

專案進口未開放大陸物品申請書

CCC 號列： 9028.30.00.00-4 (申請人如無法確認貨品號列或對貨品號列有疑義者，請先向進口地海關申請進口貨物稅則預先審核)
中、英文貨品名稱： 數位電費計、圖示定時電度計 Power & Energy Monitor
貨品規格：(請敘明材質、成分、組成百分比、尺寸、製造過程等) 如附件 DM 及手冊。
數量或重量：(請填列明確單位) @48s/箱，總共 1056pcs, @7.59kgs/箱，總重 224.99kgs
進口理由： 1. 台灣銷售，了解客戶需求做為開發新產品的準備。
進口用途及流向： 2. 台灣銷售 3. 消費者，各大電子材料行
加工後製成品名稱：已經是成品

Model 2022 數位電費計

使用說明書

承蒙您的惠顧購買本公司的產品，非常感謝。

在使用本產品之前，請詳細的閱讀本「使用說明書」各章節的內容，並妥善的保存。

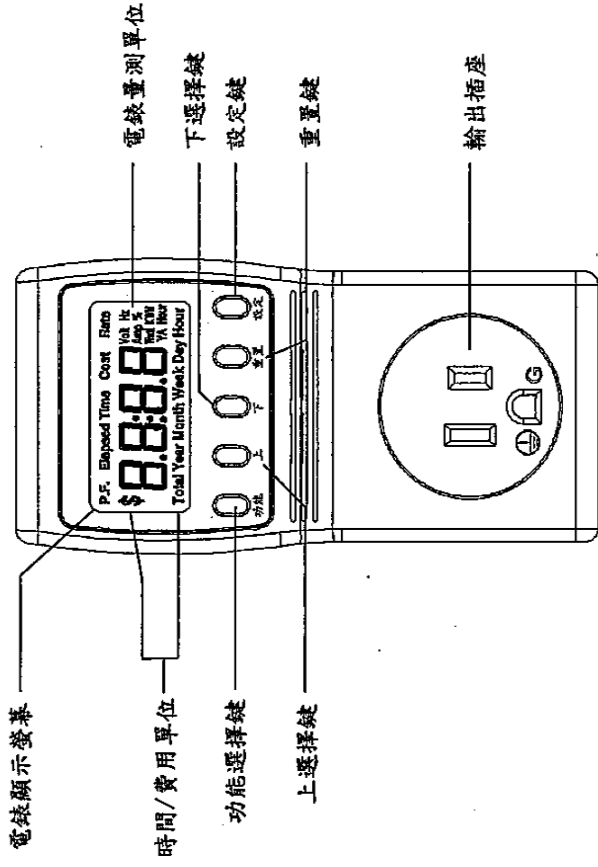
安全訊息：

- 本機只能用於電源為 AC 95~125V 或 207~253V，50 ~ 60Hz 的地區，請勿用於除此之外的地區。
- 本機最大的輸出電流為 15A。
- 請勿自行打開外蓋或擅自進行修理。請將維修工作委託給專業維修人員。

警告：

為了避免發生火災或觸電事故，請勿讓本機淋雨或受潮。

顯示說明：



簡易操作使用：

本產品是個多功能的家用電力電錶，它可以顯示電壓(Volt)，電流(Amp)，瓦特(Watt)，伏安(VA)，頻率(Hz)，功率因素(P.F %)，用電度數(KWH)及其用電費用或預估未來一段時期的電費，您可先參照這段簡易操作使用幾分鐘，熟悉及確認此產品功能正常，但往後請務必詳讀完整的使用說明以能充分使用本產品的全部功能。

1. 請把本產品插在插座上及把您想量測的電器插頭插入本產品輸出插座上。
2. 電錶顯示螢幕會顯示電壓(Volt)，可以藉由按”上”選擇鍵，”下”選擇鍵循環的來回顯示電壓(Volt)，電流(Amp)，瓦特(Watt)，伏安(VA)，頻率(Hz)，功率因素(P.F %).
3. 連續按住”功能”選擇鍵，可顯示電費(Cost)，費率(Rate)，用電度數(KWH)及用電時間(Elapsed Time)。
4. 持續按住”重置”鍵直到”rEst”出現。
5. 持續按住”設定”鍵直到”Rate”出現及已設定的費率閃爍。
6. 可使用”上”選擇鍵，”下”選擇鍵設定費率。
7. 再按住”設定”鍵即可儲存費率，”SAVE”會短暫出現表示儲存完成。
8. 按住”功能”選擇鍵找到電費(Cost)顯示，其數字即表示目前電器使用到現在的電費。
9. 再按”功能”選擇鍵找到用電度數(KWH)顯示，其數字即表示目前電器使用到現在的用電度數。
10. 再按”功能”選擇鍵找到用電時間(Elapsed Time)顯示，其數字表示目前電器使用到現在的用電時間。
11. 請務必詳讀完整的使用說明以能充分使用本產品的全部功能。

安裝:

1. 請先關掉想要量測的電器同時拔出插頭，再把本產品插入插座及把電器插頭插入本產品的輸出插座。
2. 再把電器重新開機確定其正常工作。假如電器有不正常狀況請再檢查連接的插頭插座。
3. 電錶顯示螢幕會顯示電壓(Volt)，其值即是目前工作電壓。

電表功能:

按住"功能"選擇鍵找到電壓(Volt)，本機即是在電錶功能模式，配合"上"選擇鍵，"下"選擇鍵可隨意循環顯示電壓(Volt)，電流(Amp)，瓦特(Watt)，伏安(VA)，頻率(Hz)，及功率因素(P.F %).

電費顯示:

1. 按住"功能"選擇鍵可找到"Total"、"Cost"顯示，其數值即表示電器用電費用的總數及用電度數和費率的乘積。
2. 按住"上"選擇鍵或"下"選擇鍵可循環來回找到年(Year)，月(Month)，週(Week)，日(Day)和時(Hour)，其相對應的數值即是預估電器使用一段時期的電費。
3. 這個電費預估值是根據過去一段時期的數值去推估而來的，例如，量測電器 2 個小時的值再乘上 12 即是日(Day)的推估電費，乘上 84 即是週(Week)的推估電費，假如量測電器 24 小時後，再乘上 7 即是週(Week)的推估電費，乘上 30 即是月(Month)的推估電費，很明顯的量測時間愈久，推估的電費愈準確。
4. 某些電器及使用習慣會有循環式開關，電費預估必須有幾次的開關才能有比較準確的預估值，例如電視，假如都是在開機狀態下量測，會相當不容易推估日(Day)，週(Week)的值，除非電視是 24 全天候開著，所以電視必須經過幾次的開關使用後其預估值才會比較準確，另外冰箱會在幾個小時左右自動啟動及只提供保溫效果，所以量測冰箱經過幾個小時後便容易得到準確的推估值。
5. 持續按住"重置"鍵幾秒鐘後，"rEst"會短暫出現代表電費、用電度數及用電時間已被歸零。

費率顯示及設定:

1. 按住"功能"選擇鍵可找到"Rate"顯示，代表目前已設定的費率。
2. 持續按住"設定"鍵幾秒鐘後目前已設定的費率值會閃爍，按住"上"選擇鍵或"下"選擇鍵可以設定新費率，費率的數值可以在電力公司給的帳單上查到，應該是每度多少錢，再持續按住"設定"鍵後"SAVE"會短暫出現代表新費率已設定成功。

用電度數顯示:

1. 按住"功能"選擇鍵可找到"KWH"顯示，代表目前已使用累積的用電度數，數值會是 0.01 KWH 到 9999KWH，小數點會隨著數字的增加而自動進位。
2. 持續按住"重置"鍵幾秒鐘後，"rEst"會短暫出現代表累積用電度數，電費及用電時間已被歸零。

用電時間顯示:

1. 按住"功能"選擇鍵可找到"Elapsed Time"顯示，代表目前已使用累積的用電時間，數值會是從小時:分鐘(00:00)到小時(9999)小數點會隨著數字的增加而自動進位。
2. 持續按住"重置"鍵幾秒鐘後，"rEst"會短暫出現代表累積用電時間，用電度數及電費已被歸零。

記憶功能:

1. 當本機在正常工作時突然斷電，電錶顯示螢幕會消失及無法繼續量測，此時已累積用電度數，電費及用電時間會被自動儲存，此特性可以使您自由的更換其他插座、其他想要量測的電器並且不用擔心突然的斷電。
2. 當本機重新插上插座或是電重新供電後，電錶顯示螢幕會顯示電壓(Volt)，儲存的數值可隨意讀取。

規格

Model 2022				
項目	範圍		精確度	
	110V	220V	最大誤差	一般誤差
電壓錶(Volt)	95.0 ~ 125.0 Vrms	207.0 ~ 253.0 Vrms	0.5%	0.2%
電流錶(Amp)	0 ~ 15.00 Arms		0.5%	0.3%
瓦特錶(Watt)	0 ~ 1875 Watts	0 ~ 3795 Watts	1%	0.5%
伏安錶(VA)	0 ~ 1875 VA	0 ~ 3795 VA	1%	0.5%
頻率錶(Hz)	50 ~ 60.0 Hz		1%	±0.1Hz
功率因素錶(P.F.)	0.00 ~ 1.00		$\frac{Watt}{Vrms \times Arms}$	
用電度數錶(KWH)	0.00 ~ 9999 KWH		1%	0.5%
用電時間(Time)	00:00 ~ 9999		30 ppm	
目前合計費用(Total)	0.00 ~ 9999		1%	0.5%
預算年費用(Year)	0.00 ~ 9999		1%	0.5%
預算月費用(Month)	0.00 ~ 9999		1%	0.5%
預算周費用(Week)	0.00 ~ 9999		1%	0.5%
預算日費用(Day)	0.00 ~ 9999		1%	0.5%
預算時費用(Hour)	0.00 ~ 9999		1%	0.5%
費率(Rate)	0.000 ~ 9.999			
量測時間	1 Sec			
一般規格				
輸入電壓	110V	110 伏特 ± 10% · 60Hz		
	220V	220 伏特 ± 10% · 60Hz		
消耗功率	110V	1 瓦		
	220V	2 瓦		
尺寸		長 130.0mm x 寬 60.0mm x 高 36.0mm		
重量		大約 145g		

使用環境條件
室內使用
海拔高度 2000 公尺以下
操作溫度：5℃~40℃
相對濕度 80%以下
輸入電壓必須在市電額定電壓+/-10%內
污染等級：2

備註：1. 此規格是根據正弦波及功率因素等於 1。

2. 一般誤差的條件為電壓於市電額定電壓 +/- 10%，電流為 0.2 安培至 15 安培。

3. 精確度 = % (讀值 + 範圍)。

維護

為維護本機壽命，請勿讀本機接觸及受潮，也避免長時間在日光下直接曝曬。

清潔本機外觀時須將本機拔除插座再使用材質柔軟布擦拭本機。如遇到難擦拭的髒污可將布用水沾溼或用稀釋酒精(75%)擦拭。

警告：請勿使用有機或化學溶劑清潔本機，以避免本機外觀損壞。



請勿於本產品上使用轉接插頭/插座，容易因溫度升高熔毀外殼而發生燃燒的危險。

博計電子股份有限公司

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Graphic Timer with Energy Monitor Operation Manual

Thank you for purchasing the 2045 Graphic Timer with Energy Monitor. This operating manual will provide an overview of the product, safety instructions, a quick guide to operation, and complete instructions for correct usage. Take the time to completely review these instructions as well as safety warnings to ensure your best use of the product.

Now you can protect your valuable electronics and find out what they are actually costing you. Simply connect these appliance to the Graphic Timer with Energy Monitor and it will assess how efficient they are, then you can program ON/OFF period to save your money. The unit is combined the advantage of traditional mechanical and electronic timer, easy to program the quarterly basis ON/OFF period for 7 days and 24 hours same to you program traditional mechanical timer, and not limited to one day only. On the other hand, user always forget which days and which period is ON or OFF for using electronic timer, now you don't need to take a note for your program, you can just press keys to see the detailed 7 days 24 hours ON/OFF setting information.

Advanced features also included:

- Monitoring Voltage, Amperage, KWH, Elapsed Time, Costs and CO2 emissions.
- Displaying SAVE KWH, Elapsed Time, Costs and CO2 emissions.
- Holiday and Random mode.
- Over current, over voltage, and under voltage provide clean safe power to your expensive equipments.
- Zero power crossing switch provide a spike free ON/OFF relay control to prolong your appliances usage life.
- LED can provide LCD backlight, and as a programmable night light.

Now you'll know how much power your entire appliances are using, and saving power by graphic timer. With the innovative Graphic Timer with Energy Monitor you'll have peace of mind in more ways than one.

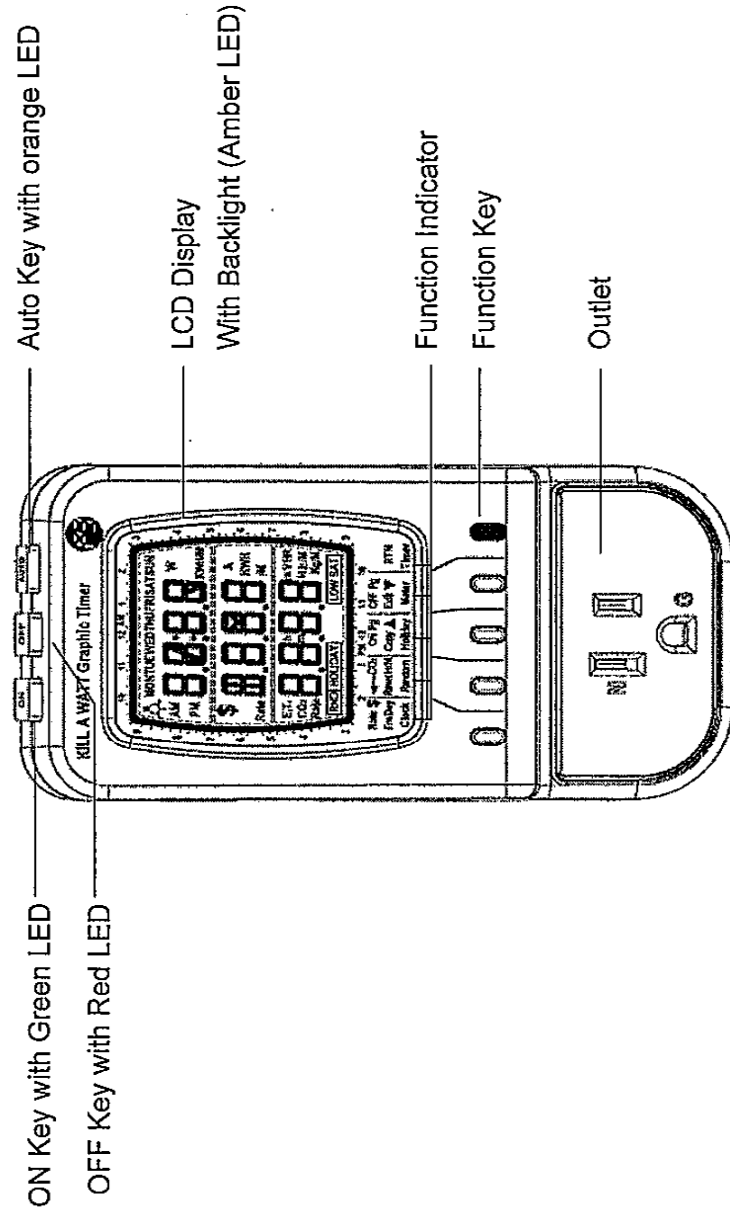
Safety Instructions:

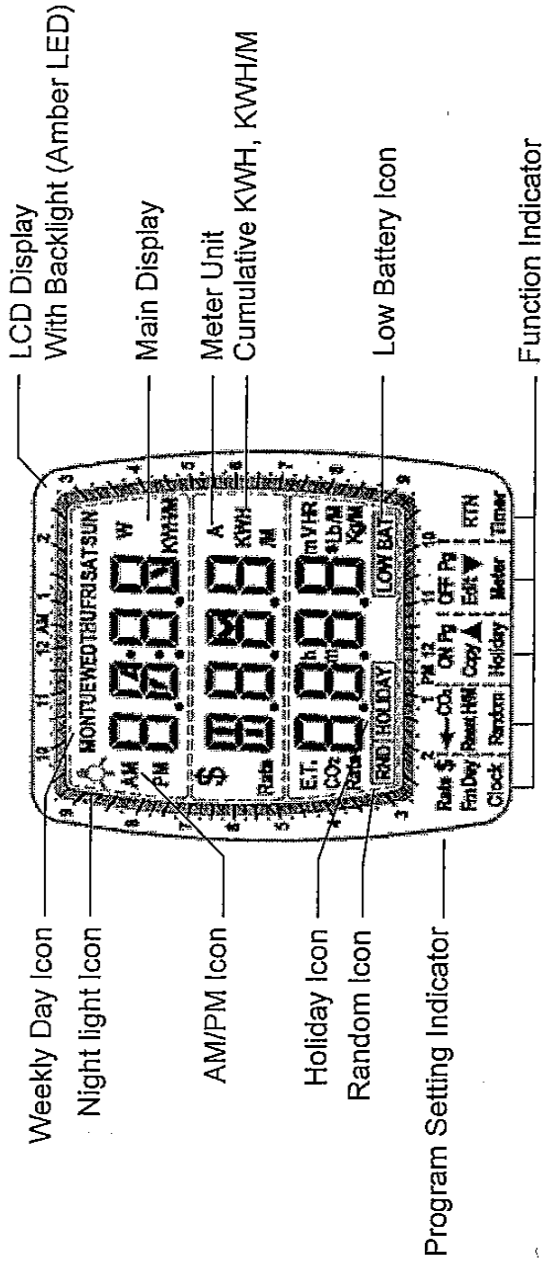
- The operating voltage is limited to +/- 10% of Line voltage 120Vac. Do not use it in other voltage rating.
- The maximum output current is 15A.
- To reduce the risk of electric shock, do not remove cover. No user-serviceable parts inside. Refer servicing to qualified service personnel.

Warning:

- To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

Feature Locations:





Installation:

1. Using the appropriate flat screwdriver open the battery holder, and position the 3 (AAA/no. 4) batteries according to the +/- terminal. When the batteries are in place, press the battery holder back into its original position. **Now you can operate the unit by battery power, it is great convenient for you to set the unit and not locked to wall outlet, or using a power strip for you more convenient to operate the unit.**
2. Turn off the appliance before connection to the unit and remove the power cord from the outlet. Connect the Graphic Timer with Energy Monitor unit to the outlet and appliance to the unit.
3. Press the **ON** key, and Turn the appliance back on and confirm normal operation. If the appliance does not function, please recheck your installation.

ON, OFF and Auto key function:

1. Pressing the **OFF** key will turn off power to outlet at once. The **OFF** key will illuminate in red. The unit will continue to measure power (e.g. Voltage, Time, clock) and the function keys and LCD display will continue to operate.
2. Pressing the **ON** key will turn power on to outlet at once. The **ON** key will illuminate in green. The unit features a spike-free switch function which activates at zero-crossing and will present clean power to your connected appliance. The unit will measure power and the function keys and LCD display will operate.
3. Pressing the **Auto** key to **Timer** mode, the **Auto** key will illuminate in orange. It will activate the unit auto on or off according to the **Timer**. If the **Timer** is on, the unit will be on at once no matter what status on or off now is. If the **Timer** is off, the unit will be off at once no matter what status on or off now is.
Pressing the **ON** or **OFF** key, output will be switched to on or off accordingly, but the **Auto** key stays lit and the **Timer** continues to control the output, the next **Timer** event (on or off) is the next time that the on/off state is changed.
Pressing the **Auto** key again to **Manual** mode can disable auto on or off function and **Auto** key LED will be dark. The unit will be always manually on or off according to the unit manual latest on or off status until **ON** or **OFF** or **Auto** key pressing.
Pressing and hold **OFF** or **ON** key 2 seconds, output will be switched to off or on accordingly, it is manual mode too, can disable auto on or off function and **Auto** key LED will be dark. The unit will be always manually off or on status until **ON** or **OFF** or **Auto** key pressing.

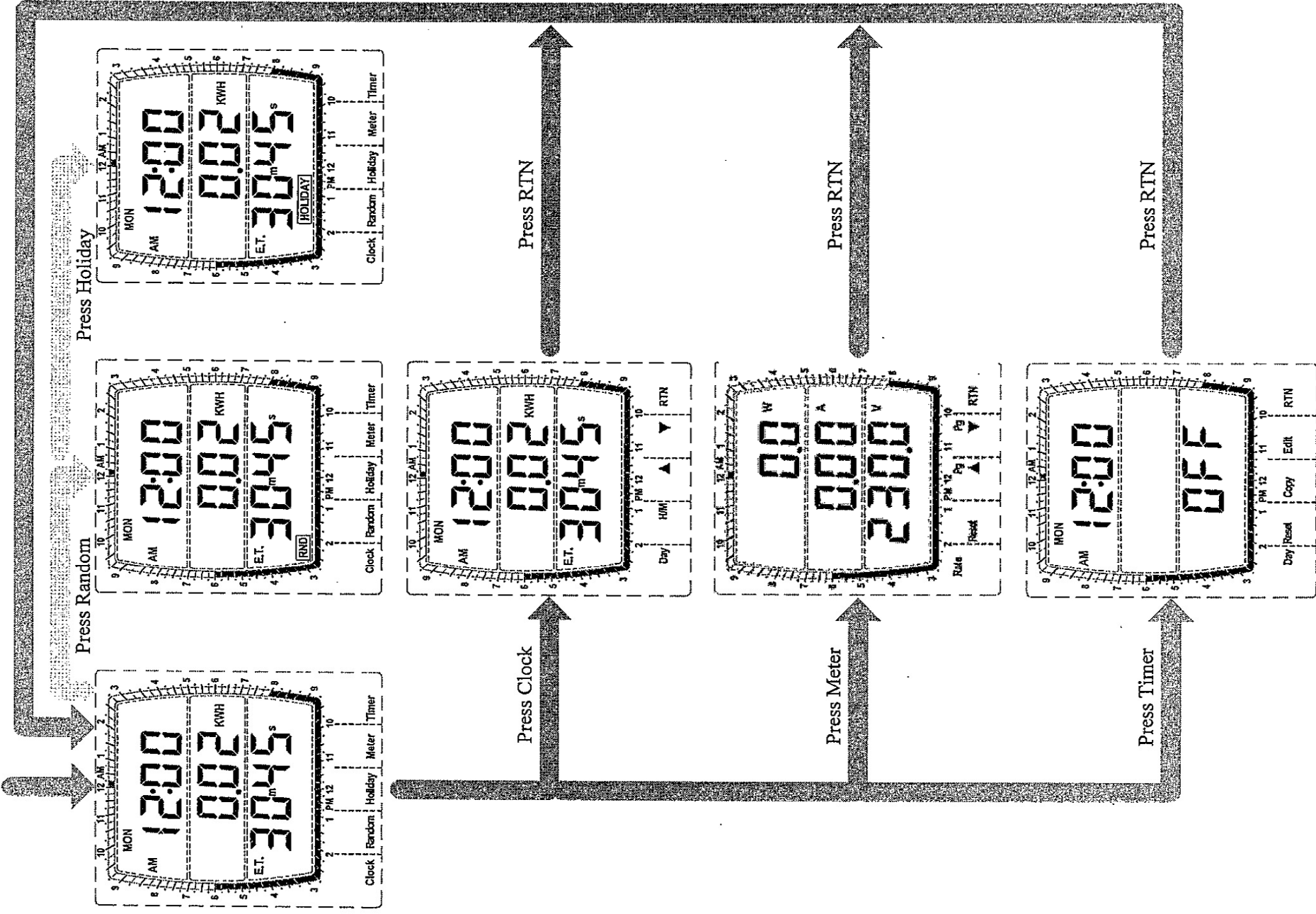
Remark:

Editing display flashes indicate this item can be re-set.

- It includes Clock, Random, Holiday, Meter and Timer 5 modes.
- LCD display default will show Clock, KWH and E.T.
- E.T.: Elapsed time.

© MENU Mode

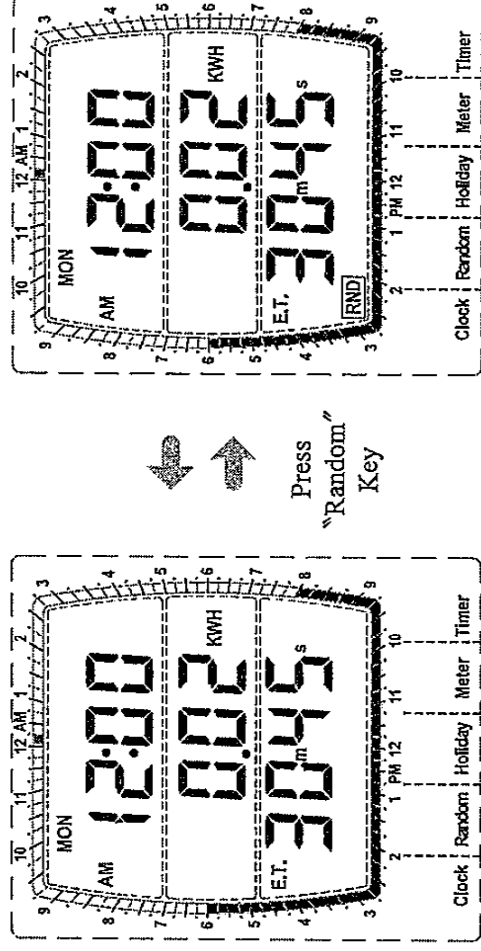
Power ON



Random mode:

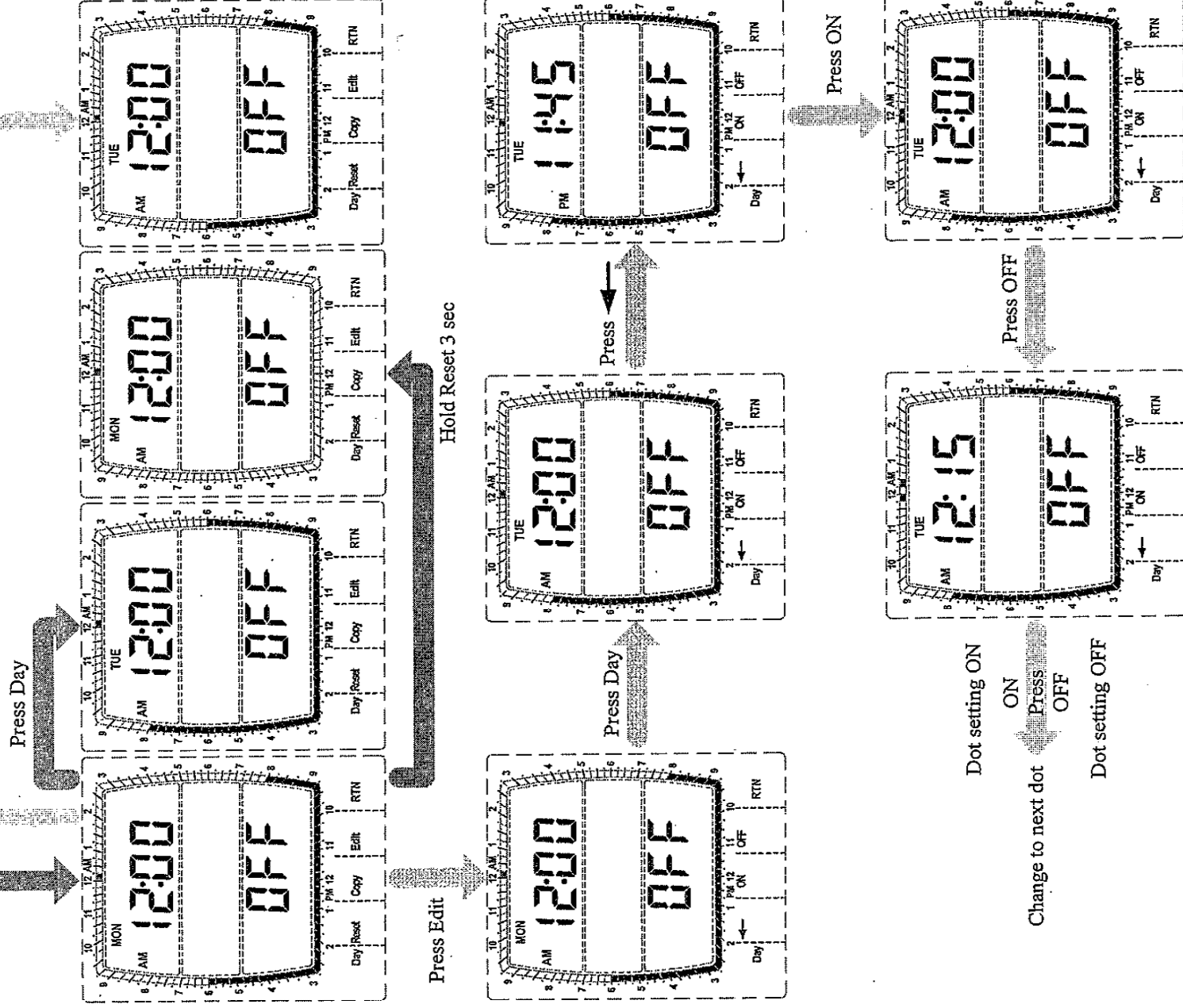
Timer random output on/off +/- (0 to 15 min).

Power ON Reset



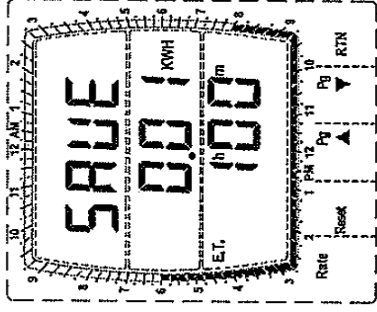
Timer mode:

- It includes Day selection, output ON/OFF edit, Reset, and use Copy to easy edit for consecutive day same ON/OFF timer.
- Day: MON, TUS, WED, THU, FRI, SAT, SUN, Holiday and nightlight.
- Reset: Hold Reset key over 3 seconds will clean clock to zero and all segments to be off.
- Copy: Copy all edition to next day, cycle through MON to SUN, Holiday and nightlight.
- Edit: ON: The current flashing cursor of outer LCD will be set to on and flashing cursor will be moved to next segment for setting.
 - OFF: The current flashing cursor of outer LCD will be set to off and flashing cursor will be moved to next segment for setting.
- ← : Counterclockwise.
- RTN: Return to MENU mode.
- Nightlight: LCD backlight amber LED can be programmed as a nightlight. ON is amber LED light, OFF is amber LED dark.
- Holiday: For Timer non-scheduling day, user can edit its special Timer output ON/OFF.

**Meter mode:**

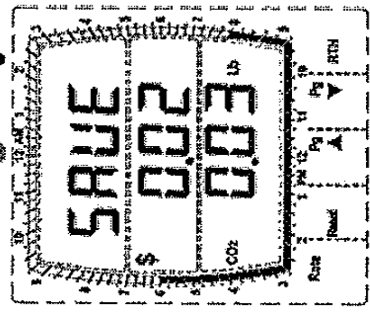
- Not only show the electronic appliance instant Watt, Current(A), Voltage, power consumption KWH, Cost, Cost rate, CO2 emission, CO2 rate, Lb/Kg selection, predict monthly KWH, Cost, CO2, but also how much Power, Elapsed time, Cost, CO2 have been saved when timer off, predict monthly Cost and CO2 save.
- Rate: Cost and CO2 rate.
Reset: Hold Reset key over 3 seconds will clean KWH, Cost and CO2 value.
Pg▲ : +1 page.
Pg▼ : -1 page.
RTN: Return to MENU mode.
SAVE: Predict Timer off KWH, Elapsed time, cost and CO2 saving.
\$: Cost
CO2: CO2, unit Lb and Kg is selected.
▲ : Rate value +0.001.
▼ : Rate value -0.001.

Display
SAVED KWH &
SAVED Elapsed Time



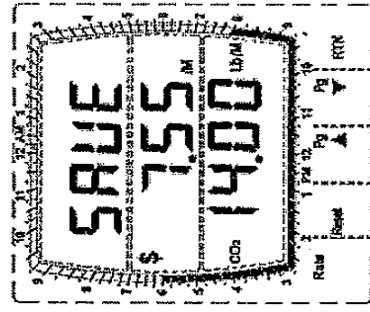
Press Pg

Press Pg

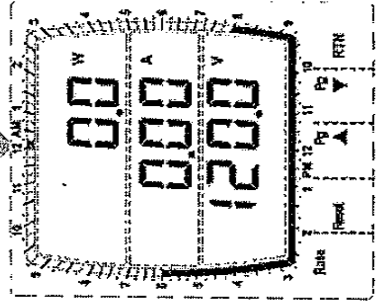


Press Pg

Press Pg

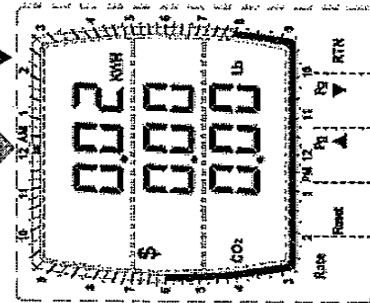


Press Pg Pg



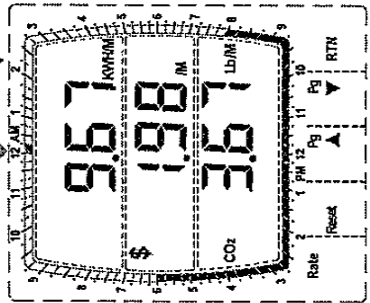
Press Pg

Press Pg

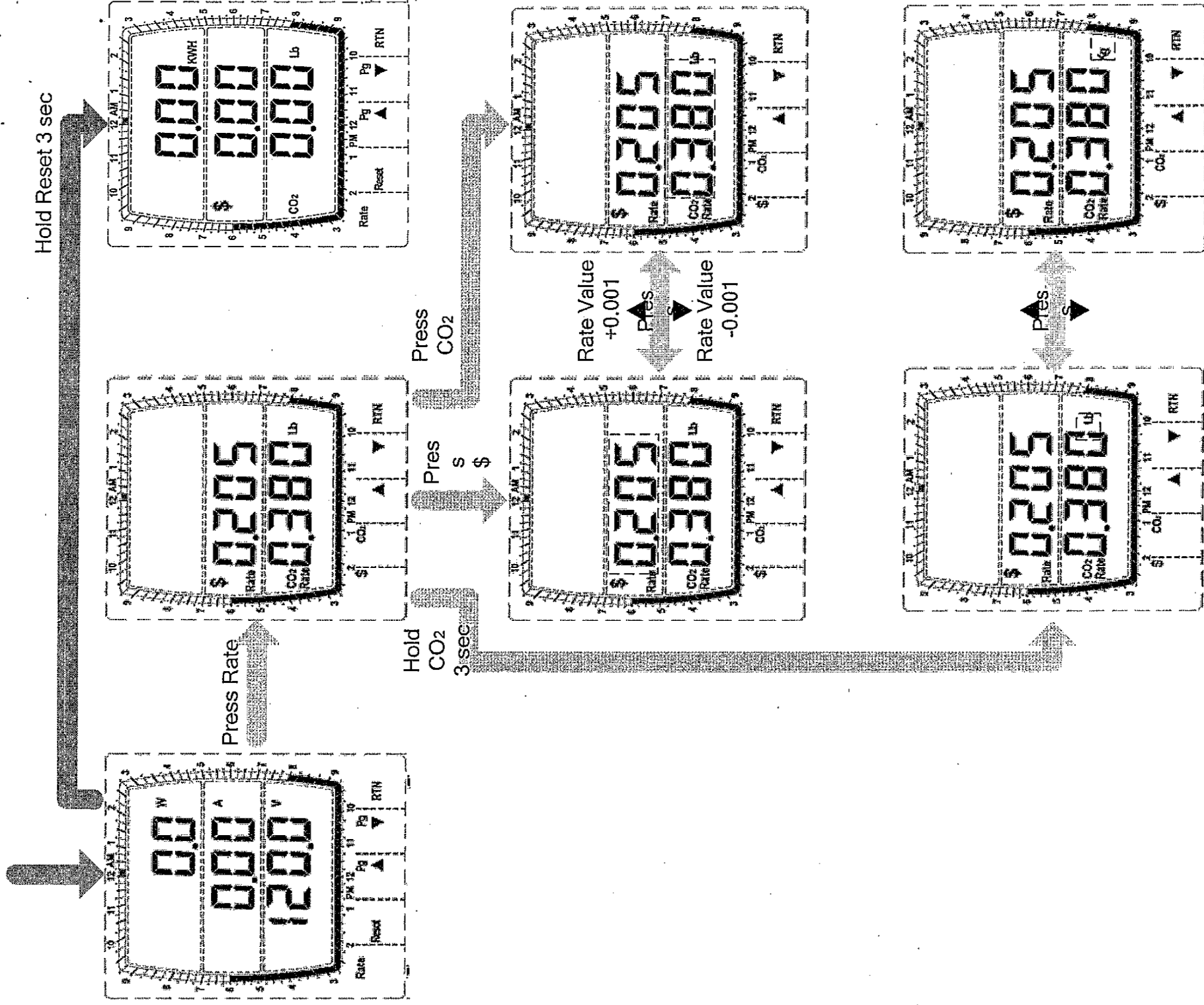


Press Pg

Press Pg

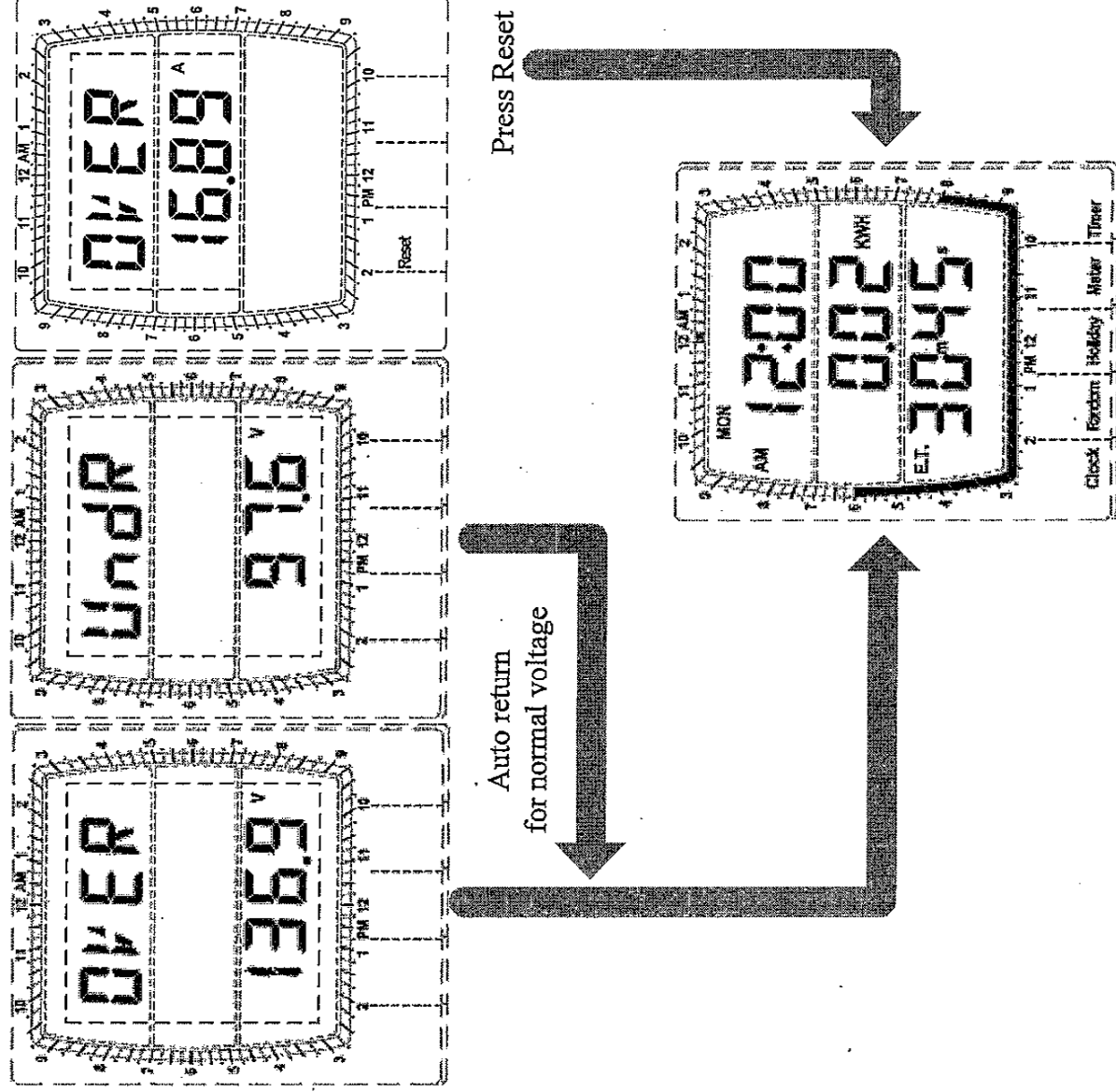


Press Pg Pg

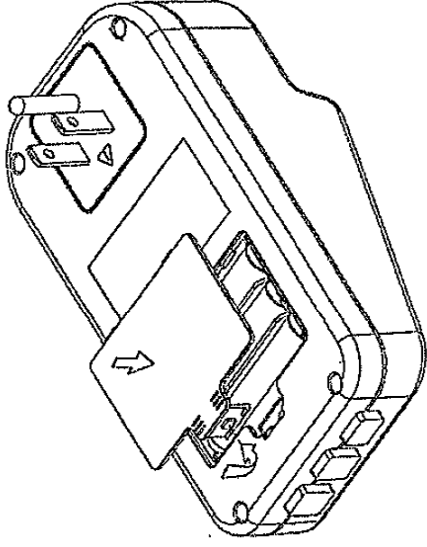
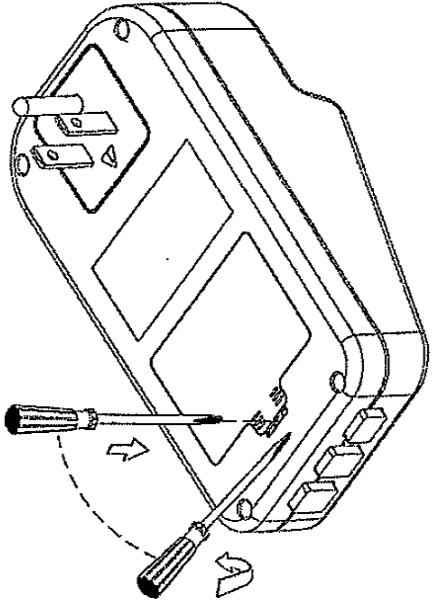


1. **Abnormal Voltage mode:** When the voltage presented at the wall outlet is over or under the normal voltage range, the unit will switch to Abnormal Voltage mode. The power will be switched off to the outlet. The OFF key will illuminate in red. The main display will flash the protected voltage value. The Abnormal Voltage icon **OVER/UndR** will display and the audible alarm will sound. When the AC line voltage delivered by the wall outlet returns to a normal range and is stable for at least 2 seconds, the unit will switch back to normal mode and restart power immediately. The unit will enter Abnormal Voltage mode if the AC line voltage is over normal by 13% or under normal by 18%. The unit will switch back to normal mode when the AC line voltage returns to +10% to -15% normal.
2. **Over Current and Over Temperature mode:** When the current load presented by the connected appliance exceeds the max. Current(15A), or a certain temperature, the unit will switch to Over Current mode or Over Temperature mode. The power will be switched off to the outlet. The OFF key will illuminate in red. The main display will flash the protected current value. The **OVER** icon or **HIGH TEMP** icon will display and the audible alarm will sound. Remove the appliance; press the Reset key to turn off the audible alarm and erase the main display protected current value and Over icon. Then press **ON** key to turn the power back on.
3. **Low battery operate:** When battery voltage under 3.3V, "LOW BAT." icon on, recover by battery change. Battery change clock need re-setting.

© Alarm Mode



1. When power to the unit is interrupted, the internal power supply will be switched to battery back up mode immediately. Battery will sustain the unit operation except the **Protection** functions, due to there is no AC line power existence, **Protection** functions are not necessary in this stage. And also LED backlight is disable if AC power is interrupted.
2. This allows the user to take unit anywhere to set and programming. It is more convenient for user to set and programming the unit anywhere, wall outlet location is not limited for user to program.
3. When the unit is plugged back in or AC line power coming, the internal power supply will be switched back to AC line power. It means the battery can be used for a pretty longer period.
4. Battery change, using the appropriate flat screwdriver open the battery holder, and position the 3 (AAA/no. 4) batteries, according to the +/- terminal. When the batteries are in place, press the battery holder back into its original position.



Retained measurements:

1. When power to the unit is interrupted, cumulative power consumption KWH and Elapsed Time will be retained automatically into EEPROM no matter the battery back up mode is worked or not. It is possible for user forgetting change battery which is in low battery condition. User program Timer ON/OFF information is already retained in EEPROM on every time user setting, it is great advantage for user to program one time only and don't worry about AC line power is interrupted.
2. When the AC power line back or the unit plug into another outlet again, cumulative power consumption KWH and Elapsed Time will be retrieved automatically.

Item	Specification		Accuracy		Response Time	
	Range	Res.	Typ	Max	Action	Recovery
Voltage	108.0~132.0 V	0.1V	0.1%	0.4%		1sec
Current	0.00~15.00 Amp	0.01A	0.5%	1% ± 0.1A		1sec
Active power	0.0~99.9 Watt	0.1W	1%	2% ± 1W		1sec
	100~1980 Watt	1W		2% ± 5W		
KWH	0.00~99.99 KWH	0.01KWH	1%	2% ± 5W		1sec
	100~9999 KWH	1KWH				
Elapsed Time	00:00~59:59 (min/sec)	1sec	30 ppm			1sec
	00:00~99:59 (hour/min)	1min				
	100~9999 (hour)	1 hour				
Monthly, Total Cost	0.00~99.99	0.01	1%	2% ± 5W		1sec
	100~9999	1				
Monthly, Total CO ₂	0.00~99.99	0.01	1%	2% ± 5W		1sec
	100~9999	1				
Save KWH	0.00~99.99 KWH	0.01KWH	1%	2% ± 5W		1sec
	100~9999 KWH	1KWH				
Save Time	00:00~59:59 (min/sec)	1sec	30 ppm			1sec
	00:00~99:59 (hour/min)	1min				
	100~9999 (hour)	1 hour				
Monthly Total Save Cost	0.00~99.99	0.01	1%	2% ± 5W		1sec
	100~9999	1				
Monthly Total Save CO ₂	0.00~99.99	0.01	1%	2% ± 5W		1sec
	100~9999	1				
Cost Rate	0.000~9.999	0.001	—			—
Kg(Lb)-CO ₂ Rate	0.000~1.999	0.001	—			—
UVP	Output Off : <98.4 V (120 Vrms -18%) Then On if Vac >102.0 V (120 Vrms -15%)	—	0.1%	0.4%	5sec	2 Sec (Auto)
OVP	Output Off: > 135.6 V (120Vrms +13%) Then On if Vac: < 132.0 V (120Vrms +10%)	—	0.1%	0.4%	5sec	2 Sec (Auto)
OCP	Output Off: > 15.38A (15A +2.5%)	1A	0.5%	1% ± 0.1A	5sec	Manual
Clock	7 Day, 24 Hour	1min	30 ppm			1min
Timer	7 Day 24 Hour + Holiday 1~199 day	15min	30 ppm			15min
Night-Light	24 Hour	15min	30 ppm			15min
Back Light	3 LED (Amber)		—			
Outlet	3-prong grounded plug and receptacle		—			
Output status LED	Output ON : Green Output OFF : Red Output AUTO : Yellow		—			
Buzzer	Key : 1 short sound Abnormal : continuous short sound		—		1sec	—
Spike free switch	ON/OFF on zero power		—			

ENVIRONMENT CONDITIONS	
IN DOOR USE ONLY	
ALTITUDE : UP TO 2000M	
OPERATION TEMPERATURE : 0°C ~ 50°C, Max. R.H. 90%	
NON OPERATION TEMPERATURE : -10°C ~ 60°C Max.R.H. 95%	
OPERATION VOLTAGE IS LIMITED TO ±10% OF LINE VOLTAGE	
POLLUTION DEGREE : 2	
CAT II	

GENERAL SPECIFICATION	
POWER RATING	120 Vrms ± 10%, 50/60Hz
POWER CONSUMPTION	Max. 1.0 Watt
Ratings	15 Amp (1980 Watts) Resistive and Inductive, 600 Watts Tungsten, 1/3 H.P. 120V.A.C.
LW/H	160mm x 90mm x 72mm
WEIGHT	Around 280g

- Note: 1. The specification is based on sine wave and resistance load.
2. The typical accuracy is the most reading on the specific.

Trouble Shooting:

Item	Symptoms	Action	Description
1	The main display flash when the unit first time connected to wall outlet.	Clock setting	1. This normal operation, Clock is not set yet. 2. New unit connect to AC line or battery change will be reset clock
2	Over icon display and Amp value is flashing, audible alarm is sounded. Output is off and OFF key illuminate red.,	Check and remove the appliance which is drawing over current to the unit, press Reset key and ON key to restart the unit.	This is over current protection function indicating the total power consumption is larger than the max. by 2.5%.
3	Over/Under icon display and Volt value is flashing, audible alarm is sounded. Output is off and OFF key illuminate red.,	The unit will restart automatically when the AC power line voltage returns to normal voltage within 2 seconds. If condition persists call a qualified technician.	This is abnormal voltage (too high or too low) protection function.
4	LCD show low battery icon	Battery change.	This is a normal condition.
5	No display in the LCD, no response from pressing keys.	1. Check that the unit connected to an energized AC wall outlet or battery. 2. Request technical support.	When the unit is not connected to an energized AC power and no power of battery, it shall be no display in the LCD, no response from pressing keys. Or something defective internally.

Maintenance

- Protect the meter from adverse weather conditions. The meter is not waterproof. Do not expose the LCD display to direct sunlight for long periods of time.
- CAUTION: To avoid damage to the meter, do not expose it to sprays, liquids, or solvents.
- Clean the exterior of the meter by removing dust with a lint-free cloth.
- Use care to avoid scratching the clear plastic display filter.
- For further cleaning, use a soft cloth or paper towel dampened with water. You can use a 75% isopropyl alcohol solution for more efficient cleaning.
- CAUTION: To avoid damage to the surface of the meter, do not use abrasive or chemical cleaning agents.

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