

MINCO 500V2 genset controller operating instruction manual

The generator-set controller MINCO 500V2 adopt high performance microprocessor and industrial class devices, 128×64 dot LCD, with manual menu. It have the properties of compact structure, marked display and convenience install. The controller can control the generator startup or stop , detect and measure the work state of the generator, realize the auto-protect function. When the normal supply is broken-down, it can auto-startup the generator, and provide remote control function.

I Characteristic

1. The measure of real valid value about AD voltage and current.
2. The run parameters about LCD screen of 128 × 64 lattice, it has background light, the color have blue or yellow- green.
3. The controller control the generator by either press key, or switch input, or communication interface.
4. With the remote control interface, can set the delay time of start and stop. It can auto start , stop and provide power onload.
5. With control output: idle, acceleration, deceleration, onload and pre-fuel. Idling and ACCeleration/DECeleration are quickly under the control of compatible.
6. Have two velocity source : frequency input or speed sensor input
7. Auto record the start times and run time of gen-set.
8. With protect function include high coolant temperature, low oil pressure, over speed, emergency stop and over crank.
9. With RS232 communications port, attaching remote control program.
10. Chinese and English language choice , double language menus.



II The front-panel function explain

The front panel of MINCO 500V2 gen-set controller have one 128×64 dot LCD screen, seven press-keys and eight LED lights. The press-keys control the generator, the indicator lights combine the LCD screen indicate the parameter, state and failure of gen-set.

1. The control key explain

RUN: When press this key, the above green LED always bright, indicate controller is be placed in "start state", directly manual start generator, and has been keep running.

AUTO:When press this key, the above yellow LED always bright, indicate controller is be placed

in "automatic state", the controller receive the "remote start" switch signal, if this switch is close, then postponing starting the generator; Otherwise will delay stop machine. To realize the auto-start control of gen-set, "Remote start" switch signal can be provided by the detect module of the normal supply. If the gen-set are reset by the "remote reset" switch, then after the switch of the "remote reset" is opened, the controller is placed in automatic state.

RESET :When press this key, the above red LED always bright, indicate controller is be placed in "STOP/RESET" state, if at this time generator just in the running, press this key will shut down immediately.

ESC ( / **LEFT**)

+ ( / **UP**)

- ( / **DOWN**)

ENTER ( / **RIGHT**)

+ and **-** key always used for switch the LCD content , combining the state indicator LED of the front-panel, can check out all parameters and state of input, output interface directly.

ESC **+** **-** **ENTER** The four keys combine all parameters of controller to check out or set.

2. Explain of the LED light

The front-panel of the controller has 7 indicator LED light, they denote the state or alarm of controller and generator:

Indicator light of the start state (green)-the designation controller be placed in " start state";

Indicator light of the auto state (yellow)-the designation controller be placed in "auto state";

Indicator light of the shut down/reset state(red)-the designation controller be placed in "shut down/reset "state;

Indicator light of the remote start (yellow)- Indicator the input port of “ remote start” was closed;

Indicator light of the onload (yellow)- Indicator the output port of “emerg. Supply” was closed, load supplied on gen-set;

Indicator light of failure (red)-denote the failure of gen-set ,having already shut down to protected, concrete failure reason to show on the LCD screen;

Indicator light of alarm (red)- denote the alarm information of gen-set, concrete reason to show on the LCD screen;

3. LCD

Under the normal appearance state (not set state and not failure state), the LCD is divided five screen to show all measurement parameters and state of input or output of gen-set. Press **+**, **-** key, will switch show on five screen, the contents on each screen are:

- 1) gen-set three-phase voltage, load three-phase current;
- 2) gen-set frequency, gen-set speed, work time of the gen-set, start(success) number of times of gen-set;
- 3) analog input: coolant temperature, oil pressure, option input , battery voltage(the contents of the behind brackets is corresponding state of switch);
- 4)state of output switch (0 denote opened , 1 for closed): start, fuel, failure, pre-fuel, running, idle;
- 5) state of input switch (0 denote opened, 1 for closed): emergency stop, remote reset, ACCeleration limit, DECeleration limit ;

If the show switch mode is set the “ auto switch ”, then separating about 10 seconds , the show contents of the auto switch LCD are switched to next screen, equal to press once key. If didn't operate any key over a minute, the LCD screen would close the background light automatically, until pressed arbitrarily a key to just open the background light. When close the background light, the LCD screen could not see the display contents, don't worry to be failure of controller.

4. Failure and alarm denote

If the indicator light of failure is bright, it denote the gen-set to appear failure, have already shut down to protect, the LCD screen stop show the normal information at this time, but shows concrete failure reason, and keep long light with the back towards brightness. the possible failure reason have:

The current of the gen-set over limit, gen-set onload fail, lose the rotate speed signal, over crank (gen-set fail to start) , low oil pressure, high coolant temperature, over speed , the frequency of the gen-set over limit, the voltage of the gen-set over limit, the option input over limit (once "option input respond" parameter set to “alarm and shut down”), emergency stop, low battery voltage.(once " low battery voltage respond " set to “alarm and shut down”)

Once the gen-set appears to failure lead to shut down to protect, the reason of failure will be locked, the LCD screen stop normal manifestation, the gen-set can't re-start again. Have to wait to failure is expel, and after press key to reset, the LCD screen then can recover normal manifestation, and start the gen-set again.

If the “alarm” indicator is bright, denotes gen-set appears the alarm information, on the LCD screen to anti-show the parameter item .Appear the alarm information will not influence the work of the gen-set, just reminding the operator an attention to process. The possible alarm information have:

Alarm of option input (once "option input respond" parameter set to “alarmv but no t to shut down”), alarm of low battery voltage (once "low battery voltage respond " set to “ alarm but not to shut down “) , alarm of ACCeleration failure ("ACCeleration limit" is anti-show), alarm of DECeleration failure ("DECeleration limit" is anti-show).

III Parameter setup

All parameters can read and write through the communication port, the detailed parameter circumstance is written in communication protocol agreement. Except input the curve data of coolant temperature, oil pressure and option input sensors, all parameters can setup on the front-panel keys of the controller.

When press **ENTER** key after, the LCD screen stops a normal display, entering set state, showing the first class setup menu. The first class menu has four items: alarm limit setup, measure data adjust, delay time parameter adjust, system parameters adjust. Press **+**, **-** key choice item, the items chosen are anti-show; Press **ESC** key, then exist the set state. Press **ENTER** key, enter next class menu of pick out the item. If over a minute didn't operate any key, will exist the state of parameter set automatically to avoid change parameter setup by an illegal operation personnel.

1. Alarm limit setup

The second class menu of "alarm limit setup" has ten items: upper limit of voltage, lower limit of voltage, upper limit of current, upper limit of the frequency, the lower limit of frequency and the upper limit of rotate speed, the upper limit of coolant temperature, the lower of oil-pressure, the upper or lower limit of option input (an upper or lower limit is confirmed by "alarm mode of option input"), the lower limit of battery, Acceleration upper limit, Deceleration lower limit. The right side of the menu is the corresponding parameter data of the item. If coolant temperature, oil pressure, option input are set alarm by switch input, then the setup limit of alarm is invalid.

Press **+**, **-** key choice item, pick out of the item is anti-show; press **ESC** key back to the first class menu; Press **ENTER** key, enter setup parameter state of the pick out item, the underline will appears under the parameter data at this time, mean that parameter to being operated. The first bit of parameter is anti- showed, mean can change this data.

After entering the parameter setup state, press **+**, **-** key can change the data of anti-show; press **ESC** key, the bit of anti-show is shifted to left. After shift to the first bit, again press **ESC** key, then turn back to the second class menu, the parameter will not be changed; press **ENTER** key, the bit of anti-show is shifted to right, after shift to the last bit, again press **ENTER** key, then turn back to the second class menu, the parameter will be saved.

2. Measure data adjust

The second class menu of "measure data adjust" have 9 items: A phase of voltage, B phase of voltage, C phase of voltage, A phase of current, B phase of current, C phase of current, battery voltage, adjust of coolant temperature, adjust of oil-pressure, adjust of option input. The item of right side the menu is the real-time data of measuring. The customer decided whether it is need to adjust the data according to the error between the true data and measure data about

MINCO 500V2. The MINCO 500V2 controllers all have already carried on the data adjust at factory, but that may have certain deviation in the actual usage environment. If the deviation is in the tolerance scope, that suggest customer do not need to adjust the date again. Especially the three-phase current. If the deviation is very great, it is must need to adjust, please reed first the «the simple explain of setting MINCO 500V2» .

Press , key to choice item, pick out of the item is anti-show; Press key backing out to the first class menu; Press key, enter data adjust state of chosen item, underline of the parameter data will appears at this time, mean that parameter to be operating. The first bit of Parameter is anti- show, mean can change that data.

After entering data adjust state, Press , key to the anti-show data; press key, the bit of anti-show is shifted to left, after shift to the first bit, again press key, then turn back to the second class menu, the data adjustis canceled; press key, the bit of anti-show is shifted to right,, after shift to the fourth bit, again press key, then turn back to the second class menu, the data adjust is accomplished, the parameters are saved.

For the adjust of the three phase voltage, three phase current and the battery voltage, after entering the data adjust state, first change the data to be show the correct data, then press key to accomplish data adjust(the current reserve two fractions, the battery voltage reserves one fraction). But adjust of coolant temperature, oil pressure and option input is different. The MINCO 500V2 controllers provided spinner of this three parameters, MINCO 500V2 provides adjustment spinner scopes about $\pm 10\%$. What need to be explain specially, the sensor of the coolant temperature and oil pressure etc, is probably a positive coefficient deviation (The output of sensor is increased with input augment), is also probably a negative coefficient deviation (The output of sensor is reduced with input augment). The adjustment result of increasing or reducing the adjust value is decide by the actual circumstance.

3. Delay time setup

The second class menu of “delays time” has 22 items : the delay of remote reset, the delay of remote start , the delay of cycle crank space , the delay of crank time, the delay of the bypass monitor, the delay of ETS fuel, the delay of pre-fuel, the delay of idle acceleration (up speed to start), the delay of idle deceleration (down speed to shutdown), The delay of ACCeleration, the delay of low oil pressure alarm, the delay of high coolant temperature alarm, the delay of over speed, the delay of option input alarm, the delay of lose speed, the delay of low battery voltage, the delay of retransform, the delay of over load, the delay of genset voltage over limit, the delay of genset frequency over limit, the delay of warm up machine, the delay of DECeleration. The right side of the menu item is the real time work state of corresponding item. The customer can judge the work state of gen-set, according transformation of delay time. These are very useful to debug and maintenance the gen-set.

Press , key to choice the item, pick out of the item is anti-show; press key back

to the first class menu; Press **ENTER** key, enter the state of parameter setup about pick out the item, at this time the underneath of the parameter data appears lineation, mean that parameter to be operating. The first bit of Parameter anti- show, mean can change that data.

After entering the parameter setup state, press **+**, **-** key to change the data of anti-show; press **ESC** key, the bit of anti-show is shifted to left, after shift to the first bit, again press **ESC** key, then backing out second class menu, the parameter is not changed; press **ENTER** key, the bit of anti-show is shifted to right, after shift to the last bit, again press **ENTER** key, then backing out second class menu, the change of parameters are saved. The upper limit of delay time can't more than 255 seconds, if setup data is more than 255s, systems change to 255s compulsively.

Delay time explain:

- 1) The delay of “crank” - When crank gen-set, the delay begin. The period of delay that examine start successful condition(the rotate speed of gen-set > trip speed or speed lower limit), if the condition is satisfied, then think the gen-set is started and terminate the delay.
- 2) The delay of “cycle crank space” - After the crank delay be over, if the start condition is not yet satisfied and the crank number of times come closed of a set value, then begin to cycle crank space delay. While delay is over, crank delay again, crank number to add 1 in the meantime.
- 3) The delay of “bypass monitor” -After the gen-set start successfully, that begin to start delay of the bypass. The term of delay ,no monitor " low oil pressure ", " high coolant temperature " etc, to avoid mistake alarm when gen-set in start early.
- 4) The delay of “remote start” - In the "auto" state of controller, when the "remote start" switch to shut, the delay is begin, after the delay, begin to start the gen-set.
- 5) The delay of the “remote reset”- In the "auto" state of controller, when the "remote start" switch to shut, the delay is begin, after the delay, to stop the gen-set.
- 6) The delay of “ETS fuel” - Only when the system is established "ETS(energize to stop) fuel". The delay of ETS(energize to stop) fuel was acting. At this time, the output of "fuel" is equivalent with stop machine. While stop machine, the relay of "fuel" is in the closed state, the delay of ETS(energize to stop) fuel begin to work. After delay is over and the oil pressure is low, the relay of "fuel" will break.
- 7) The delay of “pre-fuel”-Before the gen-set to start, that begin the delay of pre-fuel. At the same time, the relay of “pre-fuel” to closed. After the delay be over, the relay of pre-fuel to open, the gen-set start to crank.
- 8) The delay of “idle acceleration” - After the gen-set start successfully, the delay of idle acceleration is begin, in the term of delay, the relay of “idle ” begin to work.
- 9) The delay of “idle deceleration” -When start stop machine, the delay of idle deceleration is begin. In the term for delay, the relay of “idle ” begin to work.
- 10) The delay of “ACCeleration”- After the gen-set start successfully and the the delay of “idle acceleration” was over, the delay of acceleration is begin. in the term of delay, the relay of “ACCeleration ” closed. Still, if the delay is over fail to monitor to acceleration to place signal, "acceleration failure" to report an alarm.
- 11) The delay of “low oil pressure alarm”-When genset running, if the pressure of oil is over low, the delay is begin. In the term of delay, if the oil pressure comeback normal state, the delay will be interrupt. After the delay is over, if the oil pressure is over low yet, that will appear the alarm of “low oil pressure”.
- 12) The delay of “high coolant alarm”-It is similar to the delay of “low oil pressure alarm”.

- 13) The delay of “over speed”-When the genset rotate speed is over speed upper, the delay is begin. In the term for delay, if the speed of gen-set comeback normal state, the delay will be interrupt. After the delay is over, if the speed yet be overed, that will appear the alarm of “ over speed”.
- 14) The delay of “option input alarm” - It is similar to the delay of “low oil pressure alarm”.
- 15) The delay of “lose speed”-If not detect the speed signal in the term of starting or running, the delay of “lose speed” is begin. If no yet detect the speed signal, when the delay is over, that will appear the alarm of “ lose speed”.
- 16) The delay of “low battery voltage ”- It is similar to the delay of “low oil pressure alarm”.
- 17) The delay “retransform” –It begin to work, if the normal supply comeback normal state after gen-set on load. The normal supply must be stable for period of time, until the delay retransform is over that switch to normal supply on load.
- 18) The delay of “over load” - It is similar to the delay of “low oil pressure alarm”.
- 19) The delay of “genset voltage over limit” - It is similar to the delay of “low oil pressure alarm”.
- 20) The delay of “genset frequency over limit” - It is similar to the delay of “low oil pressure alarm”.
- 21) The delay of “DECeleration”- When the gen-set shut down, the delay of acceleration is begin. in the term of delay, the relay of “DECeleration ” closed. Still, if the delay is over fail to monitor to deceleration to place signal , "deceleration failure" to report an alarm.
- 22) The delay of “warm up”-It is between gen-set starting successfully and supply to load. It will extend the time of genset providing power to load. If not a emergency state, it can make supply until the gen-set reach to optimal work state , and can availably letdown the abrasion of gen-set.

Note: If the parameter of delay is setted “zero” that will have a delay less than 1s.

4. System parameter settings

The second class menu of “alarm limit set” has 16 items: trip speed (genset speed lower limit), current transformer(CT) rate , change password, module address, crank number, flywheel tooth number, speed source, fuel mode, reaction of coolant temperature , reaction of low oil pressure, option input sensor select, reaction of option input , reaction of low battery voltage, alarm mode of option input , voltage measure mode, display change mode. The right of menu is parameter data of corresponding item.

Press , key to choice the item, pick out of the item is anti-show; press key to backing out to the first class menu; Press key, enter the state of parameter setup about pick out the item , at this time the underneath of the parameter data appears lineation, mean that parameter to be operating. The first bit of Parameter anti- show, mean can change that data.

After entering the parameter setup state, press , key to change the data of anti-show ; press key, the bit of anti-show is shifted to left, after shift to the first bit, again press key, then backing out the second class menu, the parameter is not changed; press key, the bit of anti-show is shifted to right, after shift to the last bit, again press key, then backing out second class menu, the change of parameters are saved.

System parameters explain:

- 1) Trip speed (genset speed lower limit)-While starting the gen-set, if examine to the rotate speed more than the trip speed (genset speed lower limit), then think the gen-set start success and stop crank immediately. The trip speed (genset speed lower limit) is generally set for 1/3 of the

gen-set rating speed.

- 2) Current transformer(CT) rate-the set of current transformer(CT) rate correspond to ratio 5. For example, if the set of current transformer(CT) rate is 500, practically correspond to 500:5.
- 3) Change password-the factory password is “8421”, consumer can change to own password.
- 4) Module address- only when multi - module compose networks, to distinguish multi equipments.
- 5) Crank number-when gen-set start, if the times of continuously failure start exceed the parameter, that will lead to the alarm of “over crank”.
- 6) Flywheel tooth number-it is only valid when “speed source” is set “speed sensor”.
- 7) Speed source – “0”: frequency of gen-set, “1”: speed sensor.
- 8) Fuel mode- “0”: Energize To Run (ETR), fuel when starting genset. “1”: Energize To Stop(ETS), fuel when shutdown genset, at this time, fuel mean “stop” machine.
- 9) Coolant sensor select - “0”: alarm by the high coolant temperature switch , “1”: alarm by the the analog sensor of coolant temperature.
- 10) Oil pressure select – “0”: alarm by the low oil pressure switch , “1”: alarm by the analog sensor of oil pressure.
- 11) Option input sensor select – “0”: switch , “1”: analog sensor.
- 12) Reaction of option input – “0”: alarm and stop , “1”: only alarm.
- 13) Reaction of low battery voltage- “0”: alarm and stop , “1”: only alarm.
- 14) Alarm mode of option input – “0”: on lower, “1”: on higher.
- 15) Mode of voltage measure- “0”: measure the phase voltage, “1”: measure the line voltage.
- 16) Display change mode- “0”: manual switch, “1”: auto switch.
- 17) Language choice- “0”: Chinese , “1”: English .

5、The interface of password verification

While enter into the setting mode, screen should display the first menu. That have four items : alarm settings, analog adjust , delay settings, system parameter settings.

If you selected alarm settings menu, every one can enter view and modified.

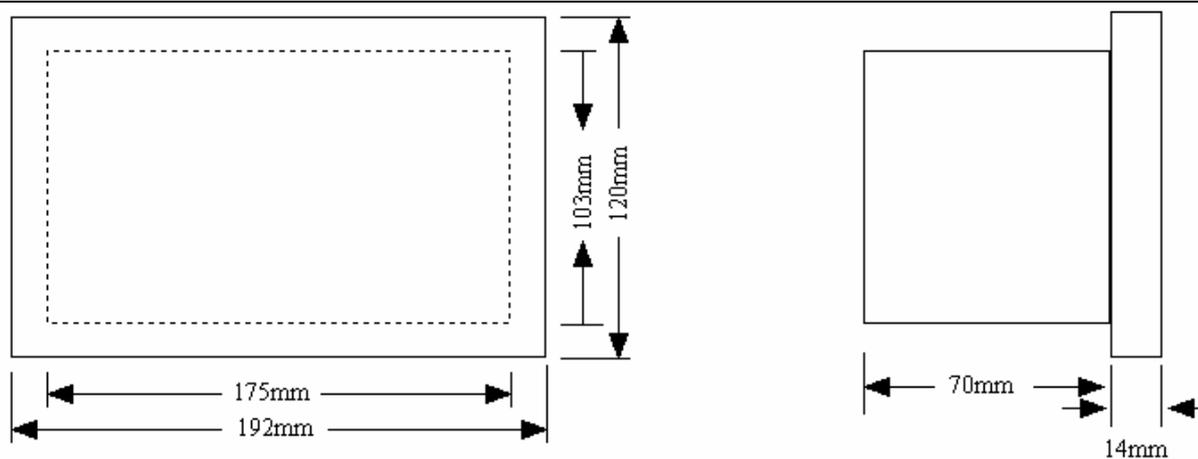
If you want to change the value of measurement, delay time and the system parameter settings, you must be entrance the interface of password confirmed, and then. Press , key to change the data of anti-show, Pressed the key of , the cursor will be moved to left, moved to the first position, when you pressed again on the key of , the system setting will return to the first menu, press the key of [set], the cursor will be moved to left, moved to the last position, when you pressed again on the key of , the system setting will return to the second menu. If the password is mistake, the system will request to input the password again.

IV. The illustration of controller’s port

1. The input port of rotate speed sensor (magnetic pickup)
 - Port 35- the single input of rotate speed.
 - Port 36- GND (connect with battery cathode)
2. The input port of switch signal (attached optoelectronic isolator, effective work when connect with GND)
 - Port 34- Emergency shut-down
 - Port 33- remote start
 - Port 32- remote reset
 - Port 31- high Coolant temperature

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- Port 30- low oil pressure
 - Port 29- Option input
 - Port 28- ACCeleration limit
 - Port 27- DECeleration limit
3. Relay output port (relay isolation, touch dot tolerance 2A/250V)
 - Port 26- start output
 - Port 25- fuel output (fuel when ETR /stop machine when ETS)
 - Port 24- common shutdown
 - Port 23- pre-fuel/preheat
 - Port 22- ACCeleration
 - Port 21- DECeleration
 - Port 20- emergency(gen-set) supply on load
 - Port 19- common port, except for idle speed all output relay have one touch dot connect to the common port.
 - Port 17, Port 18- idle speed output (it is sole touch dot).
 4. Provide power (range: 8~36VDC)
 - Port 1- Connect to the positive of battery. When control work normally, the current of power is less than 300 mA.
 - Port 2- Connect to the battery cathode (GND).
 5. Analog input (the range of input voltage:0~4.0 V DC).
 - Port 3- analog ground(AGND), connect to battery cathode inside.
 - Port 4- option input
 - Port 5- oil pressure input
 - Port 6- coolant temperature.
 6. Three-phase voltage input of gen-set (voltage transformer isolated inside the controller,0-300V AC)
 - Port 7- A phase voltage of gen-set
 - Port 8- B phase voltage of gen-set
 - Port 9- C phase voltage of gen-set
 - Port 10- zero line
 7. Three-phase current input of load (current transformer isolated inside the controller, 0-5A AC)
 - Port 11, Port 12- A phase current of load
 - Port 13, Port 14- B phase current of load
 - Port 15, Port 16- C phase current of load

V Size of form and outside wiring diagram

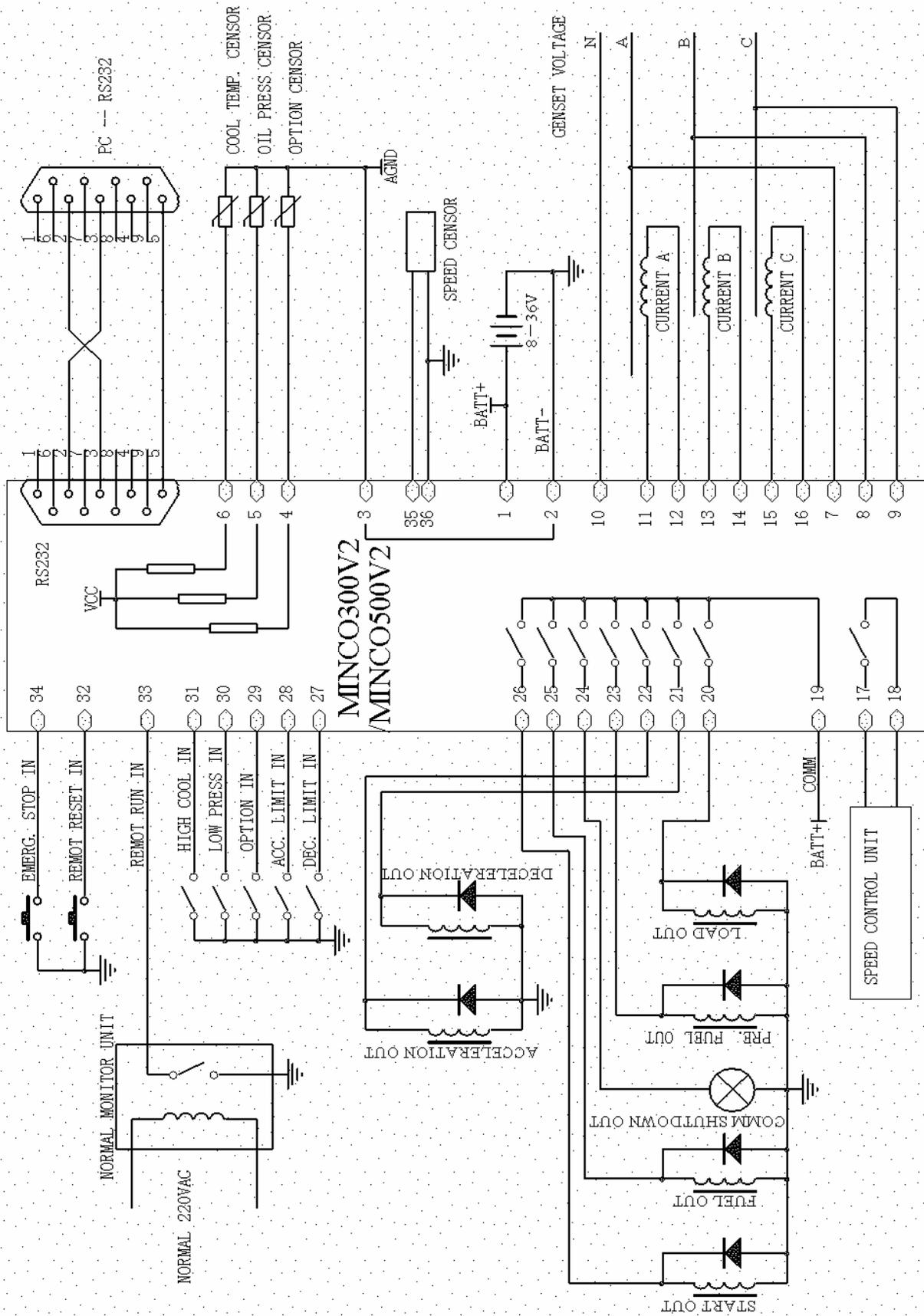


Size of form: 192 mm (Wide) × 120 mm (High) × 14mm (Deep) (front panel)

175 mm (Wide) × 103 mm (High) × 70 mm (Deep) (back shell)

Hole size of panel: 176 mm (wide) × 104 mm (high)

Outside wiring diagram (auto start, Auto Transform Switch state):



MINCO300V2/MINCO500V2 GENSET CONTROLLER LINE CONNECTION

Explanation: :

1. When output to connect the inductance property load (such as RL), you need to plus the current absorption electric circuit in outside wiring, otherwise will probably influence controller to work normally.
2. Compatible ACCeleration/DECeleration and idle controls way two kinds. If using idling way, must connect the "ACC limit" and "DEC limit" this two input switch with "GND", the MINCO 500V2 will skip acceleration and deceleration control; If using ACCeleration/DECeleration way, does not think that idle exports, only requires setting up the delay of "idle acceleration" and the delay of "idle deceleration" to be OK then.
3. If using ACCeleration/DECeleration way, require cut-over to "ACC limit" and "DEC limit" two import switch. But under some condition, position-limit protection is to be used for on ACC/DEC organization but not be had the position-limit signal to provide with MINCO 500V2. Now, MINCO 500V2 also can carry out regular ACC/DEC of speed controls, be only job giving an alarm, only not affecting regularity of the genset that can appear to "ACC failure" and "DEC failure".
4. The input port of "remote start" can also connect to the timer or other devices, to realized time start machine automatically and others.
5. That if engine take is loaded with is to decide from "remote start" switch input, if the engine is to get it in gear according to press START button, the engine is to be not automation being loaded with as long as the "remote start" switch input is no closure. therefore the consumer wants to pay attention to this one point specially if having no need of automation starting engine when applying, require that hand movement starts an engine as well as being loaded with, definitely being asking to short circuit that GND with "remote start" switch input only.
6. The input sensor's allotted resistance of coolant temperature. Oil pressure. Option input have differently hinder value to mate differently machine sensor (refer to communication protocol). The inside of MINCO 500V2 controller have had three 150 Ohm allotted resistance, so not need to connect the allotted resistance outside.
7. The speed sensor (magnetic pickup) put to near the flywheel to pickup the machine rotate speed, if the MINCO 500V2 controller set "speed source" was "genset frequency" (the factory default set) and not need connect the sensor.

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Appendix 1 : The simple explain of setting MINCO 500V2

I. Debugging mode: Please use our company provide the “mcviewer-500 genset Control System” software to set and adjust controller ,and through the computer’s RS232 communication port .

II. Link method: Follow the subsidiary controller communication line to connect the computer and MINCO 500V2; and install the “MCviewer-500V2 genset Control System” in computer. After installation success, running “MCviewer-500V2 genset Control System”, entrance monitor program select the used serial port (default for serial port 1) , if the communication is right, "Comm State " red light turn to green light, monitoring software begin normal receive data from MINCO 500V2 controller. If the communication incorrect, " Comm State " light is yellow. Needing to check at this time is what reason cause of the communication fail (select communication port mistake, the string line is tottering, etc.), if can’t be certain the reason of the MINCO 500V2 controllers, please connect with manufacturer technologist .

III. Menu explain: While monitoring software and MINCO 500V2 controller switch normal, it could monitor MINCO 500V2 controller’s all of parameter, and operating some settings. Click "system parameter setting" monitor window, all the MINCO 500V2 controller’s control parameters is divided. Be marked " delay set 1","delay set 2","analog adjust ", " parameter", " control set", "alarm set " etc. Several window body in this constitution, easy to setting for correspond. Each window body has four buttons : "Read Module", "Write Module", "Read Disk", "Write Disk".

" Read Module ": Press this button, should limit MINCO 500V2 controller parameter to monitoring software, and show in the monitoring software .

“Write to module”: Press this button, MINCO 500V2 controller data biography is arrived at monitoring the software and display .

" Write Module ": Press this button, Deliver to monitoring the data hair that the software demonstrates to the MINCO 500V2 controller.

"Read Disk": Press this button, Playback and demonstrate the data that this locality preserves on monitoring software.

" Write Disk ": Press this button , The data will monitor software display is preserved to local place.

Especially attention: Initial stage starting linking the MINCO 500V2 controller, "system parameter setting" page display the data is blank space. Ask the first pieces of thing composing to it is to strike "Read Module", under the control of parameter that being really showing on the monitor routine now biography to over in the inside of MINCO 500V2.

IV. Parameter settings: The MINCO 500V2 controllers have already set parameter at factory, most parameters are in general use, don't need to set again. Only have a little amount parameter of "CT rate", "phase/ line voltage select", "voltage upper limit", " voltage lower limit", " current being over load " etc, require that the consumer carries out corresponding adjustment according to concrete electricity allocation. Change some's parameters with delivering to monitoring the data hair that the software demonstrates to the MINCO 500V2 controller , being page of all face parameters's turn to be going to write in the MINCO 500V2 controller now setting up last strike "write module " button. **So suggestion customer click"Read Module" button first before changing a certain parameter, have read MINCO 500V2 controller parameter out first , have changed in order to avoiding changing some's parameter time mistake other parametric.** Suggest that change the parameter, to click a" write module " button each time, send the parameter to MINCO 500V2 controllers. The MINCO 500V2 controllers save the parameter to RAM, it need certain time . If the parameters changed too many, it is too late probably that MINCO 500V2

controllers save the parameter to RAM. Although the MINCO 500V2 controller at present for the time being not likely works, once the MINCO 500V2 controller blackout and power on again, may possibly make mistakes since the parameter does not preserve to the RAM. So, as one assure method, suggesting customer after doing all parameter set, closed the power of controllers, wait for several ten seconds, again give power. Enter into the supervision software to click" read module " button, read the data of the MINCO 500V2 controllers to the supervision software, check all parameter set whether is consistent with prepare to think of. If inconformity (smallest possibility), set again until right.

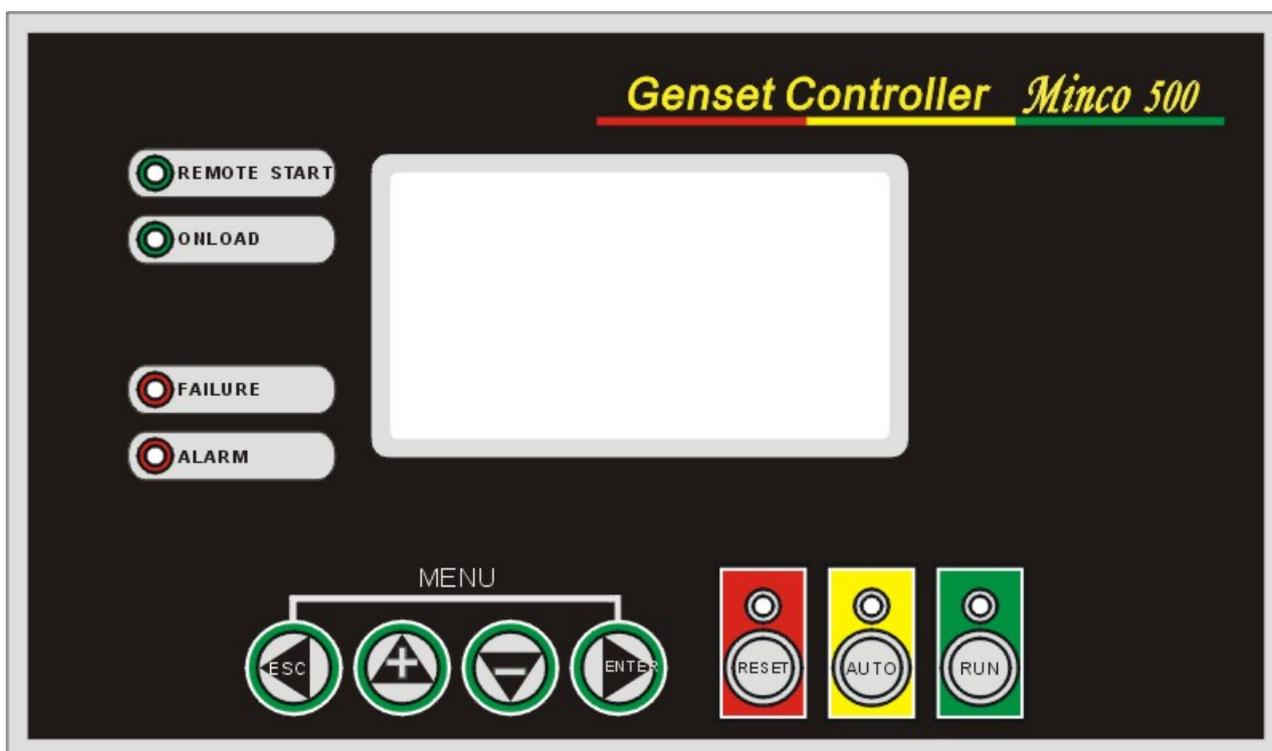
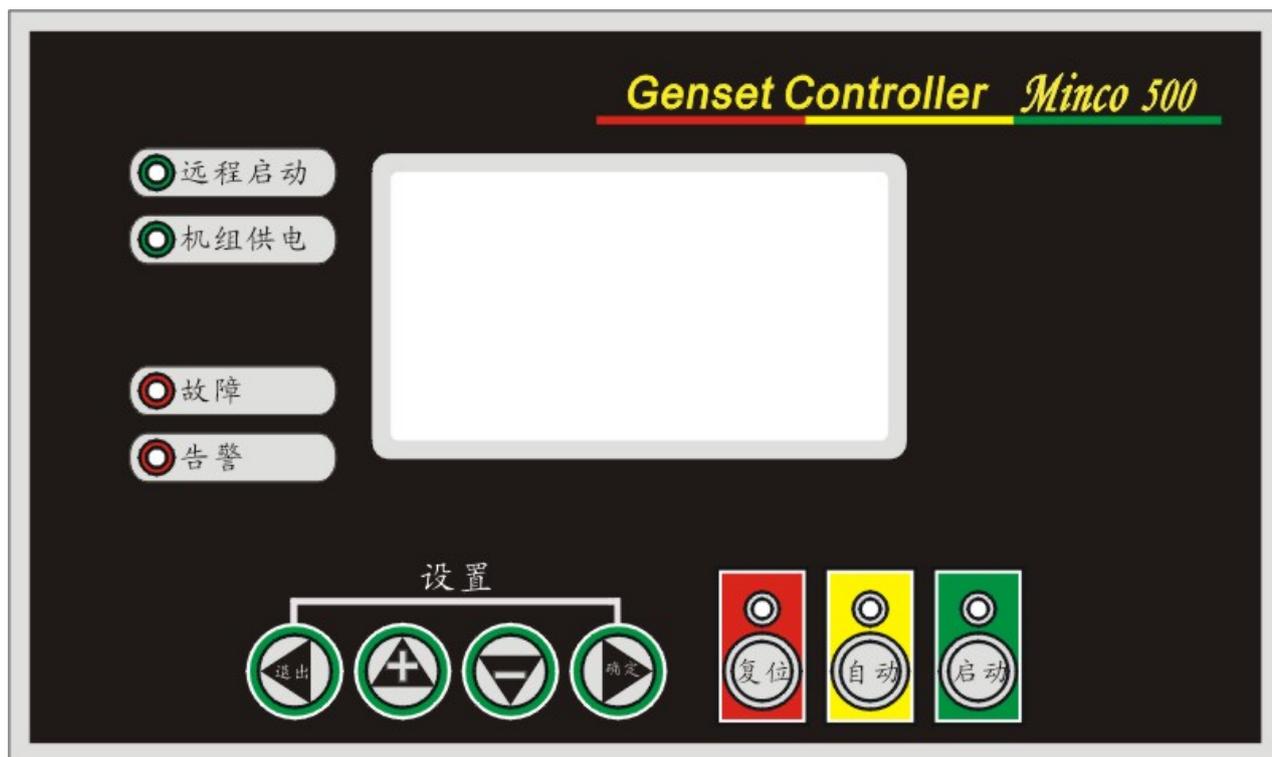
V. Data adjust: The MINCO 500V2 controllers have already carried on data adjust at factory (three phase voltage, three phase current, the battery voltage), but in practice environment, that may have the certain deviation. If measuring the value deviation with reality within error range, suggest that the consumer does not carry out data calibration, especially the three phase current. The adjust of the three phase current has little trouble, because of the set be related to "CT rate". The current measurement principle is that value pro rate basis varies shifts the electric current becoming 0 ~ 5 Amp with electric current transformer with actual electric current, the MINCO 500V2 controllers measures the 0 ~ 5 Amp accurately, Take advantage of that again with current transformer ratio, be OK to get actual electric current value. The MINCO 500V2 controllers have already adjustd 0-5A current value in the factory, the customer only need to set "CT rate" actual usage ratio, thus can display right current value.

If voltaic measure value and actual electric current value deviation is bigger, maybe is that electric current transtormer deviation brings about more, suggest customer to set "CT rate" parameter little big or small to actual parameter value, so the current measured value would also increase or reduce in ratio, it will correspond to the value current value, do not adjust electric current calibration to the full.

If must adjust electric current calibration, the consumer can only carry out calibration according to actual electric current value so under scene environment, now has to shift the electric current becoming 0~5 Amp by the value secretly scheming against with actual electric current, then it is possible correct, that is actual electric current value gets rid of with "CT rate". For example, suppose current "CT rate" is 200:5, if the A phase current is 100A that is actual measure value, but MINCO 500V2 display is a 80 A, need calibration. When calibration, that need the actual measure current value divide CT rate, Current gets 2.5A. Click" Adjust" button at the side of the " current A " shows value item, under the "read analog" page of supervise and control software, will open "adjust" frame, write in the "2.5" into the data frame, click" OK" button can immediately complete the adjust of A phase current. The current measure value of the MINCO 500V2 controllers will change into 100 A, it is consistent with actual value.

Attention: Because the MINCO 500V2 controllers measure the three phase current, three phase voltage have certain lag, so at the adjust of three phase current & three phase voltage, have to in the stable state of voltage and current, otherwise measure values probably have larger deviation.

Appendix 2 : MINCO 500V2 front panel diagram Chinese & English contrasts



Appendix 3: MINCO 500V2 back paster diagram Chinese & English contrasts

