Guide the Drive Innovation

Intellectualize the Future of Industry

Become a Top-Ranking Supplier of Industrial Automation Products and Solutions

GUIDE

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GUIDE

Stock Code: 301633

HF630N Series
AC Drive

COMPANY PROFILE

Wuhan Guide Technology Co., Ltd.

Wuhan Guide Technology Co., Ltd. (Stock name: Guide Technology; **Stock code: 301633**) is a nationally accredited "Little Giant" enterprise. It is primarily recognized and supported by the Ministry of Industry and Information Technology with its specialized, professional and innovative high-tech features. It has three subsidiaries: Wuhan Guide Intelligent Technology Co., Ltd., Wuhan Guide Software Information Technology Co., Ltd., and Wuhan Guide Drive Science and Technology Co., Ltd. as well as branches in Shenzhen, Hainan and Shanghai.

GUIDE focuses on the field of industrial automation and informatization. There are three segments of our business: automatic drive products, intelligent control systems, and smart port management system software. GUIDE is committed to the localization of core drive components for various mechanical equipment, the automation of industrial equipment operation procedures, and the digitalization and informatization of enterprise management.

Guide Technology is engaged in the research and development, production, sales, and related technical services of industrial automation products such as VFDs, inverters, regenerative rectifier units, and industry-dedicated drives. Guide Intelligent provides solutions for the intelligent and unmanned operation of lifting and transportation equipment in fields such as ports, cement, metallurgy, railways, and warehousing. Guide Software is devoted to the development and service of software products such as production operation management systems, asset management systems, and integrated control systems. GUIDE has a nationwide sales and service network, and its products and services are widely used in industries such as ports, shield machinery, petroleum, construction machinery, ships, petroleum, cement, metallurgy, overhead cranes, railways, logistics, textiles, mining, chemical engineering, thermoelectricity generation.

GUIDE is recognized as an "Outstanding High-tech Enterprise in Wuhan". It has been successively honored as one of the "Top 10 Intelligent and Informatized Enterprises in the Chinese Cement Industry", one of the "Chinese Top 100 Innovative Construction Enterprises", and an "Advanced Demonstration Enterprise for Port Science and Technology Innovation". The VFD products have won the "Top 3 of China Communications and Transportation Association Science and Technology Progress Award". Its intelligent control system products have garnered the "Champion of China Port Association Science and Technology Award".

GUIDE will uphold the business philosophy of "Quality and Service" continuously, implement our core values of "Achieving Customers, Benefiting Employees, Rewarding Shareholders and Contributing to Society", and develop firmly towards the mission of "Guide the Drive Innovation, Intellectualize the Future of Industry" to realize the vision of "Become a top-ranking supplier of industrial automation products and solutions".

GUIDE

PRODUCT HIGHLIGHTS

- Safe and Reliable
- Convenient and Easy to Use
- Powerful Performance

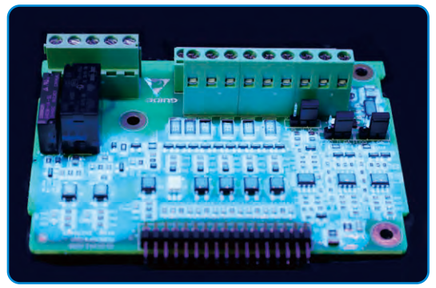
Safe and Reliable

1

The independent air duct design effectively prevents dust, particles, and other pollutants from entering the drives.
It prevents internal sparking and short circuits, enhancing product reliability and prolong service life.

2

Fully automated conformal coating spraying process ensures more stable and uniform coating coverage, improving the protection of single board.



3

A comprehensive reliability testing program ensures that the product meets the requirements of complex application environments.

Test Type	Test Name	Test Project
Mechanical reliability test	Vibration and shock test	Half-sine shock test (Working/non-working state)
		Sinusoidal vibration test (Working status)
		Random vibration test (Working/non-working state)
Environmental reliability test	Temperature test	Low-temperature storage test
		High-temperature storage test
		Low-temperature operation test
		High-temperature operation test
		Rapid temperature change test
		Thermal shock test
	Humidity and thermal test	Constant heat test
		Temperature and humidity cycling test
	Salt spray test	Neutral salt spray test
		Acid salt spray test
Protection level test	Dust and waterproof test	Dustproof test
		Waterproof test

Vibration test bench

Thermal shock test chamber

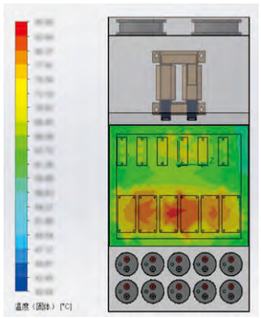
Temperature and humidity test chamber

Dustproof test chamber

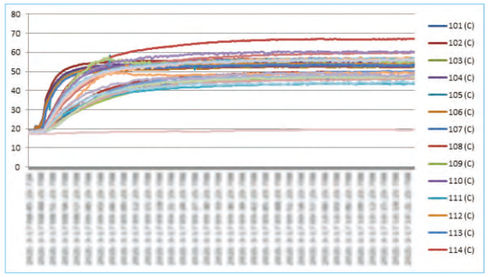
Waterproof laboratory

4

Accurate design simulation and rigorous testing and certification.



Use scientific thermal simulation technology to ensure that the thermal design in the product development stage is more reasonable and reliable.



The entire machine has undergone rigorous thermal testing, ensuring reliable operation for extended periods under various load conditions.

Safe and Reliable

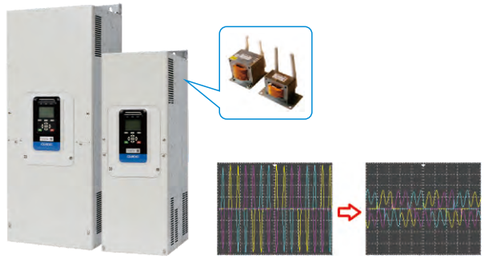
5

The drives are equipped with a built-in DC reactor and braking units.

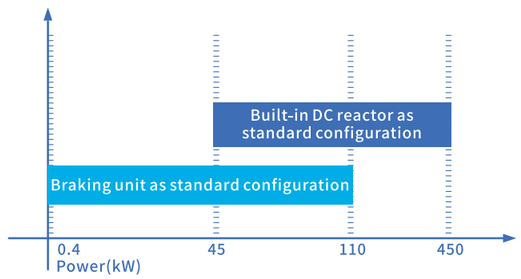
During operation, almost all the heat generated by the dedicated liquid-cooled drive for shield tunneling is absorbed by the cooling liquid, thus providing high-level protection for the drive. Compared to drives of the same power level, it can remove heat faster due to the higher heat transfer efficiency of the liquid cooling medium. Since there is no need for air ducts for heat dissipation, the structure of the liquid-cooled drive is very compact, saving space in the cooling system.

6

The drive is equipped with a built-in DC reactor and braking components.



The built-in DC reactor can effectively improve the power factor on the input side of the drive, enhancing overall efficiency and thermal stability. It can effectively eliminate higher-order harmonics and external conducted and radiated interference, improving the reliability in the process of operation.

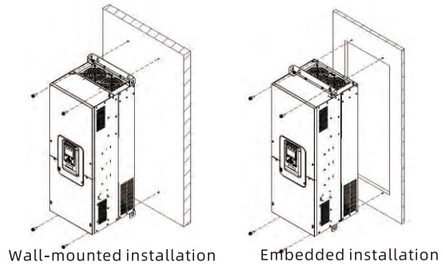


Standard built-in braking unit for 0.4 kW-110 kW;
Standard built-in DC reactor for 45 kW-450 kW.

Convenient and Easy to Use

1

Supports multiple installation methods.



The product is compatible with both wall-mounted and embedded installation methods. The installation components are independently designed, removable, and flexible to accommodate various on-site usage scenarios.

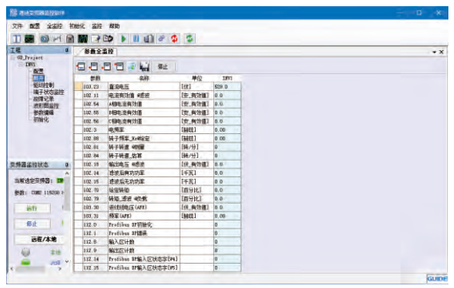
2

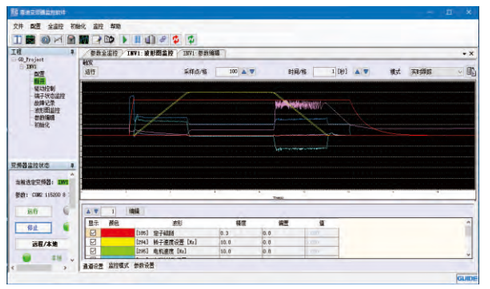
A multi-language handheld LCD panel equipped with full functions such as upload and download.

Multi-language handheld LCD panel, size: 240 mm*160 mm, supports display in multiple languages such as Chinese, English and Russian. It has the ability to upload and download parameters, making commissioning more convenient and efficient.

3

Fully functional GuideInvSoft host computer software.



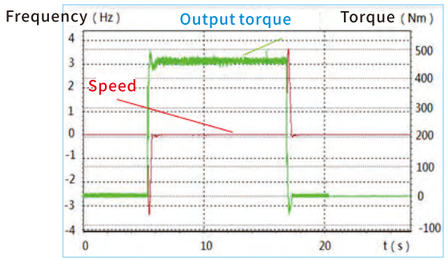


GUIDE drives are equipped with a powerful background monitoring software, GuideInvSoft, which allows real-time monitoring of various operational data of the converter on a computer, including online oscilloscope functionality. It also enables configuration and management of the parameters of converter, making commisioning more convenient and efficient.

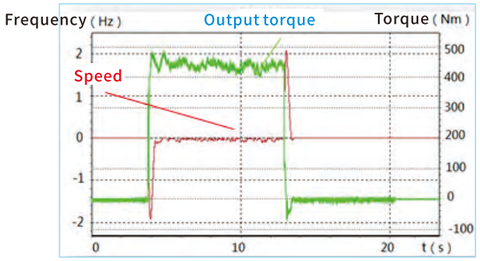
Powerful Performance

1

High-performance vector control, with open and closed-loop vector zero-speed 200% torque output.



The rated torque is 230 Nm. It shows 200% torque output at closed-loop 0 rpm.



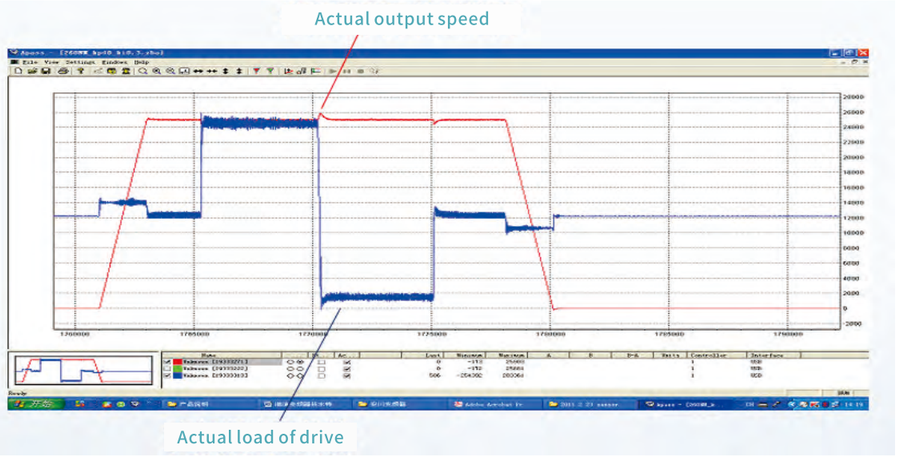
The rated torque is 230 Nm. It shows 200% torque output at open-loop 0 rpm.

(A 45 kW drive controls a 37 kW motor, with a rated torque of 230 Nm.)

Both closed-loop vector control and open-loop vector control can control the motor to output up to 200% of its rated torque at zero speed.

2

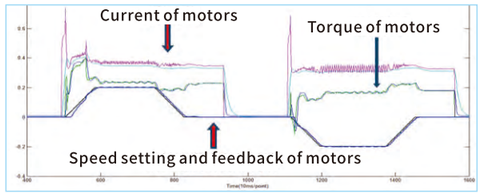
Real-time load monitoring function.



When there is a wide-range sudden change in load during motor operation, the drive exhibits excellent dynamic response characteristics, ensuring the precision of motor speed control.

3

Multi-motor rigid coupling synchronous control technology.

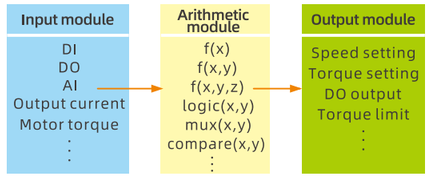


Master-slave speed control + slave torque adjustment

GUIDE drive adopts master-slave control or DROOP control to ensure the synchronization of current, torque, and speed of multiple motors under closed-loop or open-loop vector control modes. It can maintain the synchronization of multiple motors under various conditions such as sudden changes in load, unbalanced load, low speed and high speed.

4

Custom programming function.



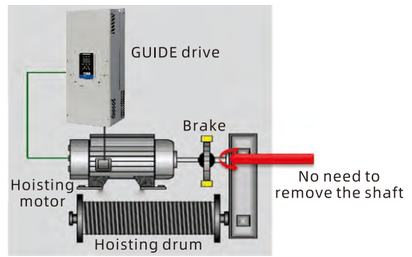
- PID regulator module, timer module
- Basic mathematical function module: +-x÷
- Unary, binary, ternary logical operations
- Sum of squares, maximum, minimum value modules
- Selection and comparison function modules
- Filter, sampls storage module
- Minimum execution cycle: 10 ms
- Numerous variables available for custom programming

The drive is equipped with a powerful custom programming function. Users can perform secondary programming of relevant logic through parameter settings according to the on-site working conditions without changing the software code.

5

Self-tuning of motor with load.

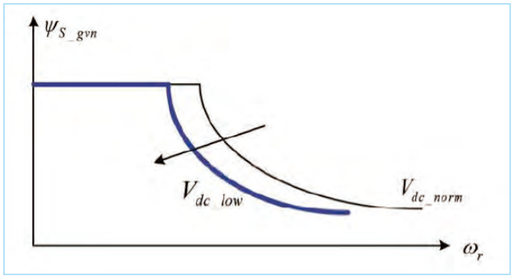
GUIDE drive can perform self-tuning under 50% rated load of the motor; and consistent with the motor parameters obtained from the motor self-tuning without load. It is suitable for retrofit projects where motor shaft cannot be easily disconnected from the load.



Powerful Performance

6

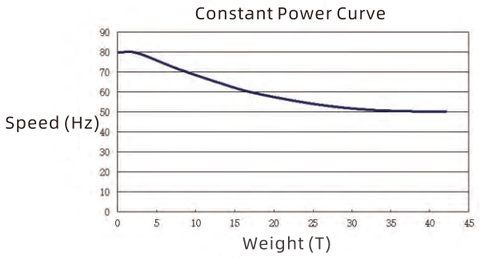
High-speed flux-weakening control.



GUIDE drive can realize high-speed flux-weakening control, enabling accurate flux linkage setting in flux-weakening zone when input voltage is fluctuant, ensuring stable performance in motor over-frequency control.

7

Equipped with a built-in constant power control module,it enhances the operational efficiency of the equipment.



GUIDE drive is equipped with a built-in constant power control module, which can automatically adjust the output frequency according to the load size, achieving high speed under light load and low speed under heavy load, greatly improving the working fficiency of the equipment.

HF630N
Series AC Drive

HF630N XX XXX - 4 - XXX + X
① ② ③ ④ ⑤ ⑥

Customized Model

① Product Series

② Type and Structure
Default: Standard

③ Power
Example:
5R5 = 5.5 kW
055 = 55 kW
110 = 110 kW

④ Voltage Level
4: 380 V

⑤ Spare

6 Optional Accessories

Code	Note	Code	Note
LED	Digital display panel		
SW01	Permanent magnet synchronous control software	SW02	Standard anti-sway software
SW03	Fixed rope length anti-sway software	SW04	Analog output rope length software
SW05	Analog input rope length software		
MB01	Modbus RTU communication card	DP01	Profibus DP communication card
PN01	Profinet communication card	CAN01	CAN open communication card
PG02	Incremental encoder card suitable for standard drives	PG03	Incremental encoder card suitable for permanent magnet synchronous drives
PG04	Rotary encoder card suitable for permanent magnet synchronous drives		
IO01 (IO expansion card)	7 DI+4 DO+Modbus RTU communication (Applicable to standard drives)	IO02 (IO expansion card)	5 DI+2 DO (Applicable to standard drive)
IO03 (IO expansion card)	5 DI+2 DO+1 AI+Modbus RTU communication (Applicable to permanent magnet synchronous drive)		
PC01 (Logic control card)	20 DI + 6 DO + CANopen communication + Modbus RTU communication	PC03 (Logic control card)	20 DI+6 DO

Example:
1. HF630N-5R5-4: 400 V/5.5 kW standard drive, featuring LCD panel, without built-in DC reactor, built-in braking unit;
2. HF630N-110-4: 400 V/110 kW standard drive, featuring built-in DC reactor, built-in braking unit, and LCD panel;
3. HF630N-250-4+LED+MB01: 400 V/250 kW standard drive, featuring built-in DC reactor, no built-in braking unit, LED panel, and an optional Modbus RTU communication card.

Power and Dimensions of HF630N Series AC Drive

Model	Light Overload		Heavy Overload		Type	Dimensions [mm] (H*W*D)	Weight (kg)
	Output current (A)	Applicable Motor Capacity (kW)	Output current (A)	Applicable Motor Capacity (kW)			
HF630N-0R4-4	1.8	0.4	-	-	N1	260*140*191	3.5
HF630N-0R7-4	2.6	0.75	1.8	0.4			
HF630N-1R1-4	3.3	1.1	2.6	0.75			
HF630N-1R5-4	4	1.5	3.3	1.1			
HF630N-2R2-4	5.7	2.2	4	1.5			
HF630N-3R7-4	10.2	3.7	5.7	2.2	N2	260*140*191	4
HF630N-5R5-4	15	5.5	10.2	3.7			
HF630N-7R5-4	18	7.5	15	5.5			5
HF630N-011-4	24	11	18	7.5			
HF630N-015-4	32	15	24	11	N3	302*180*194	6.5
HF630N-018-4	38	18.5	32	15			
HF630N-022-4	47	22	38	18.5	N4	375*279*236	12.5
HF630N-030-4	65	30	47	22			
HF630N-037-4	75	37	65	30			
HF630N-045-4	94	45	75	37	N5	766*235*345.5	38
HF630N-055-4	115	55	94	45			
HF630N-075-4	155	75	115	55			
HF630N-090-4	188	90	155	75	N6	885*315*331.5	55
HF630N-110-4	215	110	188	90			
HF630N-132-4	265	132	215	110	N7	965*390*345.5	80
HF630N-160-4	303	160	265	132			
HF630N-185-4	365	185	303	160	N8	1093*492*376	120
HF630N-200-4	396	200	365	185			
HF630N-220-4	438	220	396	200			
HF630N-250-4	485	250	438	220	N9	1200*490*395.5	150
HF630N-280-4	545	280	485	250			
HF630N-315-4	610	315	545	280	N10	1305*700*415	240
HF630N-355-4	668	355	610	315			
HF630N-400-4	720	400	668	355			
HF630N-450-4	820	450	720	400			
HF630N-630-4-C	1220	630	1100	560	Cabinet-built drive (2 parallel drives)	/	/
HF630N-710-4-C	1336	710	1230	630			
HF630N-800-4-C	1440	800	1345	710			
HF630N-900-4-C	1640	900	1450	800			

Note:
1. For models ranging from 0.4 kW to 37 kW, there is no built-in DC reactor. For models ranging from 45 kW to 450 kW, a built-in DC reactor is standard;
2. For models of 110 kW and below, a built-in braking unit is standard. For models of 132 kW and above, there is no built-in braking unit. An external braking unit can be separately selected and equipped when necessary;
3. The LCD panel is standard configuration of the HF630N standard drives, while the LED panel is standard configuration of the HF630N+SW01 drives;
4. Light overload condition: 150% of the rated output current, and overload is allowed 1 minute every 5 minutes; heavy overload condition: 180% of the rated output current, and overload is allowed 1 minute every 5 minutes.

Technical Parameters of HF630N Standard AC Drive

Item		Description
Input	Input Voltage	Three-phase 380 V- 480 V
	Rated frequency	50/60 Hz
	Allowable voltage fluctuation	-15% to +10%
	Allowable frequency fluctuation	The allowable range of frequency variation is fLN ±2% (±4% for an independent power supply). Frequency variation rate: ≤2% fLN/s.
Output	Output voltage range	0 V-Input voltage, error range less than 5%
	Asymmetry of output voltage	Under normal operating conditions, within the entire range of output frequency adjustment, and under symmetrical load conditions for each phase, the asymmetry of the output three-phase voltage should not exceed 1%.
	Output frequency range	0 Hz-300 Hz
Control Characteristics	Operation command mode	Panel control, terminal control, communication control.
	Carrier frequency	1 kHz-10 kHz, adjustable according to temperature and load characteristics.
	Frequency resolution	Digital setting: 0.01 Hz, analog setting: maximum frequency ×0.1%
	Control mode	Closed-loop vector control (VC), open-loop vector control (SVC), and V/F control.
	V/F control	Linear type, multi-point type, quadratic type.
	Torque control	With PG torque control/without PG torque control.
	Maximum speed	300 Hz, dependent on the electrical and mechanical characteristics of the motor.
	Starting torque	0 Hz/200% (VC and SVC), 0.8 Hz/150% (V/F)
	Torque response	<5 ms (SVC), <5 ms (VC)
	Torque control accuracy	±5% (SVC), ±3% (VC)
	Speed range	1:500 (SVC), 1:1000 (VC)
	Speed accuracy	±0.02% rated speed (VC), ±0.2% rated speed (SVC), ±0.5% rated speed (V/F).
	Overload capacity	Light overload: 150% of the output current, with an overload allowed for 1 minute every 5 minutes; heavy overload: 180% of the output current, with an overload allowed for 1 minute every 5 minutes.
	Torque compensation	Automatic torque compensation function.
	Acceleration and deceleration mode	Linear mode, customized multi-point curve mode.
	Automatic voltage regulation	Automatically maintain a constant output voltage when the power grid is fluctuated.
	DC braking mode	DC braking during startup and DC braking during shutdown.
	Built-in process PID	Easily realize a closed-loop control system for process variables (pressure, temperature, flow rate, etc.).
	Bus options	CANopen, Modbus RTU, Profibus DP, Profinet

Technical Parameters of HF630N Series AC Drive

Item		Description
Control Characteristics	Special functions	Free functional modules for user-programmable applications: logic function module, mathematical function module, timer module, PID module, etc.
		Motion control: multi-curve acceleration/deceleration function, timer-controlled operation/stop control, etc.
		Crane functions: power optimization, and the function of opening and closing the crane's brake.
		Synchronization control: master/slave synchronization control, speed/torque control.
Input/Output Terminal	Input terminal	5 digital inputs and 2 analog inputs (voltage 0 V to +10 V or current 0 mA/4 mA-20 mA) are standard on the terminal board.
	Output terminal	3 digital outputs (1 collector output and 2 relay outputs), 2 analog outputs (voltage 0 V to +10 V or current 0 mA/4 mA-20 mA) is standard on the terminal board.
HMI	Operation panel LED/LCD	Relevant parameters can be set and copied, and various parameters such as output frequency, output voltage, and output current can be displayed on the panel, as well as the operating state, fault state, and parameter setting state. Display content: function, data, unit.
Protection function		Overcurrent protection, overvoltage protection, undervoltage protection, overheat protection, overload protection, etc.
Place of use		Not exposed to direct sunlight, dust-free, and non corrosive environment.
Environment	Altitude	For locations below 1000 meters, no derating is required. For locations with an altitude exceeding 1000 meters, please reduce the rated power and rated output current by 1% for every additional 100 meters. For locations with an altitude exceeding 3000 meters, please consult the manufacturer for guidance.
	Ambient temperature	-10 ℃ to +40 ℃. If the ambient temperature exceeds 40 ℃, derating is required. The derating is 1% for every 1 ℃ increasing. If the ambient temperature exceeds 50 ℃, it is necessary to consult the manufacturer for guidance. When the ambient temperature falls below -10 ℃, it is necessary to additionally install auxiliary heating equipment.
	Humidity	Less than 95% RH, no condensation.
	Storage	Storage temperature: -20 ℃ to +60 ℃.
Other	Efficiency	> 98%
	Option accessories	It can accommodate communication cards, IO expansion cards, and PG cards.
	Other interfaces	External panel interface.
	Ingress protection	IP20
	Cooling method	Natural cooling is applied for 1.1 kW and below; forced air cooling is applied for 1.5 kW and above.
	Pollution degree	2

Optional Accessories (With Package)

Name	Code	Specification and Model	Note
LED Panel	LED	GDHF-AKZX1	Digital display panel
Modbus RTU Communication Card	MB01	GDHF-AMBX1	Modbus RTU communication card
DP Communication Card	DP01	GDHF-ADPX1	Profibus DP communication card
PN Communication Card	PN01	GDHF-APNX1	Profinet communication card
CAN Communication Card	CAN01	GDHF-ACNX1	CANopen communication card
PG Card	PG02	GDHF-APGX1	Incremental encoder card suitable for standard drives
PG Card	PG03	GDHF-BPGX1	Incremental encoder card suitable for permanent magnet synchronous drives
Rotary Transformer PG Card	PG04	GDHF-BPGY1	Rotary encoder card suitable for permanent magnet synchronous drives
IO Expansion Card 1	IO01	GDHF-AIOX1	7 DI+4 DO+Modbus RTU communication (Applicable to standard drives)
IO Expansion Card 2	IO02	GDHF-AIOX2	5 DI+2 DO (Applicable to standard drives)
IO Expansion Card 3	IO03	GDHF-BIOX1	5 DI+2 DO+1 AI+Modbus RTU communication (Applicable to permanent magnet synchronous drives)
Logic Control Card 1	PC01	GDHF-AGYZ1	20 DI +6 DO +CANopen communication + Modbus RTU communication
Logic Control Card 3	PC03	GDHF-AGYZ3	20 DI+6 DO