ENG

MOTION CONTROL

VDI100

GENERAL PURPOSE FULL VECTOR INVERTER

GEFRAN

COD. 82261A - 09/2015

DESCRIPTION

The GEFRAN range of VDI100 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 both asynchronous and permanent magnet SPM and IPM motors.

VDI100 inverter features an intuitive and user friendly interface 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 VDI100 series offer a perfect automation system integration with "universal" standard configuration, optional cards and accessories. All these elements offer real advantages in terms of product and system optimization and cost saving.

> Wide motor control capability
> Advanced auto-tuning
> High level sensor vector mode
> Fast computing ability
> Conformity to global standards.

POWER RANGE

	Power																		
kW (Hp)	0.75 (1.0)	1.5 (2.0)	2.2 (3.0)	3.7 (5.0)	5.5 (7.5)	7.5 (10)	11 (15)	15 (20)	18.5 (25)	22 (30)	30 (40)	37 (50)	45 (60)	55 (75)	75 (100)	90 (125)	110 (150)	130 (175)	160 (215)
230 Vac, 3ph	Size 1		Size 2			Size 3		Size 4		Size 5									
400 Vac, 3ph	Size 1			Size 2		Size 3			Size 4		Size 5				Size 6		Size 7		
400 Vac -F, 3ph	Size 1			Size 2		Size 3			Size 4		Size 5								

DRIVE TYPE DESIGNATION

VDI100-XXXX-KXX-X-Y

EMI Filter:	F = included; [Empty] = not included
Rated voltage:	2T = 230 Vac (200...240 Vac), 3ph; 4 = 400 Vac (380...480 Vac), 3ph
Software:	X = standard
Braking unit:	B = included; X = not included
Keypad:	K = Integrated (LED keypad with 5-digits 7-segment display)
Drive power, in kW	
Mechanical drive sizes	
VDI100 drive series	

WEIGHTS AND DIMENSIONS

Mechanical size - Protection degree	Dimensions: Width x Height x Depth		Weight	
	mm	inches	kg	lbs
1 - IP20/NEMA 1	130 x 215 (306*) x 150	5.12 x 8.46 (12.04*) x 5.9	2.2 (3.5*)	4.8 (7.7*)
2 - IP20/NEMA 1	140 x 279 (400*) x 177	5.51 x 10.98 (15.75*) x 6.97	3.8 (3.5*)	8.4 (7.7*)
3 - IP20/NEMA 1	210 x 300 (416.5*) x 215	8.26 x 11.81 (16.4*) x 8.46	6.2 (8*)	13.7 (17.6*)
4 - IP20/NEMA 1	265 x 360 (500*) x 225	10.43 x 14.17 (19.68*) x 8.56	10 (12.5*)	22 (27.5*)
5 - IP20/NEMA 1	286.5 x 525 (679*) x 252	10.57 x 9.92 (26.73*) x 29.92	30 (32.5*)	66.1 (71.6*)
55kW only	286.5 x 525 x 252	10.57 x 9.92 x 29.92	35	77.1
6 - IP00 [NEMA 1]	344 [348.5] x 580 [740] x 300 [300]	13.54 [13.72] x 22.83 [29.13] x 11.81 [11.81]	46.7 [49.7]	102.9 [109.5]
7 - IP00 [NEMA 1]	459 [463.5] x 790 [1105] x 324.5 [324.5]	18.07 [18.24] x 31.1 [43.5] x 12.77 [12.77]	88 [94.4]	194 [208.1]

* with filter

GENERAL CHARACTERISTICS

Control Characteristics	Motor type	Asynchronous and Synchronous Motor (Surface Permanent Magnet Motor, Interior Permanent Magnet Motor)
	Control Modes	V/f, V/f+Encoder, SLV (vector control open loop), SV (vector control closed loop), PMSLV (vector control open loop for Permanent Magnet Motor, PMSV (vector control closed loop for Permanent Magnet Motor)
	Speed control accuracy	±1% (SLV, overload 200% and control range 1 : 30 (60....2Hz ; 50...1.6Hz)), ±1% (SLV, overload 150% and control range 1 : 50 (60....1.2Hz ; 50...1Hz)), ±1.5% (V/f open-loop, overload 150% and control range 1 : 40 / 60....1.5Hz ; 50...1.25Hz), ±0.1% (SV)
	Output Frequency	0.1Hz~599Hz
	Output Frequency Resolution	0.01Hz
	Overload Tolerance	• **Heavy Duty Mode** (HD.): 150% rated current for 60sec, 200% rated current for 2 sec. (Factory default) • **Normal Duty Mode** (ND.): 120% rated current for 60sec
	Frequency Setting Signal	0 to +10V, -10V to +10V, 4 to 20mA or pulse train input
	Acceleration / Deceleration Time	0.0 ~ 6000.0 sec (separate acceleration and deceleration time set)
	Voltage / Frequency Characteristics	15 fixed + one customized V/f pattern
	Braking Unit	Built-in braking transistor on 3ph 400V Class 0.75-30kW HD and on 3ph 200V Class 0.75-18.5kW HD
	Display	LED keypad with 5-digits 7-segment display (LCD keypad option)
	Main Control Functions	Auto-tuning, Zero Servo, Torque Control, Position Control, Droop, Soft-PWM, Over-Voltage Protection, Dynamic Braking, Speed Search, Frequency Traversing, Momentary Power Loss Restart, PID Control, Automatic Torque Compensation, Slip Compensation, RS-485 Communication, Close Loop Control with encoder, Simple PLC Function, 2 Analog Output, Torque-Off function, Application Presets
	Other Functions	Records of Power ON and Operation Time, 4 Fault History Records and Latest Fault State Record, Energy-Saving Function, Phase Loss Protection, DC Braking, Mechanical Brake Control, Dwell, S Curve Acceleration and Deceleration, Pulse input / output, Display of Engineering Unit, NPN / PNP Selection
Protection Functions	Stall Prevention	During Acceleration, Deceleration and continuous run
	Over Current (OC) and Output Short-Circuit (SC) Protection	When the current exceeds 200% of the inverter rated current
	Inverter Overload Protection (OL2)	Inverter stops when the output is higher than below conditions. • **Heavy Duty Mode** (HD.): 150% rated current for 60sec, 200% rated current for 2 sec. (Factory default), Carrier frequency is from 2kHz to 8kHz • **Normal Duty Mode** (ND.): 120% rated current for 60sec, Carrier frequency is 2kHz
	Motor Overload Protection (OL1)	Electrical overload protection curve
	Over Voltage Protection (OV)	OV threshold = 410Vdc (230V class), 820Vdc (400V class)
	Under Voltage (UV)	UV threshold = 190Vdc (230V class), 380Vdc (400V class)
	Momentary Power Loss Restart	When Power loss exceeds 15ms. This function can be set up to 2 sec
	Overheat Protection (OH)	Thermistor sensor on heatsink
	Ground Fault Protection (GF)	Protection by current detection circuit
	Charge Indicator	When main circuit DC voltage ≥ 50V, the CHARGE LED is on
	Output Phase Loss Protection (OPL)	If the OPL function acts, the motor stops rotation automatically
Environment Specification	Protection degree	Sizes 1 to 5: IP20 / NEMA 1, with standard removable anti dust cover Sizes 6-7: IP00; available optional NEMA 1 kit (cover and conduit box)
	Operating Temperature	-10~+50°C (Sizes 1 to 5 without anti dust cover; sizes 6 -7) -10~+40°C (Sizes 1 to 5 with anti dust cover; sizes 6 -7 with NEMA 1 kit) Up to +60°C with derating.
	Storage Temperature	-20 ~ +70°C
	Humidity	95% RH or less (no condensation)
	Altitude	Altitude of 1000 meters or lower
	Vibration	1.0G, in compliance with IEC 60068-2-6
Communication Function		Built-in: RS-485 with Modbus RTU / ASCII (standard RJ45 connection) Optional: Profibus/CANopen/DeviceNet/TCP-IP
DC choke		Built-in on 3ph 400V Class 75-160kW HD
EMI filter		Add-on module on –F version 3ph 400V Class 0.75-45kW HD In compliance with EN61800-3 standard
Certification	CE RoHS	In compliance with EN61800-3 (CE & RE) and EN61800-5-1(LVD) Conformity to RoHS directive
	c UL us	UL508c
Encoder expansion card (optional)		Asynchronous Motor: Digital incremental Line driver and Open collector, Resolver PM motor: Digital incremental Line driver, Resolver, SinCos

GENERAL CHARACTERISTICS

SMART FUNCTIONS INTEGRATED

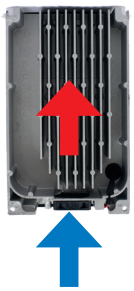
VDI100 integrates intelligent functions to simplify system integration, reduce costs and improve comfort in industrial environment.

> Intelligent over voltage suppression
> Advanced motor auto-tune
> Ultra low motor noise with Soft-PWM
> Application presets.

I/O CONFIGURATION

The VDI100 inverter features a standard I/O card specially developed to give maximum flexibility for the user.

> Digital input: 8, NPN/PNP
> Digital output: 2 (size 1) / 1 (all other sizes)
> Analog input: 2, AI1: -10~10V / 0~10V, AI2: 0~10V / 4~20mA
> Analog output: 2, AO1:0~10V, AO2:0~10v/4~20mA
> Relay output: 1 (size 1) / 2 (all other sizes)
> Others: PTC input (AI2), Pulse input (32kHz), Pulse output (32kHz).



ROBUST DESIGN

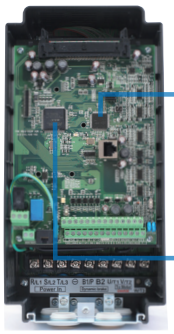
Coated PCB offers protection for harsh environments.

All models have fan cooled external heatsinks which eliminate ingress of dust.

SERIAL COMMUNICATION

Modbus

The VDI100 integrates a standard RS485 serial line with Modbus RTU/ASCII protocol, for peer-to-peer or multidrop connections.



DUAL CORE PROCESSORS

High Performance & Reliability.

- **32Bit MCU**

Mass computing capability for advanced current vector control technology.
Minimizes the internal loop time for higher control response.

- **ASIC** (from size 2)

Prevents inrush current damage to IGBT module.
Enhances the reliability and life expectancy of motor drive.

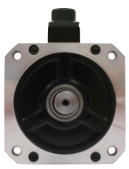
"UNIVERSAL" IN MOTOR TECHNOLOGIES

Simple parameter settings for easy switching between asynchronous and permanent magnet motors.

High performance current vector control for a wide range of motors types.

Asynchronous Motor

> Competitive
> Mechanical Robustness



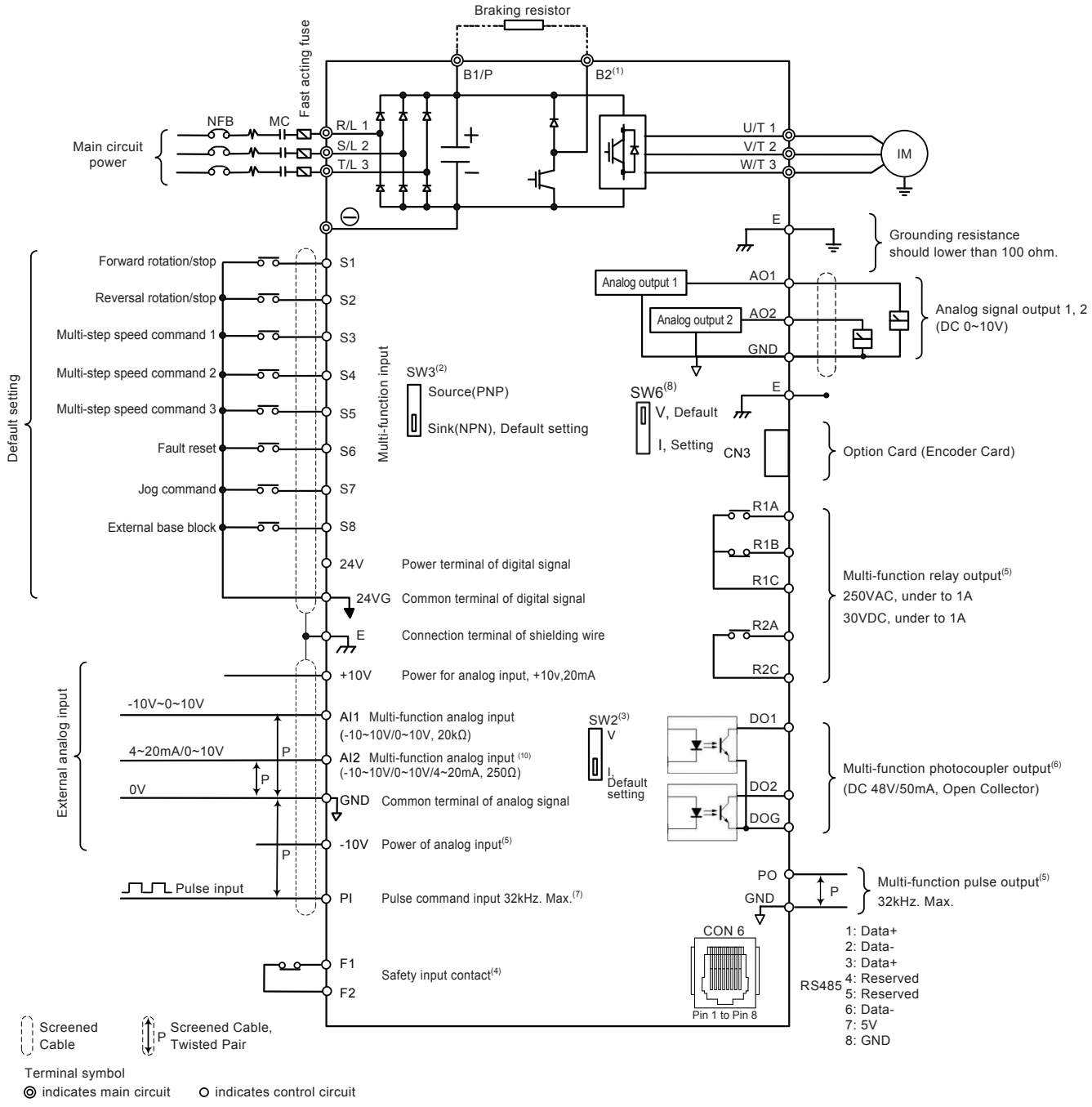
Surface Permanent Magnet Motors (SPM)

> High Efficiency
> High power density
> Low Cogging Torque

Interior Permanent Magnet Motors (IPM)

> Highly Efficiency
> Compact Size
> With Reluctance Torque

WIRING DIAGRAM



(1) The main circuit of 200V 0.75~18.5kW and 400V 0.75~30kW (included) with built-in braking transistor provide terminal B2. The braking resistor can be connected directly between B1 and B2. Optional braking module is available for the other models.
(2) The multi-function digital input terminals S1~S8 can be set to Source (PNP) or Sink (NPN) mode by SW3 switch.
(3) Multi-function analog input 2 (AI2) can be set to the voltage command input (0~10/-10~10V) or the current command input (4~20mA) through SW2 switch.
(4) When integrated Torque-off function is NOT used, connect a link across terminals F1 & F2 for the inverter output to function.
External safety circuits can be interfaced with inverter using terminals F1 and F2.
(5) Terminals -10V S(+), S(-), R2A-R2C and PO-GND are provided for 200V 2.2kW and 400V 3.7kW ratings or above.
(6) Terminals DO2 is provided for 200V 1.5kW and 400V 2.2kW ratings or below (size 1).
(7) When using open collector input, there is no need of resistance because of built-in pull-up resistance.
(8) AO2 default setting is 0~+10V.
(9) 400V class 75kW~160kW have built-in DC reactors.
(10) Multi-function analog input 2 (AI2) can be set as PTC Overheat Protection.

CHOOSING THE INVERTER: INPUT AND OUTPUT DATA

THREE PHASE - 230V CLASS

Sizes VDI100				1007	1015	2022	2037	2055	3075	4110	4150	4185	5220
Output Rating [2]	HD [3]	Rated Output Capacity	KVA	1.9	3	4.2	6.7	9.5	12.6	17.9	22.9	27.8	32.4
		Rated Output Current	A	5	8	11	17.5	25	33	47	60	73	85
		Maximum Applicable Motor [1]	HP	1	2	3	5	7.5	10	15	20	25	30
			kW	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22
	ND [4]	Rated Output Capacity	KVA	2.3	3.7	4.6	8.4	11.4	16.0	21.3	26.3	30.1	41.9
		Rated Output Current	A	6	9.6	12	22	30	42	56	69	80	110
		Maximum Applicable Motor [1]	HP	2	3	5	7.5	10	15	20	25	30	40
			kW	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30
	Maximum Output Voltage		V	Three-Phase, 200V to 240V									
	Maximum Output Frequency		Hz	0.1~599 (Based on parameter setting)									
Input Power	Rated Voltage, Frequency			Three-Phase, 200V to 240V, 50/60Hz									
	Allowable Voltage Fluctuation			-15% ~ +10%									
	Allowable Frequency Fluctuation			±5%									
Braking Transistor				Built-in									(6)

THREE PHASE - 400V CLASS

Sizes VDI100				1007	1015	1022	2037	2055	3075	3110	3150 4150-F	4185	4220	5300	5370	5450	5550	6750	6900	71100	71320	71600
Output Rating [2]	HD [3]	Rated Output Capacity	KVA	2.6	3.2	4.2	7	11.3	13.7	18.3	23.6	29.7	34.3	45.7	57.2	69.3	89.9	114	137	165	198	225
		Rated Output Current	A	3.4	4.2	5.5	9.2	14.8	18	24	31	39	45	60	75	91	118	150	180	216	260	295
		Maximum Applicable Motor [1]	HP	1	2	3	5	7.5	10	15	20	25	30	40	50	60	75	100	125	150	175	215
			kW	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160
	ND [4]	Rated Output Capacity	KVA	3.1	4.1	5.3	9.2	13.3	17.5	23.6	29.0	33.5	44.2	55.6	67.1	78.5	111	128	159	191	226	250
		Rated Output Current	A	4.1	5.4	6.9	12.1	17.5	23	31	38	44	58	73	88	103	145	168	208	250	296	328
		Maximum Applicable Motor [1]	HP	2	3	5	7.5	10	15	20	25	30	40	50	60	75	100	125	150	175	210	250
			kW	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	185
	Maximum Output Voltage		V	Three-Phase, 380V to 480V																		
	Maximum Output Frequency		Hz	0.1~599 (Based on parameter setting)																		
Input Power	Rated Voltage, Frequency			Three-Phase, 380V to 480V, 50/60Hz																		
	Allowable Voltage Fluctuation			-15% ~ +10%																		
	Allowable Frequency Fluctuation			±5%																		
Braking Transistor				Built-in											Option (External Braking Module)							

(1) Based on the standard 4-pole induction motor. The selected inverter must have a higher output current rating than the motor.

(2) The default setting of VDI100 is HD (heavy duty mode). To switch VDI100 to ND (normal duty mode) set parameter (00-27) to 1. When switching to ND (normal duty mode), the frequency will change to 2kHz.

(3) The default setting of carrier frequency in HD mode is shown into the table on the right, if the setting value is higher than default setting, derating may be required.

(4) The default setting of carrier frequency in ND mode is 2kHz, if the setting value is higher than default setting, de-rating may be required.

(5) If control mode is set to SLV mode and maximum frequency is larger than 80Hz, the carrier frequency range is 2~8kHz.

(6) Option (External Braking Module)

Inverter Voltage and Capacity		HD mode carrier freq range	HD mode carrier freq default setting
200V Class	400V Class		
0.75 ~ 15 kW	0.75 ~ 22 kW	2~16 kHz	8 kHz
18.5 kW	-	2~12 kHz	6 kHz
22 kW	-	2~12 kHz [5]	5 kHz
-	30 ~ 37 kW	2~12 kHz [5]	5 kHz
-	45 ~ 132 kW	2~10 kHz [5]	5 kHz
-	90 kW	2~10 kHz	4 kHz
-	160 kW	2~8 kHz	3 kHz

DRIVE MODELS & CODES

THREE PHASE – 230V CLASS

- Without EMI filter
- BU built-in up to 18.5 kW
- IP20 / NEMA 1

Code	Model	Pn@ 230 Vac		Configuration
		HD	ND	
S6N100	VDI100-1007-KBX-2T	0.75 kW	1.5 kW	Internal Braking Unit - Without EMI filter
S6N101	VDI100-1015-KBX-2T	1.5 kW	2.2 kW	Internal Braking Unit - Without EMI filter
S6N102	VDI100-2022-KBX-2T	2.2 kW	3.7 kW	Internal Braking Unit - Without EMI filter
S6N103	VDI100-2037-KBX-2T	3.7 kW	5.5 kW	Internal Braking Unit - Without EMI filter
S6N104	VDI100-2055-KBX-2T	5.5 kW	7.5 kW	Internal Braking Unit - Without EMI filter
S6N105	VDI100-3075-KBX-2T	7.5 kW	11 kW	Internal Braking Unit - Without EMI filter
S6N106	VDI100-4110-KBX-2T	11 kW	15 kW	Internal Braking Unit - Without EMI filter
S6N107	VDI100-4150-KBX-2T	15 kW	18.5 kW	Internal Braking Unit - Without EMI filter
S6N108	VDI100-4185-KBX-2T	18.5 kW	22 kW	Internal Braking Unit - Without EMI filter
S6N109	VDI100-5220-KXX-2T	22 kW	30 kW	Without EMI filter

THREE PHASE – 400V CLASS

- With built-in EMI filter
- BU built-in up to 30 kW
- IP20 / NEMA 1

Code	Model	Pn@ 400 Vac		Configuration
		HD	ND	
S6N110	VDI100-1007-KBX-4-F	0.75 kW	1.5 kW	Internal Braking Unit - With EMI filter
S6N111	VDI100-1015-KBX-4-F	1.5 kW	2.2 kW	Internal Braking Unit - With EMI filter
S6N112	VDI100-1022-KBX-4-F	2.2 kW	3.7 kW	Internal Braking Unit - With EMI filter
S6N113	VDI100-2037-KBX-4-F	3.7 kW	5.5 kW	Internal Braking Unit - With EMI filter
S6N114	VDI100-2055-KBX-4-F	5.5 kW	7.5 kW	Internal Braking Unit - With EMI filter
S6N115	VDI100-3075-KBX-4-F	7.5 kW	11 kW	Internal Braking Unit - With EMI filter
S6N116	VDI100-3110-KBX-4-F	11 kW	15 kW	Internal Braking Unit - With EMI filter
S6N117	VDI100-4150-KBX-4-F	15 kW	18.5 kW	Internal Braking Unit - With EMI filter
S6N118	VDI100-4185-KBX-4-F	18.5 kW	22 kW	Internal Braking Unit - With EMI filter
S6N119	VDI100-4220-KBX-4-F	22 kW	30 kW	Internal Braking Unit - With EMI filter
S6N120	VDI100-5300-KBX-4-F	30 kW	37 kW	Internal Braking Unit - With EMI filter
S6N121	VDI100-5370-KXX-4-F	37 kW	45 kW	With EMI filter
S6N122	VDI100-5450-KXX-4-F	45 kW	55 kW	With EMI filter

- Without EMI filter
- BU built-in up to 30 kW
- IP20 / NEMA 1

Code	Model	Pn@ 400 Vac		Configuration
		HD	ND	
S6N123	VDI100-1007-KBX-4	0.75 kW	1.5 kW	Internal Braking Unit – Without EMI filter
S6N124	VDI100-1015-KBX-4	1.5 kW	2.2 kW	Internal Braking Unit – Without EMI filter
S6N125	VDI100-1022-KBX-4	2.2 kW	3.7 kW	Internal Braking Unit – Without EMI filter
S6N126	VDI100-2037-KBX-4	3.7 kW	5.5 kW	Internal Braking Unit – Without EMI filter
S6N127	VDI100-2055-KBX-4	5.5 kW	7.5 kW	Internal Braking Unit – Without EMI filter
S6N128	VDI100-3075-KBX-4	7.5 kW	11 kW	Internal Braking Unit – Without EMI filter
S6N129	VDI100-3110-KBX-4	11 kW	15 kW	Internal Braking Unit – Without EMI filter
S6N130	VDI100-3150-KBX-4	15 kW	18.5 kW	Internal Braking Unit – Without EMI filter
S6N131	VDI100-4185-KBX-4	18.5 kW	22 kW	Internal Braking Unit – Without EMI filter
S6N132	VDI100-4220-KBX-4	22 kW	30 kW	Internal Braking Unit – Without EMI filter
S6N133	VDI100-5300-KBX-4	30 kW	37 kW	Internal Braking Unit – Without EMI filter
S6N134	VDI100-5370-KXX-4	37 kW	45 kW	Without EMI filter
S6N135	VDI100-5450-KXX-4	45 kW	55 kW	Without EMI filter
S6N136	VDI100-5550-KXX-4	55 kW	75 kW	Without EMI filter

- Without EMI filter
- External BU
- IP00 (*)

Code	Model	Pn@ 400 Vac		Configuration
		HD	ND	
S6N137	VDI100-6750-KXX-4	75 kW	90 kW	Without EMI filter - IP00
S6N138	VDI100-6900-KXX-4	90 kW	110 kW	Without EMI filter - IP00
S6N139	VDI100-71100-KXX-4	110 kW	132 kW	Without EMI filter - IP00
S6N140	VDI100-71320-KXX-4	132 kW	160 kW	Without EMI filter - IP00
S6N141	VDI100-71600-KXX-4	160 kW	185 kW	Without EMI filter - IP00

(*) Available optional NEMA 1 kit.

ACCESSORIES AND OPTIONS

BRAKING UNIT

Code	Model	Description
S6N142	BU-2-VDI100	For VDI100 230V Class
S6N143	BU-4-VDI100	For VDI100 400V Class

NEMA 1 KIT (FOR SIZES 6 AND 7)

Code	Model	Description
S6N147	NM1-S6-VDI100	VDI100 frame 6 NEMA 1 kit
S6N148	NM1-S7-VDI100	VDI100 frame 7 NEMA 1 kit

OTHER OPTIONS

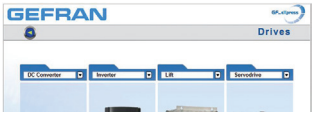
Code	Model	Description
Communication modules		
S6N218	EXP-PDP-BDI/VDI	Profibus DP interface module
S6N219	EXP-TCPIP-BDI/VDI	Ethernet TCP/IP interface module
S6N220	EXP-DN-BDI/VDI	DeviceNet interface module
S6N221	EXP-CAN-BDI/VDI	CanBus interface module
Encoder cards		
S6N222	EXP-LD-VDI100	Digital incremental Line driver encoder card
S6N223	EXP-OC-VDI100	Digital incremental open collector encoder card
S6N224	EXP-LD-PM-VDI100	Digital incremental line driver encoder card for Permanent Magnet motor
S6N225	EXP-RS-PM-VDI100	Resolver card for Permanent Magnet motor and Asynchronous
S6N226	EXP-SC-PM-VDI100	SinCos encoder card for Permanent Magnet motor
Others		
S6N228	Memory KB-BDI/VDI	Copy unit
S6N229	Cable RJ45 to USB 1.8m	RJ45 to USB connecting cable (1.8 m. cable)
S6N230	Cable RJ45 to USB 3m	RJ45 to USB connecting cable (3 m. cable)
S6N231	KB-LCD-VDI100	LCD keypad
S6N233	KB-BLI-VDI100	Blind cover
S6N234	KB cable 1m	Keypad extension cable 1 m
S6N235	KB cable 2m	Keypad extension cable 2 m
S6N236	KB cable 3m	Keypad extension cable 3 m
S6N237	KB cable 5m	Keypad extension cable 5 m
S6N242	Protective cover VDI100 Size 1	Protective cover for VDI100 Size 1
S6N243	Protective cover VDI100 Size 2	Protective cover for VDI100 Size 2
S6N244	Protective cover VDI100 Size 4	Protective cover for VDI100 Size 4

SOFTWARE

GF-EXPRESS PROGRAMMING SOFTWARE

Applications

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



Features

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

GF_eXpress software configures the parameters of the automation components, drives and sensors in the Gefran catalogue.

The graphic interface makes selecting and configuring parameters easy and intuitive. Devices are grouped according to product type and functions.

Products are searched by means of a context search and a display of product photos.

This provides a single device library for all Gefran products.

Complete configuration information for every device is given in XML format to facilitate expansion of the catalogue and parameters.