M740 Series

Smart Water Pump Drive

User Manual

Thank you for choosing YOUZHONG high performance smart M740 water pump drive. M740 drive is a single phase and three phase variable frequency drive that is designed specially to manage water pump's performance to match a wide range of water supply system conditions and requirments.

M740 drive allows your pump to work more efficiently,safely and smartly, reduce a large amount of energy consumption and prolong the lifetime of your pumps.

M740 drive is made of high quality components and materials and adopts the latest microprocessor technology.

This manual is issued for consumers to easily and properly operate the smart M740 drive.The information contained in this manual is subjected to change without prior notice.

Safety Precautions

In order to ensure the proper and safe use of M740 drive series and avoid any possible damages on the operator,drive or pump,please affirm to read carefully the below tips before installation and operation.

· Do not operate the equipment with power on, cut off the power and wait for at least 10 minutes before wiring and inspection,or it would probably cause electric shock.

· The main circuit terminal must be connected to the power cable tightly or it would probably cause damage on pump due to loose connection.

· Do not leave any other objects inside the drive,such as wire fragments,soldering tin,metal,etc. It would cause electric short circuit to burn out the drive.

· Do not install capacity or piezoresistor on the output end of drive,or it will cause breakdown or fault on the drive or even damage some critical components. Please remove it if there is any exsisting capacity or piezoresistor.

Selection Table

	Mode	Power	Output Current	Size (mm)			Installing Hole(mm)
				L	W	H	
1PH 220V in 3PH 220v out	M740-2TR75A0	0.75KW	4A	150	102	118	Ø4
	M740-2T1R5A0	1.5KW	7A	150	102	118	Ø4
	M740-2T2R2A0	2.2KW	10A	150	102	118	Ø4
3PH 380V in 3PH 380v out	M740-4TR75A0	0.75KW	2.1A	150	102	118	Ø4
	M740-4T1R5A0	1.5KW	3.8A	150	102	118	Ø4
	M740-4T2R2A0	2.2KW	5.1A	150	102	118	Ø4
	M740-4T004A0	4.0KW	9A	294	131	173	Ø5
	M740-4T5R5A0	5.5KW	13A	294	131	173	Ø5
	M740-4T7R5A0	7.5KW	16A	294	131	173	Ø5
	M740-4T011A0	11KW	25A	294	131	173	Ø6.5
	M740-4T015A0	15KW	32A	337	197	193	Ø6.5
	M740-4T18R5A0	18.5KW	38A	337	197	193	Ø8.5
	M740-4T022A0	22KW	45A	337	197	193	Ø8.5
	M740-4T030A0	30KW	60A	348.5	227	171.5	Ø8.5
	M740-4T037A0	37KW	75A	348.5	227	171.5	Ø8.5

Technical Parameters

Controlling Characteristic	Control Mode		V/F control
	Starting Torque		0.5Hz±100%
	Speed Adjustable Range		1:100
	Speed-holding precision		±1.0%
	Overload Capability		150% rated current for 60s;180% rated current for 1s
	Acceleration/deceleration Time		0.1-3600s
Input&Output Parameters	Start Frequency		0.01-10.00Hz
	Input Voltage		220VAC±15%,380V±15%
	Input Frequency Range		50/60Hz,fluctuation±5%
	Output Voltage		0-rated input voltage
	Output Frequency		0-200Hz
Peripheral Interface	Digital Input		3 way of digital terminal input
	Analog Input		V: 0-5V V (remote pressure gauge):0-10V C(transducer): 4-20mA C1(transducer):4-20mA
	Replay Output		2 way output,pragrammable
	Open Collection Output		1 way output,pragammable
Basic Functions	Command Running Channel		Three kinds of channels: 1.Operational panel 2.Control terminal,3.Serial communication port,choose 1 and 2 for master drive and 3 for auxiliaries
	Built-in PID		Advanced PID arithmetic to realize closed loop control system
	Stall Speed Control		Automatically limit current and voltage at running period to prevent tripping due to frequent overcurrent or overvoltage
	Master and Auxiliaries connection		Extensible RS485 design,one drive in the system can be master and controls the other auxiliary drives (4 at most) to work by communication mode,Master drive sends PID feedback information to the auxiliary drives and monitors status of auxiliaries in real time.Any failure of the auxiliary drives does not affect the others.
	Water Shortage Protection		If the drive detects the pipe pressure is lower than the water shortage pressure set value,the system stops working automatically.After set period time,it restarts automatically for specified times.If pressure restores to normal,system works normally,otherwise,system stops automatically in case of idle running of pump and prolongs pump lifetime to the maximum extent.
	High Pressure Alarm		When pressure exceeds set pressure,it

		stops running automatically to avoid damage on pipe network due to high pressure.
	Automatic Energy-saving Running	Automatically lower output voltage under light loading to save energy
	Password Setting	4-bit password can be set with non-zero numbers,Exit password setting interface and the password will be valide in 1 minute.
	Parameters Locking	Define whether the parameter is locked in running or stopped status in case of misoperation.
Use Condition	Installation	Installation should be executed under the conditions of no direct sunlight,dust,corrosive gas,inflammable gas,oil mist,steam and water drop.
	Altitude	Lower than 1000m,service in derated capacity above 1000m.Derate 1% capacity every 100m increase in temperature.
	Environment Temperature	-10℃-+40℃,service in derated capacity for 40℃-50℃.Derate 4% capacity every 1℃ increase in height.
	Humidity	≤95%RH,no water condensation.
	Vibration	<5.9m / S2(0.6G)

Keypad Description (quick use guide)

1.Indicator Lights

PRESS.	Pressure setting is valid only when the light is on
RUN	Constant lighting means pump is running,while flickering means pump is in sleep status
STOP	Constant lighting means pump is in stop status.
Online	Flickering means inverter is in the multi-pump control mode
Manual	Light-on indicates pump runs at a given frequency set by hand
Auto	Light-on indicats pump is running in constant pressure mode
Low flow	Light-on means pump is under protection against water shortage
Sleep	Light-on means pump is sleeping .

2. Function button

MENU	Used to switch inverter from fixed mode to parameter setting mode
UP DOWN	Used to set parameters and modify pressure values
SHIFT	1. In setting parameters,press shift to move the blink cursor 2. In running status,press Shift to show different displays among running frequency,output current,output voltage, temperature,set pressure and running pressure
RUN/STOP	Used to start,stop pump and for reset fault.The button is invalid when the external terminal is connected.
ENTER	Used to save parameters settings
Reset (back to factory default setting) by pressing MENU and SHIFT simultaneously	

How to set parameters

The system has two parameter group: 1. U group (function group) ,U group includes U0,U1,U2,U3 subgroups 2. d group (monitoring group)

1) At the original display status, press SHIFT to display sequently running frequency,output current,dc-link voltage,temperature and set pressure-current presure.
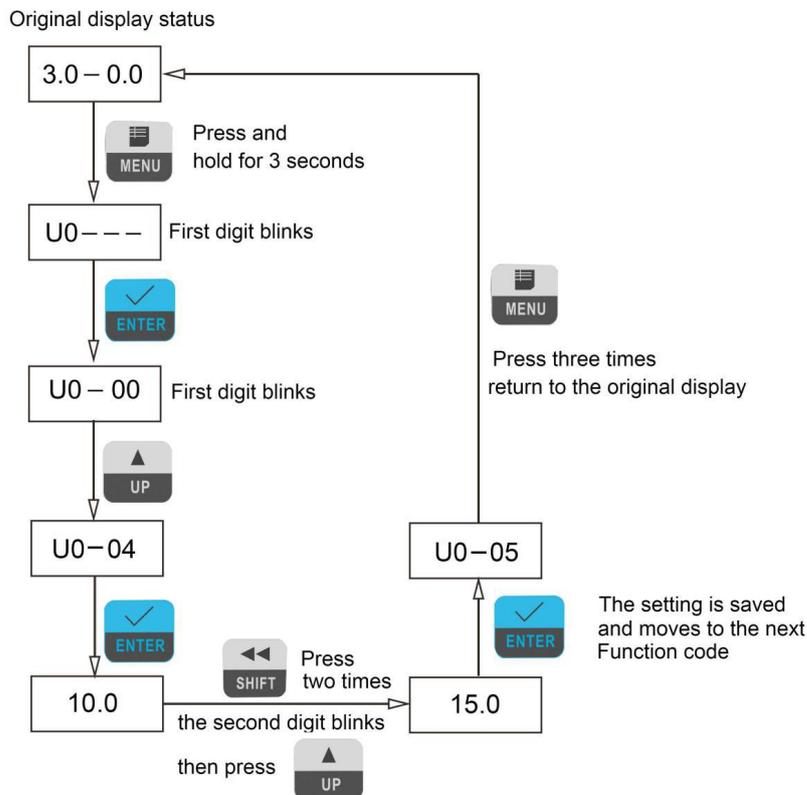
2) At the orignal displaly status, press MENU and hold for 3 seconds to enter U group ,press MENU again (do not need to hold for 3secs) to switch to d group

Press MENU for 3 times to return to original display status.

3) After entering U group,press "+" to enter U1.U2.U3 group. Press ENTER to the function code,press ENTER again to the parameter of the function code, press "+ "and "- " to modify the parameter and press ENTER to save the setting.finally press MENU continually for 3 times to return to the original display status
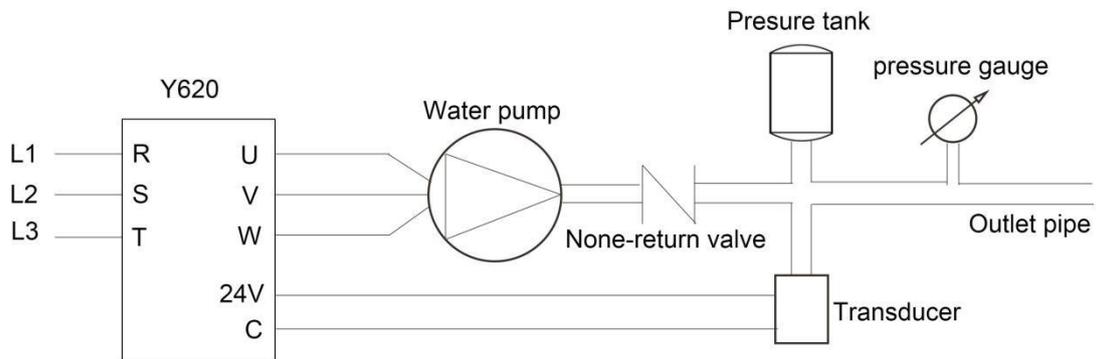
4) Under stop/running status, press "+" / "-" and hold 3seconds to increase or decrease pressure

The following is the procedure on how to change the sensor range (U0-04) from 10bar (factory default value) to 15bar. The procedure is the same for setting other parameters.

Original display status

3.0 − 0.0	

Press and hold for 3 seconds (MENU)

U0 − − −	First digit blinks

(ENTER)

U0 − 00	First digit blinks

(UP)

U0 − 04	

(ENTER)

10.0	

Press two times (SHIFT)

the second digit blinks

then press (UP)

15.0	

(ENTER) The setting is saved and moves to the next Function code

U0 − 05	

(MENU) Press three times return to the original display

Single pump control mode

1.Terminal wiring diagram

2.Debugging procedure
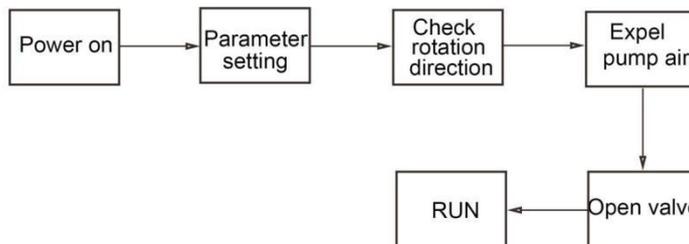
3. Quick operation step

1) Target pressure setting

At Stop/running status, directly press ▲UP or ▼DOWN (do not need to enter U

parameter group) and hold for 3 seconds,then set the target pressure..

2) Basic parameters setting

Note: "○" means parameters can be modified at both stop and running status.						
"●" means parameters can be modified only at stop status.						
Function Code	Description	Set range	Unit	Default	Modification Level	Note
U0-02	Running Direction	0:Forward 1:Reverse 2: Forbidden		0	○	
U0-03	Sensor type	0: (0-10) 1: (4-20) 5: (4-20)	V mA mA	1	●	0: V termial 1: C termial 5: C1 terminal
U0-04	Sensor Range	0.0-60	Bar	10	○	

|						
U0-05	Press. Calibration	(0~2.000)		1.000	○	When display smaller than gauge,increase U0-05. When display bigger than gauge,decrease U0-05

Below is parameters needed to set based on user's requirement

Function Code	Description	Set range	Unit	Default	Modification Level	Note
U0-01	Start Press. Setting	0-target press.	Bar	2.4	○	80% of target press.
U1-05	High Press. Alarm Value	0-60.0	Bar	15.0	○	
U1-07	Low Press. Alarm Value	0-60.0	Bar	0.5	○	
U0-10	Start and Stop command	0:keypad 1:External control 2:Communication		0	○	When use external switch on/off, set U0-10=1

Multi-pump control

1. Terminal wiring diagram

In two master and multi slave pumping system,master and standby master drive are connected to pressure sensors as below:
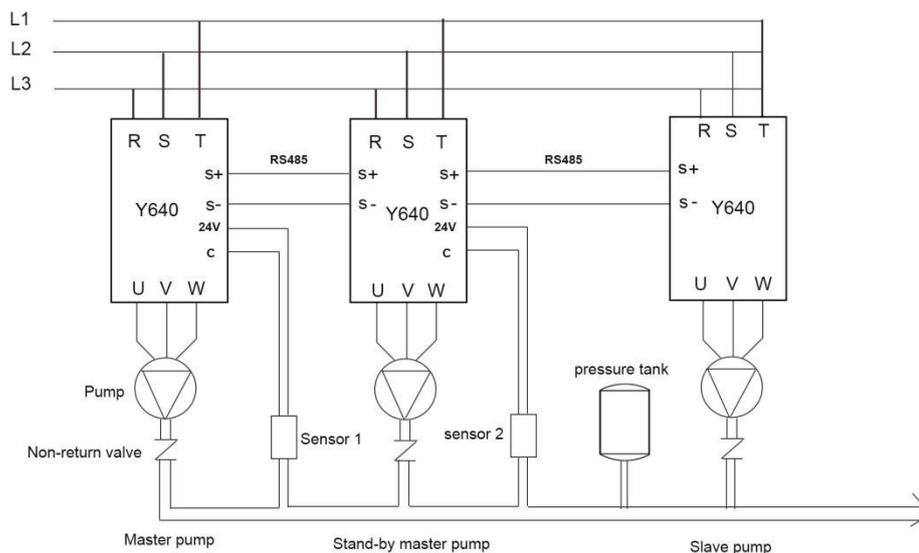
1)Multi-Pump Control-Can realize two masters and Max.4 auxiliaries (standby master works as slave) to combine work.

2) There are two masters (one is master,the other is standby master) and 3 slaves. The standby master replaces the master to command the whole system only when the master fails to work.The two master drives are both equipped with pressure transducers,the other auxiliary drives are without transducers.

3).All the drives are connected through a RS485 Communication line.

4) The master detects pipe water pressure through pressure transducer,and sends the pressure signal to the auxiliaries and automatically controls the auxiliaries to run or stop and PID status according to the water pressure condition.

5) When master drive failes to work, the standby master will automatically replace the master to controls the whole system; when any auxiliary drive fails to work, the system will just skip it by and start the next one, ensuring the automatic shift of pump group.

6) The pumps run alternately (8hours by default) to balance every pump's running time to prolong service life of the whole unit machine.

2. Operating steps for multi-pump system

1) Set target pressure on master drive

At Stop status, directly press [UP] or [DOWN] (do not need to enter U parameter group) and hold for 3 seconds,then set the target pressure..

2)Set sensor type and sensor range on master and standby drive.

Function Code	Description	Set range	Unit	Default	Modification Level	Note
U0-03	Sensor type	0: (0-10) 1: (4-20) 5: (4-20)	V mA mA	1	●	0: V termial 1: C termial 5: C1 terminal
U0-04	Sensor Range	0.0-60	Bar	10	○	

3)Confirm each pump's rotation direction

If any pump's rotation direction is not correct, refer to one of the following 2 ways to change the the rotation direction:

a. Modify U0-02 value

b. Exchange any two of U/V/W wiring

4)Adjust display pressure

When display smaller than gauge,increase U0-05.When display bigger than gauge,decrease U0-05

5)Parameters setting for pumping system

Two pump system :

Drive type	Parameters setting
Master drive 1	U3-01=1,U3-03=2,
Standby drive 2	U0-10=2,U0-13=2,U3-01=2

Three pump system:

Drive type	Parameters setting
Master drive 1	U3-01=1,U3-03=2
Standby drive 2	U0-10=2,U0-13=2,U3-01=2,U3-03=2
Slave drive 3	U0-10=2,U0-13=2,U3-01=3

Four pump system:

Drive type	Parameters setting
Master drive 1	U3-01=1,U3-03=3
Standby drive 2	U0-10=2,U0-13=2,U3-01=2,U3-03=3
Slave drive 3	U0-10=2,U0-13=2,U3-01=3
Slave drive 4	U0-10=2,U0-13=2,U3-01=4

Five pump system:

Drive type	Parameters setting
Master drive 1	U3-01=1,U3-03=4
Standby drive 2	U0-10=2,U0-13=2,U3-01=2,U3-03=3
Slave drive 3	U0-10=2,U0-13=2,U3-01=3
Slave drive 4	U0-10=2,U0-13=2,U3-01=4
Slave drive 5	U0-10=2,U0-13=2,U3-01=5

Note: The screen display on standby and slave drives are running frequency (default setting)
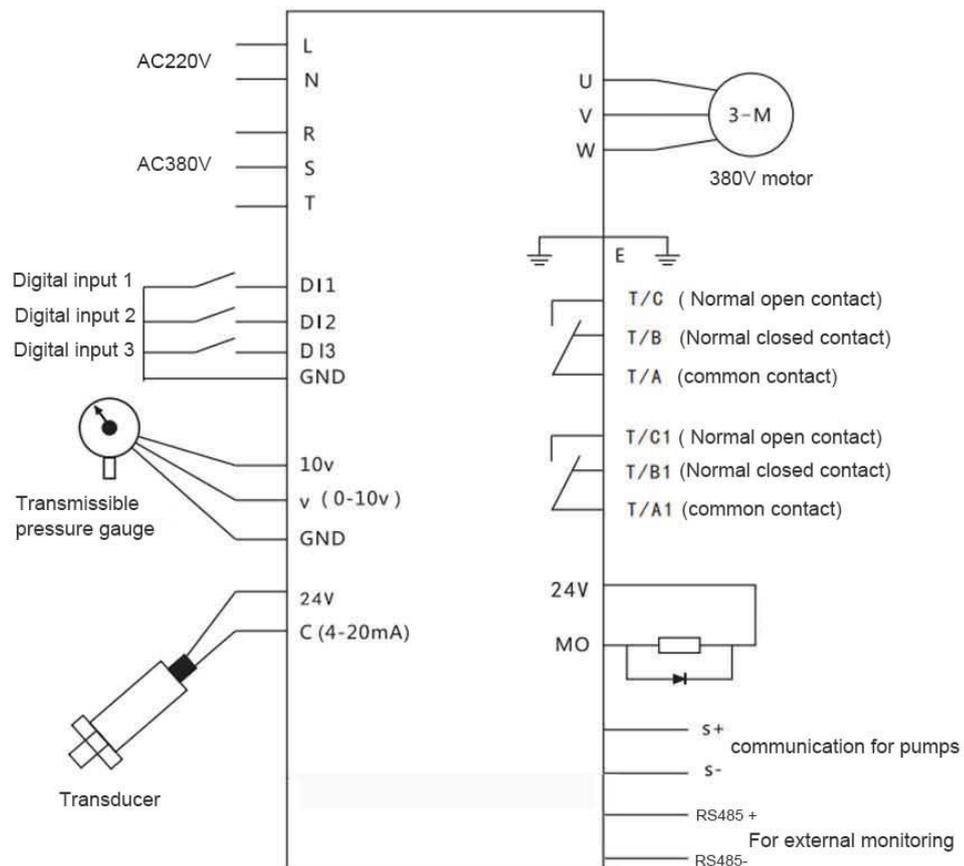
Terminal instruction

Terminal Name	Description
DI1,DI2,D3	Digital input Input voltage: 9~30V,input resistance: 10KΩ
V	Analog input ,input : 0~10V, input resistance: 6.8KΩ
C,C1	Analog input, current: 4~20mA, input resistance: 500KΩ
GND	Reference zero potential for 5V,10V,24V
10V	Output voltage, current:0-10mA
MO	Output terminal,external supply:0-24V,current:0-50mA
24V	24V output voltage
5V	5V output voltage

TA,TB,TC TA1,TB1,TC1	Relay output : TA/TC open,　TA/TB closed TA1/TC1 open,　　TA1/TB1 closed Contact capacity:　AC250V/3A,DC30V/1A
S+, S-	Pump communication
RS485+，RS485-	For external monitoring
A01	Output alalog,0-10v

Control Board Terminal Diagram

485+	485-	S+	S-	V	C	C1	+24V	D I1	D I2	D I3	T/A	T/B	T/C
	A01	GND	+10V	+5V	GND	COM	+24V	COM	MO	COM	T/A1	T/B1	T/C1

Wiring diagram of power board and control board

Common Alarm Codes And Solutions

Alarm code	Alarm Description	Possible reasons	Solutions
A-01	Water shortage protection	1. low inlet flow. 2. The power of drive is bigger than that of pump, Water pressure below 0.5bar. 3. U1-01 value is set too big.	1. Increase inlet flow. 2. Modify U1-00 value to be 2. 3. Modify U1-01 value to a small number.
A-02	High water pressure protection	1. Actual pressure exceeds 15bar 2. Transducer malfunction,the readout exceeds 15bar.	1. Modify U1-06 value to a bigger number. 2. Replace the failed transducer .
A-03	Low water pressure protection	1. Pressure below 0.5bar under the normal running status. 2. Pressure below 0.5bar ,the pump rotates reversely. 3. Water consumption is bigger than outlet flow. 4. U1-08 value is set too high.	1. Eliminate the air in the pump. 2. Adjust the rotation direction. 3. Increase the inlet flow 4. Replace with bigger size pump or reduce water consumption. 5. Change the U1-08 value to a small number.
A-04	Low current protection	1. Incoming water shortage. 2. The power of drive is bigger than that of pump. 3. U1-04 Value is set too high	1. Increase incoming water 2. U1-00 value is modified as 2. 3. U1-04 value is modified as a small number.

Fault Information And Trouble Shooting

Fault Code	Fault Type	Possible Reasons	Solutions
E-01	Output Short circuit	1. Output short circuit or connected to ground 2. Too heavy overload	1. Wiring inspection 2. Ask manufacturer for help
E-02	Over current in speed acceleration	1. Acceleration time is too short. 2. Torque boost is too high or V/F curve is not applicable	1. Increase acceleration time 2. Lower torque boost,Increase voltage to adjust V/F curve.
E-03	Over current in speed deceleration	Deceleration time is too short	Increase deceleration time
E-04	Over current in running	Abrupt load change	Reduce the fluctuation of load
E-05	Software over current	The same as E-01,E-02,E-03	The same as E-01,E-02,E-03

E-06	Internal communication problems	Hardware problems	Ask manufacturer for help
E-07	Grounding faults	1. The output end of drive or motor is connected to ground 2. The drive's input wire and output wire is connected together	1. Inspect wiring 2. Inspect if the motor has aging problems.
E-08	Over voltage in speed acceleration	1. Too high input voltage 2. Frequently switch on and off	Inspect the power and voltage
E-09	Over voltage in speed deceleration	1. Deacceleration time is too short. 2. Abnormal input voltage	1. Increase deceleration time 2. Inspect the power voltage 3. Use new brake resistor
E-10	Over voltage in running	1. Abnormal input voltage 2. Returned energy load	1. Inspect the power 2. Use new brake resistor
E-14	underload	1. Virtual connection of drive's output wire 2. No load	1. Inspect the wiring 2. Inspect load
E-15	Drive overload	1. Too big load 2. Too short acceleration time 3. Torch increases too high or V/F curve not applicable 4. Grid voltage is too low	1. Reduce load or use big power drive 2. Increase acceleration time 3. Lower torque,Increase voltage to adjust V/F curve. 4. Inspect grid voltage
E-16	Motor overload	1.Too big load 2.Too short acceleration time 3.Protection value is too small 4.Torch increases too high or V/F curve not applicable	1.Reduce load or use big power drive 2.Increase acceleration time 3.Increase overload protection value 4.Lower torque,Increase voltage to adjust V/F curve.
E-17	Current detection fault	1. Breakdown of circuit or detecting device. 2. Auxiliary power problems	Ask manufacturer for help
E-18	Undervoltage in running	1. Abnormal input voltage 2. Big load starts in power grid	1. Inspect power voltage 2. Supply electricity seperately
E-19	Open terminal external devices fault	External devices fault,Signal from input end	Inspect the signal and its related devices
E-20	Close terminal external devices fault	External devices fault,Signal from input end	Inspect the signal and its related devices
E-21	Drive overheating	1. Air passage blocked 2. The environment temperature is too high 3. Fan failed	1. Clean up the air passage 2. Decrease carrier frequency 3. Change fan
E-22	Input phase loss	1. Input voltage phase loss 2. Input voltage is too low	1. Check input wires connection 2. Check grid phase loss
E-23	Output phase loss	Poor connection between	Inspect wiring

E-24	Storage faults	Hardware fault	Contact manufacturer
		drive and motor	
E-25	Running time reaches set time	Running time reaches set time	Seek for service
E-26	PID feedback fault	1. PID feedback signal is lost 2. Transducer is broken 3. Feedback information does not meet setting	1. Check feedback passage 2. Check transducer for problems 3. Verify the correct feedback to meet the setting
E-27	Rs485 fault	Data transmitting and receiving mistakes under the serial communication	1. Check wiring 2. Contact manufacturer
E-28	Interference	Improper operation caused by the surrounding EMI	Use absorption circuit to eliminate the surrounding interference

Parameters Setting Table

Note: "○":The parameter can be modified in both standby and operating status.

"●": The parameter can't be modified in operating status

"◎": The parameter is the actual detected and recorded value which can't be modified.

U0 Basic Function Parameters Group						
Function Code	Description	Set range	Unit	Default	Modification Level	Note
U0-00	Target Pressure setting	0.5~60	Bar	3.0	○	
U0-01	Start Pressure Setting	0-U0-00	Bar	2.4	○	Wakeup from standby when pressure is lower than PID set pressure
U0-02	Running Direction	0:Forward 1:Reverse 2: Forbidden		0	○	Rotation direction can be changed or stopped by modifying the parameters
U0-03	Sensor feedback type	0: (0-10) 1: (4-20) 5: (4-20)	V mA mA	1	●	0: V terminal 1: C terminal 5: C1 terminal
U0-04	Sensor Range	0.0-60	Bar	10	○	
U0-05	Pressure Calibration Factor	(0~2.000)		1.000	○	Display pressure is lower than actual pressure,increase the factor,on the contrary,decrease the factor
U0-06	Water leakage	0: Close	Bar	1.5	○	The larger the

	Factor	0.0~100				leakage,the smaller the factor
U0-07	Detection Time Of Maintaining Pressure	3-6000	S	30	○	
U0-08	Sleep Frequency	0.00-100	Hz	30.00	●	
U0-09	Acceptable Pressure Deviation	0-10.0		0.5	○	
U0-10	Start and Stop controlling Mode	0:keypad 1:Terminal 2:Communication control		0	○	
U0-11	restart when Power is on	0: Invalid 1: Restart when power on		0	○	
U0-12	Auto-start delay	0.1-100.0	S	10.0	○	
U0-13	Frequency given	0:U0-14 1:PID 2:Communication (slave comm.2) 3.external controller (0-10v) 4.external controller(4-20mA) 5.C1 (4-20mA)		1	○	
U0-14	Hand input frequency	0.00-200	Hz	50.00	○	
U0-15	Max.Frequency	5.00-200	Hz	50.00	●	
U0-16	Upper limit Frequency	5.00-200	Hz	50.00	●	
U0-17	Lower limit Frequency	5.00-50	Hz	20.00	●	
U0-18	Acceleration Time	0.1-6000	S	4.0	○	
U0-19	Deceleration time	0.1-6000	S	4.0	○	
U0-20	Stop Method	0: Stop by deceleration 1: Natural Stop		0	○	
U0-21	Reserve	-----		----	○	
U0-22	Parameters Initialization	0-9999		0	●	11: Reset to factory setting 22:Clear up faults

U1 Pump Parameters Group						
Function Code	Description	Set range	Unit	Default	Modification Level	Note
U1-00	Water Shortage Detection Options	0: Do not detect 1:By current 2:By Press. 3:By current & press. 4:Water shortage		2		When water shortage terminal is chosen,U2-10 value should be set to be11
U1-01	Water Shortage Detecting Pressure	0-60.0	Bar	0.5	○	
U1-02	Water Shortage Detecting Frequency	0.00-100.0	Hz	45.00	○	Only detecting water shortage when running frequency is over set frequency
U1-03	Delay Time For Water Shortage Detection	0.1-999.9	S	50.0	○	
U1-04	Detecting Current For Water Shortage	Depending on motor type	A		○	Applicable for U1-00:1&3
U1-05	High Pressure Alarm Value	0-60.0	Bar	15.0	○	
U1-06	Detection Time For High Pressure Alarm	0.0-200.0	S	3.0	○	
U1-07	Low Pressure Alarm Value	0-60.0	Bar	0.5	○	
U1-08	Detection Time For Low Pressure Alarm	0.0-6000.0	S	60.0	○	
U1-09	Anti-Freezing Function	0: OFF 1: ON		1	○	
U1-10	Running cycle for anti-freezing	3-60000	Min	1500	○	
U1-11	Running Time For Anti-Freezing	0-6000	S	10	○	
U1-12	Anti-Freezing Running Frequency	0.00-100.00	Hz	30.00	○	
U1-13	No. of Automatic Alarm Recovery	0-1000		200	○	
U1-14	Automatic Alarm Recovery Time	0-60000	Min	10	○	
U1-15	Alarm recovery method	0:OFF 1:ON		111	●	

U2 Input & Output Parameters Group						
Function Code	Description	Set Range	Unit	Default	Modification Level	Note
U2-00	Min.Input V value	0.00-10.00		0.00	○	
U2-01	Frequency For Min.Input V Value	0.0-100.0	%	0.00	○	
U2-02	Max.Input V Value	0.00-10.00		10.00	○	
U2-03	Corresponding Frequency For Max.Input V Value	0.0-100.0	%	100.0	○	
U2-04	V Filter Time Constant	0.01-10.00	s	0.05	○	
U2-05	Min.Input C Value	0.00-20.00		4	○	
U2-06	Corresponding Frequency For Min.Input C Value	0.0-100.0	%	0.0	○	
U2-07	Max.Input C Value	0.00-20.00		20.00	○	
U2-08	Corresponding Frequency For Max.Input C Value	0.0-100.0	%	100.0	○	
U2-09	C Filter Time Constant	0.01-10.00	s	0.05	○	
U2-10	DI1 Multi-functional Input Terminal	0: No function 1:Forward running		1	●	11: Water Shortage Input
U2-11	DI2 Multi-functional Input Terminal	2:Reverse running 3:Fault 4:Haste stop 5:Restoration 6: PID closed		0	●	When D11 and GND are disconnected,water shortage alarm will be displayed on the screen.
U2-12	DI3 Multi-functional Input Terminal	7:Command by keypad 8: Command by terminal 9: Command by communication 10:Fault Input is closed permanently 11: Water shortage input		11	●	
U2-14	Mo output	0: No function 1: device on 2:fault		1	○	
U2-15	Relay1 (TA,TB,TC)	3:FD 4:FDT2 5: Zero		2	○	TA /TB normal closed, TA/TC open
U2-16	Relay2 (TA1,TB1,TC1)	6:Lower limit frequency running 7:Upper limit		1	○	TA1 /TB1 normal closed, TA1/TC1 open

		frequency running 8:Standy mode 9:Sleeping 10: Reach temperature					
U2-17	Valid DI1 input delay	0.0-3600.0	s	0.0	○	
U2-18	Invalid DI1 input delay	0.0-3600.0	s	0.0	○	
U2-19	Valid DI2 input delay	0.0-3600.0	s	0.0	○	
U2-20	Invalid DI2 input delay	0.0-3600.0	s	0.0	○	Relay TA/TB/TC
U2-21	Valid DI3 input delay	0.0-3600.0	s	0.0	○	
U2-22	Invalid DI3 input delay	0.0-3600.0	s	0.0	○	
U2-23	Mo output delay	0.0-3600.0	s	0.0	○	
U2-24	relay output delay	0.0-3600.0	s	0.0	○	
U2-25	Relay1 output delay	0.0-3600.0	s	0.0	○	

U3 Advanced Parameters Group						
Function Code	Description	Set Range	Unit	Default	Modification Level	Note
U3-00	Baud rate	5:9600 6:192100 7:38400		6	●	
U3-01	Address	3~5 for auxiliary drive. 1,2 for master drive		1	●	
U3-02	Alternation time	0-60000	min	480	●	
U3-03	Auxiliary drive quantity	0-4		0	●	
U3-04	Multi-pump control method	0: master-slave control 1:Synchronous control		0	●	
U3-05	Pump-adding delay	0.1-600.0	s	1.0	●	
U3-06	Pump-reducing delay	0.1-600.0	s	0.1	●	
U3-07	Start of standy master delay	0.1-30.0	s	5.0	●	
U3-08	Baud rate	5: 9600 6: 19200 7:38400		5	●	
U3-09	Standard protocol address	0-247		1	●	
U3-10	Screen Display Under Stop Status	0-9		204	○	Refer to d monitoring parameters group

U3-11	The First Display Parameter Under Running Status	0-4		4	○	Refer to d monitoring parameters group
U3-12	Carrier Frequency	1-12		6	●	
U3-13	Torque Enhancement	0-20.0	%	4.0	●	Depending on motor
U3-14	Low Frequency Vibration Suppression Intensity	0-100		100	○	
U3-15	High Frequency Vibration Suppression Intensity	0-100		0	○	
U3-16	The Turning Point Between Low & High Frequency	5.00-50.00	Hz	20.00	●	
U3-19	Sleeping Delay Time	1.0-200.0	s	1.0	○	
U3-20	Proportionality Factor	0.0-50.0		10.0	○	
U3-21	Integral Time	0.1-100.0	s	0.6	○	
U3-29	Effective Selections For Multifunctional Input Terminal	0: Regular 1: Low effective		0	●	
U3-30	Inspection Value For Feedback Line Broken	0.0-100.0	%	5.0		
U3-31	Time For Recognizing Feedback Line Broken	0.0-3000.0	s	10.0	○	0.0 represents do not recognize
U3-32	Motor type	0: asynchronous 1:Permanent magnet synchronous		0	●	
U3-33	Motor Rated Power	1-1000	KW		●	Depending on motor type
U3-34	Motor Rated Rotation Speed	1-10000	rpm		●	Depending on motor type
U3-35	Motor Rated Voltage	1-800	V		●	Depending on motor type
U3-36	Motor Rated Current	0.1-1000.0	A		●	Depending on motor type
U3-37	Motor Rated Frequency	5.00-200.0	Hz		●	Depending on motor type
U3-38	Output Phase loss Protection Selection	0: OFF 1: ON		1	○	
U3-40	Motor Overload Gain Protection	20.0-1000.0	%	100.0	○	
U3-41	Quick current limit	0: OFF 1: ON		1	○	
U3-42	Overvoltage (stall speed) Protection Voltage	120-150	%	130	○	
U3-43	Overcurrent Stall Speed Gain	0-100.0	s	20	○	
U3-44	Overcurrent (stall speed)Protection Current	100.0-200.0	%	160	○	
U3-45	Low Voltage Protection Current	70.0-100.0	%	100.0	○	
U3-46	Auto Fault Reset times	0-20		3	○	
U3-47	Fault Reset Interval Time	0.1-100.0	s	10.0	○	
U3-54	Sleep Section	0: OFF 1:ON		1	●	

| U3-55 | Input phase loss protection | 0: OFF
1:ON | | 1 | ● | |

d monitoring parameters group

| d-00: Output frequency
d-03: Temperature
d-06: Feedback pressure
d-09:Accumulated power-on time(0-65535H)
d-12:DI input
d-14:The second fault type
d-17: Current when faults happen
d-20: Fault time
d-21:Feedback pressure when faults happen | d-01: Output current
d-04: Set pressure-current pressure
d-07:Set speed
d-10: V input voltage value
d-13:The first fault type
d-15:The third fault type
d-18: Bus voltage when fault occur | d-02: Bus voltage
d-05: Set pressure
d-08:Accumulated running time(0-65535H)
d-11:C input current value
d-16:Fault frequency
d-19:Internal Temperature when faults happen |