



Model: GM88

## Timing Power Monitor Instruction Manual



Version: GM88-EN-00

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### III. Operating instructions

- Instrument startup/shutdown  
The instrument can start to work when plugging the instrument directly into the power supply socket. And when disconnecting the power supply, the instrument is shut down.  
(1)Arechargeable battery is internally installed in the instrument, which can realize “disconnection operation” (in case that internal power supply is available): press “OK” to start the instrument, where user can set the instrument; if the user does not have any operation during outage, the instrument will automatically shut down in about 10 seconds.  
(2)Charging of built-in battery  
After plugging the instrument into the power supply socket, the instrument will automatically charge the built-in rechargeable battery. In order to ensure the related set operation, the instrument must be supplied by the high voltage power or batteries. New or long-term unused instrument must be plugged into the power supply and charged for 4 to 8 hours before the normal operation of timer function.
- Backlight setting function  
On “CUR” display, long press “SET” for 2 seconds to enter backlight setting interface.After entering the interface, “LEd” will be displayed, and “ON” or “OFF” will flicker (as shown in Figure 1).We can select “ON” or “OFF” through pressing “▲” or “▼”. After finish setting, press “OK” to exit the setup. If you choose “OFF”, then the backlight will automatically off (factory default settings) within

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20 seconds and accumulated time will flicker, and press “OK” to reset.

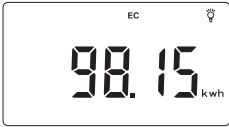


Figure 2



Figure 3

- The working current of measuring equipment  
Press “▲” or “▼” to switch to the current monitoring interface (as shown in Figure 4): the measurable range is 1.000-10.000 A. (display mA within 1A)



Figure 4

- Power factor of measuring equipment  
Press “▲” or “▼” to switch to the power factor monitoring interface under measuring mode (as shown in Figure 5): the display measurable range is 0.001-1.000.

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Figure 8

- CO<sub>2</sub> discharge quantity corresponding to current and electricity consumption of measuring equipment  
Press “▲” or “▼” to switch respectively to CO<sub>2</sub> discharging interface (as shown in Figure 9): the measurable range is 0.00-55,500kg.



Figure 9

- Measurement over-limit alarming setting  
On power display interface, long press “SET” and hold for 2 seconds until thousand-digit of the LCD flickers, and enter the power alarm limit setting. Press “▲” or “▼” to adjust the numerical value. After thousand-digit adjustment, press “OK” to hundred-digits setting, and so on. Finally press “OK” to exit the setup mode. Note: this setting value should not exceed 2200W (fault factory value is 2200W), otherwise “Err” will be

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### I Introduction

Multifunctional time control electric monitor, whose internal product design takes professional micro control chip as the core, matches with precise current sensor, and can be used in comprehensive inspection and monitoring for working condition of the AC power supply equipment.

### II. Safety instruction

- Plug the product into power supply socket, and electrical appliances into the product to measure parameters of electrical appliances. It can detect working voltage, current, power and other parameters of electrical appliances to make the operation situation and energy-consuming of electrical appliances clear.
- Before using the product, it is necessary to check whether there is crack or short of plastic parts on the shell, especially the insulation point around the joint. Please do not use product damaged.
- It is necessary to return product to specified maintenance point for repair if it can not work normally.
- The loading power of electrical appliances of product can not exceed the rated power of product (2200W).
- Please do not open up product at will and check by disassembling the machine with electricity.

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in case of no operation; If you choose “ON”, the backlight will be normally on.



Figure 1

- Measure and operation  
(1) Measuring mode  
In the measurement mode,press “▲” or “▼” can check freely the electrical current, voltage, power, power consumption, CO<sub>2</sub> emission and power factor, etc. When pressing “▲”, its display order is: WATT→CUR→VOLT→FREQ→CT→POW→CO<sub>2</sub>→PF→CLOCK→time switch interface; When pressing “▼”, the display order can be reversed.  
(2) Check the current electricity consumption and electricity consumption time  
Press “▲” or “▼” to switch respectively to electricity monitoring interface (as shown in Figure 2) and accumulated time monitoring interface (as shown in Figure 3), and its measurable range is respectively 0.00-99,999 KWH and 0-99,999 minutes. Measurement of electricity quantity and electricity consumption time can save automatically. Even in case of long time outages, the accumulated measuring value will not be lost.  
\*Accumulated electric quantity and accumulated time are clear: switch respectively to the accumulated electric quantity and accumulated time interface and press “SET”

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Figure 5

- Power of measuring equipment  
Press “▲” or “▼” to switch respectively to voltage monitoring interface (as shown in Figure 6) and frequency monitoring interface (as shown in Figure 7), and its measurable range is from 180.0 V-260.0 V and 40.00-60.00 Hz respectively.



Figure 6



Figure 7

- Press “▲” or “▼” to switch respectively to power monitoring interface (as shown in Figure 8): the measurable range is 0.02-2200.0 W.

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Figure 10



Figure 11

- Clock function  
The product inside is equipped with rechargeable batteries, and even unplugging the product from the socket, it can also run normally. But new or long-term unused products need to reset the time and week.  
Setting method: press “▲” or “▼” to enter the clock interface (as shown in Figure 12). Long press “SET” and hold for 2 seconds until “hour” flickers. And after finishing “▲” or “▼” adjustment, then press “SET” to switch to the “MINUTE” settings. After completing hour

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(24-hour), minute, week settings successively, press “OK” to return to the interface of the clock.



Figure 12

- Timer setting  
The instrument is internally designed with 20 sets of timer and each set of timer on/off time can be set independently, which means that the user can set up 20 different dates or time of on/off controlling data in No. 1-20 timer to meet the needs of the time control in daily life.  
Note: before enabling the timer function, the clock must be set. If timer function is enabled by high voltage and in case of midway power off or battery running out, before recovering to high voltage clock, it should be set to continue enabling the timer function.  
(1) Setting procedure  
Step 1: enter timer setting interface (as shown in Figure 13): long press “SET” and hold for 2 seconds, and “hour” of the first timer will flicker. After pressing “▲” or “▼”, open “hour” setting and press “SET” to switch to the “Minutes”; set time and week for startup in a similar way; after “date” for startup is adjusted, press “SET” to automatically

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No.	Week State Options	No.	Week State Options
1	Monday	8	Monday-Friday
2	Tuesday	9	Saturday-Sunday
3	Wednesday	10	Monday-Saturday
4	Thursday	11	Monday-Sunday
5	Friday	12	Monday, Wednesday and Friday
6	Saturday	13	Tuesday, Thursday and Saturday
7	Sunday		

- Timer clearance  
Under the timer settings interface,press the “▲” or “▼” for 2 seconds to clear timing parameters. Note: after the timer clears, the clock of timer setting interface will display “-:-:-”, instead of “0000” (as shown in Figure 15).

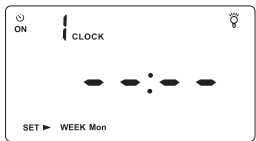


Figure 15

- Startup and shutdown of timing mode  
In the voltage interface, long press “SET” for 2 seconds to switch on and off timing function.

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### V. Application cases

- When selling all kinds of energy-saving appliances, the power measuring function can be used to show energy-saving conditions thereof for users.
- Ordinary users can take advantage of power/ electric quantity metering function to test working conditions of all kinds of domestic appliances (refrigerators, air conditioners, washing machines, Televisions, computer, fan, energy-saving lamps,etc.), in order to clearly know all kinds of electrical power consumption situation and better guide reasonable utilization.In addition, through testing of domestic appliances operating power and being compared with its marked power, user can find abnormal conditions caused by electrical leakage, which enables user to eliminate hidden danger in time.
- “Low carbon and environmental protection ” concept is getting closer and closer to our life. By adopting CO<sub>2</sub> discharging measuring functions, users can clearly know carbon emissions corresponding to electrical consumption.
- Rated current of household power supply is generally 10A and overcurrent can easily damage the internal cable or even cause safety hazards. By using overcurrent protection function,connect this product firstly to domestic power supply socket and then plug the socket into electrical power supply, which can make your daily electricity safer.
- Overcharge of electric vehicle battery will reduce battery life or even causes risk. By using the time switch and the settingfunction, the charging of battery car can be intelligently managed.

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- Repair:  
a.Refer to your maintenance card for relevant maintenance regulations.  
b.In case of any product damages due to disassembling of users,improper transportation or storage after purchase, or operation not as required, modifying maintenance card at will and having no purchase certificate, the company will not provide maintenance.
- Special declaration:  
a.Our company reserves the right to modify the product design and the instruction. We will not give further notice for any changes!  
b.Old batteries must be dealt in accordance with the local law or rules.

### VI. LCD display and keys

- There are 4 keys on this product, which is as shown in Figure 17.
- The display of LCD is as shown in Figure 18.

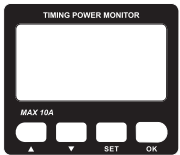


Figure 17



Figure 18

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enter shutdown time and date setting interface of the first timer and it can be set up in a similar way.



Figure 13

- Step 2: when the startup and shutdown time and date settings of the 1st timer are completed, the 2nd group can be set successively and startup and shut down time and date settings of 20 groups of timer can be made at most.20 groups' timer startup and shutdown setting data shall be corresponded to each other.



Figure 14

- Week setting of the instrument  
There are 13 combination states in total, which is as shown in the below table:

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- Power-on and off state  
In case of not setting the timer or closing of timing function, internal switch will be closed by default. If the timer has been set, internal switch will automatically search for the timer settings value when electricity is supplied and the switch state will be set on the corresponding state.  
For example: In case that No.1 timer is set to open at 8:00 and close at 10:00, the internal switch state will be opened when the user supplies power between 8:00 and 10:00, and “ON” will be displayed in the top left of the screen (as shown in Figure 16). Note: “ON” indicates timer starting and the close of internal switch, and “OFF” indicates timer starting and the break of internal switch.



Figure 16

- Outage operation  
When the internal electric battery is available, press “OK” to awake the instrument and there is no need to plug that into the socket. Under awakened state, user can undertake various settings of instrument and if there is no button operation in 10 seconds, it will automatically enter into sleep mode.

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- Long time and repeated heating of water dispenser can destroy drinking water (producing harmful substances such as nitrite).By using the time switch and setting function, the heating of water dispenser can be intelligently managed, which avoids repeated boiling of drinking water and enables us to enjoy healthy life.
- Sometimes after you go outdoors and realize not turning a certain appliances off, electricity waste may be caused. Solve the problem by using time switch and setting function.

### V. Maintenance and repair

- Maintenance

- Cleaning of shell:  
a.Since alcohol and diluent will cause corrosion on shell, the cleaning shall be executed by wiping gently with a small amount of water.  
b.Collision, wet, etc. are strictly forbidden.

- Do not put the instrument in the following environment:  
a.Places which may be water splashed or highly dusted.  
b.Air full of high concentrations of salt or sulfur.  
c.Air full of other gases or chemicals.  
d.Places with high temperature or humidity or direct sunlight.

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### VII. Technical parameters

Applicable power supply	220V 50Hz
Working voltage range	180.0V~260.0V
Maximum rated current	10A
Maximum power	2200W
Power measurable range	0.2W~2200W
Maximum accumulated electric quantity	99999KWh
Maximum accumulated time	99999minutes
Power factor	0.001-1.000
Over current protection	When the current is 12A, the electricity will be cut off in 6 seconds. When the current is 15A, the electricity will be cut off in 2 seconds.
Time switch appointment	20 groups on-off control period can be set
Backlight function	ON/OFF can be set
Precision	Level 1
Constant	6400imp/kWh
Power dissipation	<1W
Working temperature	0~ 45℃
Storage temperature	-20~ 60℃
Dimension	60.0*55.7*120.0mm
Weight	138.5g

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