Energy efficient , beautiful environment

SHENZHEN K-EASY AUTOMATION CO.,LIMITED

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Version: A01

KD600M SERIES

Universal vector frequency converter

COMPANY INTRODUCTION

Shenzhen K-Easy Automation Co.,Limited is a professional manufacturer, specialize in R&D And production of AC drives. We have built up a comprehensive product family. Frequency inverters' power covers the range from 0.4 to 630kW, and voltage range is between 220V and 480V. More than inverters are running smoothly 300, 000 units at different industrial sites.

Why Us

- We believe “quality is life ”,so we will test all products before shipment,All Module of our VFD will be used quality is life with Infenion only, With years of persistence, the total failure ratio of Our frequency inverters has been controlled below 1%. We never lose a customer because of the quality problem;
- With Strong R&D and Engineer Team, makes our after-service very easy, For all doubts and requesting for technologies supporting, We can offer detailed Solution without delay, so for us,“Not Only Products, But also solutions”;
- All our products will be offered with 24 months Warranty Period instead of 18 months.

Join us, enjoy the business.

Name Rules

KD600M	-	2	S	-	2.2	G	/	4.0	P
①		②	③		④	⑤		④	⑤

Code	No.	Content
①	Product series	KD600M series
②	Voltage level	2 : 220V 4 : 380V
③	Voltage Classification	S : Single-phase T : Three phase
④	Adapted motor power	0.4KW~5.5KW
⑤	Application	G: Universal type P: Fan and water pump type

QUALITY SERVICE

- Our VFD has been used in Shenzhen and Guangzhou Metrol Since Year 2014.
- Problem Rate Less Than 1%..
- Support OEM Service
- Strong Engineer Team
- 24 Months Warranty Time
- Very Good After Sales-Service, Best Solutions Can be always offered within 2 hours

KD600M series Universal vector frequency converter

KD600M is our new design with the most compact size but good vector Control Mode, Can be easily tuned to simple speed control for 80% Motors,really cheapest price, and good function.. with 24 months warranty offered, it can almost match all customers'requests.

KD100:Power Rate	1 phase & 3 phase Input 3 phase output	220V (+-20%) 0.4KW~4.0KW	380V (+-20%) 0.7KW~5.5KW

Best Solutions For Small Vector Series

Vector Control | PID | Multi-step Freq. | ModBus

Over-voltage & Over-current stall control | Torque Boost

Wobble Frequency Control | Simple PLC | FDT | ……

Start Torque@0.5Hz
100%

Overload Capability
200%

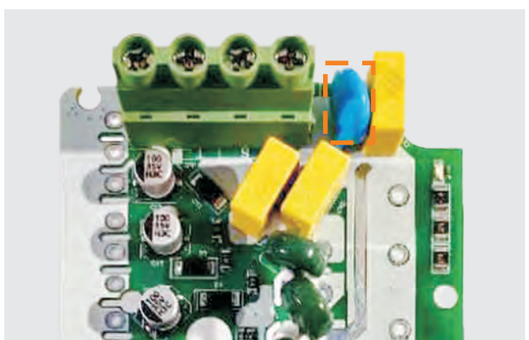
Speed accuracy ±
0.5%

Ambient Temp °C
40

Speed Regulation
1:100

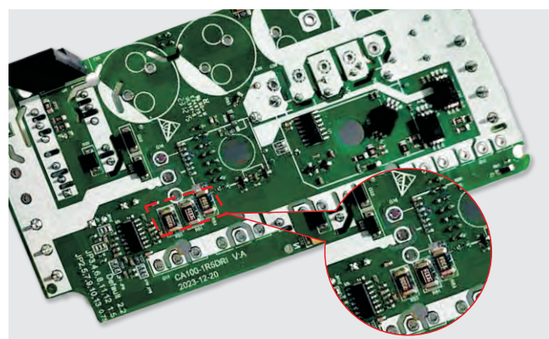
Multi-step speed max.
16

REASONABLE STRUCTURAL DESIGN



EMC grounding design

✧ Independent grounding system selection switch (through the screw access or not to choose), easy to solve the problem of EMC interference and leakage current.



Three resistance current sampling and reconstruction technology

✧ Hall Chips Will Be Built In For All Series, Which Is Mainly Used For Heavy Loading And Over-Current Protection (95% Factory In China No install this in mini series).

With Three phase current detection	Without Three phase current detection
Over-Current Protection for 3 Phase for output Motor	Need Software to check Over-Current
—	Protection and only check out 2 phase for output Motor
Protetion Time For Over-Current < 0.001S	Protetion Time For Over-Current < 5~10S
Isolation of primary and secondary sides	X
Strong anti-interference	X
Can use for Vector Control	X

ADVANCED DESIGN

C3
◆ **EMC Filter**
C3 Level Filter Build-In Standardly
Better EMC Performance

IGBT
◆ **IGBT Selection**
Selection Of Large Margin
Current>2 Times of VFD Current

200%
◆ **Overload Capacity**
120% long time running without trip.
150% for 60 seconds
180% for 10 seconds

±15%
◆ **Voltage Range**
Compatible with ±15% input voltage fluctuation, output voltage s table.

S Curve
◆ **S Curve**
S Curve Acceleration/Deceleration
Better Start /Stop Performance

Flying Start
◆ **Flying Start Function**
Restart The Running Motor Smoothly
No Current Surge
High Accuracy

Prote ction
◆ **Protection**
Overcurrent、Overvoltage、PID feedback failure、Overheat、Undervoltage、The main contactor is abnormal、Motor overload、Fast protection、Unbalanced output、Frequency conversion overload、System abnormal、Motor detection abnormalOutput phase loss、Input phase loss、Short circuit protection of control board power supply.

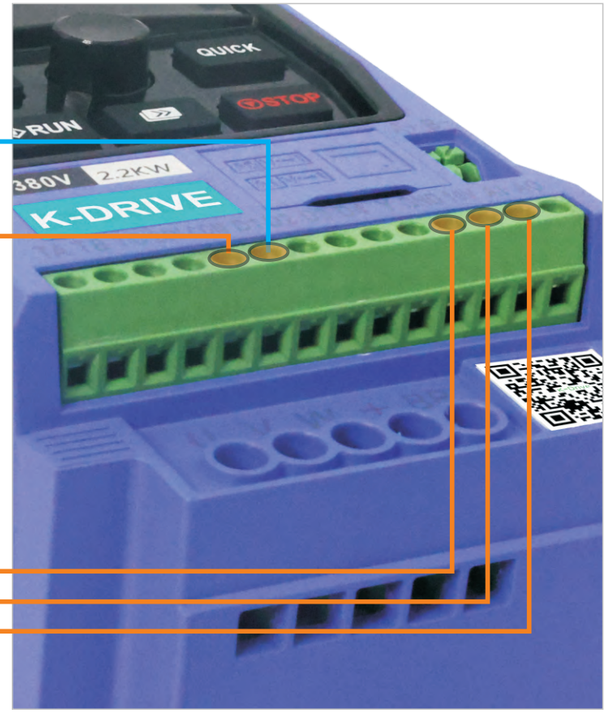
EASILY CONNECT WAY

External Switch

Forward Button, P5-00=1

External potentiometers

“Setting Way,P0-06=2 To Use External potentiometers”

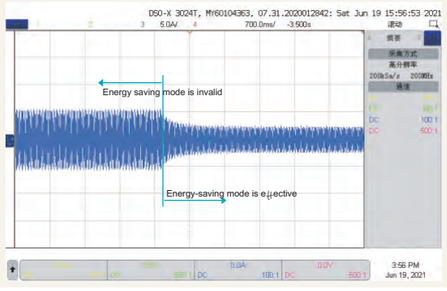


DRIVE DESIGN & FEATURES

Energy-saving operation of fans and pumps

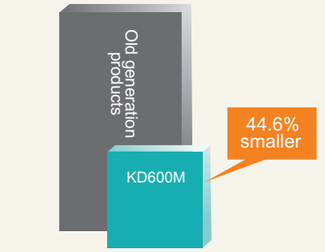
- With excellent automatic energy-saving function, you only need to set the maximum energy-saving target, as long as the operation meets the energy-saving conditions, you can enter the automatic energy-saving state. By setting the VF function, one-to-multiple and long-distance control applications can be realized to meet the application of transformation occasions.

Automatic energy saving control

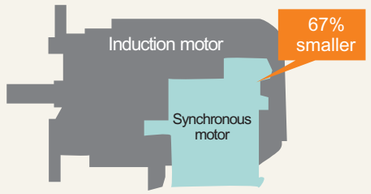


DRIVE DESIGN & FEATURES

Example:380V 90KW



Example shows 220V 3.7KW motor



Even more compact

- K-DRIVE continues to make applications even smaller by combining the compact designed drive with the light, efficient design of a synchronous motor.
- Use Side-by-Side installation for an even more compact setup.
- Finless models available.

Independent duct design

- Independent air duct design, effectively preventing dust entering inverter, causing short-circuit and other faults and improving reliability;
- Use bigger air volume and long life cooling fan effectively reduces the internal temperature rise of the inverter and ensures reliable and stable operation of inverter.

Perfect protection system

- Designed for 10 years of maintenance-free operation.
- Cooling fan, capacitors, relays, and IGBTs have been carefully selected and designed for a life expectancy up to ten years.

※ Assumes the drive is running continuously for 24 hours a day at 80% load with an ambient temperature of 40℃.

DRIVE DESIGN & FEATURES

High speed accuracy and wide speed range

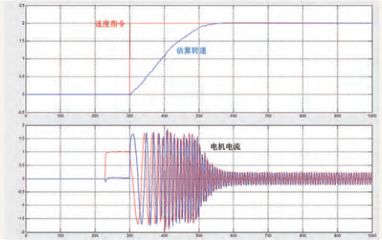
✧ **High speed accuracy and wide speed range:**

Steady speed accuracy: ±0.5% (SVC), ±0.02% (VC);
Speed range: 1:200 (SVC), 1:1000 (VC),

✧ **Heavy load overload capability:**

110% rated current for long-term stable operation;
150% rated current for 1 minute;
180% rated current 10s.

100Hz step response

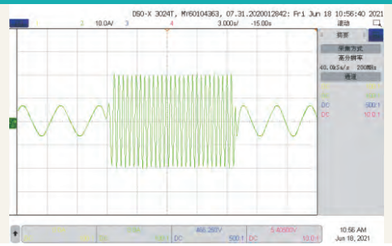


High torque in low speed, fast response

✧ **High torque in low speed, fast response Load capacity in low speed:**

VF: 180%@0.50Hz ;
SVC: 180%@0.25Hz ;
VC: 200%@0.00Hz.

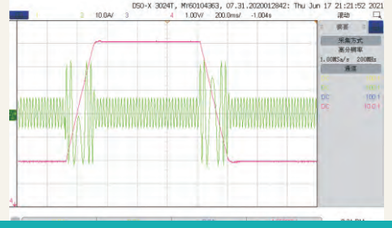
0.25Hz plus 150% load



Rapid response to impact loads

✧ When it meets with sudden load change, inverter can quickly restore the speed, reduce the speed fluctuation, and ensure the production stability and high quality finished products.

0.0s acceleration and deceleration time fast forward and reverse

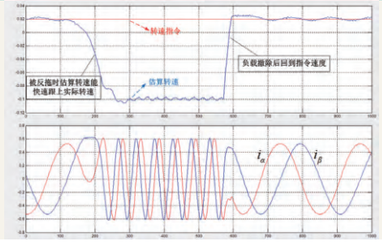


Optimized SVC algorithm, stable operation in power generation

✧ At present, most of the inverters can not work stably under the SVC control mode (especially in the case of being reversed).

✧ KD600M can run very well, and it achives great convenience in some special applications (such as tension control in rewinding and winding) .

Reversed waveform



SPECIFICATION

Input & Output

Input voltage	1AC 220~240V(± 15%) 3AC 220~240V(± 15%) 3AC 380~460V(± 15%)
Input frequency	50Hz/60Hz ±5%
Output voltage	0~input voltage, deviation <±3%
Output frequency	0~600Hz

Control Characteristics

Control mode	v/f control Sensor-less vector control Torque control
Speed accuracy	±0,5% (V/f) ±0,2% (SVC)
Speed fluctuation	±0,3% (SVC)
torque response	< 10ms (SVC)
Starting torque	0,5Hz: 150% (V/f) 0,25Hz: 180% (SVC)
Overload capability	150% Rated current -60s 180% Rated current -10s 200% Rated current -1s
Simple PLC Multi-step speed	16 speed External digital signal control Internal clock
PID function	Standard build-in
Communication	Modbus

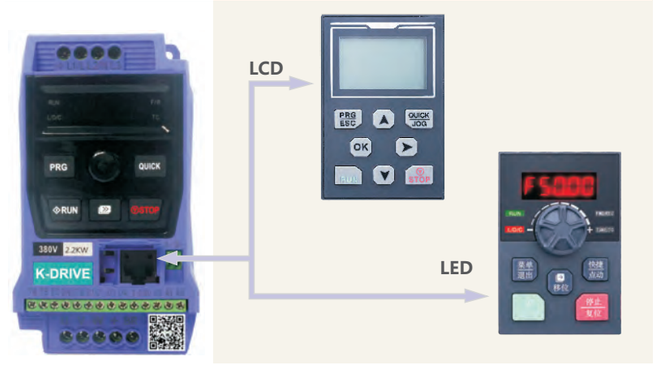
Featured functions

Featured functions	Input &Output delay Flexible parameters display AVR (Automatic Voltage Regulation) Timing control, fixed length control, etc. Simple PLC, 16-steps speed control Torque control build-in S curve acceleration/deceleration Multi-functional programmable keypad V/f separated control

Environment Limitation

Installation location	Without direct sunlight,free from dust,corrosive gases, oil mist, flammable gases, water vapor, water drop and salt,etc.
Altitude	0~2000m Derated 1% for every 1000m when the altitude is above 1000meters
Ambient temperature	-10°C~50°C (Output derated while the temperature is higher than 40°C)
Storage temperature	-20°C~+70°C
Relative Humidity	5-95% no condensation

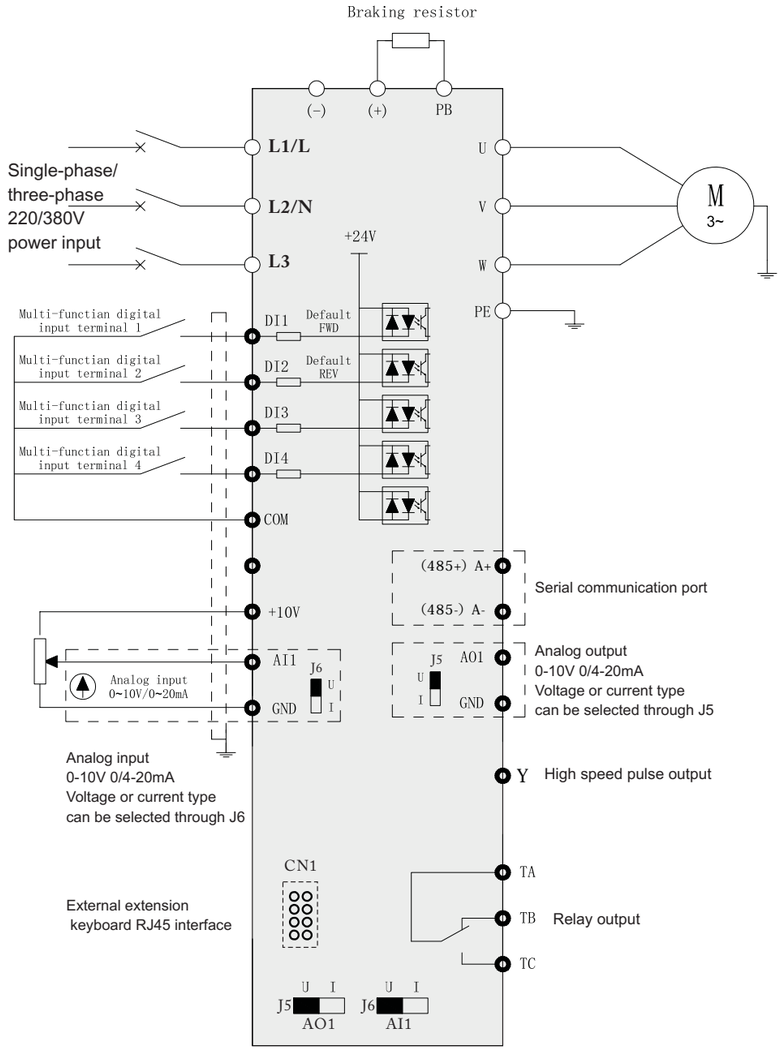
External keyboard



Cooperation brand

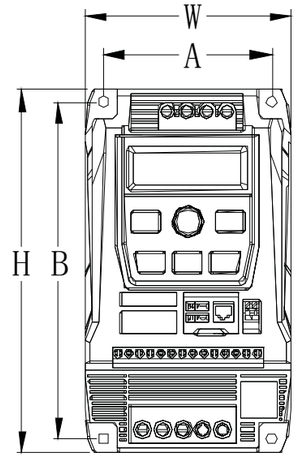
World-class components inside,
stronger “bones”, healthier “body”.

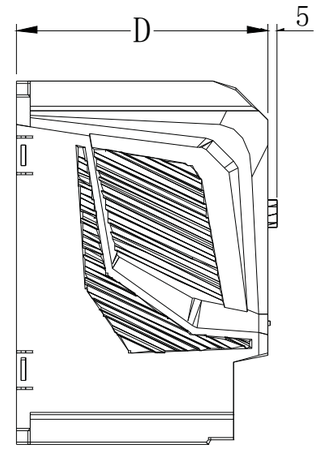
BASIC WIRING DIAGRAM



Terminal	Terminal Name	Terminal	Terminal Name
D1~D4	Digital Input X5	AI1	Analog Input X1
A,B	RS485 X1	TA,TB,TC	Relay Output X1
X5	HDI (High Speed Pulse Input /Output) X1		

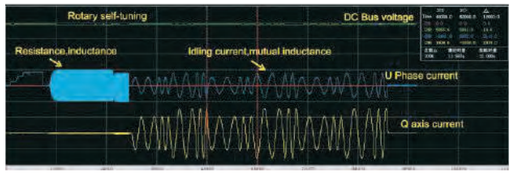
TECHNICAL SPECIFICATION



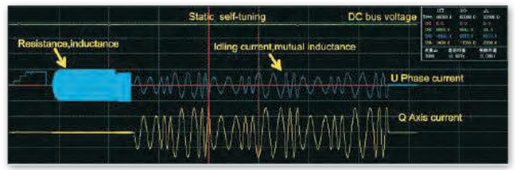


Model	Input current (A)	Output curren t(A)	Dimensions (mm)			Installation size(mm)		Aperture
			H	W	D	A	B	
Single phase 220V range: -15%~+20%								
KD600M-2S-0.4G	5.4	2.3	149	83	107	66	136	Φ5
KD600M-2S-0.7G	8.2	4.0	149	83	107	66	136	Φ5
KD600M-2S-1.5G	14.0	7.0	170	98	120	80	157	Φ5
KD600M-2S-2.2G	23.0	9.6	170	98	120	80	157	Φ5
Three phase 220V range: -15%~+20%								
KD600M-2T-0.4G	2.7	2.3	149	83	107	66	136	Φ5
KD600M-2T-0.7G	4.2	4.0	149	83	107	66	136	Φ5
KD600M-2T-1.5G	7.7	7.0	170	98	120	80	157	Φ5
KD600M-2T-2.2G	12.0	9.6	170	98	120	80	157	Φ5
Three phase 380V range: -15%~+20%								
KD600M-4T-0.7G/1.5P	3.4/5.0	2.1/3.8	149	83	107	66	136	Φ5
KD600M-4T-1.5G/2.2P	5.0/5.8	3.8/5.1	149	83	107	66	136	Φ5
KD600M-4T-2.2G/3.7P	5.8/10.5	5.1/9.0	149	83	107	66	136	Φ5
KD600M-4T-4.0G/4.0P	10.5/14.6	9.0/13.0	170	98	120	80	157	Φ5
KD600M-4T-5.5G/7.5P	14.6/20.5	13.0/17.0	170	98	120	80	157	Φ5

PERFORMANCE FEATURES



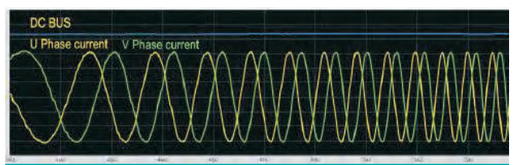
Rotary self-tuning



Fully static self-tuning

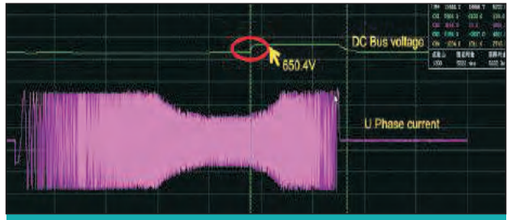
Self-tuning of motor parameters

- It could accurately acquire the motor parameters both in rotary and static self-tuning, so as to provide higher control accuracy and response speed,which is convenient and simple.
- Rotary self-tuning: Must unload the motor. Suit for applic-ations with higher requirement of control accuracy.
- Fully static self-tuning: Leading motor tuning algorithm, can acquire the motor parameters in static status, which is compar-able to the rotary self-tuning.



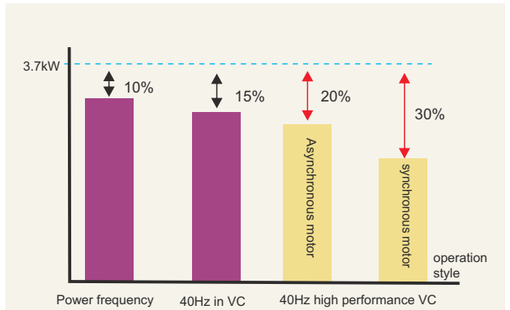
Over current suppression

The current suppression function could avoid the frequent OC fault of inverter. While the current is over the current protection point, it could continuously limit the current below the protection point, so as to protect devices, prevent the overcurrent fault caused by sudden load or interference and reduce the loss caused by.stop without reason.



Over voltage suppression

The overvoltage suppression function could prevent inverter from overvoltage fault in ACC/DEC process. During ACC/DEC, if the bus voltage of inverter reaches or exceeds the overvoltage protection point, the overvoltage suppression function could suppress the rising of bus voltage by automatically adjust the operation frequency, so as to protect the devices and avoid the overvoltage fault caused by the rising of bus voltage.



Comparison diagram of fan energy saving

Excellent energy-saving functions

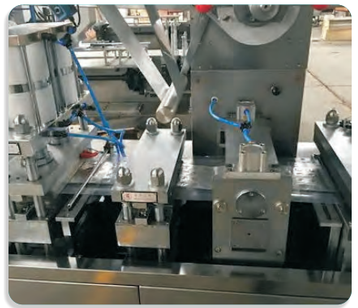
Adopt the new generation of energy-saving control technolo-gy to realize the high-efficiency operation of induction motor; reduce the excitation current according to the load current, and automatically adjust according to the loading condition; improve the motor efficiency at most; reduce the motor consumption and energy consumption. 30% of AM&PMSM adopt the VC mode to drive PMSM and the energy utilization could increased by more than 10%.

APPLICATIONS

Printing Dyeiing

Wire Drawing Mchine

Water Supply



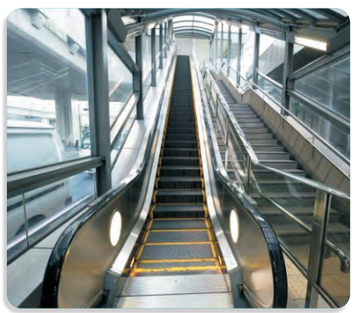
Packing Machiine

Industrial Washing Machine

Construction Hoist

Ball Mill

Air Compressor



Escalator