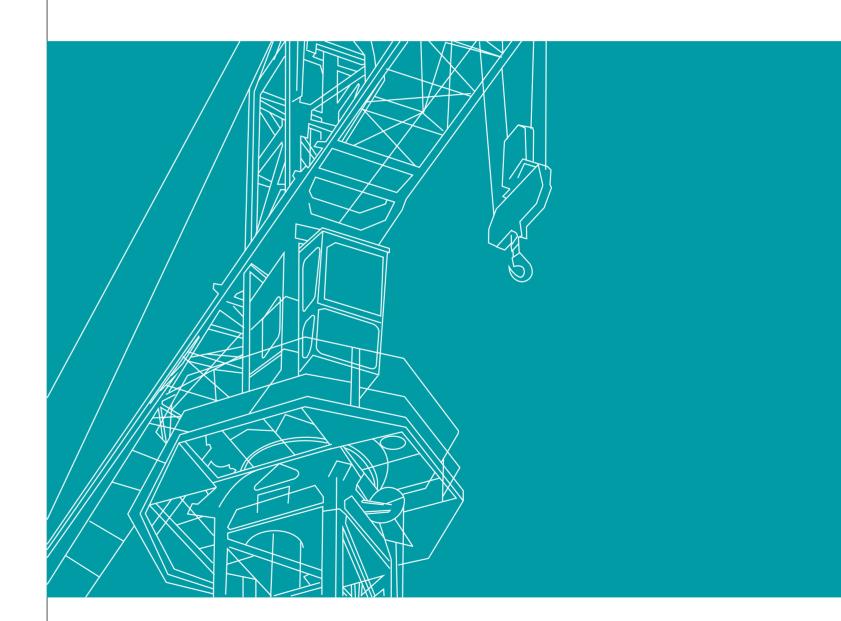


# **Crane Solution**



# **VEICHI**

Suzhou Veichi Electric Co., Ltd

No.1000 Songjia Road, Guoxiang street, Wuzhong Economic and Technological Development Zone, Suzhou Tel:+86-512-6617 1988 Fax:+86-512-6617 3610

Facebook: https://www.facebook.com/veichigroup Whatsapp: +86- 138 2881 8903 Https://www.veichi.org/



\*Version:2021 V1.1 Veichi Electric Co., Ltd all rights reser



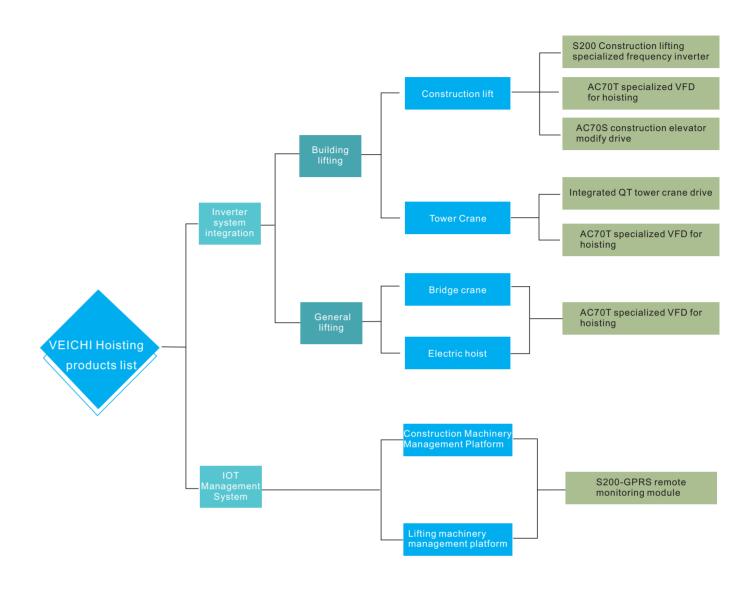
Veichi (stock code:688698) has always committed to electric drive and industrial control since it's foundation. As an all-round company engaged in R & D, manufacturing and sales on high-tech industrial automation products, Veichi has been identified with several honorary titles such as Jiangsu provincial-level Enterprise Technology Center, Jiangsu Private-own Technical Enterprise, Specialized and sophisticated enterprises that produce new and unique products, Jiangsu Engineering Research Center, Jiangsu New and High-tech Enterprise and Suzhou city-level Gazelle Company (High Growth Enterprise) and has obtained the highest level of enterprise credit. Through years of independent research and development, Veichi now has authorized patents totaling 143 by the end of 30th, September, 2022, and among them 34 are for invention. Having established R & D center and manufacturing bases in Suzhou and Shenzhen, added with the wholly-owned subsidiary in India, Veichi now are dealing with customers from several nations and regions and has the full capability to provide safe, competitive and trustworthy products and services to customers from the larger world.

Veichi provides various products including inverters from 0.4kW to 5,600kW, servo systems from 50W to 200kW, motion controllers, PLC and HMI, which are applied in all sorts of fields occasions like lifting, mining, rail traffic, machine tools, compressors, plastic equipment, photo-voltaic pumping, construction, robots/mechanical arms, printing and packaging, chemical fibers for textile use, metallurgy, municipal works, petrol work and chemical engineering. 20 service stations and 160 contracted distributors cover 31 provinces on China mainland and Hong Kong, Macao and Taiwan regions, which guarantees a massive and efficient network for sales and services for our customers. Veichi will continue to abide by the operation philosophy, that is, guided by market demand and driven by technical innovation, enlarge and enhance its core business like inverters, servo systems, control systems and SIoTs. And Veichi will always be hard at providing quality products and services for customers and further make contributions to the development of electric drives and industrial controls.

#### 2020 2019 A-share of science 2017 and technology Indian subsidiary put into innovation board 2015 operation landing Strategy adjustment and Restructuring to a company regional + industry sales limited by shares 2014 • First stage of Suzhou model adopted Industry sales increased by 2005 Veichi project completed • AC80C high performance Title of high-tech 47.81% over the same First stage of Suzhou period delivered by the 2022 inverters launched Shenzhen, the beginn ofentrepreneurship Veichi project put into construction SD6X0 electro-hydraulic First-generation of Xi'an research center servo and VE series PLC inverters put into established VC5-series PLC production products launched products fully launched 2021 on the market 2018 The second stage of Suzhou Veichi project put into construction AC300 High-performance frequency inverter & D700 2013 AC800 series inverter, \$D710 series servo system products 2016 series servo system, V7E series launched Suzhou Veichi Electric Co., Ltd established motor & VC1 series PLC fully promoted on the market First generation of servo system successfully First stage of Suzhou developed Veichi project put into Construction elevator & tower crane products launched operation Servo motion controller & AC200 frequency

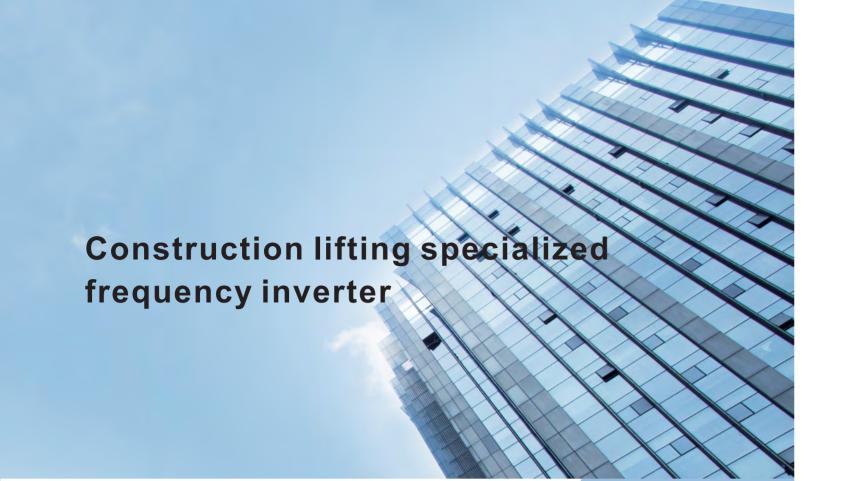
inverter launched

# **VEICHI** Hoisting products list





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#### **Product overview**

Construction lifting integrated drive, it is an integrated system specially developed for the principle of electrical control of construction lifts. It integrates frequency conversion control units, logic control units, lifting weight limiters, brake units, etc. it has the advantages of perfect functions, stable performance, easy installation, and elegant appearance. Providing customers with comprehensive high-performance, safe and reliable solutions.



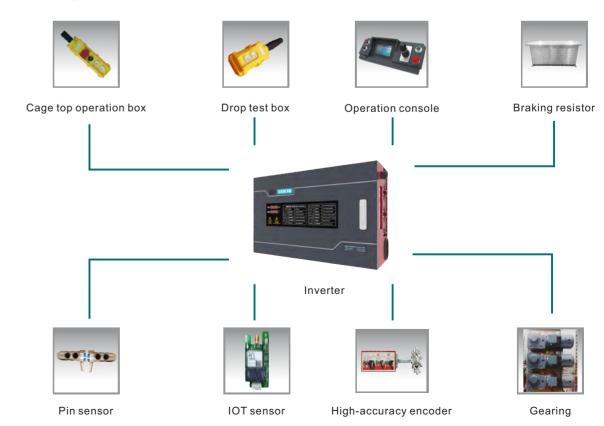
# Naming rules

# Brake type B: Energy consumption braking type Inverter power (kW) E-type machine fourth generation products Rated load 2000kg Construction lifting integrated drive

# C4/E4 Series specification model

Model	Power	Rated current(A)	Suitable motor power
\$200- <b>E</b> 4-037B	37KW	75	11KW*3/15KW*2
S200- <b>E</b> 4-045B	45KW	90	13KW*3/22KW*2
S200-C4-037B	37KW	75	11KW*3/15KW*2
S200- <b>C</b> 4-045B	45KW	90	13KW*3/22KW*2

#### **System components**



#### **Product features**

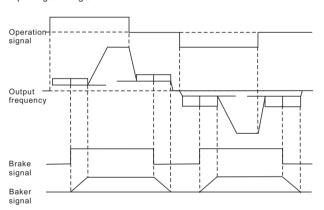
#### Intelligent voice broadcast prompt function

- Real-time voice broadcast of various fault information and main command, limit, emergency stop status; can accurately and quickly recognize the fault
- With Chinese and English broadcast mode for customers to choose.



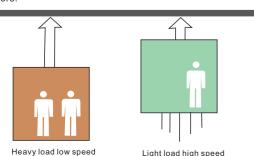
# High safety, redundant brake circuit software and hardware design

- Adopt dual signal, dual brake, high safety redundant control design.
- Before opening the brake, the running system detects the motor torque in real time to provide maximum auxiliary protection against sliding.
- Professional sequential logic brake function to ensure high reliable opening/closing of the brake.



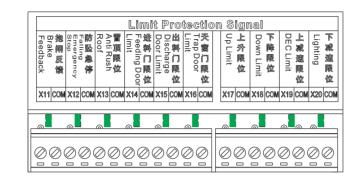
#### Light load high speed function

When this function is valid, it is calculated by the built-in load detection module. When the elevator is in a light load or empty cage state, the inverter will speed up and enter the Weak magnetic region (constant power). Effectively improve the carrying capacity of construction elevators.



#### Intelligent state selection

Various limit positions can be displayed, the running status of the main command is clear at a glance, and maintenance is more convenient.



#### Human-machine interface information interaction system

- The friendly man-machine interface can display the current floor, current height, current load, running direction, running speed and other information.
- Automatic leveling operation interface: leveling accuracy <= 2mm; convenient storage of floor position.



#### Keyboard storage and parameter copy function

The keyboard operator can store the entire set of parameters of the elevator, and realize batch download and copy of the parameters.



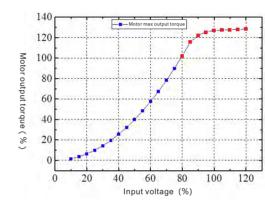


#### Automatic test function

When this function is valid, the system can enter the automatic cycle test mode, which greatly saves the debugging time before leaving factory and improves the delivery efficiency.

#### Variable speed function with voltage function

- When this function is valid, when the elevator is running, the external voltage is reduced, resulting in insufficient output torque of the motor. At this time, the system automatically reduces the output frequency to meet the output torque requirements of the motor, to avoid sliding caused by insufficient torque.
- Wide voltage range: Ensure normal operation of input voltage within ±20%.



Relationship between input voltage and output torque

#### Soft limit protection function

Soft limit protection function

Accurate feedback of the real-time position of the cage through a high-precision encoder; even when the upper and lower limit positions and the deceleration limit are abnormal (the adhesion cannot be disconnected normally), it can ensure that the lift does not appear to top punch and squat bottom.

position on encoder; it positions formal (the normally), appear to

#### Deceleration optimization function

(Applicable to construction elevators without conditional installation of deceleration limit switches) When this function is enabled, the built-in stop algorithm is effective; to ensure that the equipment can also stop accurately during normal operation.

#### Brake braking torque detection function

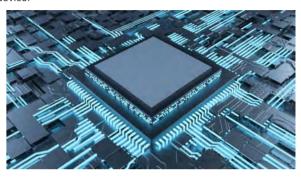
Maintenance personnel can be reminded to regularly check the equipment brake assembly to ensure the safe operation of the equipment. Working principle: The motor is in the brake locked state, at this time, 120% of the rated torque is output to the motor. If the shaft end of the motor generates displacement, it means that the brake torque is insufficient, and the system will emit an audible and visual alarm signal; otherwise normal.

#### Motor real-time self-learning function

Automatically obtain the dynamic parameters of the motor during operation (the stator resistance value becomes larger and the output torque decreases after the motor is heated) to ensure that the motor can output the maximum torque under any working conditions.

#### Pre-authorization settings

Built-in clock perpetual calendar chip, can accurately set the device pre-authorization time; convenient for users to remotely manage the device



#### Easy maintenance

The C4 machine design focuses on the convenience of on-site maintenance of the machine. The middle board adopts the right-opening door type; the device is modular; there is no complicated peripheral circuit, ensuring that non-professional maintenance personnel can easily replace accessories.



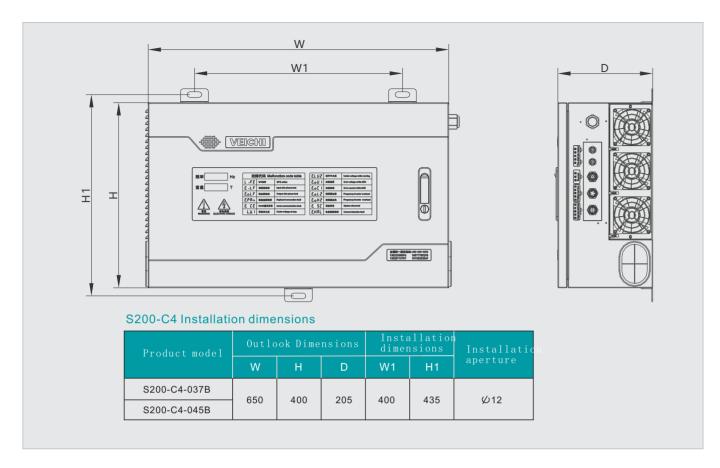
#### Lightning protection function

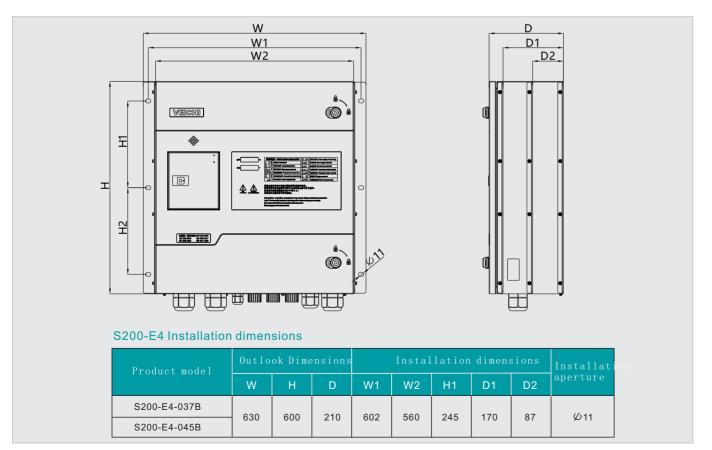
The system has a built-in lightning absorption module. Using the industry's advanced gas discharge device to the ground discharge technology, can effectively prevent induction lightning, direct lightning.



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#### **Product dimensions**





#### Accessories

# S200-PA200-D Smart console

- Support ID card authority management
   The shell is injection molded with high-strength engineering plastics (PC + ABS).
- Friendly human-computer interface-Chinese display fault information and countermeasures
   Friendly human-machine interaction interface-Chinese display fault information and countermeasures, as well as elevator operating position, speed, weight, each main command, limit status
- Automatic leveling interface.



#### S200-PA200-C Embedded console (overseas)

- Suitable for lifts without cab.
- HMI man-machine interface; the operation interface is the same as the intelligent operation console.
- The machine case is made of 304 stainless steel, which is beautiful and durable.



#### S200-EN-200(HC) High-precision encoder kit

- Using differential long-line driving incremental encoder with strong anti-interference performance.
- The transmission wheel adopts 8 modes and 15 teeth 1: 1 matching.



-07-







#### **Product overview**

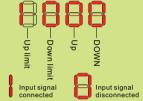
A drive with position parking function specially designed for the renovation of old elevators; it integrates frequency converter, brake module and status indicator, which is convenient for on-site maintenance of equipment and minimizes the cost of frequency conversion of construction elevators.



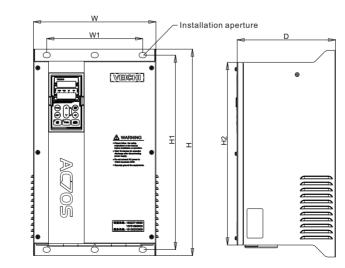
#### **Product Features**

- Safe and reliable-Dedicated brake logic control function, Through the release frequency and release current to reach the release at the same time, to ensure its safety and reliability.
- 2. High performance-Compared with complete sets of inverters, the price is cheap and the performance is equivalent.
- 3. Humanized design-no need to change the inverter parameters, As long as the wire is connected correctly, it will run normally after power on.
- Simple transformation-Simple retrofit-no need to add deceleration limit device, no replacement of operation table; accurate stop at any speed. (Deceleration optimization function).
- Convenient maintenance-the keyboard operator can display upper and lower limit positions, ascending and descending signals to make it convenient for system maintenance.
- 6. Extend mechanical life- Stable operation, no impact, reduce the wear of mechanical structure and wearing parts, extend the use time of motor and disc brake; effectively increase the service life of construction elevator.





#### **Product Installation dimension**



Drive model	W	W1	н	H1	H2	ח	Installation aperture
AC70S-037-B(G1)	255	200	430	405	380	205	Ø11



# SMC glass fiber reinforced plastics cabinet (mold stamping)

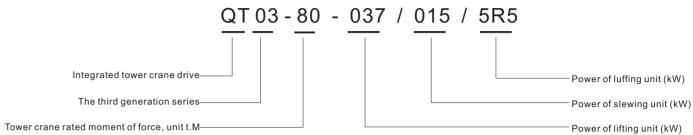
- ◆ Corrosion resistance, Strong aging resistance
- ◆ Impact resistance high strength
- ◆ Same life as the host machine



#### **Product overview**

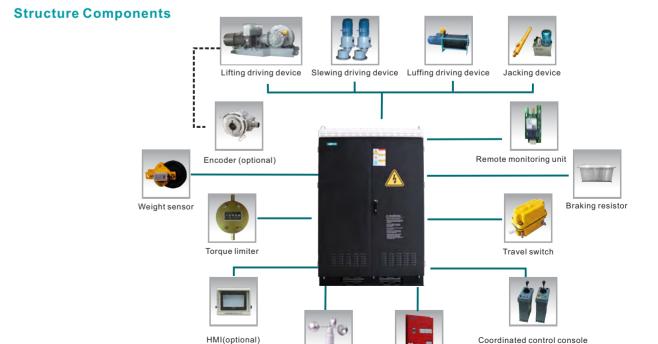
Industry first- Integrated tower crane drive, a mid-to-high-level model that is specifically designed for the modular control of tower cranes' electrical control needs. It integrates three major mechanisms: frequency conversion control unit, PLC logic control unit, black box monitoring unit (expansion). Tower crane solution. With the characteristics of intelligent, lightweight, high efficiency and energy saving, safety and reliability, the integration of tower crane frequency conversion is bound to be the new trend of the industry's future development.

# Naming rules



# **Specifications**

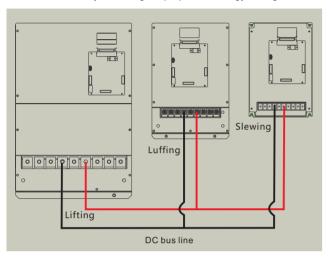
Specifications		Adaptive motor power	Rated power	Rated current		Specifications		Adaptive motor power	Rated power	Rated current	
	Lifting	30KW	Three	75A		QT03-250-075/022/011-S	QT03-250-075/022/011-S Slew	Lifting	55KW/63KW	Three	150A
QT03-80-037/015/5R5-S	Slewing	5.5KW*2	phase	32A				Slewing	7.5KW*2	phase	45A
	Luffing	4KW	380V	10A			Luffing	7.5KW	380V	25A	
	Lifting	37KW	Three	90A			Lifting	75KW	Three	180A	
QT03-100-045/015/5R5-S	Slewing	5.5KW*2	phase	32A		QT03-315-090/022/011-S	Slewing	7.5KW*2	phase 380V	45A	
	Luffing	5.5KW	380V	13A			Luffing	5.5KW/7.5KW		25A	
	Lifting	45KW	Three	110A							
QT03-160-055/018/7R5-S	Slewing	11KW	phase	38A							
	Luffing	5.5KW	380V	17A							



# **System Features**

# Built-in common DC bus technology (multi-machine transmission)

When the lifting mechanism is dropping the heavy object, the energy returned from the motor can be used for slewing and the luffing mechanism, thereby achieving the purpose of energy saving.



# Intelligent man-machine interface and voice prompt function

- Equipped with 10" touch screen (HMI), it can display various master commands, limit status, inverter monitoring data and related function buttons; friendly man-machine interface, simple and easy to operate.
- The intelligent voice prompt system can cyclically broadcast various fault states and processing countermeasures, operation prompts and warnings through live pronunciation.



#### Tower crane black box function (expandable)

Compatible with GPS and Beidou satellite precise positioning, real-time recording of tower crane operation status, overload times and real-time data, local storage, and upload to Internet of Things platform at the same time.



#### Ground remote control operation (optional)

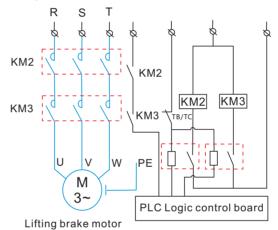
- The driver can use the "local / remote control" selection switch on the linkage platform to give control power to the ground operator for remote control operation, so as to realize the ground wireless control tower crane.
- The system needs to add a set of wireless remote control operator.



# Lifting mechanism

#### Double signal, double holding brake High safety redundant brake control circuit

- The secondary control loop of the hoisting brake is a dual-signal, dual-brake redundancy circuit. That is, the frequency converter sends 2 way brake signals to control two brake contactors respectively.
- Release conditions: Only two brake contactors can be closed at the same time to release the brake.
- Closing conditions: Any one of holding brake contactor disconnected can the brake be closed safely.
- Prevent any one of the brake contactors from sticking, stuck or the residual charge of the coil, which can't be disconnected and cause a slide accident.
- Dedicated brake sequential logic control function to ensure safe and reliable system.



#### Anti-sliding hovering function

- Working principle: When the mechanical brake system fails, once the motor shows signs of slipping (slight creeping visible on the output shaft of the reducer), this function is activated, instantaneous output of 180% rated zero-speed torque, the motor enters a stable hovering state, and sound and light are detected The alarm signal also guides the driver to operate the master switch to safely drop the heavy objects to the ground and ascend statically.
- This function has high requirements on the dynamic output response of the inverter, and needs to be implemented in a closed-loop vector control mode with excellent high performance.

#### Slow motion function (closed loop mode)

- When the linkage switch is set to the "slow motion" gear, the lifting mechanism is limited to a speed range of 0.1-0.5m/min at this time.
- The inverter is required to continuously output a constant torque at ultra-low frequency.
- Suitable for slow motion of PC assembled building template, butt joint, Structural docking.

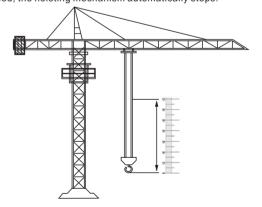
# Brake braking torque detection function

Working principle: The brake is in a locked state, and the inverter outputs 180% torque on the motor. At this time, the encoder feedback pulse signal is used to determine whether the motor shaft is displaced. If the displacement exceeds a certain threshold, it means that the brake torque is insufficient and issues audible and visual warning, indicating that the brake needs to be adjusted and replaced.



#### Lifting at a fixed distance

Tower crane lifting fixed distance function, The driver only needs to set the distance values of lifting, ascending and descending on the touch screen. At this time, the driver operates the master handle and the hoisting only runs within the set range. When the set range value is reached, the hoisting mechanism automatically stops.



#### Light load speed-up function

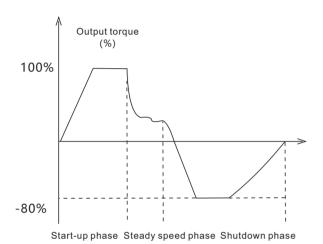
- When the empty hook or light load, the lifting mechanism will run at a higher speed (1.5-2 times the rated speed), also known as "weak magnetic speed-up".
- Greatly improve work efficiency; especially suitable for working conditions of tower cranes

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# Slewing mechanism

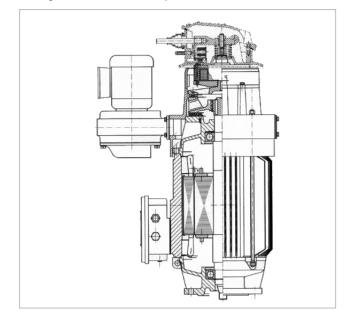
#### Slewing DTC torque control function

- Adopting advanced DTC torque control method, no eddy current system is needed. Combining the advantages of speed control and torque control, it perfectly solves the typical problems such as uneven speed of the low-speed gear of the tower crane's slewing; rebound during shutdown, and difficult to run against the wind.
- It is recommended that the slewing motor install the encoder with the best effect (the double slewing mechanism should ensure that one of the motors has an encoder installed).



#### Wind indicator control system

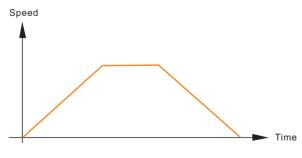
The system is equipped with a set of perfect control system of wind indicator. Users only need to connect the wind indicator coil and action limit signal to use it, which is simple and convenient.



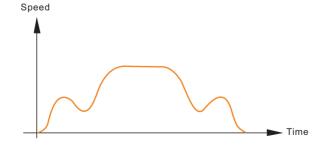
# Luffing mechanism

# Luffing anti-shake function (Sensorless open-loop anti-shake)

- Modeling based on the pendulum principle; introducing parameters such as sling length and swing angle to form a set of automatic anti-sway core algorithms.
- The frequency and acceleration/deceleration time of the inverter can be adjusted dynamically to suppress the swing. When the object reaches the set position, the swing is greatly reduced or stopped automatically.

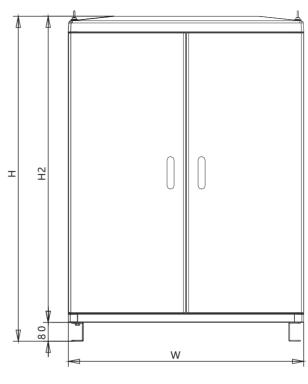


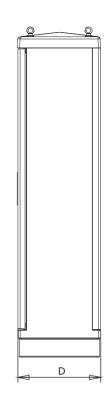
Schematic diagram when the anti-shake function is not activated

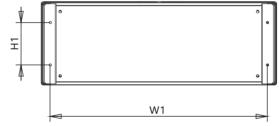


Schematic diagram when anti-shake function is activated

#### **Product dimensions**







Product number		Dim	ensions		Install dimen		Installation
rioddothdinser	W	н	H2	D	W1	H1	aperture
QT03 all series	1000	1390	1300	351.6	923	180	Ø10

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#### Accessories



			Input signa	l characterist	icsOutput signal	characterist	
Product model	Power supply	Function f	Response requency rang	nput impedance	Output frequency range	Output current	
AC200PG01	5V159/ 200 A	Disconnection detection	Differential	1 11 0	0~80KHz	≤100mA	
AC200PG02		Disconnection detection frequer division output	0-8KHz cy	about 1 k Ω	0-80KHz divisibl		





# Selection of lifting resistance box

Tower crane integrated drive product model	Lifting resistance box model
QT03-80-037/015/5R5	BZR-15/24KW-S1
QT03-100-045/015/5R5	BZR-10/30KW-S1
QT03-160-055/018/7R5	BZR-8/48KW-S1
QT03-250-075/022/011	BZR-8/48KW-S1
QT03-315-090/022/011	BZR-5/60KW-S1





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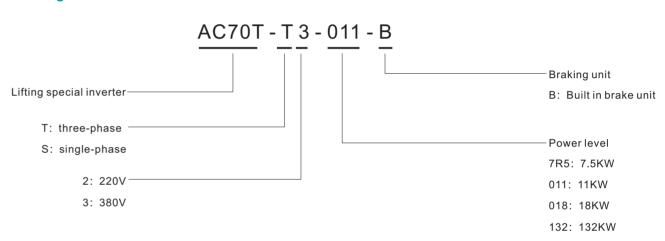


#### **Product overview**

AC70T hoist special inverter: Specially designed for the application of lifting industry, with perfect functions, good protection effect (smoke corrosion resistance), excellent performance, ensuring the safety, reliability and efficiency of lifting machinery, suitable for port machinery, ship machinery, construction machinery, mining machinery, Crane, gantry crane, electric hoist, driving and hoisting industries such as hoist, pitch, cart, trolley, slewing, luffing and other mechanisms.



# Naming rules



# **Specifications**

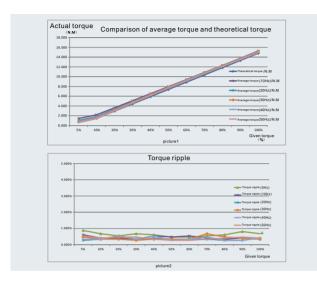
Specifications	Adaptive motor power	Rated input voltage	Rated current	Specifications	Adaptive motor power	Rated input voltage	Rated current
AC70T-T3-R75-B	0.75KW		2.3A	AC70T-T3-037-B	37KW		75A
AC70T-T3-1R5-B	1.5KW	7	3.7A	AC70T-T3- <b>04</b> 5-B	45KW	]	90A
AC70T-T3-2R2-B	2.2KW	7 1	5A	AC70T-T3-055-B	55KW	1	120A
AC70T-T3-004-B	4KW	7 1	10A	AC70T-T3-075-B	75KW		150A
AC70T-T3-5R5-B	5.5KW	three-phase	13A	AC70T-T3-090-B	90KW	three-phase	180A
AC70T-T3- <b>7</b> R5-B	7.5KW	380V	17A	AC70T-T3-110	110KW	380V	210A
AC70T-T3-011-B	11KW	7 1	25A	AC70T-T3- <b>132</b>	132KW	]	250A
AC70T-T3-015-B	15KW	7 1	32A	AC70T-T3- <b>160</b>	160KW		310A
AC70T-T3-018-B	18KW	7 1	38A	AC70T-T3- <b>185</b>	185KW	]	340A
AC70T-T3-022-B	22KW	7 [	45A	AC70T-T3- <b>200</b>	200KW	]	380A
AC70T-T3-030-B	30KW	]	60A				

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#### **Product features**

#### Low frequency and high torque stable output

0.5Hz/150% Stable output of rated torque to ensure that the lifting equipment runs smoothly during startup, ascent, and descent;



#### Excellent current suppression and bus voltage suppression

The current suppression function can avoid frequent overcurrent alarms of the inverter. When the current exceeds the current protection point, the overcurrent suppression function can continuously limit the current within the current protection point, thereby protecting the safety of the device and avoiding overcurrent alarm caused by sudden load or interference.



The overvoltage suppression function can avoid the overvoltage alarm of the inverter during acceleration and deceleration. When the bus voltage of the inverter reaches or exceeds the overvoltage protection point during acceleration and deceleration, the overvoltage suppression function can suppress the rise of the bus voltage by automatically adjusting the operating frequency, thereby protecting the safety of the device and avoiding the inverter caused by the rise of the bus voltage overpressure alarm.



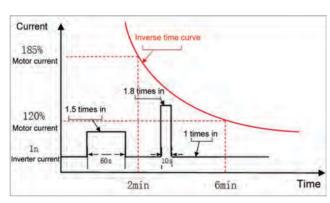
#### Wide speed range

The output frequency range is 0-320Hz, which meets the requirements of lifting equipment at light load and high speed, and heavy load at low speed, which improves the work efficiency of the equipment.



#### Strong overload capacity

150% rated current for 1 minute, 180% rated current for 10 seconds, 200% rated current for 0.5 seconds.



#### Stall protection mode (closed-loop mode)

When it is detected that the actual speed exceeds 115% of the rated speed during operation, the inverter quickly issues a brake signal to achieve emergency braking.

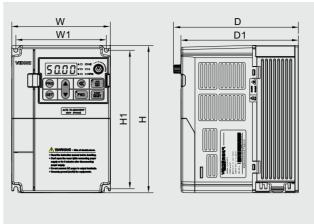
#### Brake dedicated control logic

Control the brake of the lifting equipment to open and close in a reasonable sequence to ensure the safety and reliability of the system.

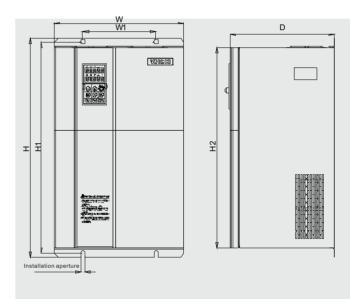
#### Wide voltage input range

Automatic voltage stabilization: to ensure that when the grid voltage drops, the output can still meet the torque output requirements of the lifting equipment, and the allowable input voltage fluctuation range is  $\pm 20\%$ .

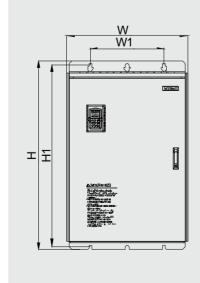
#### **Dimensions**



Inverter model		Dime	ensions	Mountir	Installation		
mverter moder	W	Н	D	D1	W1	H1	aperture
AC70T-T3-R75-B							
AC70T-T3-1R5-B	122	182	154.5	145	112	171	ф5
AC70T-T3-2R2-B							
AC70T-T3-004-B	159	246	157.5	148	147.2	236	ф5.5
AC70T-T3-5R5-B	133	240	137.3	140	147.2	230	φυ.υ
AC70T-T3-7R5-B	405	204	407.5	450	470	075	4.7
AC70T-T3-011-B	195	291	167.5	158	179	275	ф7
AC70T-T3-015-B							
AC70T-T3-018-B	230	330	200	190	208	315	ф7
AC70T-T3-022-B							



Inverter model		Din	nensio	Mou ho	Installation			
	W	Н	D	D1	W1	H1	aperture	
AC70T-T3-030-B	٥٠٠	440	225	370	180	395	ф7	
AC70T-T3-037-B	255	410	225	370	160	395	Ψ	
AC70T-T3-045-B	205	005	570	260	522	180	550	ф9
AC70T-T3-055-B	305	570	260	522	100	550	фэ	
AC70T-T3-075-B								
AC70T-T3-090-B	380	620	290	564	240	595	ф11	
AC70T-T3-110								



	D	<del>-</del>
H2		35 35

lavortar madal		Dim	ensions	Mountir	Installation			
Inverter model	W	Н	D	D1	W1	H1	aperture	
AC70T-T3-132	500	780	340	708	350	755	ф11	
AC70T-T3-160								
AC70T-T3-185	650	1060	400	950	400	1023	ф16	
AC70T-T3-200								

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# **Construction Machinery Remote Management System**

Adopt centralized remote monitoring and management: Solve the difficulty of mechanical equipment maintenance, realize remote maintenance management across regions, keep abreast of the mechanical equipment operation status, and reduce equipment maintenance costs

# Remote monitoring module

#### **Product description**

The remote monitoring module is based on mobile cellular technology, connects the field RS485 bus data to the remote server, and accepts the remote server instructions and it is the bridge which transmits the signal to the field RS485 bus. It is an important element of large-scale remote industrial intelligent management system of components. Aiming at the remote positioning of machinery and equipment, a dedicated monitor developed for monitoring and management, and building an intelligent monitoring and management system for machinery.



#### **Technical features**



Use Quectel industrial-grade GPRS module, Use reliable TCP/IP communication protocol; it has functions such as error correction and encryption mechanism of communication protocol.



Remote fault diagnosis: It can remotely monitor various limit positions, main commands, emergency stop status, set inverter parameters, and upload data to the service platform. Provide equipment value-added services to facilitate after-sales maintenance and reduce operating



Support mobile phone remote management, fault reminder, expiration reminder service, when the device fails or the lease period is approaching, the server will actively send a warm reminder to the user.



Built-in 1000mAh lithium battery, device can still ensure accurate positioning.



Using dual positioning mode of GPS and base station, the positioning accuracy is high; even in the case of obstructions, to ensure that the positioning is not disturbed; it can still be accurately positioned.



Prevent man-made malicious disassembly and destruction, protect the interests of customers; support machine lock, unlock, real-time SMS reminder of equipment failure.

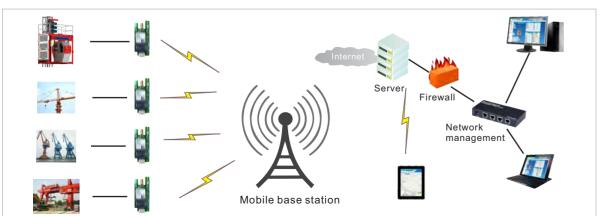


Using GPRS real-time data communication, real-time data exchange between the logic controller and the device, the relevant information of the device can be obtained through the PC terminal and the mobile phone APP; it is convenient to grasp the operation status of the device at the very beginning.



The powerful management platform and superior management interface allow you to easily realize the remote control, remote signaling and telemetry of the equipment.

#### Data transmission scheme



#### **Construction Machinery Remote Management System**

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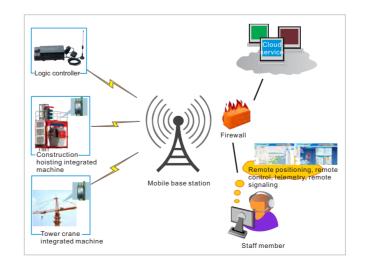


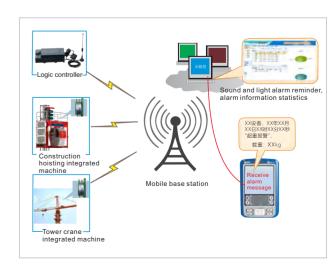
real time monitoring——Online monitoring of equipment operation, get related fault information.



Accurate locating----GPS satellite and base station dual positioning

Equipment Information Management-Accurately enter equipment information and establish perfect equipment files.





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# Manufacturing & Quality control









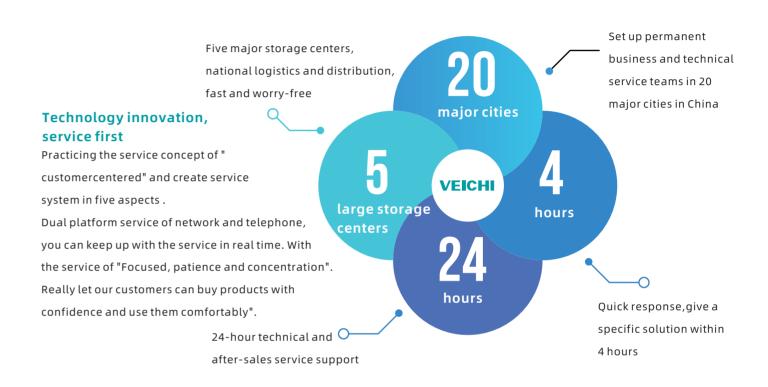
#### Intelligent manufacturing with application of automation equipment for the whole process

- > A smart factory established based on intelligent manufacturing with an annual capacity of 600,000 sets.
- > Automatic SMT automatic production line including automatic spraying, assembly, testing, packaging, high temperature aging and other advanced production equipment.
- > Production target management in strict accordance with the production process and management methods to greatly improve efficiency.
- > Complete supply chain system to deliver one off orders with large volumes.

#### Spirit of craftsman abided by with focus on products details and higher delicacy

- > Adherence to the policy and philosophy of quality first.
- > Execution to the letter of ISO9001 quality management system in procurement, design and manufacturing.
- > High employee competency with graduates of college and above lead to high product quality.
- > Unique codes on each product for controlling and tracing quality information in the product traceability system.

# **Service and Support**





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