ENG

SYSTEM INVERTER AND REGENERATIVE POWER SUPPLY UNIT

SIEIDrive ADV200 - ADV100 - AFE200

GEFRAN







THE ACKNOWLEDGED INTERNATIONAL LEADER

Thanks to forty years of experience, Gefran is the world leader in the design and production of solutions for **measuring, controlling, and driving industrial production processes.**
We have 14 branches in 12 countries and a network of over 80 worldwide distributors.



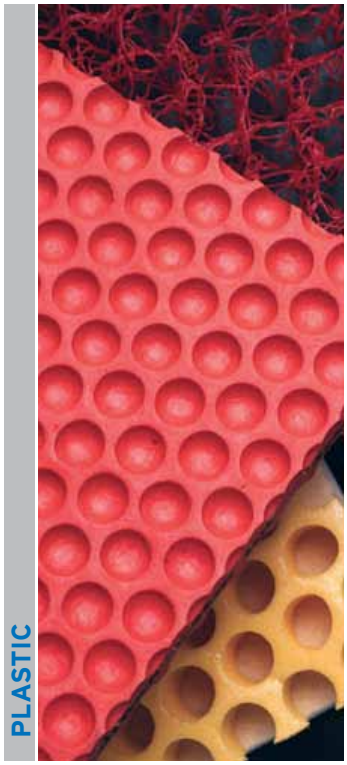
QUALITY AND TECHNOLOGY

Gefran components are a **concentrate of technology**, the result of constant research and of **cooperation with major research centres**.
For this reason, Gefran is synonymous with quality and expertise in the design and production of:

- **sensors** for measuring main variables such as **temperature, pressure, position and force**
- **state-of-the-art components and solutions for indication and control**, satisfying demands for optimisation of processes and intelligent management of energy consumption
- **automation platforms** of various complexities
- **electronic drives and electric motors** in AC and DC for all industrial automation, HVAC, water treatment, lift, and photovoltaic needs.

Gefran's know-how and experience guarantee continuity and tangible solutions.

GEFRAN













PERFORMANCE

In addition to foreseeing the market's application needs, Gefran forms partnerships with its customers to find **the best way to optimise and boost the performance of various applications.** Gefran products communicate with one another to provide integrated solutions, and can dialogue with devices by other companies thanks to compatibility with numerous fieldbuses.

CANopen EtherCAT EtherNet/IP DeviceNet GDNET Modbus PROFIBUS PROFINET

SERVICES

PRE AND POST SALES
A team of Gefran experts works with the customer to select the ideal product for its application and to help install and configure devices (technohelp@gefran.com).

TRAINING
Gefran offers a wide range of courses at different levels for the technical-commercial study of the Gefran product range as well as specific courses *on demand*.

TEST BENCHES



MATERIAL HANDLING



CONVEYORS



MATERIAL RECYCLING MACHINERY



DESCRIPTION

ADV200



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



The ADV200 are also available on a range of panel-mounted inverters configuration.
It are designed as a compact, ready-for-use solution fully compatible with the maximum operating conditions of the drive.
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.

POWER RANGE

Models	Power (kW)																																						
	0.37	0.55	0.75	1.5	2.2	3.0	4.0	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	250	315	355	400	500	630	710	900	1000	1350	1650					
ADV200-4			Size 1					Size 2			Size 3			Size 4			Size 5			Size 6		Size 7					Parallel size 7 (*)												
ADV200-DC											Size 3			Size 4			Size 5			Size 6		Size 7					Parallel size 7 (*)												
ADV200-6																		S.5		Size 6		Size 7					Parallel size 7 (*)												

Power ratings of up to 1.2 MW on request.

(*) Inverters of over 400 kW comprise one master MASTER unit and one or more SLAVE units..

GENERAL CHARACTERISTICS

Power supply	ADV200-4: 3 x 380VAC -15% ... 500VAC +5%		
	ADV200-4/4A-DC: 450...750VDC;		
	ADV200-6/6A-DC: 840 ... 1120VDC (5750 ... 61320); 600 ... 1120VDC (≥ 71600).		
	ADV200-6: 3 x 690VAC ±10%; 50-60 HZ ± 2% (5750 ... 61320), 3 x 500...690VAC ±10%; 50-60 HZ ± 2% (71600 ... 1000kW),		
Power ratings	ADV200-4: from 0.75kW to 1.0MW	ADV200-DC: from 18.5kW to 1.65MW	ADV200-6: from 75kW to 1.65MW
Maximum output voltage	0,98 x Vin		
Maximum output frequency f2	500Hz (1007 ... 72000), 200Hz (72500 ... 1000kW)		
IGBT braking unit	Sizes 1007 ... 5550: Internal (with external resistor); braking torque 150 % MAX Sizes ≥ 5750: External optional (BUy series)		
Overload (for Synchronous motor)	**ADV200-4, ADV200-4-DC, ADV200-6-DC** Heavy Duty: 160 % x In (1' each 5'), 200 % x In (for 3''). Light Duty: 110 % x In (1' each 5').		
	ADV200-6 (5750 ... 6110) Heavy Duty: 150 % x In (1' each 5'), 200 % x In (for 3''). Light Duty: n.d.		
	ADV200-6 (72000 ... 1.65MW) Heavy Duty: 160 % x In (1' each 5'), 200 % x In (for 3''). Light Duty: 110 % x In (for 60'').		
Overload (for Asynchronous motor)	**ADV200-4, ADV200-4-DC, ADV200-6-DC** Heavy Duty: 150 % x In (1' each 5'), 180 % x In (for 0.5''). Light Duty: 110 % x In (1' each 5').		
	ADV200-6 (5750 ... 6110) Heavy Duty: 136 % x In (for 60''), 183 % x In (for 0.5''). Light Duty: n.d.		
	ADV200-6 (72000 ... 1.65MW) Heavy Duty: 150 % x In (for 60''), 180 % x In (for 0.5''). Light Duty: 110 % x In (for 60'').		
Control mode	Open-loop vector control Vector control with feedback Open loop V/f and V/f with feedback		
Optional cards	Integration of up to 3 options onboard the drive		
	"Safety STO" card compliant with SIL3 machine safety directive (for ADV200-...+SI models)		
Multi-language programming SW	GF-eXpress (5 languages)		
PLC	PLC with advanced IEC61131-3 programming environment		
Rated protection	IP20-rated protection (IP00 size 7 and parallel)		
Fieldbus management	DeviceNet, CANopen®, Modbus RTU, EtherCAT, GDNET, PROFIBUS, Ethernet IP, PROFINET		

		Control mode	Speed control precision (*)	Range di controllo
Precision	**Asynch.**	FOC with feedback	± 0.01% motor speed rating	1 : 1000
		Open-loop FOC	± 30% motor slip rating	1 : 100
		V/F	± 60% motor slip rating	1 : 30
	Synch.	FOC with feedback	± 0.01% motor speed rating	1 : 1500
		Open-loop FOC	± 0,1% motor speed rating	1 : 20

(*) for standard 4-pole motor

Standard supply configuration	**Programming keypad**	Integrated KB_ADV
	Regulation	• 2 bipolar analog inputs (Voltage/Current) • 2 bipolar analog outputs (1: Voltage/Current, 1: Voltage) • 6 digital inputs (PNP/NPN) • 2 digital outputs (PNP/NPN) • 2 relay outputs, single contact • RS485 serial line (Modbus RTU)
	Power	• Integrated choke DC side (up to 132 kW) • Integrated mains filter • Integrated dynamic braking module (up to 55kW)
	Reference resolution	• Digital = 15bit + sign • Analog input = 11-bit + sign • Analog output = 11-bit + sign
Conformity	**Immunity/Emissions**	CEE - EN 61800-3
	Safety standards	EN 50178, EN 61800-5-1, UL508C, UL840 degree of pollution 2 STO (Safe Torque Off): IEC 61508 SIL 3, EN 954-1 Cat. 3 EN 61508 and EN 61800-5-2
Environmental conditions	**Ambient temperature**	-10°C ... +40°C (+14°F ...+104°F), +40°C...+50°C (+104°F...+122°F) with derating
	Altitude	Max 2000 m.(up to 1000 m without derating)
Markings	CE	Complies with the EEC directive concerning low voltage equipment
	UL c UL us	ADV200-4 and ADV200-4/4A-DC: UL and cULus, Complies with directives for the American and Canadian markets.

ADV200

Modularity



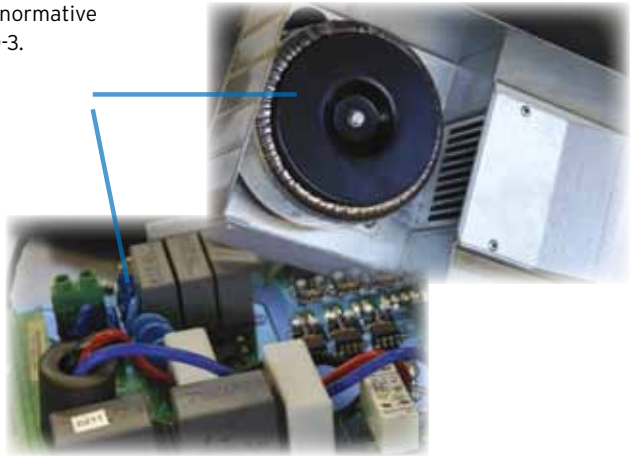
An innovative concept of integrated technology that offers full modularity. Mountable side by side and with accessories specifically dedicated to system solutions , **ADV200** has been engineered to make installation easy for any operator, both in existing systems and in specific machine solutions, always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

Integrated Quality

ADV200 **integrates** the fundamental devices for an absolute quality level, such as the **DC choke** that ensures maximum reliability in any conditions of working and the **input filter** that renders the drive in compliance with the EMC normative EN61800-3.

Fast Access

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





Programming Keypad

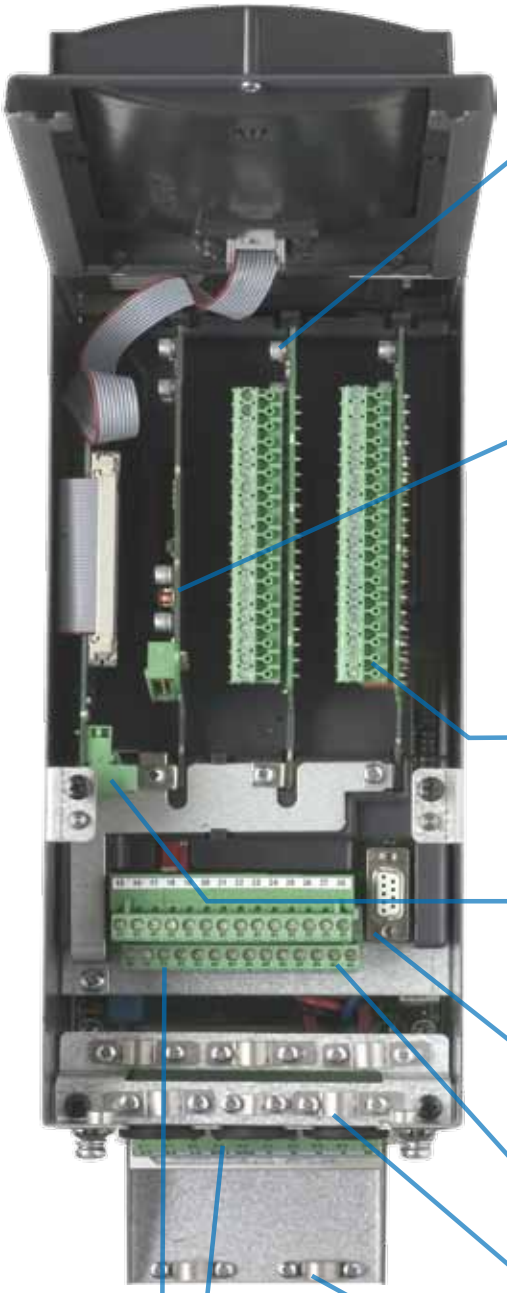
Structured with 2 setting modes Easy and Export, to satisfy each level of user's skill and programming needs both for complex or easy installation. A powerful platform but at the same time with a structure of menu/parameters that offers quick understanding, also facilitated by functionality of the keypad and the display.



Intuitive navigation and **easy start-up function** thanks to the "**Wizard**" tool.

ADV200 offers as standard **10 language** programming (English, Italian, French, German, Spanish, Polish, Romanian, Russian, Turkish and Portuguese).

- 4 lines display for 21 characters
- Clear alphanumeric text
- Full information of any parameters
- Fast Navigating Keys
- Key for displaying the last 10 parameters that have been changed
- DISP key for rapid display of operating parameters
- Upload - Download and storage of 5 complete sets of drive parameters
- Remotable up to 10 meters.



Options

ADV200 manages up to 3 option cards:

> Encoder interface



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

> Fieldbus interface





EXP-CAN-ADV	S527L	Expansion card for CANopen ® and DeviceNet interface
EXP-PDP-ADV	S530L	Expansion card for Profibus_DP interface
EXP-ETH-GD-ADV200	S5L29	Ethernet GD-net interface expansion card
EXP-ETH-CAT-ADV200	S5L09	EtherCAT interface expansion card
EXP-ETH-IP-ADV200	S5L19	Ethernet IP interface expansion card
EXP-ETH-PN-ADV	S5L60	Profinet interface expansion card

> I/O expansions



EXP-IO-D5R8-ADV	S5L38	5 digital inputs / 1 digital output / 8 relay output
EXP-IO-D6A4R1-ADV	S526L	4 digital inputs / 2 digital outputs / 2 analog inputs / 2 analog outputs / 2 double contact relays
EXP-FL-XCAN-ADV	S5L41	Master CAN controller and Fast Link interface
EXP-IO-SENS-100-ADV	S5L40	To acquire signals from PT100 (PT1000), (NI1000), 0-10V, 0/4...20mA, KTY84, PTC
EXP-IO-SENS-1000-ADV	S5L37	



Safety Card

Integrated on board the drive as the 4th option, the **EXP- SFTy** card allows the motor to be disabled without the use of a safety contactor on the drive output. It guarantees compliance with the machine safety directive and meets the following standards:

- PL=d under EN ISO 13849-1
- SIL 3 under IEC 61508
- EN 954-1 Cat. 3.

Serial Line

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

Back-Up Supply

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

Smart Connections

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

Cables shield

OMEGA clamp to grounding 360° of shielded cables.

ADV200-4 • CHOOSING THE INVERTER - INPUT AND OUTPUT DATA

The combinations of motor power ratings and inverters listed in the table envisage the use of motors in which the voltage rating is equal to that of the mains power.
For motors with different voltage ratings the inverter must be chosen according to the current rating of the motor.
The combinations listed in the table thus show the current that can be delivered by the drive during continuous operation and overload conditions, according to the mains voltage.

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

Input and Output Data ADV200-4								
Sizes ADV200-4	AC input current for continuous operation I_N		Inverter Output		Pn mot (Recommended asynchronous motor rating, fsw = default)			
					Heavy Duty (150% overload)		Light Duty (110%overload)	
	Heavy Duty (150% overload) @ 400 Vac [Arms]	Light Duty (110%overload) @ 400 Vac [Arms]	Heavy Duty [kVA]	Light Duty [kVA]	@400 Vac [kW]	@460 Vac [Hp]	@400 Vac [kW]	@460 Vac [Hp]
1007	2.1	3.7	1.7	3	0.75	1	1.5	2
1015	3.7	4.9	3	4	1.5	2	2.2	3
1022	4.9	6.5	4	5.3	2.2	3	3	5
1030	6.5	8.1	5.3	6.6	3	5	4	5
1040	8.1	11.1	6.6	9	4	5	5.5	7.5
2055	11.1	14	9	11.4	5.5	7.5	7.5	10
2075	14	19.6	11.4	15.9	7.5	10	11	15
2110	19.6	26.4	15.9	21.5	11	15	15	20
3150	26.4	32.3	21.5	26.3	15	20	18.5	25
3185	32.3	39	26.3	32	18.5	25	22	30
3220	39	53	32	43	22	30	30	40
4300	53	64	43	52	30	40	37	50
4370	64	74	52	60	37	50	45	60
4450	74	100	60	73	45	60	55	75
5550	100	143	73	104	55	75	75	100
5750	143	171	104	125	75	100	90	125
5900	171	200	125	145	90	125	110	150
61100	200	238	145	173	110	150	132	175
61320	238	285	173	208	132	175	160	200
71600	300	350	208	267	160	200	200	250
72000	350	420	267	319	200	250	250	300
72500	420	580	319	409	250	300	315	400
73150	580	640	409	450	315	400	355	450
73550	640	710	450	506	355	450	400	500
400 kW	665	800	506	603	400	500	500	650
500 kW	800	1100	603	776	500	650	630	850
630 kW	1100	1215	776	852	630	850	710	950
710 kW	1215	1350	852	956	710	950	800	1100
900 kW	1650	1800	1108	1247	900	1200	1000	1300
1000 kW	1800	2020	1247	1420	1000	1300	1200	1600

Rated output current In (fsw = default)								Switching frequency fsw	
Heavy Duty				Light Duty					
For Asynchronous motors (150% overload)		For Synchronous motors (160% overload)		For Asynchronous motors (110% overload)		For Synchronous motors (110% overload)			
@400 Vac [A]	@460 Vac [A]	@400 Vac [A]	@460 Vac [A]	@400 Vac [A]	@460 Vac [A]	@400 Vac [A]	@460 Vac [A]	Default	Higher
2.5	2.3	2.3	2.1	4.3	3.9	3.9	3.5	8	10, 12
4.3	3.9	3.9	3.5	5.8	5.2	5.2	4.7	8	10, 12
5.8	5.2	5.2	4.7	7.6	6.8	6.8	6.1	4	6, 8, 10, 12
7.6	6.8	6.8	6.1	9.5	8.6	8.6	7.7	4	6, 8, 10, 12
9.5	8.6	8.6	7.7	13	11.7	11.7	10.5	4	6, 8, 10, 12
13	11.7	11.7	10.5	16.5	14.9	15	13.5	4	6, 8, 10, 12
16.5	14.9	15	13.5	23	20.7	21	18.9	4	6, 8, 10, 12
23	20.7	21	18.9	31	27.9	28	25.2	4	6, 8, 10, 12
31	27.9	28	25.2	38	34.2	34	30.6	4	6, 8, 10, 12
38	34.2	34	30.6	46	41.4	41	36.9	4	6, 8, 10, 12
46	41.4	41	36.9	62	55.8	56	50.4	4	6, 8, 10, 12
62	55.8	56	50.4	75	67.5	68	61.2	4	6, 8, 10, 12
75	67.5	68	61.2	87	78.3	78	70.2	4	6, 8, 10, 12
87	78	78	70.2	105	94.5	95	85.5	4	6, 8
105	94.5	95	85.5	150	135	135	121.5	4	6, 8
150	135	135	122	180	162	162	146	4	6, 8
180	162	162	146	210	189	189	170	4	6, 8
210	189	189	170	250	225	225	203	4	6, 8
250	225	225	203	300	270	270	243	4	6, 8
300	270	270	243	385	347	347	312	4	-
385	347	347	312	460	414	414	373	4	-
460	414	414	373	590	531	521	469	2	4
590	531	521	469	650	585	585	527	2	-
650	585	585	527	730	657	657	591	2	-
730	657	657	591	870	783	783	705	4 (1)	-
870	783	783	705	1120	1008	1008	907	2	4 (1)
1120	1008	1008	907	1230	1107	1107	996	2	-
1230	1107	1107	996	1380	1242	1242	1118	2	-
1600	1440	1440	1296	1800	1620	1620	1458	2	-
1800	1620	1620	1458	2050	1845	1845	1661	2	-

(1) from fw 6.03.

ADV200-DC • CHOOSING THE INVERTER - INPUT AND OUTPUT DATA

The combinations of motor power ratings and inverters listed in the table envisage the use of motors in which the voltage rating is equal to that of the mains power.
For motors with different voltage ratings the inverter must be chosen according to the current rating of the motor.
The combinations listed in the table thus show the current that can be delivered by the drive during continuous operation and overload conditions, according to the mains voltage.

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

Input and Output Data ADV200-DC

Sizes ADV200-DC	DC input current for continuous operation I_N				Inverter Output		Pn mot (Recommended asynchronous motor rating, fsw = default)					
	Heavy Duty (150% overload)		Light Duty (110%overload)		Heavy Duty	Light Duty	Heavy Duty (150% overload)			Light Duty (110%overload)		
	-4/4A @ 540 Vdc [Arms]	-6/6A @ 930 Vdc [Arms]	-4/4A @ 540 Vdc [Arms]	-6/6A @ 930 Vdc [Arms]	@ 400V [kVA]	@ 400V [kVA]	(1) [kW]	(2) [Hp]	(3) [Hp]	(1) [kW]	(2) [Hp]	(3) [Hp]
3185	39	-	48	-	26.3	32	18.5	25		22	30	
3220	48	-	65	-	32	43	22	30		30	40	
4300	65	-	80	-	43	52	30	40		37	50	
4370	80	-	90	-	52	60	37	50		45	60	
4450	90	-	125	-	60	73	45	60		55	75	
5550	125	-	175	-	73	104	55	75		75	100	
5750	175	-	210	-	104	125	75	100		90	125	
5900	210	-	240	-	125	145	90	125		110	150	
61100	240	-	290	-	145	173	110	150		132	175	
61320	290	-	350	-	173	208	132	175		160	200	
71600	370	190	430	235	208	267	160	200	150	200	250	200
72000	430	235	510	300	267	319	200	250	200	250	300	250
72500	510	300	710	370	319	409	250	300	250	315	400	350
73150	710	370	780	420	409	450	315	400	350	355	450	400
73550	780	420	850	470	450	506	355	450	400	400	500	450
400 kW	860	514	1020	637	506	603	400	500	450	500	650	500
500 kW	1020	653	1420	797	603	776	500	650	550	630	850	700
630 kW	1420	814	1560	925	776	852	630	850	700	710	950	800
710 kW	1560	926	1700	1032	852	956	710	950	800	800	1100	900
900 kW	2130	1236	2610	1445	1108	1247	900	1200	1000	1000	1300	1100
1 MW	2340	1445	2550	1542	1247	1420	1000	1300	1100	1200	1600	1300
1.35 MW	-	1684	-	1855	-	-	1350	-	1500	-	-	1600
1.65 MW	-	2058	-	2254	-	-	1650	-	1800	-	-	2000

(1) ADV200-...-4/4A-DC = @400 Vac; ADV200-...-6/6A-DC = @690 Vac;
(2) ADV200-...-4/4A-DC = @460 Vac;
(3) ADV200-...-6/6A-DC = @575 Vac.

Rated output current In (fsw = default)											
Light Duty (110%overload) (For Asynchronous motors)			Heavy Duty (160% overload) (For Synchronous motors)			Light Duty (110%overload) (For Asynchronous motors)			Light Duty (110%overload) (For Synchronous motors)		
@540 Vdc [A]	@650 Vdc [A]	@930 Vdc [A]	@540 Vdc [A]	@650 Vdc [A]	@930 Vdc [A]	@540 Vdc [A]	@650 Vdc [A]	@930 Vdc [A]	@540 Vdc [A]	@650 Vdc [A]	@930 Vdc [A]
38	34.2	-	34	30.6	-	46	41.4	-	41	36.9	-
46	41.4	-	41	36.9	-	62	55.8	-	56	50.4	-
62	55.8	-	56	50.4	-	75	67.5	-	68	61.2	-
75	67.5	-	68	61.2	-	87	78.3	-	78	70.2	-
87	78	-	78	70.2	-	105	94.5	-	95	85.5	-
105	94.5	-	95	85.5	-	150	135	-	135	121.5	-
150	135	-	135	122	-	180	162	-	162	146	-
180	162	-	162	146	-	210	189	-	189	170	-
210	189	-	189	170	-	250	225	-	225	203	-
250	225	-	225	203	-	300	270	-	270	243	-
300	270	170	270	243	153	385	347	210	347	312	189
385	347	210	347	312	189	460	414	265	414	373	238
460	414	265	414	373	238	590	531	330	521	469	297
590	531	330	521	469	297	650	585	375	585	527	337
650	585	375 (3)	585	527	337	730	657	415 (3)	657	591	373
730	657	400	657	591	360	870	783	500	783	705	450
870	783	500	783	705	450	1120	1008	630	1008	907	567
1120	1008	630	1008	907	567	1230	1107	710	1107	996	639
1230	1107	710 (3)	1107	996	639	1380	1242	790 (3)	1242	1118	711
1600	1440	900	1440	1296	810	1800	1620	1000	1620	1458	900
1800	1620	1000 (3)	1620	1458	900	2050	1845	1150 (3)	1845	1661	1035
-	-	1300 (3)	-	-	1170 (3)	-	-	1450	-	-	1305
-	-	1600	-	-	1440	-	-	1770	-	-	1593

Sizes ADV200-DC-4/4A	Switching frequency fsw	
	Default	Higher
3185 ... 4370	4 kHz	6, 8, 10, 12 kHz
4450 ... 61320	4 kHz	6, 8 kHz
71600 ... 72000	4 kHz	-
72500 ... 73150	2 kHz	- (6)
400 kW	4 kHz (5)	-
500 kW	2 kHz	4 kHz (5)
630 kW ... 1 MW	2 kHz	-

Sizes ADV200-DC-6/6A	Switching frequency fsw	
	Maximum (default)	Minimum
71600	2 kHz / 4 kHz (4)	2 kHz
72000	2 kHz / 4 kHz (4)	2 kHz
72500 ... 73550	2 kHz	2 kHz
400 kW ... 1.65 MW	2 kHz	2 kHz

(3) Current values with an ambient temperature of 35°C.

(4) 4 kHz in "variable frequency" mode (PAR 658 Switch freq. mode =1).

(5) from fw 6.03

(6) 72500 = 4 kHz

ADV200-6 • CHOOSING THE INVERTER - INPUT AND OUTPUT DATA

The combinations of motor power ratings and inverters listed in the table envisage the use of motors in which the voltage rating is equal to that of the mains power.
For motors with different voltage ratings the inverter must be chosen according to the current rating of the motor.
The combinations listed in the table thus show the current that can be delivered by the drive during continuous operation and overload conditions, according to the mains voltage.

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

Input and Output Data ADV200-6												
Sizes ADV200-6	AC input current		Pn mot (Recommended asyncronous motor rating, fsw = default)				Rated output current In (for Asyncronous motor) (fsw = default)		Rated output current In (For Synchronous motors) (fsw = default)		Switching frequency "Fixed frequency" mode (PAR 658 Switch freq. mode =0, default)	
	Heavy Duty	Light Duty	Heavy Duty		Light Duty		Heavy Duty	Light Duty	Heavy Duty	Light Duty	Maximum (default)	Minimum
	@ 690 Vac [Arms]	@ 690 Vac [Arms]	@690 Vac [kW]	@575 Vac [kW]	@690 Vac [kW]	@575 Vac [kW]	[A]	[A]	[A]	[A]	(kHz)	(kHz)
5750	90	-	75	-	-	-	92	-	75	-	4	2
6900	109	-	90	-	-	-	110	-	90	-	4	2
61100	129	-	110	-	-	-	133	-	110	-	2	2
61320	157	-	132	-	-	-	159	-	130	-	2	2
71600	172	210	160	150	200	200	170	210	153	189	4	2
72000	214	263	200	200	250	250	210	265	189	238	2	2
72500	263	336	250	250	315	350	265	330	238	297	2	2
73150	336	382	315	350	355	400	330	375	297	337	2	2
73550	382	420	355	400	400	450	375 (1)	415	337 (1)	373	2	2
400 kW	420	520	400	450	500	500	400	500	360	450	2	2
500 kW	533	651	500	550	630	700	500	630	450	567	2	2
630 kW	665	755	630	700	710	800	630	710	567	639	2	2
710 kW	756	843	710	800	800	900	710 (1)	790	639 (1)	711	2	2
900 kW	1009	1180	900	1000	1000	1100	900	1000	810	900	2	2
1 MW	1180	1259	1000	1100	1150	1300	1000 (1)	1150	900 (1)	1035	2	2
1.35 MW	1375	1515	1350	1500	1500	1600	1300 (1)	1450	1170 (1)	1305	2	2
1.65 MW	1680	1840	1650	1800	1800	2000	1600	1770	1440	1593	2	2

(1) Current values with an ambient temperature of 35°C.

WEIGHTS AND DIMENSIONS

Sizes ADV200-4	Dimensions: Width x Height x Depth		Weight	
	mm	inches	kg	lbs
1007...1040	118 x 322 x 235	4.65 x 12.7 x 9.25	5.8	12.8
2055 ... 2110	150 x 392 x 250	5.91 x 15.43 x 9.84	10.2	22.5
3150...3185	180 x 517 x 250	7.09 x 20.35 x 9.84	16.4	36.2
3220			22	48.5
4300...4450	268 x 616 x 270	10.55 x 24.25 x 10.63	32	70.6
5550...5900	311 x 767 x 325	12.24 x 40.2 x 12.8	60	132.3
61100 ... 61320	422 x 878 x 360	16.61 x 34.6 x 14.2	90	198.4
71600...72000	417 x 1407 x 485	16.42 x 55.4 x 19.1	130	286.6
72500			140	308.7
73150 ... 73550			150	330.7
400kW	837 x 1407 x 485	33.0 x 55.4 x 19.1	260	573.2
500kW			280	617.4
630 - 710kW			450	992.1
900kW - 1MW	1257 x 1407 x 485	49.5 x 55.4 x 19.1	450	992.1

Sizes ADV200-DC	Dimensions: Width x Height x Depth		Weight			
	mm	inches	kg		lbs	
3185	180 x 517 x 250	7.09 x 20.35 x 9.84	12		26.5	
3220			18		39.7	
4300...4450	268 x 616 x 270	10.55 x 24.25 x 10.63	24		52.9	
5550 ... 5900	311 x 730.4 x 325	12.24 x 30.55 x 12.8	40		88.2	
61100	421 x 924.5 x 360	16.57 x 36.4 x 14.17	68		149.9	
61320	421 x 924.5 x 360	16.57 x 36.4 x 14.17	68		149.9	
			(ADV200-...-4-DC)		(ADV200-...-6-DC)	
	mm	inches	kg	lbs	kg	lbs
71600...72000	417 x 1407 x 485	16.42 x 55.4 x 19.1	120	267	135	288
72500			130	287	145	320
73150 ... 73550			140	307	155	342
400kW	837 x 1407 x 485	33.0 x 55.4 x 19.1	240	529	270	595
500kW			260	573	290	639
630 - 710kW			420	926	310	683
900kW - 1MW	1257 x 1407 x 485	49,5 x 55,4 x 19,1	420	926	465	1025
1.35 MW	1677 x 1407 x 485	66.02 x 55.4 x 19.1	-	-	600	1322,7
1.65 MW	2097 x 1407 x 485	82.56 x 55.4 x 19.1	-	-	750	1653,5

Sizes ADV200-6	Dimensions: Width x Height x Depth		Weight	
	mm	inches	kg	lbs
5750	520 x 942 x 318	20.5 x 37.1 x 12.5		
6900 - 61100 - 61320	520 x 1134 x 319	20.5 x 44.6 x 12.6		
71600...72000	417 x 1407 x 485	16.42 x 55.4 x 19.1	135	298
72500			145	320
73150 ... 73550			155	342
400kW	837 x 1407 x 485	33.0 x 55.4 x 19.1	270	595
500kW			290	639
630 - 710kW			310	683
900kW - 1MW	1257 x 1407 x 485	49,5 x 55,4 x 19,1	465	1025
1.35 MW	1677 x 1407 x 485	66.02 x 55.4 x 19.1	600	1322,7
1.65 MW	2097 x 1407 x 485	82.56 x 55.4 x 19.1	750	1653,5

ADV100



The GEFRAN range of **ADV100** inverters is specifically designed to give the utmost **flexibility of application** to modern automation systems and ensure ease of use, while guaranteeing advanced control capabilities for all asynchronous motors.
It features an intuitive programming environment to enable immediate motor start-up and system functions to implement control architectures for the most advanced application solutions, all with maximum **energy efficiency**.
The ADV100 is based on a **fully modular** structure with a choice of standard configurations, optional cards and integrated accessories such as EMC filters and mains chokes. All these elements offer real advantages in terms of product optimisation and **savings in panel space and wiring costs**, bringing considerable economic benefits.

POWER RANGE

Models	Power (kW)												
	4.0	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90
ADV100	Size 1		Size 2		Size 3			Size 4			Size 5		

WEIGHTS AND DIMENSIONS

Sizes ADV100	Dimensions: Width x Height x Depth		Weight	
	mm	inches	kg	lbs
1040 - 1055	159.2 x 331.1 x 158.7	6.27 x 13.04 x 6.25	5.8	12.8
2075 - 2110	159.2 x 382.1 x 158.7	6.27 x 15.04 x 6.25	7.8	17.2
3150 ... 3220	227.8 x 387 x 178	8.97 x 15.24 x 7.01	10.5	23.15
4300 ... 4450	268 x 612 x 276	10.55 x 24.09 x 10.87	32	70.6
5550...5900	311 x 748 x 330.5	12.24 x 29.4 x 123.01	60	132.3

ADV100 • GENERAL CHARACTERISTICS

Power supply	3 x 230VAC -15% ... 500VAC +5%, 50/60Hz ±2%
Power ratings	from 4kW to 90kW
Voltage	Maximum output 0.98 x Vin
Control Mode	Open-loop vector control Vector control with feedback Open loop V/f and V/f with feedback
Overload	150% In for 60 seconds every 5 minutes
	180% In for 0.5 seconds every 5 minutes
Optional cards	Integration of up to 2 options onboard the drive
Multi-language programming SW	GF-eXpress (5 languages)
Rated protection	Standard IP20
Reference resolution	• Digital = 15bit + sign • Analog input = 11-bit + sign • Analog output = 11-bit + sign
Fieldbus management	CANopen / DeviceNet communication (integrated in ADV120-...-C models)

	Control mode	**Speed control precision (*)**	**Range di controllo**
Precision	FOC with feedback	± 0,01% motor speed rating	1 : 1000
	Open-loop FOC	± 30% motor slip rating	1 : 100
	V/F	± 60% motor slip rating	1 : 30

(*) for standard 4-pole motor

Standard supply configuration	**Regulation**	• 2 bipolar analog inputs (Voltage/Current) • 2 bipolar analog outputs (1: Voltage/Current, 1: Voltage) • 6 digital inputs (PNP/NPN) • 2 digital outputs (PNP/NPN) • 2 relay outputs, single contact • RS232 serial line (Modbus RTU)
	Power	• Integrated choke DC side (≥ size 4300) • Integrated mains filter (≥ size 4300) • Integrated dynamic braking module (up to size 5550)
Options		Multilingual programming keypad with LCD screen (5 lines x 20 characters) and memory for 5 parameter sets
		Input choke
		Output chokes
		Braking resistors
		Incremental digital encoder feedback card (EXP-DE-I1R1F2-ADL)
		I/O expansion cards
		CANopen / DeviceNet communication (integrated in ADV120-...-C models)
		External EMC filter: • 4...45 kW: C2 Category / 1st Environment / Motor cable length 30m; • 55kW: C3 Category / 2nd Environment / Motor cable length 100m).
Conformity	**Immunity/Emissions**	CEE - EN 61800-3
	Safety standards	EN 50178, EN 61800-5-1, UL508C, UL840 degree of pollution 2.
Condizioni Ambientali	**Ambient temperature**	-10 ...40°C, +40°C...+50°C with derating
	Altitude	Max 2000 m.(up to 1000 m without derating)
Markings	CE	Complies with the EEC directive concerning low voltage equipment
	UL c UL us	Complies with directives for the American and Canadian markets.

ADV100



I/O configuration

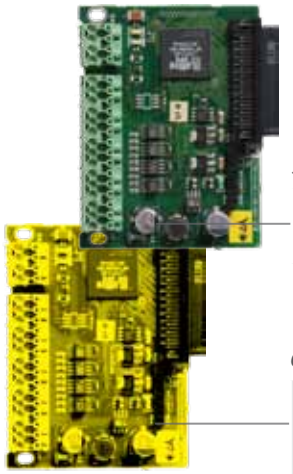
The ADV100 inverter features a new I/O card, as standard, specially developed for standard application **configuration and to limit costs**; a higher card can be supplied on request for advanced applications:

Standard on ADV110 and ADV120:

Card	Code	Description
EXP-IO-D6A4R2-F-ADL	S580L	• 1 enable input (Enable) • 6 digital inputs (DI) • 2 differential analog inputs (AI), 1 voltage (± 10V, 11 bit + sign) and 1 voltage/current (± 10V, 11 bit + sign; 0 ... 20 mA, 11 bit). • 2 analog outputs (AO); ± 10V, 11 bit + sign • 2 relay outputs (RO), single contact

Optional cards on request:

EXP-IO-D4-ADL	S567L	1DI (Enable) + 2 (Prog.DI) + 2 (RO)
EXP-IO-D5R3-F-ADL	S5L08	1DI (Enable) + 5 (Prog.DI) + 3 (RO)
EXP-IO-D8R4-ADL	S568L	1DI (Enable) + 8 (Prog. DI) + 4 (RO)
EXP-IO-D8A4R4-ADL	S570L	1DI (Enable) + 8 (Prog. DI) + 2 (AI) + 2 (AO) + 4 (RO)
EXP-IO-D12A2R4-ADL	S569L	1DI (Enable) + 8 (Prog. DI) + 4 (DO) + 2 (AI) + 4 (RO)
EXP-IO-D16R4-ADL	S566L	1DI (Enable) + 12 (Prog. DI) + 4 (DO) + 4 (RO)



Encoder

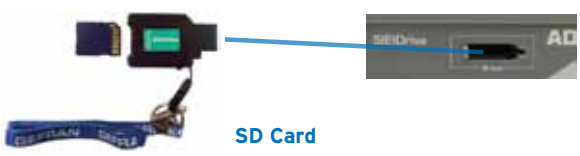
The ADV100 interfaces with **incremental digital encoders** (DE) for field-oriented vector control (FOC) of asynchronous motors:

Standard on ADV120:

EXP-DE-I1-ADL	S5L36	• channels A+ A-, B+ B-, differential line drivers, optoisolated • management of loss of encoder signals • TTL and HTL electrical interface

Optional card upon request:

EXP-DE-I1R1F2-ADL	S5L04	• channels A+ A-, B+ B-, Z+ Z-, differential line drivers, optoisolated • management of loss of encoder signals • encoder signal repetition • TTL and HTL electrical interface



Special adapter required SD-ADL, cod. S574L.

SD Card

The SD memory card (standard on ADV120-...-C models) makes **saving and loading data and configurations** with the ADV100 very simple.



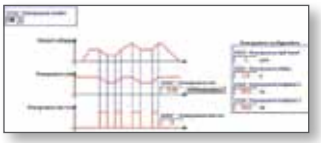
Two self-tuning modes

Self-tuning of motor parameters:

- "Reduced" for faster start-up
- "Complete" to obtain maximum efficiency.

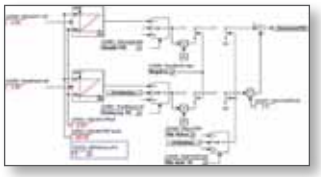
> Energy Saving

The ADV100 has a dedicated function that **decreases** the voltage applied at the motor terminals, and thus **current absorption**, in reduced load conditions.



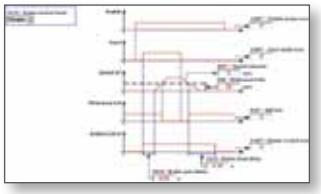
> PID control

The ADV100 **integrates** a complete, easy-to-program, smart **PID controller**, with value settings in engineering units, leakage function and programmable stand-by.



> Brake Control

The SIEIDrive ADV100 can control an **electromechanical parking brake** mounted on the motor.



Power ratings, EMI filter and choke



Size 1 = from 4 to 5,5 kW (*)
Size 2 = from 7,5 to 11 kW (*)
Size 3 = from 15 to 22 kW (*)
Size 4 = from 30 to 45 kW (**)
Size 5 = from 55 to 90 kW (***)

(*) Without EMI filter and input choke
(**) EMI filter (EN 61800-3 : C3 Category / 2nd Environment / 20m Motor cable length) and choke integrated
(***) EMI filter (EN 61800-3 : C3 Category / 2nd Environment / 30m Motor cable length) and choke integrated

Programming keypad

The optional **K-ADV100** programming keypad (cod. S5P3T) featuring full display of parameters and variables in 5 languages makes the ADV100 extremely intuitive and easy to use.
It has a strip of magnetic material on the back so that it can be attached to the front of the drive or other metal surface (e.g. door of the electrical panel).

- 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 15 metres (a 70 cm-long connection cable is supplied as standard).

Serial communication

The ADV100 integrates the RS232 serial line with Modbus RTU protocol as standard for peer-to-peer programming with PC.

Wide range of power supplies

A single product for all power supply types, from 230Vac to 500Vac.



ADV100 • CHOOSING THE INVERTER - INPUT AND OUTPUT DATA

The combinations of motor power ratings and inverters listed in the table envisage the use of motors in which the voltage rating is equal to that of the mains power.
For motors with different voltage ratings the inverter must be chosen according to the current rating of the motor.
The combinations listed in the table thus show the current that can be delivered by the drive during continuous operation and overload conditions, according to the mains voltage.

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

Input Data ADV100					
Sizes ADV100	AC input current for continuous operation In		Overload		In
	@ 230-400 Vac [Arms]	@ 480 Vac [Arms]	150 % x In (1' each 5') [A]	180 % x In (0,5" each 5') [A]	[A]
1040	11	10	14.3	17.1	9.5
1055	16	14	19.5	23.4	13
2075	20	18	24.8	29.7	16.5
2110	28	26	34.5	41.4	23
3150	40	38	46.5	55.8	31
3185	47	44	57	68.4	38
3220	53	49	69	82.8	46
4300	53	50	93	111.6	62
4370	64	60	112.5	135	75
4450	74	71	130.5	156.6	87
5550	100	92	157.5	189	105
5750	143	135	225	270	150
5900	171	165	270	324	180

Output Data ADV100								
Sizes ADV100	Inverter Output for continuous operation	Pn mot (Recommended rating, fsw = default)		I2n (Rated output current)		Switching frequency fsw	
	[kVA]	@400 Vac [kW]	@460 Vac [Hp]	@400 Vac [A]	@460 Vac [A]	Default [KHz]	Higher [KHz]
1040	7.6	4	5	9.5	8.6	4	6, 8, 10, 12
1055	11.1	5.5	7.5	13	11.7	4	6, 8, 10, 12
2075	13.9	7.5	10	16.5	14.9	4	6, 8, 10, 12
2110	19.4	11	15	23	20.7	4	6, 8, 10, 12
3150	27.7	15	20	31	27.9	4	6, 8, 10, 12
3185	32.6	18.5	25	38	34.2	4	6, 8, 10, 12
3220	36.7	22	30	46	41.4	4	6, 8, 10, 12
4300	36.7	30	40	62	55.8	4	6, 8, 10, 12
4370	44.3	37	50	75	67.5	4	6, 8, 10, 12
4450	51.3	45	60	87	78	4	6, 8
5550	69.3	55	75	105	94.5	4	6, 8
5750	99.1	75	100	150	135	4	6, 8
5900	118.5	90	125	180	162	4	6, 8

AFE200



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

The AFE200 offers a number of advantages:

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

The AFE200 range has power ratings of **22kW to 1,65MW** for three-phase power supplies of 4**00Vac to 690Vac**. Ease of use and intuitive programming make it possible for users of any level to exploit the high-level performance of Active Front End technology for a broad range of applications where there is a need for real energy saving.

POWER RANGE

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

Power ratings > 1.2 MW on request.

(*) AFE200 of over 400 kW comprise one master MASTER unit and one or more SLAVE units..

WEIGHTS AND DIMENSIONS

Sizes AFE200	Dimensions: Width x Height x Depth		Weight	
	mm	inches	kg	lbs
3220	180 x 517 x 250.1	7.09 x 20.35 x 9.85	18	39.7
4450	268 x 616 x 270	10.55 x 24.25 x 10.63	24	52.9
5900	311 x 730.4 x 325	12.24 x 30.55 x 12.8	40	88.2
61320	421 x 924.5 x 360	16.57 x 36.4 x 14.17	68	149.9
71600...72000	417 x 1407 x 485	16.42 x 55.4 x 19.1	130	286.6
72500			140	308.7
73150 ... 73550			150	330.7

DESCRIPTION

AFE200

Flexible Modular Technology

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

The AFE200 is available in 5 hardware sizes

- from 22kW to 355kW in the stand-alone configuration
- from 400kW to 1.65MW in "parallel" configurations.



Management of optional cards

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

- Fieldbus interface card
- I/O expansion card.

Back-up power supply

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

Pre-load system

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

Dedicated accessories

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

- Dedicated Pre-load kit (mandatory)
- Mains filter EMI type
- Mains filter LCL type (mandatory)

Total ease of use

The AFE200 is designed to enable simple, quick, economical connections to the system to be powered. All structures are extremely easy to handle and the terminal strips and optional card racks are readily accessible.

Serial line

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

Tastiera di Programmazione

The KB_ADV programming keypad (supplied as standard) makes the man-machine interface simple, immediate and highly functional.
The programming software is available in 2 modes, Easy and Expert, suitable for users of any level and all programming requirements, however complex.



The powerful platform also features a menu/parameter structure that is easy to interpret and is facilitated by the keypad functions and display.
The "**Wizard**" tool ensures totally user-friendly **immediate start-up functions**. Standard features of the AFE200 include programming in **10 languages** (English, Italian, French, German, Spanish, Polish, Romanian, Russian, Turkish and Portuguese).

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

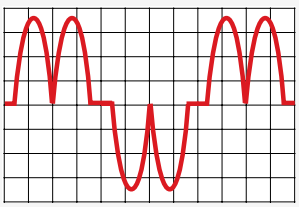
AFE200 • GENERAL CHARACTERISTICS

Power supply	AFE200-...-4/4A: 380VAC -15% ...500VAC +5%, 50/60Hz AFE200-... -6/6A: 500VAC -10% ...690VAC +10%, 50/60Hz
DC-link rated voltage	AFE200-...-4/4A: 650...780 VDC AFE200-... -6/6A: 820...1120 VDC
Power ratings	from 22kW to 1.65MW
Cosphi	≥ 0,99
THD	≤ 3% (Considering a network with voltage THD of less than 2%).
Overload	• Heavy duty: 150% for 60 sec every 300 sec., 180% 0.5 sec. • Light duty: 110% for 60 sec every 300 sec.
Optional cards	Integration of up to 2 options onboard the drive
Multi-language programming SW	GF-eXpress (5 languages)
Rated protection	IP20-rated protection (IP00 size 7 and parallel)
Reference resolution	Digital = 15bit + sign Analog input = 11-bit + sign Analog output = 11-bit + sign
Fieldbus management	DeviceNet, CANopen, Modbus RTU, EtherCAT, GDNET, PROFIBUS, Ethernet IP, PROFINET.

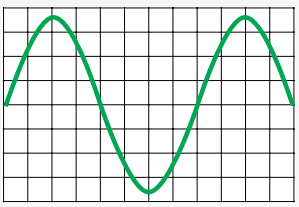
Standard supply configuration	**Programming keypad**	Integrated KB_ADV
	Regulation:	• 2 bipolar analog inputs (Voltage/Current) • 2 bipolar analog outputs (1: Voltage/Current, 1: Voltage) • 6 digital inputs (PNP/NPN) • 2 digital outputs (PNP/NPN) • 2 relay outputs, single contact • RS485 serial line (Modbus RTU)
Options		LCL type line input filter, is composed by one Input choke and one LC filter (mandatory)
		Pre-load kit, includes fusibles, resistors and pre-load contactor (mandatory)
		External EMI mains filter
Conformity	**Climatic conditions**	EN 60721-3-3
	Electrical safety	EN 50178, EN 61800-5-1, UL508C, UL840 pollution level 2
	Vibrations	EN 60068-2-6, test Fc.
	EMC	EN61800-3
Environmental conditions	**Ambient temperature**	-10°C ...+40°C, +40°C...+50°C with derating
	Altitude	Max 2000 m.
Markings	CE	Complies with the EEC directive concerning low voltage equipment
	c UL us	Complies with directives for the American and Canadian market (except types AFE200-...-6/6A).

Input current THD

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



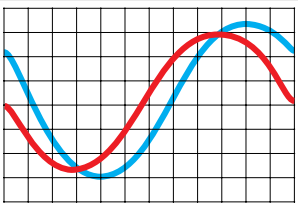
From AC inverter



From AFE200 power supply unit

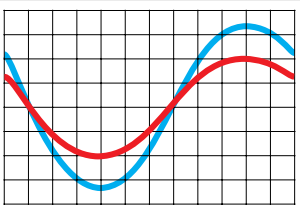
Mains input power factor

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



From AC inverter

Mains voltage
Mains current



From AFE200 power supply unit

AFE200 • CHOOSING THE POWER SUPPLY UNIT - INPUT AND OUTPUT DATA

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

Input Data AFE200-4					Input Data AFE200-6				
Sizes AFE200-4	AC Input current for continuous operation In AFE200-4		Switching frequency fsw AFE200-4		Sizes AFE200-6	AC Input current for continuous operation In AFE200-6		Switching frequency fsw AFE200-6	
	Heavy Duty (150% overload) @400 Vac [A]	Light Duty (110%overload) @400 Vac [A]	Default	Higher		Heavy Duty (150% overload) @690 Vac [A]	Light Duty (110% overload) @690 Vac [A]	Default	Higher
3220	40	60	8	-	-	-	-	-	-
4450	80	100	8	-	-	-	-	-	-
5900	160	200	4	6.8	-	-	-	-	-
61320	230	280	4	6.8	-	-	-	-	-
71600	280	340	4	-	71600	150	190	4	-
72000	340	400	2	4	72000	190	240	2	-
72500	400	500	2	4	72500	240	300	2	-
73150	500	560	2	-	73150	300	340	2	-
73550	560	600	2	-	73550	340 (1)	380	2	-
400 kW	600	760	2	-	400 kW	360	455	2	-
500 kW	760	950	2	-	500 kW	455	570	2	-
630 kW	950	1060	2	-	630 kW	570	645	2	-
710 kW	1060	1050	2	-	710 kW	645 (1)	720	2	-
900 kW	1400	1500	2	-	900 kW	850	920	2	-
1 MW	1500	1730	2	-	1 MW	920 (1)	1150	2	-
					1.35 MW	1200 (1)	1350	2	-
					1.65 MW	1470 (1)	1645	2	-

Output Data AFE200-4									Output Data AFE200-6			
Sizes AFE200	Output AFE-...-4/4A				Output current rating In (DC) (fsw = default)				Output AFE-...-6/6A		Output current rating In (DC) (fsw = default)	
	Heavy Duty		Light Duty		Heavy Duty		Light Duty		HD	LD	HD	LD
	@ 400 Vac [kW]	@ 460 Vac [kW]	@ 400 Vac [kW]	@ 460 Vac [kW]	650 Vdc [A]	750 Vdc [A]	650 Vdc [A]	750 Vdc [A]	@ 690 Vac [kW]	@ 690 Vac [kW]	[A]	[A]
3220	28	29	42	43	43	39	64	57	-	-	-	-
4450	55	57	69	72	85	76	107	96	-	-	-	-
5900	110	115	139	143	171	153	213	191	-	-	-	-
61320	159	165	194	201	245	220	298	268	-	-	-	-
71600	194	201	236	244	298	268	363	325	179	227	165	210
72000	236	244	277	287	363	325	426	383	227	287	210	265
72500	277	287	346	358	426	383	532	477	287	358	265	330
73150	346	358	388	402	532	477	597	536	358	406	330	375
73550	388	402	416	430	597	536	640	573	406	454	375	420
400 kW	416	430	527	545	640	551	811	699	430	544	396	500
500 kW	527	545	658	681	811	699	1012	873	544	681	500	627
630 kW	658	681	734	760	1012	873	1129	974	681	771	627	711
710 kW	734	760	797	825	1129	974	1226	1058	771	860	711	792
900 kW	970	1004	1039	1075	1492	1287	1598	1378	1015	1100	935	1012
1 MW	1039	1075	1200	1242	1598	1378	1846	1592	1100	1255	1012	1155
1.35 MW	-	-	-	-	-	-	-	-	1434	1613	1320	1485
1.65 MW	-	-	-	-	-	-	-	-	1757	1966	1615	1810

(1) Current values with an ambient temperature of 35°C.

SOFTWARE

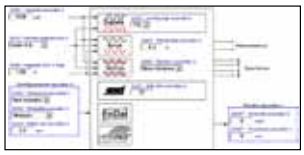
GF-EXPRESS PROGRAMMING SOFTWARE

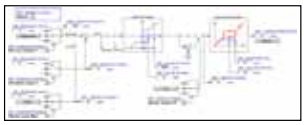
Applications
- Parameter configuration of Gefran devices (Instruments, Drives, Sensors)
- Tuning of control parameters with on-line tests and trends
- Management of parameter archive for multiple configuration

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



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.





"MDPLC" ADVANCED DEVELOPMENT ENVIRONMENT

The Motion Drive Programmable logic controller (MDPIc) 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.
MDPIc allows complete personalisation of the drives according to the application requirements using a "friendly" and powerful graphic interface.
The importance of the MDPIc's performance is particularly evident when defining advanced applications.
The primary feature of MDPIc is its ability to create an application code for the drives in assembly language, by compiling the application written in the MDPIc environment with PLC languages in compliance with the IEC 61131-3 international standard.
When using an MDPIc application with the ADV200, the drive's basic functions continue to be executed. Two MDPIc 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)



CD-ROM MDPIc
cod. 1S3A56

STANDARD APPLICATIONS

On request the cd-rom with following applications:

- **Torque Winder (TW)**

Standard Winding/Un-Winding control, torque control in open-loop or closed-loop with load cell..

- **Positioning control (POS)**

Single axis Standard Positioning with Absolute encoder management.

- **Electric shaft (ELS)**

Standard Electronic Line Shaft control.

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

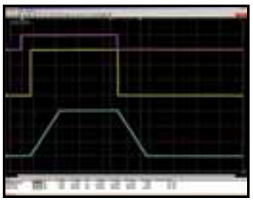


CD-ROM Standard Applications
cod. 1S3E15

SOFTSCOPE

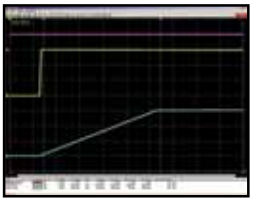
SoftScope is a software oscilloscope with synchronous sampling (buffered with a minimum sampling time of 1ms). Using SoftScope the user can easily display in a fast way some specific variables, for example commissioning variables, variables to test performance levels achieved or to tune the control loops.

SoftScope allows the definition of the following parameters:
- Trigger conditions (e.g. climbing leading edge of a specific signal)
- Recording quality (a multiple of the basic clock at 1ms)
- Recording duration period
- System sizes to be recorded.



Speed cycle
Start, ramp reference 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

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