SIMATIC motion





KD600 SERIES
Vector inverter

ISO 9001 CE

ABOUT US



Shenzhen K-Easy Automation Co.,Limited is a professional manufacturer, specialize in R&D And production of AC drives. We have built up a compr ehensive 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.






COMPANY PROFILE






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.

QUALIFICATION HONOR

(ISO9001 quality management system certification & CE certificate)







BIGGER SIZE, BIGGER POWER

Do whatever you want I Give you what you want



OUTSTANDING QUALITY

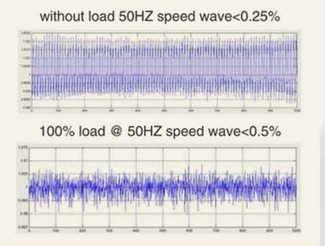
01 100% Start Torque@0.5Hz	02 200% Overload Capability	03 ±0.5% Speed accuracy
04 40 ℃ Ambient Temp	05 1:100 Speed Regulation	06 16 Multi-step speed max.

FULL FUNCTIONING

485 communication interface + 16 speed adjustable



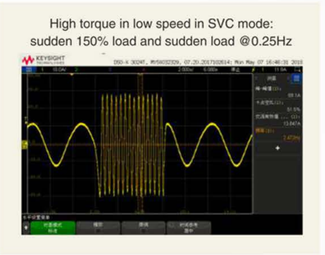
EXCELLENT PERFORMANCE



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:

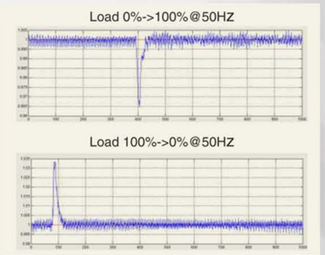
110% rated current for long-term stable operation
150% rated current for 1 minute
180% rated current 10s



HIGH TORQUE IN LOW SPEED, FAST RESPONSE

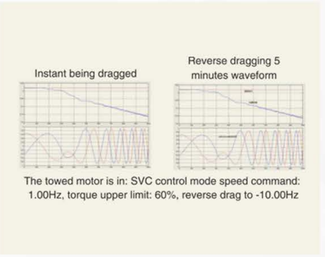
High torque in low speed, fast response
Load capacity in low speed:

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



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.



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).

KD600 can run very well, and it achives great convenience in some special applications (such as tension control in rewinding and winding) .

STABLE AND RELIABLE

	Synchronous Motor
Rotational Auto-Tuning	Applications requiring high starting torque, high speed, and high accuracy.
Stationary Auto-Tuning	Applications where the motor must remain connected to the load during the tuning process.
Line-to-Line Resistance Auto-Tuning	For tuning after the cable length between the motor and drive has changed, or when motor and drive capacity ratings differ.
Encoder Auto-Tuning	For running the motor at top efficiency all the time

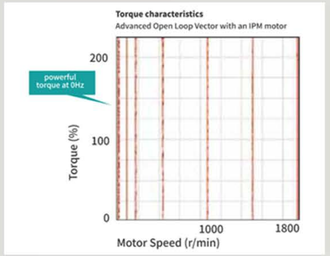
	Tuning the Load
ASR*Tuning	Perfects responsiveness relative to the machine. Until now, this tuning procedure was fairly time consuming to set.
Inertia Tuning	Optimizes the drive 's ability to decelerate the load. Useful for applications using Kinetic Energy Buffering Function and Feed Forward functions.

NEW AUTO-TUNING FEATURES

Auto-Tuning features optimize drive parameters for operation with induction motors as well as synchronous motors to achieve the highest performance levels possible.

Optimizing not only the drive and motor performance, but also automatically adjusts settings relative to the connected machinery.

New Auto-Tuning methods. KD600 continuously analyzes changes in motor characteristics during operation for highly precise speed control.

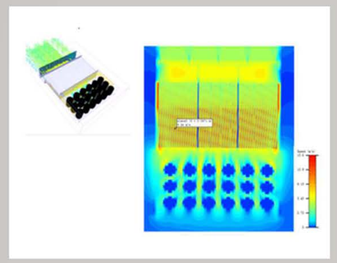


POWERFUL TORQUE CHARACTERISTICS

Powerful torque at 0Hz, without sensors or feedback devices. Until recently, sensorless control has been out of reach for synchronous motors.

KD600 series provides powerful starting torque algorithm without relying on pole sensors or motor feedbacc.

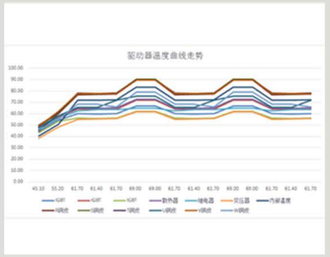
High-performance current vector control achieves powerful starting torque with an induction motor.



DECELERATION OVER EXCITATION FUNCTION

Accurate thermal simulation platform software ensures the reliability of thermal simulation.

Each KD600 inverter has undergone thermal simulation testing, and only the physical prototype is developed within the scope of the thermal simulation safety design requirements. After the actual test, the thermal simulation results are very close to the physical test results. In the limit test state, the thermal simulation can replace the actual load simulation and an additional layer of scientific thermal test.



RIGOROUS TEMPERATURE RISE TEST

The whole machine temperature rise test uses the most severe cyclic overload test to meet the long-term reliable operation under extreme load conditions.

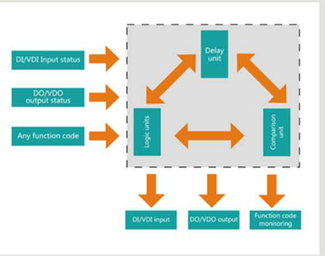
Cyclic overload test: 1.5 times overload current for 1 minute, ambient current for 4 minutes, and 1.5 times operation for 1 minute at ambient temperature of 40° .

STABLE AND RELIABLE

COMPLETE PROTECTION

The whole series has output to ground short circuit protection, over current protection, drive overload protection, motor overload protection, drive over temperature protection, optional PT100/PT1000 motor over temperature protection.

According to the type of fault, it can be set as fault free stop, fault deceleration stop, fault continue to run, and facilitate the on-site handling of emergency situations.



POWERFUL INTERNAL LOGIC

Built-in up to 6 sets of delay functions, a wide variety of input sources, the output can be used as a variety of other built-in module inputs.

Built-in up to 4 sets of comparator units, any input, multiple comparison functions, the output can be used as a variety of other builtin module inputs.

Built-in up to 4 sets of logic units, arbitrary inputs, multiple logic operations, and outputs can be used as inputs for various other builtin modules.

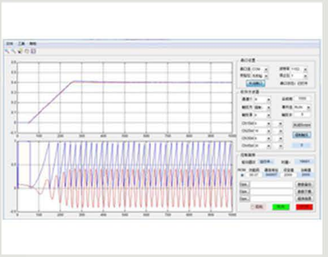


RICH EXPANSION FUNCTION

Standard ModbusRTU communication function,-support for fieldbus such as Profibus-DP, CanOpen ,etc.

Supports incremental encoders and resolvers, where incremental encoders are compatible with differential encoders and open collector encoders.

Support for IO expansion.



POWERFUL DEBUGGING SOFTWARE

Support online oscilloscope function;

Support parameter backup and download;

Support function parameter modification;

Support inverter software online upgrade.

MULTIFUNCTIONAL AND USER FRIENDLY

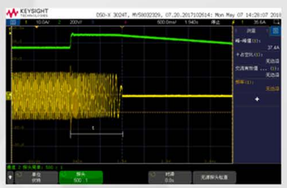
DECELERATION OVER EXCITATION FUNCTION

In many applications, the over-excitation function is set, the deceleration time is shortened by adjusting the motor output frequency and current, and the peripheral braking resistor and other accessories are reduced when the requirements for fast shutdown are met.

Deceleration overexcitation is valid



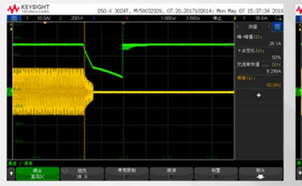
Deceleration over excitation is invalid



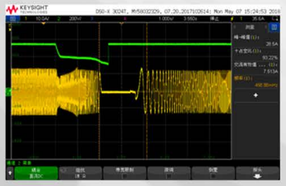
UNDERVOLTAGE STALL FUNCTION

When the system is powered off instantaneously, the motor is controlled by the regenerative energy during deceleration to maintain the inverter running for a short period of time and reduce the risk of idling under the instability of the grid.

Undervoltage stall is invalid



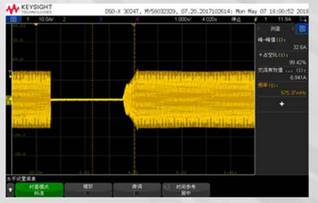
Undervoltage stall is valid



EXCELLENT SPEED TRACKING

Non-impact smooth start for motors that do not stop rotating.

Speed tracking current waveform

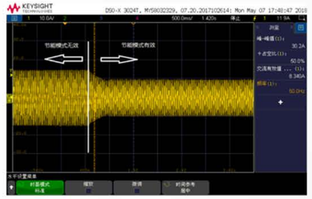


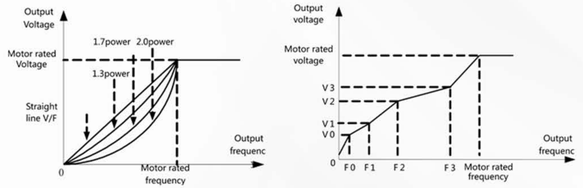
MULTIFUNCTIONAL AND USER FRIENDLY

ENERGY SAVING FUNCTION

It has excellent automatic energy saving function, only need to set the maximum energy saving target, as long as the operation meets the energy saving condition, it can enter the automatic skill state.

By setting the VF function, it can realize the application of 1 drag and long distance







RELIABLE DEVICE

Adopt world-class brand devices

AVAGO TECHNOLOGIES · TEXAS INSTRUMENTS · infineon · TDK · FE · VISHAY

METICULOUS JUST TO SURPASS



INDEPENDENT AIR 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.



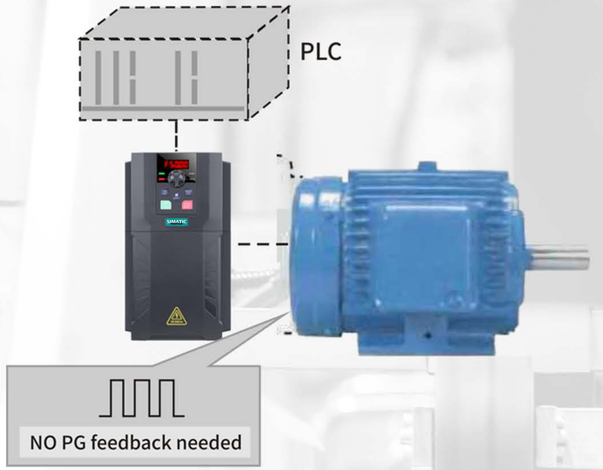
PERFECT PROTECTION SYSTEM

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 ambie nt temperature of 40℃.

POSITIONING CAPABILITY WITHOUT EXTERNAL DEVICES



ADVANCED DRIVE TECHNOLOGY



USE MORE VARIETY

Control panel can be extended ex-ternally



NEW KEYBOARD

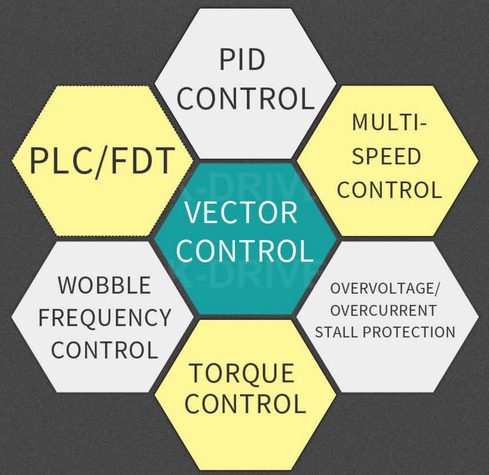
more convenient to use



FEATURES A LOT

POWER RANGE Single-phase input: 220V 0.4KW~4.0KW Three-phase input: 380V 0.4KW~630KW





OUTSTANDING ABILITY

EMC Filter — C3 Level Filter Build-In Standardly
Better EMC Performance

IGBT — Selection Of Large Margin
Current>2 Times of VFD Current

200% — 120% long time running without trip.
150% for 60 seconds
180% for 10 seconds

±15% — Compatible with ±15% input voltage
fluctuation, output voltage s

S Curve — S Curve Acceleration/Deceleration
Better Start /Stop Performance

Flying Start — Restart The Running Motor Smoothly
No Current Surge

APPLICATION

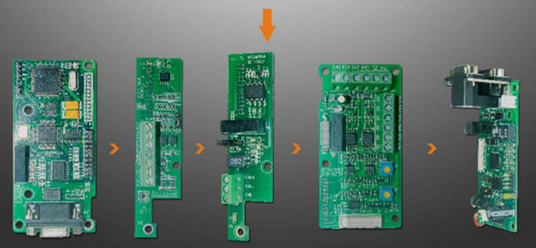
Fans / Water Pumps / Injection Molding Machines / Extruders / Ball Mills / Screw Air Compressors / Winding Machines / Mixers / Conveyors / CNC Machine Tools / Hoists, etc.

Construction site factory water plant / hotel community bath / central air conditioning water system / paper machinery factory / farm / sewage treatment plant / fire hospital traffic / machine tool equipment, etc.



EXTERNAL AND E XPANSION CARDS





Name	Model	Function
I/O expansion card 1	KD600-IO1	5 digital inputs, one relay output, one analog A02 output, one digital y2 output, and one temperature detection (PT100/PT1000/PTC/KTY).
I/O expansion card 2	KD600-IO2	Two digital inputs, one relay output, one analog AO2 output, and one LCD expansion network port RJ45 socket.
RS-485 communication card	KD600-ISO485	One isolated MoDBus communication adapter card
CAN communication expansion card	KD600-CAN	CANOPEN communication adapter card
ProFinet communication card	KD600-PN	ProFinet communication card
Profbus-DP communication card	KD600-DP	Profbus-DP communication card
Ethercat communication card	KD600-Ethercat	Ethercat communication card
Open collector ABZ encoder	KD600-PG1	Open collector PG card (PG card 1 can only be applied to asynchronous machines; compatible with complementary output, the encoder card output DC power supply can be selected +12V or +5V (jumper selection))
Differential input ABZ encoder card	KD600-PG3	ABZ differential signal input PG card
Resolver Interface Card	KD600-PG6	Applicable to resolver, DB9 interface, optional matching shielded encoder cable.
LCD screen	KD600-LCD	The LCD screen needs to be used with a 102 expansion card.

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

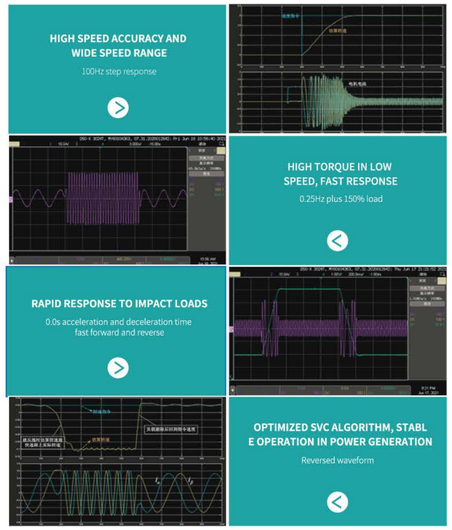
Control mode	v/f control Sensor-less vector control Torque control
Speed accuracy	±0,5% (V/f) ±0,2% (SVC)
Speed fluctuation	±0,3% (SVC)
torque response	< 10ms (SVC)
Starting torque	0,5Hz: 150% (V/f) 0,25Hz: 180% (SVC)
Overload capability	150% Rated current -60s 180% Rated current -10s 200% Rated current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

Featured functions

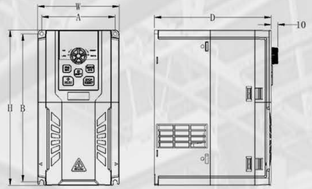
Featured functions	Input &Output delay Flexible parameters display AVR (Automatic Voltage Regulation) Timing control, fixed length control, etc. Simple PLC, 16-steps speed control Torque control build-in S curve acceleration/deceleration Multi-functional programmable keypad V/f separated control

Environment Limitation

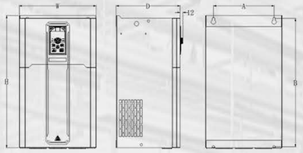
Installation location	Without direct sunlight,free from dust,corrosive gases, oil mist, flammable gases, water vapor, water drop and salt,etc.
Altitude	0~2000m Derated 1% for every 1000m when the altitude is above 1000meters
Ambient temperature	-10°C~50°C (Output derated while the temperature is higher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



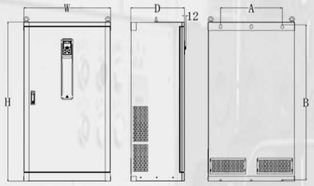
BASIC WIRING DIAGRAM



Schematic diagram of plastic dimensions and installation dimensions below 22KW



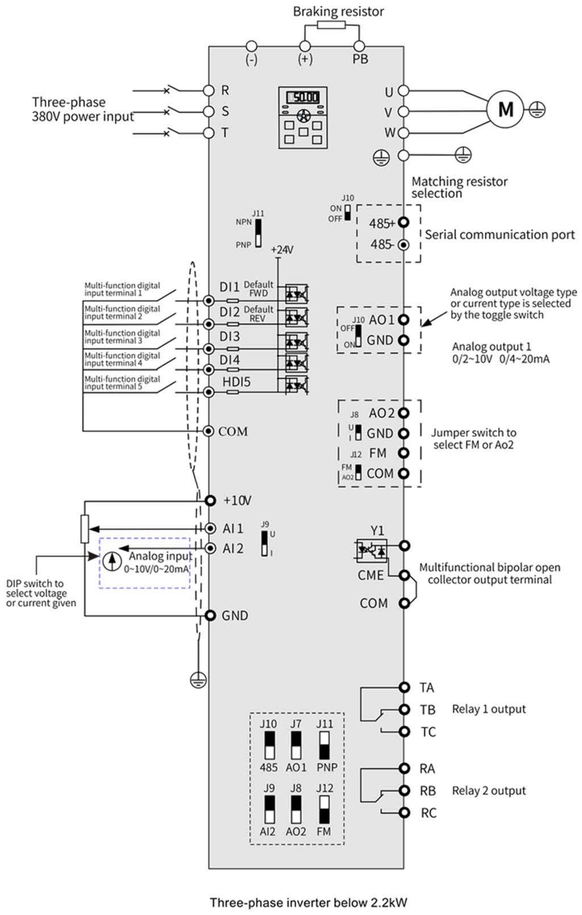
Schematic diagram of overall dimensions and installation dimensions of 30~132KW sheet metal chassis



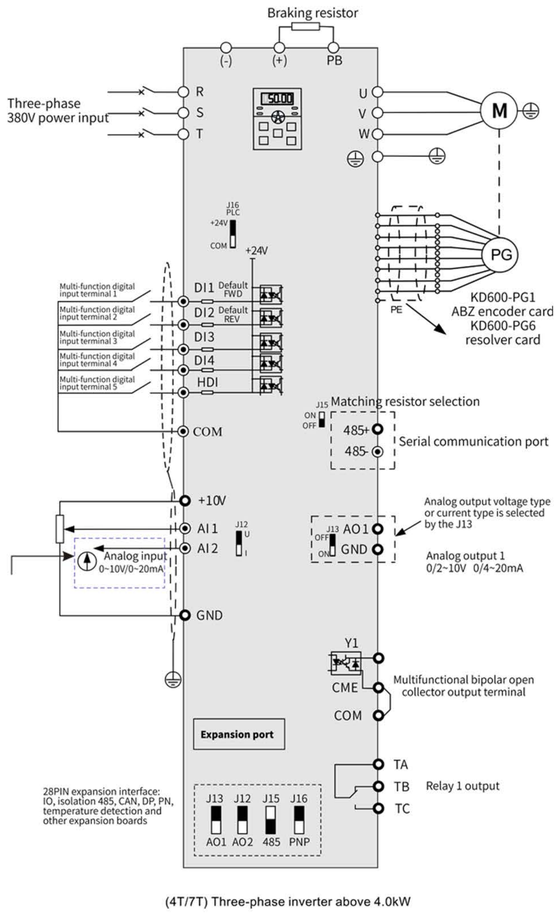
160KW Inverter Dimensions and Installation Dimensions

AC Drive Model	Adapter motor (KW)	Rated Input Current(A)	Rated Output Current(A)	Installation size(mm)		Dimensions (mm)			Aperture
				A	B	H	W	D	d
Input voltage: single-phase 220V Range: -15%~20%									
KD600-2S-0.4G	0.4	5.4	2.3	76	156	165	86	140	5
KD600-2S-0.7G	0.75	8.2	4.0						
KD600-2S-1.5G	1.5	14.0	7.0						
Input voltage: three-phase 380V Range: -15%~20%									
KD600-4T-0.7G/1.5P	0.7	3.4	2.1	76	156	165	86	140	5
KD600-4T-1.5G/2.2P	1.5	5.0	3.8						
KD600-4T-2.2G/4.0P	2.2	5.8	5.1						
KD600-4T-4.0G/5.5P	4.0	10.5	9.0	98	182	192	110	165	5
KD600-4T-5.5G/7.5P	5.5	14.6	13.0						
KD600-4T-7.5G/9.0P	7.5	20.5	17.0	111	223	234	123	176	6
KD600-4T-9.0G/11P	9.0	22.0	20.0						
KD600-4T-11G/15P	11	26.0	25.0	147	264	275	160	186	6
KD600-4T-15G/18.5P	15	35.0	32.0						
KD600-4T-18.5G/22P	18.5	38.5	37.0	174	319	330	189	186	6
KD600-4T-22G/30P	22	46.5	45.0						
KD600-4T-30G/37P	30	62.0	60.0	200	410	425	255	206	7
KD600-4T-37G/45P	37	76	75						
KD600-4T-45G/55P	45	92	91	245	518	534	310	258	10
KD600-4T-55G/75P	55	113	110						
KD600-4T-75G/90P	75	157	152	290	544	560	350	268	10
KD600-4T-90G/110P	90	180	176						
KD600-4T-110G/132P	110	214	210	320	678	695	410	295	10
KD600-4T-132G/160P	132	256	253						
KD600-4T-160G/185P	160	307	304	380	1025	1050	480	330	10
KD600-4T-185G/200P	185	345	340						
KD600-4T-200G/220P	200	385	380						
KD600-4T-220G/250P	220	430	426	500	1170	1200	590	365	14
KD600-4T-250G/280P	250	468	465						
KD600-4T-280G/315P	280	525	520						
KD600-4T-315G/350P	315	590	585	500	1255	1290	700	400	16
KD600-4T-350G/400P	350	665	650						
KD600-4T-400G/450P	400	785	725						
KD600-4T-450G/500P	450	883	820	/	/	1800	1000	500	/
KD600-4T-500G/550P	500	920	900						
KD600-4T-550G/630P	550	1020	1000						
KD600-4T-630G/710P	630	1120	1100						
KD600-4T-710G/800P	710	1315	1250	/	/	2200	1200	600	/
KD600-4T-800G/900P	800	1525	1450						

BASIC WIRING DIAGRAM



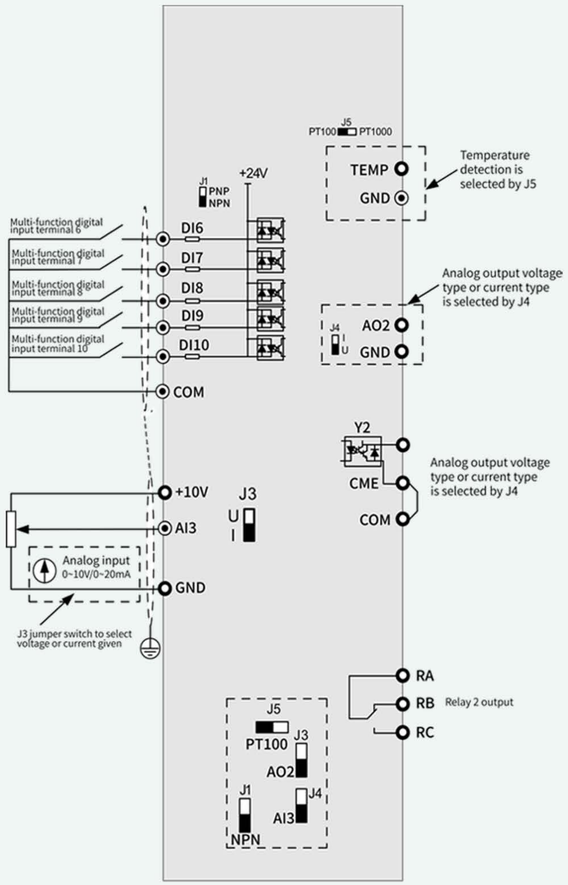
Three-phase inverter below 2.2kW



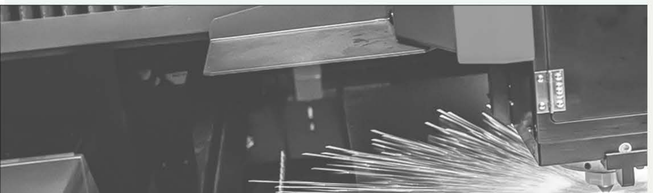
(4T/7T) Three-phase inverter above 4.0kW



CONTROL CIRCUIT TERMINAL AND WIRING



KD600-IO1 expansion card



Control circuit terminal and wiring

Three-phase 220V/380V below 2.2 KW

GND	AO1	485-	DI1	DI2	DI3	DI4	HDI5	+24V	RA	RB	RC	
+10V	AI1	AI2	485+	CME	COM	Y1	AO2/FM	COM	TA	TB	TC	

Three-phase 380V/660V 4.0KW or more

+10V	AI1	AI2	DI1	DI2	DI3	DI4	HDI	T/A	T/B	T/C	
GND	GND	AO1	485+	485-	CME	COM	Y1	FM	COM	+24V	

RA	RB	RC	COM	DI6	DI7	DI8	
GND	TEMP	AI3	AO2	DI9	DI10	Y2	

Control terminal function description

Sort	Terminal	Name	Function Description
Power supply	+10V-GND	External +10V power supply	Provide +10V power supply to the outside, the maximum output current: 10mA Generally used as working power supply of external potentiometer, potentiometer resistance range: 1~5kΩ
	24V-COM	External +24V power supply	Provide +24V power supply to the outside, generally used as the working power supply of digital input and output terminals and external sensor power supply, Maximum output current: 200mA
Analog input	AI1-GND	Analog input terminal 1	1. Input voltage range: DC0~10V 2. Input impedance: 100KΩ
	AI2-GND	Analog input terminal 2	1. Input range: DC0~10V/4~20mA, determined by the CL3 DIP switch on the control board, the factory is voltage mode. 2. Input impedance: 100kΩ for voltage input, 500Ω for current input.
Digital input	DI1-COM	Digital input 1	1. Optical coupling isolation, compatible with bipolar input, switch by DI DIP switch, the factory is NPN mode 2. Input impedance: 3.3kΩ 3. Voltage range for level input: 9~30V 4. HDI5 can be used as high-speed input port, the maximum input frequency is 50KHz 5. DI6~DI10 are expansion board interfaces.
	DI2-COM	Digital input 2	
	DI3-COM	Digital input 3	
	DI4-COM	Digital input 4	
	DI5-COM	Digital input 5	
	DI6-COM	Digital input 6	
	DI7-COM	Digital input 7	
	DI8-COM	Digital input 8	
	DI9-COM	Digital input 9	
	DI10-COM	Digital input 10	

Sort	Terminal	Name	Function Description
Digital input	DI1-COM	Digital input 1	1. Optical coupling isolation, compatible with bipolar input, switch by DI DIP switch, the factory is NPN mode 2. Input impedance: 3.3kΩ 3. Voltage range for level input: 9~30V 4. HDI5 can be used as high-speed input port, the maximum input frequency is 50KHz 5. DI6~DI10 are expansion board interfaces.
	DI2-COM	Digital input 2	
	DI3-COM	Digital input 3	
	DI4-COM	Digital input 4	
	DI5-COM	Digital input 5	
	DI6-COM	Digital input 6	
	DI7-COM	Digital input 7	
	DI8-COM	Digital input 8	
	DI9-COM	Digital input 9	
	DI10-COM	Digital input 10	
Analog output	AO1-GND	Analog output 1	The voltage or current output is determined by the DIP switch on the control board (refer to the bit number of the terminal wiring diagram). Output voltage range: 0~10V Output current range: 0~20mA
	AO2-GND	Analog output 2	
Digital output	Y1-CAE	Digital output 1	Optocoupler isolation, bipolar open collector output Output voltage range: 0~24V Output current range: 0~50mA Note: The digital output ground CAE and the digital input ground COM are internally isolated, but the CAE and COM have been externally short-circuited before leaving the factory (in this case, Y1 is driven by +24V by default). When Y1 wants to drive with an external power supply, the external short connection between CAE and COM must be disconnected.
Digital output	FM (optional Y2)	High-speed pulse output	Analog voltage/current input,Choose voltage or current input by Setting JP3 jumper. Factory default: voltage input(Grounding: GND)
Communication Interface	485+, 485-	Modbus communication interface	Modbus communication interface, you can choose whether to need communication matching resistance through the DIP switch (refer to the bit number of the terminal wiring diagram). If Profibus communication function is required, please select KD600 series expansion card and Profibus DP card.
Relay output 1	TA-TB	Normally closed terminal	Contact drive capability: AC250V, 3A, COSϕ=0.4. DC30V, 1A
	TA-TC	Normally open terminal	
Relay output 2	RA-RB	Normally closed terminal	Contact drive capability: AC250V, 3A, COSϕ=0.4. DC30V, 1A
	RA-RC	Normally open terminal	
Keyboard extension cable interface	Control board RJ45 interface	External keyboard interface	External keyboard interface, can use standard network cable for external extension.