

MINCO T8 Dual Power Automatic Transfer Switch controller

Instruction Manual

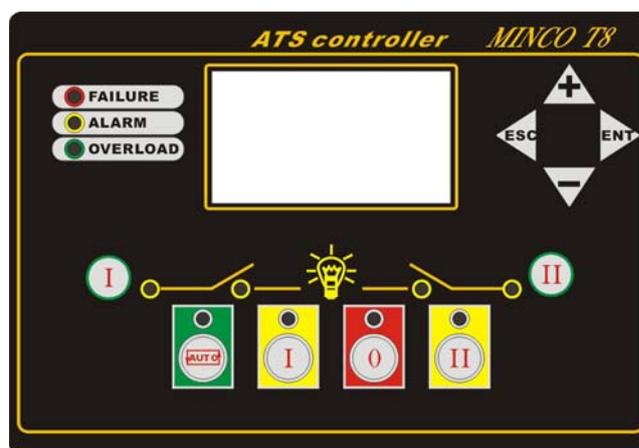


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MINCO T8 Dual Power Automatic Transfer Switch controller,high-performance microprocessors and industrial components manufactured, LCD display, with compact structure, clear display, easy installation. It accurately measures two-way three-phase voltage, makes judgment for abnormal voltage (high/low voltage, high / low frequency etc.) and control ATS' two-way power switch & load.

I. Function define

Minco T8 Dual Power Automatic Switch controller,has 128 × 64 dot matrix LCD screen, 8 buttons and 11 indicator lights. The key control ATS switching. Indicator light and LCD screen show two-way voltage,current measurement and ATS status,fault. In practical applications,I circuit as main circuit is commended, II circuit as standby.



1. Operation Key

AUTO/RUN : Press the button, the above yellow light keep bright, controller is in “auto” status, controller control ATS automatic switching; Press button again, yellow light is closed, controller is in “manual” status, control ATS switching by man.

II: Press the button, the above green light keep bright, controller is in “II circuit supply” status, controller will make ATS to switch to II circuit supply.

O: Press the button,the above yellow light keep bright, controller in “I and II circuit disconnect” status.Controller will make ATS to “0” position. This button is only availability for three position(I,0 ,II) of ATS.

I: Press the button, the above red light keep bright, controller is in “I Circuit supply” status, controller will make ATS to switch to I circuit supply.

+ 、 **-** transfer screen display content,and indicator lights status , you can directly read all the measured parameters and ATS status.

ESC **+**、 **-** **ENT** Combination of these four buttons will be used to achieve MINCOT8 all the parameters viewing or setting.

Note: If controller is in “Auto” status, the **II** **I** **O** button are invalid.

2. Indicator lights

There are 11 lights in the controller panel, which indicate controller and generator’s status & failure

AUTO/ RUN indicator light (Yellow)--- indicates controller is in “auto” or “manual” status;

II Circuit indicator light (Green)—indicates controller is in “**II** Circuit supply” status;

“0” indicator light (Yellow)—indicates controller is in “**I,II** circuit disconnect” status;

I Circuit shut indicator light (Red)—indicates controller is in “**I** Circuit supply” status;

Over current indicator light (Green)-- indicates over current is load;

Failure indicator light (Red)—indicates ATS is in failure, specific failure cause displays in LCD screen.

Alarm indicator light (Yellow)— indicates ATS control alarm message appears, the specific cause will be found in LCD screen;

II Circuit normal indicator light (Yellow)— indicates voltage, frequency are normal in **II** circuit.

II Circuit supply indicator light (Yellow)—indicates **II** circuit supply is normal, and detect the supply signal.

I Circuit normal indicator light (Yellow)-- voltage, frequency are normal in **I** circuit.

I Circuit shut indicator light (Yellow)—indicates **I** circuit supply is normal, and detect the supply signal.

3. LCD Display

Under normal display states (Non-set state), LCD screen is divided into three-screen display of all measured parameters and ATS state. Key **+**, **-**, transfer display content between the three-screen, each screen display content as below:

- 1) **I** circuit: three phase voltage, frequency, supply states
- 2) **II** circuit: three phase voltage, frequency, supply states
- 3) Load three phase current, power, power factor, system time

Transfer the display mode: set to automatic switching mode, then at intervals of 10 seconds, auto-transfer LCD display screen to the next screen, which equates to press **-**. If the LCD backlight set to automatic state, more than three minutes does not operate any buttons, LCD screen backlight will automatically shut down until you press any button or open the backlight before failure. During the closure of backlight, LCD screens may not see the display, do not mistake it for controller failure. If the LCD backlight set always bright, then the LCD backlight still does not close.

4. Failure and Alarm indication

When **I** circuit is failure supply or failure break, failure indicator light is bright. In screen display failure information. If high/low voltage, high/low frequency, alarm indicator light is bright, The

screen display alarm information.

When **II** circuit is failure supply or failure break ,failure indicator light is bright. The screen display failure information.If high/low voltage, high/low frequency,alarm indicator light is bright, the screen display alarm information.

Load current is over, the over current indicator light is bright.

II. Parameter Set

As optional function, all the parameters can be read through the communication port.We accept especial order ,offer software and cable.

Press **ENT**, LCD screen stops normal display, enter set state, display set menu. A menu (8 items) : input port status, output port status, history records, the date and time, alarm high/low limits, measurement data calibration, delay time set, the system parameter set. Press **+**, **-** button to select the entry. Press **ESC** to exit the set state; press **ENT**, select the entry and enter into next menu. If more than three minutes does not operate any button will automatically exit parameter set state.

1.Switch Input Status

Real time display controller input port(IN1-IN6) state.

Press **+**, **-**, **ECS**, **ENT** any key will be exit

2.Relay Output State

Real time display controller output port(OUT1-OUT7)state

Press **+**, **-**, **ECS**, **ENT** any button will be exit

3.Shutdown record

Enter menu, check record, display information: Fault serial number/ Fault total number, record content, fault time. A total of 50 historical records can be recorded.

Record content: main circuit shut, standby circuit shut, main circuit shut failure, standby circuit shut failure, main circuit breaking failure, standby circuit breaking failure,main circuit input alarm, standby circuit input alarm,compulsory break valid

Press **+**, **-**display up, down failure; **ECS**, **ENT** any button will be exit

4. Date and Time

Enter menu, set date and time of Minco T8 controller,

Format:Year_Month_day_/Hour_Minute_Second_”. Press **+**, **-**,to change display date,Press **ESC** move to left,the cursor move to first position, then press **ESC** again,back to superior menu,date and time will not be changed. Press **ENT**, the cursor move to right, move to last position, then press **ENT** again, back to superior menu, date and time have been changed.

5.Alarm limit set

Alarm limit set menu(7 items): voltage high limit, voltage low limit, current high limit,**I** circuit

frequency high limit, **I** circuit frequency low limit, **II** circuit frequency high limit, **II** circuit frequency low limit.

Measurement data overstep high or lower limits. the controller will alarm.

Press $\boxed{+}$, $\boxed{-}$, choose entry; Press \boxed{ESC} back to superior menu; Press \boxed{ENT} enter entry parameter set, the selected parameter is in underline, press $\boxed{+}$, $\boxed{-}$ to change the data. Press \boxed{ESC} the cursor move to left, to first digit, press \boxed{ESC} back to superior menu, parameter will be not changed. Press \boxed{ENT} , the cursor move to right, to last digit, then press \boxed{ENT} again, back to superior menu, date and time have been changed.

6. Calibration Measurements

Calibration measurement menu(9 items): **I** circuit A phase voltage, **I** circuit B phase voltage, **I** circuit C phase voltage, Current A phase, Current B phase, Current C phase, **II** circuit A phase voltage, **II** circuit B phase voltage, **II** circuit C phase voltage.

MINCO T8 controller in the factory have been calibrated, the actual measured values of the deviation within the error range, Re-calibration is not recommended, in particular the three phase current.

Press $\boxed{+}$, $\boxed{-}$, choose entry; Press \boxed{ESC} back to superior menu; Press \boxed{ENT} enter date calibration, press $\boxed{+}$, $\boxed{-}$ to change the data. Press \boxed{ESC} the cursor move to left, to first digit press \boxed{ESC} back to superior menu, date calibration will be cancelled. Press \boxed{ENT} , the cursor move to right, to the fourth digit, then press \boxed{ENT} again, back to superior menu, date calibration is finished. Changed parameter will be saved.

7. Delay time set

Delay time set menu(13 items): remote stop delay, remote start delay, **I** circuit abnormal voltage delay, **I** circuit abnormal voltage delay, **II** circuit abnormal voltage delay, **II** circuit abnormal voltage delay, shut delay, load without electricity delay, shut failure delay, breaking failure delay, over load delay, breaking delay, alarm input delay etc.

Press $\boxed{+}$, $\boxed{-}$, choose entry; Press \boxed{ESC} back to superior menu; Press \boxed{ENT} enter parameter set, press $\boxed{+}$, $\boxed{-}$ to change the data. Press \boxed{ESC} the cursor move to left, to first digit press \boxed{ESC} back to superior menu, date will be changed. Press \boxed{ENT} , the cursor move to right, to last digit, then press \boxed{ENT} again, back to superior menu, Changed parameter will be saved. Delay time is not more than 225 seconds, if set the data more than 255 seconds, system will defaults to 255 seconds.

Delay time instruction:

- 1) Remote stop delay — When **I** circuit voltage comeback normal state, it starts delay. Delay finished, stop input remote signal
- 2) Remote start delay—When **I** circuit voltage abnormal, it starts delay. Voltage doesn't comeback normal when delay finish, remote start signal starts generator.

- 3) **I** circuit voltage normal delay—**I** circuit voltage need for confirmation delay from abnormal to normal.
- 4) **I** circuit voltage abnormal delay—**I** circuit voltage need for confirmation delay from normal to abnormal
- 5) **II** circuit voltage normal delay—**II** circuit voltage need for confirmation delay from abnormal to normal.
- 6) **II** circuit voltage abnormal delay—**II** circuit voltage need for confirmation delay from normal to abnormal
- 7) Shut delay—supply relay output time, it is setted “0”, relay will continue output.
- 8) Load without electricity delay—transfer between I and II, load without electricity time, in other words, in “0” position time.
- 9) Shut failure delay— send shut signal, if controller doesn’t detect shut signal within shut failure delay time, it will sent shut failure signal.
- 10) Breaking failure delay—send breaking signal, if controller doesn’t detect breaking signal within breaking failure delay time, it will send breaking failure signal.
- 11) Over load delay—When load current is high, start delay, if current comeback normal within delay time, delay will be intermitted; Current is always high within delay finished, it will send over load alarm.
- 12) Breaking delay: break relay output time.
- 13) Alarm input delay: After shutting, if corresponding circuit alarm input switch is close, it will delay. Delay finished, there is input alarm signal.

8. System parameter set

System parameter set menu(9 items): power output control,current ratio, change password, equipment address,switch mode,switch priority,measure voltage mode, display switch mode, language choose, LCD backlight choice etc.

Press 、, choose entry; Press back to superior menu; Press enter parameter set, press 、 to change the data. Press the cursor move to left, to first digit, press back to superior menu,parameter will not be changed. Press , the cursor move to right, to last digit, then press again, back to superior menu, Changed parameter will be saved.

System parameter instruction:

- 1) Power output control: 0: auto switch output 1:**I** circuit 2:**II** circuit
- 2)Current ratio—current ratio set is 5, for example, the current rate setting in 500, it’s correspond with 500:5
- 3)Change password-- Default password **8421**, please change to own password.
- 4)Equipment address-- only set for multiple equipment network, to differentiate the equipment.

5)ATS style-- 0: no OFF position (two segments kind), such as SOCOMEC VS switch;
 1: one OFF position(three segments kind), such as SOCOMEC VE switch;
 2: two OFF position, such as the ATS composed of two circuit breakers or two contacts.

6)ATS control priority—0: I Circuit switch priority 1: no switch priority

7)Measure voltage mode—“0”measure phase voltage,“1” measure line voltage

8)Display switch mode—0: manual switch 1: auto switch

9)Language – 0:Chinese 1: English

Note: Simultaneity press 、, changing language is also available.

10)LCD backlight—0:auto close 1: keep bright

9. Password Authentication window

Enter setting sate, the menu(4 items):Alarm high/low limit set, Calibration Measurements,delay time set, system parameter set

Alarm high/low limit set without password.

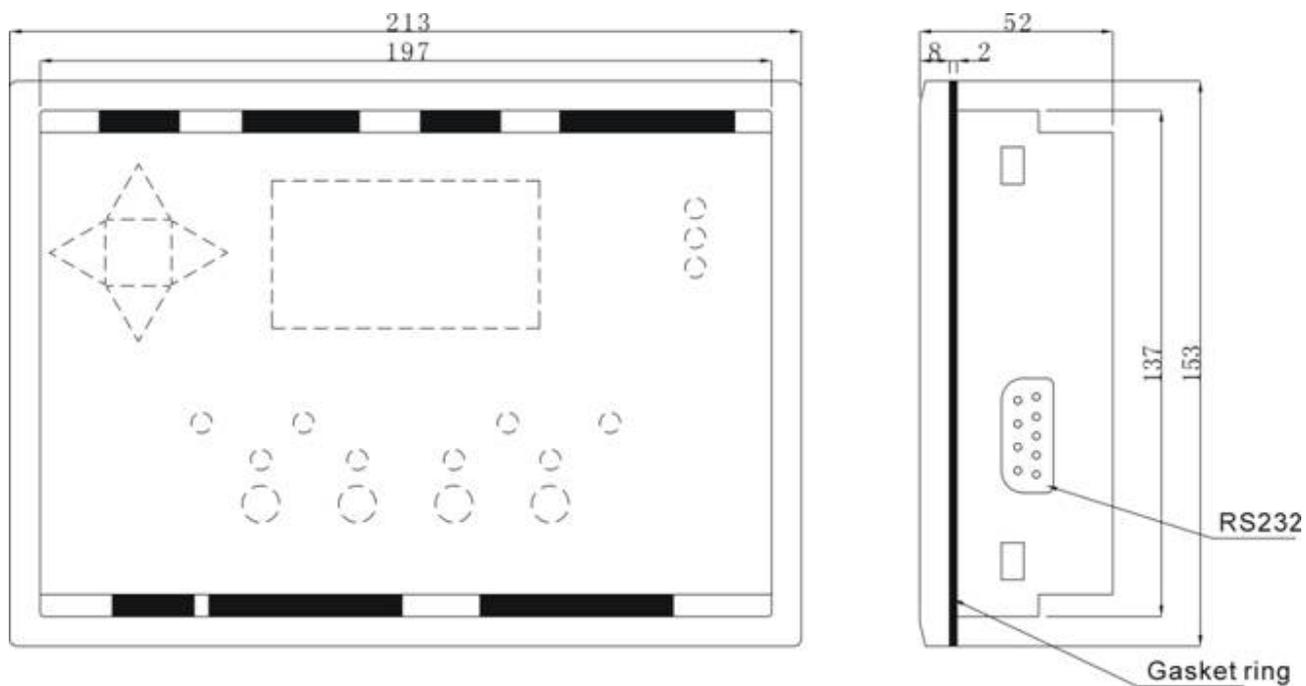
Calibration Measurements,delay time set, system parameter set need password.LCD screen displaly password authentiacion window, press 、change data, press move to left, to first digit, press again,back to superior menu; Press , the cursor move to right, to last digit,input correct pass word, then press again, enter next menu. wrong password,can't enter next menu.

III. Connect port instruction

Port No.	Funtion instruction	
Supply power (power:8~36VDC, normal work current<300mA, suitable for 3 phase 4 wire)		
1	“+” Power anode input	Controller can use I、 II A phase voltage.Connecting genset start battery anode & catchode when starting genset,
2	“-” Power cathode input	
Inside switch power output (capability:AC 250V/10A)		
3	Power A phase	When any circuit(I,II) A phase is normal,this port has output.This port can be ATS'work power.
4	Power N	
I circuit power three phase voltage input (0-300V AC)		
5	I circuit power voltage A phase	
6	I circuit power voltage B phase	
7	I circuit power voltage C phase	
8	I circuit power N	
Three phase load current input (0-5A AC,without inside isolation,must add current transformer)		
9、 10	A phase load current	
11、 12	B phase load current	
13、 14	C phase load current	
II circuit power three phase voltage input (0-300V AC)		

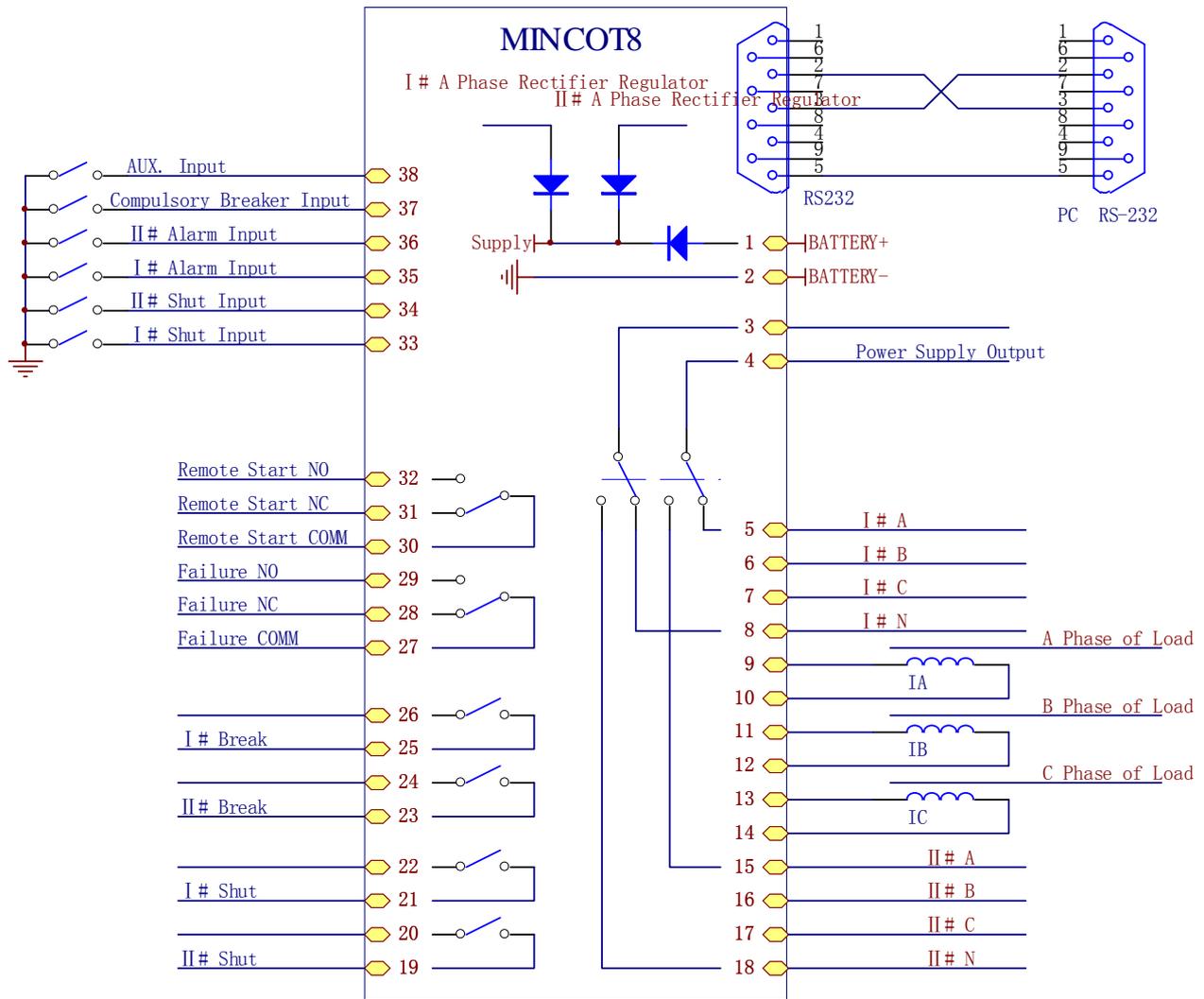
15	II circuit power voltage A phase	
16	II circuit power voltage B phase	
17	II circuit power voltage C phase	
18	II circuit power N	
Relay output port(Relay insulate, contact capability 10A/250VAC/30VDC)		
19	II Circuit shut	
20		
21	I Circuit shut	
22		
23	II Circuit break	If ATS just have one OFF position,this output is invalid.
24		
25	I Circuit break	
26		
27	Failure output	Failure output (NO)
28		Failure output (comm)
29		Failure output (NC)
30	Remote start output	Remote start output (NO)
31		Remote start output(Comm)
32		Remote start output(NC)
Switch input port (add photoelectricity insulation, it is valid when connect to GND)		
33	I circuit shut input	
34	II circuit shut input	
35	I circuit alarm input	
36	II circuit alarm input	
37	Compulsory break input	ATS with positions is applicability. When compelling break, no matter under manual or auto mode, ATS will be switched to 0 position. 0 indicator light is bright.
38	AUX.	

IV. Dimension and outside wiring diagram



Operate panel	W 213 X H 153mm
Install hole	W 199 X H 139mm
Depth	D 52mm

For three phase four wire :



For single two wire:

