

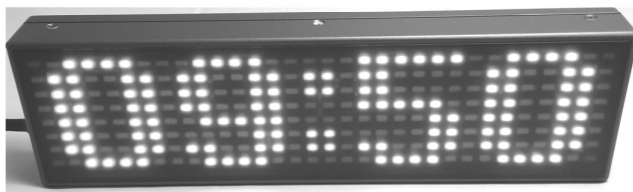


***SPECIFICATIONS OF ET-BIG CLOCK BOX**

- Setup various data formats for display of Clock; Time, Day, Date, Month, Year (only last 2-Digit (A.D. or B.E) and Temperature
- Be red 8x32 Dot Matrix Display that uses RTC DS3231 as Time Base and process data by MCU AVR MEGA328
- Be controlled by IR-Remote Control; use DC 12V Power Supply; the maximum size of numeric value is 7.5cm. (H) x 5.5cm.(W)
- Setup Date-Time; setup 0-15 Levels Adjustable Brightness of Display; setup display format after POWER-ON or RESET
- Have Mode ON-OFF Display; Mode Stop Watch provided with Connector to control timing from external; Mode Alarm Clock provided with Connector to send Signal Logic out when Alarm happened; Mode Counter shows counting value according to Signal Trig from external; Mode shows message “Open” or “Close”; and, Mode transmits data through RS485 to show data on the second ET-BIG CLOCK BOX and it can choose and setup preferable data format to show on the Display.
- Connector is provided to be connected to external Sensor to measure temperature and humidity; it supports “ET-SENSOR AM2302”

*** PACKAGE OF ET-BIG CLOCK BOX includes**

- ET-BIG CLOCK BOX, provided with Backup 3V (#CR203) inside
- ET-IR Remote Key
- ET-Switching Adapter 12V 1A Type-J



1. ET-BIG CLOCK BOX

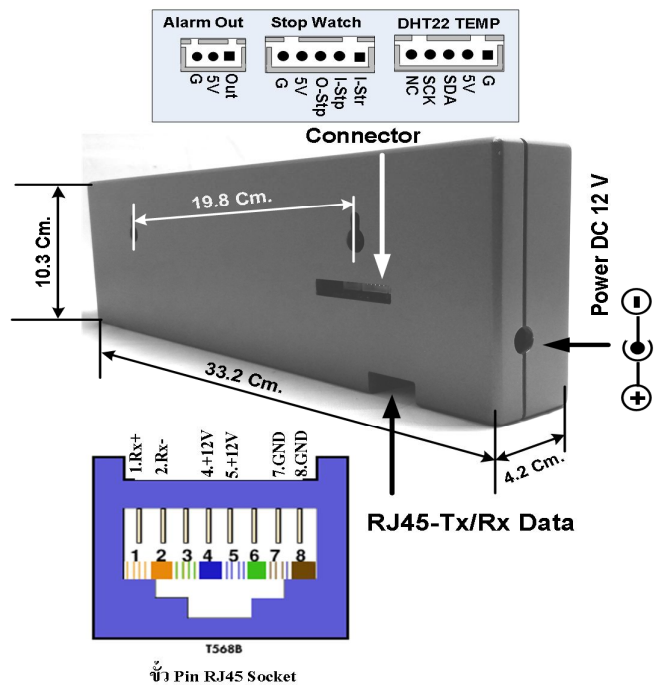


2. ET-IR Remote Key

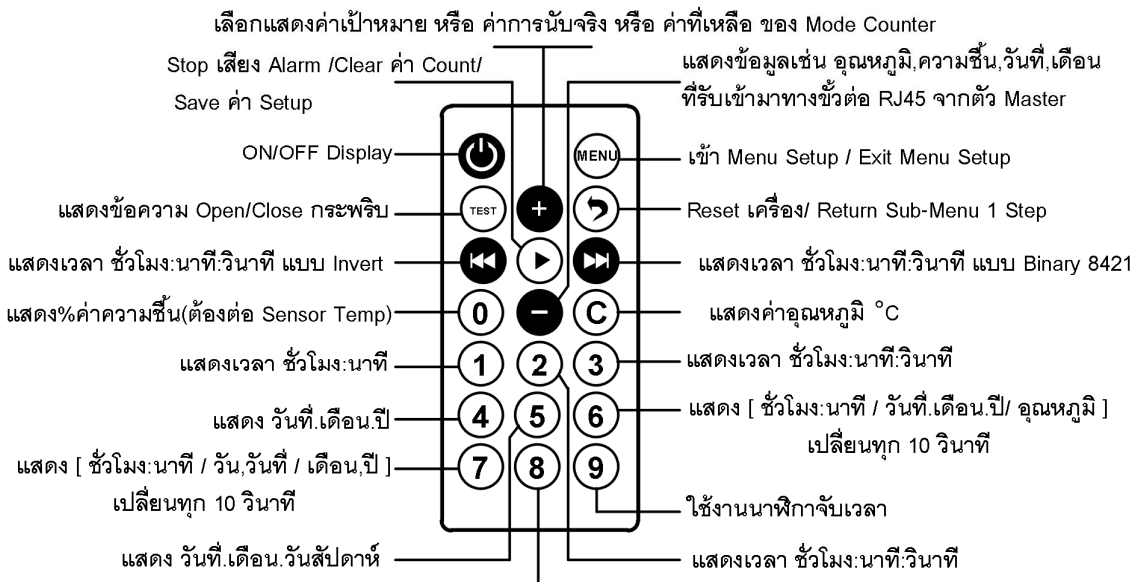


3. ET-Switching Adapter 12V 1A Type J

*** COMPONENTS, DIMENSIONS & CONNECTORS**



*** HOW TO USE & FUNCTIONS OF KEY REMOTE**





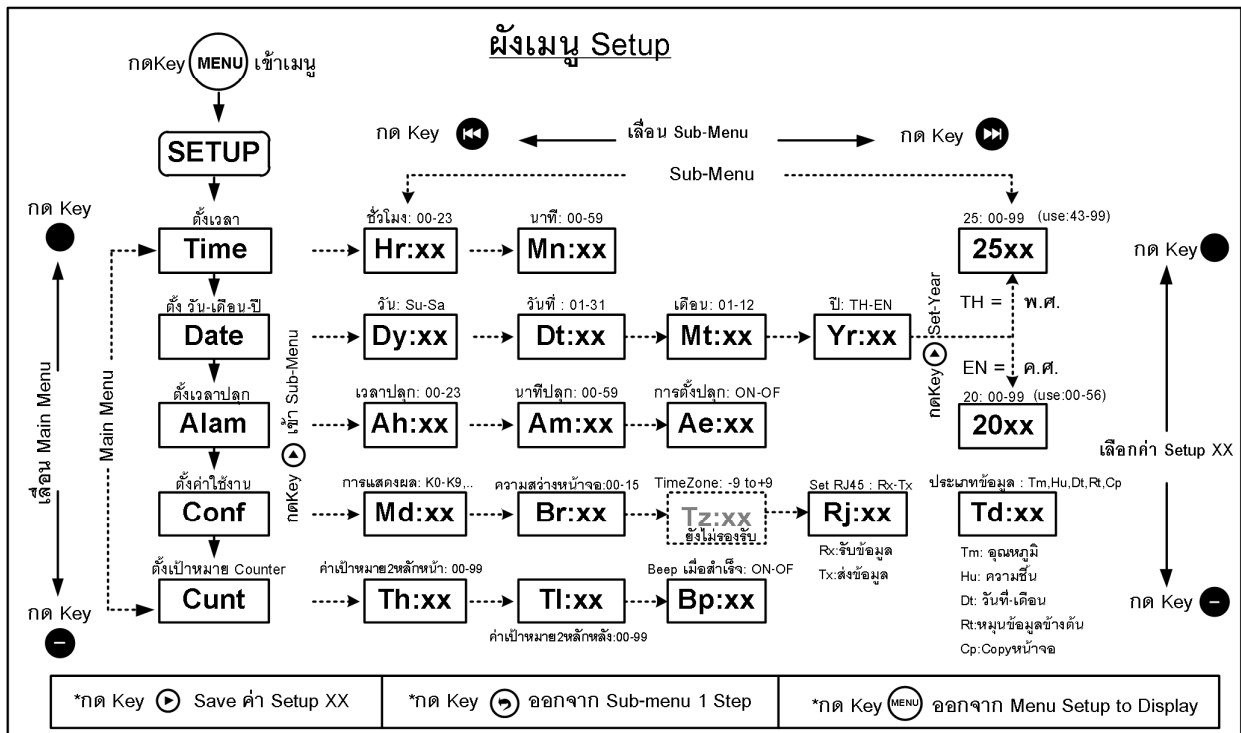
- **ON/OFF Display:** Press the Key one time, it is OFF Display; and press the Key again, it is ON Display instead.
- **RESET:** When it is in any display mode, not Mode Setup, please press the Key to RESET.
- **Mode SETUP:** Press Key to enter Mode SETUP; for more information, please read the section "How to use Menu SETUP".
- **STOP WATCH:** Press Key to enter Mode Timing; this Key is used to Start-Stop-Clear all in one, respectively. The format of display is Minute (00-59): Second (00-59): 1/100 Second (00-99).
- **HOW TO USE ET-BIG CLOCK BOX AS SINGLE TYPE:** Press any Key (Key 0-9, C, <<, >>, +, Test) to show data.
- **HOW TO USE ALARM:** Enter Menu Alarm to setup Time value for Alarm (Ah:xx,Am:xx) and set Ae:ON to enable Alarm. After setting values completely, always press the Key to save the setting value; and then, press the Key to exit from Mode Setup. Next, press Remote Key 1 to choose the format of display as preferred. When it reaches the specified Alarm, user will hear Alarm sound and Status of Alarm Logic 1 will be sent out to Connector Alarm Out that can be read and used. When user presses the Key , it stops Alarm sound and the Status at Connector Alarm Out becomes Logic 0.
- **HOW TO USE COUNTER:** Enter Menu Cunt to setup the preferable Target value for counting; Th: 2-Digit Upper (thousands, hundreds), Tl: 2-Digit Lower (tens, units), Bp:ON/OFF a beeping sound happens when it reaches the setting Target. After setting the values completely, it always presses the Key to save the setting value; and then, press the Key to exit from Setup Mode. Next, press the Remote Key to enter Mode Counter and when the Key is pressed next time, it changes the display of Counter in a following order;

T: Target --> A: Actual Counting --> R: Remain (the differences between Target and Actual Counting)

It can test the counting value by providing Signal Count (Trig) Logic 0 to Pin I-Str of Connector Stop-Watch; in this case, speed of Signal Count should not be higher than 10 HZ when setting Config Rj:Rx and it should not be higher than 1.25 HZ when setting Config Rj:Tx. If user wants to clear the counting value and restart, please press the Key .

- **HOW TO SETUP DISPLAY FORMAT AFTER POWER-ON:** It can choose and setup any favorite display format after Power-ON or RESET, please go to Menu Conf --> Md:xx; choose the favorite Key to show, and then press the Key to save the setting Key.

*** DIAGRAM OF MENU SETUP**





- MEANING OF ABBREVIATIONS IN EACH MENU:

Main Menu

Time: Setup Time value as Hour, Minute as follows;

Sub-Menu (The value of Second is set as 0 when it saves the value)

Hr:xx (Hour) = Setup Time value as 24-hour in a range of 0-23 hours

Mn:xx (Minute) = Setup Time value as Minute in a range of 0-59 minutes.

Date: Setup Days of a week, Date, Month, and Year (either Buddhist Era or Christian Era) as follows;

Sub-Menu

Dy:xx (Day) = Setup Days of a week; Su: Sunday, Mo: Monday, Tu: Tuesday, We: Wednesday, Th: Thursday,

Fr: Friday, Sa: Saturday

Dt:xx (Date) = Setup Date in a range of 1-31

Mt:xx (Month) = Setup Month in a range of 1-12

Yr:xx (Year) = Setup Year type either to be Christian Era or Buddhist Era (the chosen value will be the display format of the Clock)

TH: Setup Year type as B.E.25xx (Default); only last 2-digit is setup in a range of 00-99 (should setup as 43-99)

EN: Setup Year type as A.D.20xx; only last 2-digit is setup in a range of 00-99 (should setup as 00-56)

NOTE: When setting Year value, it should setup the value in a range of A.D. 2000-2100 or B.E. 2543-2643 for RTC DS3231. However, the Year value of both Christian Era and Buddhist Era that is setup for RTC must be conformed with. Moreover, the Year value should be setup in a range of A.D. 2000-2056 or B.E. 2543-2599.

Alam: (Alarm) Setup Alarm Clock each day; setting values are

Sub-Menu (Second value will be setup as 0 when it saves the value)

Ah:xx (Alarm Hour) = Setup Hour value of Alarm in a range of 0-23 hours

Am:xx (Alarm Minute) = Setup Minute value of Alarm in a range of 0-59 minutes

Ae:xx (Alarm Enable) = Setup state of ON/OFF Alarm as follows;

ON: Enable Alarm

OF: Disable Alarm (Default)

Conf: (Configuration) Setup the essential values for the Clock as follows;

Sub-Menu


Md:xx (Mode Display) = Setup any preferable display format after Power-ON; this display format will be conformed to the pressed Key on the Remote; K0-K9, KC, K-, K+, KR, KL, KT, KP(>). If any Key is chosen, the screen always shows the chosen Key after Power-ON (Default=K1).

Br:xx (Brightness) = Adjust brightness of Display in a range of 00-15 (00:Dimmest, 15:Brightest)


Tz:xx (Time Zone) = Setup Time Zone that will be valid when using Time Base from GPS, it can setup the value in a range of -9 to +9 (Time Zone of Thailand is +7) (**NOTE: This model is currently not supported by GPS**)



Rj:xx (RJ45) = Setup values for transmitting data of Connector RJ45 (RS485 Communication) as follows;

Rx: Connector RJ45 is setup to receive data from the Clock that is set as Tx. When pressing the Key , the received data will be shown on the Display according to the data format that is setup in Sub-Menu Td:xx.

Tx: Connector RJ45 is setup to send data and the Clock prints data such as Date, Time, Temperature, or Humidity through Connector RJ45 all the times.

Td:xx (Type Data) = Choose the received data through Connector RJ45 to show on the Display. Press Key  and choose following values;

- Tm(Temp) : Choose Temperature value to show on The Display
- Hu(Humidity) : Choose Humidity value to show on The Display
- Dt(Date/Mount) : Choose Date and Month to show on The Display
- Rt (Rorate) : Show each of 3 values above and alternately change every 10 seconds.
- Cp(Copy Display) : Show the same data as Master device according to the pressed Key (except Key9)

Cunt: (Counter): It sets Target value for Counter and enables Buzzer to produce a beeping sound when the counting value reaches the specified Target, please choose

Sub-Menu

Th:xx (Target ByteHigh) = Setup the first 2-digit value of Target (thousands and hundreds) in a range of 00-99

Tl:xx (Target ByteLow) = Setup the last 2-digit value of Target (tens and units) in a range of 00-99

(Ex. If setting Target = 200, please setup the value as Th= 02, Tl = 00 , or










If setting Target = 7501, please setup the value as Th=75, Tl = 01)


Bp:xx (Beep) = Produce a beeping sound when Counter reached the specified Target value, please choose

ON: Produce a beeping sound when the counting value reaches the specific Target




OF: No Beep sound when the counting value reaches the specific Target (Default)

- **HOW TO USE MENU SETUP:** Referred to diagram of Menu above, it can summarize how to use Menu Mode Setup as follows;

- 1) Press Key  to enter Mode Setup; the Display shows the message “SETUP” for a while and then enter the first Main Menu “Time”.
- 2) Press Key  or Key  to choose the preferable Main Menu for setting value
- 3) After chose and entered the preferable Main Menu completely, press Key  to go to the sub-menu of the Main Menu, and the Display shows the first sub-menu.
- 4) Press Key  or Key  to choose the preferable sub-menu for setting value.
- 5) After chose the preferable sub-menu completely, press Key  or Key  to choose and setup values.
- 6) After setup values for sub-menu completely, press Key  to save; the Display shows the tick sign at the position user has chosen and setup for a while and user can hear Beep sound twice, it means that all setting values are saved completely. User can return to step 4 to choose and set value of the next sub-menu.

After setup the values of sub-menu completely but user doesn't press any Key Save, all new setting values are not used; or, if user exits Mode Menu, all setting values return to the old one; or, if user moves to other sub-menus and then returns to the previous one, all new setting values are not updated. In summary, it always presses Key Save  after setup any sub-menu completely, otherwise it is



- 7) When user is in any sub-menu and wants to exit to Main Menu in order to change and go to other Main Menu, press the Key  to go backwards a step by step until it returns to Main Menu, and then user can start step 2 again
- 8) If user wants to exit Mode Setup, please press the Key  repeatedly until it exits Mode Setup (Display stops at normal display mode that shows Time); or, press the Key  only one time, it exits Mode Setup instantly.

NOTE - *If any new external device is connected to Connectors of ET-BIG CLOCK BOX, it always resets the Clock to update new connective device.*

- If it is not connected to any external Sensor Temp, the Temperature value will be read from internal RTC-DS3231.

***** **For full information, please download from WWW.ETTEAM.COM** *****