ENGINEERING
TOMORROW

HOLIP®

Holip Drive

A150 Series Standard Vector Drive

Our **Aspiration :**

We are engineering tomorrow.
We passionately push boundaries
on results and reputation.

Company **Profile**

Founded in 2001, Zhejiang Holip Electronic Technology Co. Ltd.("Holip") was acquired by Danfoss in 2005 and became the member of the Danfoss Group ever since.

Established in 1933, Danfoss is a large multinational industrial manufacturing company in Denmark. As a global leader in refrigeration & air conditioning, heating & water processing and power electronics, Danfoss also sets industry standards for its reliability, excellence and innovation, and keeps striving for the best in customer satisfaction and solution in the climate & energy industry.

Holip has been devoted to frequency converters' research, design, manufacturing, marketing and service for more than a decade, meanwhile it set up Provincial Inverter R&D Center at a very early stage in China. Nowadays, Holip is one of the largest frequency converter manufacturers in China.

Our products, known as HLP series frequency converter, have been widely used in various industries such as air compressors, chemical fibers, textiles, printing and dyeing, plastics, lighting, steel, paper, chemicals, machines and cranes, etc. Holip has always been dedicated itself to providing high quality products, professional sales and efficient and reliable service. Every single converter must go through strict quality tests, such as high temperature tests and full load tests before delivery. Holip frequency converter has been listed in "National Key New Product", "National Torch Plan Projects", and honored with "Famous Brand Products of Zhejiang Province".

To fully implement business strategy of Danfoss China--2nd Home Market, Holip, as part of Danfoss China, also has made key action plans such as optimizing product performance and fastening the development of new products, improving the competences of salesforce, optimizing the structure of product cost and so on. Nowadays, Holip has become the manufacture and logistics center of Danfoss Drives Segment in the Asian-Pacific region; and the Danfoss factory in Haiyan, known as Haiyan Campus, has become the globally important factory area of Danfoss, with annual yield of 1.8 million units.

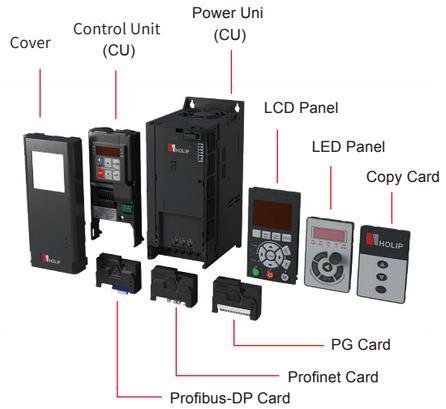
Product Brief

A150 series drive is a new generation of standard vector inverter developed by Holip, using future-oriented modular design concept. The whole machine is divided into control unit (CU), power unit (PU), optional card, LCP and covers. Modules can be configured in the best way according to the application requirements, providing high flexibility for the applications.

Flexible

Modular design

Adopting the modular design concept that faces the future, the combination and replacement of each module of the inverter are flexible and simple, making the application and maintenance of the product convenient and friendly.



PU can work independently

The power unit can work independently via additional terminals. It has basic functions: start/stop, forward/reverse and communication control. For many occasions, it can further simplify control and reduce costs.

Multi-Motor Control

Supports IM, SPM, IPM and SynRM.

Note: SynRM control is under development.

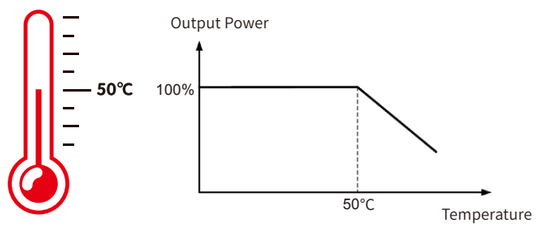
Compact

Compact design greatly optimizes the installation space. Supports side-by-side installation. Greatly improves the space utilization of the equipment.

Reliable

50°C Without derating

With the optimized design, all models can work at an ambient temperature of 50°C without derating, ensuring the application in hot summer.

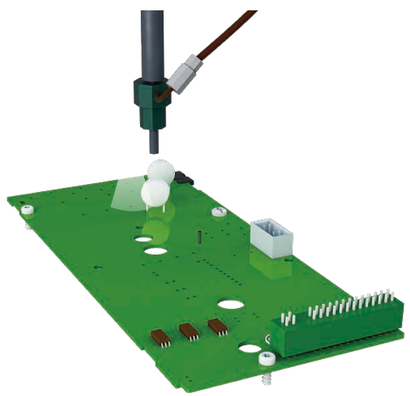


Independent duct design

The independent duct design effectively prevents pollutants from entering the electronic components area and improves the protection effectiveness of the inverter.

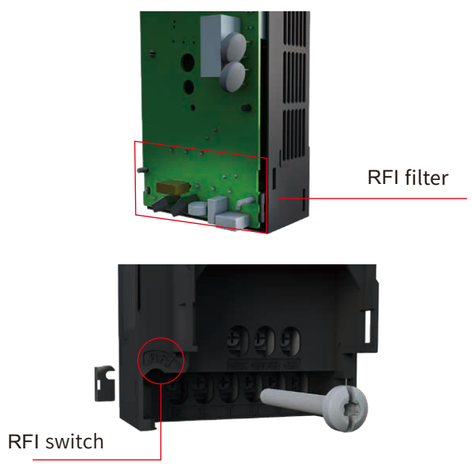
Enhanced coated circuit board

Class 3C3 coated circuit board increases reliability in harsh environments and extends drive life.



Built-in RFI filter

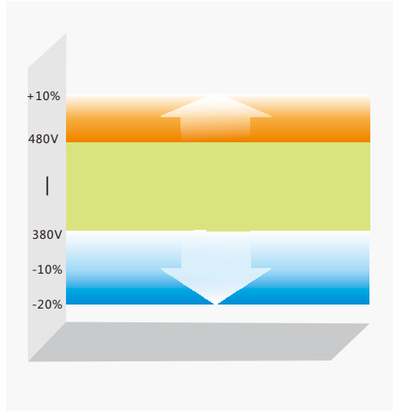
All models have built-in class C3 RFI filters, which can reduce electromagnetic interference.



Reliable

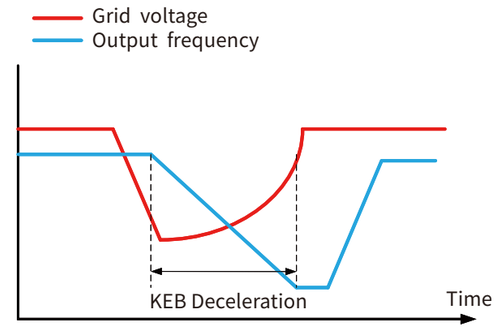
Wide voltage range design

All models can work in the voltage range of 200~240V/380~480V -20%~+10% to meet the various voltage power grid.



Kinetic Energy Back-up

When an unexpected power shut-down occurs, KEB function controls the motor deceleration to reduce the interruption of production.



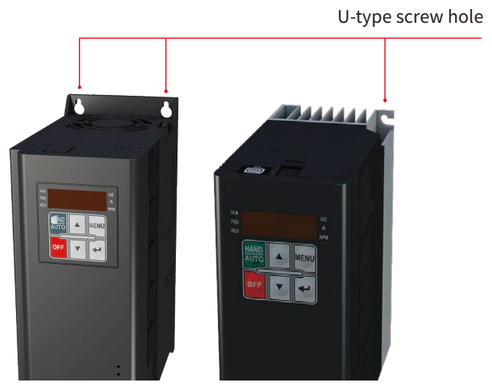
Easy to Use

Screwless Wiring of Control Terminal

Spring clamp control terminals provide fast and easy wiring.

U-type screw hole design

U-type screw hole design improves installation efficiency.



Easy to use

Easy cleaning and replacement fan design

Easy cleaning and replacement fan design can better clean pollutants attached to the fan and heatsink.

Partial fanless design

The model of 220V 0.37kW/380V 0.75kW are fanless design. Not only improves the product's environmental adaptability, reduces noise, but also reduces product maintenance.

Communicative

Supports Modbus, Profibus-DP, Profinet and IoT.

（Note: More protocols are under development.）

Technical Specifications

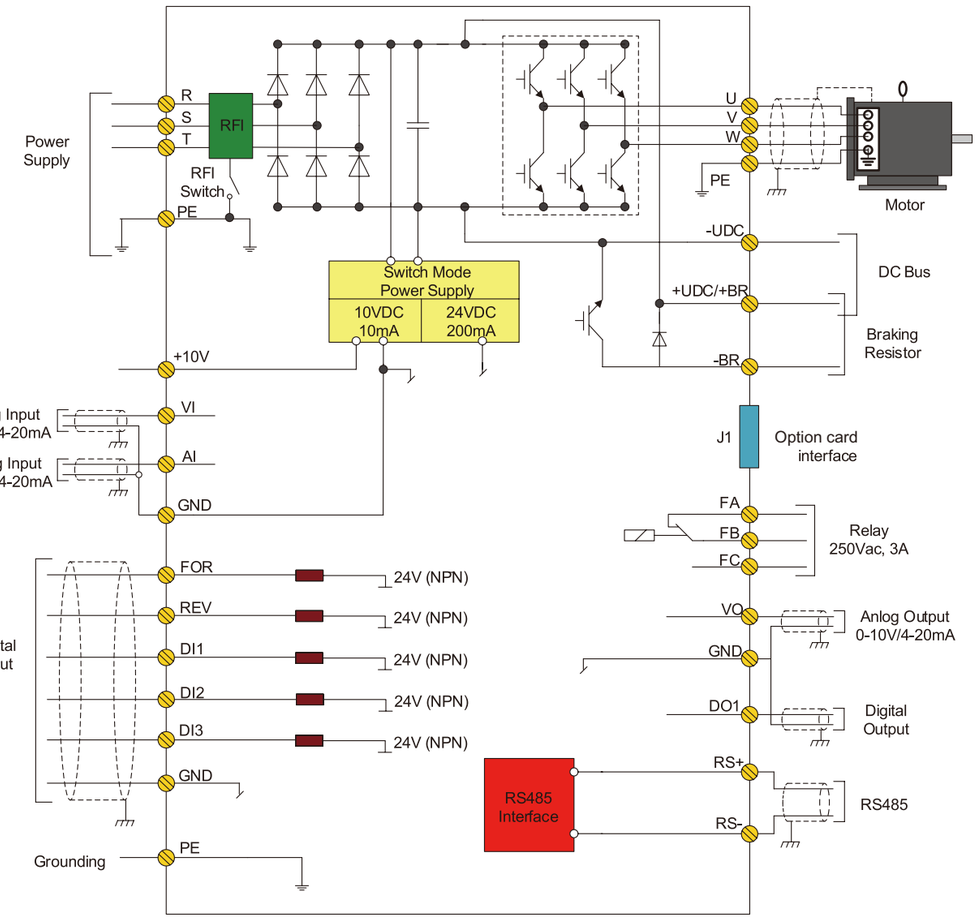
Item		Specification
Power supply	Supply voltage	Single/Three phase 200~240V -20%~+10%; Three phase 380~480V -20%~+10%;
	Frequency	48~62Hz;
	Max. imbalance	3%;
Motor output	Output voltage	Three phase 0-100% of supply voltage;
	Output frequency	0-400Hz;
Main control functions	Control mode	V/F, VVC+;
	Start torque	0.5Hz 150%;
	Overload capacity	150% 60s, 200% 1s;
	PWM switch frequency	2~16kHz;
	Speed setting resolution	Digital: 0.001Hz; Analogy: 0.5‰ of the max. operating frequency;
	Speed open-loop control accuracy	30~4000 rpm: tolerance±8 rpm;
	Control command source	LCP, digital terminal, local bus;
	Frequency setting source	LCP, analog, pulse, local bus;
	Ramp control	Selectable 4-speed steps ramp up and down times 0.05-3600.00s;
Basic Function	Speed Open-loop Control; Process Closed-loop Control; Torque Open-loop Control; AMA Function; Motor Magnetisation; Slip Compensation; Torque compensation; Automatic Voltage Regulation; V/F Control, DC Brake; AC Brake; Speed Limit; Current Limit; Flying Start; Reset Function; Counter; Timer; Jogging; Multi-speed Control via Digital input; Mechanical Braking; UP/DOWN;	
Protection Functions	Missing Motor Phase Protection; Low-voltage Protection; Over-voltage Protection; Over-current Protection; Output Phase Loss Protection; Output Short Circuit Protection; Output Grounding Fault Protection; Motor Thermal Protection; Live Zero Timeout Function; AMA Fails; CPU Fault; EEPROM Faults; Button freeze; Duplicate Fails; LCP Invalid; LCP Incompatible; Parameter Read-only; Reference Out of Range; Invalid While Running etc.	
IO Terminals	Input	5 digital inputs (1 supports pulse input, pulse range: 1Hz~100kHz); 2 analog input, both can receive voltage or current signals.
	Output	1 digital output (supports pulse output, pulse range: 1Hz~100kHz); 1 relay output; 1 analog input (supports current output or voltage output via parameter).
	Power supply	1 +10V, max current output 10mA;
	Communication	RS+, RS-, max baud rate 115200bit/s;

Display	8 segments, 5 numeric displays	Display frequency, warnings, status and so on;
	Indicator	Light FWD, REV, HZ, A, RPM display various status of the drive;
	Data read-outs	Frequency setting, output frequency, feedback value, output current, DC link voltage, output voltage, output power, input terminals state, output terminals state, analogue input, analogue output, 1-10 fault records and accumulated working time etc.;
Environment	Enclosure	IP20;
	Ambient temperature	-10℃ ~60℃ , derating >50℃ ;
	Humidity	5%-85% (95% without condensation);
	Vibration test	1.14g;
	Max. altitude above sea level	1000m, derating use when more than 1000 meters;
	Motor cable length	Shield cable: 50 meters, unshield cable: 100 meters;
others	DC choke	None
	Braking unit	Built-in

Particular Specifications

Model	Input voltage	Input current (A)	Output current (A)	Rated power (kW)	Power Dissipation (W)	Air flow rate (m³/h)	Net weight (kg)
A150-0D3723	1×200-240V	5.6	2.5	0.37	17.4	0	0.8
	3×200-240V	3.6	2.5		16.5		
A150-0D7523	1×200-240V	10.5	4.5	0.75	32.9	17.2	0.9
	3×200-240V	6.8	4.5		30.9		
A150-01D523	1×200-240V	18.6	7.5	1.5	55.6	17.2	0.9
	3×200-240V	10.9	6.8		50.9		
A150-02D223	1×200-240V	26.5	9.6	2.2	86	45.5	1.5
	3×200-240V	15.5	9.6		78.7		
A150-0D3743	3×380-440V	1.9	1.2	0.37	14	0	0.8
	3×440-480V	1.7	1.1				
A150-0D7543	3×380-440V	3.6	2.1	0.75	25.3	0	0.8
	3×440-480V	3.2	2.0				
A150-01D543	3×380-440V	6.0	3.8	1.5	48.4	17.2	0.9
	3×440-480V	5.4	3.4				
A150-02D243	3×380-440V	8.5	5.3	2.2	58.5	17.2	0.9
	3×440-480V	7.6	4.8				
A150-04D043	3×380-440V	14.4	9.0	4.0	101.3	45.5	1.5
	3×440-480V	13.0	8.1				
A150-05D543	3×380-440V	19.4	13.0	5.5	141.1	90.0	2.0
	3×440-480V	17.5	10.8				
A150-07D543	3×380-440V	24.8	17.0	7.5	160.5	90.0	2.0
	3×440-480V	22.3	14				

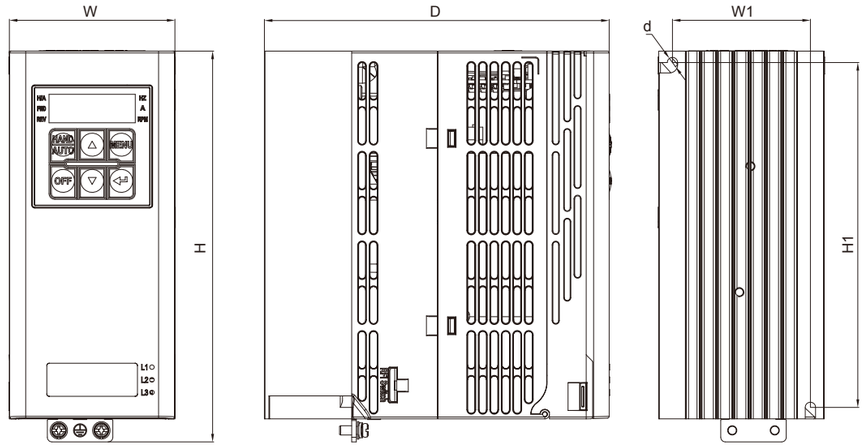
Wiring



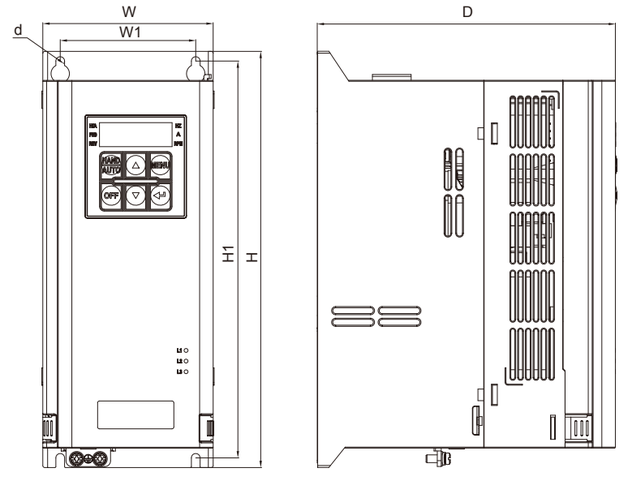
Control Terminals'Specifications

Symbol	Description	Specification
FOR, REV, DI1, DI2, DI3	Digital input	1. Logic: >DC 19V Logic: 0; <DC 14V Logic: 1; 2. Input voltage: 0~30V; 3. Input resistance: 3.6kΩ; 4. DI3 can be configured as pulse input, Pulse input range: 0.00~100.00kHz;
DO1	Digital output	1. Open collector output; 2. Output current range: 0-30mA; 3. Output current range: 0-24V; 4. Output pulse range: 0.00-100.00kHz;
RS+, RS-	RS485 communication	Max baud rate: 115200bit/s;
FA-FB-FC	Relay output	1. Resistive Load: 250VAC 3A/30VDC 3A; 2. Inductive Load: 250VAC 0.2A/24VDC 0.1A (cosφ=0.4);
+10V	10V power supply	Max load 10mA, with over load and short circuit protection functions.
VI, AI	Analog input	Both VI and AI can be configurated to 0-20mA or 0-10V by paramters: VI default: voltage input; AI default: current input; 1. Input Impedance: about 10kΩ; 2. Input Impedence: ≤500Ω;
VO	Analog output	VO can be selected to the current output or voltage output by parameter. Default voltage output 1. Voltage Output: load larger than 500Ω; 2. Current Output: load Less than 500Ω;
GND	Signal ground	GND internal connection together
PE	Ground	
J1	Option card interface	To connect option card

External and Installation Dimensions



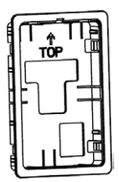
NA0-A



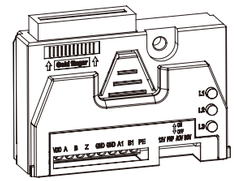
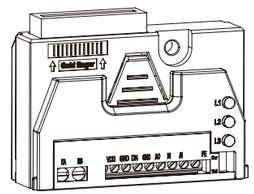
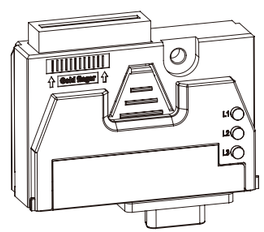
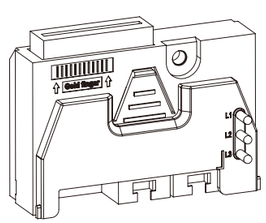
NA0-B~NA2

Frame	Voltage & Power		Dimension(mm)					
	3×200-240V	3×380-480V	W	H	D	W1	H1	d
NA0-A	0.37kW	0.37-0.75kW	72	170	150	60	150	4.5
NA0-B	0.75-1.5kW	1.5-2.2kW	72	185	150	55	175	4.5
NA1	2.2kW	4.0kW	88	215	155	70	205	4.5
NA2	-	5.5-7.5kW	100	250	160	80	240	4.5

Accessories

	Model: LCP-E20 Function: Local Control Panel (LCP) is used to modify parameters, monitor status and control the drive. The standard length of extension cable is 15 meters when mounting LCP-E20 on control cabinet. Standard configuration. Product No.: 133B4028
	Model: LCP-C30 Function: LCP-C30 supports parameter text display and modification, status monitoring, parameters copy and RTC. The standard length of extension cable is 15 meters when mounting LCP-C30 on control cabinet. Product No.: 133B8571
	Model: Cradle-01 Function: For the LCP is mounted on the control cabinet Product No.: 133B4264
	Model: CopyCard-01 Function: Copy Card can copy parameters from one drive to another. Product No.: 133B5806

Accessories

	Model: A1PG01 Function: Used for speed closed loop control, support voltage type, collector PNP/NPN open type, push-pull encoder • Encode input: A B Z • Frequency division output: A1 B1 (Divided by 1, 2, 4 multiples, up to 64) • Power: VDD 12V/24V switchable • Ground: 2* GND • Shield terminal: 1*PE • LED light: 2 Product No.: 133G8500
	Model: A1IO01 Function: Used for IO extension • Analog Input: AI, RI (supports PTC) • Analog Output: AO • Digital Input: DI4 (supports PTC) • Relay: KA-KB • Power: VDD (24V max. current 200mA) • Ground: 2 * GND • Shield terminal: PE • LED light: 2 Product No.: 133G8520
	Model: A1DP01 Function: Connect the drive into Profibus-DP networks by this card. Support DP-V1 version; Support PROFIDrive variable speed protocol. Product No.: 133G8510
	Model: A1PN01 Function: Connect the drive into Profinet networks by this card. Support PROFIDrive variable speed protocol. Product No.: 133G8511 Note: In development

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