

UniMAT

UniMAT®



## UT500 series Loop Vector Inverter Catalog

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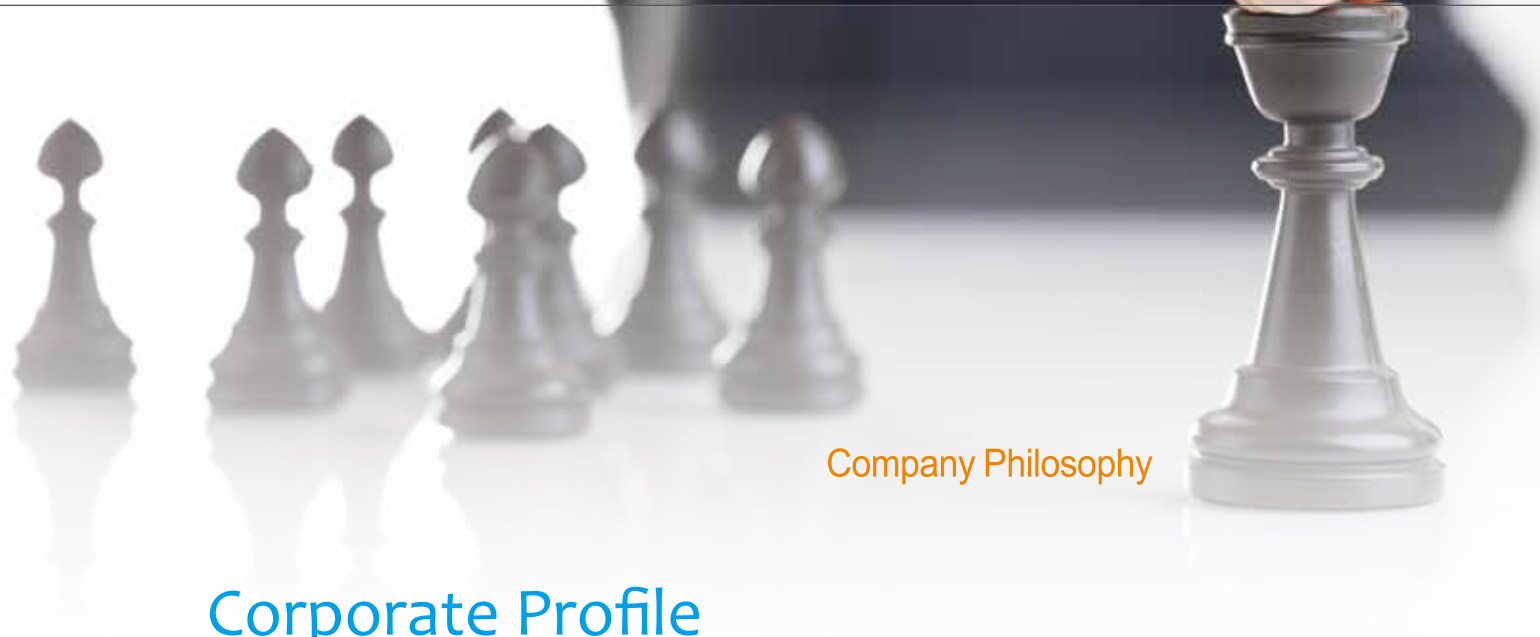
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Company Philosophy

## Corporate Profile

UniMAT Automation Technology Co., Ltd, established in 2004, is located in Shenzhen High-Tech Industrial Park. Our company specializes in automation technology and we have launched two series of PLC and one series inverter with brand UniMAT. As a leading industrial automation products and solutions provider, we provide the total automation solutions for metallurgy, automobile, electric power, petrochemical, environmental protection, cement, water treatment, new energy industries, etc. And we also provide PLC products for packaging machinery, rubber and plastics, ceramics, machinery, electronic equipment, textile machinery, engineering machinery, pharmaceutical machinery, mining machinery and other equipments.

Based on strict implementation of ISO9001 quality management and operation system, leading technology upgrade our quality, we are committed to offer 3-year warranty on PLC, and 18 months on inverters.

Since its establishment, UniMAT insists on independent research and development to enhance our own core technology. 35% of our employee and more than 10% of annual sales are involved in R & D, which covers the core platform technology research, application technology research and new product development.



## UT500 series Loop Vector Inverter

220v single phase 0.4KW - 2.2KW  
380v tri-phase 0.75KW-1000KW



### Reliable Accurate and quick response

1. No encoder vector control, torque response speed  $\leq 20\text{ms}$ ,
2. No encoder vector control, torque control accuracy  $\pm 1\%$ ,
3. No encoder vector control, 150% rated torque at 1Hz,
4. Widely voltage range, allowable voltage swing range is  $\pm 15\%$ ,
5. High overload capacity, 150% rated current 60 seconds, 180% rated current 2 seconds, 200% instantaneous trip,



### Cost-efficient, Friendly and Adaptive

1. long-life components design to extend the product usage life,
2. compact constructure design to adapt different load operations,
3. Independent air-duct design to improve anti-dust capacity, can be installed penetrably, higher adaptability,
4. Removable DC FAN to ensure system run stably and easy to wash and maintenance,
5. Keyboard is plug-and-play, support leading out to outside, support data copy,



## UT500 product characteristic

### Two drive control ways to be selected.

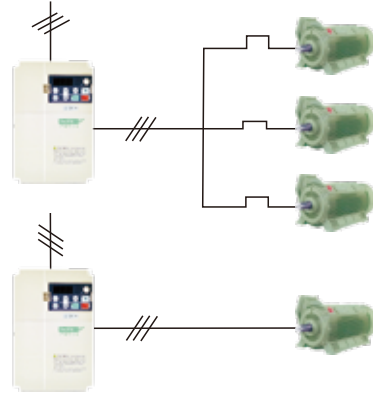
#### ○ V/F control

This control is used for the variable speed controls which no need fast response and high accuracy speed control or one inverter connects with multi motors and the motors' parameters are not confirmed or can not be self-study.

#### ○ No PG vector control

This control is used for all variable speed controls, if need high accuracy speed control, then configure to this model. It can get huge torque when fast torque response and low speed motor.

The best application, Suitable for Pressing machine at instant high torque, rapid currency response.



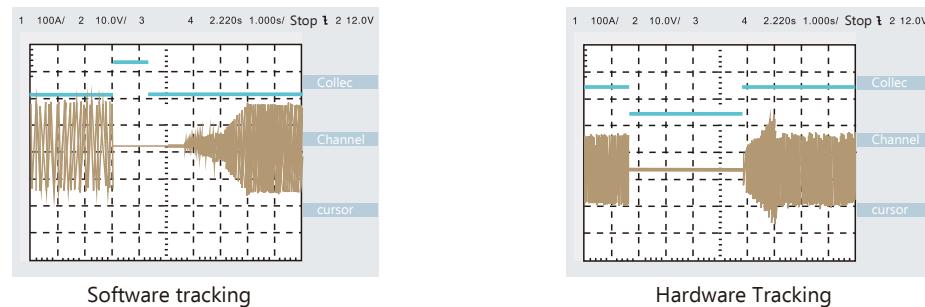
### Provide full self-study function

It can select rotating self-study or stopping self-study

Stopping self-study	It is best for the motor can not uncouple the load, e.g. the motor connects with gearbox etc Machinery, after self-study to obtain exact motor electrical parameter and then get high starting torque, high speed and high control accuracy.
Rotating self-study	It is best for the motor can uncouple the load, empty load to operate self-study. And then the machinery get high starting torque, high speed and high control accuracy.

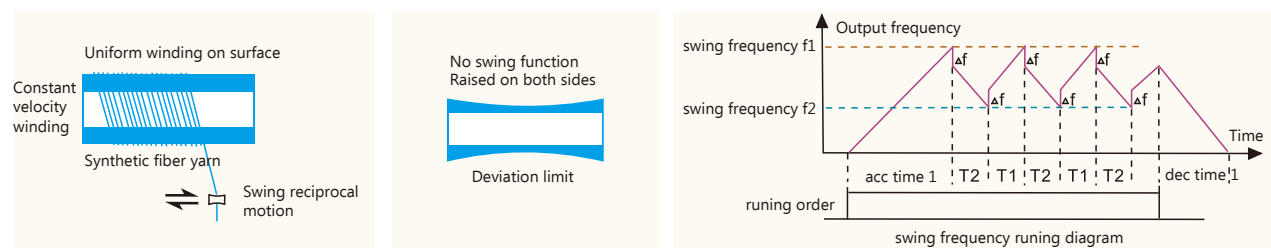
### Speed tracking way

One inverter can connect with multi motors to track starting at light loads, improve the speed tracking function of the software and hardware, and improve the speed tracking reliability and accuracy.



The best application, Suitable for Fan, Blower etc which installed rotator machineries.

### Standard swing frequency function

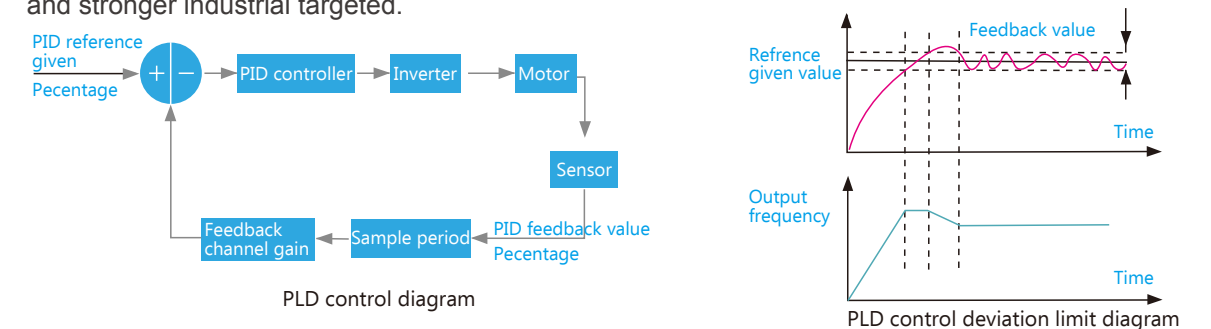


- The main propose of swing frequency is to avoid the winding is overlapped and reduce electrostatic.
- The silk processed by the machine with this function is better than the one from no this function machine, It improves the products quality and production efficiency.

The best application, Suitable for Textile, Chemical fiber which need swing frequency control. It can freely configure the frequency range, speed, frequency etc parameters.

### Multi PID contro

PID control has general PID and pressure closed loop special PID, wider application range and stronger industrial targeted.

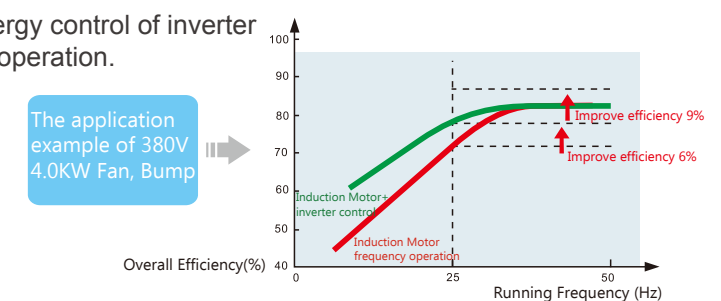


The best application: Suitable for liquid machinery, such as Fan, Water Pump, Blower, etc.

### Energy Saving

- New generation Energy operation, Using the energy control of inverter can realize the induction motor's high-efficiency operation.

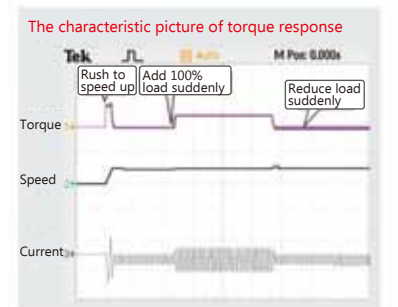
- During running, Inverter automatically calculate the best output voltage to load via load status to save the electric energy.



### The load strain capacity

- Use the automatically currency limited technology, automatically frequency adapted technology to deal with loads mutation.
- It can avoid the inverter reports fault frequently and affects the productivity, ensure the quick response.

The best application, Suitable for injection, EPC power supply, Ball Mill etc impact load.

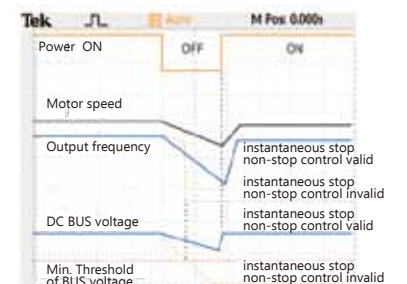


### Use professional "instantaneous stop non-stop" algorithm to trackle grid electric dazzling.

It can proceed power interruption compensation in light load or large inertial load status.

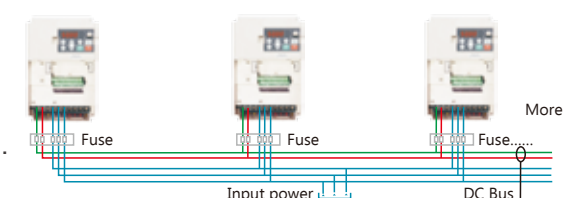
- Can save UPS (uninterruptible power supply) etc special equipments. When detecting low voltage, proceed power interruption compensation automatically.
- To search the speed at freely running, easily restart to improve the reliable of the whole system.

The best application, Suitable for dewater, Film production Line, Fan, Water Pump etc equipments which need power interruption control.



### Can use DC Power supply

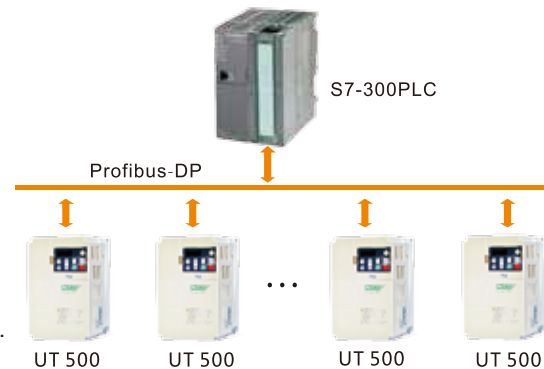
- Can use DC Power supply directly, especially suitable for sharing DC Bus solution and EPS power.
- More energy-saving and environmental protection.



## Communication Way

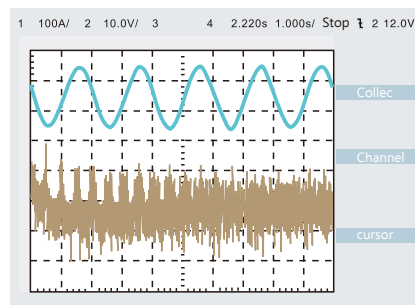
- Standard RS485 communication, Support Modbus-RTU, support Profibus-DP protocol.
- Convenient for the connection of upper computer and PLC to realize the remote monitor.

The best application, Suitable for industrial control, Smart device etc which need on-scene communication.

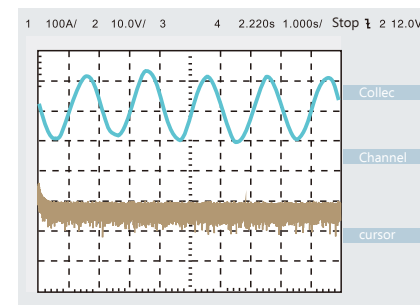


## Random Carrier function

Random Carrier function can reduce the motor noise effectively, control the inverter disturbs the peripherals.



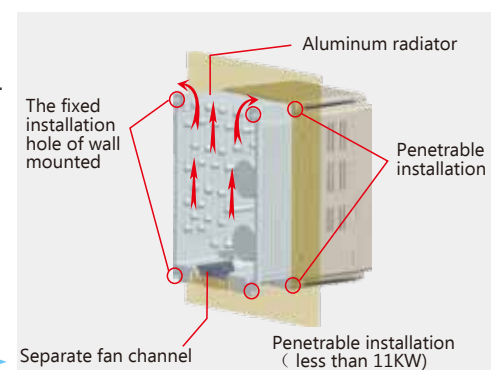
the interfering signal is strong under Fixed carrier



It can be denoise under Random Carrier

## Installation Method

- The whole series use DC Fan, easily replacement, longer life. Penetrable installation has strong adaptability.
- Cabinet uses up and down design, standard reactors are installed in the base, to ensure better cooling, improve the application life and good wiring.



UT 500 Penetrable installation diagram

## Anti-environmental design

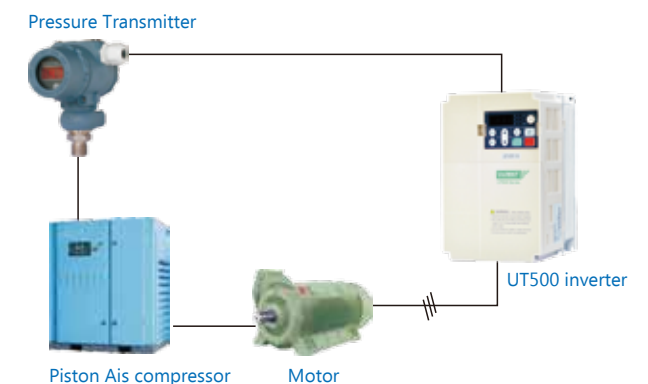
- Three proofing  
PCB three proofing( moisture proofing, salt spray proofing and fungus proofing)
- Protection grade  
Protection grade is IP20, higher grade can be required.
- Moisture resistant, dust resistant, oil resistant, vibration resistant, etc environment resistance products.



## The UT500 solution

### The solution of UT500 Series in Air Compressor

1. Save energy
2. Reduce cost
3. Improve press control accuracy
4. Extend Compressor life
5. Reduce Compressor noise
6. No PG vector control, can long-term run at 20Hz according the load character of Compressor.
7. Strong adaptability to environment, wide voltage input, output voltage automatic voltage regular function. The permitted input currency variations: Voltage  $380V \pm 15\%$ , Frequency:  $50Hz \pm 5\%$ .
8. Advanced inbuilt PID algor ithm, quick response, high accuracy of constant voltage. Through parameter it configures target constant pressure and real feedback pressure for PID computation, the speed can adapt according to the scene air situation, non-polar adapt the motor speed, the air compressor has air and then the pressure keep stable. This can improve the working condition.
9. International standard ModBus communication protocol, standard 485 communication module at inverter control panel, convenient for the air compressor communicates with the controller.
10. Provide more than 20 kinds of fault protection functions, can realize the whole sides protection which from inverter to motor and to peripheral equipment. Inbuilt lightning current protection device to improve the self-protection of lightning induction.
11. When power to the inverter, the system self-inspects the safety of software and hardware, revises the function parameters and control the equipment safety, avoid the user configures wrong.



### Suitable for :

Reciprocating type

Rotary type

Axial-flow type

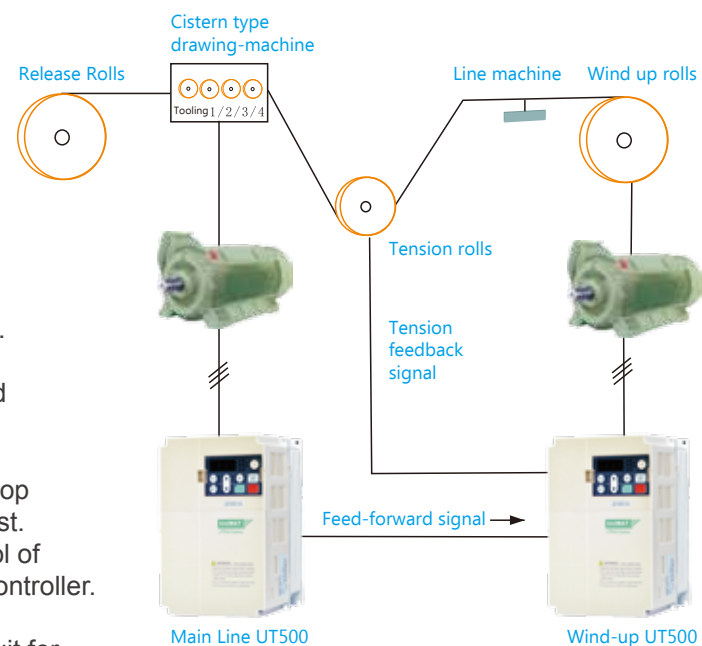
Slide type

Roots double rotor type...



## The solution of UT500 Series in Drawing Machine

1. Perfect performance at low frequency speed.
2. Advanced inbuilt PID closed loop algorithm.
3. High speed CPU control
4. Perfect fault protection, Perfect Three proofing processing, suit for industrial application environmental EMC design.
5. Vector control technology, stable speed and high accuracy.
6. Simple System, Less 18.5KW inbuilt stop unit, no need out-proportioning, low cost. Can realize the main electronics control of the Drawing Machine, no need other controller.
7. Reasonable Parameters ensure that suit for most application conditions.
8. Start logic control and winding diameter calculation, ensure that start smoothly at any winding diameter, stable roll function roll model, realize automatic recognition, configuring winding diameter, automatic tracking the master speed.
9. Copy parameter function ensure more easy at batch application.
10. High speed/low speed switch function, suit for Medium wire Drawing Machine, Energy-saving, high Efficiency.

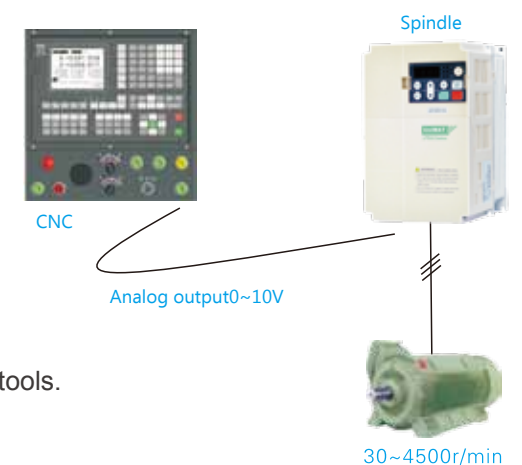


Suitable for :



## The solution of UT500 Series in the application of machine tools

1. Simplify the controlling circuit, multi flexible control way.
2. Easy to debug, all operation parameters of the inverter are debugged by intelligent keyboard and display. Easy to configure, change flexibly and debug in short time.
3. Large torque at low frequency, it has stronger feed ability and cutting depth than other brands, improve the efficiency and the capacity of the machine tools.
4. The stable speed, opened vector control can improve the processing accuracy of the machine tools.
5. The compact constructional design much suit for the machine tools.
6. The output of each frequency bands are stable, the over load ability is strong, start torque 1.0Hz can output 150%.
7. Fast dynamic response of the torque, more quick acceleration time, the fastest time is 0.1second, meet the processing demand of mechanical devices, improve the processing efficiency of single machine tools.
8. Good limiting ability of current and voltage, super strong anti-mutation, anti-blast wave over load etc ability, accurate current loop control, the inverter is not easy tripping at blast load or grid,etc mutation, ensure the production equipment work stably.
9. Simple servo function, any angle location, and accurate location.
10. Multi flexible control way can meet each complex working conditions, provide multi functions output terminal signal, such as fault output signal, working signal, speed reaching signal etc. can meet the system to control the spindle speed status.



Suitable for :



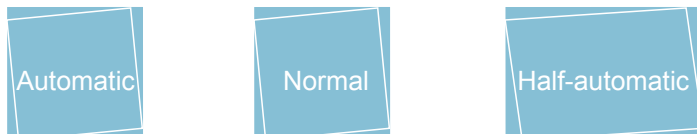


### The solution of UT500 Series in the application at industrial washing machine

1. During start, the start torque would be very large due to water absorption of the clothes, AC 70 provide enough low frequency torque ensure the start stable.
2. During wash, working frequency at 8~15Hz, and eccentric. Strong torque and SLIP COMP ensure the wash stable
3. During clothes distribution, the speed grows up step by step, the load is eccentric seriously. Control over current and over pressure function adapt the speed fluctuation efficiently under eccentric, ensure the distributing stable.
4. During dehydration, the inverter must work stably at high speed, wide frequency adapting range ensure the dehydration at one go.
5. Stable performance, the working condition of wash machine is bad, AC70 ensure the stable performance at high humidity and high Temperature.
6. IGBT margin design, suit for constant forward reversal rotation large current long period working.
7. The inverter use special PMW to match the motor's different demand at low frequency start and high frequency field weakening.
8. Three proofing print, suit for high humidity and high Temperature.
9. Special voltage frequency curve, multi bands speed control.
10. Large low frequency load ability and stop ability.

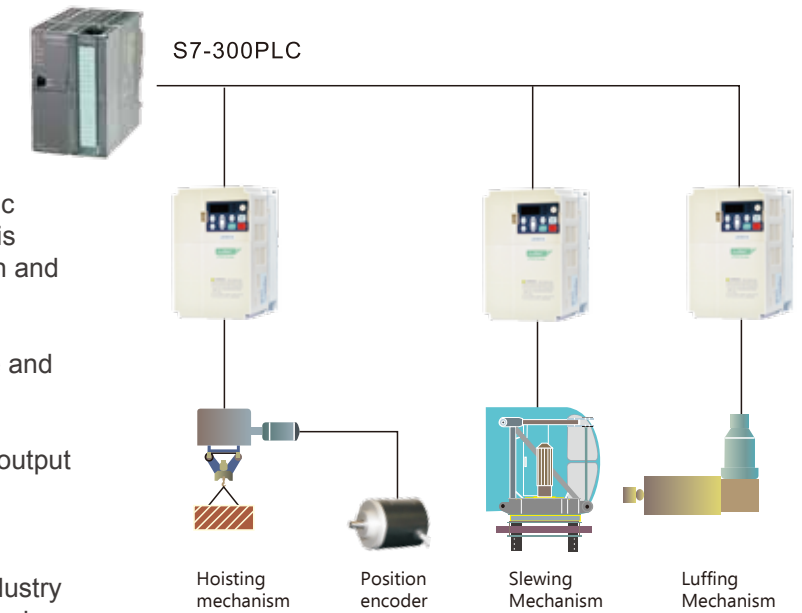


Suitable for:



### The application of UT500 in Lifting field

1. Wide voltage design can meet bad power conditions.
2. Save energy more than 20%.
3. Accurate torque control, fast dynamic response, the working speed curve is S type keep the smooth acceleration and deceleration, no impact sensitivity.
4. Full safety protection functions, safe and strong anti-interference.
5. Low Frequency provide stable high output torque, strong over load ability.
6. Perfect three proofing print process, independent duct design, suit for industry application situation, wide voltage design meet bad power condition.
7. There are DC brake, energy brake, etc brake way to ensure reliable safe, and the heavy vehicles stop stably. The accurate torque control prevents stall.
8. Unified controlled by CPU and combined with the outer circuit port of PLC ensure the reliability of the speed control system, improve the anti-interference ability of the system and realize flexible control way by PLC control.
9. Realize soft start, soft stop, reduce the mechanical shock to ensure working stable and reliable, the stop locates exactly, the heavy vehicles stop with the same place with the empty ones. Reliable and also have much indirect economic benefits.
10. Easy to speed control, and can be subsection setup, continuous adjust, It has plentiful functions, stable performance, Small Form Factor, low noise, etc

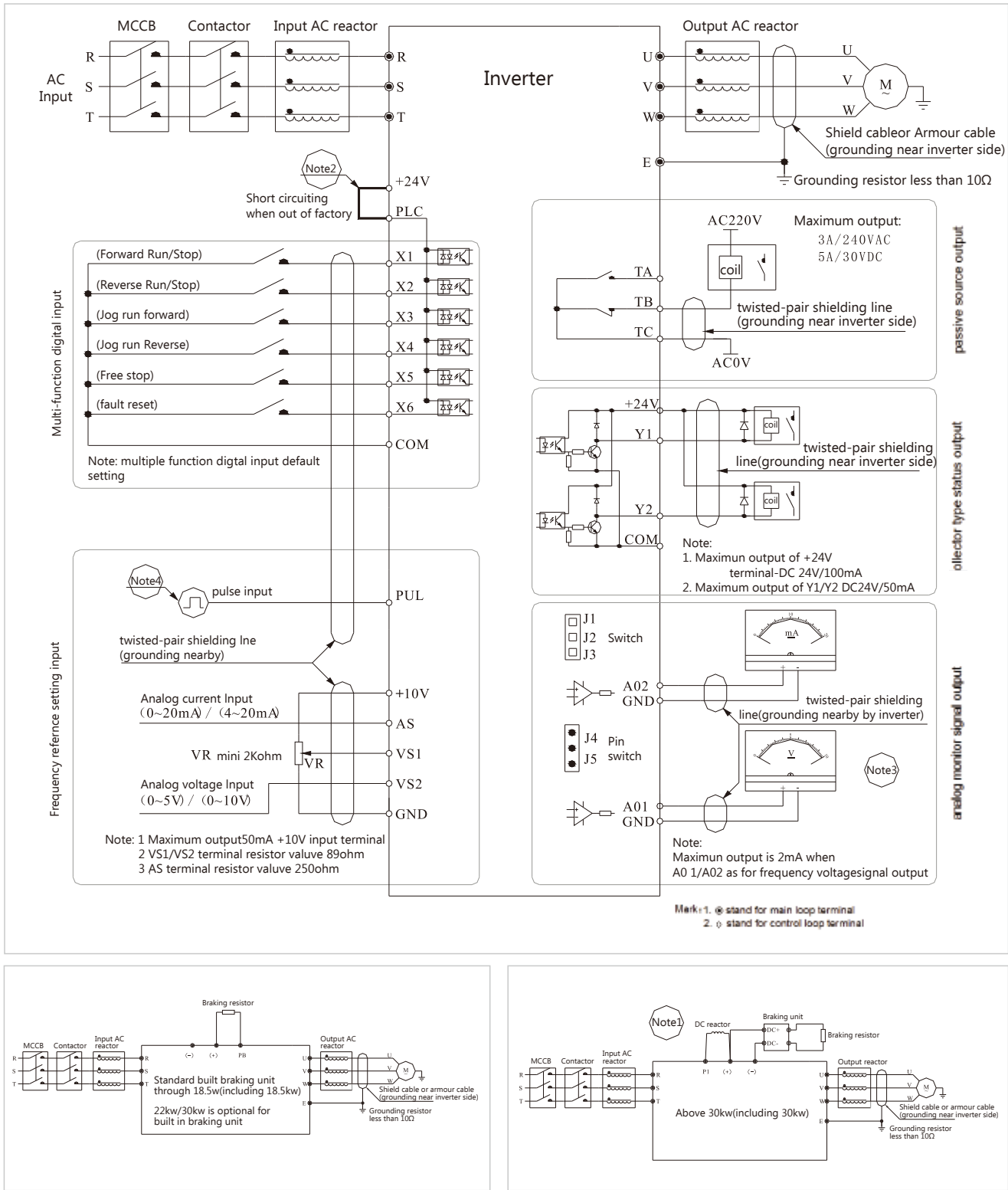


Suitable for:



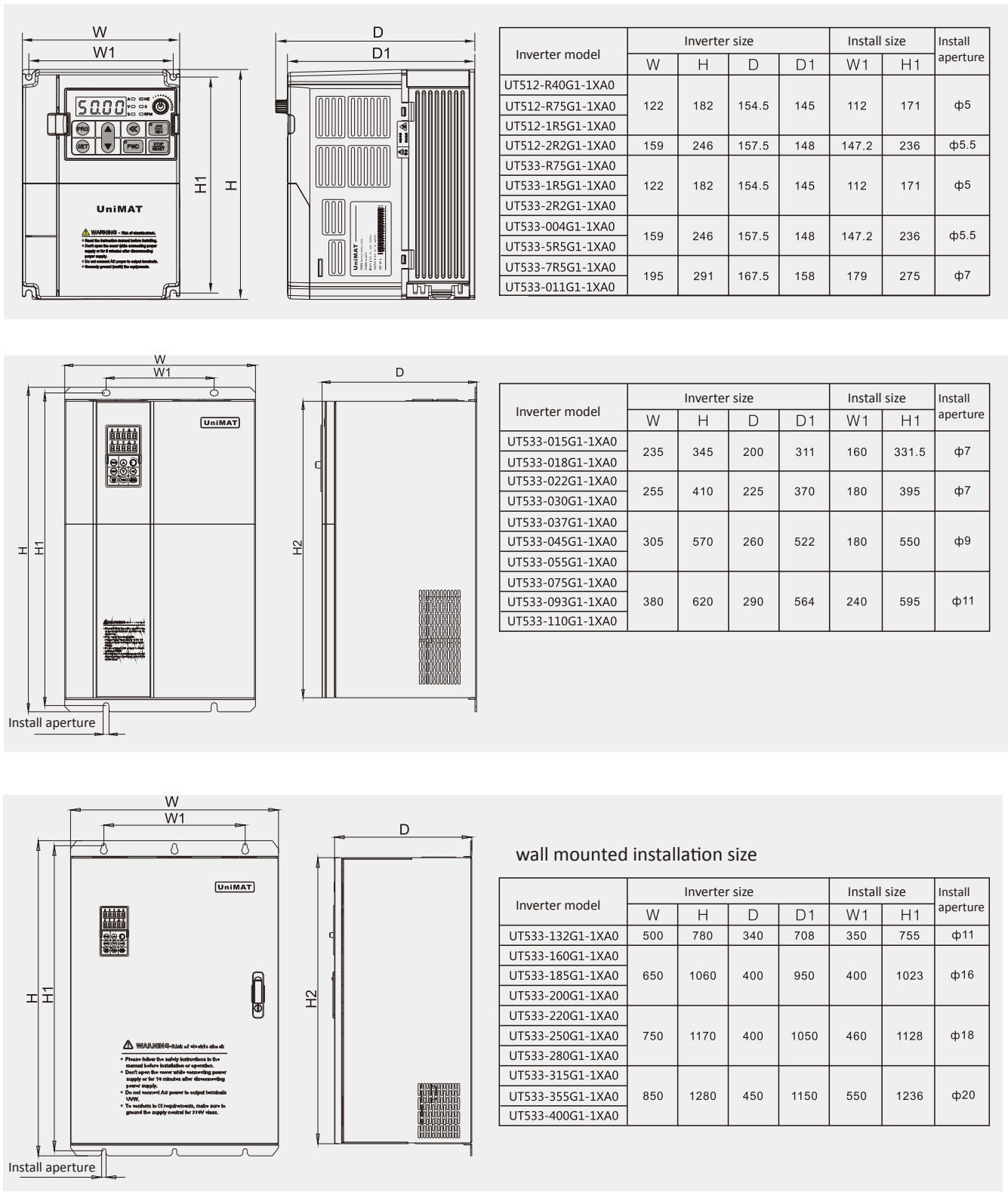
UT500 wiring and installation size

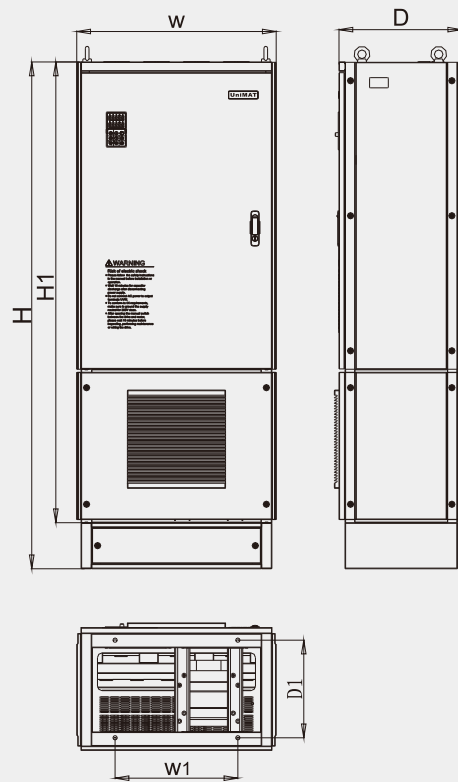
Standard wiring diagram



Remark: 1. When install DC TCR, pls remove the short film between P1 and (+).  
2. Multi function input terminal (X1, X6) can choose NPN or PNP transistor signal as input, Paranoid voltage can choose the inverter internal power(+24V port), also can choose external power(PLC port), Factory Default "+24V" shorts with "PLC"  
3. The analog monitored output is specialized for the output of Frequency Meter, Ammeter, Voltmeter, etc Meter, can not be applied for feedback control.  
4. There are multi pulse types in the real application, the detail wiring pls refer to AC70 manual.

Installation dimension





cabinet installation size

Inverter model	Inverter size				Install size		Install aperture
	W	H	D	H1	W1	D1	
UT533-160G2-1XA0	650	1600	400	1500	492	332	φ14
UT533-185G2-1XA0							
UT533-200G2-1XA0							
UT533-315G2-1XA0	750	1700	400	1600	582	332	φ14
UT533-355G2-1XA0							
UT533-400G2-1XA0							
UT533-220G2-1XA0	850	1800	450	1700	622	382	φ14
UT533-250G2-1XA0							
UT533-280G2-1XA0							

## UT500 Parameter table

## Function parameter table

- “●” : means this parameter can be changed when the inverter working  
“○” : means this parameter can not be changed when the inverter working  
“×” : means this parameter can be read not be changed  
“—” : means this parameter is configured by factory  
“※” : means this parameter is concerned with the model of the inverter.

## Basic Parameter

Function code No.	Function code Name	Setting range and definition	Factory setting	Character	Communication Address
E-00	Control method	0. V/F control 1. No PG Vector control	0	○	100H
E-01	Run command channel	0. Keyboard control 1. Terminal control 2. RS485 port control	0	○	101H
E-02	Given Frequency the main channel options	0. Keyboard digit setting 1. Keyboard potentiometer 2. VS1 voltage signal, 0-10V 3. AS current signal, 0-20mA 4. VS2 voltage signal, -10~10V 5. Terminal pulse signal 6. RS485 port 7. UP, Down control 8. Normal PID control 9. Constant voltage PID control 10. Program run 11. Swing frequency run 12. Terminal choose	1	○	102H
E-03	Given frequency the secondary channel options	0. Keyboard digit setting 1. Keyboard potentiometer 2. VS1 voltage signal, 0-10V 3. AS current signal, 4-20mA 4. VS2 voltage signal, -10~10V 5. Terminal pulse signal 6. RS485 port 7. UP, Down control 8. Normal PID control 9. Constant voltage PID control 10. Program run	0	○	103H
E-04	Given frequency the channel gain	0.01~5.00	1.000	○	104H
E-05	Given frequency the channel combined way	0. The main channel effective, the secondary one non 1. The secondary channel effective, the main one non 2. Two channel any not 0 value effective, the main channel prior 3. Main channel+( KX Auxiliary channel) 4. Main channel-( KX Auxiliary channel) 5. Max. [main channel (KX Auxiliary channel)] 6. Min. [main channel (KX Auxiliary channel)] 7. Auxiliary channel+ 8. ( KX main channel)Auxiliary channel- ( KX main channel) 9. Max. [(KX main channel) Auxiliary channel] 10Min. [(KX main channel) Auxiliary channel]	0000	○	0x007
E-06	The monitor options of the keyboard first line	0. Given frequency 1. Output frequency 2. Output current 3. Input voltage 4. Output voltage 5. Mechanical speed 6. PID given value 7. PID feedback value	0	●	106H
E-07	The monitor options of the keyboard second line	1. Reverse 2. Jog	1	●	107H
E-08	Keyboard REV/JOG options	1. Reverse 2. Jog	0	●	108H
E-09	Max. frequency	0.50~400.0Hz	50.00	○	109H
E-10	Upper limit frequency	Lower limit frequency~Max. frequency	50.00	●	10AH
E-11	Lower limit frequency	0.00~upper limit frequency	0.00	●	10BH
E-12	Run model on lower limit frequency	0. Stop 1. Run according lower limit frequency	1	●	10CH
E-13	Acceleration time1	0.1~6500.0s	※	●	10DH
E-14	Deceleration time1	0.1~6500.0s	※	●	10EH
E-15	Acceleration, deceleration way	LED at ones: Acceleration, deceleration way 0. Straight line 1. S curve LED at tens: Acceleration, deceleration time basic 0. Motor rated frequency 1. Max. Frequency LED at hundred: e quidistance stop 0. Invalid 1. Start LED at thousands: hold	0000	●	10FH
E-16	Given frequency on keyboard digit	Lower limit frequency~upper limit frequency	50.00	●	110H
E-17	V/F Model	0. Constant torque curve 1. Reduced torque curve1 (1.5 times) 2. Reduced torque curve (1.7 times) 3. Reduced torque curve (2.0 times) 4. Self definition curve	0	○	111H
E-18	Torque upgrade	0.0%~25.0%	※	●	112H
E-19	TFILTER	0.01~99.99	※	●	113H
E-20	Carrier frequency	0.7KHz~15.0KHz	※	●	114H
E-21	Carrier wave characters	LED at ones: the associated configuration of carrier wave and output frequency 0. Output frequency association invalid 1. Output frequency association valid LED at tens: the associated configuration of carrier wave temperature 0. Module temperature association invalid 1. Module temperature association valid LED at hundreds: PWM options 0. Fixed PWM 1. Random PWM1 2. Random PWM2 LED at thousands: hold	0010	●	115H
E-22	Compensation of slip frequency	0.0%~200%	100%	○	116H
E-23	Energy working options	0. Invalid 1. valid	0	○	117H
E-24	Voltage automatic adjust	0. Invalid 1. Valid in whole process 2. Invalid only at deceleration 3. Valid only at deceleratio	1	●	118H
E-25	Jog frequency	0.00Hz~ upper limit frequency	5.00	●	119H
E-26	Jog acceleration time	0.1~6500.0s	2.0s	●	11AH
E-27	Jog deceleration time	0.1~6500.0s	2.0s	●	11BH
E-28	Start frequency	0.00~60.00Hz	0.50Hz	○	11CH
E-29	Start frequency continuous time	0.0~20.0s	0.0s	○	11DH
E-30	Start options	LED at ones: the options of start 0. Start from start frequency 1. First DC brake and then Start from start frequency 2. Tracking speed and then start LED at tens: hold LED at hundreds: the direction of speed tracking 0. Searching at working direction 1. Searching at double direction LED at thousands: the way of speed tracking 0. Software tracking 1. Hardware tracking	※100	○	11EH



Function code No.	Function code Name	Setting range and definition	Factory setting	Character	Communication Address
E-31	Power off restart options	0. Invalid 1. valid	0	●	11FH
E-32	The wait time of power off restart	0.0~10.0s	0.5s	●	120H
E-33	Free stop frequency	0.00~60.00Hz	0.00Hz	●	121H
E-34	Stop way	0. Deceleration stop 1. Free stop	0	●	122H
E-35	DC brake voltage	0.0~15%	5.0%	●	123H
E-36	DC brake time when stop	0.0~30.0s	0.0s	●	124H
E-37	DC brake start frequency when stop	0.00~60.00Hz	0.00Hz	●	125H
E-38	DC brake time when start	0.0~10.0s	0.0s	●	126H
E-39	Jump frequency 1	0.00~400.0Hz(Fmax)	0.00Hz	●	127H
E-40	Jump frequency 2	0.00~400.0Hz(Fmax)	0.00Hz	●	128H
E-41	Jump frequency 3	0.00~400.0Hz(Fmax)	0.00Hz	●	129H
E-42	Jump frequency range	0.00~5.00Hz	0.00Hz	●	12AH
E-43	The self-recover times after fault	0. Off 1~3: on	0	●	12BH
E-44	The self-recover wait time after fault	0.1~20.0s	1.0s	●	12CH
E-45	Warm time	0.0~6500s	0.0s	●	12DH
E-46	Working direction options	0. Same as default 1. Opposite of default 2. Forbid reverse run	0	○	12EH
E-47	Dead zone time of positive and negative rotation	0.0~10.0s	0.0s	●	12FH
E-48	The rotation options of cooling fan	0. Fan working after inverter power on 1. Stop concern temperature, run is rotation 2. Stop, then fan stop, run concern with temperature	※	●	130H
E-49	Inverter Protection way options	LED at ones: when deceleration, the protection if over voltage over current 0. Invalid 1. Valid LED at tens: when power on the protection if short to ground 0. Invalid 1. Valid LED at hundreds: ILF Protection 0. Invalid 1. Valid LED at thousands: if inverter over load over temperature the protection options 0. Free stop 1. Current limit run	0※11	●	131H
E-50	Coefficient setting of electronic thermistor	30%~120%( less 30 invalid)	0%	●	132H
E-51	Current limit value when preventing stall	100%~250%	160 G 120 P	●	133H
E-52	Bus voltage value when preventing stall	110~150%	110%	●	134H
E-53	Voltage value for energy brake and preventing over voltage when deceleration	110~150%	135%	●	135H
E-54	Energy brake rate	0~100%	80%	●	136H
E-55	Bus under-voltage protection value	60~90%	65%	●	137H
E-56	hold				138H
E-57	hold				139H
E-58	hold				13AH
E-59	hold				13BH
E-60	Inverter output voltage ratio	50~100%	100%	○	13CH
E-61	G/P type setting	0. G type 1. P type	0	○	13DH
E-62	Speed tracking stable time	0.20~10.00s	0.60s	●	13EH
E-63	Revising parameter protection	0. All parameter can be revised 1. Just keyboard digit can be revised 2. All parameter can not be revised	0	●	13FH
E-64	Parameter initialize	0. No operation 1. Recover factory setting 2. Delete fault record 3. Inverter parameter transfer to keyboard and record 4. The parameter which keyboard kept transfer to i nverter	0	○	140H

Function code No.	Function code Name	Setting range and definition	Factory setting	Character	Communication Address
E-65	Factory password	0~9999	0	●	141H
E-66	Information checking	0. No operation 1. Check status monitor 2. Check fault information	0	●	142H
E-67	Interference suppression options	LED at ones: Over voltage I nterference suppression 0. Invalid 1. Valid LED at tens: SC Interference suppression 0. Invalid 1. Valid LED at hundreds: over current Interference suppression 0. Invalid 1. Valid LED at thousands: over current overload suppression 0. When deceleration over current suppression invalid 1. When deceleration over current suppression valid 2. Over current overload suppression valid 3. 1 and 2 both valid	0001	●	143H

## ► External Terminal

Function code No.	Function code Name	Setting range and definition	Factory setting	Character	Communication Address
F-01	Input signal option1(X1)	0. Invalid 1. Forward jog working 2. Backward jog working 3. Free stop 4. Fault recover 5. Multi speeds control1 6. Multi speeds control2 7. Multi speeds control3 8. Multi speeds control4 9. Up/down working frequency increase progressively 10. Up/down working frequency decrease progressively	27	○	201H
F-02	Input signal option2(X2)	11. Trilinear working control 12. Cancel PID control 13. External fault warning 14. Acceleration, deceleration time option1 15. Acceleration, deceleration time option2	28	○	202H
F-03	Input signal option3(X3)	16. Frequency setting channels selection terminal1 17. Frequency setting channels selection terminal2 18. Frequency setting channels selection terminal3 19. Frequency setting channels selection terminal4	1	○	203H
F-04	Input signal option4(X4)	20. Program working suspension 21. Program working restart 22. Timer trigger 23. Timer clearer 24. Counter clearer 25. Counter time input terminal 26. Order prior on Terminal channel 27. Forward working 28. Backward working	2	○	204H
F-05	Input signal option5(X5)	LED at ones: free stop the terminal recover way 0. After switch off, recover the origin instruction, has speed tracking 1. After switch off, not recover the origin instruction 2. After switch off, recover the origin instruction, not have speed tracking LED at tens: up/down terminal controls startup frequency configuration 0. After working, adjust by up/dw terminal	3	○	205H
F-06	Input signal option6(X6)	1. Working to the instantaneous frequency of the last stop, and then up/dw adjust 2. Working to the preset frequency(F-70), and then up/dw adjust LED at hundreds: the valid range options of keyboard stop/reset 0. Valid only at keyboard control 1. All control ways valid LED at thousands: the terminal operation way options after recover from fault 0. Terminal control can switch on directly 1. Terminal control, first stop and then switch on	4	○	206H
F-07	Action options of input signal		1001	○	207H

Function code No.	Function code Name	Setting range and definition	Factory setting	Character	Communication Address
F-08	Terminal operation control way options	LED at ones: terminal control way 0. Standard operation control 1. Double lines operation control 2. Trilinear operation control1 3. Trilinear operation control2 4. Trilinear operation control3 LED at tens: hold LED at hundreds: hold LED at thousands: hold	0000	○	208H
F-09	Band 1 speed setting1X		10.00	●	209H
F-10	band 2 speed setting2X		25.00	●	20AH
F-11	band 3 speed setting 3X		40.00	●	20BH
F-12	band 4 speed setting 4X		50.00	●	20CH
F-13	band 5 speed setting 5X		50.00	●	20DH
F-14	band 6 speed setting 6X		40.00	●	20EH
F-15	band 7 speed setting 7X		25.00	●	20FH
F-16	band 8 speed setting 8X		10.00	●	210H
F-17	hold				211H
F-18	hold				212H
F-19	tracking Speed	0.1~100.0%	0.1%	●	213H
F-20	The time of voltage recove	0.10S~650.00S	※	●	214H
F-21	Speed tracking action current	10%~200%	120%	●	215H
F-22	Acceleration time when reducing frequency	0.1~6500.0s	2.0s	●	216H
F-23	Deceleration time when reducing frequency	0.1~6500.0s	1.0s	●	217H
F-24	Acceleration time 2		※	●	218H
F-25	Deceleration time 2		※	●	219H
F-26	Acceleration time 3		※	●	21AH
F-27	Deceleration time 3		※	●	21BH
F-28	Acceleration time 4		※	●	21CH
F-29	Deceleration time 4		※	●	21DH
F-30	Relay output terminal TA, TB, TC	0. Zero frequency ( standby mode) 1. Fault trip alarm 1( alarm at fault self recover) 2. Fault trip alarm 2( no alarm at fault self recover) 3. Frequency reach 4. Frequency horizontal signal 5. Running 6. Reversal 7. The inverter under-voltage 8. Overload pre-alarm 9. Output frequency reaches upper limit 10. Output frequency reaches lower limit 11. Outer fault stop 12. Timer time is up 13. Counter reaches Max. 14. Counter reaches setting value 15. PID feedback upper alarm 16. PID feedback lower alarm 17. Sensor break 18. Program run, cycle period finish 19. Program run, period operate finish 20. On Energy brake 21. Output terminal external control	1	●	21EH
F-31	Terminal Y1		4	●	21FH
F-32	Terminal Y2		7	●	220H
F-33	Detection range when frequency reaches	0.00~50.00Hz	1.00 Hz	●	221H
F-34	Output frequency horizontal	0.00~400.0Hz	30.00 Hz	●	222H
F-35	Horizontal delay time of output frequency	0.0~20.0s	0.0s	●	223H
F-36	Overload pre-alarm level	50~200%	150%	●	224H
F-37	Overload pre-alarm delay time	0.0~20.0s	1.0s	●	225H
F-38	Timer setting value	1~65000s	1s	●	226H
F-39	Counter max. value	1~65000	1000	●	227H
F-40	Counter setting value	1~counter Max.	100	●	228H
F-41	VS1 input voltage lower limit	0.00V~[F-42]	0.50V	●	229H
F-42	VS1 input voltage upper limit	[F-41] ~10.00V	9.50V	●	22AH
F-43	VS1 input voltage gain	0.01~5.00	1.00	●	22BH
F-44	VS2 input voltage lower limit	-10.0V ~ [F-45]	0.5V	●	22CH

Function code No.	Function code Name	Setting range and definition	Factory setting	Character	Communication Address
F-45	VS2 input voltage upper limit	[F-44]~10.0V	9.5V	●	22DH
F-46	VS2 input voltage gain	0.01~5.00	1.00	●	22EH
F-47	VS2 input zero bias	-1.00V~1.00V	0.00V	●	22FH
F-48	VS2 input bipolarity adjust and direction control	0. Bipolarity adjust and direction control invalid 1. Bipolarity adjust and direction control valid 2. Bipolarity adjust valid but direction control invalid	0	●	230H
F-49	VS2 input bipolarity control zero hysteresis band	0.00V~3.00V	0.20V	●	231H
F-50	AS input current lower limit	0.00mA~ [F-51]	4.20mA	●	232H
F-51	AS input current upper limit	[F-50] ~20.0mA	19.50mA	●	233H
F-52	AS input current gain	0.01~5.00	1.00	●	234H
F-53	Pulse input frequency lower limit	0.00KHz~ [F-54]	0.00KHz	●	235H
F-54	Pulse input frequency upper limit	[F-53] ~50.00KHz	10.00KHz	●	236H
F-55	Pulse input frequency gain	0.01~5.00	1.00	●	237H
F-56	Input lower limit matched frequency	0.00Hz~ [F-57]	0.00 Hz	●	238H
F-57	Input upper limit matched frequency	[F-56]~Max. frequency	50.00	●	239H
F-58	Input signal characters options	LED at ones: VS1 input characteristic options 0. Positive characteristic 1. Negative characteristic LED at tens: AS input c characteristic options 0. Positive characteristic 1. Negative characteristic LED at hundreds: VS2 input characteristic options 0. Positive characteristic 1. Negative characteristic LED at thousands: Pulse input characteristic options 0. Positive characteristic 1. Negative characteristic	0000	●	23AH
F-59	Terminal analog input T/FILTER	0.01~5.00	0.50	●	23BH
F-60	Output terminal (AO) options	0. Output signal close 1. Output frequency/speed 2. Output current 3. Given frequency/speed 4. PID given amount 5. PID feedback amount 6. DC bus voltage 7. Output voltage	1	●	23CH
F-61	Output terminal (AO2) options		3	●	23DH
F-62	Analog output type options	LED at ones: AO2 output signal options 0. Frequency pulse output 1.0~20mA 2.4~20mA 3.0~10V LED at tens: AO1 output signal options 0. 0~10V 1. 0~20mA 2. 4~20mA LED at hundreds: hold LED at thousands: hold	0003	●	23EH
F-63	(AO1) output signal gain	25%~200%	100%	●	23FH
F-64	(AO2) output signal gain	25%~200%	100%	●	240H
F-65	(AO1) output signal zero adjust	-10.0%~10.0%	0.0%	●	241H
F-66	(AO2) output signal zero adjust	-10.0%~10.0%	0.0%	●	242H
F-67	The lower limit voltage of Keyboard potentiometer input	0.00V~ [F-68]	0.20V	●	243H
F-68	The upper limit voltage of Keyboard potentiometer input	[F-67] ~5.50V	4.8V	●	244H
F-69	Keyboard potentiometer gain	0.50~5.00	1.00	●	245H
F-70	Up/down potentiometer preset frequency	0.00Hz~ upper limit frequency	0.00Hz	●	246H
F-71	hold				247H

## ► Special function parameter

Function code No.	Function code Name	Setting range and definition	Factory setting	Character	Communication Address
H-01	Self-set voltage V1	0.0% ~ [H-03]	3.0%	○	301H
H-02	Self-set frequency F1	0.0Hz~ [H-04]	1.00Hz	○	302H

Order Data

UT500 series Inverter Order Data

No.	Power G/P KW	Rated Current ( A )	Order No.
UT500 Series general inverter (220V Single-phase)			
1	0.75	4A	UT512-R75G1-1XA0
2	1.5	7A	UT512-1R5G1-1XA0
3	2.2	10A	UT512-2R2G1-1XA0
4	3.7	16A	UT512-3R7G1-1XA0
UT500 Series general inverter (380V Tri-phase)			
1	0.75 / 1.5	2.5A / 3.7A	UT533-R75G1-1XA0
2	1.5 / 2.2	3.7A / 5A	UT533-1R5G1-1XA0
3	2.2 / 3.7	5A / 8.5A	UT533-2R2G1-1XA0
4	3.7 / 5.5	8.5A / 13A	UT533-3R7G1-1XA0
5	5.5 / 7.5	13A / 16A	UT533-5R5G1-1XA0
6	7.5 /11	16A /25A	UT533-7R5G1-1XA0
7	11 / 15	25A / 32A	UT533-011G1-1XA0
8	15 / 18	32A /38A	UT533-015G1-1XA0
9	18 / 22	38A / 45A	UT533-018G1-1XA0
10	22 / 30	45A / 60A	UT533-022G1-1XA0
11	30 / 37	60A / 75A	UT533-030G1-1XA0
12	37 / 45	75A / 90A	UT533-037G1-1XA0
13	45 / 55	90A / 110A	UT533-045G1-1XA0
14	55 / 75	110A /150A	UT533-055G1-1XA0
15	75 / 93	150A / 170A	UT533-075G1-1XA0
16	93 / 110	170A / 210A	UT533-093G1-1XA0
17	110 / 132	210A / 250A	UT533-110G1-1XA0
18	132 / 160	250A / 300A	UT533-132G1-1XA0
19	93 / 110	170A / 210A	UT533-093G2-1XA0
20	110 / 132	210A / 250A	UT533-110G2-1XA0
21	132 / 160	250A / 300A	UT533-132G2-1XA0
22	160 / 185	300A / 340A	UT533-160G1-1XA0
23	185 / 200	340A / 380A	UT533-185G1-1XA0
24	160 / 185	300A / 340A	UT533-160G2-1XA0
25	185 / 200	340A / 380A	UT533-185G2-1XA0
26	200 / 220	380A / 415A	UT533-200G1-1XA0
27	200 / 220	380A / 415A	UT533-200G2-1XA0
28	220 / 250	415A / 470A	UT533-220G1-1XA0
29	220 / 250	415A / 470A	UT533-220G2-1XA0
30	250 / 280	470A / 520A	UT533-250G2-1XA0
31	280 / 315	520A / 600A	UT533-280G2-1XA0
32	315 / 355	600A / 680A	UT533-315G2-1XA0
33	355 / 400	680A / 750A	UT533-355G2-1XA0
34	400 / 450	750A / 810A	UT533-400G2-1XA0
35	450 / 500	810A / 870A	UT533-450G2-1XA0
36	500 / 560	870A / 950A	UT533-500G2-1XA0
37	560 / 630	950A / 1100A	UT533-560G2-1XA0
38	630 / 700	1100A / 1300A	UT533-630G2-1XA0
UT500 Series inverter accessories			
1	UT500 special keyboard	UT500 special keyboard KB01	UT950-0KB 01-1XA0
2	DB9 expansion line,1 meter	DB9 expansion line,1 meter	UN901-0WA01-1XA0
3	DB9 expansion line,2 meters	DB9 expansion line,2 meters	UN901-0WA02-1XA0

Function code No	Function code Name	Setting range and definition	Factory setting	Character	Communication Address
H-03	Self-set voltage V2	[H-01~H-05]	28.0	○	303H
H-04	Self-set frequency F2	[H-02~H-06]	10.00	○	304H
H-05	Self-set voltage V3	[H-03~H-07]	55.0	○	305H
H-06	Self-set frequency F3	[H-04~H-08]	25.00	○	306H
H-07	Self-set voltage V4	[H-05~H-09]	80.0	○	307H
H-08	Self-set frequency F4	[H-06~H-10]	37.50	○	308H
H-09	Self-set voltage V5	[H-07] ~100.0%	100.0	○	309H
H-10	Self-set frequency F5	[H-08]~Max. frequency	50.00	○	30AH
H-11	PID output character	Positive characteristic Negative characteristic	0	○	30BH
H-12	Pid controller given signal	0. Keyboard potentiometer 1. PID keyboard digit given 2. External terminal VS1: 0~10V 3. External terminal AS:4~20mA 4. External terminal VS2 ( bipolarity failure) 5. External pulse signal 6. RS485 port given	1	○	30CH
H-13	PID controller feedback signal	0. External terminalVS1: 0~10V 1. External terminal AS:4~20mA 2. External terminal VS2 ( bipolarity failure) 3. External pulse signal	1	●	30DH
H-14	PID preset frequency	0.00Hz~Upper limit frequency	0.00Hz	●	30EH
H-15	PID preset frequency run time	0.0~6500.0s	0.0s	●	30FH
H-16	PID keyboard digit given	0.0~100.0%	50.0%	●	310H
H-17	Feedback channel's gain	0.01~5.00	1.00	●	311H
H-18	Sensor max. range	1.0~100.0	100.0	●	312H
H-19	Proportion gain P	0.1~100.0	20.0	●	313H
H-20	Integration time I	0.1~100.0s	2.0s	●	314H
H-21	Differential gain D	0.0~10.0	0.0	●	315H
H-22	Differential gain D	0.01~60.00s	0.10s	●	316H
H-23	The deviation limit of PID control	0.0~20.0%	0.0%	●	317H
H-24	Start threshold value	0.0%~sleeping threshold value	0.0%	●	318H
H-25	Sleeping threshold value	Start threshold value~100.0%	100.0%	●	319H
H-26	Warning upper limit value	Warning lower limit value~100.0%	100.0%	●	31AH
H-27	Warning lower limit value	0.0%~warning upper limit value	0.0%	●	31BH
H-28	Inspection value when sensor break	0.0~20.0%	0.0%	●	31CH
H-29	Warning run options when sensor break	0. Warning run options 1. when sensor break	0	●	31DH
H-30	Upper limit value	Lower limit value~100.0%	100.0%	●	31EH
H-31	Lower limit value	0.0%~upper limit value	0.0%	●	31FH
H-32	Program running type	0. Single cycle ( timing in second) 1. Continuous cycle(timing in second) 2. Single cycle, run continuous (timing in second) 3. Single cycle ( timing in minute) 4. Continuous cycle(timing in minute) 5. Single cycle, run continuous (timing in minute)	0	○	320H
H-33	Recover type options when program on breakpoint	0. Run at band1 speed 1. Reset and run at break frequency 2. Run at rest time and break frequency	0	○	321H
H-34	Record options when program on power failure	0. Power failure no record 1. Power failure record	0	○	322H
H-35	Band1 speed direction and acceleration and deceleration time	0. Forward, acceleration time 1/ deceleration time 1 1. Forward, acceleration time 2/ deceleration time 2 2. Forward, acceleration time 3/ deceleration time 3 3. Forward, acceleration time 4/ deceleration time 4 4. Backward, acceleration time 1/ deceleration time 1 5. Backward, acceleration time 2/ deceleration time 2 6. Backward, acceleration time 3/ deceleration time 3 7. Backward, acceleration time 4/ deceleration time 4	0	●	323H
H-36	Band2 speed direction and acceleration and deceleration time		1	●	324H
H-37	Band3 speed direction and acceleration and deceleration time		2	●	325H
H-38	Band4 speed direction and acceleration and deceleration time		3	●	326H
H-39	Band5 speed direction and acceleration and deceleration time		4	●	327H
H-40	Band6 speed direction and acceleration and deceleration time		5	●	328H
H-41	Band7 speed direction and acceleration and deceleration time		6	●	329H
H-42	Band8 speed direction and acceleration and deceleration time		7	●	32AH

Function code No	Function code Name	Setting range and definition	Factory setting	Character	Communication Address
H-43	Band1 speed operate time T1	0.0~6000s(min)	10.0	●	32BH
H-44	Band2 speed operate time T2		10.0	●	32CH
H-45	Band3 speed operate time T3		10.0	●	32DH
H-46	Band4 speed operate time T4		10.0	●	32EH
H-47	Band5 speed operate time T5		10.0	●	32FH
H-48	Band6 speed operate time T6		10.0	●	330H
H-49	Band7 speed operate time T7		10.0	●	331H
H-50	Band8 speed operate time T8		10.0	●	332H
H-51	The operate difference frequency of swing frequency	0.00~20.00Hz	2.00Hz	●	333H
H-52	The motor rated power	0.4~1100.0KW	※	○	334H
H-53	The motor rated frequency	0~400.00Hz	50.00 Hz	○	335H
H-54	The motor rated speed	0~65000rpm	※	○	336H
H-55	The motor rated voltage	0~1500V	※	○	337H
H-56	The motor rated current	0.1~1000.0A	※	○	338H
H-57	The empty load current of the motor	0.01~650.00A	※	○	339H
H-58	The stator resistance of the motor	0.001~65.000Ω	※	○	33AH
H-59	The rotor resistance of the motor	0.001~65.000Ω	※	●	33BH
H-60	The stator rotor inductance of the motor	0.1~6500.0mH	※	●	33CH
H-61	The stator rotor mutual inductance of the motor	0.1~6500.0mH	※	●	33DH
H-62	Self-setting options of the motor parameter	0. No operate 1. Turning self-study 2. Static self-study	0	○	33EH
H-63	Magnetic saturation coefficient of the motor1	0~9999	※	●	33FH
H-64	Magnetic saturation coefficient of the motor2	0~9999	※	●	340H
H-65	Magnetic saturation coefficient of the motor3	0~9999	※	●	341H
H-66	Linkage master configuration	0. The local as linkage slave 1. Master type1 2. Master type2	0	●	342H
H-67	Local address	1~247	1	●	343H
H-68	Data format	0. No calibration (E, 8, 1) 1. Even calibration(E, 8, 1) 2. Odd calibration(O, 8, 1) 3. No calibration(N, 8, 2)	3	○	344H
H-69	Baud rate	0: 1200 bps 1: 2400 bps 2: 4800 bps 3: 9600 bps 4: 19200bps	3	○	345H
H-70	The frequency rate which communication set	0.01~5.00	1.00	●	346H
H-71	Communication overtime	0.0~6500.0s	10.0s	●	347H
H-72	The breakage operate model of RS485 communication	0. Stop 1. working	0	●	348H
H-73	Response delay	0.001~1.000s	0.005s	●	349H
H-74	The operate voltage lower limit when Instantaneous stop deceleration	0%~200%	20%	●	34AH
H-75	The operate voltage upper limit when Instantaneous stop deceleration	0%~200%	90%	●	34BH
H-76	The gain of Instantaneous stop deceleration	0.01~10.00	2.00	●	34CH
H-77	Voltage recover and stable time	0.0~100.0s	2.0s	●	34DH
H-78	hold				34EH
H-79	Output terminal external control	0~9999	0	●	34FH
H-80	hold				350H