

# Clvdrives

## CLV Drives Co., Ltd.

DILIGENCE HONESTY INNOVATION DEVELOPMENT



### Address:

No. 99 A-11, 1st Chuangxin Road, Shenyang Area of China (Liaoning)  
Pilot Free Trade Zone, China.

D1, Hengli Industrial Park, No. 168, Xiakeng 1 Road, Tongde Community,  
Baolong Street, Shenzhen, Guangdong, China

### Tel:

(+86)18840602018

### Email:

[sales@clvdrives.com](mailto:sales@clvdrives.com) (Sales)

[support@clvdrives.com](mailto:support@clvdrives.com) (Technical)

### Web:

[www.clvdrives.com](http://www.clvdrives.com)





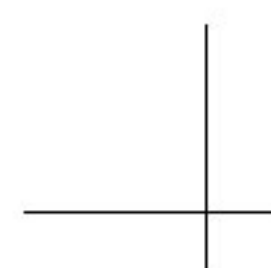
## COMPANY PROFILE



CLV Drives Co., Ltd. is a high-tech enterprise which is dedicated in the R&D, manufacturing and sales of electrical drive and inverter products. Based on the variable frequency control technology with independent intellectual property rights, CLV is positioned to serve the middle and high-end equipment manufacturers, to rapidly provide users with customized solutions so as to achieve the common growth of enterprise value and customer value.

At present, the company has mastered motor drive, vector control and permanent magnet synchronous motor control technology and other core platform technologies. CLV Drives has been a leader in variable frequency drive(VFD) and industrial automation control technology, and is committing to promote industrial civilization with leading technology, as well as providing users with more intelligent, more reliable, more precise Inverter products and energy saving applications.

The main products are: V1000 general purpose inverter, PV500 solar pump inverter, 800 series inverter cabinet and so on, which are with leading edge design and technology, incredible performance, global network of specialist sales & service partners, global engineered support, world class manufacturing, low cost of installation







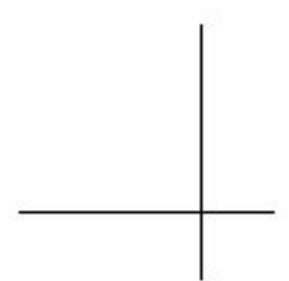
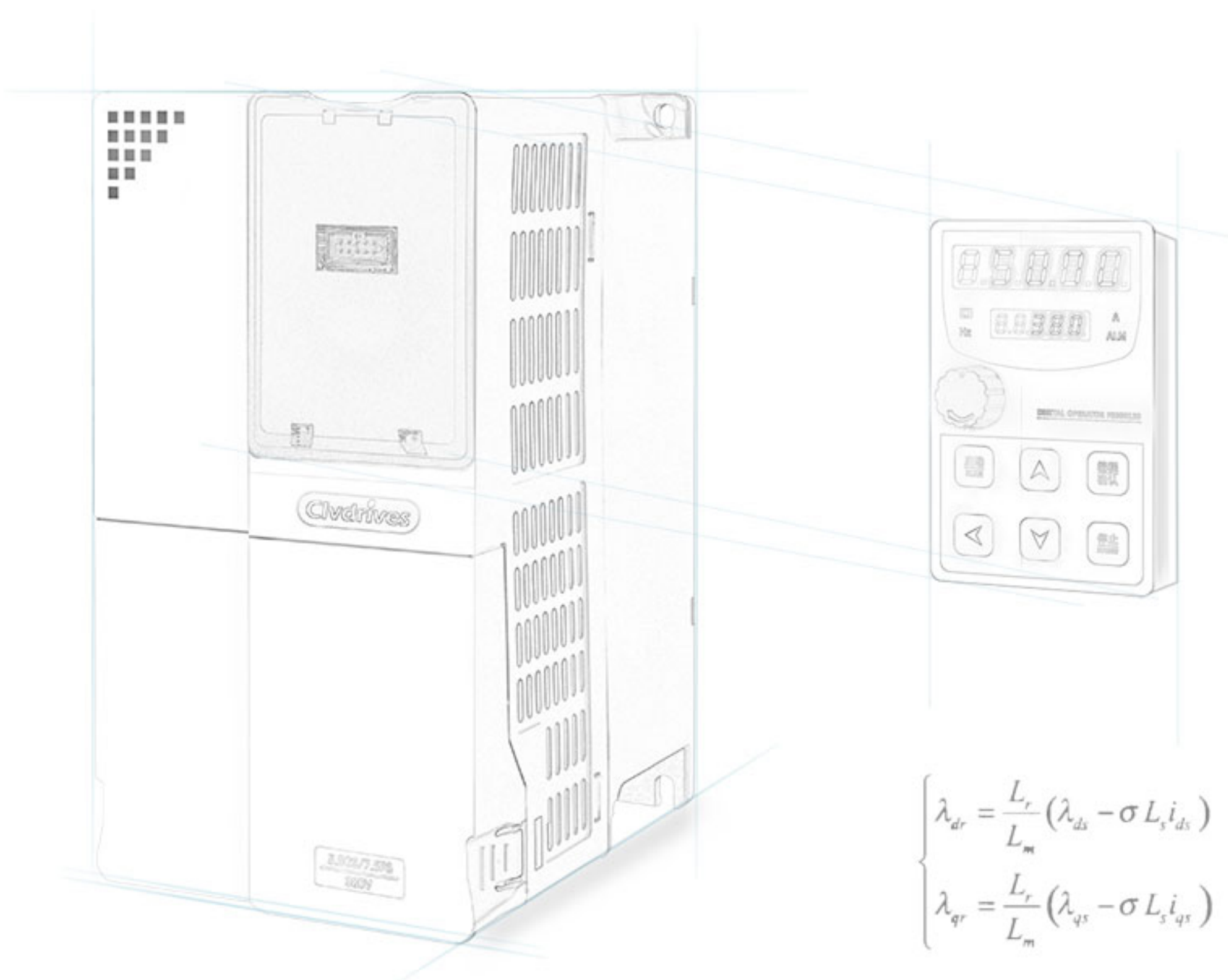
## TOP R&D TEAM

---

Self-strengthening, pragmatic, and technical...

Adhering to the concept of “self-strengthening, pragmatic, and technical” and the technological innovation mode of “product + service”, CLV is committed to becoming a national first-class and internationally renowned innovative enterprise integrating product, technology R&D and service.

CLV not only focuses on the R&D and design of product, but also pays more attention to intellectual property protection. We has applied for many design and technology related patents in China, and have set up research and development centers in Shenyang and Shenzhen respectively, bringing together top design experts abroad to develop a number of disruptive products in the automation industry.



# INDUSTRY LEADING HIGH PERFORMANCE INVERTER







## V1000 Series General Purpose Inverter

220V-380V Single & Three Phase Input	0.4~500KW 0.5~660HP
--	------------------------

CLV high-performance general-purpose inverters are developed on the platform of high-performance vector technology, adopting open-loop vector control algorithm, and supporting both asynchronous motor and permanent magnet (PM) motor control. CLV drives can improve the output performance by 20% and achieve lower power consumption, with reasonable arrangement and layout of all components. CLV drives also support different expansion interface, and new generation of expansion options, to meet the requirement of high performance, high reliability, high flexibility, high power density, and high applicability. Our products are designed and ideal for equipment manufacturing, environmental protection, and new energy systems, and widely used by industries like lifting, machine tools, metal products, wire and cable, plastic cement, printing and packaging, textile and chemical fiber, building materials, metallurgy, petroleum, municipal affairs, automobile, etc.

## Products Dimensions

### Frame A00 To A11



#### Dimension

No.	L(mm)	D(mm)	H(mm)
A00	86	131.5	170
A01	96	151	180
A02	113	166.5	221.6
A03	160	171.5	265
A04	192	171.5	302.5
A05	227	171.5	348.5
A06	327.5	238	490
A07	300	304	526
A08	370	350	690
A09	410	360	720
A10	600	380	963
A11	818	404.5	1361.5

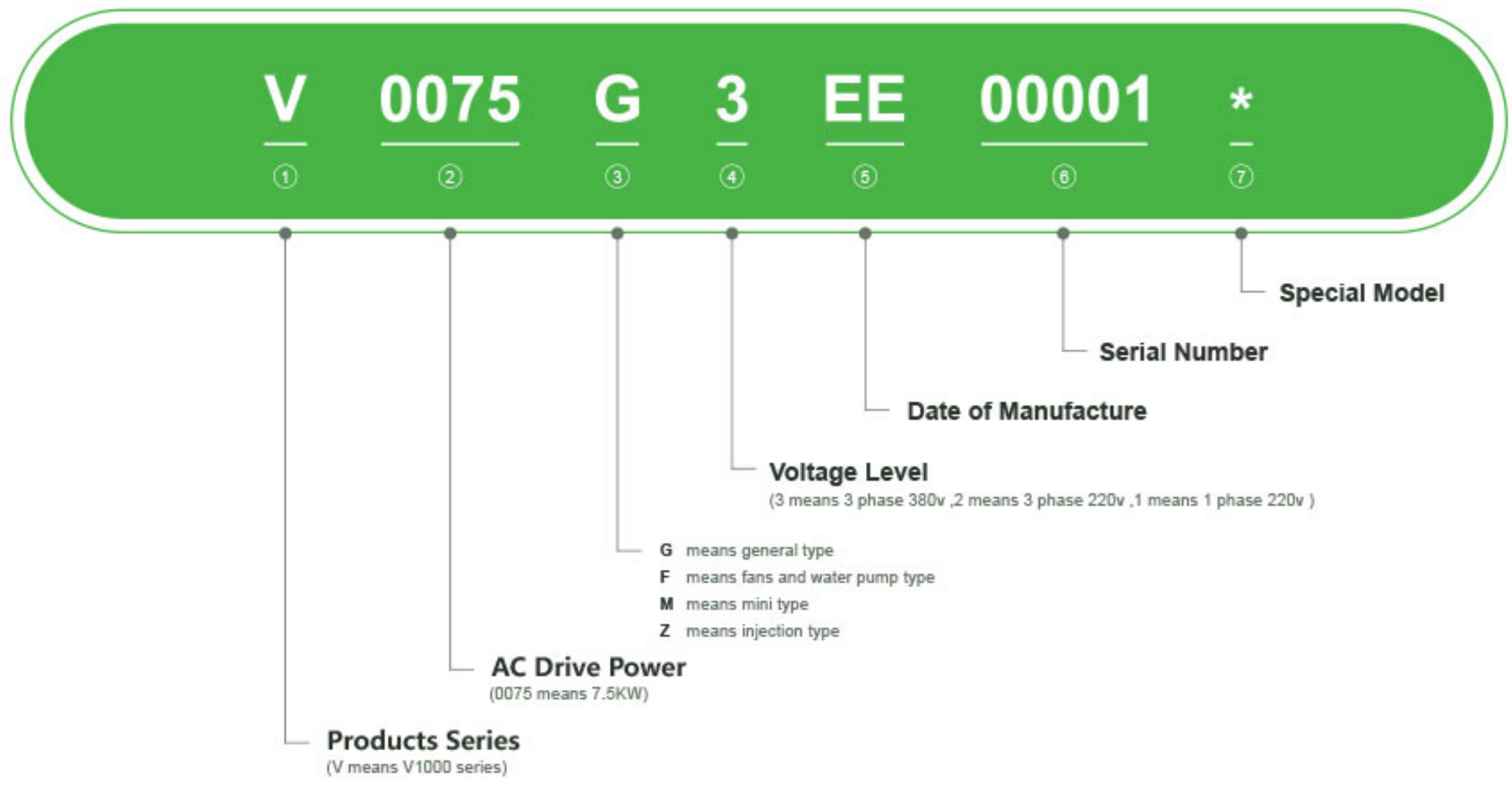


#### Installation Size

No.	L(mm)	H(mm)	Hole Φ (mm)
A00	75	159	5
A01	83.6	165.2	5
A02	98.7	202	5
A03	143	244.3	6.5
A04	172	277	8.5
A05	208.5	323	8.5
A06	202.5	459	10
A07	200	504	9
A08	302	635.5	10
A09	330	690	10
A10	400	933	12
A11	520	1280	16



**Nameplate / V1000**



**Products Series**

Inverter model	Power	Adapted motor kW	HP	Rated output current(A)	Frame
V1000-V0004G1	<b>200V</b> Single phase input	0.4	0.5	2.5	A00
V1000-V0007G1		0.75	1	4	A00
V1000-V0015G1		1.5	2	7	A00
V1000-V0022G1		2.2	3	10	A01
V1000-V0007G3	<b>380V</b> Three phase input	0.75	1	2.5	A00
V1000-V0015G3		1.5	2	3.7	A00
V1000-V0022G3		2.2	3	5.1	A01
V1000-V0040G3		4	5	8.5	A01
V1000-V0055G3		5.5	7.5	13	A02
V1000-V0075G3		7.5	10	16	A02
V1000-V0110G3		11	15	25	A03
V1000-V0150G3		15	20	32	A03
V1000-V0185G3		18.5	25	38	A04
V1000-V0220G3		22	30	45	A04
V1000-V0300G3		30	40	60	A05
V1000-V0370G3		37	50	75	A05
V1000-V0450G3		45	60	90	A06
V1000-V0550G3		55	70	110	A06
V1000-V0750G3		75	100	150	A07
V1000-V0930G3		93	125	170	A07
V1000-V1100G3		110	150	210	A08
V1000-V1320G3		132	175	250	A08
V1000-V1600G3		160	210	300	A09
V1000-V1850G3		185	245	340	A09
V1000-V2000G3	200	260	380	A09	
V1000-V2200G3	220	300	415	A09	
V1000-V2500G3	250	350	470	A10	
V1000-V2800G3	280	370	520	A10	
V1000-V3150G3	315	400	600	A10	
V1000-V3550G3	355	420	650	A11	
V1000-V4000G3	400	530	725	A11	
V1000-V4500G3	450	595	820	A11	
V1000-V5000G3	500	660	980	A11	





## PV500 Series Solar Pump Inverter

220V-380V

Single & Three Phase  
Input

0.75~500KW

1~660HP

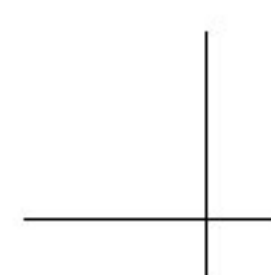


Solar pump is a water lifting equipment powered by solar energy, composed of solar pump controller and Pump. When applied, solar cell array with corresponding power is configured according to lift and daily water demand. Mainly used in agricultural irrigation, grassland animal husbandry, urban waterscape, domestic water and other fields.

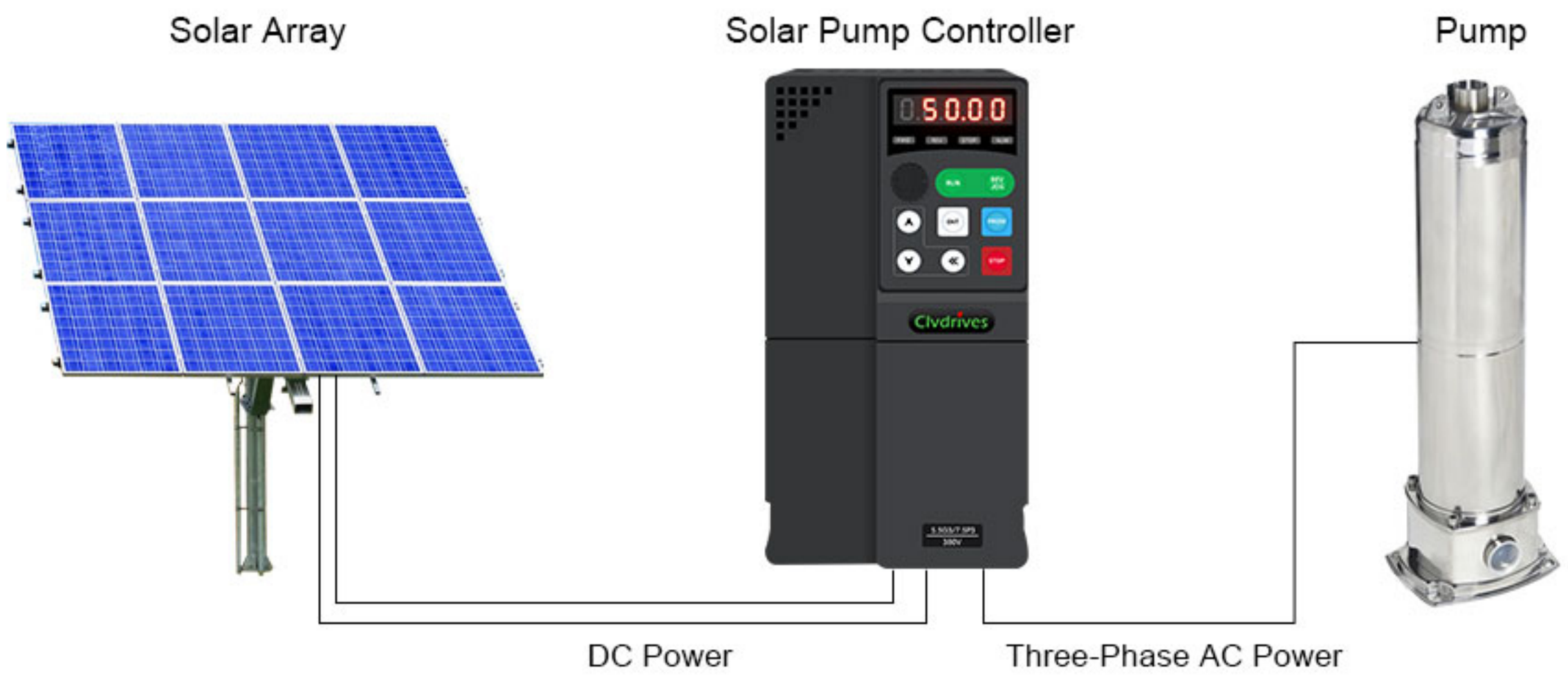
In recent years, with the global solar power products from the urban application market to a larger scale of farmland, grassland, desert and other demand markets, solar pump has become the core products of the solar industry and agricultural water conservancy, desert management, domestic water and other traditional industries integrated development.

Solar pumps use durable energy from the sun, so the whole operation does not need artificial attended, diesel, and power grid.

Solar pump system and drip irrigation, sprinkler irrigation, seepage irrigation and other irrigation facilities supporting application, can save water and energy, greatly reduce the use of high pollution energy and power input cost.







A solar array is composed of several solar cell modules in parallel, which absorbs solar radiation energy and converts it into electric energy to provide power for the system to adjust and control the water pumping system. The output frequency is adjusted in real time according to sunshine intensity, and the pump is driven to pump water from water sources such as deep wells and lakes into pools or irrigation systems to provide water for the target.



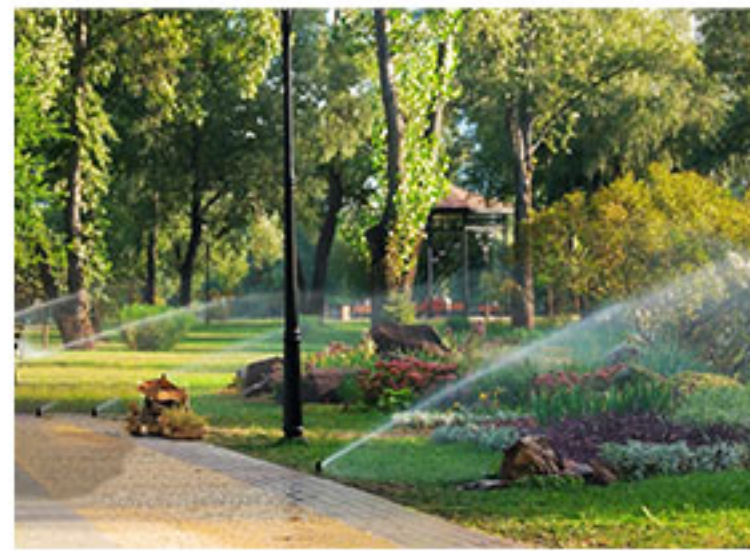
Agricultural Irrigation



Desert Governance



Seawater Desalination

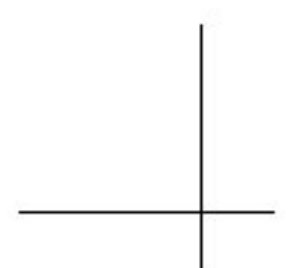


Park Greening



Grassland Animal Husbandry

It can be widely used in desert governance, agricultural irrigation, seawater desalination, forestry, grassland animal husbandry, urban waterscape, domestic water, etc.





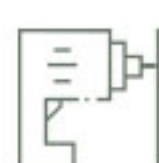
# Products Dimensions

Frame A00 To A11



## Dimension

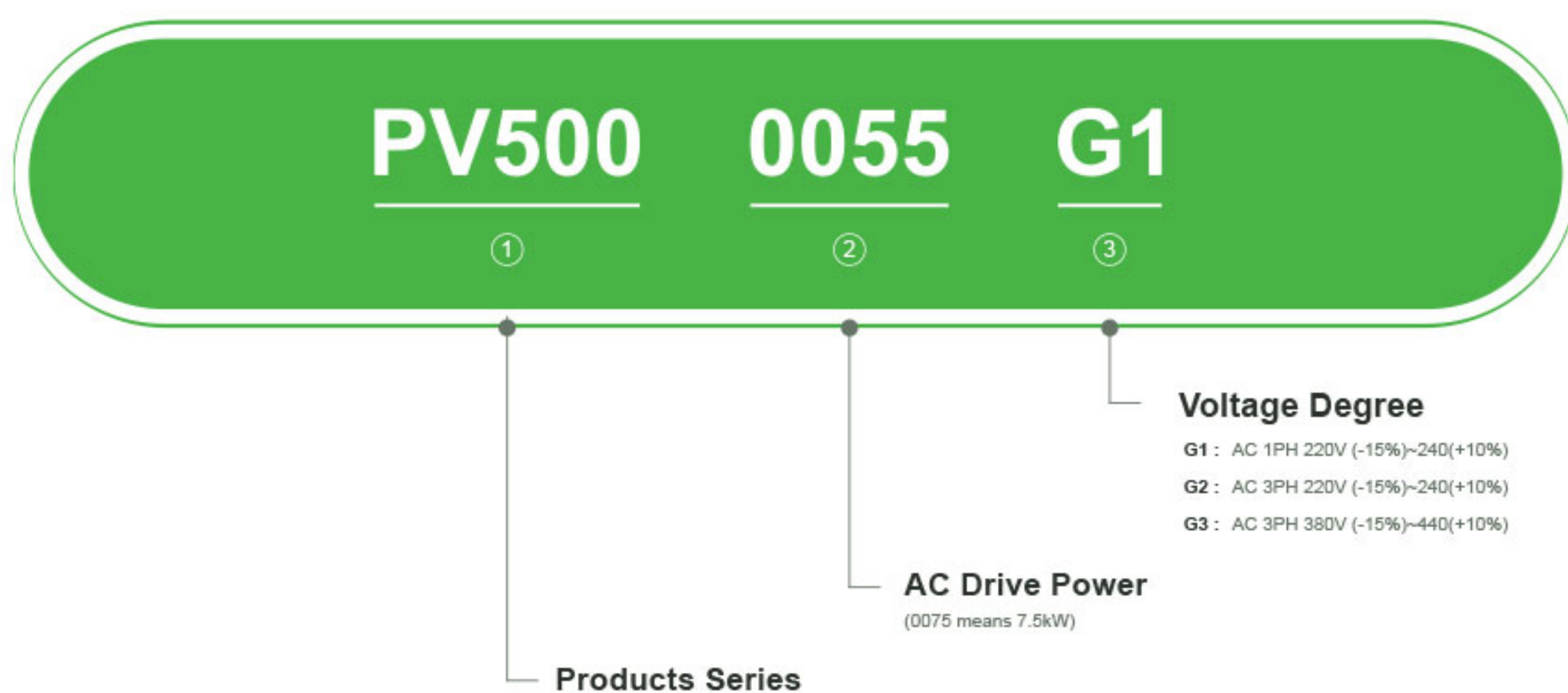
No.	W(mm)	D(mm)	H(mm)
A00	86	131.5	170
A01	96	151	180
A02	113	166.5	221.6
A03	160	171.5	265
A04	192	171.5	302.5
A05	227	171.5	348.5
A06	327.5	238	490
A07	352	299	595
A08	370	350	690
A09	470	363	775
A10	600	381	963
A11	818	404.5	1361.5



## Installation Size

No.	W(mm)	H(mm)	Hole Φ (mm)
A00	75	159	5
A01	83.6	165.2	5
A02	98.7	202	5
A03	143	244.3	6.5
A04	172	277	8.5
A05	208.5	323	8.5
A06	202.5	459	10
A07	260	574	10
A08	302	635.5	10
A09	330	745	10
A10	400	933	12
A11	520	1280	28

## Nameplate / PV500

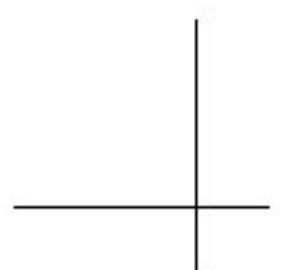






## Products Series

Inverter model	Power	Adapted motor		Rated output current(A)	Frame
		kW	HP		
PV500-0007G1	<b>200V</b> Single phase AC input (320V DC input)	0.75	1	4	A00
PV500-0007G1		1.5	2	7	A00
PV500-0007G1		2.2	3	10	A01
PV500-0040G2	<b>200V</b> Three phase AC input (320V DC input)	4	5	16	A02
PV500-0055G2		5.5	7.5	25	A03
PV500-0075G2		7.5	10	32	A03
PV500-0110G2		11	15	45	A04
PV500-0150G2		15	20	60	A05
PV500-0185G2		18.5	25	75	A05
PV500-0220G2		22	30	90	A06
PV500-0300G2		30	40	110	A07
PV500-0370G2		37	50	150	A07
PV500-0450G2		45	60	170	A07
PV500-0550G2		55	70	210	A08
PV500-0750G2		75	100	300	A09
PV500-0007G3		<b>380V</b> Three phase AC input (540V DC input)	0.75	1	2.1
PV500-0015G3	1.5		2	3.8	A00
PV500-0022G3	2.2		3	5	A00
PV500-0040G3	4		5	9	A01
PV500-0055G3	5.5		7.5	13	A02
PV500-0075G3	7.5		10	17	A02
PV500-0110G3	11		15	25	A03
PV500-0150G3	15		20	32	A03
PV500-0185G3	18.5		25	38	A04
PV500-0220G3	22		30	45	A04
PV500-0300G3	30		40	60	A05
PV500-0370G3	37		50	75	A05
PV500-0450G3	45		60	90	A06
PV500-0550G3	55		70	110	A06
PV500-0750G3	75		100	150	A07
PV500-0930G3	93		125	170	A07
PV500-1100G3	110		150	210	A08
PV500-1320G3	132		175	250	A08
PV500-1600G3	160		210	300	A09
PV500-1850G3	185		250	340	A09
PV500-2000G3	200		260	380	A09
PV500-2200G3	220		300	415	A09
PV500-2500G3	250		350	470	A10
PV500-2800G3	280		370	520	A10
PV500-3150G3	315		400	585	A10
PV500-3550G3	355		470	650	A11
PV500-4000G3	400		530	725	A11
PV500-4500G3	450	595	820	A11	
PV500-5000G3	500	660	980	A11	







## 800 Series Inverter Cabinet

<b>220V-380V</b> Single & Three Phase Input	<b>0.75~37KW</b> <b>1~50HP</b>
---	-----------------------------------



### Dimension

No.	W(mm)	D(mm)	H(mm)
K0015	240	159	300
K0075	296	171	380



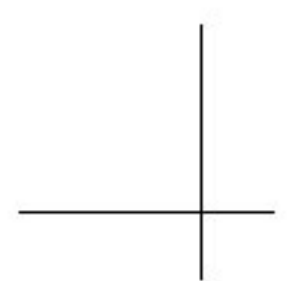
### Installation Size

No.	W(mm)	H(mm)	Hole Φ (mm)
K0015	210	275.5	7
K0075	353.5	266	7

Intelligent inverter cabinet is a convenient and easy-to-use universal inverter product launched by CLV, which aims to save the steps of complex wiring and parameter setting for customers, and can be easily completed without professional electricians.

The product subversively integrates inverter, circuit breaker protector and other equipment. It does not need additional wiring, and can be used as soon as connecting to the motor. Without complex parameter settings, it has small volume, and does not occupy space, which can easily realize to control motor, start-stop, speed regulation, protection and other abundant functions.

Intelligent inverter cabinet can be widely used in fan, water pump, conveyor belt speed regulation, machine tools, mechanical precision braking, metallurgy, building materials, municipal, printing and packaging and other industries, which has extensive prospect.



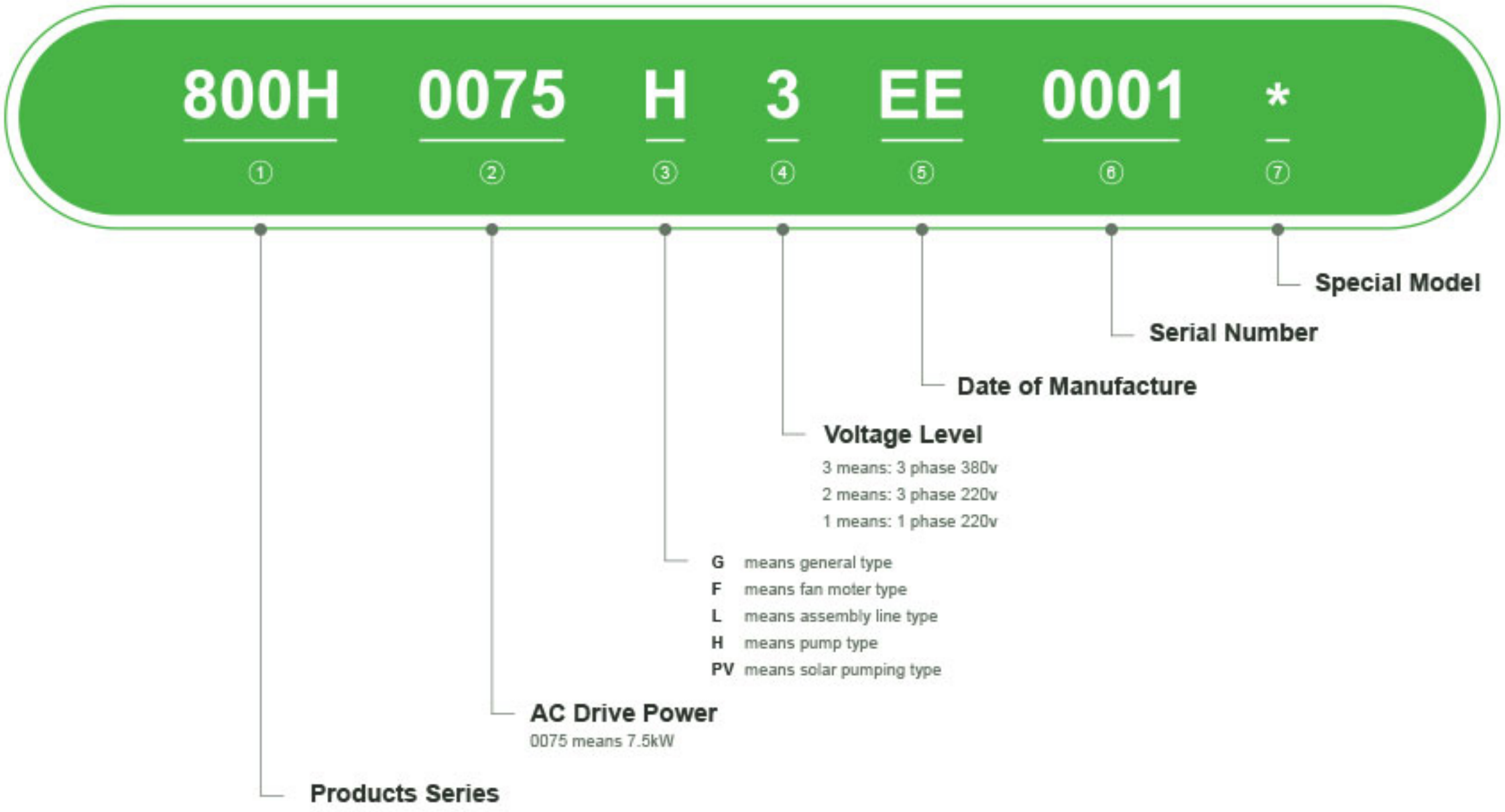




- Without complex parameter settings, it has simple panel.
- Compact body and knapsack installation, which saves space.
- No need wiring, can be used as soon as connecting to the motor, which saves installation time.
- Without professional operation, it can save labor costs.
- Multiple motor protection, is safe to use.

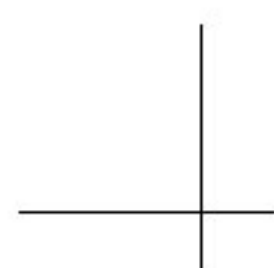
- Fan speed control, panel potentiometer design, which is convenient and fast.
- Energy saving and consumption reduction, can improve the operating efficiency of the fan and reduce energy consumption

### ■ Nameplate / 800H



### ☐☐☐ Products Series

Inverter model	Power	Adapted motor		Rated output current(A)	Frame
		kW	HP		
800H-0007H1	<b>200V</b> Single phase input	0.75	1	4	K0015
800H-0015H1		1.5	2	7	K0015
800H-0022H1		2.2	3	10	K0015
800H-0007H3	<b>380V</b> Three phase input	0.75	1	2.5	K0015
800H-0015H3		1.5	2	3.7	K0015
800H-0022H3		2.2	3	5.1	K0015
800H-0040H3		4	5	8.5	K0015
800H-0055H3		5.5	7.5	13	K0075
800H-0075H3		7.5	10	16	K0075
800H-0110H3		11	15	25	K0075
800H-0150H3		15	20	32	K0075
800H-0185H3		18.5	25	38	K0075
800H-0220H3		22	30	45	K0075
800H-0300H3	30	40	60	K0075	
800H-0370H3	37	50	75	K0075	





# Intelligent Pump Controller



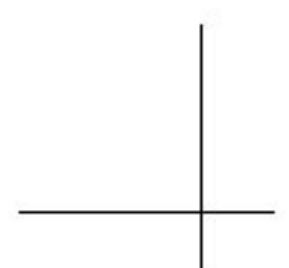
## Product Overview

Our intelligent pump controller is suitable for deep well submersible pump, centrifugal pump, pipeline pump automatic control and protection. Especially its unique design, which does not need to install the lower pool (well) probe, can achieve sensitive and reliable water system dry pump shutdown protection function, which is more convenient for the construction and installation of deep-well submersible pumps and pipeline pumps and save costs.

The specially designed dual system automatic rotation function can minimize the water system corrosion phenomenon, and the pump fault automatic switch function can ensure the reliability of the water supply system.

## Performance

1. Support one control one, one control two, one active/standby, active/standby automatic rotation function.
2. With overcurrent, overpressure, under pressure, lack of phase, blocking, no load, water shortage, anti-freezing, anti-rust and other protective functions.
3. Foolproof operation, without wiring, or setting parameters, can be used as soon as connecting to the pump, is easy to operate.
4. Regular inspection function to prevent water pump from rusting due to long-term of disuse.
5. It can realize the automatic control of liquid level sensor, electric contact pressure gauge and floating ball switch.
6. Overtemperature alarm and protection function.
7. Provide RS485 communication interface (optional), users can realize remote control through PLC and other controller.

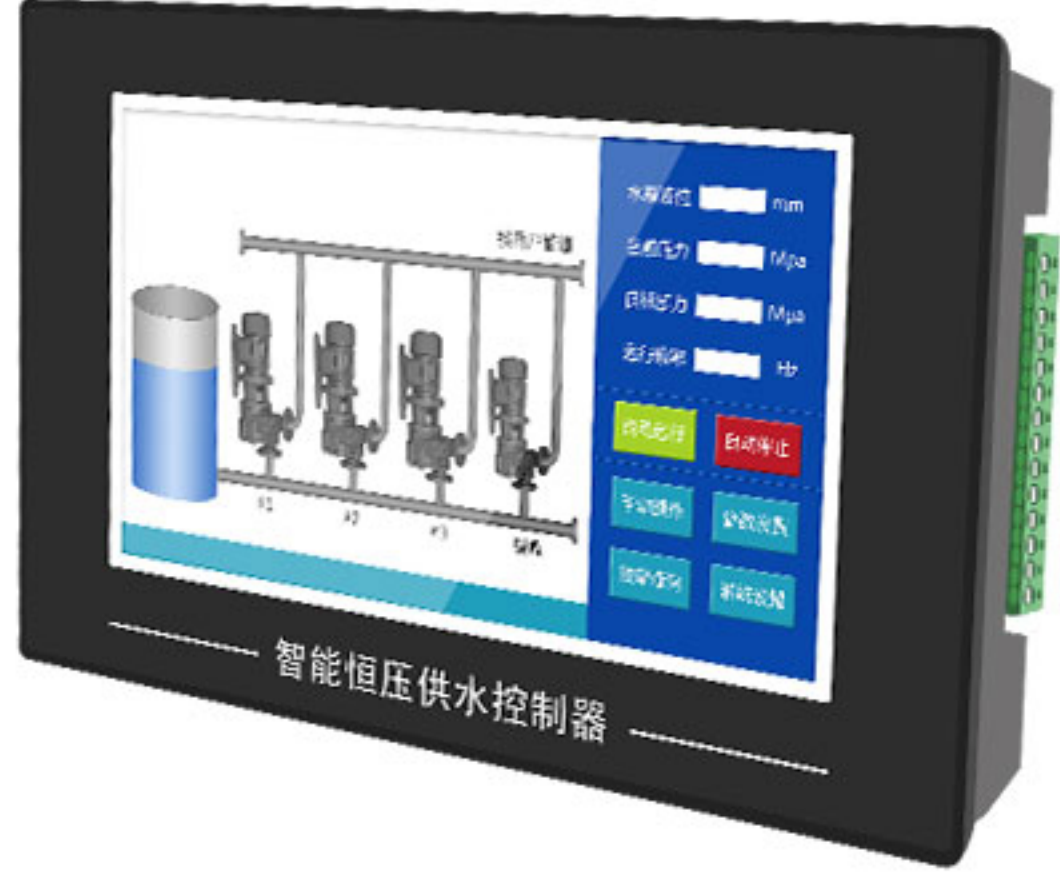




## Intelligent Constant Pressure Water Supply Controller



HY920



HY70

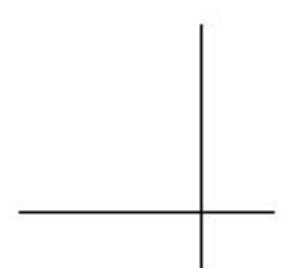
## Product Overview

Intelligent constant pressure water supply controller is a computer controller specially designed for variable frequency constant pressure water supply system and water replenishing of boiler and heat exchange system. It can be used with all kinds of inverter.

It has many functions, such as high precision pressure control, stable pressure, second fire pressure (dynamic pressure) setting, automatic control of overpressure drainage system, password lock of set parameters, etc.

## Performance

1. 32-bit high-performance processor, with fast operation speed, low power consumption and more reliability. on interface (optional), users can realize remote control through PLC and other controller
2. Multi pump linkage work, which can support the cyclic start of up to 4 pumps..
3. Timed automatic pump reversing function.
4. Support analog signal input of 0-5V remote pressure gauge and 4-20ma pressure transmitter.
5. With protection functions of water shortage automatic detection and external input shutdown.
6. With upper pressure protection function, automatically stops the pump while overpressure.
7. Time and pressure control function, supports up to 6 periods of time setting.
8. With water tank level control, high pressure starts relief valve function.
9. Built in PID parameter adjustment function, which can be adjusted quickly according to the on-site working conditions.
10. RS485 hardware interface, supporting MODBUS RTU communication protocol.
11. With functions of inverter fault alarm and pump shutdown.
12. Allow to customize the name and contact information, and main interface display function.

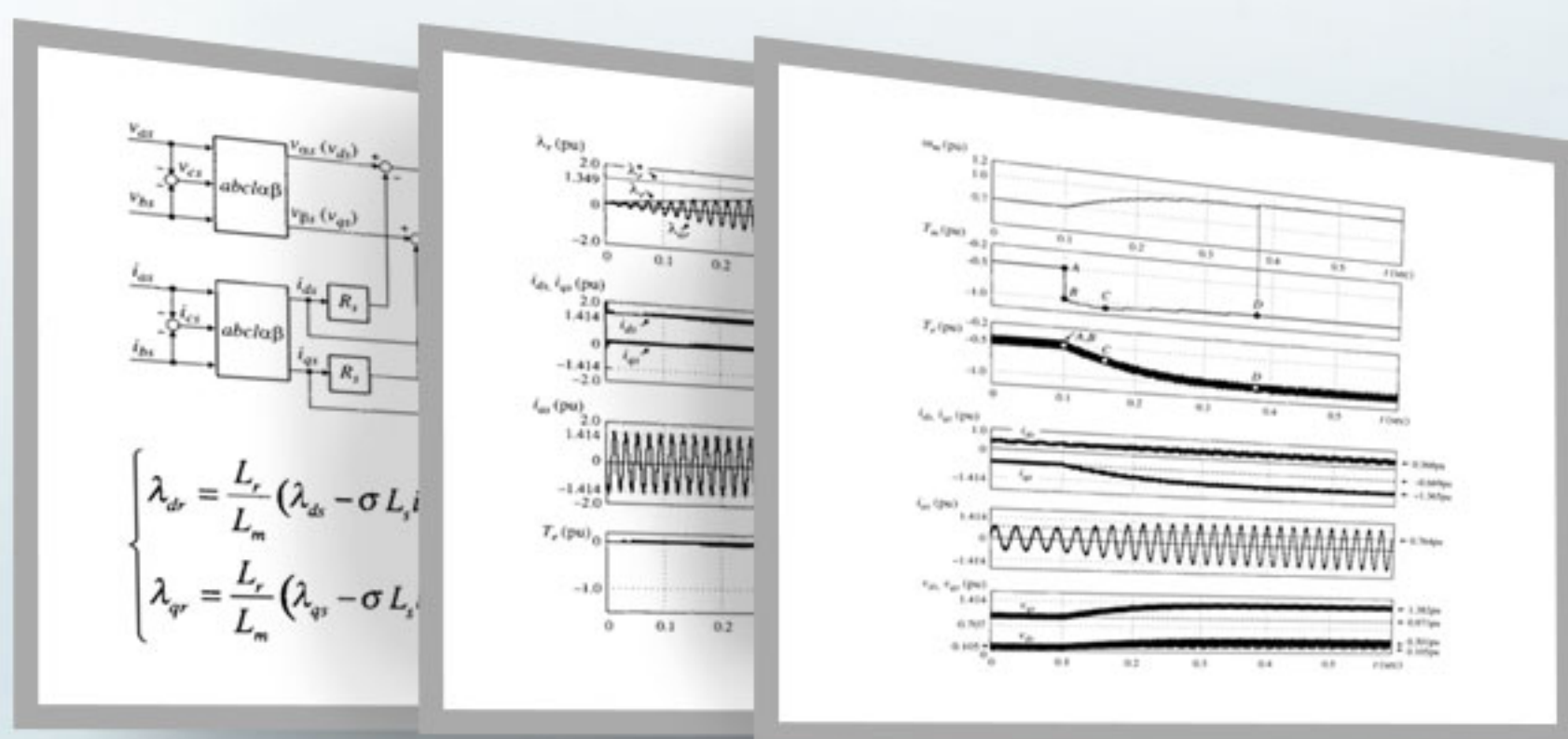






# Permanent Magnet Synchronous Wind Generator Control System

CLV wind power control system, control a permanent magnet motor, when parsing the wind speed change after the causes of the generator phase error, developed for permanent magnet motor power generation high performance control algorithm, fetching commutation interval, compensating error of time, adjust the signal delay Angle, achieve the goal of automatic correct position signal phase. After the optimization of the control algorithm, the control system can make the generator commute at the ideal commutation point, which greatly improves the performance of the generator.



Permanent magnet motor control technology, improve reliability off-grid compatibility, convenient networking applications at high altitude, strong adaptability.  
 Low cost, high efficiency, low noise  
 Sensorless vector control algorithm for high precision permanent magnet motor  
 Speed tracking starts stably, detecting air volume accurately and quickly.

Wind power is one of the fastest growing technologies in renewable energy development worldwide. Wind power generation technology is to convert wind energy into electricity, which is supplied to users through the grid or directly to users. The most important part of the conversion process from wind to electricity is the use of power electronics and control technology to convert electricity into alternating current that can be connected to the grid, or alternating current or direct current that meets customer requirements. The wind power generation control system produced by CLV has been put into use in Tibet, which is 5,500 meters above sea level. The sufficient power supply has brought a comfortable life for local herdsmen.





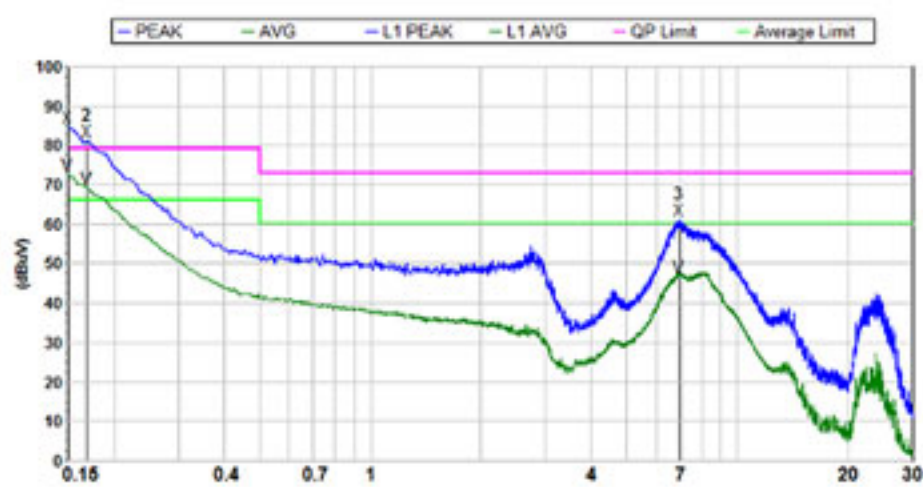


# Leading Hardware Design and Control Technology

## Industry-leading EMC filter technology

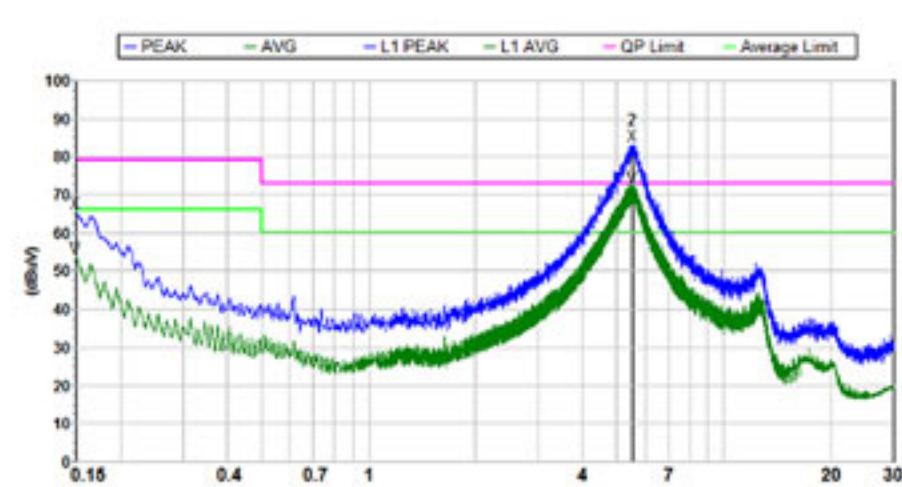
The R&D team has professional EMC design, development, testing and rectification experience. The inverter can be built with high standard EMC filter circuit, which can meet the national standard GB4824 1 group CLASS A standard limit (corresponding to the European standard C2).

### Conduction test



CLV Inverter

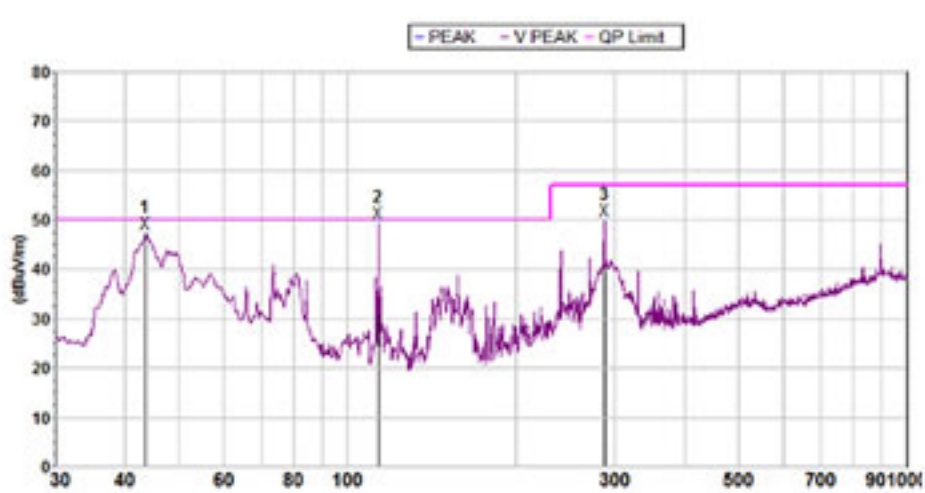
Green: the average AV Blue: quasi-peak QP



A High Performance Inverter From a Well-known Domestic Inverter Brand

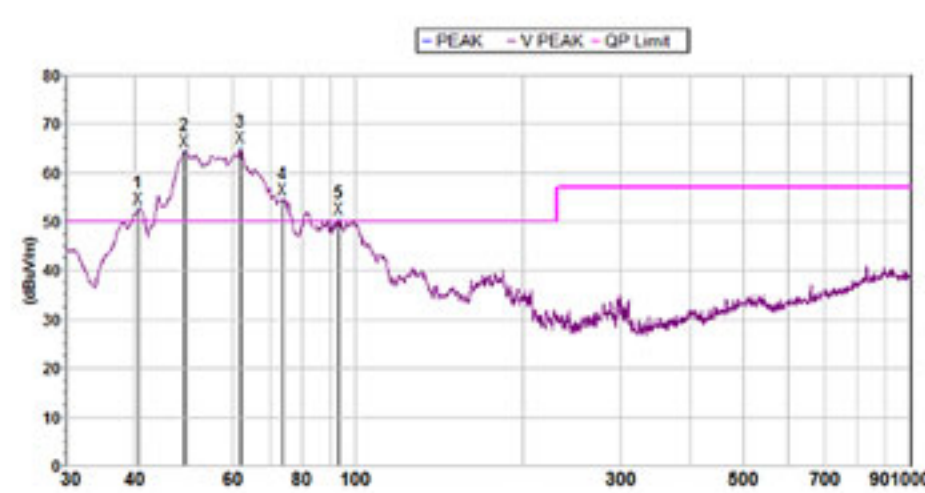
The horizontal line is the corresponding national standard limit

### Radiation Test - V



CLV Inverter

Green: the average AV Blue: quasi-peak QP

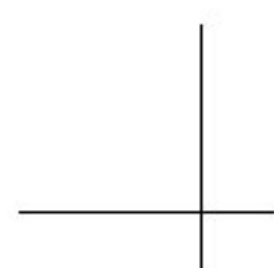


A High Performance Inverter From a Well-known Domestic Inverter Brand

The horizontal line is the corresponding national standard limit



CLV inverters are widely used in equipment manufacturing, energy conservation and environmental protection, and new energy fields, and mainly in the service of lifting, machine tools, metal products, plastic cement, printing and packaging, textile and chemical fiber, building materials, metallurgy, colliery, municipal

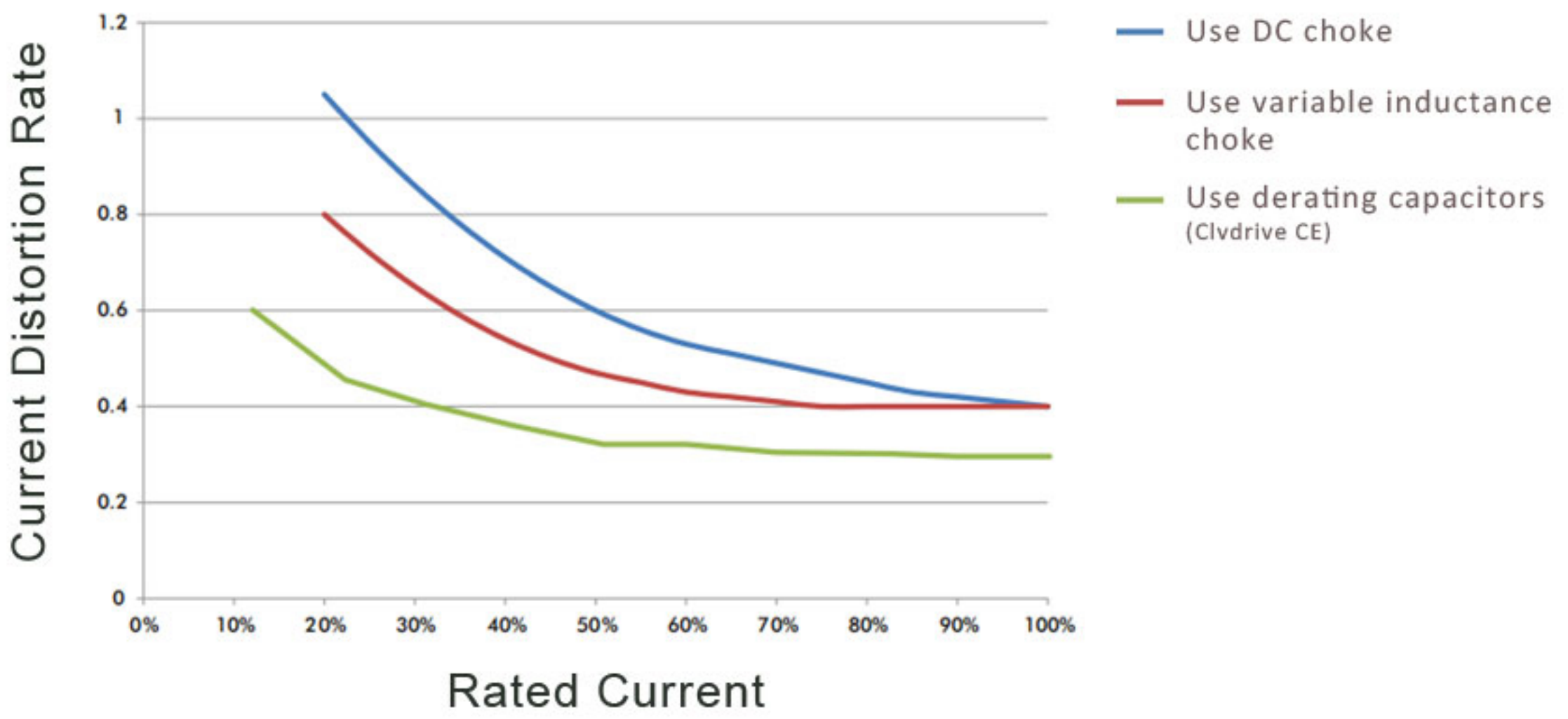




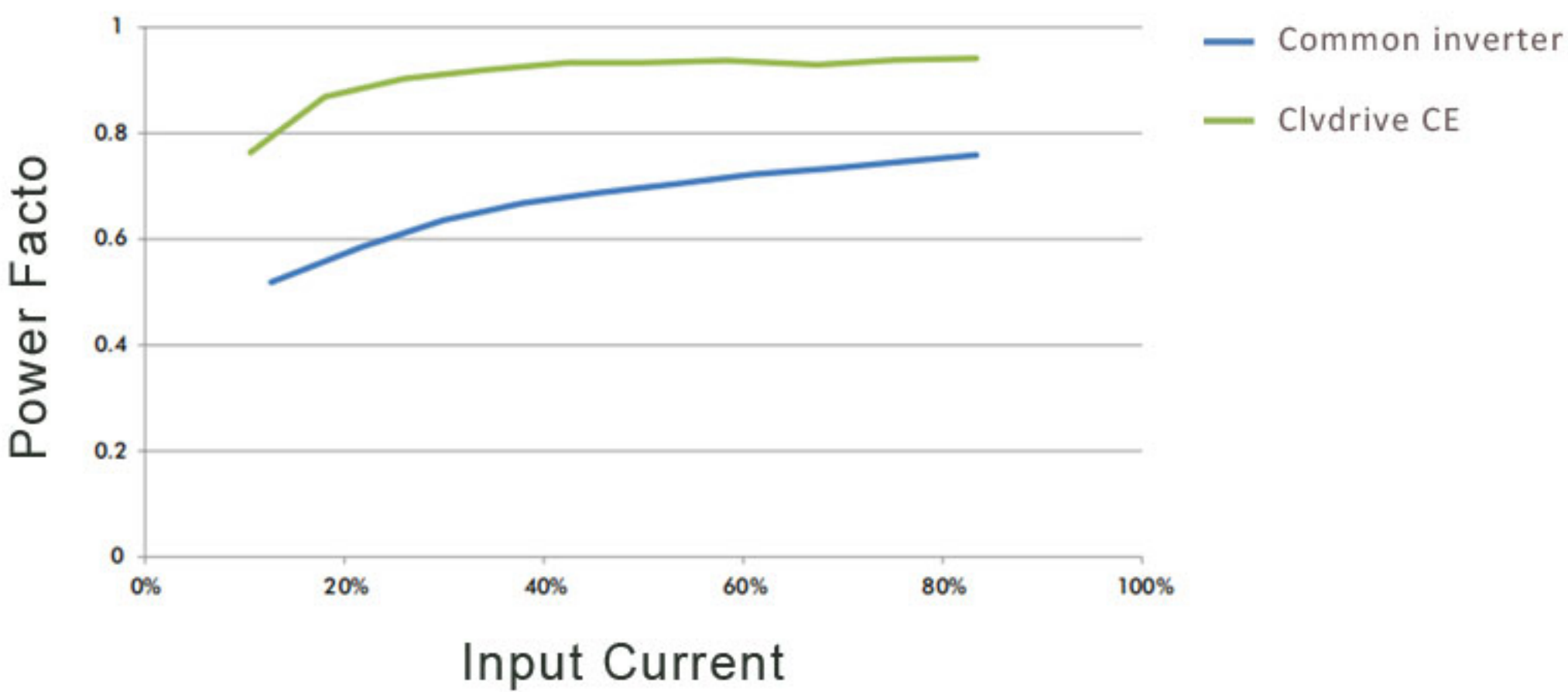
**Industry-leading Low-harmonic Inverter Solution**

**Pioneering Software Solutions**

**Adaptive DC Bus Voltage Tracking Technology**



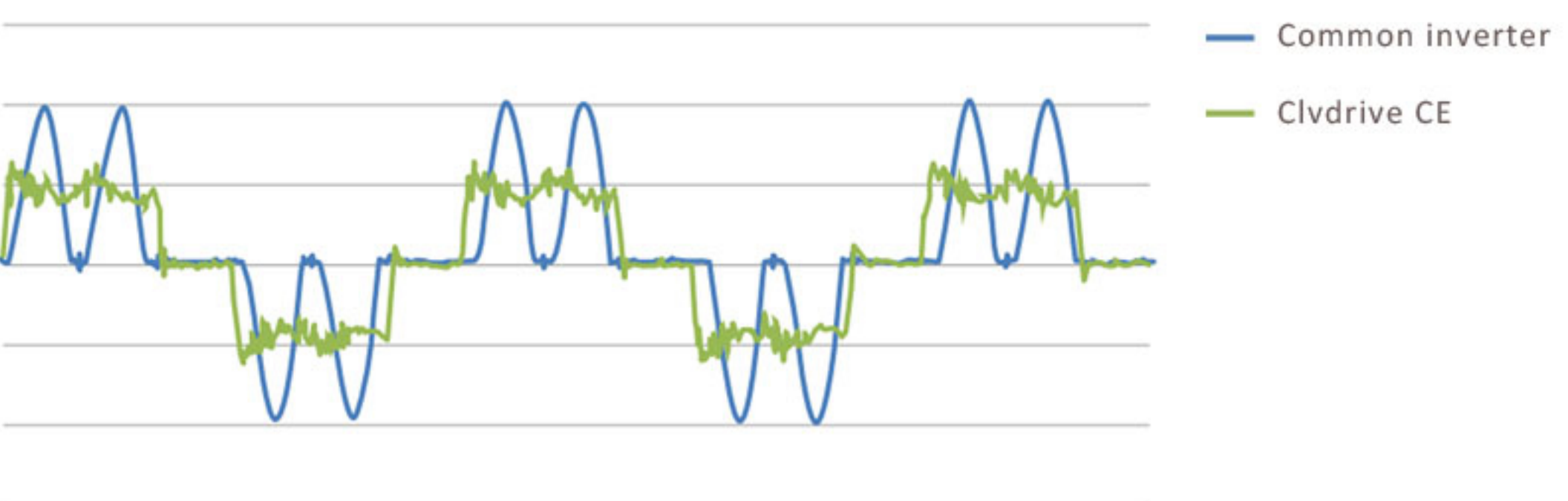
The diagram above shows typical values of current distortion rates at full and moderate loads. It is clear that reducing the DC bus capacitance significantly reduces the total harmonic distortion at full load and has a greater benefit at medium load compared with conventional DC choke or variable-inductance choke, which also reduces the total input current and the heat of the transformer.



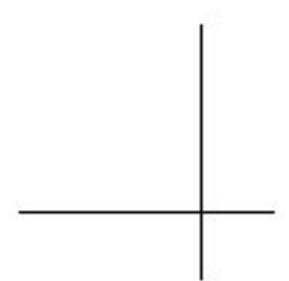
As shown above, the CLV CE has a better power factor than conventional inverters under any type of load.

**Pioneering Hardware Solutions**

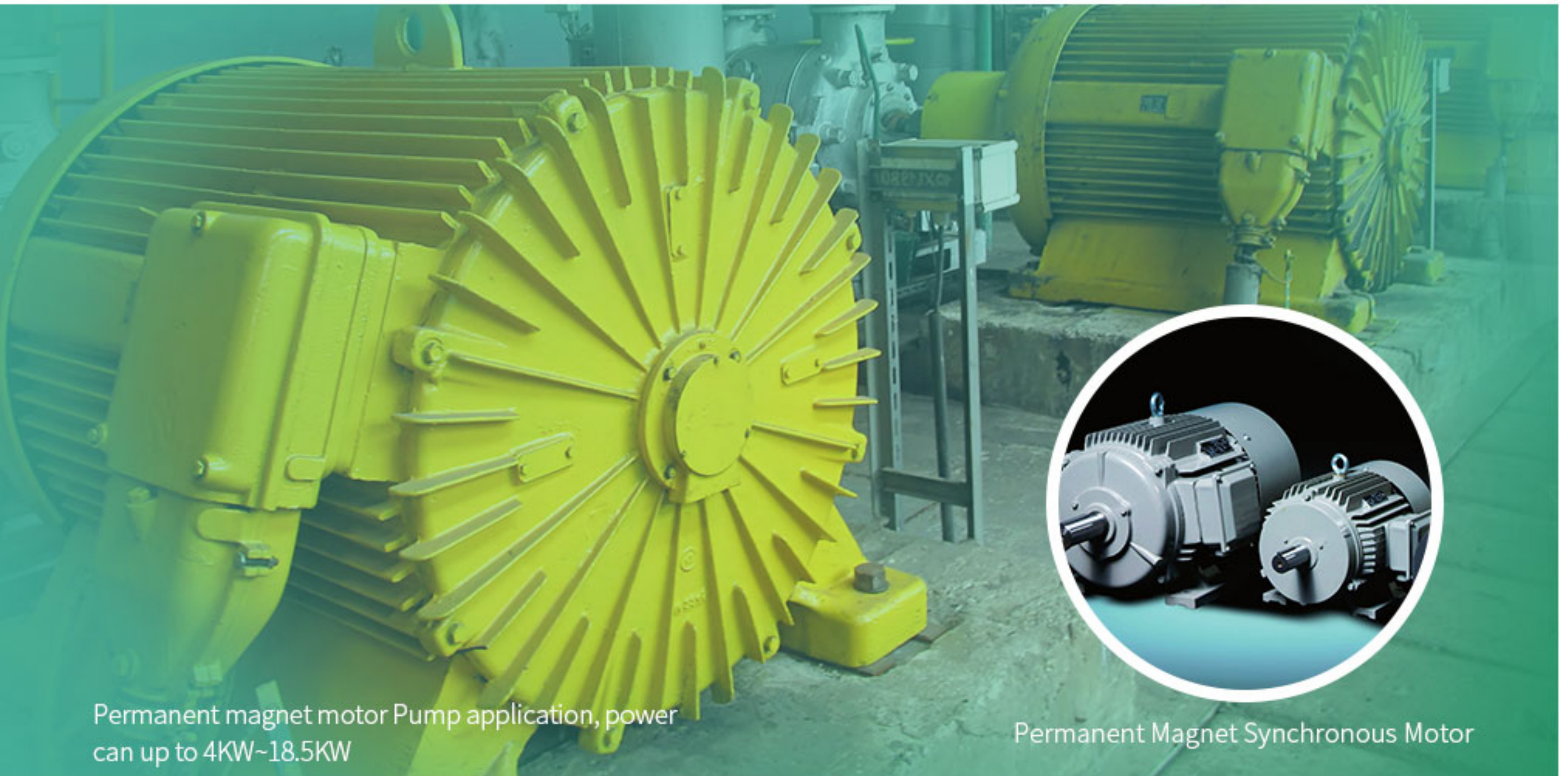
**Thin Film Small Capacitance, Minimal Current Peak**



CLV CE input current waveform, compared with conventional frequency drive under the same conditions, 100% load:







Permanent magnet motor Pump application, power can up to 4KW-18.5KW

Permanent Magnet Synchronous Motor

## Permanent Magnet Synchronous Motor Control Technology

Permanent magnet synchronous motor has the advantages of small size, high efficiency, simple structure, fast dynamic response and so on. And it's occupies a very important position in high-performance control occasions. In the permanent magnet motor vector control system, it is often necessary to install sensors on the motor shaft to detect the rotor position and speed, but this will inevitably increase the system cost, increase the motor volume and rotational inertia, and reduce the reliability of the system.

In recent years, sensorless vector control has become a popular direction of permanent magnet synchronous motor control, and control strategies emerge in an endless stream. However, there are few schemes that can achieve high performance and high precision control. The use of untested solutions to control permanent magnet motors can reduce motor performance, efficiency and life, or cause damage to motors and drivers. To solve these problems, CLV provides high-quality FOC control scheme, high-precision permanent magnet, motor sensorless vector control algorithm, so that the motor operation is more quiet, more stable, more energy saving, more smooth.

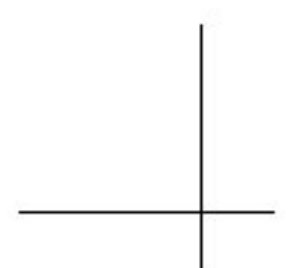
## Technical Characteristics

Sensorless vector control algorithm makes the system cost lower and does not require encoder.

For permanent magnet synchronous motor, we have independently developed a sensorless algorithm, low speed with adaptive dead zone compensation algorithm, can achieve zero speed full load start.

For the permanent magnet fan industry, we have perfect up-wind starting algorithm, DC bus overvoltage suppression algorithm, constant air volume algorithm, blocking detection and so on.

We provide quality FOC control solutions and industry-leading EMC filter technology. so that the motor operation is quieter, more stable, more energy saving, more smooth.

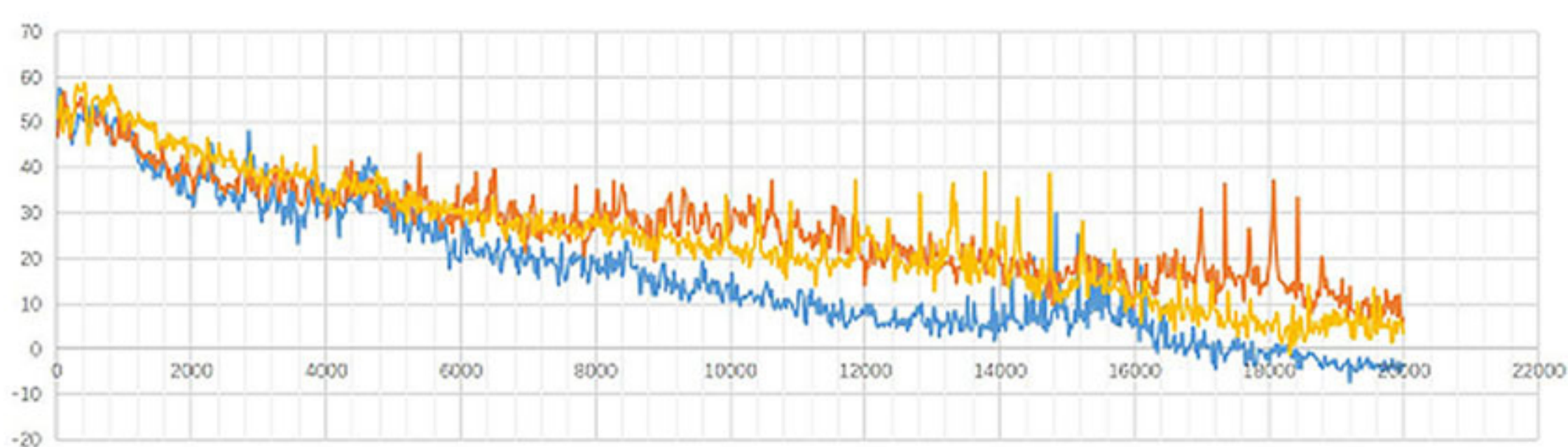




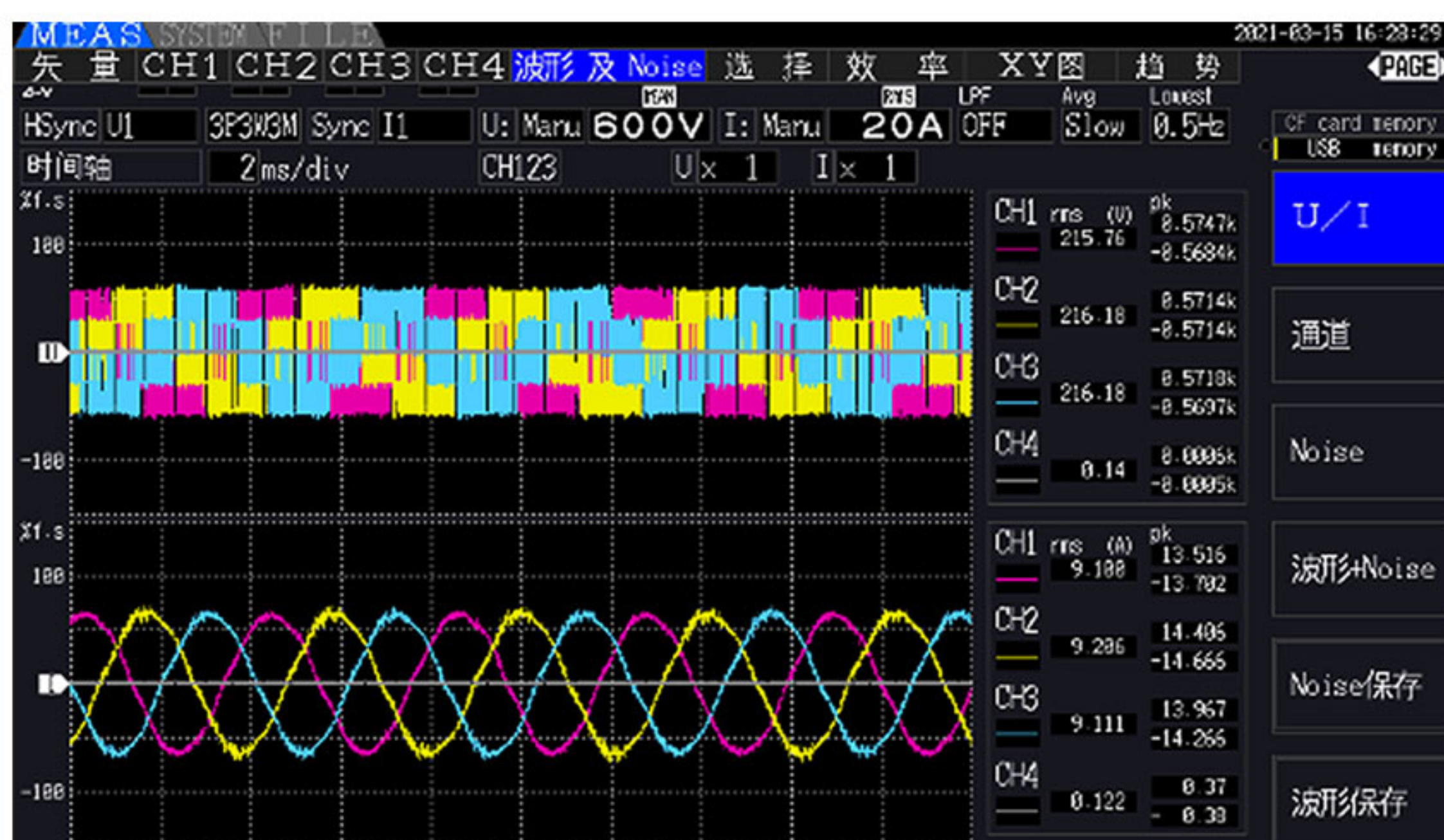


Paper industry, permanent magnet low speed, replace the traditional asynchronous motor reducer

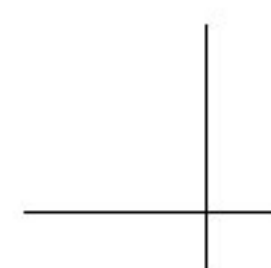
- 15KHz high performance inverter of a domestic brand
- 17KHz high performance inverter of a foreign brand
- 14KHz CLV dedicated inverter



Contrast Drawing of Noise Test of 4KW Permanent Magnet Synchronous Motor Controlled By CLV Inverter



Waveform of Output Voltage and Current of 4KW Permanent Magnet Synchronous Motor Controlled By CLV Inverter At Full Load







**Pump Inverter**

- Integrated design of pump and inverter
- Simple operation and intuitive panel
- IP66 protective level
- Built-in protection: over-current, over voltage, under-voltage, overheating, pressure sensor fault etc.



**Fan Inverter**

- 220V voltage, single phase input, three-phase output
- IP66 protection level, suitable for harsh application environment
- Simple operation and intuitive panel
- Built-in wiring, easy for installation



**Permanent Magnet Motor Controller**

- Permanent magnet motor control technology
- Energy saving and high efficiency
- Spin start function
- Low cost and high cost-effective



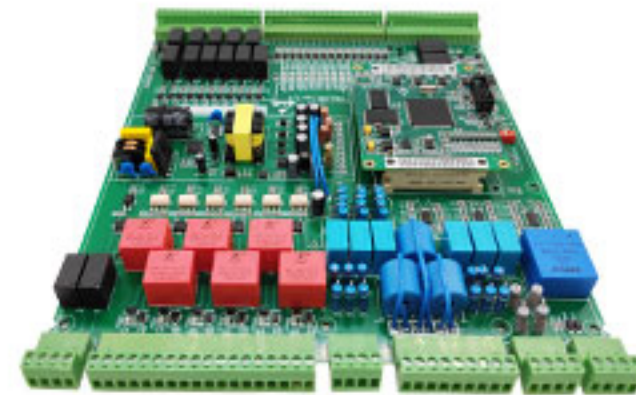
**Dual Dielectric Barrier Plasma Power Supply**

- Pure sine wave output
- The output voltage is continuously adjustable, 0 ~ 15kw
- The output frequency is adjustable from 10kHz to 40kHz
- Short circuit protection, overload protection, underload protection and other multiple protection



**Voltage and Speed Regulation System Applied to Crane**

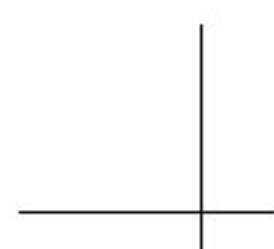
- Smooth lifting process, horizontal movement to prevent swaying
- Low speed torque is sufficient and high-speed operation is stable
- Good load adaptability, comprehensive protection function
- Display detailed information to facilitate subsequent maintenance



**Excitation Device of Synchronous Motor**

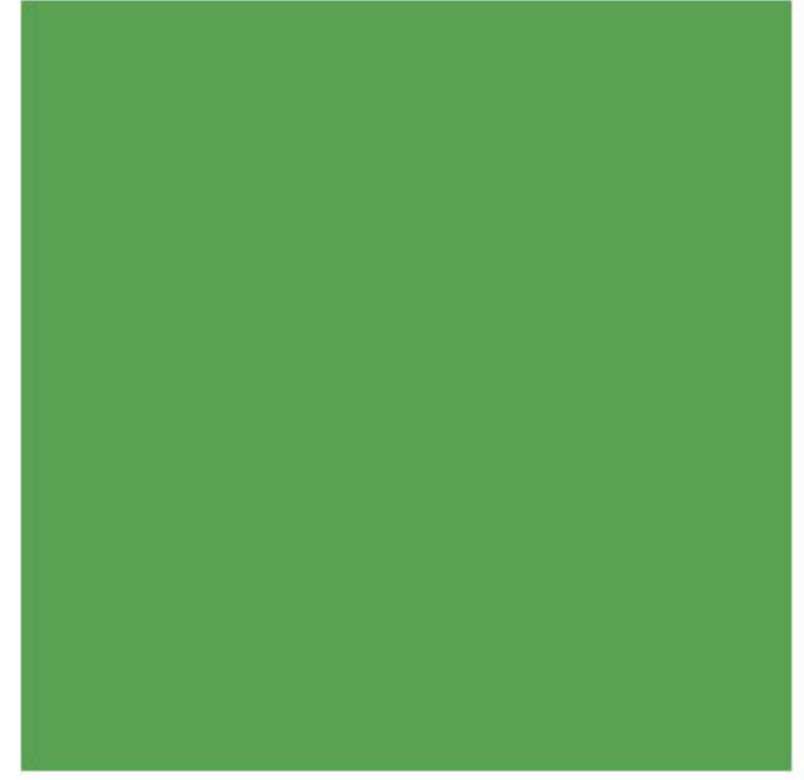
- All digital DSP control, 128-point FFT sampling
- Dual computer CAN bus communication
- Constant power factor, constant excitation current
- Its power can up to 200kW-20MW

**Global Application Solutions**





- Inverter for Fan
- Inverter for Permanent Magnet Pump
- Inverter for Farm Fan
- Excitation Device of Synchronous Motor
- Signal isolators
- Vacuum Pump Inverter
- CLV Servo Driver
- CLV Blast Furnace Temperature
- Measuring Gun



For more application, you can visit CLV website:  
[www.clvdrives.com](http://www.clvdrives.com)

**Address:**

No. 99 A-11, 1st Chuangxin Road, Shenyang Area of China (Liaoning)  
Pilot Free Trade Zone, China.

D1, Hengli Industrial Park, No. 168, Xiakeng 1 Road, Tongde Community,  
Baolong Street, Shenzhen, Guangdong, China

**Tel:**

(+86)18840602018

**Email:**

[sales@clvdrives.com](mailto:sales@clvdrives.com) (Sales)  
[support@clvdrives.com](mailto:support@clvdrives.com) (Technical)

**Web:**

[www.clvdrives.com](http://www.clvdrives.com)