

DL300 Series

Open Loop Vector Universal Inverter



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Enterprise vision
to be outstanding automation product and solution provider

Enterprise Spirit
Innovation and enterprising

Enterprise Mission
to creat value for customers

Business Philosophy
People oriented and common progress

Core Value
Integrity, win-win, pragmatic, dedication

5 Regions

18 Overseas sales network

35 Offices

Established in 2004, Shenzhen Simphoenix Electric Technology Co., Ltd. is committed to becoming an outstanding provider of automation products and solutions. The company specializes in the development, production, sales and service of industrial automation products, the main products are servo drive, inverter, permanent magnet synchronous motor, PLC, HMI and so on. In addition, Huizhou Co., Ltd., a wholly-owned subsidiary of Electric, focuses on the field of automation and works together with its parent company to provide customers with first-class products and solutions.

After more than twenty years of development, Simphoenix has become a well-known brand with complete product structure and strong r&d strength among domestic industrial automation brands.



DL300 Series

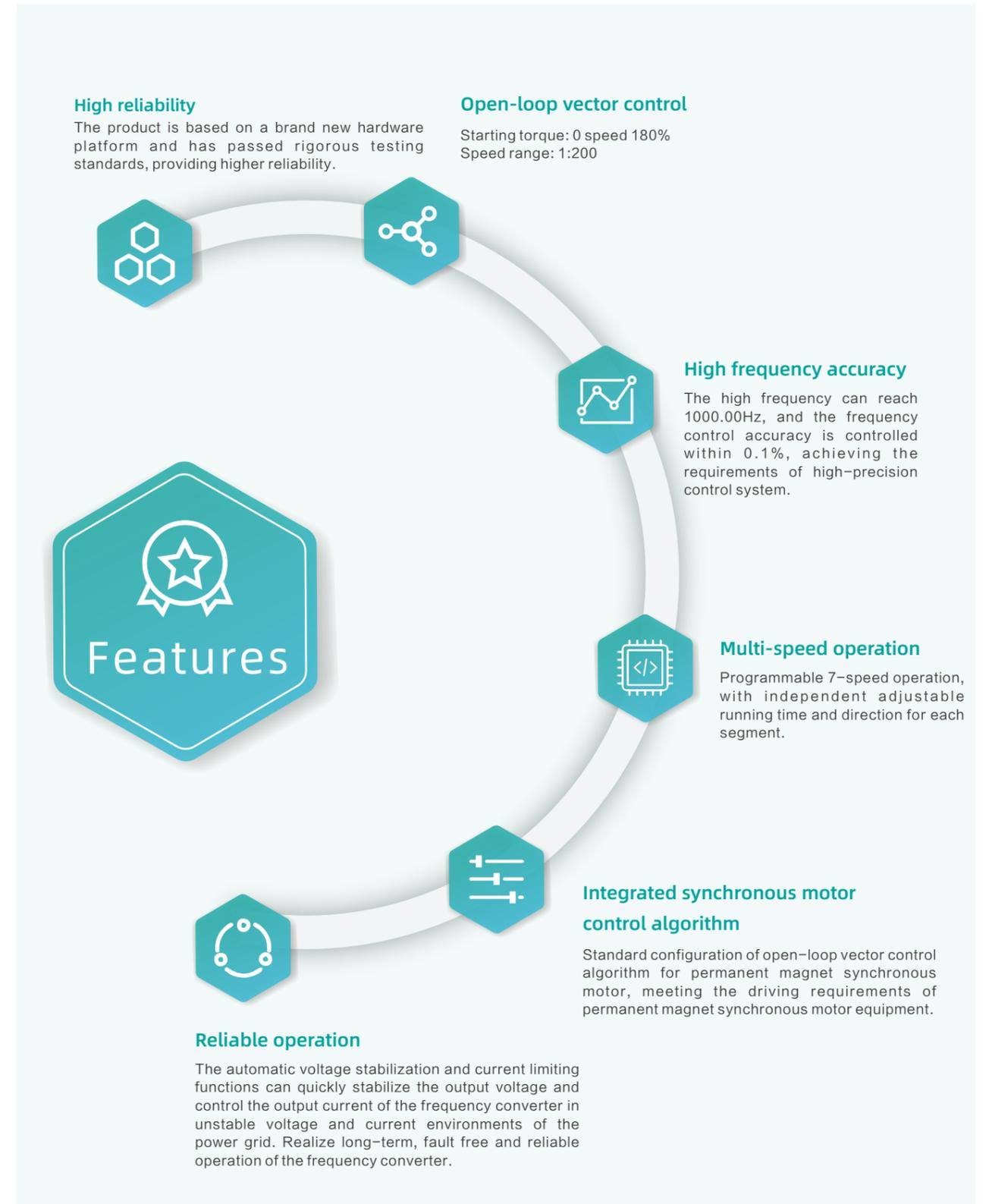
Open Loop Vector Universal Inverter

The DL300 series is based on a completely new software and hardware platform, featuring superior performance, ultra-compact size, aesthetically pleasing durability, comprehensive protection functions, and reliable stable operation. It fully inherits the company's high-end frequency converter technologies, including vector control, V/F control algorithms, and open-loop vector control algorithms for permanent magnet synchronous motors, along with flexible parameter configuration, diverse expansion interfaces, and over a hundred types of warnings and alarms. It is a high-performance, fully protected vector-type universal inverter.



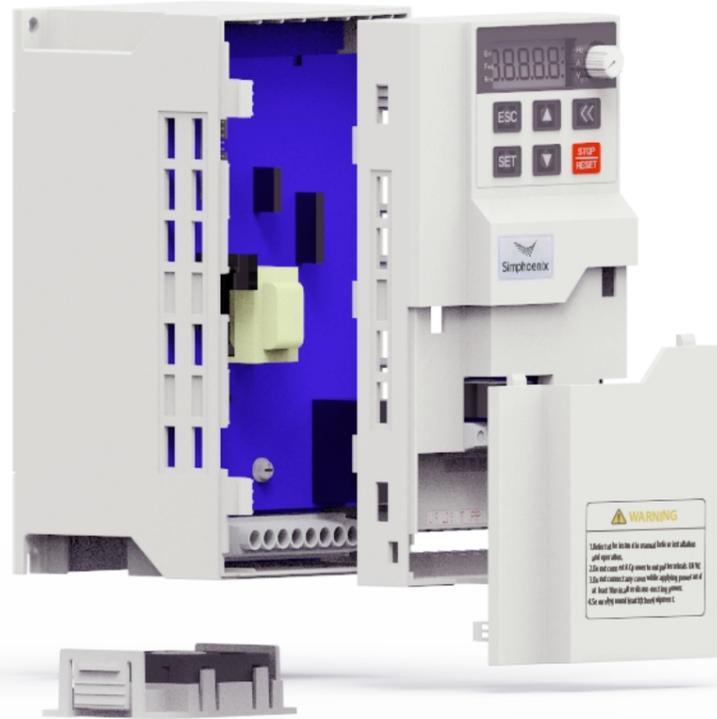
Applications

Widely used in industries such as food machinery, carving machines, woodworking machinery, photovoltaic energy, fans, and water pumps



Product architecture

- High space utilization and high power integration density
- Small in size and thin in thickness, meeting the requirements for compact installation of equipment
- Independent air duct blowing design, reducing the impact of dust and particulate matter on internal components



Naming rule

DL300-4 T 0015 G

Model	
DL300 series open-loop vector type general inverter	

Voltage class	
4	AC-380V
2	AC-220V

Power phase	
T	three phase
S	single phase

Load type	
G	heavy load
P	light load

Adaptor power (kW)	
0011	1.1
0015	1.5
...	...
...	...
0150	15.0

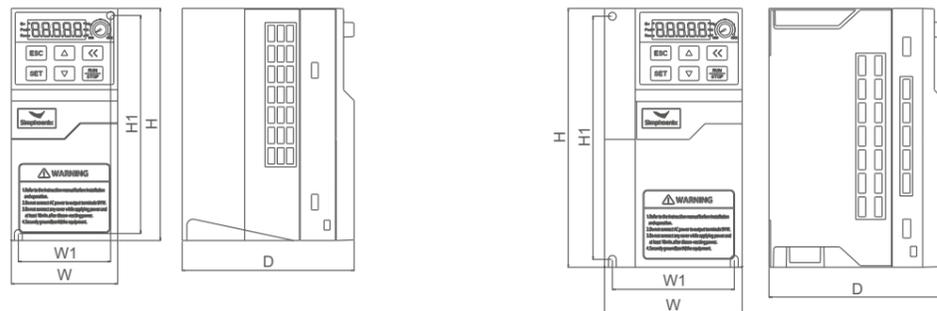
Specifications

Input	Rated voltage and frequency	Three phase (4T#) 380V 50/60Hz	Single phase (2S#) 220V 50/60Hz	
	Allowable voltage range	380 ~ 415V ± 10%	220V ± 10%	
Output	Voltage	0~Input voltage		
	Frequency	0.00~1000.0Hz		
	Loading capacity	General load mode: 110% -- long time; 150%--1min; 180%--2 sec Steady light load: 105%--long time; 120%--1min; 150%--2 sec		
Control method		VF control/open-loop vector		
Control characteristics	Frequency setting resolution	Analog input	0.1% of maximum output frequency	
		Digital setting	Low frequency mode 0.01Hz, high frequency mode 0.1Hz	
	Frequency accuracy	Analog input	Within 0.1% of the maximum output frequency	
		Digital input	Set within 0.1% of the output frequency	
	V/F curve (voltage frequency characteristics)	The reference frequency can be set arbitrarily between 5~1000Hz, and the multi node V/F curve can be set arbitrarily		
	Torque boost	Manual setting: 0.0~20.0% of rated output		
	Automatic current and voltage limiting	Automatically detect the stator current and voltage of the motor during acceleration, deceleration, or steady-state operation, and suppress them within the allowable range based on a unique algorithm		
Under voltage suppression during operation	Especially for users with low grid voltage and frequent fluctuations in grid voltage, even within the allowable voltage range, the system can maintain the longest possible operating time based on unique algorithms and residual energy allocation strategies.			
Typical functions	Multi speed control	7-segment programmable multi-stage speed control, 5 selectable operating modes		
	Optional built-in PID controller	Internally integrated optimized PID controller, capable of achieving simple closed-loop control		
	RS485 communication and linkage control	MODBUS protocol		
	Frequency setting	Analog input	DC voltage 0~10V, DC current 0~20mA (optional)	
		Digital input	Operation panel settings, potentiometer settings, RS485 interface settings, UP/DW terminal control, and can also be combined with analog inputs for various settings.	
	Output signal	Relay and OC output	1 OC output and 1 relay normally open output (TA/TC), up to 16 meanings to choose from	
		Analog output	1-channel 0~10V voltage signal, upper and lower limits can be set separately	
	Automatic voltage stabilization operation	According to the needs, dynamic voltage regulation, static voltage regulation, and unstable voltage regulation can be selected to achieve the most stable operating effect		
	Acceleration and deceleration time setting	0.01~600Sec continuously adjustable		
	Operational function	Upper and lower frequency settings, reverse operation restrictions, RS485 communication, frequency increasing and decreasing control, etc		
Display	Operation panel display	Operating status	Output frequency, output current, output voltage, motor speed, set frequency, module temperature, analog input/output, etc	
		Alarm content	Record of the last 6 faults, including output frequency, output current, output voltage, DC voltage, module temperature, and other operational parameters during the most recent fault trip	
Protection/alarm function		Overcurrent, overvoltage, undervoltage, overheating, short circuit, output phase loss, internal memory failure, etc		
Environment	Temperature	-10 °C~+45 °C (not frozen)		
	Humidity	Less than 90% (without frost)		
	Environment	Indoor (without direct sunlight, corrosion, flammable gases, oil mist, dust, etc.)		
	Altitude	From 0~1000 meters, for every 1000 meters increase, the load will decrease by 10%		
	Protection level	IP20		
Cooling method		Forced air cooling		
Installation method		Wall-mounted		
Vibration		<6m/s ²		

Model

Model	General load mode			Steady light load		
	Rated capacity (kVA)	Output current (A)	Suitable motor (kW)	Rated capacity (kVA)	Output current (A)	Suitable motor (kW)
DL300-2S0007	1.9	5.0	0.75	--	--	--
DL300-2S0015	2.9	7.5	1.5	--	--	--
DL300-2S0022	3.8	10.0	2.2	--	--	--
DL300-2S0030	5.3	14.0	3.0	--	--	--
DL300-2S0040	6.3	16.5	4.0	--	--	--
DL300-4T0011G/4T0015P	2.0	3.0	1.1	2.4	3.7	1.5
DL300-4T0015G/4T0022P	2.4	3.7	1.5	3.6	5.5	2.2
DL300-4T0022G/4T0040P	3.6	5.5	2.2	6.3	9.5	4.0
DL300-4T0040G/4T0055P	6.3	9.5	4.0	8.6	13.0	5.5
DL300-4T0055G/4T0075P	8.6	13.0	5.5	11.2	17.0	7.5
DL300-4T0075G/4T0110P	11.2	17.0	7.5	16.5	25	11
DL300-4T0110G/4T0150P	16.5	25	11	21.7	33	15
DL300-4T0150G/4T0185P	21.7	33	15	25.7	37	18.5

Dimensions

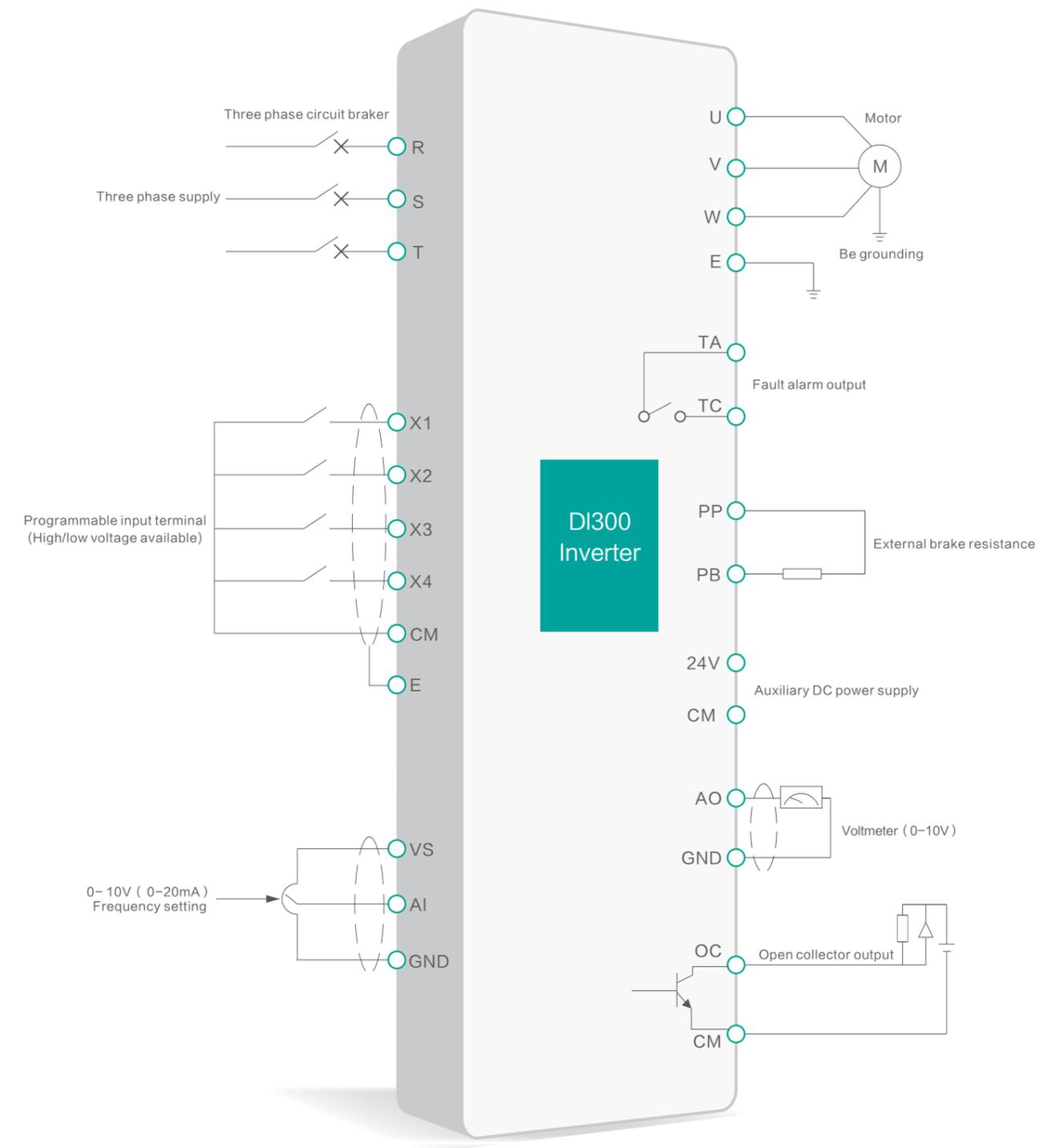


Class I
DL300-4T0011G/4T0015P~
DL300-4T0015G/4T0022P
DL300-2S007~2S0015

Class II, III and IV
DL300-4T0022G/4T0040P~
DL300-4T0150G/4T0185P
DL300-2S0022~2S0040

Model (Three phase 380V)	Model (Single phase 220V)	W1 (mm)	W (mm)	H1 (mm)	H (mm)	D (mm)	Screw specification
DL300-4T0011G/4T0015P	DL300-2S0007	59	68	139	148	110	M4
DL300-4T0015G/4T0022P	DL300-2S0015						
DL300-4T0022G/4T0040P	DL300-2S0022	78	88	155	165	113	M4
DL300-4T0040G/4T0055P	DL300-2S0030						
DL300-4T0055G/4T0075P	DL300-2S0040	99	109	199	209	135	M4
DL300-4T0075G/4T0110P	--						
DL300-4T0110G/4T0150P	--	134	146	235	249	155	M5
DL300-4T0150G/4T0185P	--						

Wiring Diagram



Application of DL300 series inverter in food crushing pot

Introduction

Grinding pot is a commonly used food processing machinery, mainly used for grinding and processing food raw materials. Due to the varying hardness and volume of crushed materials, the frequency converter driving the main rotating motor is required to have short acceleration and deceleration time, strong overload capacity, and strict requirements for the volume of the frequency converter. The Simphoenix DL300 series meets the strict process requirements of crushing pots with its excellent control performance, compact and compact structural design, and simple and convenient operation.



Process requirements

- Smooth acceleration and deceleration, balanced torque output.
- Easy to install, operate, and maintain.
- High production efficiency.

System Solution

The system uses DL300 series to drive the main rotating motor, adopts SVC control mode, and high-precision potentiometer achieves stepless speed regulation through 0-10V analog channel. The excellent control performance of the frequency converter enables the main motor to accelerate quickly to the working speed, and the strong overload capacity can ensure the crushing of various hardness food materials, improving the efficiency of the equipment.



Features

- Strong overload capacity, 150% -60s, 180% -2s.
- Small and beautiful size, saving installation space.
- Accurately adapt motor parameters in SVC mode to ensure stable operation of the equipment.
- The speed can be adjusted in various ways, making it easy and simple to operate.
- After comprehensive EMC testing, the product is guaranteed to be stable and reliable.

