

## ■ About MICNO

Shenzhen MICNO Electric Co., Ltd. is a national high-tech enterprise, which specializes in R&D, manufacture, sale and service of electrical drive, industrial automation products. MICNO headquarters is located in Guangming District Shenzhen city, has modern office and professional factory. MICNO has been a public company of NEEQ in China in 2016, with stock code 839477.

MICNO masters the leading synchronization, asynchronization current vector control technology, torque control technology and solar pump driving technology, including the main products such as general purpose inverter, various kinds of inverters of special industries and solar pump inverter. The products cover 220V, 380V, 460V, 525V, 660V voltage level with 0.4kW --1.6MW power range, which are widely used in electric power, metallurgy, petroleum and chemical, mining,

textile and chemical fiber, printing and packaging, paper-making, machine tool, plastic, hoisting, solar agricultural irrigation and other industries.

With "Market-oriented, Customer-centric" business philosophy, MICNO provides high cost performance products and service to customers, make the customers more competitive. The sales and service network is nationwide in domestic market. And our products have also been exported to more than 60 countries all over the world.

MICNO adheres to the enterprise core value of "Quality, Innovation, Integrity, Win-Win", dedicated to be the world famous supplier of products and services in the electric drive, industrial automation control fields, and would like to achieve customer, staff and enterprise values growing together.

## ■ Contents

- 03 ■ KE300A sensorless vector control inverter
- 14 ■ KE600A/KE600B close-loop vector control inverter
- 17 ■ KE300F open-loop permanent magnet synchronous drive
- 19 ■ KE330A open-structure sensorless vector control inverter
- 21 ■ KE610 energy-saving integrated cabinet
- 25 ■ Optional parts





# KE300A

## sensorless vector control inverter

KE300A incorporates perfectly the optimized asynchronous driving and years of experience; it is born for asynchronous driving motors! KE300A is built on TI's powerful DSP-based motor control chip, with the adoption of the sensorless current vector control (SVC) and open-loop torque control (TC). KE300A can be widely used for the asynchronous motor driving where better speed control and low-frequency torque are required.

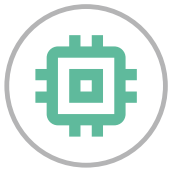
|    |     |      |             |
|----|-----|------|-------------|
| S2 | 1AC | 220V | 0.4~11kW    |
| T2 | 3AC | 220V | 0.4~200kW   |
| T4 | 3AC | 380V | 0.75~1400kW |
| T6 | 3AC | 660V | 15~1600kW   |

## Product feature

01

### Excellent design and superb manufacturing process

With large design margin for key components and PCB;  
Adopting industry-leading automatic spraying and strict automatic testing standards, making sure more stable and reliable products;  
With optimized control algorithms and comprehensive protection functions, making more outstanding performance of the complete product.



02

### Powerful hardware speed tracking

With powerful hardware speed tracking, easily responding to the applications with large inertia requiring quick start.



03

### Accurate parameter identification

With an optimized motor parameter autotuning model, providing more precise identification.



04

### Enhanced oscillation suppression

With enhanced oscillation suppression, equal to all applications of motor current oscillation with facility.



05

### Fast current limiting

With fast current limiting function, easily responding to the conditions with sudden load, greatly reducing the probability of inverter's frequent over-current fault.



06

### Dual PID switching

With dual PID switching function, adapting to varied complicated conditions with flexibility.



07

Original energy-saving mode

With an original energy-saving mode, when at a light load, reducing the output voltage automatically, making more efficient energy saving.



08

Optimized V/F separation

With optimized V/F separation function, easily meeting various demands of the power inverter industry.



09

Flux-weakening control

Flux-weakening control, the max. frequency could be up to 3000Hz, easy for the applications requiring high speed.



10

Powerful PC monitoring software

With various background monitoring functions, facilitating on-site data collection and commissioning;

Capable of batch parameters upload and download, and autogeneration of commissioning documents.



Application

KE300A is widely applicable to fan, water pump, air compressor, machine tool, winding, centrifuge, conveyor belt, mixer, ball mill, medium frequency power supply, woodworking machinery, petrochemical industry, plastic machinery, industrial washing, simple hoisting equipment, etc., which require better speed control and low-frequency torque for asynchronous motor driving.

Model description

KE300A-5R5G / 7R5P-T4

Sensorless vector control inverter series

Power rating  
5R5: 5.5kW  
7R5: 7.5kW

G/P  
G: Constant torque type  
P: Variable torque type

Input voltage  
S2: 1AC 220V  
T2: 3AC 220V  
T4: 3AC 380V  
T6: 3AC 660V

Selection guide

| Model            | Motor |      | Rated Input Current (A) | Rated Output Current (A) |
|------------------|-------|------|-------------------------|--------------------------|
|                  | kW    | HP   |                         |                          |
| 1AC 220~240V±15% |       |      |                         |                          |
| KE300X-0R4G-S2   | 0.4   | 0.5  | 5.4                     | 2.3                      |
| KE300X-0R7G-S2   | 0.75  | 1.0  | 8.2                     | 4.0                      |
| KE300X-1R5G-S2   | 1.5   | 2.0  | 14.0                    | 7.0                      |
| KE300-2R2G-S2    | 2.2   | 3.0  | 23.0                    | 9.6                      |
| KE300A-004G-S2   | 4.0   | 5.0  | 25.0                    | 15.0                     |
| KE300A-5R5G-S2   | 5.5   | 7.5  | 38.0                    | 23.0                     |
| KE300A-7R5G-S2   | 7.5   | 10.0 | 50.0                    | 32.0                     |

| 3AC 220~240V±15% |      |     |      |     |
|------------------|------|-----|------|-----|
| KE300X-0R4G-T2   | 0.4  | 0.5 | 3.4  | 2.3 |
| KE300X-0R7G-T2   | 0.75 | 1.0 | 5.0  | 4.0 |
| KE300X-1R5G-T2   | 1.5  | 2.0 | 7.7  | 7.0 |
| KE300-2R2G-T2    | 2.2  | 3.0 | 10.5 | 9.0 |
| KE300A-004G-T2   | 4.0  | 5   | 18   | 17  |
| KE300A-5R5G-T2   | 5.5  | 7.5 | 26   | 25  |
| KE300A-7R5G-T2   | 7.5  | 10  | 35   | 32  |
| KE300A-011G-T2   | 11   | 15  | 46.5 | 45  |
| KE300A-015G-T2   | 15   | 20  | 62.5 | 60  |
| KE300A-018G-T2   | 18.5 | 25  | 76   | 75  |
| KE300A-022G-T2   | 22   | 30  | 92   | 91  |
| KE300A-030G-T2   | 30   | 40  | 113  | 112 |
| KE300A-037G-T2   | 37   | 50  | 157  | 150 |
| KE300A-045G-T2   | 45   | 60  | 180  | 176 |
| KE300A-055G-T2   | 55   | 75  | 214  | 210 |
| KE300A-075G-T2   | 75   | 100 | 307  | 304 |
| KE300A-090G-T2   | 90   | 125 | 350  | 340 |

| 3AC 380~415V±15%    |          |        |         |         |
|---------------------|----------|--------|---------|---------|
| KE300A-0R7G/1R5P-T4 | 0.75/1.5 | 1/2    | 3.4/5.0 | 2.1/3.8 |
| KE300A-1R5G/2R2P-T4 | 1.5/2.2  | 2/3    | 5.0/6.8 | 3.8/6   |
| KE300A-2R2G/004P-T4 | 2.2/4.0  | 3/5    | 6.8/10  | 6/9     |
| KE300A-004G/5R5P-T4 | 4.0/5.5  | 5/7.5  | 10/15   | 9/13    |
| KE300A-5R5G/7R5P-T4 | 5.5/7.5  | 7.5/10 | 15/20   | 13/17   |
| KE300A-7R5G/011P-T4 | 7.5/11   | 10/15  | 20/26   | 17/25   |
| KE300A-011G/015P-T4 | 11/15    | 15/20  | 26/35   | 25/32   |
| KE300A-015G/018P-T4 | 15/18.5  | 20/25  | 35/38   | 32/37   |
| KE300A-018G/022P-T4 | 18.5/22  | 25/30  | 38/46   | 37/45   |
| KE300A-022G/030P-T4 | 22/30    | 30/40  | 46/62   | 45/60   |
| KE300A-030G/037P-T4 | 30/37    | 40/50  | 62/76   | 60/75   |
| KE300A-037G/045P-T4 | 37/45    | 50/60  | 76/90   | 75/90   |
| KE300A-045G/055P-T4 | 45/55    | 60/75  | 92/113  | 90/110  |

|                     |         |         |           |           |
|---------------------|---------|---------|-----------|-----------|
| KE300A-055G/075P-T4 | 55/75   | 75/100  | 112/157   | 110/150   |
| KE300A-075G/090P-T4 | 75/90   | 100/125 | 157/180   | 150/176   |
| KE300A-090G/110P-T4 | 90/110  | 125/150 | 180/214   | 176/210   |
| KE300A-110G/132P-T4 | 110/132 | 150/175 | 214/256   | 210/253   |
| KE300A-132G/160P-T4 | 132/160 | 175/210 | 256/307   | 253/304   |
| KE300A-160G/185P-T4 | 160/185 | 210/250 | 307/350   | 304/340   |
| KE300A-185G/200P-T4 | 185/200 | 250/260 | 350/385   | 340/377   |
| KE300A-200G/220P-T4 | 200/220 | 260/300 | 385/430   | 377/423   |
| KE300A-220G/250P-T4 | 220/250 | 300/330 | 430/468   | 423/465   |
| KE300A-250G/280P-T4 | 250/280 | 330/370 | 468/525   | 465/520   |
| KE300A-280G/315P-T4 | 280/315 | 370/420 | 525/590   | 520/585   |
| KE300A-315G/350P-T4 | 315/350 | 420/470 | 590/665   | 585/640   |
| KE300A-350G/400P-T4 | 350/400 | 470/530 | 665/785   | 640/720   |
| KE300A-400G/450P-T4 | 400/450 | 530/600 | 785/840   | 720/820   |
| KE300A-450G/500P-T4 | 450/500 | 600/660 | 840/880   | 820/900   |
| KE300A-500G/560P-T4 | 500/560 | 660/750 | 880/980   | 900/1000  |
| KE300A-560G/630P-T4 | 560/630 | 750/840 | 980/1130  | 1000/1100 |
| KE300A-630G/710P-T4 | 630/710 | 840/950 | 1130/1290 | 1100/1250 |
| KE300A-710G-T4      | 710     | 950     | 1290      | 1250      |
| KE300A-800G-T4      | 800     | 1070    | 1450      | 1400      |
| KE300A-900G-T4      | 900     | 1200    | 1630      | 1580      |
| KE300A-1000G-T4     | 1000    | 1330    | 1800      | 1750      |
| KE300A-1200G-T4     | 1200    | 1600    | 2160      | 2100      |
| KE300A-1400G-T4     | 1400    | 2120    | 2420      | 2350      |

| 3AC 660~690V±15% |    |    |    |    |
|------------------|----|----|----|----|
| KE300A-015G-T6   | 15 | 20 | 21 | 19 |
| KE300A-018G-T6   | 18 | 25 | 28 | 22 |
| KE300A-022G-T6   | 22 | 30 | 35 | 28 |
| KE300A-030G-T6   | 37 | 40 | 40 | 35 |
| KE300A-037G-T6   | 37 | 50 | 47 | 45 |
| KE300A-045G-T6   | 45 | 60 | 55 | 52 |
| KE300A-055G-T6   | 55 | 75 | 65 | 63 |



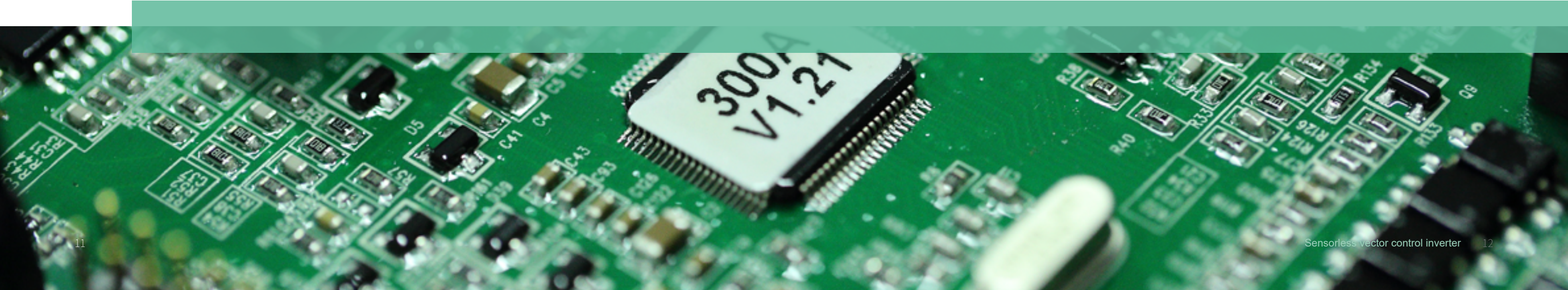
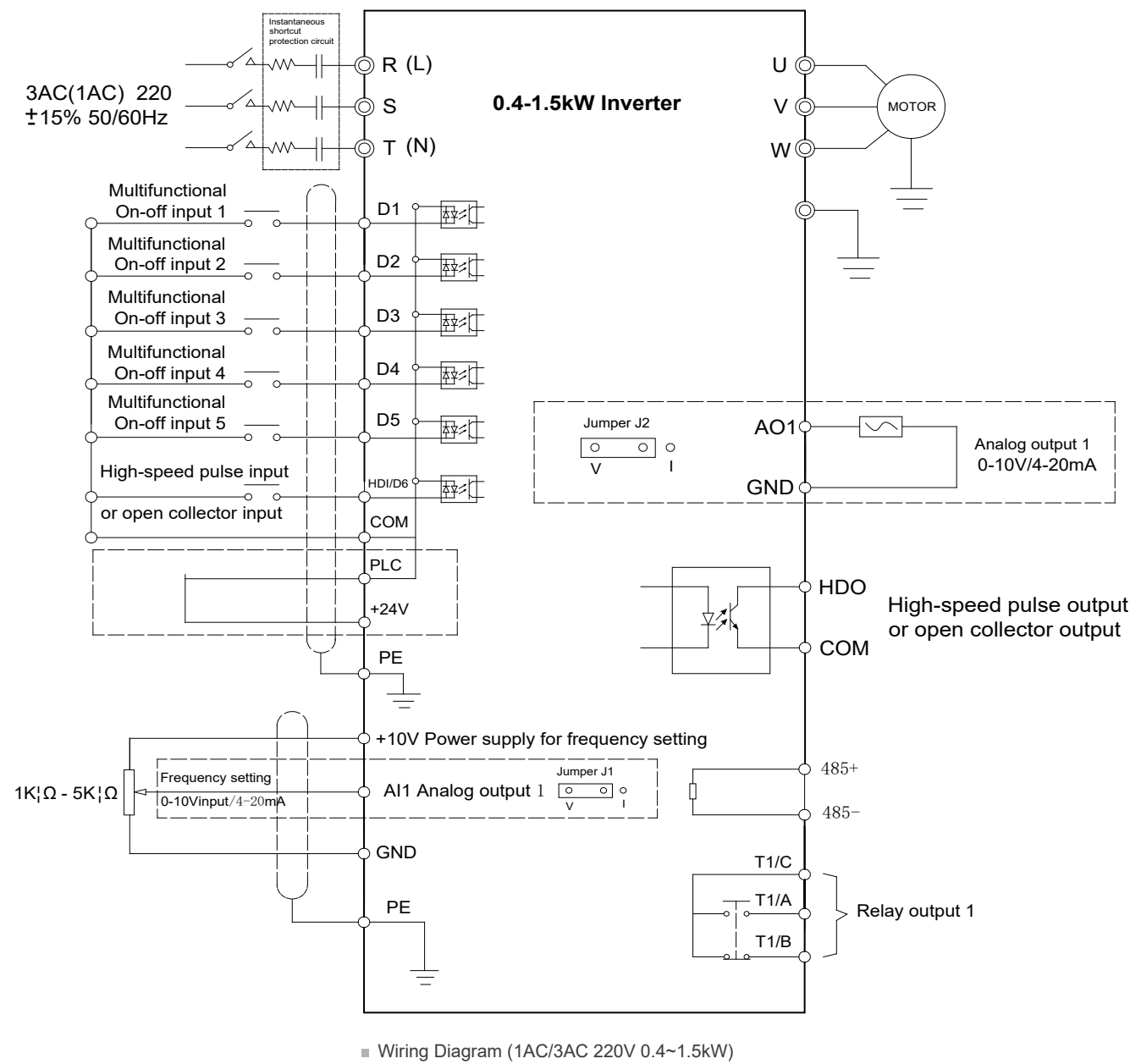
|                 |      |      |      |      |
|-----------------|------|------|------|------|
| KE300A-075G-T6  | 75   | 100  | 90   | 86   |
| KE300A-090G-T6  | 90   | 105  | 100  | 98   |
| KE300A-110G-T6  | 110  | 130  | 130  | 121  |
| KE300A-132G-T6  | 132  | 175  | 170  | 150  |
| KE300A-160G-T6  | 160  | 210  | 200  | 175  |
| KE300A-185G-T6  | 185  | 250  | 210  | 195  |
| KE300A-200G-T6  | 200  | 260  | 235  | 215  |
| KE300A-220G-T6  | 220  | 300  | 257  | 245  |
| KE300A-250G-T6  | 250  | 330  | 265  | 260  |
| KE300A-280G-T6  | 280  | 370  | 305  | 300  |
| KE300A-315G-T6  | 315  | 420  | 350  | 330  |
| KE300A-350G-T6  | 350  | 470  | 382  | 374  |
| KE300A-400G-T6  | 400  | 530  | 435  | 410  |
| KE300A-450G-T6  | 450  | 600  | 490  | 465  |
| KE300A-500G-T6  | 500  | 660  | 595  | 550  |
| KE300A-560G-T6  | 560  | 745  | 610  | 590  |
| KE300A-630G-T6  | 630  | 840  | 710  | 680  |
| KE300A-710G-T6  | 710  | 950  | 800  | 770  |
| KE300A-800G-T6  | 800  | 1050 | 900  | 865  |
| KE300A-900G-T6  | 900  | 1150 | 1000 | 970  |
| KE300A-1000G-T6 | 1000 | 1330 | 1120 | 1080 |
| KE300A-1200G-T6 | 1200 | 1600 | 1290 | 1280 |
| KE300A-1400G-T6 | 1400 | 1860 | 1510 | 1460 |
| KE300A-1600G-T6 | 1600 | 2130 | 1780 | 1720 |

Technical specifications

| Item             | Technical Index                         | Specification  |
|------------------|---|--|
| Input            | Input voltage                           | 1AC/3AC 220V±15%, 3AC 380V±15%, 3AC 660V±15%   |
|                  | Input frequency                         | 47~63Hz  |
| Output           | Output voltage                          | 0~rated input voltage  |
|                  | Output frequency                        | V/f control: 0~3000Hz<br>Sensorless vector control: 0~300Hz  |
| Control Features | Control mode                            | V/f control<br>Sensorless vector control<br>Torque control   |
|                  | Operation command mode                  | Keypad control<br>Terminal control<br>Serial communication control   |
|                  | Frequency setting mode                  | Digital setting, analog setting, pulse frequency setting, serial communication setting, multi-step speed setting & simple PLC, PID setting, etc. These frequency settings can be combined & switched in various modes. |
|                  | Overload capacity                       | G model: 150% 60s, 180% 10s, 200% 3s<br>P model: 120% 60s, 150% 10s, 180% 3s   |
|                  | Starting torque                         | 0.5Hz/150% (SVC); 1Hz/150% (V/f)   |
|                  | Speed adjustment range                  | 1:100 (SVC); 1:50(V/f)   |
|                  | Speed control precision                 | ±0.5% (SVC)  |
|                  | Carrier frequency                       | 1.0--16.0kHz, automatically adjusted according to temperature and load characteristics   |
|                  | Frequency accuracy                      | Digital setting: 0.01Hz<br>Analog setting: maximum frequency * 0.05%   |
|                  | Torque boost                            | Automatically torque boost; manually torque boost: 0.1%~30.0%  |
|                  | V/f curve                               | Three types: linear, multiple point and square type (1.2 power, 1.4 power, 1.6 power, 1.8 power, square)   |
|                  | Acceleration/deceleration mode          | Straight line/S curve; four kinds of acceleration/deceleration time, range: 0.1s~3600.0s   |
|                  | DC braking                              | DC braking when starting and stopping<br>DC braking frequency: 0.0Hz~maximum frequency, braking time: 0.0s~100.0s  |
|                  | Jog operation                           | Jog operation frequency: 0.0Hz~maximum frequency<br>Jog acceleration/deceleration time: 0.1s~3600.0s   |
|                  | Simple PLC & multi-step speed operation | It can realize a maximum of 16 segments speed running via the built-in PLC or control terminal.  |
|                  | Built-in PID                            | Built-in PID control to easily realize the close loop control of the process parameters (such as pressure, temperature, flow, etc.)  |
|                  | Automatic voltage regulation            | Keep output voltage constant automatically when input voltage fluctuating  |

|                         |   |  |
|-------------------------|---|--|
| Control Function        | Common DC bus                             | Common DC bus for several inverters, energy balanced automatically   |
|                         | Torque control                            | Torque control without PG  |
|                         | Torque limit                              | "Router" characteristics, limit the torque automatically and prevent frequent over-current tripping during the running process   |
|                         | Wobble frequency control                  | Multiple triangular-wave frequency control, special for textile  |
|                         | Timing/length/counting control            | Timing/length/counting control function  |
|                         | Over-voltage & over-current stall control | Limit current & voltage automatically during the running process, prevent frequent over-current & over-voltage tripping  |
| Input/output terminals  | Fault protection function                 | Up to 30 fault protections including over-current, over-voltage, under-voltage, overheating, default phase, overload, shortcut, etc., can record the detailed running status during failure & has fault automatic reset function |
|                         | Input terminals                           | Programmable DI: 7 on-off inputs, 1 high-speed pulse input<br>2 programmable AI: AI1: 0~10V or 0/4~20mA<br>A12: 0~10V or 0/4~20mA  |
|                         | Output terminals                          | 1 programmable open collector output: 1 analog output (open collector output or high-speed pulse output)<br>2 relay output<br>2 analog output: 0/4~20mA or 0~10V   |
|                         | Communication terminals                   | Offer RS485 communication interface, support MODBUS-RTU communication protocol   |
| Human machine interface | LED display                               | Display frequency setting, output frequency, output voltage, output current, etc.  |
|                         | Multifunction key                         | QUICK/JOG key, can be used as multifunction key  |
| Environment             | Ambient temperature                       | -10℃ ~40℃ , derated 4% when the temperature rise by every 1℃ (40℃ ~50℃ ).  |
|                         | Humidity                                  | 90%RH or less (non-condensing)   |
|                         | Altitude                                  | ≤1000M: output rated power, >1000M: output derated   |
|                         | Storage temperature                       | -20℃ ~60℃  |

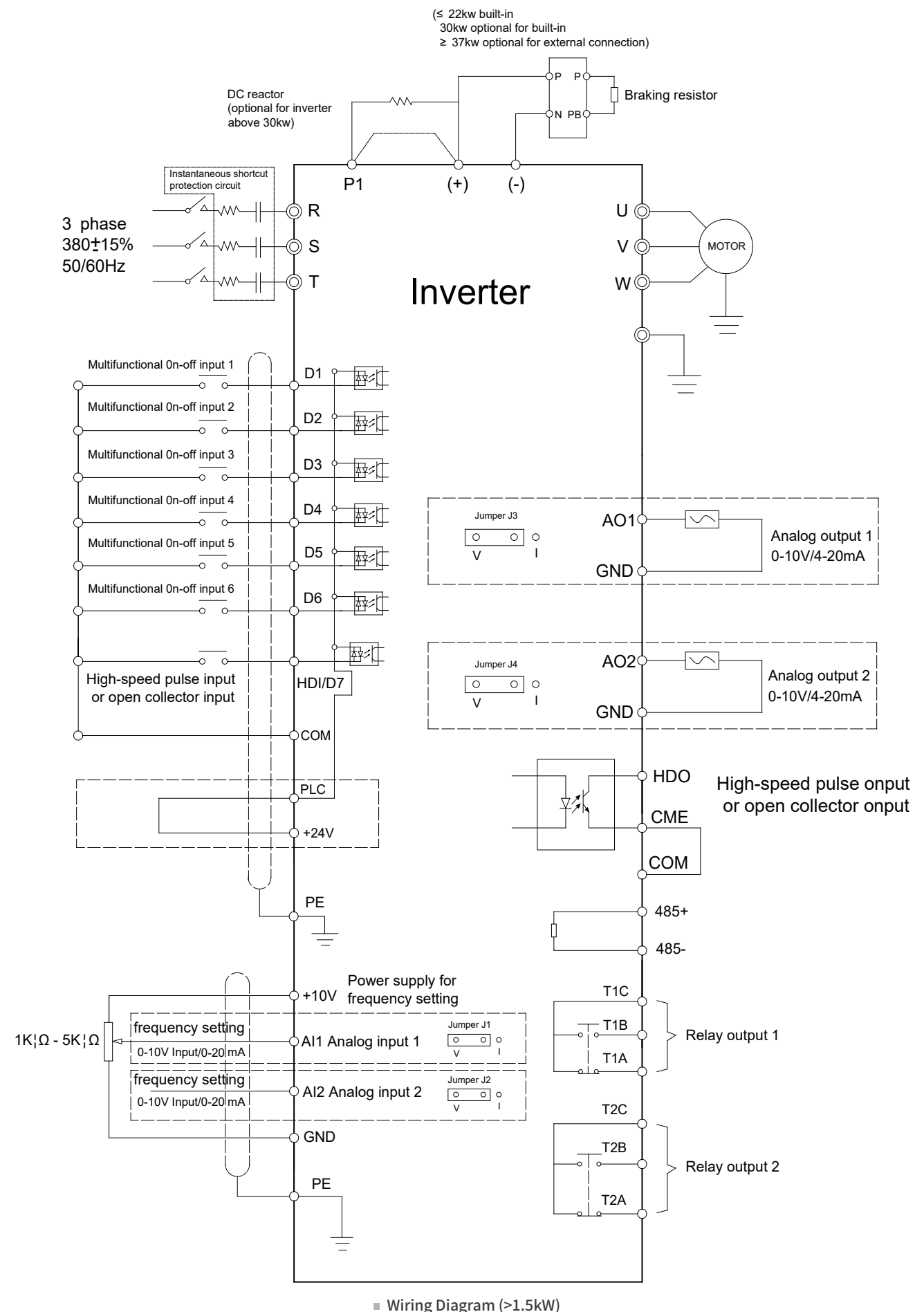
Wiring diagram





# KE600A/KE600B

## close-loop vector control inverter



KE600A, an all-round drive, integrates a variety of control modes: sensorless current vector control, close-loop current vector control, V/F control, and torque control. With a modular design, KE600A is more flexible in application, more powerful in function, and more stable in performance. With close-loop vector control, KE600A can maximize the control performance of any motor (asynchronous motor or synchronous motor).

KE600B, built-in position loop and servo positioning function, could be widely used in motor driving applications with a higher requirement on position control.

|    |     |      |           |
|----|-----|------|-----------|
| T2 | 3AC | 220V | 1.5~90kW  |
| T4 | 3AC | 380V | 1.5~800kW |
| T6 | 3AC | 660V | 15~1000kW |

# Product feature

- 01

**Comprehensive parameter identification**  
  
With comprehensive parameter identification, simultaneously compatible with dynamic and static identifications for both synchronous motors and asynchronous motors.
- 02

**Multi-motor switching**  
  
Built-in multiple motor parameters, supporting multi-motor switching.
- 03

**Modular design, compatible with various expansion cards**  
  
KE600A/KE600B has superior expansion capability. Users can choose PG card, I/O expansion card, MODBUS communication card, injection molding card, pulse expansion card, according to their actual needs.
- 04

**Fast dynamic response**  
  
Sensorless vector control, dynamic response time <20ms;  
Close-loop vector control, dynamic response time <5ms.
- 05

**High-precision torque control**  
  
When close-loop vector control, the torque control accuracy achieving  $\pm 5\%$ , easily responding to tension winding control.



- 06

**High start torque, and super low-frequency load-carrying capability**  
  
0.5Hz, 150% start torque (sensorless vector control asynchronous motors)  
0Hz, 200% startup torque (close-loop vector control asynchronous motors)



- 07

**Non-stop when instantaneous power off**  
  
With the capability of non-stop when instantaneous power off, ensuring the system continuously operate without tripping in case of instantaneous power off.



- 08

**AVR automatic voltage regulation**  
  
When the input voltage is fluctuant, the inverter can automatically keep the constant output voltage.



- 09

**Powerful positioning function (KE600B)**  
  
With powerful positioning function and built-in position loop, achieving spindle positioning control.



- 10

**Excellent close-loop vector control for synchronous motors**  
  
With excellent close-loop vector control for synchronous motors, capable of high torque output at zero speed, the speed ratio up to 1:1000.







### Application

KE600A is widely applicable to papermaking, lifting machinery, elevators, port machines, CNC machine tool, precision injection molding, metallurgy, mining, electric power, petroleum and chemical industry, which highly require speed control for synchronous motor driving or asynchronous motor driving.

KE600B, built-in position loop and servo positioning function, could be widely used in motor driving applications with a higher requirement on position control.





# KE300F

## open-loop permanent magnet synchronous drive

With the world-leading sensorless current vector control technology (SVC) for synchronous motor, KE300F can accurately identify the motor parameters, dynamically estimate the rotor speed and pole position, and can easily drive all types of permanent magnet synchronous motors (SPM & IPM). KE300F can be widely used for the synchronous motor driving applications where better speed control and low-frequency torque are required.

|    |     |      |           |
|----|-----|------|-----------|
| S2 | 1AC | 220V | 0.4~5.5kW |
| T2 | 3AC | 220V | 1.5~90kW  |
| T4 | 3AC | 380V | 1.5~800kW |
| T6 | 3AC | 660V | 15~1000kW |

## Product feature

### 01 Leading synchronous motor sensorless vector control (SVC)

With the world-leading sensorless vector control technology (SVC) for synchronous motor, capable of easily driving all types of permanent magnet synchronous motors (SPM & IPM) with no need encoder feedback.



### 02 Enhanced overexcitation regulation

With enhanced overexcitation regulation, providing fast stop with no need of braking resistor.



### 03 Non-stop when instantaneous power off

With the capability of non-stop when instantaneous power off, ensuring the system continuously operate without tripping in case of instantaneous power off.



### 04 Ultra-high speed flux-weakening control

With ultra-high speed flux-weakening control, the max. frequency could be up to 500Hz (SVC), easy for the applications requiring high speed.



### 05 Excellent design and superb manufacturing process

With large design margin for key components and PCB;  
Adopting industry-leading automatic spraying and strict automatic testing standards, making sure more stable and reliable products;  
With optimized control algorithms and comprehensive protection functions, making more outstanding performance of the complete product.



## Application



KE300F is widely applicable to fan, pump, air compressor, air conditioner, oil field, woodworking machine, packaging machine, food machine, printing machine, material conveying, textile machine and electric tools, which require synchronous motor driving applications without encoder feedback but having better speed control and low-frequency torque.



# KE330A

open-structure  
sensorless vector  
control inverter



KE330A adopts KE300A's technology platform. With a brand-new open structure, smaller size, better heat dissipation, lower cost, more flexible application, it is the best choice for OEM module-chassis customers.

T2 3AC 220V 15~90kW

T4 3AC 380V 15~200kW

T6 3AC 660V 15~200kW

## Product feature



01

### Fully open structure, more flexible application

With a brand-new open structure (without case), smaller size, better heat dissipation, lower cost, and more flexible application, it is the best choice for OEM module-chassis customers.



02

### Accurate parameter identification

With an optimized motor parameter autotuning model, providing more accurate identification.



03

### Enhanced oscillation suppression

With enhanced oscillation suppression, equal to all applications of motor current oscillation with facility.



04

### Fast current limiting

With fast current limiting function, easily responding to the conditions with sudden load, greatly reducing the probability of inverter's frequent over-current fault.



05

### Powerful hardware speed tracking

With powerful hardware speed tracking, easily responding to the applications with large inertia requiring quick start.



06

### Flux-weakening control

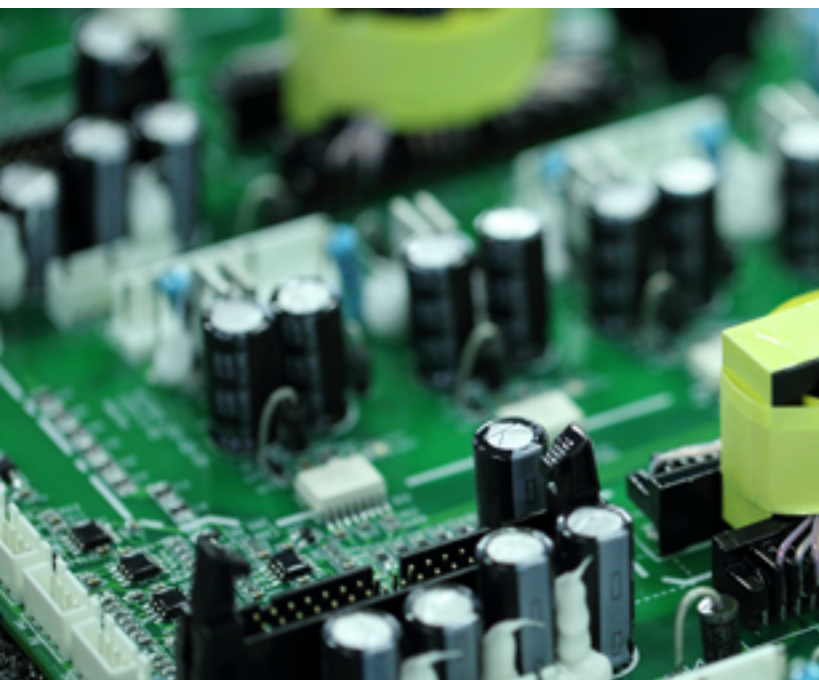
Flux-weakening control, the max. frequency could be up to 3000Hz, easy for the applications requiring high speed.



## Application

KE330A is widely applicable to OEM or ODM applications such as woodworking machine, packaging machine, food machine, printing machine, textile machine, lifting machine, cable machine and other machinery supporting industries.





# KE610

## energy-saving integrated cabinet

KE610 electric supply/energy-saving integrated cabinet has the built-in electric supply bypass. When the energy-saving circuit fails, it can automatically switch to the electric supply circuit, so as to ensure the continuity of production.

T2 3AC 220V 7.5~90kW

T4 3AC 380V 7.5~200kW

## Product feature



01

**With built-in electric supply/energy-saving switching, creating safe and reliable system**

With the switching function, the system can switch to the electric supply circuit in case of failure in the energy-saving circuit, thus to ensure the continuity of production.



04

**Ultra-high speed flux-weakening control**

With ultra-high speed flux-weakening control, the max. frequency could be up to 3000Hz, easy for the applications requiring high speed.



02

**Powerful hardware speed tracking**

With powerful hardware speed tracking, easily responding to the applications with large inertia requiring quick start.



05

**Non-stop when instantaneous power off**

With the capability of non-stop when instantaneous power off, ensuring the system continuously operate without tripping in case of instantaneous power off.



03

**Original energy-saving mode**

With an original energy-saving mode, when at a light load, reducing the output voltage automatically, making more efficient energy saving.

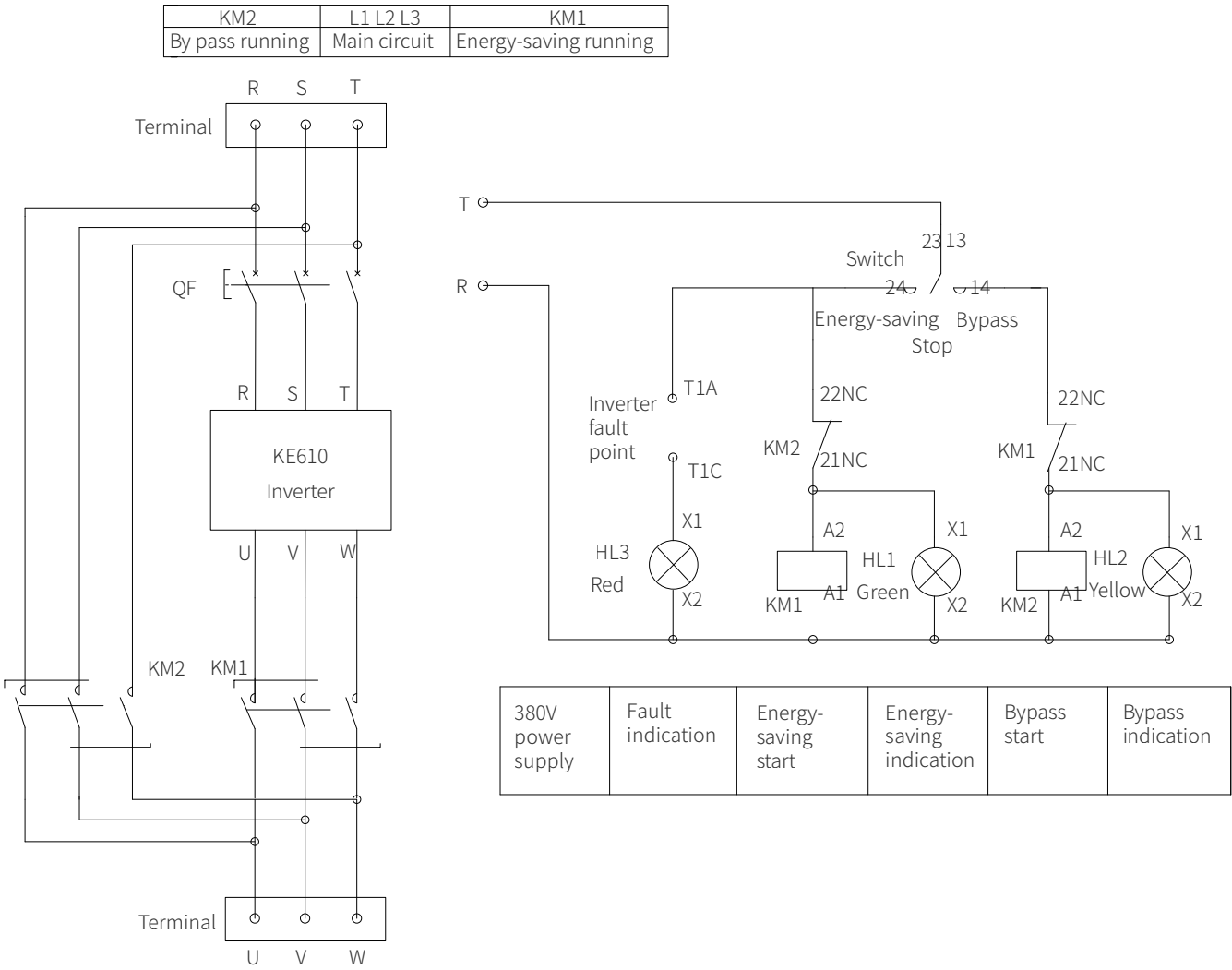


06

**AVR automatic voltage regulation**

When the input voltage is fluctuant, the inverter can automatically keep the constant output voltage.

System wiring diagram



Application

KE610 is widely applicable to escalators, central air conditioner, plastic machine, extrusion machine, compressors, hoist, fan and pump, which require an energy saving transformation with electric supply/energy-saving switching.



## Optional parts

### MDC braking unit



01

MDC braking unit is used for converting the excess electric energy of the DC circuit of the inverter into the thermal energy of the braking resistor. The brake unit cannot be used alone; it must be used in conjunction with the braking resistor.

MICNO standard inverters of 30kW and below have a standard built-in braking unit; for 30kW inverter, the built-in braking unit is optional; for 37kW and above inverters, an external braking unit is required.

#### Model

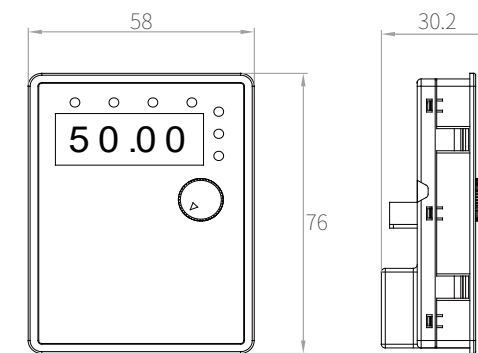
MDC-100-4

MDC-200-4

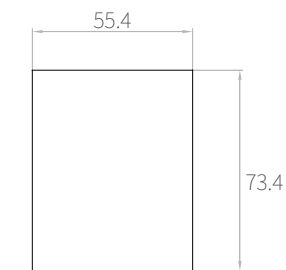
### Keypad

#### 01 LED keypad (standard part)

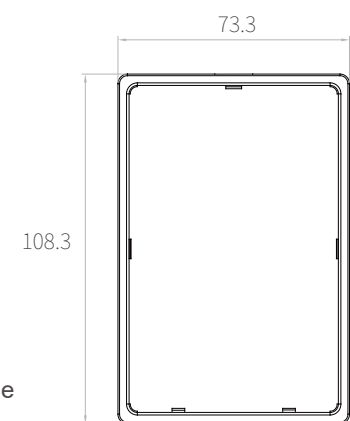
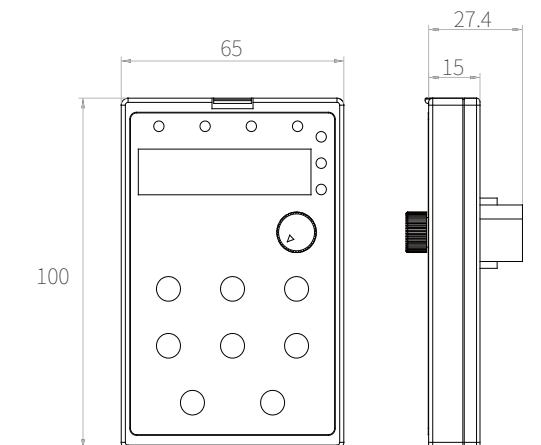
**Illustration** This keypad can be connected with the inverter externally by ordinary network cable, also can be mounted on the front side of panel directly. The suggested thickness of panel is 1.2mm.



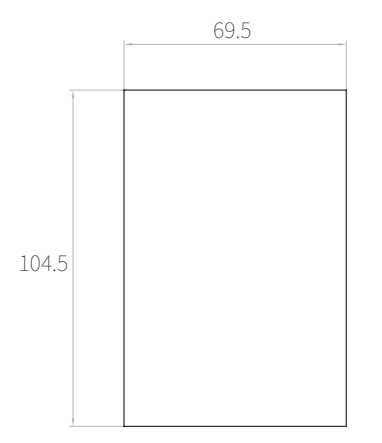
■ Mini keypad dimension



■ Installation size on the panel while using this keypad



■ Standard keypad bracket dimension



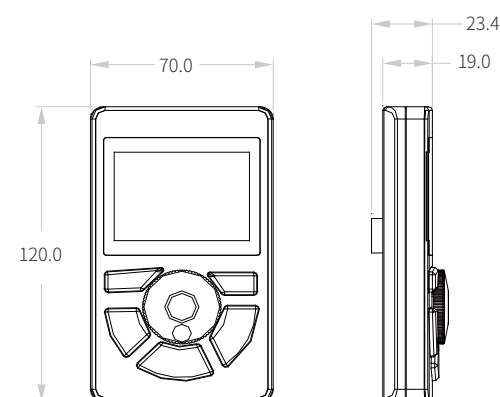
■ Hole dimension of standard keypad bracket

#### Illustration

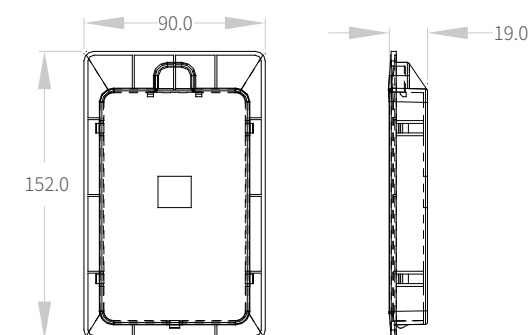
This keypad can be connected with the inverter externally by ordinary network cable, and it needs an additional bracket to fix it.

## 02 LCD keyboard

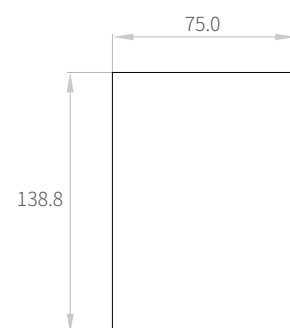
LCD keyboard supports Chinese/English display, can be used for viewing parameter definitions (without the need of manual), modifying parameters, checking fault and status information, starting and stopping the inverter, copying parameters, etc.



■ LCD keypad dimension



■ LCD keypad bracket dimension



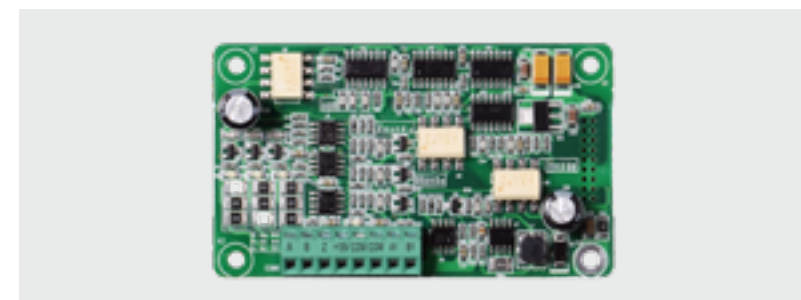
■ Hole dimension of LCD keypad bracket

## KE600A / KE600B expansion cards

### 01

#### OC PG card

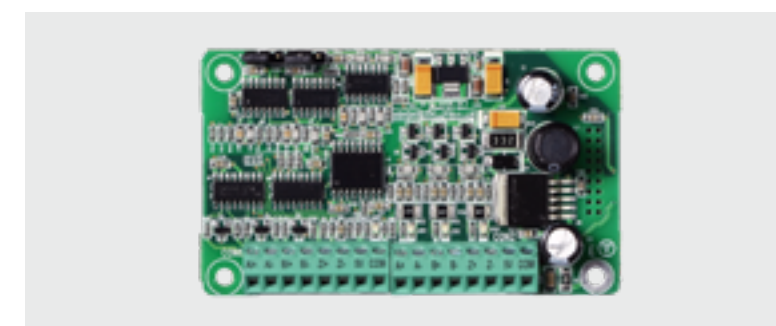
Used for collecting OC encoder's input signals when close-loop vector control, supporting frequency dividing output, and providing 15V power supply.



### 02

#### Differential PG card

Used for collecting differential encoder's input signals when close-loop vector control, supporting frequency dividing output, and providing 5V power supply.



### 03

#### Rotary transformer PG card

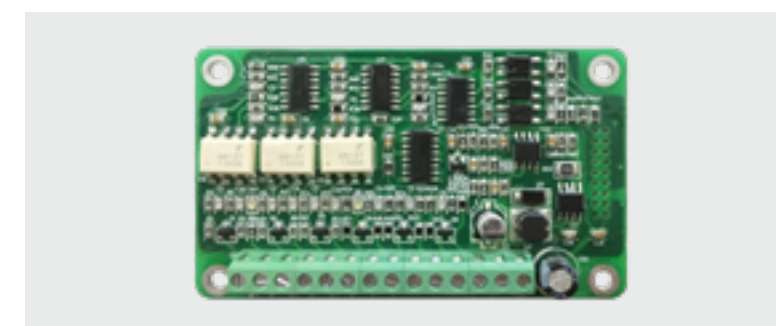
Used for collecting rotary transformer's input signals when close-loop vector control.



### 04

#### Sine-cosine PG card

Used for collecting sine-cosine encoder's input signals when close-loop vector control, providing 5V power supply.



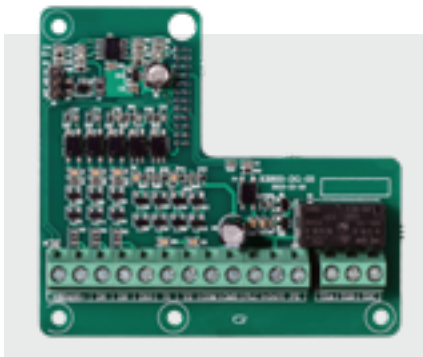


I/O expansion card

I/O expansion cards are used for expanding input and output terminals, which can provide:

- digital input: 3 inputs
- digital output: 1 output, could be as high-speed pulse output
- open-circuit collector output: 1 output
- relay output: 1 output (normally open/normally closed)
- communication interface: 1 interface, standard RS485 interface

05



06

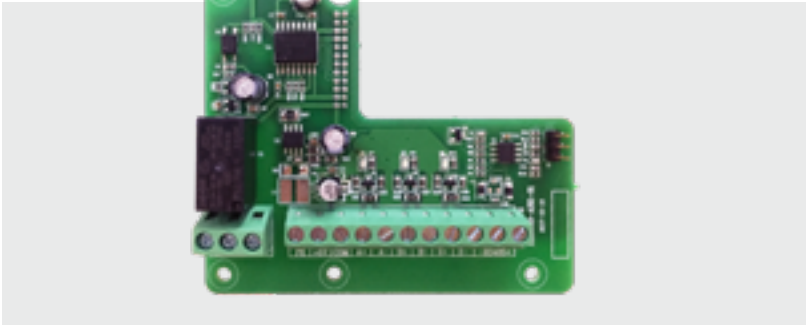
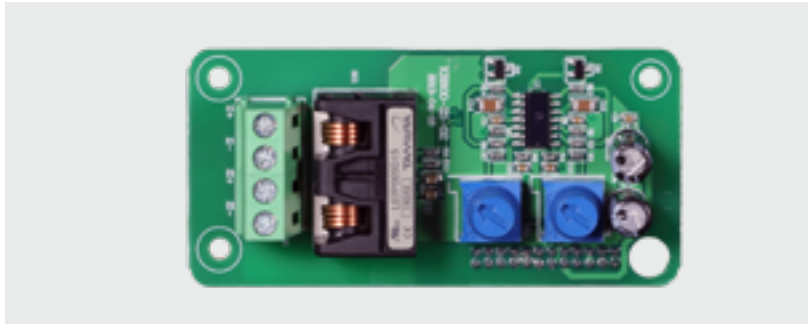
Communication card

Used for expanding the communication terminal, could provide 1 international standard RS485 interface.

Injection molding machine card

Used for collecting flow and pressure signals from the injection molding machine.

07



08

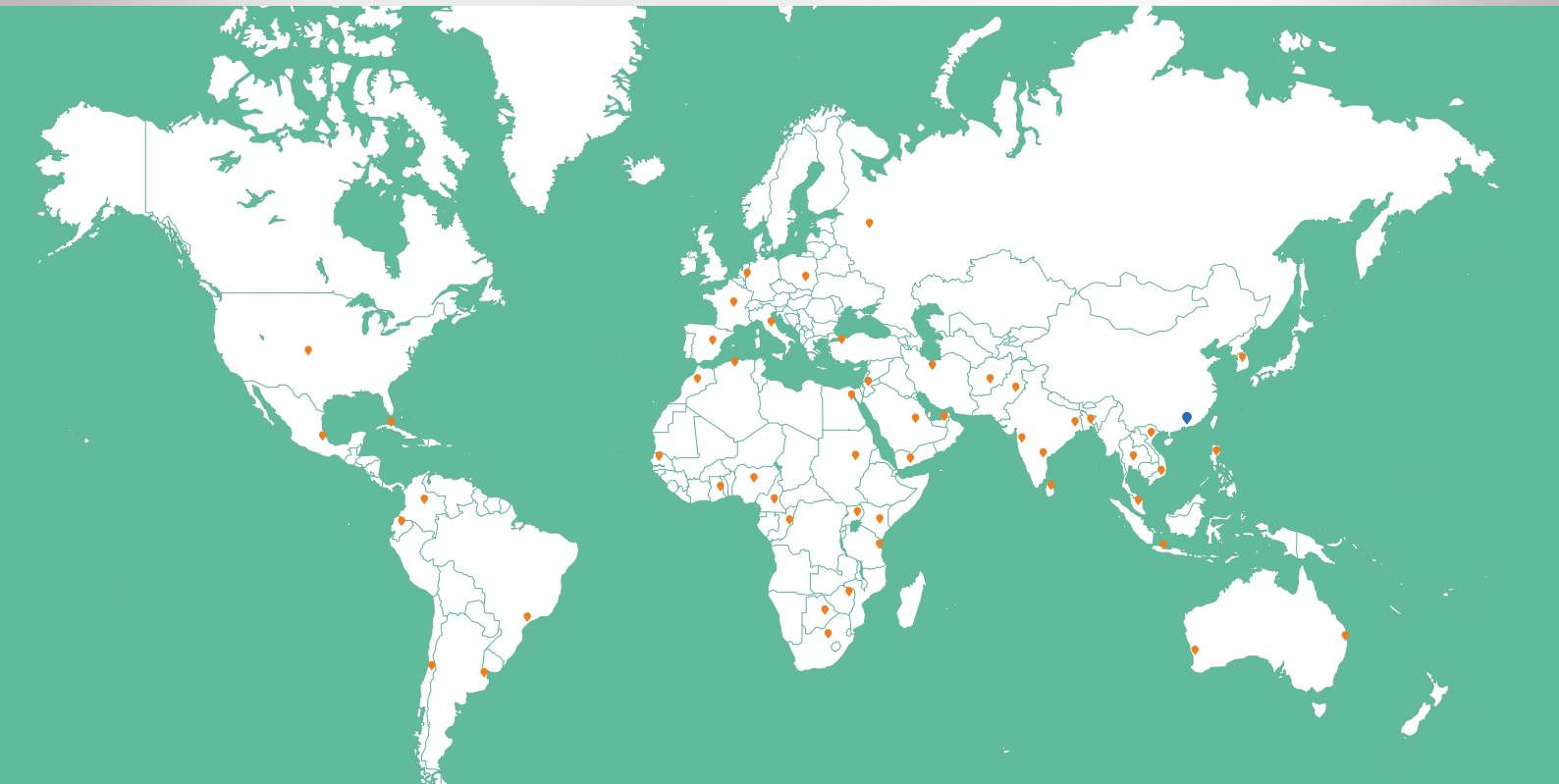
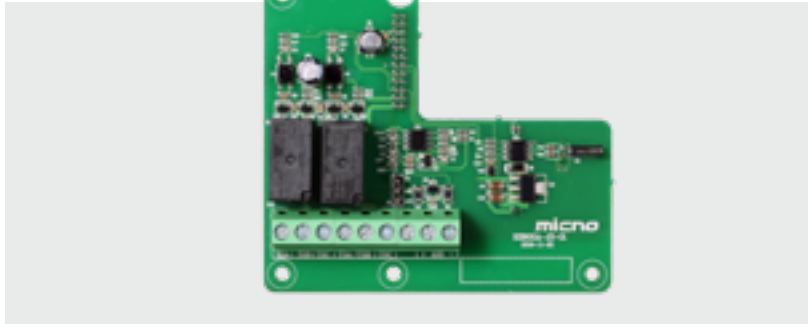
Pulse positioning card

Used for collecting pulse control signals from the master controller during the positioning control.

Clock encryption card

Used for timing, time display and multi-time encryption, with a built-in 3V rechargeable battery.

09



- ◆ Headquarters
- Exported to more than 60 countries

MICNO rich product lines, worldwide sales and service network can always provide you fast support.