

KE300A Medium voltage High Performance Vector Control Inverters

Creat a better life with smart drive



Manufacturer:

Shenzhen Micno Electric Co., Ltd.

Address: 4th Floor, Building 1, Invengo RFID Industrial Park, Tongguan Road,
Jiazitang, Guangming District, Shenzhen, China

Zip code: 518132

Tel: 0755-21675213

Fax: 0755-21675200

Email: acdrive@micno.com.cn

Website: www.micnodrive.com

Stock code: 839477



Information may be subject to change without notice during product improving.

Company Profile

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, 1140V, 3300V, 6600V, 11000V voltage level with 0.4kW~20MW 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. Service outlets.



Product Introduction

KE300A series inverters are special products designed for motor loads at special voltage degree (1140V) in mine and oil industry;

Advanced 3-level topological structure and AFE rectification technology, excellent motor drive performance and small impact to the grid.

New modular design fully meets the special requirements of mining explosion-proof equipment, so the products are widely applied to belt conveyors, hoists, winches, aerial riding devices, emulsion pumps, etc.



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Professional
variable frequency drive technology
Focus
on industry applications
Expert
reliable design

Professional Variable Frequency Drive Technology

Advanced 3-level Topological Structure

The output waveform is closer to the sine wave



3-level output voltage waveform



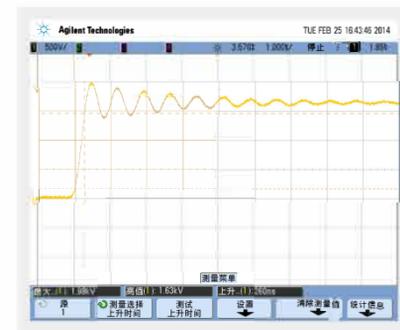
2-level output voltage waveform

- > The motor runs more smoothly, reduce mechanical vibration caused by non-sinusoidal output waveforms, prolong motor service life;
- > Reduce output harmonic significantly, restrain conduction and radiation interference caused by the inverter, possess excellent EMC features;
- > Reduce user configuration costs effectively.

du/dt reduces significantly



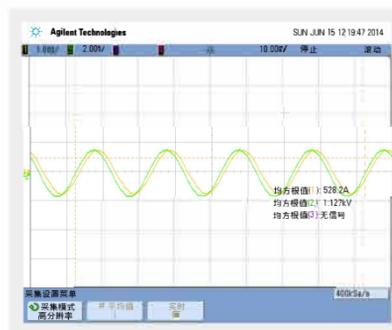
3-level du/dt waveform



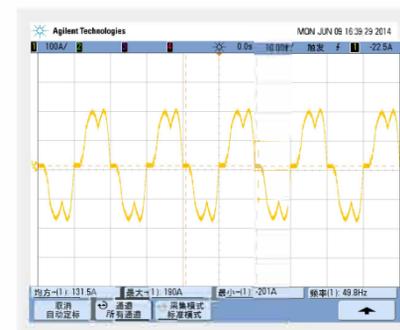
2-level du/dt waveform

- > Reduce impact voltage to the armature, protect motor insulation effectively;
- > Slow down electrocorrosion to motor bearings caused by axial current, prolong motor service life;
- > Reduce leakage current of the system, it runs safely and reliably.

Professional AFE Rectification Feedback



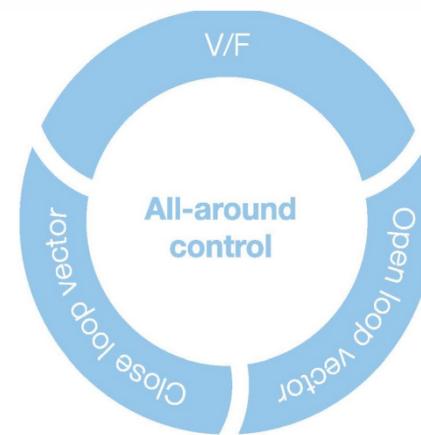
Input controllable current rectification waveform of (AFE IGBT rectification)



Input current waveform of uncontrollable rectification

- ❖ Low input harmonic, reduce interference to the grid

All-around Control Modes



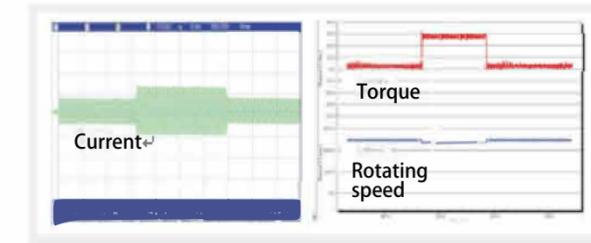
Excellent Drive Performance

High overload capacity and quick response



Sudden loading/unloading waveforms of asynchronous motors

Excellent Running Control Performance



100% of the rated load of asynchronous motors, suddenly loading/unloading current, torque and speed waveforms

- Wide speed range
- High accuracy
- Smoothly braking

	Speed range	Starting torque	Speed control accuracy	Speed fluctuation
Close loop vector control	1:1000	0Hz/180%	±0.1% of Max. speed	±0.1%
Open loop vector control	1:100	0.5Hz/150%	±0.5% of Max. speed	±0.3%

Diverse Human-machine Interfaces



LCD keypad



LED keypad

Perfect Motor Autotuning

Built-in various motor autotuning modes

- Rotating Autotuning (RUN)
- Static Autotuning (STOP)

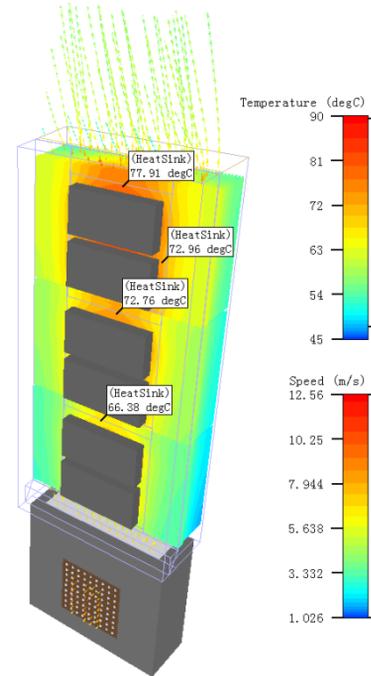
Before autotuning, decouple the motor from the load. The mode is suitable in the cases when high starting torque, speed and control accuracy are needed.

Before autotuning, input correct nameplate parameters of the motor without decoupling the motor from the load. The mode is suitable in the cases when the motor cannot decouple from the load, avoiding the device cannot perform rotation autotuning after installation.

Reliable Designer

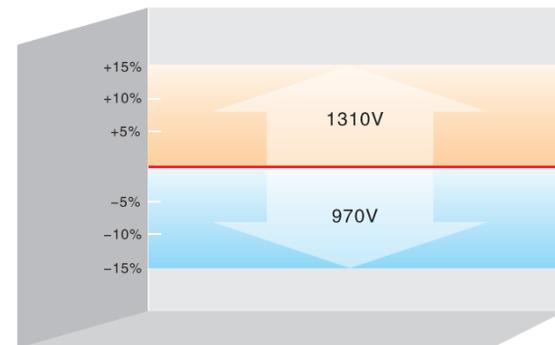
Focus On Industry Applications

Advanced Thermal Simulation

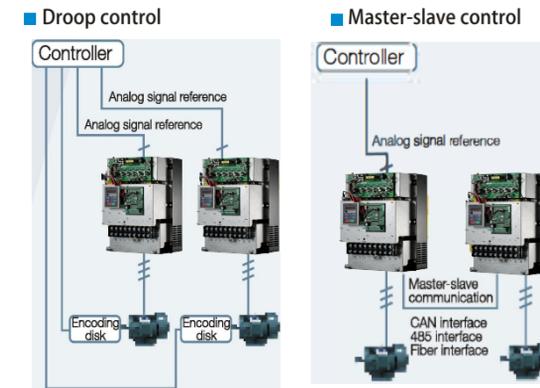


Wide Input Voltage Range

Satisfy hash grid situations



Multi-motor Power Balancing Operation

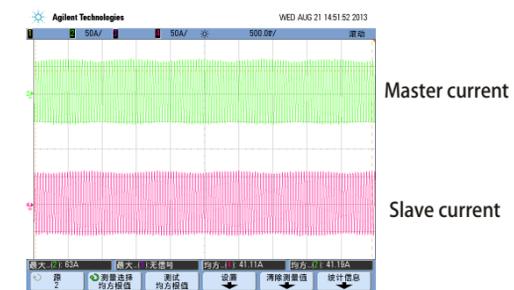


inverters are embedded with droop control mode, master-slave control mode and facilitate multi-motor power balance

Powerful Braking Solution



4-quadrant operation energy can be directly to fed back the grid for braking

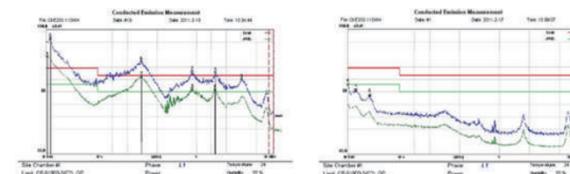


Current waveforms of the master and slave

Special EMC Filter



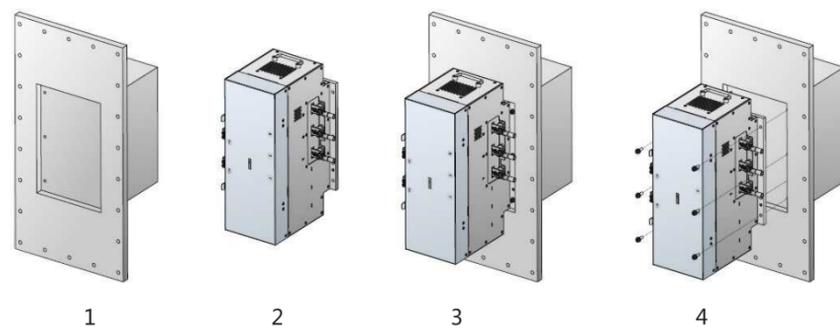
- > Special design for spectrum characteristics under inverter drive.
- > High insertion loss.
- > Actual load test of the inverter.
- > Optional grounding methods.
- > Low leakage current.



Before adding EMC filter

After adding EMC filter

Professional customized laminated,compact structure,easy to maintain



Laminated busbar

Reduce stray induction and IGBT turn-off peak
Compact design, decrease the whole size High reliability, more durable

Rich Network Configuration

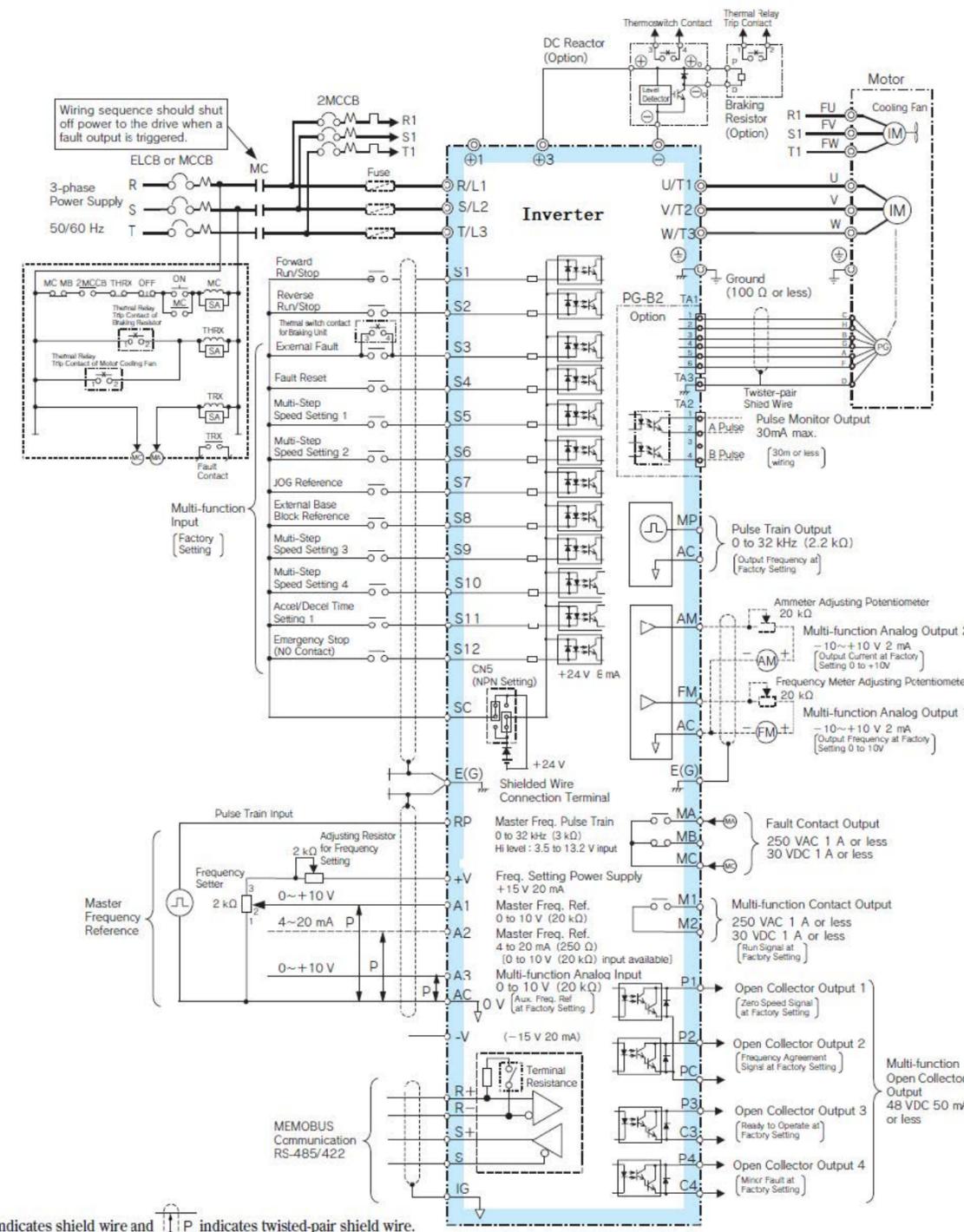
Provide various communication networks and Fieldbus optional cards



Technical Parameters

Model Number	Specification
Control method	Sine wave PWM Flux vector control, open-loop vector control 1 or 2, V/f control without PG, V/f control with PG (switched by parameter setting)
Torque characteristics	150%/0.3 Hz (Open-loop vector control 2), 150%/0 min ⁻¹ (Flux vector control)
Speed control range	1:200 (Open-loop vector control 2), 1:1000 (Flux vector control)
Speed control accuracy	±0.2% (Open-loop vector control, 25°C ± 10°C), ±0.02% (Flux vector control, 25°C ± 10°C)
Speed control response	10 Hz (Open-loop vector control 2), 30 Hz (Flux vector control)
Torque limits	Provided for vector control only (4 quadrant steps can be changed by parameter settings.)
Torque accuracy	±5%
Frequency control range	0.01 to 400 Hz
Frequency accuracy (temperature characteristics)	Digital references: ± 0.01% (-10°C to +40°C) Analog references: ±0.1% (25°C ± 10°C)
Frequency setting resolution	Digital references: 0.01 Hz, Analog references: 0.03 Hz/60 Hz (11 bit with no sign)
Output frequency resolution	0.001 Hz
Overload capacity and maximum current	150% of rated output current per minute, 200% for 5 s
Frequency setting signal	-10 to 10 V, 0 to 10 V, 4 to 20 mA, pulse train
Acceleration/Deceleration time	0.01 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)
Braking torque	Approximately 20%
Main control functions	Restarting for momentary power loss, speed searches, overtorque detection, torque limits, 17-speed control (maximum), acceleration/deceleration time changes, S-curve acceleration/deceleration, 3-wire sequence, autotuning (rotational or stationary), dwell functions, cooling fan ON/OFF control, slip compensation, torque compensation, jump frequencies, upper and lower limits for frequency references, DC braking for starting and stopping, high-slip braking, PID control (with sleep function), energy-saving control, MODBUS communications (RS-485/422, 19.2 kbps maximum), fault reset, function copying, droop control, torque control, speed/torque control switching, etc.
Motor protection	UL recognized protection by electronic thermal overload relay.
Instantaneous overcurrent protection	Stops at approx. 200% of rated output current.
Fuse blown protection	Stops for fuse blown.
Overload protection	150% of rated output current per minute, 200% for 5 s
Overvoltage protection	Stops when main-circuit DC voltage is above 2300V.
Undervoltage protection	Stops when main-circuit DC voltage is below 1250V.
Momentary power loss ride-through	Stops for 15ms or more. By selecting the momentary power loss method, operation can be continued if power is restored within 2 s.
Cooling fin overheating	Protection by thermistor.
Stall prevention	Stall prevention during acceleration, deceleration, or running.
Grounding protection	Protection by electronic circuits.
Charge indicator	Lit when the main circuit DC voltage is approx. 50 V or more.
Ambient operating temperature	-10°C to 40°C (Enclosed wall-mounted type) 10°C to 45°C (Open chassis type)
Ambient operating humidity	95% max. (with no condensation)
Storage temperature	-20°C to +60°C (short-term temperature during transportation)
Application site	Indoor (no corrosive gas, dust, etc.)
Altitude	1000 m max.
Vibration	Tolerance for vibration frequency less than 20 Hz, 9.8 m/s ² max.; 20 to 50 Hz, 2 m/s ² max

Wiring diagram



Product Selection

(If the value exceeds the rated data, please contact with Shenzhen Micno Electric Co., Ltd.)

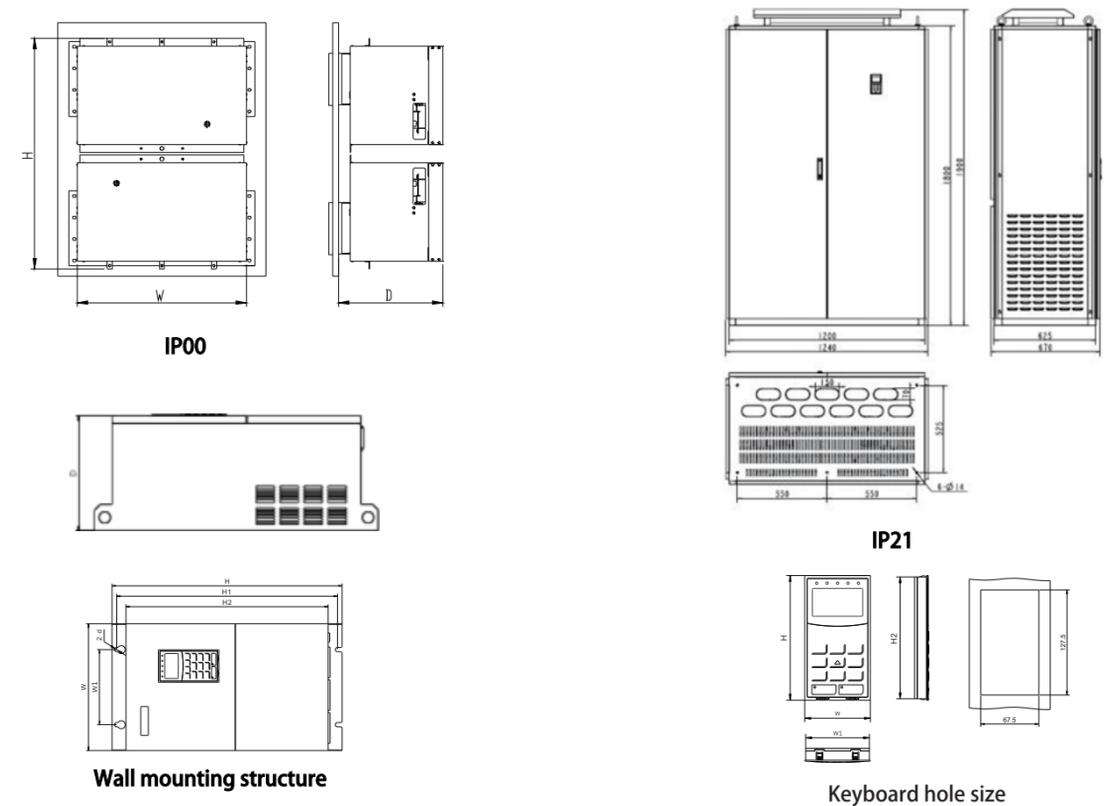
Produce model	Rated Power (kW)	Rated input current(A)	Rated output current(A)
KE300A-037G-T12-3L	37	27	26
KE300A-045G-T12-3L	45	31	31
KE300A-055G-T12-3L	55	38	42
KE300A-075G-T12-3L	75	47	52
KE300A-090G-T12-3L	90	56	58
KE300A-110G-T12-3L	110	68	73
KE300A-132G-T12-3L	132	82	86
KE300A-160G-T12-3L	160	98	104
KE300A-200G-T12-3L	200	119	121
KE300A-250G-T12-3L	250	150	162
KE300A-315G-T12-3L	315	185	208
KE300A-400G-T12-3L	400	235	260
KE300A-500G-T12-3L	500	300	325
KE300A-630G-T12-3L	630	380	415
KE300A-710G-T12-3L	710	430	450
KE300A-800G-T12-3L	800	480	500
KE300A-900G-T12-3L	900	535	561
KE300A-1000G-T12-3L	1000	600	620

Model description

KE300A - 075G - T12 - 3L

Label	Name	Label	Power degree	Label	Voltage degree	Label	Control mode
KE300A	High Performance Vector Control Inverters	75G	75kW	T12	1140V	3L	3-level control method
		400G	400kW				

Mounting structure



Applications



Belt conveyor

Designed for special voltage degree, medium voltage inverters can be applied to up/down/shrinkable belt conveyors and are suitable for severe atmospheres under coal mines. The products can be used in master-slave control of multi-motors.

Application equipment: up/down belt conveyors



Scraper conveyor

Focusing on scraper conveyors at special voltage degree in coal industry, medium voltage inverters realize soft start and stop, reduce chain breakage and become much better in control performance than traditional soft start.

The mine hoist runs up or down. In up-going process, the inverter drives the motor and converts electric energy into potential energy and kinetic energy; in down-going process, the motor will enter into power generation state when deceleration braking and the mine car runs down, and then inverter will feedback the energy generated by the motor to the grid.



Mine hoist

The mine cableway is used for facilitating transporting workers in mines, including up or down movement. In up-going process, the inverter drives the motor and converts electric energy into potential energy and kinetic energy; in down-going process, the motor will enter into power generation state when deceleration braking and the mine car runs down, and then inverter will feedback the energy generated by the motor to the grid.



Mine cableway



Emulsion pump

By real-time monitoring the pressure at the outlet of the emulsion pump, inverter will adjust its output frequency automatically and realize constant supply pressure and automatic emulsion preparation.



Oil field

Inverter can realize soft start and stop of electric submersible pump, prolong the service life of the pump, improve the power factor of the pump system, enhance energy saving effect, achieve continuous adjustment of current and voltage output, and make the system in the best working conditions. Application equipment: Electric submersible pumps, pumping units

Service network



- ◆ Headquarters
- ◆ Exported to more than 60 countries

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

One-stop Service

