111000-HD-4-S-RD-IP54 V	1000KW HD	integrated	35 [95]

- High Duty (HD)
- **Basic**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	Pn @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110090-HD-4-X-B-IP54 C	90KW HD	-	40 [104]
"	ADV 110110-HD-4-X-B-IP54 C	110KW HD	-	40 [104]
"	ADV 110132-HD-4-X-B-IP54 C	132KW HD	-	40 [104]
"	ADV 110160-HD-4-X-B-IP54 C	160KW HD	-	40 [104]
"	ADV 110200-HD-4-X-B-IP54 C	200KW HD	-	40 [104]
"	ADV 110250-HD-4-X-B-IP54 C	250KW HD	-	40 [104]
"	ADV 110315-HD-4-X-B-IP54 C	315KW HD	-	40 [104]
"	ADV 110355-HD-4-X-B-IP54 C	355KW HD	-	40 [104]
"	ADV 110400-HD-4-S-B-IP54 C	400KW HD	integrated	40 [104]
"	ADV 110500-HD-4-S-B-IP54 C	500KW HD	integrated	40 [104]
"	ADV 110630-HD-4-S-B-IP54 C	630KW HD	integrated	40 [104]
"	ADV 110710-HD-4-S-B-IP54 V	710KW HD	integrated	35 [95]
"	ADV 110900-HD-4-S-B-IP54 V	900KW HD	integrated	35 [95]
"	ADV 111000-HD-4-S-B-IP54 V	1000KW HD	integrated	35 [95]

ADV200 panel-mounted inverter - Series 400 Vac, 50 Hz

- Light Duty (LD)
- **Ready to use**
- IP31

CODE	PRODUCT IDENTIFICATION	PN @ 400 Vac LD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110110-LD-4-X-RD-IP31	110KW LD	-	40 [104]
"	ADV 110132-LD-4-X-RD-IP31	132KW LD	-	40 [104]
"	ADV 110160-LD-4-X-RD-IP31	160KW LD	-	40 [104]
"	ADV 110200-LD-4-X-RD-IP31	200KW LD	-	40 [104]
"	ADV 110250-LD-4-X-RD-IP31	250KW LD	-	40 [104]
"	ADV 110315-LD-4-X-RD-IP31	315KW LD	-	40 [104]
"	ADV 110355-LD-4-X-RD-IP31	355KW LD	-	40 [104]
"	ADV 110400-LD-4-X-RD-IP31	400KW LD	-	40 [104]
"	ADV 110500-LD-4-S-RD-IP31	500KW LD	integrated	40 [104]
"	ADV 110630-LD-4-S-RD-IP31	630KW LD	integrated	40 [104]
"	ADV 110710-LD-4-S-RD-IP31	710KW LD	integrated	40 [104]
"	ADV 110900-LD-4-S-RD-IP31	800KW LD	integrated	40 [104]
"	ADV 111000-LD-4-S-RD-IP31	1000KW LD	integrated	40 [104]
"	ADV 111200-LD-4-S-RD-IP31	1200KW LD	integrated	40 [104]

- Light Duty (LD)
- **Basic**
- IP31

CODE	PRODUCT IDENTIFICATION	PN @ 400 Vac LD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110110-LD-4-X-B-IP31	110KW LD	-	40 [104]
"	ADV 110132-LD-4-X-B-IP31	132KW LD	-	40 [104]
"	ADV 110160-LD-4-X-B-IP31	160KW LD	-	40 [104]
"	ADV 110200-LD-4-X-B-IP31	200KW LD	-	40 [104]
"	ADV 110250-LD-4-X-B-IP31	250KW LD	-	40 [104]
"	ADV 110315-LD-4-X-B-IP31	315KW LD	-	40 [104]
"	ADV 110355-LD-4-X-B-IP31	355KW LD	-	40 [104]
"	ADV 110400-LD-4-X-B-IP31	400KW LD	-	40 [104]
"	ADV 110500-LD-4-S-B-IP31	500KW LD	integrated	40 [104]
"	ADV 110630-LD-4-S-B-IP31	630KW LD	integrated	40 [104]
"	ADV 110710-LD-4-S-B-IP31	710KW LD	integrated	40 [104]
"	ADV 110900-LD-4-S-B-IP31	800KW LD	integrated	40 [104]
"	ADV 111000-LD-4-S-B-IP31	1000KW LD	integrated	40 [104]
"	ADV 111200-LD-4-S-B-IP31	1200KW LD	integrated	40 [104]

ADV200 panel-mounted inverter - Series 400 Vac, 50 Hz

- Light Duty (LD)
- **Ready to use**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	Pn @ 400 Vac LD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110110-LD-4-X-RD-IP54 V	110KW LD	-	35 [95]
"	ADV 110132-LD-4-X-RD-IP54 V	132KW LD	-	35 [95]
"	ADV 110160-LD-4-X-RD-IP4 V	160KW LD	-	35 [95]
"	ADV 110200-LD-4-X-RD-IP54 V	200KW LD	-	35 [95]
"	ADV 110250-LD-4-X-RD-IP54 V	250KW LD	-	35 [95]
"	ADV 110315-LD-4-X-RD-IP54 V	315KW LD	-	35 [95]
"	ADV 110355-LD-4-X-RD-IP54 V	355KW LD	-	35 [95]
"	ADV 110400-LD-4-X-RD-IP54 V	400KW LD	-	35 [95]
"	ADV 110500-LD-4-S-RD-IP54 V	500KW LD	integrated	35 [95]
"	ADV 110630-LD-4-S-RD-IP54 V	630KW LD	integrated	35 [95]
"	ADV 110710-LD-4-S-RD-IP54 V	710KW LD	integrated	35 [95]
"	ADV 110900-LD-4-S-RD-IP54 V	800KW LD	integrated	35 [95]
"	ADV 111000-LD-4-S-RD-IP54 V	1000KW LD	integrated	35 [95]
"	ADV 111200-LD-4-S-RD-IP54 V	1200KW LD	integrated	35 [95]

- Light Duty (LD)
- **Basic**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	Pn @ 400 Vac LD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110110-LD-4-X-B-IP54 V	110KW LD	-	35 [95]
"	ADV 110132-LD-4-X-B-IP54 V	132KW LD	-	35 [95]
"	ADV 110160-LD-4-X-B-IP54 V	160KW LD	-	35 [95]
"	ADV 110200-LD-4-X-B-IP54 V	200KW LD	-	35 [95]
"	ADV 110250-LD-4-X-B-IP54 V	250KW LD	-	35 [95]
"	ADV 110315-LD-4-X-B-IP54 V	315KW LD	-	35 [95]
"	ADV 110355-LD-4-X-B-IP54 V	355KW LD	-	35 [95]
"	ADV 110400-LD-4-X-B-IP54 V	400KW LD	-	35 [95]
"	ADV 110500-LD-4-S-B-IP54 V	500KW LD	integrated	35 [95]
"	ADV 110630-LD-4-S-B-IP54 V	630KW LD	integrated	35 [95]
"	ADV 110710-LD-4-S-B-IP54 V	710KW LD	integrated	35 [95]
"	ADV 110900-LD-4-S-B-IP54 V	800KW LD	integrated	35 [95]
"	ADV 111000-LD-4-S-B-IP54 V	1000KW LD	integrated	35 [95]
"	ADV 111200-LD-4-S-B-IP54 V	1200KW LD	integrated	35 [95]

ADV200 panel-mounted inverter - Series 400 Vac, 50 Hz

- Light Duty (LD)
- **Ready to use**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	Pn @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110110-LD-4-X-RD-IP54 C	110KW LD	-	40 [104]
"	ADV 110132-LD-4-X-RD-IP54 C	132KW LD	-	40 [104]
"	ADV 110160-LD-4-X-RD-IP54 C	160KW LD	-	40 [104]
"	ADV 110200-LD-4-X-RD-IP54 C	200KW LD	-	40 [104]
"	ADV 110250-LD-4-X-RD-IP54 C	250KW LD	-	40 [104]
"	ADV 110315-LD-4-X-RD-IP54 C	315KW LD	-	40 [104]
"	ADV 110355-LD-4-X-RD-IP54 C	355KW LD	-	40 [104]
"	ADV 110400-LD-4-X-RD-IP54 C	400KW LD	-	40 [104]
"	ADV 110500-LD-4-S-RD-IP54 C	500KW LD	integrated	40 [104]
"	ADV 110630-LD-4-S-RD-IP54 C	630KW LD	integrated	40 [104]
"	ADV 110710-LD-4-S-RD-IP54 C	710KW LD	integrated	40 [104]

- Light Duty (LD)
- **Basic**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	Pn @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110110-LD-4-X-B-IP54 C	110KW LD	-	40 [104]
"	ADV 110132-LD-4-X-B-IP54 C	132KW LD	-	40 [104]
"	ADV 110160-LD-4-X-B-IP54 C	160KW LD	-	40 [104]
"	ADV 110200-LD-4-X-B-IP54 C	200KW LD	-	40 [104]
"	ADV 110250-LD-4-X-B-IP54 C	250KW LD	-	40 [104]
"	ADV 110315-LD-4-X-B-IP54 C	315KW LD	-	40 [104]
"	ADV 110355-LD-4-X-B-IP54 C	355KW LD	-	40 [104]
"	ADV 110400-LD-4-X-B-IP54 C	400KW LD	-	40 [104]
"	ADV 110500-LD-4-S-B-IP54 C	500KW LD	integrated	40 [104]
"	ADV 110630-LD-4-S-B-IP54 C	630KW LD	integrated	40 [104]
"	ADV 110710-LD-4-S-B-IP54 C	710KW LD	integrated	40 [104]

ADV200 panel-mounted inverter with AFE200 regenerative module - Series 400 Vac, 50 Hz

- High Duty (HD)
- **Ready to use**
- **IP31**

CODE	PRODUCT IDENTIFICATION	PN @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	AFE 11090-HD-4-X-RD-IP31	90KW HD	-	40 [104]
"	AFE 110110-HD-4-X-RD-IP31	110KW HD	-	40 [104]
"	AFE 110132-HD-4-X-RD-IP31	132KW HD	-	40 [104]
"	AFE 110160-HD-4-X-RD-IP31	160KW HD	-	40 [104]
"	AFE 110200-HD-4-X-RD-IP31	200KW HD	-	40 [104]
"	AFE 110250-HD-4-X-RD-IP31	250KW HD	-	40 [104]
"	AFE 110315-HD-4-X-RD-IP31	315KW HD	-	40 [104]
"	AFE 110355-HD-4-S-RD-IP31	355KW HD	integrated	40 [104]
"	AFE 110400-HD-4-S-RD-IP31	400KW HD	integrated	40 [104]
"	AFE 110500-HD-4-S-RD-IP31	500KW HD	integrated	40 [104]
"	AFE 110630-HD-4-S-RD-IP31	630KW HD	integrated	40 [104]
"	AFE 110710-HD-4-S-RD-IP31	710KW HD	integrated	40 [104]
"	AFE 110900-HD-4-S-RD-IP31	900KW HD	integrated	40 [104]

- High Duty (HD)
- **Basic**
- **IP31**

CODE	PRODUCT IDENTIFICATION	PN @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	AFE 11090-HD-4-X-B-IP31	90KW HD	-	40 [104]
"	AFE 110110-HD-4-X-B-IP31	110KW HD	-	40 [104]
"	AFE 110132-HD-4-X-B-IP31	132KW HD	-	40 [104]
"	AFE 110160-HD-4-X-B-IP31	160KW HD	-	40 [104]
"	AFE 110200-HD-4-X-B-IP31	200KW HD	-	40 [104]
"	AFE 110250-HD-4-X-B-IP31	250KW HD	-	40 [104]
"	AFE 110315-HD-4-X-B-IP31	315KW HD	-	40 [104]
"	AFE 110355-HD-4-S-B-IP31	355KW HD	integrated	40 [104]
"	AFE 110400-HD-4-S-B-IP31	400KW HD	integrated	40 [104]
"	AFE 110500-HD-4-S-B-IP31	500KW HD	integrated	40 [104]
"	AFE 110630-HD-4-S-B-IP31	630KW HD	integrated	40 [104]
"	AFE 110710-HD-4-S-B-IP31	710KW HD	integrated	40 [104]
"	AFE 110900-HD-4-S-B-IP31	900KW HD	integrated	40 [104]

ADV200 panel-mounted inverter with AFE200 regenerative module - Series 400 Vac, 50 Hz

- High Duty (HD)
- **Ready to use**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	AFE 11090-HD-4-X-RD-IP54 V	90KW HD	-	35 [95]
"	AFE 110110-HD-4-X-RD-IP54 V	110KW HD	-	35 [95]
"	AFE 110132-HD-4-X-RD-IP54 V	132KW HD	-	35 [95]
"	AFE 110160-HD-4-X-RD-IP54 V	160KW HD	-	35 [95]
"	AFE 110200-HD-4-X-RD-IP54 V	200KW HD	-	35 [95]
"	AFE 110250-HD-4-X-RD-IP54 V	250KW HD	-	35 [95]
"	AFE 110315-HD-4-X-RD-IP54 V	315KW HD	-	35 [95]
"	AFE 110355-HD-4-S-RD-IP54 V	355KW HD	integrated	35 [95]
"	AFE 110400-HD-4-S-RD-IP54 V	400KW HD	integrated	35 [95]
"	AFE 110500-HD-4-S-RD-IP54 V	500KW HD	integrated	35 [95]
"	AFE 110630-HD-4-S-RD-IP54 V	630KW HD	integrated	35 [95]
"	AFE 110710-HD-4-S-RD-IP54 V	710KW HD	integrated	35 [95]
"	AFE 110900-HD-4-S-RD-IP54 V	900KW HD	integrated	35 [95]

- High Duty (HD)
- **Basic**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	AFE 11090-HD-4-X-B-IP54 V	90KW HD	-	35 [95]
"	AFE 110110-HD-4-X-B-IP54 V	110KW HD	-	35 [95]
"	AFE 110132-HD-4-X-B-IP54 V	132KW HD	-	35 [95]
"	AFE 110160-HD-4-X-B-IP54 V	160KW HD	-	35 [95]
"	AFE 110200-HD-4-X-B-IP54 V	200KW HD	-	35 [95]
"	AFE 110250-HD-4-X-B-IP54 V	250KW HD	-	35 [95]
"	AFE 110315-HD-4-X-B-IP54 V	315KW HD	-	35 [95]
"	AFE 110355-HD-4-S-B-IP54 V	355KW HD	integrated	35 [95]
"	AFE 110400-HD-4-S-B-IP54 V	400KW HD	integrated	35 [95]
"	AFE 110500-HD-4-S-B-IP54 V	500KW HD	integrated	35 [95]
"	AFE 110630-HD-4-S-B-IP54 V	630KW HD	integrated	35 [95]
"	AFE 110710-HD-4-S-B-IP54 V	710KW HD	integrated	35 [95]
"	AFE 110900-HD-4-S-B-IP54 V	900KW HD	integrated	35 [95]

ADV200 panel-mounted inverter with AFE200 regenerative module - Series 400 Vac, 50 Hz

- High Duty (HD)
- **Ready to use**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	Pn @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	AFE 11090-HD-4-X-RD-IP54 C	90KW HD	-	40 [104]
"	AFE 110110-HD-4-X-RD-IP54 C	110KW HD	-	40 [104]
"	AFE 110132-HD-4-X-RD-IP54 C	132KW HD	-	40 [104]
"	AFE 110160-HD-4-X-RD-IP54 C	160KW HD	-	40 [104]
"	AFE 110200-HD-4-X-RD-IP54 C	200KW HD	-	40 [104]
"	AFE 110250-HD-4-X-RD-IP54 C	250KW HD	-	40 [104]
"	AFE 110315-HD-4-X-RD-IP54 C	315KW HD	-	40 [104]
"	AFE 110355-HD-4-S-RD-IP54 C	355KW HD	integrated	40 [104]

- High Duty (HD)
- **Basic**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	Pn @ 400 Vac HD	Safety	Ambient temperature °C [°F]
Upon request	AFE 11090-HD-4-X-B-IP54 C	90KW HD	-	40 [104]
"	AFE 110110-HD-4-X-B-IP54 C	110KW HD	-	40 [104]
"	AFE 110132-HD-4-X-B-IP54 C	132KW HD	-	40 [104]
"	AFE 110160-HD-4-X-B-IP54 C	160KW HD	-	40 [104]
"	AFE 110200-HD-4-X-B-IP54 C	200KW HD	-	40 [104]
"	AFE 110250-HD-4-X-B-IP54 C	250KW HD	-	40 [104]
"	AFE 110315-HD-4-X-B-IP54 C	315KW HD	-	40 [104]
"	AFE 110355-HD-4-S-B-IP54 C	355KW HD	integrated	40 [104]

ADV200 panel-mounted inverter with AFE200 regenerative module - Series 400 Vac, 50 Hz

- Light Duty (LD)
- **Ready to use**
- **IP31**

CODE	PRODUCT IDENTIFICATION	Pn @ 400 Vac LD	Safety	Ambient temperature °C [°F]
Upon request	AFE 110110-LD-4-X-RD-IP31	110KW LD	-	40 [104]
"	AFE 110132-LD-4-X-RD-IP31	132KW LD	-	40 [104]
"	AFE 110160-LD-4-X-RD-IP31	160KW LD	-	40 [104]
"	AFE 110200-LD-4-X-RD-IP31	200KW LD	-	40 [104]
"	AFE 110250-LD-4-X-RD-IP31	250KW LD	-	40 [104]
"	AFE 110315-LD-4-X-RD-IP31	315KW LD	-	40 [104]
"	AFE 110355-LD-4-X-RD-IP31	355KW LD	-	40 [104]
"	AFE 110400-LD-4-S-RD-IP31	400KW LD	integrated	40 [104]
"	AFE 110500-LD-4-S-RD-IP31	500KW LD	integrated	40 [104]
"	AFE 110630-LD-4-S-RD-IP31	630KW LD	integrated	40 [104]
"	AFE 110710-LD-4-S-RD-IP31	710KW LD	integrated	40 [104]
"	AFE 110900-LD-4-S-RD-IP31	900KW LD	integrated	40 [104]
"	AFE 111000-LD-4-S-RD-IP31	1000KW LD	integrated	40 [104]

- Light Duty (LD)
- **Basic**
- **IP31**

CODE	PRODUCT IDENTIFICATION	Pn @ 400 Vac LD	Safety	Ambient temperature °C [°F]
Upon request	AFE 110110-LD-4-X-B-IP31	110KW LD	-	40 [104]
"	AFE 110132-LD-4-X-B-IP31	132KW LD	-	40 [104]
"	AFE 110160-LD-4-X-B-IP31	160KW LD	-	40 [104]
"	AFE 110200-LD-4-X-B-IP31	200KW LD	-	40 [104]
"	AFE 110250-LD-4-X-B-IP31	250KW LD	-	40 [104]
"	AFE 110315-LD-4-X-B-IP31	315KW LD	-	40 [104]
"	AFE 110355-LD-4-X-B-IP31	355KW LD	-	40 [104]
"	AFE 110400-LD-4-S-B-IP31	400KW LD	integrated	40 [104]
"	AFE 110500-LD-4-S-B-IP31	500KW LD	integrated	40 [104]
"	AFE 110630-LD-4-S-B-IP31	630KW LD	integrated	40 [104]
"	AFE 110710-LD-4-S-B-IP31	710KW LD	integrated	40 [104]
"	AFE 110900-LD-4-S-B-IP31	900KW LD	integrated	40 [104]
"	AFE 111000-LD-4-S-B-IP31	1000KW LD	integrated	40 [104]

ADV200 panel-mounted inverter with AFE200 regenerative module - Series 400 Vac, 50 Hz

- Light Duty (LD)
- **Ready to use**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 400 Vac	Safety	Ambient temperature
		LD		°C [°F]
Upon request	AFE 110110-LD-4-X-RD-IP54 V	110KW LD	-	35 [95]
"	AFE 110132-LD-4-X-RD-IP54 V	132KW LD	-	35 [95]
"	AFE 110160-LD-4-X-RD-IP54 V	160KW LD	-	35 [95]
"	AFE 110200-LD-4-X-RD-IP54 V	200KW LD	-	35 [95]
"	AFE 110250-LD-4-X-RD-IP54 V	250KW LD	-	35 [95]
"	AFE 110315-LD-4-X-RD-IP54 V	315KW LD	-	35 [95]
"	AFE 110355-LD-4-X-RD-IP54 V	355KW LD	-	35 [95]
"	AFE 110400-LD-4-S-RD-IP54 V	400KW LD	integrated	35 [95]
"	AFE 110500-LD-4-S-RD-IP54 V	500KW LD	integrated	35 [95]
"	AFE 110630-LD-4-S-RD-IP54 V	630KW LD	integrated	35 [95]
"	AFE 110710-LD-4-S-RD-IP54 V	710KW LD	integrated	35 [95]
"	AFE 110900-LD-4-S-RD-IP54 V	900KW LD	integrated	35 [95]
"	AFE 111000-LD-4-S-RD-IP54 V	1000KW LD	integrated	35 [95]

- Light Duty (LD)
- **Basic**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 400 Vac	Safety	Ambient temperature
		LD		°C [°F]
Upon request	AFE 110110-LD-4-X-B-IP54 V	110KW LD	-	35 [95]
"	AFE 110132-LD-4-X-B-IP54 V	132KW LD	-	35 [95]
"	AFE 110160-LD-4-X-B-IP54 V	160KW LD	-	35 [95]
"	AFE 110200-LD-4-X-B-IP54 V	200KW LD	-	35 [95]
"	AFE 110250-LD-4-X-B-IP54 V	250KW LD	-	35 [95]
"	AFE 110315-LD-4-X-B-IP54 V	315KW LD	-	35 [95]
"	AFE 110355-LD-4-X-B-IP54 V	355KW LD	-	35 [95]
"	AFE 110400-LD-4-S-B-IP54 V	400KW LD	integrated	35 [95]
"	AFE 110500-LD-4-S-B-IP54 V	500KW LD	integrated	35 [95]
"	AFE 110630-LD-4-S-B-IP54 V	630KW LD	integrated	35 [95]
"	AFE 110710-LD-4-S-B-IP54 V	710KW LD	integrated	35 [95]
"	AFE 110900-LD-4-S-B-IP54 V	900KW LD	integrated	35 [95]
"	AFE 111000-LD-4-S-B-IP54 V	1000KW LD	integrated	35 [95]

ADV200 panel-mounted inverter with AFE200 regenerative module - Series 400 Vac, 50 Hz

- Light Duty (LD)
- **Ready to use**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	PN @ 400 Vac	Safety	Ambient temperature
		LD		°C [°F]
Upon request	AFE 110110-LD-4-X-RD-IP54 C	110KW LD	-	40 [104]
"	AFE 110132-LD-4-X-RD-IP54 C	132KW LD	-	40 [104]
"	AFE 110160-LD-4-X-RD-IP54 C	160KW LD	-	40 [104]
"	AFE 110200-LD-4-X-RD-IP54 C	200KW LD	-	40 [104]
"	AFE 110250-LD-4-X-RD-IP54 C	250KW LD	-	40 [104]
"	AFE 110315-LD-4-X-RD-IP54 C	315KW LD	-	40 [104]
"	AFE 110355-LD-4-X-RD-IP54 C	355KW LD	-	40 [104]
"	AFE 110400-LD-4-S-RD-IP54 C	400KW LD	integrated	40 [104]

- Light Duty (LD)
- **Basic**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	PN @ 400 Vac	Safety	Ambient temperature
		LD		°C [°F]
Upon request	AFE 110110-LD-4-X-B-IP54 C	110KW LD	-	40 [104]
"	AFE 110132-LD-4-X-B-IP54 C	132KW LD	-	40 [104]
"	AFE 110160-LD-4-X-B-IP54 C	160KW LD	-	40 [104]
"	AFE 110200-LD-4-X-B-IP54 C	200KW LD	-	40 [104]
"	AFE 110250-LD-4-X-B-IP54 C	250KW LD	-	40 [104]
"	AFE 110315-LD-4-X-B-IP54 C	315KW LD	-	40 [104]
"	AFE 110355-LD-4-X-B-IP54 C	355KW LD	-	40 [104]
"	AFE 110400-LD-4-S-B-IP54 C	400KW LD	integrated	40 [104]

ADV200 panel-mounted inverter - Series 690Vac, 50Hz

- High Duty (HD)
- **Ready to use**
- IP31

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110160-HD-6-X-RD-IP31	160KW HD	-	40 [104]
"	ADV 110200-HD-6-X-RD-IP31	200KW HD	-	40 [104]
"	ADV 110250-HD-6-X-RD-IP31	250KW HD	-	40 [104]
"	ADV 110315-HD-6-X-RD-IP31	315KW HD	-	40 [104]
"	ADV 110355-HD-6-X-RD-IP31	355KW HD	-	35 [95]
"	ADV 110400-HD-6-S-RD-IP31	400KW HD	integrated	40 [104]
"	ADV 110500-HD-6-S-RD-IP31	500KW HD	integrated	40 [104]
"	ADV 110630-HD-6-S-RD-IP31	630KW HD	integrated	40 [104]
"	ADV 110710-HD-6-S-RD-IP31	710KW HD	integrated	35 [95]
"	ADV 110900-HD-6-S-RD-IP31	900KW HD	integrated	40 [104]
"	ADV 111000-HD-6-S-RD-IP31	1000KW HD	integrated	35 [95]

- High Duty (HD)
- **Basic**
- IP31

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110160-HD-6-X-B-IP31	160KW HD	-	40 [104]
"	ADV 110200-HD-6-X-B-IP31	200KW HD	-	40 [104]
"	ADV 110250-HD-6-X-B-IP31	250KW HD	-	40 [104]
"	ADV 110315-HD-6-X-B-IP31	315KW HD	-	40 [104]
"	ADV 110355-HD-6-X-B-IP31	355KW HD	-	35 [95]
"	ADV 110400-HD-6-X-B-IP31	400KW HD	integrated	40 [104]
"	ADV 110500-HD-6-S-B-IP31	500KW HD	integrated	40 [104]
"	ADV 110630-HD-6-S-B-IP31	630KW HD	integrated	40 [104]
"	ADV 110710-HD-6-S-B-IP31	710KW HD	integrated	35 [95]
"	ADV 110900-HD-6-S-B-IP31	900KW HD	integrated	40 [104]
"	ADV 111000-HD-6-S-B-IP31	1000KW HD	integrated	35 [95]

ADV200 panel-mounted inverter - Series 690Vac, 50Hz

- High Duty (HD)
- **Ready to use**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac	Safety	Ambient temperature
		HD		°C [°F]
Upon request	ADV 110160-HD-6-X-RD-IP54 V	160KW HD	-	35 [95]
"	ADV 110200-HD-6-X-RD-IP54 V	200KW HD	-	35 [95]
"	ADV 110250-HD-6-X-RD-IP54 V	250KW HD	-	35 [95]
"	ADV 110315-HD-6-X-RD-IP54 V	315KW HD	-	35 [95]
"	ADV 110355-HD-6-X-RD-IP54 V	355KW HD	-	30 [86]
"	ADV 110400-HD-6-S-RD-IP54 V	400KW HD	integrated	35 [95]
"	ADV 110500-HD-6-S-RD-IP54 V	500KW HD	integrated	35 [95]
"	ADV 110630-HD-6-S-RD-IP54 V	630KW HD	integrated	35 [95]
"	ADV 110710-HD-6-S-RD-IP54 V	710KW HD	integrated	30 [86]
"	ADV 110900-HD-6-S-RD-IP54 V	900KW HD	integrated	35 [95]
"	ADV 111000-HD-6-S-RD-IP54 V	1000KW HD	integrated	30 [86]

- High Duty (HD)
- **Basic**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac	Safety	Ambient temperature
		HD		°C [°F]
Upon request	ADV 110160-HD-6-X-B-IP54 V	160KW HD	-	35 [95]
"	ADV 110200-HD-6-X-B-IP54 V	200KW HD	-	35 [95]
"	ADV 110250-HD-6-X-B-IP54 V	250KW HD	-	35 [95]
"	ADV 110315-HD-6-X-B-IP54 V	315KW HD	-	35 [95]
"	ADV 110355-HD-6-X-B-IP54 V	355KW HD	-	30 [86]
"	ADV 110400-HD-6-S-B-IP54 V	400KW HD	integrated	35 [95]
"	ADV 110500-HD-6-S-B-IP54 V	500KW HD	integrated	35 [95]
"	ADV 110630-HD-6-S-B-IP54 V	630KW HD	integrated	35 [95]
"	ADV 110710-HD-6-S-B-IP54 V	710KW HD	integrated	30 [86]
"	ADV 110900-HD-6-S-B-IP54 V	900KW HD	integrated	35 [95]
"	ADV 111000-HD-6-S-B-IP54 V	1000KW HD	integrated	30 [86]

ADV200 panel-mounted inverter - Series 690Vac, 50Hz

- High Duty (HD)
- **Ready to use**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110160-HD-6-X-RD-IP54 C	160KW HD	-	40 [104]
"	ADV 110200-HD-6-X-RD-IP54 C	200KW HD	-	40 [104]
"	ADV 110250-HD-6-X-RD-IP54 C	250KW HD	-	40 [104]
"	ADV 110315-HD-6-X-RD-IP54 C	315KW HD	-	40 [104]
"	ADV 110355-HD-6-X-RD-IP54 C	355KW HD	-	35 [95]
"	ADV 110400-HD-6-S-RD-IP54 C	400KW HD	integrated	40 [104]
"	ADV 110500-HD-6-S-RD-IP54 C	500KW HD	integrated	40 [104]
"	ADV 110630-HD-6-S-RD-IP54 C	630KW HD	integrated	40 [104]

- High Duty (HD)
- **Basic**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110160-HD-6-X-B-IP54 C	160KW HD	-	40 [104]
"	ADV 110200-HD-6-X-B-IP54 C	200KW HD	-	40 [104]
"	ADV 110250-HD-6-X-B-IP54 C	250KW HD	-	40 [104]
"	ADV 110315-HD-6-X-B-IP54 C	315KW HD	-	40 [104]
"	ADV 110355-HD-6-X-B-IP54 C	355KW HD	-	35 [95]
"	ADV 110400-HD-6-S-B-IP54 C	400KW HD	integrated	40 [104]
"	ADV 110500-HD-6-S-B-IP54 C	500KW HD	integrated	40 [104]
"	ADV 110630-HD-6-S-B-IP54 C	630KW HD	integrated	40 [104]

ADV200 panel-mounted inverter - Series 690Vac, 50Hz

- Light Duty (LD)
- **Ready to use**
- IP31

CODE	PRODUCT IDENTIFICATION	Pn @ 690Vac LD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110200-LD-6-X-RD-IP31	200KW LD	-	40 [104]
"	ADV 110250-LD-6-X-RD-IP31	250KW HD	-	40 [104]
"	ADV 110315-LD-6-X-RD-IP31	315KW LD	-	40 [104]
"	ADV 110355-LD-6-X-RD-IP31	355KW LD	-	40 [104]
"	ADV 110400-LD-6-X-RD-IP31	400KW LD	-	35 [95]
"	ADV 110500-LD-6-S-RD-IP31	500KW LD	integrated	40 [104]
"	ADV 110630-LD-6-S-RD-IP31	630KW LD	integrated	40 [104]
"	ADV 110710-LD-6-S-RD-IP31	710KW LD	integrated	40 [104]
"	ADV 110900-LD-6-S-RD-IP31	800KW LD	integrated	35 [95]
"	ADV 111000-LD-6-S-RD-IP31	1000KW LD	integrated	40 [104]
"	ADV 111150-LD-6-S-RD-IP31	1150KW LD	integrated	35 [95]

- Light Duty (LD)
- **Basic**
- IP31

CODE	PRODUCT IDENTIFICATION	Pn @ 690Vac LD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110200-LD-6-X-B-IP31	200KW LD	-	40 [104]
"	ADV 110250-LD-6-X-B-IP31	250KW HD	-	40 [104]
"	ADV 110315-LD-6-X-B-IP31	315KW LD	-	40 [104]
"	ADV 110355-LD-6-X-B-IP31	355KW LD	-	40 [104]
"	ADV 110400-LD-6-X-B-IP31	400KW LD	-	35 [95]
"	ADV 110500-LD-6-S-B-IP31	500KW LD	integrated	40 [104]
"	ADV 110630-LD-6-S-B-IP31	630KW LD	integrated	40 [104]
"	ADV 110710-LD-6-S-B-IP31	710KW LD	integrated	40 [104]
"	ADV 110900-LD-6-S-B-IP31	800KW LD	integrated	35 [95]
"	ADV 111000-LD-6-S-B-IP31	1000KW LD	integrated	40 [104]
"	ADV 111150-LD-6-S-B-IP31	1150KW LD	integrated	35 [95]

ADV200 panel-mounted inverter - Series 690Vac, 50Hz

- Light Duty (LD)
- **Ready to use**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac LD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110200-LD-6-X-RD-IP54 V	200KW LD	-	35 [95]
"	ADV 110250-LD-6-X-RD-IP54 V	250KW HD	-	35 [95]
"	ADV 110315-LD-6-X-RD-IP54 V	315KW LD	-	35 [95]
"	ADV 110355-LD-6-X-RD-IP54 V	355KW LD	-	35 [95]
"	ADV 110400-LD-6-X-RD-IP54 V	400KW LD	-	30 [86]
"	ADV 110500-LD-6-S-RD-IP54 V	500KW LD	integrated	35 [95]
"	ADV 110630-LD-6-S-RD-IP54 V	630KW LD	integrated	35 [95]
"	ADV 110710-LD-6-S-RD-IP54 V	710KW LD	integrated	35 [95]
"	ADV 110900-LD-6-S-RD-IP54 V	800KW LD	integrated	30 [86]
"	ADV 111000-LD-6-S-RD-IP54 V	1000KW LD	integrated	35 [95]
"	ADV 111150-LD-6-S-RD-IP54 V	1150KW LD	integrated	30 [86]

- Light Duty (LD)
- **Basic**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac LD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110200-LD-6-X-B-IP54 V	200KW LD	-	35 [95]
"	ADV 110250-LD-6-X-B-IP54 V	250KW HD	-	35 [95]
"	ADV 110315-LD-6-X-B-IP54 V	315KW LD	-	35 [95]
"	ADV 110355-LD-6-X-B-IP54 V	355KW LD	-	35 [95]
"	ADV 110400-LD-6-X-B-IP54 V	400KW LD	-	30 [86]
"	ADV 110500-LD-6-S-B-IP54 V	500KW LD	integrated	35 [95]
"	ADV 110630-LD-6-S-B-IP54 V	630KW LD	integrated	35 [95]
"	ADV 110710-LD-6-S-B-IP54 V	710KW LD	integrated	35 [95]
"	ADV 110900-LD-6-S-B-IP54 V	800KW LD	integrated	30 [86]
"	ADV 111000-LD-6-S-B-IP54 V	1000KW LD	integrated	35 [95]
"	ADV 111150-LD-6-S-B-IP54 V	1150KW LD	integrated	30 [86]

ADV200 panel-mounted inverter - Series 690Vac, 50Hz

- Light Duty (LD)
- **Ready to use**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110200-LD-6-X-RD-IP54 C	200KW LD	-	40 [104]
"	ADV 110250-LD-6-X-RD-IP54 C	250KW HD	-	40 [104]
"	ADV 110315-LD-6-X-RD-IP54 C	315KW LD	-	40 [104]
"	ADV 110355-LD-6-X-RD-IP54 C	355KW LD	-	40 [104]
"	ADV 110400-LD-6-X-RD-IP54 C	400KW LD	-	35 [95]
"	ADV 110500-LD-6-S-RD-IP54 C	500KW LD	integrated	40 [104]
"	ADV 110630-LD-6-S-RD-IP54 C	630KW LD	integrated	40 [104]
"	ADV 110710-LD-6-S-RD-IP54 C	710KW LD	integrated	40 [104]

- Light Duty (LD)
- **Basic**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac HD	Safety	Ambient temperature °C [°F]
Upon request	ADV 110200-LD-6-X-B-IP54 C	200KW LD	-	40 [104]
"	ADV 110250-LD-6-X-B-IP54 C	250KW HD	-	40 [104]
"	ADV 110315-LD-6-X-B-IP54 C	315KW LD	-	40 [104]
"	ADV 110355-LD-6-X-B-IP54 C	355KW LD	-	40 [104]
"	ADV 110400-LD-6-X-B-IP54 C	400KW LD	-	35 [95]
"	ADV 110500-LD-6-S-B-IP54 C	500KW LD	integrated	40 [104]
"	ADV 110630-LD-6-S-B-IP54 C	630KW LD	integrated	40 [104]
"	ADV 110710-LD-6-S-B-IP54 C	710KW LD	integrated	40 [104]

ADV200 panel-mounted inverter with AFE200 regenerative module - Series 690Vac, 50Hz

- High Duty (HD)
- **Ready to use**
- **IP31**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac HD	Safety	Ambient temperature °C [°F]
Upon request	AFE 110160-HD-6-X-RD-IP31	160KW HD	-	40 [104]
"	AFE 110200-HD-6-X-RD-IP31	200KW HD	-	40 [104]
"	AFE 110250-HD-6-X-RD-IP31	250KW HD	-	40 [104]
"	AFE 110315-HD-6-X-RD-IP31	315KW HD	-	35 [95]
"	AFE 110355-HD-6-S-RD-IP31	355KW HD	integrated	40 [104]
"	AFE 110400-HD-6-S-RD-IP31	400KW HD	integrated	40 [104]
"	AFE 110500-HD-6-S-RD-IP31	500KW HD	integrated	40 [104]
"	AFE 110630-HD-6-S-RD-IP31	630KW HD	integrated	35 [95]
"	AFE 110710-HD-6-S-RD-IP31	710KW HD	integrated	35 [95]
"	AFE 110900-HD-6-S-RD-IP31	900KW HD	integrated	35 [95]

- High Duty (HD)
- **Basic**
- **IP31**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac HD	Safety	Ambient temperature °C [°F]
Upon request	AFE 110160-HD-6-X-B-IP31	160KW HD	-	40 [104]
"	AFE 110200-HD-6-X-B-IP31	200KW HD	-	40 [104]
"	AFE 110250-HD-6-X-B-IP31	250KW HD	-	40 [104]
"	AFE 110315-HD-6-X-B-IP31	315KW HD	-	35 [95]
"	AFE 110355-HD-6-S-B-IP31	355KW HD	integrated	40 [104]
"	AFE 110400-HD-6-S-B-IP31	400KW HD	integrated	40 [104]
"	AFE 110500-HD-6-S-B-IP31	500KW HD	integrated	40 [104]
"	AFE 110630-HD-6-S-B-IP31	630KW HD	integrated	35 [95]
"	AFE 110710-HD-6-S-B-IP31	710KW HD	integrated	35 [95]
"	AFE 110900-HD-6-S-B-IP31	900KW HD	integrated	35 [95]

ADV200 panel-mounted inverter with AFE200 regenerative module - Series 690Vac, 50Hz

- High Duty (HD)
- **Ready to use**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac HD	Safety	Ambient temperature °C [°F]
Upon request	AFE 110160-HD-6-X-RD-IP54 V	160KW HD	-	35 [95]
"	AFE 110200-HD-6-X-RD-IP54 V	200KW HD	-	35 [95]
"	AFE 110250-HD-6-X-RD-IP54 V	250KW HD	-	35 [95]
"	AFE 110315-HD-6-X-RD-IP54 V	315KW HD	-	30 [86]
"	AFE 110355-HD-6-S-RD-IP54 V	355KW HD	integrated	35 [95]
"	AFE 110400-HD-6-S-RD-IP54 V	400KW HD	integrated	35 [95]
"	AFE 110500-HD-6-S-RD-IP54 V	500KW HD	integrated	35 [95]
"	AFE 110630-HD-6-S-RD-IP54 V	630KW HD	integrated	30 [86]
"	AFE 110710-HD-6-S-RD-IP54 V	710KW HD	integrated	30 [86]
"	AFE 110900-HD-6-S-RD-IP54 V	900KW HD	integrated	30 [86]

- High Duty (HD)
- **Basic**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac HD	Safety	Ambient temperature °C [°F]
Upon request	AFE 110160-HD-6-X-B-IP31 V	160KW HD	-	35 [95]
"	AFE 110200-HD-6-X-B-IP31 V	200KW HD	-	35 [95]
"	AFE 110250-HD-6-X-B-IP31 V	250KW HD	-	35 [95]
"	AFE 110315-HD-6-X-B-IP31 V	315KW HD	-	30 [86]
"	AFE 110355-HD-6-S-B-IP31 V	355KW HD	integrated	35 [95]
"	AFE 110400-HD-6-S-B-IP31 V	400KW HD	integrated	35 [95]
"	AFE 110500-HD-6-S-B-IP31 V	500KW HD	integrated	35 [95]
"	AFE 110630-HD-6-S-B-IP31 V	630KW HD	integrated	30 [86]
"	AFE 110710-HD-6-S-B-IP31 V	710KW HD	integrated	30 [86]
"	AFE 110900-HD-6-S-B-IP31 V	900KW HD	integrated	30 [86]

ADV200 panel-mounted inverter with AFE200 regenerative module - Series 690Vac, 50Hz

- High Duty (HD)
- **Ready to use**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac HD	Safety	Ambient temperature °C [°F]
Upon request	AFE 110160-HD-6-X-RD-IP54 C	160KW HD	-	40 [104]
"	AFE 110200-HD-6-X-RD-IP54 C	200KW HD	-	40 [104]
"	AFE 110250-HD-6-X-RD-IP54 C	250KW HD	-	40 [104]
"	AFE 110315-HD-6-X-RD-IP54 C	315KW HD	-	35 [95]
"	AFE 110355-HD-6-S-RD-IP54 C	355KW HD	integrated	40 [104]

- High Duty (HD)
- **Basic**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac HD	Safety	Ambient temperature °C [°F]
Upon request	AFE 110160-HD-6-X-B-IP54 C	160KW HD	-	40 [104]
"	AFE 110200-HD-6-X-B-IP54 C	200KW HD	-	40 [104]
"	AFE 110250-HD-6-X-B-IP54 C	250KW HD	-	40 [104]
"	AFE 110315-HD-6-X-B-IP54 C	315KW HD	-	35 [95]
"	AFE 110355-HD-6-S-B-IP54 C	355KW HD	integrated	40 [104]

ADV200 panel-mounted inverter with AFE200 regenerative module - Series 690Vac, 50Hz

- Light Duty (LD)
- **Ready to use**
- **IP31**

CODE	PRODUCT IDENTIFICATION	P _N @ 690Vac LD	Safety	Ambient temperature °C [°F]
Upon request	AFE 110160-LD-6-X-RD-IP31	160KW LD	-	40 [104]
"	AFE 110200-LD-6-X-RD-IP31	200KW LD	-	40 [104]
"	AFE 110250-LD-6-X-RD-IP31	250KW LD	-	40 [104]
"	AFE 110315-LD-6-X-RD-IP31	315KW LD	-	40 [104]
"	AFE 110355-LD-6-X-RD-IP31	355KW LD	-	35 [95]
"	AFE 110400-LD-6-S-RD-IP31	400KW LD	integrated	35 [95]
"	AFE 110500-LD-6-S-RD-IP31	500KW LD	integrated	40 [104]
"	AFE 110630-LD-6-S-RD-IP31	630KW LD	integrated	40 [104]
"	AFE 110710-LD-6-S-RD-IP31	710KW LD	integrated	35 [95]
"	AFE 110900-LD-6-S-RD-IP31	900KW LD	integrated	40 [104]
"	AFE 111000-LD-6-S-RD-IP31	1000KW LD	integrated	35 [95]

- Light Duty (LD)
- **Basic**
- **IP31**

CODE	PRODUCT IDENTIFICATION	P _N @ 690Vac LD	Safety	Ambient temperature °C [°F]
Upon request	AFE 110160-LD-6-X-B-IP31	160KW LD	-	40 [104]
"	AFE 110200-LD-6-X-B-IP31	200KW LD	-	40 [104]
"	AFE 110250-LD-6-X-B-IP31	250KW LD	-	40 [104]
"	AFE 110315-LD-6-X-B-IP31	315KW LD	-	40 [104]
"	AFE 110355-LD-6-X-B-IP31	355KW LD	-	35 [95]
"	AFE 110400-LD-6-S-B-IP31	400KW LD	integrated	35 [95]
"	AFE 110500-LD-6-S-B-IP31	500KW LD	integrated	40 [104]
"	AFE 110630-LD-6-S-B-IP31	630KW LD	integrated	40 [104]
"	AFE 110710-LD-6-S-B-IP31	710KW LD	integrated	35 [95]
"	AFE 110900-LD-6-S-B-IP31	900KW LD	integrated	40 [104]
"	AFE 111000-LD-6-S-B-IP31	1000KW LD	integrated	35 [95]

ADV200 panel-mounted inverter with AFE200 regenerative module - Series 690Vac, 50Hz

- Light Duty (LD)
- **Ready to use**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac	Safety	Ambient temperature
		LD		°C [°F]
Upon request	AFE 110160-LD-6-X-RD-IP54 V	160KW LD	-	35 [95]
"	AFE 110200-LD-6-X-RD-IP54 V	200KW LD	-	35 [95]
"	AFE 110250-LD-6-X-RD-IP54 V	250KW LD	-	35 [95]
"	AFE 110315-LD-6-X-RD-IP54 V	315KW LD	-	35 [95]
"	AFE 110355-LD-6-X-RD-IP54 V	355KW LD	-	30 [86]
"	AFE 110400-LD-6-S-RD-IP54 V	400KW LD	integrated	30 [86]
"	AFE 110500-LD-6-S-RD-IP54 V	500KW LD	integrated	35 [95]
"	AFE 110630-LD-6-S-RD-IP54 V	630KW LD	integrated	35 [95]
"	AFE 110710-LD-6-S-RD-IP54 V	710KW LD	integrated	30 [86]
"	AFE 110900-LD-6-S-RD-IP54 V	900KW LD	integrated	35 [95]
"	AFE 111000-LD-6-S-RD-IP54 V	1000KW LD	integrated	30 [86]

- Light Duty (LD)
- **Basic**
- **IP54 with fan units**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac	Safety	Ambient temperature
		LD		°C [°F]
Upon request	AFE 110160-LD-6-X-B-IP54 V	160KW LD	-	35 [95]
"	AFE 110200-LD-6-X-B-IP54 V	200KW LD	-	35 [95]
"	AFE 110250-LD-6-X-B-IP54 V	250KW LD	-	35 [95]
"	AFE 110315-LD-6-X-B-IP54 V	315KW LD	-	35 [95]
"	AFE 110355-LD-6-X-B-IP54 V	355KW LD	-	30 [86]
"	AFE 110400-LD-6-S-B-IP54 V	400KW LD	integrated	30 [86]
"	AFE 110500-LD-6-S-B-IP54 V	500KW LD	integrated	35 [95]
"	AFE 110630-LD-6-S-B-IP54 V	630KW LD	integrated	35 [95]
"	AFE 110710-LD-6-S-B-IP54 V	710KW LD	integrated	30 [86]
"	AFE 110900-LD-6-S-B-IP54 V	900KW LD	integrated	35 [95]
"	AFE 111000-LD-6-S-B-IP54 V	1000KW LD	integrated	30 [86]

ADV200 panel-mounted inverter with AFE200 regenerative module - Series 690Vac, 50Hz

- Light Duty (LD)
- **Ready to use**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac	Safety	Ambient temperature
		LD		°C [°F]
Upon request	AFE 110160-LD-6-X-RD-IP54 C	160KW LD	-	40 [104]
"	AFE 110200-LD-6-X-RD-IP54 C	200KW LD	-	40 [104]
"	AFE 110250-LD-6-X-RD-IP54 C	250KW LD	-	40 [104]
"	AFE 110315-LD-6-X-RD-IP54 C	315KW LD	-	40 [104]
"	AFE 110355-LD-6-X-RD-IP54 C	355KW LD	-	35 [95]

- Light Duty (LD)
- **Basic**
- **IP54 with air conditioning unit**

CODE	PRODUCT IDENTIFICATION	PN @ 690Vac	Safety	Ambient temperature
		LD		°C [°F]
Upon request	AFE 110160-LD-6-X-B-IP54 C	160KW LD	-	40 [104]
"	AFE 110200-LD-6-X-B-IP54 C	200KW LD	-	40 [104]
"	AFE 110250-LD-6-X-B-IP54 C	250KW LD	-	40 [104]
"	AFE 110315-LD-6-X-B-IP54 C	315KW LD	-	40 [104]
"	AFE 110355-LD-6-X-B-IP54 C	355KW LD	-	35 [95]

Programming

"GF_eXpress" PC Configuration Tool

Applications

- Parameter configuration of Gefran devices (Instruments, Drives, Sensors)
- Tuning of control parameters with on-line tests and trends
- Management of parameter archive for multiple configuration

Features

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



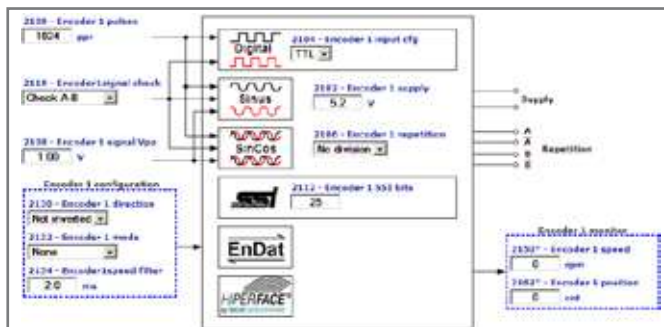
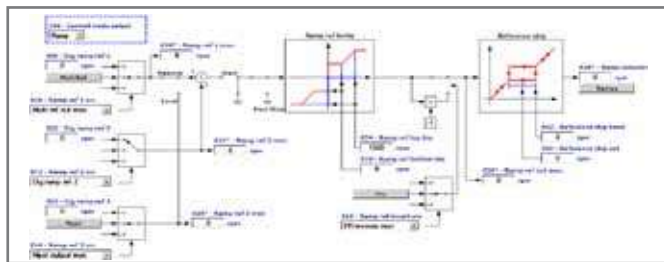
GF_eXpress is the software used to configure the parameters of the automation components, drives and sensors in the Gefran catalogue.

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 Gefran products.

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



The selected product can be configured as follows:

- using a sub-set of predefined parameters
- using a guided graphic interface with context menus

The creation of custom parameter menus with a limited sub-set of data is envisaged, to enable better and more effective device configuration.

GF_eXpress is based on HTML technology. The graphic layout and content are intuitive and easy to use.

The interface and descriptions of the configuration parameters are available in multi-language format.

The use and support of UNICODE format, for multi-language management, enables the inclusion of languages that use special characters (Chinese, Korean, Russian, etc.).

GF_eXpress also offers the following functions:

• Autoscan

Device connection parameters can be configured manually or using the Autoscan function.

The Autoscan function automatically searches for the device connected to the development PC, sending serial commands to identify the type and parameters of communication.

• Monitor Window

When the device is connected, the configuration pages display the value of the single parameter in real-time.

Besides displaying the value the Monitor Window also enables parameters to be modified in real-time.

• Recipes

Saving and archiving a list of parameters. This function is used to manage same configurations on different devices or the transfer of configurations between different users.

• Oscilloscope

Simultaneous monitoring of up to 8 curves. The reference value for the curve being displayed can be selected from among all the variables that are available for the selected device.

• Print

Prints the variables that are displayed or selected. The Print function also includes the preview.

• Technical data

Operating systems:

- Windows ® 2000, XP, Vista.

Minimum PC requirements:

- Pentium class CPU
- 512 MB of RAM
- Free space of > 200MB
- Graphic card min. VGA (1024x768)
- 1 RS232 or USB serial port
- 1 Ethernet port (for other Gefran devices, e.g. Geflex)
- CD-ROM drive

Communication protocols supported:

- Serial communication with the device (Modbus)
- Ethernet communication with TCP Modbus devices

Programming Keypad

ADV200-... and AFE200

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 **ADV/200AFE** 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.



Softscope

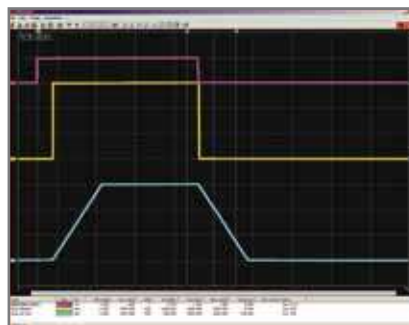
SoftScope is a software oscilloscope with synchronous sampling (buffered with a minimum sampling time of 1ms). Using SoftScope the user can easily display in a fast way some specific variables, for example commissioning variables, variables to test performance levels achieved or to tune the control loops.

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.

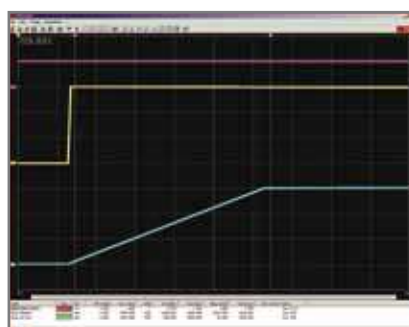
The curves can be displayed with different colours and they can be enabled/disabled. The zoom function allows enlargement of the details. The cursor allows detection of the signal peaks and duration.

The recorded data are displayed as time-based curves and therefore can be analysed. The displayed curves can be printed and stored in ASCII format and can be used with the most common data processing tools (for example Excel, Matlab).



Speed cycle
Start, ramp reference 1500 rpm, ramp output reaches 1500 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 1500 rpm of the previous cycle.

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

"MDPlc" advanced development environment

The **Motion Drive Programmable** logic controller (MDPlc) development environment is a tool for the development of industrial applications based on the SIEIDrive 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)

These languages can be used simultaneously within the same application so that the most suitable language is used for each application process.

The application can be structured on different levels, according to the block hierarchy and sequence. The user can also use basic library blocks or create custom blocks to be incorporated into personalised libraries.

The MDPlc editor is very efficient due to specific functions such as syntax, colouring and automatic insertion, together with the ability to include comments thereby making the program easier to be used.

The MDPlc development environment is structured on 5 "tasks" performed with different cycle times:

- Task "Boot": application boot (initialisation)
- Task "Fast": cycle at 1ms (high priority)
- Task "Slow": cycle at 8ms
- Task "Background": asynchronous execution (low priority)
- Task "Parameter": asynchronous if a parameter is modified

The user can program each task with a high degree of precision in one or more of the IEC 61131 - 3 standard languages, including those with floating-point arithmetic. Depending on the application

and in order to obtain the desired performance and accuracy levels, the user can organise the program to take best advantage of the system capacities in terms of languages and calculation times. The user can also access all drive variables and parameters, including the system (processor) and DSP ones (for example, instant voltage and currents, encoder variables and parameters).

Inside the MDPlc application the user can define different variables (floating, integers, etc.) and parameters. Again, depending on the application, the user can also define some personalised drive parameter menus that can be used and modified by the GF_eXpress configurator of the drive.

The application can perform a direct data exchange using the available buses (DeviceNet, CanOpen®, Profibus-DP, Fast Link, etc.) both via the supervision PC/Plc and via the I/O remote modules. Typical situations where MDPlc applications have been developed are packaging, automatic warehouse systems, the plastic and glass industry, the textile sector and other applications requiring high reliability, accuracy, programming flexibility and short development times.



CD-ROM MDPlc for ADV200
code 1S3A56

• Debug tools



MDPIc integrates a series of diagnostic tools supporting the application debug, its setting and optimisation. MDPIc allows the display, both numerically and graphically, and in suitable windows of all drive and application variables which have been configured via the drag-and drop mode. The graphic curves are displayed with different colours for clarity; the different colours can be connected to configurable events and conditions (trigger). Because the synchronous acquisitions are buffered at 1ms, the variables are used with high accuracy so as to give a precise analysis of their condition.

During the application development and testing, it is possible to insert some triggers into pre-defined code points, which can be configured via a suitable window. The variables, which are read in a synchronous way with each trigger, can be displayed as numbers, as diagrams or tables. The MDPIc environment supports the application debug by highlighting any programming errors, which are then displayed in a suitable window during the compiling process. The highlighted error is displayed together with its position and error cause showing a direct link to the program section to be analysed.

During the application development and testing, it is possible to insert some triggers into pre-defined code points, which can be configured via a suitable window. The variables, which are read in a synchronous way with each trigger, can be displayed as numbers, as diagrams or tables. The MDPIc environment supports the application debug by highlighting any programming errors, which are then displayed in a suitable window during the compiling process. The highlighted error is displayed together with its position and error cause showing a direct link to the program section to be analysed.

• Instruction List (IL)



Instruction List is a low-level language, with a structure similar to a simple machine assembler language. It is ideal for solving small straightforward problems where there are few decision points and a limited number of changes in the program execution flow.

IL can be used when the execution time is critical, for example in the MDPIc Fast Task at 1ms.

• Structured Text (ST)



Structured text is a high-level language. It has a syntax that on first appearance is very similar to Pascal language. An ST program is usually organised as continuous text. This is divided and structured into paragraphs, which represent the logic units of

the ST program.

The wide range of basic commands satisfies the needs of the data management, computation functions, complex arithmetic calculations and control structure. ST has a comprehensive range of constructs to assign values to variables, to call functions and function blocks, to create expressions, to evaluate conditions (IF, CASE) and to implement iterations and loops (WHILE, REPEAT UNTIL).

ST is recommended in the MDPIc Fast Task at 1 ms, where the execution time is critical.

• Ladder Diagram (LD)



The representation of logical sequences in the form of the ladder diagram originates from the area of electrical plant engineering.

LD is based on the methods used to design relay logic. This form of representation is particularly suitable for implementing

relay switching operations in PLC programs.

• Function Block Diagram (FBD)



The basic idea behind PLC programming with the function block diagram is that the program is structured in function-oriented logical sequence cascades (networks). FBD derives from the graphic representation of flow diagrams, hence its ease of use.

FBD is based on viewing a system in terms of the flow of signals, represented in the form of electronic circuit diagrams. Within one network, the execution direction is always from left to right. All input values must always be computed and available before the execution of a function block. The execution and evaluation of a network is not completed until the output values of all elements have been calculated.

• Sequential Flow Chart (SFC)



Sequential Function Chart is a powerful graphical language for the description of the sequential behaviour of a program in terms of states and transitions

SFC describes the sequential aspects of a program and it can be used to divide a control problem

so that only relevant aspects to a specific phase are considered.

SFC can be useful for the development of programs with a well-defined "top-down" or "bottom-up" structure. Usually SFC can include functions, function blocks and programs, and also actions and transitions written with languages such as FBD, IL, LD or ST, which are more suitable for descriptions of specific parts of the program and not of the sequential flow, implemented with the SFC program.J

Accessories

Gefran offers a range of accessories to meet the various requirements of the machines where the panels are installed:

	ADV200		AFE200	
	Ready to use	Basic	Ready to use	Basic
EXP-SFTy-ADV safety card (if not supplied as standard);	•	•	•	•
BUS interface: GDnet, CANopen, Devicenet, Profibus, Ethercat (Modbus RTU integrated as standard);	•	•	•	•
Expansion of digital and analog inputs/outputs;	•	•	•	•
Encoder input/repetition card. Interfaces are available for TTL/HTL digital incremental encoders, Sinusoidal encoders, ENDAT/SSI/HIPERFACE absolute encoders;	•	•	•	•
Automatic line switch;	•	•	•	•
Air/water heat exchangers and external chillers for high-power panels;	•	•	•	•
Output chokes;	•	•	•	•
Power contactor;	•	•	•	•
PT100 relay;	•	•	•	•
PT100, KTY84 motor protection interface	•	•	•	•
BUy dynamic braking module and braking resistors;	•	•	•	•
Service plug with 10 A fuse;	•	•	•	•
Service lamps inside panel;	•	•	•	•
Passive harmonic filters;	•	•	•	•
Dedicated EMC filter;	•	•	•	•
Customised doors;	•		•	
One door free for use by customer;	•	•	•	•
Anti-condensation elements;	•	•	•	•
Cable entry/exit at top.	•	•	•	•

Some of these accessories require the addition of another door to the standard panel.

Line choke • 6-impulse input bridge

- 400-460 Vac, 50/60 Hz mains
- **High Duty (HD)**
- Motor with rated voltage = 400-460 Vac

Model	Motor size [kW]	ADV200 size [kW]	Line choke		
			Type	Code	Q.ty
ADV-110090	90	90	-		-
ADV-110110	110	110	-		-
ADV-110132	132	132	-		-
ADV-110160	160	160	LR3-160		1
ADV-110200	200	200	LR3-200		1
ADV-110250	250	250	LR3-315		1
ADV-110315	315	315	LR3-ADV-355		1
ADV-110355	355	355	LR3-ADV-355		1
ADV-110400	400	400	LR3-200		2
ADV-110500	500	500	LR3-315		2
ADV-110630	630	630	LR3-355		2
ADV-110710	710	710	LR3-355		2
ADV-110900	900	900	LR3-355		3
ADV-111000	1000	1000	LR3-355		3

- 400-460 Vac, 50/60 Hz mains
- **Light Duty (LD)**
- Motor with rated voltage = 400-460 Vac

Model	Motor size [kW]	ADV200 size [kW]	Line choke		
			Type	Code	Q.ty
ADV-110110	110	90	-		-
ADV-110132	132	110	-		-
ADV-110160	160	132	-		-
ADV-110200	200	160	LR3-200		1
ADV-110250	250	200	LR3-200		1
ADV-110315	315	250	LR3-315		1
ADV-110355	355	315	LR3-ADV-355		1
ADV-110400	400	355	LR3-ADV-355		1
ADV-110500	500	400	LR3-200		2
ADV-110630	630	500	LR3-315		2
ADV-110710	710	630	LR3-355		2
ADV-110800	800	710	LR3-355		2
ADV-111000	1000	900	LR3-355		3
ADV-111200	1200	1000	LR3-355		3

Line choke • 6-impulse input bridge

- 500-690 Vac, 50/60 Hz mains
- **High Duty (HD)**
- Motor with rated voltage = 500-690Vac

Model	Motor size [kW]	ADV200 size [kW]	Line choke		
			Type	Code	Q.ty
ADV-110160	160	160	LR3-6-ADV-160		1
ADV-110200	200	200	LR3-6-ADV-200		1
ADV-110250	250	250	LR3y-6-250		1
ADV-110315	315	315	LR3-6-ADV-355		1
ADV-110355	355	355	LR3-6-ADV-355		1
ADV-110400	400	400	LR3-6-ADV-200		2
ADV-110500	500	500	LR3y-6-250		2
ADV-110630	630	630	LR3-6-ADV-355		2
ADV-110710	710	710	LR3-6-ADV-355		2
ADV-110900	900	900	LR3-6-ADV-355		3
ADV-111000	1000	1000	LR3-6-ADV-355		3

- 500-690 Vac, 50/60 Hz mains
- **Light Duty (LD)**
- Motor with rated voltage = 500-690Vac

Model	Motor size [kW]	ADV200 size [kW]	Line choke		
			Type	Code	Q.ty
ADV-110200	200	160	LR3-6-ADV-160		1
ADV-110250	250	200	LR3-6-ADV-200		1
ADV-110315	315	250	LR3y-6-250		1
ADV-110355	355	315	LR3-6-ADV-355		1
ADV-110400	400	355	LR3-6-ADV-355		1
ADV-110500	500	400	LR3-6-ADV-200		2
ADV-110630	630	500	LR3y-6-250		2
ADV-110710	710	630	LR3-6-ADV-355		2
ADV-110800	800	710	LR3-6-ADV-355		2
ADV-111000	1000	900	LR3-6-ADV-355		3
ADV-111200	1200	1000	LR3-6-ADV-355		3

Line choke • Input bridge with AFE power supply module

- 400-460 Vac, 50/60 Hz mains
- **High Duty (HD)**
- Motor with rated voltage = 400-460 Vac

Model	Motor size [kW]	ADV200 size [kW]	AFE200 size [kW]	Line choke		
				Type	Code	Q.ty
AFE-110090	90	110	90	LR3-4-090-AFE	S7AL02	1
AFE-110110	110	132	90	LR3-4-090-AFE	S7AL02	1
AFE-110132	132	160	132	LR3-4-160-AFE	S7AL03	1
AFE-110160	160	200	160	LR3-4-160-AFE	S7AL03	1
AFE-110200	200	250	200	LR3-4-250-AFE	S7AL05	1
AFE-110250	250	315	250	LR3-4-250-AFE	S7AL05	2
AFE-110315	315	355	315	LR3-4-315-AFE	S7AL06	2
AFE-110355	355	400	355	LR3-4-355-AFE	S7AL04	2
AFE-110400	400	500	400	LR3-4-250-AFE	S7AL05	2
AFE-110500	500	630	500	LR3-4-250-AFE	S7AL05	2
AFE-110630	630	710	630	LR3-4-315-AFE	S7AL06	2
AFE-110710	710	900	710	LR3-4-355-AFE	S7AL04	2
AFE-110900	900	1000	900	LR3-4-315-AFE	S7AL06	3

- 400-460 Vac, 50/60 Hz mains
- **Light Duty (LD)**
- Motor with rated voltage = 400-460 Vac

Model	Motor size [kW]	ADV200 size [kW]	AFE200 size [kW]	Line choke		
				Type	Code	Q.ty
AFE-110110	110	110	90	LR3-4-090-AFE	S7AL02	1
AFE-110132	132	132	90	LR3-4-090-AFE	S7AL02	1
AFE-110160	160	160	132	LR3-4-160-AFE	S7AL03	1
AFE-110200	200	200	160	LR3-4-160-AFE	S7AL03	1
AFE-110250	250	250	200	LR3-4-250-AFE	S7AL05	1
AFE-110315	315	315	250	LR3-4-250-AFE	S7AL05	1
AFE-110355	355	355	315	LR3-4-315-AFE	S7AL06	2
AFE-110400	400	400	355	LR3-4-355-AFE	S7AL04	2
AFE-110500	500	500	400	LR3-4-250-AFE	S7AL05	2
AFE-110630	630	630	500	LR3-4-315-AFE	S7AL06	2
AFE-110710	710	710	630	LR3-4-355-AFE	S7AL04	2
AFE-110900	900	900	900	LR3-4-315-AFE	S7AL06	3
AFE-111000	1000	1000	900	LR3-4-315-AFE	S7AL06	3

Line choke • Input bridge with AFE power supply module

- 500-690 Vac, 50/60 Hz mains
- **High Duty (HD)**
- Motor with rated voltage = 500-690 Vac

Model	Motor size [kW]	ADV200 size [kW]	AFE200 size [kW]	Line choke		
				Type	Code	Q.ty
AFE-110160	160	200	160	LR3-6-AFE-160	S7AL11	1
AFE-110200	200	250	200	LR3-6-AFE-200	S7AL12	1
AFE-110250	250	315	250	LR3-6-AFE-250	S7AL13	1
AFE-110315	315	355	315	LR3-6-AFE-315	S7AL14	1
AFE-110355	355	400	355	LR3-6-AFE-355	S7AL10	1
AFE-110400	400	500	400	LR3-6-AFE-200	S7AL12	2
AFE-110500	500	630	500	LR3-6-AFE-250	S7AL13	2
AFE-110630	630	710	630	LR3-6-AFE-315	S7AL14	2
AFE-110710	710	900	710	LR3-6-AFE-355	S7AL10	2
AFE-110900	900	1000	900	LR3-6-AFE-315	S7AL14	3

- 500-690 Vac, 50/60 Hz mains
- **Light Duty (LD)**
- Motor with rated voltage = 500-690 Vac

Model	Motor size [kW]	ADV200 size [kW]	AFE200 size [kW]	Line choke		
				Type	Code	Q.ty
AFE-110160	160	160	160	LR3-6-AFE-160	S7AL11	1
AFE-110200	200	200	160	LR3-6-AFE-160	S7AL11	1
AFE-110250	250	250	200	LR3-6-AFE-200	S7AL12	1
AFE-110315	315	315	250	LR3-6-AFE-250	S7AL13	1
AFE-110355	355	355	315	LR3-6-AFE-315	S7AL14	1
AFE-110400	400	400	355	LR3-6-AFE-355	S7AL10	1
AFE-110500	500	500	400	LR3-6-AFE-200	S7AL12	2
AFE-110630	630	630	500	LR3-6-AFE-250	S7AL13	2
AFE-110710	710	710	630	LR3-6-AFE-315	S7AL14	2
AFE-110900	900	900	900	LR3-6-AFE-315	S7AL14	3
AFE-111000	1000	1000	900	LR3-6-AFE-315	S7AL14	3

EMI filter • Input bridge with AFE power supply module

- 400-460 Vac, 50/60 Hz mains
- **High Duty (HD)**
- Motor with rated voltage = 400-460 Vac

Model	Motor size [kW]	ADV200 size [kW]	AFE200 size [kW]	EMI filter				
				Type	Code	Q.ty	Dimensions (L x H x p) mm [inches]	Unit weight kg [lbs]
AFE-110090	90	110	90	EMI FN3120-480-230	S74EE	1	300 x 168 x 140 [11.8 x 6.6 x 5.5]	13.3 [29.3]
AFE-110110	110	132	90	EMI FN3120-480-230	S74EE	1	300 x 168 x 140 [11.8 x 6.6 x 5.5]	13.3 [29.3]
AFE-110132	132	160	132	EMI FN3120-480-230	S74EE	1	300 x 168 x 140 [11.8 x 6.6 x 5.5]	13.3 [29.3]
AFE-110160	160	200	160	EMI FN3359-480-320	S7GOH	1	440 x 260 x 122 [17.3 x 10.2 x 4.8]	10.5 [23.1]
AFE-110200	200	250	200	EMI FN3359-480-400	S7GHY	1	440 x 260 x 122 [17.3 x 10.2 x 4.8]	10.5 [23.1]
AFE-110250	250	315	250	EMI FN3359-480-600	S7GHW	1	440 x 260 x 142 [17.3 x 10.2 x 5.6]	11 [24.2]
AFE-110315	315	355	315	EMI FN3359-480-600	S7GHW	1	440 x 260 x 142 [17.3 x 10.2 x 5.6]	11 [24.2]
AFE-110355	355	400	355	EMI FN3359-480-600	S7GHW	1	440 x 260 x 142 [17.3 x 10.2 x 5.6]	11 [24.2]
AFE-110400	400	500	400	EMI FN-3359-480-800	S7EMI6	2	510 x 280 x 177 [20.1 x 11 x 7]	18 [39.7]
AFE-110500	500	630	500	EMI FN-3359-480-800	S7EMI6	2	510 x 280 x 177 [20.1 x 11 x 7]	18 [39.7]
AFE-110630	630	710	630	EMI FN-3359-480-1000	S7EMI7	2	510 x 280 x 177 [20.1 x 11 x 7]	18 [39.7]
AFE-110710	710	900	710	EMI FN-3359-480-1600	S7EMI8	2	400 x 300 x 160 [15.8 x 11.8 x 6.3]	27 [59.5]
AFE-110900	900	1000	900	EMI FN-3359-480-1600	S7EMI8	3	400 x 300 x 160 [15.8 x 11.8 x 6.3]	27 [59.5]

- 400-460 Vac, 50/60 Hz mains
- **Light Duty (LD)**
- Motor with rated voltage = 400-460 Vac

Model	Motor size [kW]	ADV200 size [kW]	AFE200 size [kW]	EMI filter				
				Type	Code	Q.ty	Dimensions (L x H x p) mm [inches]	Unit weight kg [lbs]
AFE-110110	110	110	90	EMI FN3120-480-230	S74EE	1	300 x 168 x 140 [11.8 x 6.6 x 5.5]	13.3 [29.3]
AFE-110132	132	132	90	EMI FN3120-480-230	S74EE	1	300 x 168 x 140 [11.8 x 6.6 x 5.5]	13.3 [29.3]
AFE-110160	160	160	132	EMI FN3120-480-230	S74EE	1	300 x 168 x 140 [11.8 x 6.6 x 5.5]	13.3 [29.3]
AFE-110200	200	200	160	EMI FN3120-480-230	S74EE	1	300 x 168 x 140 [11.8 x 6.6 x 5.5]	13.3 [29.3]
AFE-110250	250	250	200	EMI FN3359-480-400	S7GHY	1	440 x 260 x 122 [17.3 x 10.2 x 4.8]	10.5 [23.1]
AFE-110315	315	315	250	EMI FN3359-480-600	S7GHW	1	440 x 260 x 142 [17.3 x 10.2 x 5.6]	11 [24.2]
AFE-110355	355	355	315	EMI FN3359-480-600	S7GHW	1	440 x 260 x 142 [17.3 x 10.2 x 5.6]	11 [24.2]
AFE-110400	400	400	355	EMI FN3359-480-600	S7GHW	1	440 x 260 x 142 [17.3 x 10.2 x 5.6]	11 [24.2]
AFE-110500	500	500	400	EMI FN-3359-480-800	S7EMI6	2	510 x 280 x 177 [20.1 x 11 x 7]	18 [39.7]
AFE-110630	630	630	500	EMI FN-3359-480-1000	S7EMI7	2	510 x 280 x 177 [20.1 x 11 x 7]	18 [39.7]
AFE-110710	710	710	630	EMI FN-3359-480-1600	S7EMI8	2	400 x 300 x 160 [15.8 x 11.8 x 6.3]	27 [59.5]
AFE-110900	900	900	900	EMI FN-3359-480-1600	S7EMI8	3	400 x 300 x 160 [15.8 x 11.8 x 6.3]	27 [59.5]
AFE-111000	1000	1000	900	EMI FN-3359-480-1600	S7EMI8	3	400 x 300 x 160 [15.8 x 11.8 x 6.3]	27 [59.5]

EMI filter • Input bridge with AFE power supply module

- 500-690Vac mains, 50/60Hz
- **High Duty (HD)**
- Motor with rated voltage = 500-690Vac

Model	Motor size [kW]	ADV200 size [kW]	AFE200 size [kW]	EMI filter				
				Type	Code	Q.ty	Dimensions (L x H x p) mm [inches]	Unit weight kg [lbs]
AFE-110160	160	200	160	EMI-FN3359HV-690-150	S7EMI13	1	420 x 127 x 210 [16.5 x 5 x 8.2]	6.5 [14.3]
AFE-110200	200	250	200	EMI-FN3359HV-690-180	S7EMI14	1	420 x 127 x 210 [16.5 x 5 x 8.2]	6.5 [14.3]
AFE-110250	250	315	250	EMI-FN3359HV-690-250	S7EMI15	1	420 x 132 x 230 [16.5 x 5.2 x 10.2]	7 [15.4]
AFE-110315	315	355	315	EMI-FN3359HV-690-320	S7EMI16	1	440 x 122 x 260 [17.3 x 4.8 x 10.2]	10.5 [23.1]
AFE-110355	355	400	355	EMI-FN3359HV-690-400	S7EMI17	1	440 x 122 x 260 [17.3 x 4.8 x 10.2]	10.5 [23.1]
AFE-110400	400	500	400	EMI-FN3359HV-690-180	S7EMI14	2	420 x 127 x 210 [16.5 x 5 x 8.2]	6.5 [14.3]
AFE-110500	500	630	500	EMI-FN3359HV-690-250	S7EMI15	2	420 x 132 x 230 [16.5 x 5.2 x 10.2]	7 [15.4]
AFE-110630	630	710	630	EMI-FN3359HV-690-320	S7EMI16	2	440 x 122 x 260 [17.3 x 4.8 x 10.2]	10.5 [23.1]
AFE-110710	710	900	710	EMI-FN3359HV-690-320	S7EMI16	2	440 x 122 x 260 [17.3 x 4.8 x 10.2]	10.5 [23.1]
AFE-110900	900	1000	900	EMI-FN3359HV-690-320	S7EMI16	3	440 x 122 x 260 [17.3 x 4.8 x 10.2]	10.5 [23.1]

- 500-690Vac mains, 50/60Hz
- **Light Duty (LD)**
- Motor with rated voltage = 500-690Vac

Model	Motor size [kW]	ADV200 size [kW]	AFE200 size [kW]	EMI filter				
				Type	Code	Q.ty	Dimensions (L x H x p) mm [inches]	Unit weight kg [lbs]
AFE-110160	160	160	160	EMI-FN3359HV-690-180	S7EMI13	1	420 x 127 x 210 [16.5 x 5 x 8.2]	6.5 [14.3]
AFE-110200	200	200	160	EMI-FN3359HV-690-180	S7EMI14	1	420 x 127 x 210 [16.5 x 5 x 8.2]	6.5 [14.3]
AFE-110250	250	250	200	EMI-FN3359HV-690-250	S7EMI15	1	420 x 132 x 230 [16.5 x 5.2 x 10.2]	7 [15.4]
AFE-110315	315	315	250	EMI-FN3359HV-690-320	S7EMI16	1	440 x 122 x 260 [17.3 x 4.8 x 10.2]	10.5 [23.1]
AFE-110355	355	355	315	EMI-FN3359HV-690-320	S7EMI16	1	440 x 122 x 260 [17.3 x 4.8 x 10.2]	10.5 [23.1]
AFE-110400	400	400	355	EMI-FN3359HV-690-400	S7EMI17	1	440 x 122 x 260 [17.3 x 4.8 x 10.2]	10.5 [23.1]
AFE-110500	500	500	400	EMI-FN3359HV-690-250	S7EMI15	2	420 x 132 x 230 [16.5 x 5.2 x 10.2]	7 [15.4]
AFE-110630	630	630	500	EMI-FN3359HV-690-320	S7EMI16	2	440 x 122 x 260 [17.3 x 4.8 x 10.2]	10.5 [23.1]
AFE-110710	710	710	630	EMI-FN3359HV-690-320	S7EMI16	2	440 x 122 x 260 [17.3 x 4.8 x 10.2]	10.5 [23.1]
AFE-110900	900	900	900	EMI-FN3359HV-690-320	S7EMI16	3	440 x 122 x 260 [17.3 x 4.8 x 10.2]	10.5 [23.1]
AFE-111000	1000	1000	900	EMI-FN3359HV-690-320	S7EMI16	3	440 x 122 x 260 [17.3 x 4.8 x 10.2]	10.5 [23.1]

Options

Encoder expansion cards



Code	Identification option	Description	ADV200-4	ADV200-6	AFE200-4	AFE200-6
S5L30	EXP-DE-I1R1F2-ADV	TTL/HTL digital incremental encoder expansion card 1 encoder input - 1 encoder output - 2 freeze channels	●	●		
S5L35	EXP-DE-I2R1F2-ADV	TTL/HTL digital incremental encoder expansion card 2 encoder inputs - 1 encoder output - 2 freeze channels	●	●		
S5L31	EXP-SE-I1R1F2-ADV	Sinusoidal incremental encoder expansion card 1 encoder input - 1 encoder output - 2 freeze channels	●	●		
S5L32	EXP-SESC-I1R1F2-ADV	Sincos incremental encoder expansion card 1 encoder input - 1 encoder output - 2 freeze channels	●	●		
S5L33	EXP-EN/SSI-I1R1F2-ADV	Absolute EnDat/SSI encoder expansion card 1 encoder input - 1 encoder output - 2 freeze channels	●	●		
S5L34	EXP-HIP-I1R1F2-ADV	Absolute Hiperface encoder expansion card 1 encoder input - 1 encoder output - 2 freeze channels	●	●		

External I/O



S526L	EXP-IO-D6A4R1-ADV	4 digital inputs / 2 digital outputs / 2 analog inputs / 2 analog outputs / 2 double contact relays	●	●	●	●
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Remote I/O



	GILOGIK II	System with CAN interface for master EXP-FL-XCAN-ADV card. The system consists of the CAN gateway module and digital and analog I/O connectors on the back-plane. CAN gateway type: R-GCANs • CANopen protocol (slave) • 9-pin male sub-D connector • Baud Rate: 500 kbps • Data transmission speed: 8 ms • Power supply 24 Vdc – 2 A max I/O Modules: various digital and analog I/O modules are available For information, please visit the www.gefran.com website (Home> Products> Components and Automation> Automation platforms) or contact our Sales Office.	●	●	●	●
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Code	Identification option	Description	ADV200-4	ADV200-6	AFE200-4	AFE200-6
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Fieldbus expansion cards



S527L	EXP-CAN-ADV	Expansion card for CANopen ® and DeviceNet interface CANopen: - Transmission speed: up to 1 Mbit/s - Data frame: 1 SDO to access all drive parameters, 4 PDO of 4 I/O words for fast access - Bus address: 1...128 DeviceNet: - Transmission speed: 125, 250, 500 kbit/s - Bus address: 1...63 - Data frame: Explicit Messaging for access to all drive parameters, 16 Polling I/O words for fast access	●	●	●	●
S530L	EXP-PDP-ADV	Expansion card for Profibus_DP interface - Transmission speed 9.6 kbit/s ... 12 Mbit/s - Bus address: 1...125 - Data frame: configuration channel for access to all drive parameters; 16 I/O fast words for fast access - Support Sync and Freeze.	●	●	●	●
S5L29	EXP-ETH-GD-ADV200	Ethernet GD-net interface expansion card	●	●	●	●
S5L09	EXP-ETH-CAT-ADV200	EtherCAT interface expansion card	●	●	●	●
S5L19	EXP-ETH-IP-ADV200	Ethernet IP interface expansion card	●	●	●	●
S5L41	EXP-FL-XCAN-ADV	Fast Link interface and remote I/O expansion card Fast Link interface: The card enables fast synchronous communication between one master drive device and up to 15 slave drive devices. • Physical support: optical fibre; • Data transmission: One-way (two-way communication is currently being developed); • Maximum number of data from master drive device to slave drive devices: 8 parameters with 32-bit format; • Data transmission speed 250 µs; • Maximum node-to-node distance: 5 metres (with normal plastic fibre). I/O expansion card: The card acts like a master device with the DS401 Device profile for generic I/O modules. • Maximum number of slave nodes: 1; • Maximum number of external digital inputs: 64; • Maximum number of external digital outputs: 64; • Maximum number of external analog inputs: 8; • Maximum number of external analog outputs: 8; • Transmission speed: 500 kbps • Data transmission speed: 8 ms.	●	●	●	●



External Braking Unit



Code	Identification option	Description	ADV200-4	ADV200-6	AFE200-4	AFE200-6
S9D55	BUy 1020	Braking unit for 230VAC...480VAC lines In= 20Arms, UL mark	●			
S9D56	BUy 1050	Braking unit for 230VAC...480VAC lines In= 50Arms, UL mark	●			
S9D57	BUy 1085	Braking unit for 230VAC...480VAC lines In= 85Arms, UL mark	●			
S9D30	BUy 1065-6	Braking unit for 690VAC line In= 65Arms		●		

Connection via serial line



S533L	OPT – RS485 – ADV	Optoisolator for RS485 for Multidrop connections	●	●	●	●
S50T6	Kit RS485 - PCI COM	Universal kit for RS485 serial line (PCI COM + connection cables)	●	●	●	●
S560T	PCI COM	Universal RS-232 / RS-485 serial interface	●	●	●	●
8S8F59	Shielded cable for PCI 485	RS-485 serial interface cable (L = 5 m)	●	●	●	●
S5A20	USB-RS232 CONVERTER	USB - RS232 serial protocol converter	●	●	●	●

Various



S576L	PTC-D01	Interface for PTC sensor	●	●		
1S3A56	CD-ROM MDPIc	MDPIc development environment for ADV200	●	●		
1S9002	CD-ROM Configurator	GF-eXpress + ADV200 Instruction manuals	●	●		
1S9004	CD-ROM Configurator	GF-eXpress + AFE200 Instruction manuals			●	●

- We guarantee each customer a high-quality, tailored service backed by a wealth of technical and professional expertise, which makes GEFRA a reliable, flexible partner capable of providing specialised, global support.

“You can be assured that your plant will be backed by a wealth of professional expertise.”



Our pre-sales support includes preliminary technical and commercial advice, with recommendations for professional and economically advantageous solutions. Our aim is to provide innovative products and solutions tailored to suit each individual requirement.



Installation and Start-up

Purchasing a GEFRAN product provides access to a global package of exclusive services.

GEFRAN has an international team of engineers who are specialised in the installation and commissioning of proprietary drives and control systems. Customers can always rely on fast, professional service and an efficient telephone support line.



After-sales Service

GEFRAN offers a highly professional after-sales service to customers worldwide.

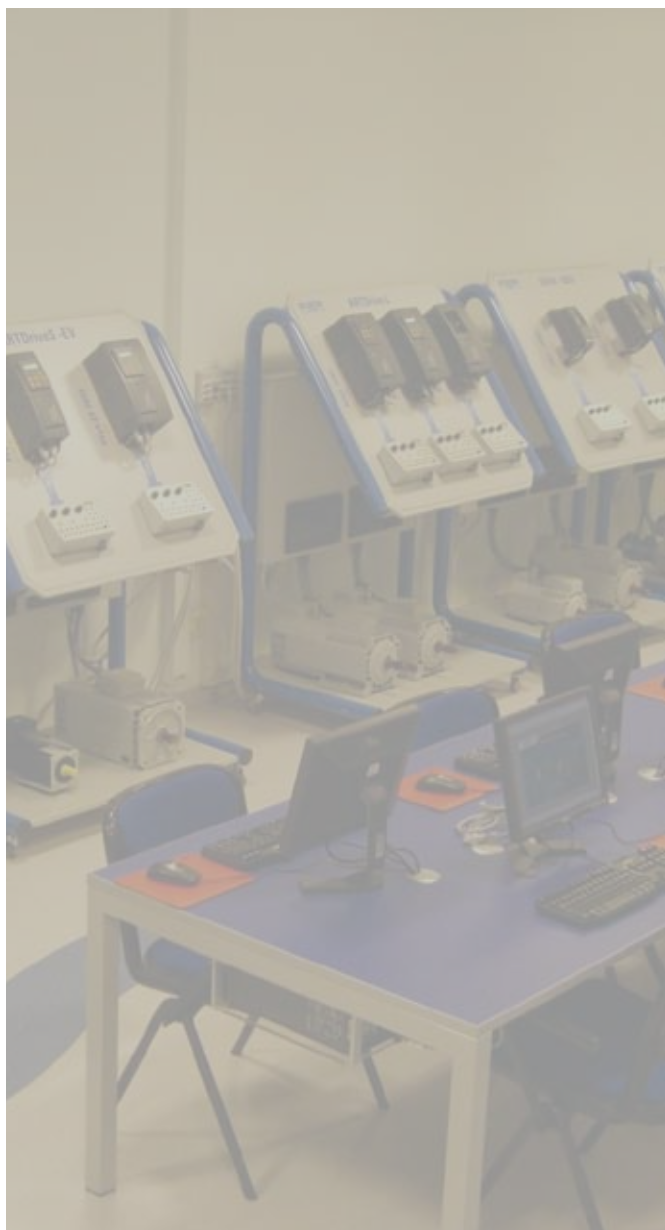
Customers know they can rely on fast, worldwide support, limiting machine downtimes to a minimum without affecting production capacity.



Calendar of courses and education days

Training addresses internal technical and service personnel of the Gefran Group and system maintenance engineers, machine manufacturers and control system designers

- ➔ "Gefran Drive & Motion" training courses are intended to provide industrial automation sector operators with a basic grounding in SIEDrive DC, AC and Servo-brushless drives.
- ➔ The courses are structured so that participants are able to acquire a general theoretical grounding in drives and include a detailed description of Gefran products covering theoretical/practical use of the drives.



Venue of courses

The courses are held at the Gefran S.p.A. production facility - Drive & Motion Control Unit in Gerezano (Varese), Italy.

For foreign branches, training courses can be organised at other times, directly at the branch or Gefran distributors' facilities.

Education days (on demand)

In addition to scheduled courses, problems and specific aspects of SIEIDrive products can be examined during "Education" days.

These courses, dedicated exclusively to individual requirements, are available on request and must be defined directly with sales staff at Gefran S.p.A.

The duration of "Education" days may vary according to the issues that are dealt with.

Levels

Courses are normally based on three levels of difficulty: level 1 (basic); level 2 (high) and level 3 (advanced) mainly addressing MDPIc application developers.

Frequency and number of participants

The courses planned for 2010 envisage a minimum and maximum number of participants.

The frequency of the courses shown may be changed according to demand.

Reservations

To book a place on these courses, please call us on +39 02 967601 / +39 02 96760500. This service is available at the following times: 9.00 – 12.30 / 13.30 – 17.00 or send an e-mail to: marketing@gefran.com.

Gefran S.p.A. - Drive & Motion Control Unit will book overnight hotel accommodation.





After-sales Service

*“High-level performance,
from the first day onwards,”*

- ➔ Faults must be detected and repaired as soon as possible in order to guarantee continuous operation of industrial production systems.
- ➔ GEFRA responds to this important requirement by offering a highly professional after-sales service to cover each step.



Telephone helpline

The Contact Centre helpline is available to deal with your requests and answer your technical queries.

The dedicated helpline operates from 8 am until 8 pm, from Monday to Saturday.

 **+39 02 967 60428**



Online assistance

GEFRAN also operates an online technical service.

We welcome enquiries from end users, installers and project designers. Contact us any time at technoHelp@gefran.com to receive immediate assistance in the form of technical or commercial advice.



ON-SITE assistance

With offices and service centres throughout the world, GEFran guarantees a prompt, reliable service to ensure continuous plant operation.

Repairs are carried out at our works or on-site by skilled technicians.



GEFRAN guarantees the quality and functionality of its products when dispatched and will:

- ➔ replace faulty products with an equivalent or similar product
- or:
- ➔ repair, in good time, any parts that are found to be faulty during the warranty period.



WARRANTY terms and conditions

Products to be replaced must be returned in their original packaging or in other adequate or equivalent packaging.

The customer will be responsible for the cost of forwarding the product to GEFRA (Drive & Motion Control Unit - Gerenzano (Varese), Italy, while the latter will bear all costs relating to the materials and transport charges to replace all or part of the product.

In case of assistance provided by our technical staff, work may be performed at the GEFRA facility.

For repairs carried out on-site at the customer's premises, GEFRA guarantees assistance within 48 working hours following receipt of the written request.

Exclusion of WARRANTY

The warranty does not apply in the following cases, in which GEFRA declines all responsibility:

- work, modifications or repairs carried out on the customer's own initiative
- use of the product other than for its intended purpose, incorrect use or installation under conditions other than those described in the user guide
- damage caused by foreign bodies (smoke, corrosive substances, etc.) or damage due to unforeseeable circumstances (lightning, overvoltage, damage caused by water, earthquake, fire, war, riots, etc.)
- damage during transportation or in any case occurring after the transfer of risk and damage resulting from incorrect packaging by the customer
- inadequate ventilation
- out-of-pocket expenses (travel, transport, board and lodging) incurred by technical staff in order to carry out repairs at the customer's premises are excluded.

Solutions

GEFRAN system technology

- GEFran applies its application experience to the design and development of specific automation systems for a broad range of industrial sectors.
- Innovative technological solutions based on an extensive range of process control products and 45 years of experience, acquired in working alongside leading sector operators.
- "Custom-built" single or multiple-drive control systems to individual specifications and hardware and software system architecture for automation systems to control the very latest machines.



Plastic

GEFRAN's Power Electronic Drive solutions have always been used with success in the various plastic processing industries.

GEFRAN has acquired a technological know-how in the control of all-electric and hybrid injection presses and of equipment used for blowing, extrusion, film processing, mixing, etc., to consolidate its undisputed leadership in terms of product and sector.



Metal - Sheet metal

GEFRAN's Power Electronic Drive platforms, used in sheet metal, metal wire and metal processing, guarantee system efficiency and offer energy-saving technology for high power industrial machinery.

With its technological products and dedicated application programs, GEFRAN develops complete control systems based on the highly specialised System Drive platform.



Test benches



Industrial hoisting

The advanced configurations and functions of the Gefran Power Electronic Drive systems have been designed for use with a broad range of control architectures for modern and advanced automation systems.

Industrial applications for test benches, industrial hoisting, cement works, mills for the ceramics industry, mines, transport systems, mixers, grinders, etc. can be implemented with ready to use panel solutions, which are equipped with standard features to improve the energy efficiency of the motor or use active front end regenerative power supply technology for maximum energy saving.

With its products and dedicated application programs, GEFRAN develops complete control systems based on the highly specialised System Drive platform.



Oil & Gas



HVAC



Compressors



Water Treatment

Gefran's Power Electronic Drive platforms offer dedicated application solutions for the air-conditioning and water treatment industries and generally for controlling pumps used in the main production and power generation processes.

The availability of specific SW functions and power structures for variable or quadratic torque loads results in the best possible design in terms of technology and cost-effectiveness and enables control of highly optimised systems.

Clean power energy technology also guarantees better power control with real benefits in terms of energy saving.

Notes :



If you have any suggestions that you think might help us to improve this catalogue, please do not hesitate to contact us at techdoc@gefran.com.

GEFRAN S.p.A. reserves the right to make changes and variations to products, data, dimensions at any time without the obligation of prior notice.

The data indicated are provided for the sole purpose of describing the product and must not be considered as legally binding characteristics.

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Certificate No. FM 38167

Gefran S.p.A. (Drive & Motion Control Unit - Gerenzano VA), operates a Quality Management System which complies with the requirements of ISO 9001:2008



The company operates a ISO 9001:2008-certified quality system.

Our primary corporate goal is customer satisfaction: it is from this that mutual collaboration, maximum trust in the company and a consolidated long-stand-

ing partnership role stem.

Gefran ensures total support through its technical services (from design and start-up right up to onstream assistance), which are more highly specialised than those which large multisector companies are able to offer.

GEFRAN always meets the demands of high-tech users with the certainty of total quality.



GEFRAN

GEFRAN HEADQUARTER

Via Sebina, 74
25050 PROVAGLIO D'ISEO (BS) ITALY
Ph. +39 03098881
Fax +39 0309839063
info@gefran.com

Drive & Motion Control Unit

Via Carducci, 24
21040 GERENZANO (VA) ITALY
Ph. +39 02967601
Fax +39 029682653
info.motion@gefran.com

Technical Assistance:
technohelp@gefran.com

Customer Service
motioncustomer@gefran.com
Ph. +39 02 96760500
Fax +39 02 96760278

AUTHORIZED DISTRIBUTORS

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ISO 9001
FM 38167



GEFRAN BENELUX N.V.

Lammerdries-Zuid 14A
B-2250 OLEN
Ph. +32 (0) 14248181
Fax +32 (0) 14248180
info@gefran.be

GEFRAN DEUTSCHLAND GmbH

Philipp-Reis-Straße 9a
D-63500 Seligenstadt
Ph. +49 (0) 61828090
Fax +49 (0) 6182809222
vertrieb@gefran.de

SIEI AREG - GERMANY

Gottlieb-Daimler Strasse 17/3
D-74385 - Pleidelsheim
Ph. +49 (0) 7144 897360
Fax +49 (0) 7144 8973697
info@sieiareg.de

GEFRAN SUISSE sa

Sandackerstrasse, 30
9245 Oberbüren
Ph. +41 71 9554020
Fax +41 71 9554024
office@gefran.ch

GEFRAN FRANCE sa

4, rue Jean Desparmet - BP 8237
69355 LYON Cedex 08
Ph. +33 (0) 478770300
Fax +33 (0) 478770320
commercial@gefran.fr

GEFRAN UK Ltd

Capital House, Hadley Park East
Telford
TF1 6QJ
Tel +44 (0) 8452 604555
Fax +44 (0) 8452 604556
sales@gefran.co.uk

GEFRAN España

Calle Vic, números 109-111
08160 - MONTMELÓ
(BARCELONA)
Ph. +34 934982643
Fax +34 935721571
comercial.espana@gefran.es

GEFRAN SIEI Drives Technology Co., Ltd

No. 1285, Beihe Road, Jiading
District, Shanghai, China 201807
Ph. +86 21 69169898
Fax +86 21 69169333
info@gefransiei.com.cn

GEFRAN SIEI Electric Pte. Ltd.

No. 1285, Beihe Road, Jiading
District, Shanghai, China 201807
Ph. +86 21 69169898
Fax +86 21 69169333
info@gefransiei.com.cn

GEFRAN SIEI - ASIA

Blk.30 Loyang Way
03-19 Loyang Industrial Estate
508769 Singapore
Ph. +65 6 8418300
Fax +65 6 7428300
info@gefransiei.com.sg

GEFRAN INDIA Head Office: Pune

Survey No: 182/1 KH, Bhukum, Paud road,
Taluka - Mulshi,
Pune - 411 042, MH, INDIA
Phone No.: +91-20-39394400
Fax No.: +91-20-39394401
gefran.india@gefran.in

Branch Office: Mumbai

403, Damodar Nivas,
'B' Cabin Road, Near Railway quarters,
Naupada, Thane (W) - 400 602, MH, India
Phone No.: +91-22-2533 8797
Phone/Fax No.: +91-22-2541 8797
gefran.india@gefran.in

Branch office: Ahmedabad

20-A, Second Floor, Kala Purnam Building,
Near Municipal Market, C. G. Road,
Ahmedabad - 380 019, Gujarat, India
Ph: +91-79-2640 3591
Ph/Fax: +91-79-2640 3592
gefran.india@gefran.in

GEFRAN TAIWAN

Rm. 3, 9F., No.8, Ln. 157, Cihui 3rd St.,
Zhongli City,
Taoyuan County 320, Taiwan (R.O.C.)
Tel/Fax +886-3-4273697
dino.yeh@gefransiei.com.sg

GEFRAN Inc.

8 Lowell Avenue
WINCHESTER - MA 01890
Toll Free 1-888-888-4474
Fax +1 (781) 7291468
info@gefraninc.com

GEFRAN BRASIL ELETROELETRÔNICA

Avenida Dr. Altino Arantes,
377/379 Vila Clementino
04042-032 SÃO PAULO - SP
Ph. +55 (0) 1155851133
Fax +55 (0) 1132974012
comercial@gefran.com.br

www.gefran.com