



[www.entes.eu](http://www.entes.eu)

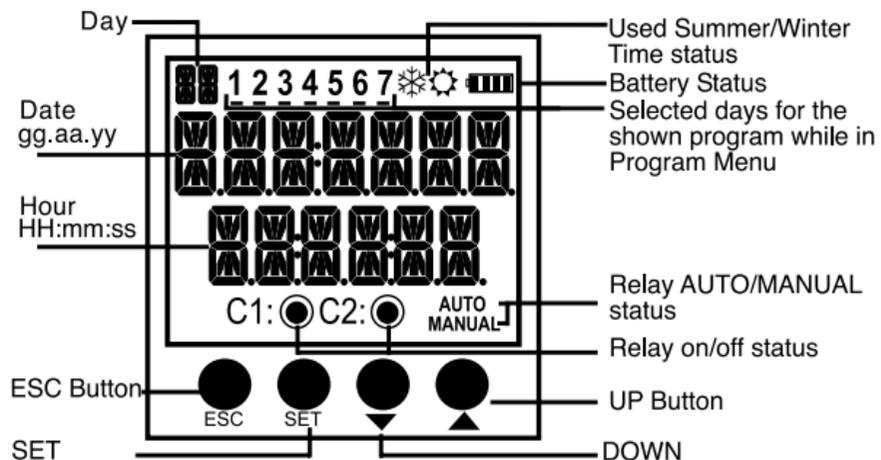
## DTR-10 User Manual and Menu Map

**Adr:** Dudullu OSB; 1. Cadde; No:23 34776 Ümraniye - İSTANBUL / TÜRKİYE  
**Tel:** +90 216 313 01 10 **Fax:** +90 216 314 16 15 **E-mail:** [contact@entes.eu](mailto:contact@entes.eu) **Web:** [www.entes.eu](http://www.entes.eu)  
**Call Center Technical Support:** 0850 888 84 25



A5299 / Rev.4

DTR-10, which has a real time clock, is an electronic timer that calculates the sunset and sunrise periods automatically. It is designed for controlling the devices which are connected to its contacts according to sunset, sunrise and the time periods which are programmed by the user.



**ESC Button** : It is used to switch between monitoring menus. In the programming mode, it is used to cancel a parameter change or to return to the previous menu.

**SET Button YUKARI** : It is used to switch between monitoring menus. When it is pressed for 3 seconds, programming mode is entered. In the programming mode, it is used to apply a parameter change or to enter to a menu.

**DOWN Buttons** : In the monitoring menu, it is used to switch between programs to show their activity in a day. When the DOWN button is pressed for 3 seconds, C1 relay goes into manual mode and when the UP button is pressed for 3 seconds, C2 relay goes into manual mode. In the programming menu; it is used to browse between menus, to select parameters and to adjust values with digits.

①

### Precautions for Installation and Safe Use

If below precautions are not properly observed and carried out, it may result in cases with injury or death.

Disconnect power before working on the device.

- When device is connected to the network, do not remove the front panel.
- Do not clean the device with solvent or similar items. Only clean with dry cloth.
- Verify correct terminal connections before energizing the device.
- Install the device on the electrical panel.
- Contact your authorized reseller in case problems occur with your device.



**No responsibility is assured by the manufacturer or any of its subsidiaries for any consequences rising out of the use of this material.**

**- The output loads connected to the relays do not function if auxiliary supply is absent. Even if the relay status is monitored as "on" ( [ ] ! ● and/or [ ] ● ), auxiliary supply is a must for the operation.**

- There are two reserves in the device. Programmed data is protected by these reserves against power outages.
- For long time reserve, a battery is used. If the device is not continuously supplied with voltage and waited on the shelf, the battery life is 5 years.
- Reserve battery should only be changed by the authorized service.

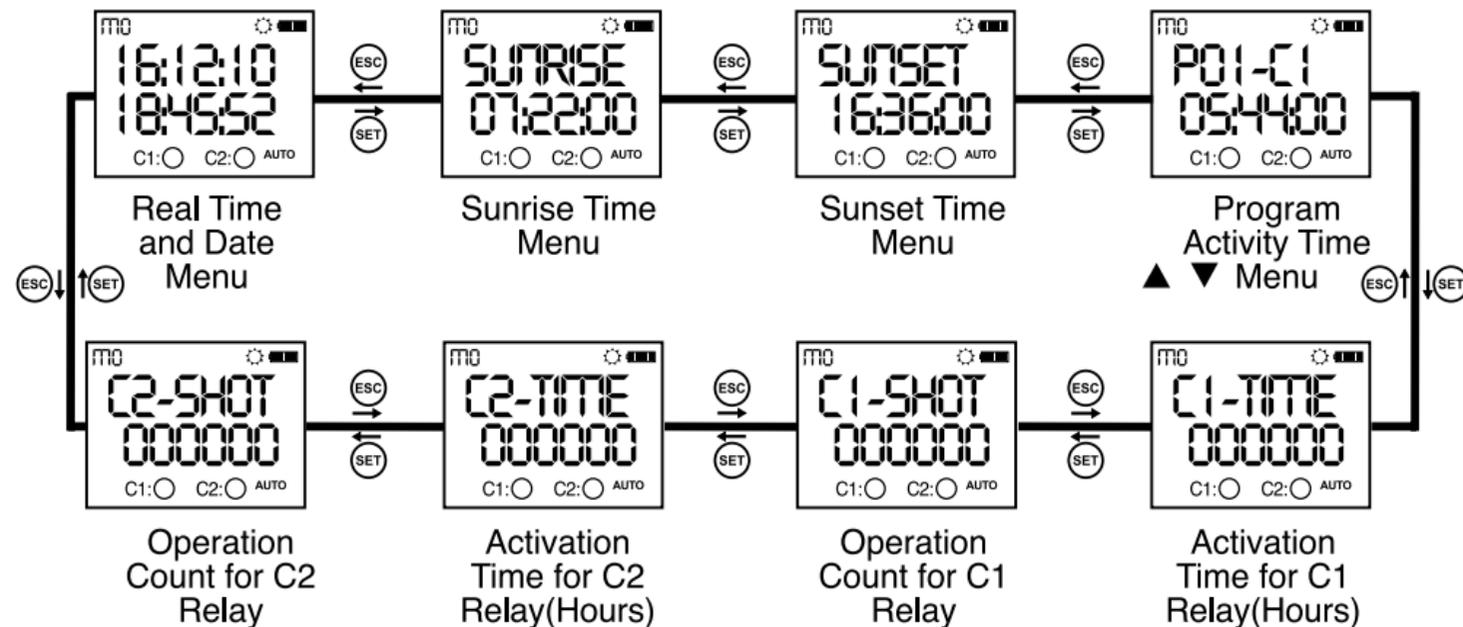
### MANUAL MODE :

In order to use the relay outputs manually, DTR-10 has to be in the monitoring mode. The DOWN button is used to switch the C1 relay to manual mode and the UP button is used to switch the C2 relay to manual mode. When the UP or DOWN button is pressed for 3 seconds, "MANUAL" indication appears on the screen. If this is done while the relay C1 or C2 is activated, that relay will be deactivated. If it is done while the relay C1 or C2 is deactivated, no switching will occur. When the device is in manual mode and the relay is not energized, and the DOWN button is pressed once C1 contact will turn off its contact or when the UP button is pressed once C2 contact will turn off its contact at the end of a 3-second delay. During this delay, the symbol indicating the state of the relay contact is flashing. After the activation of the contact, when the DOWN button is pressed again for 3 sec, C1 relay will exit the manual mode. When the UP button is pressed again for 3 sec, C2 relay will exit the manual mode. The relay will stay activated or deactivated according to the program flow. When both of the the relays are in manual mode, "AUTO" indication will disappear from the screen.

②

## MONITORING MENU :

SET and ESC buttons are used to switch between menus in the monitoring mode. If the device is left unattended for 60 seconds in any menu other than the real time and date, it returns to the real time and date screen.



Program activity time menu shows the programs, which are stored on the device, in order according to program activity time. The active or finished programs can be shown with UP or DOWN buttons. The programs with a # sign next to them are the programs which are still active.

## DTR-10 Menu Settings



If the "SAVE" option doesn't get accepted when returning to the monitoring menu, the changes which are made in the DTR-10 menus will be discarded. This isn't the case for "TIME SETTINGS" menu. The changes which are done in "TIME SETTINGS" menu are applied immediately.

When none of the keys are pressed in the programming menu, the device returns to monitoring menu and any changes which were made will be discarded. Refer to the menu map when configuring the DTR-10 menus.

- **Program Menu:** There are 15 programs available to program between P01 and P15. The available settings for programs are relay selection, activation time, activation day, deactivation time, time conflict query and save. In addition to these, an appointed program has two additional settings as "EDIT" and "DELETE". If "EDIT" is selected for an appointed program, the existing settings of that program is shown and can be reconfigured. If "DELETE" is selected for an appointed program, that program will be deleted permanently.

**Output Selection ( PXX-OUT ):** DTR-10 has 2 relay outputs as C1 and C2. The user must choose between C1 and C2 as the relay output which he want to control.

**Activation Time Setting ( PXX-ON ):** There are 3 parameters: Time, sunrise and sunset. The user can select and set any of the 3 parameters which suits the application best.

**Time Parameter ( TIME ):** This parameter is the adjustment of the relay according to the real time clock. If this parameter is selected, the user can enter an activation time between 00:00:00 (HH:mm:ss) and 23:59:59.

**Sunrise Parameter ( SUNRISE ):** This parameter is the adjustment of the relay according to sunrise time which is calculated in reference to the local coordinates and date. If this parameter is selected, the user can enter an activation time adding or subtracting 9:59:59(HH:mm:ss) to the local sunrise time. If the time after the subtraction corresponds to the day before, this parameter is adjusted as 00:00:00 for the current day.

**Sunset Parameter ( SUNSET ):** This parameter is the adjustment of the relay according to sunset time which is calculated in reference to the local coordinates and date. If this parameter is selected, the user can enter an activation time adding or subtracting 9:59:59(HH:mm:ss) to the local sunset time. If the time after the addition corresponds to the day after, this parameter is adjusted as 23:59:59 for the current day.

**Selection of Activation Days:** The day/days in which the program will be activated is adjusted in this menu. If "ALL DAYS" "YES" is selected, the program will be activated for all days of the week. If "NO" is selected, the user will be asked to select "YES" or "NO" for the all of the days starting from Monday in which the program will be active. There are numbers 1 to 7 on the top section of the screen. These numbers stand for the days of the week. "1" indicates Monday. These numbers also help to indicate the days in which a program will be active without entering that appointed programs menu.

**Deactivation Time Setting ( PXX-OFF ):** There are 3 parameters: Time, sunrise and sunset. The user can select and set any of the 3 parameters in the best way. These parameters are the same as in the relay activation setting. In this menu, the user can select a different option than in the relay activation setting but the activation and deactivation times must be set differently. If the activation setting is selected as sunrise/sunset and the deactivation setting is selected as time, the deactivation time shouldn't be earlier than the activation setting. For the cases other than this one in which the deactivation time is set earlier than the activation time, the deactivation time is set for the next day.

**Time Conflict Query:** The device checks for any time conflicts between the existing programs and the newly entered program. If there is a time conflict, it warns the user with the "CROSS PXX" warning. If there isn't a time conflict, "PROGRAM VALID" is shown on the screen. These warnings will be shown for 3 seconds. If a button is pressed before 3 seconds run out while a warning is displayed, the save menu is entered.

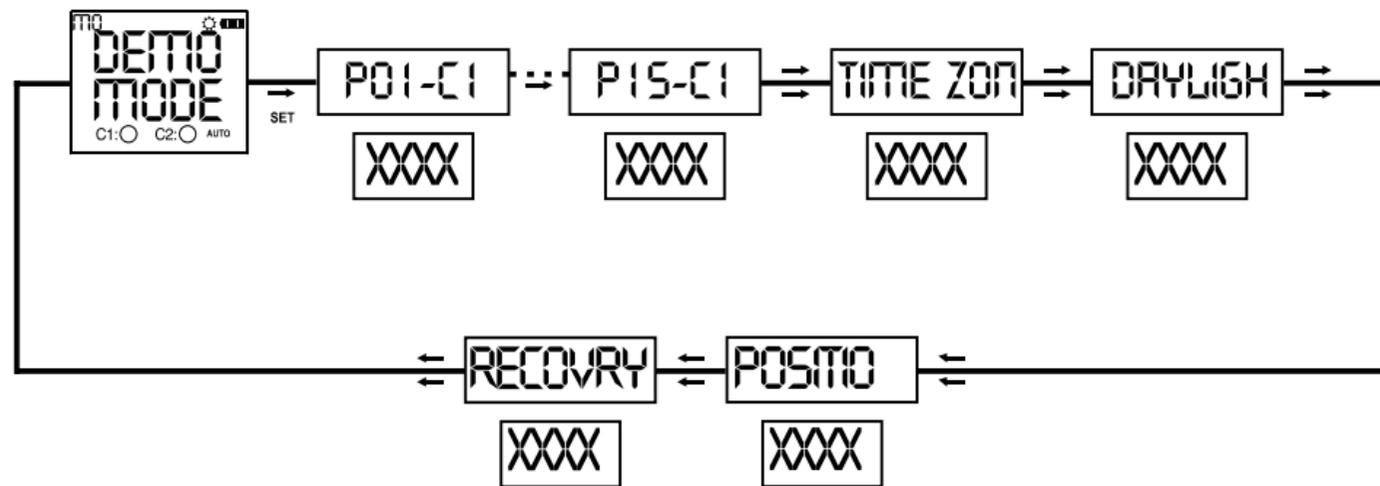
**Save:** In this menu, the user is asked to approve the changed program or not. If the program is not confirmed by the user, it stays unchanged. If the program is confirmed by the user, the changes are kept on the memory but are not in effect. When the "SAVE" query is confirmed by the user while returning to the monitoring menu, the changes are saved to the memory. See application example 1 and 2

#### • Relay Time Menu:

The operation counts and activation times of the C1 and C2 relays are reset in this menu. The user can reset any of the parameter/parameters of the C1 relay. There are 4 sub-menus as "C1-TIME", "C1-SHOT", "C2-TIME" and "C2-SHOT". When the "SAVE" query is confirmed by the user while returning to the monitoring menu, the changes are saved to the memory.

#### • Settings Observation Menu:

The user can observe the sub-menu settings with 3 second intervals in this menu. The activation/deactivation time settings, time zone, summer/winter time setting, geographical coordinates and the parameter to which the exit from the manual mode is set can be displayed. UP, DOWN and ESC buttons enables the interval between screens to extend. The SET button provides a faster browsing between the sub-menus.



xxxx is a symbolic representation. The set parameters are shown here.

### • Regional Settings Menu:

Geographical settings are done in this menu. The changes which are made in this menu are saved to the memory when the "SAVE" query is confirmed by the user while returning to the monitoring menu.

**Location Menu:** The sunrise and sunset times are automatically calculated according to the set coordinates. The user can choose to select the **MANUAL** parameter and enter latitude and longitude of the coordinate which he is in manually or to use the coordinates which are already saved on the devices memory. The selectable options are 68 world clocks. When any parameter other than **MANUAL** is selected, the time zone is adjusted automatically.

**Time Zone Menu:** The time zone for the geographical location in which the user resides is set in this menu. This parameter affects only the sunrise and sunset times according to the set location.

Daylight Savings Time (DST) Menu: DST usage is set in this menu. There are 4 parameters.

**Europe Parameter:** According to the European DST settings; the DST starts when the local time is about to reach 03:00:00 and the clocks are turned 1 hour forward to 04:00:00 on the last Sunday of March. The DST ends when the local time is about to reach 02:00:00 and the clocks are turned 1 hour backward to 01:00:00 on the last Sunday of October.

**USA Parameter:** According to the USA DST settings; the DST starts when the local time is about to reach 02:00:00 and the clocks are turned 1 hour forward to 03:00:00 on the second Sunday of March. The DST ends when the local time is about to reach 02:00:00 and the clocks are turned 1 hour backward to 01:00:00 on the first Sunday of October.

**Custom Parameter(CUSTOM):** By choosing this parameter, the user first selects the month, the place of the day in that selected month(Ex.: The selection of the "second" parameter in the "second Saturday of March". It is selected as the week of the month.), the day, the time on which it will be turned forward for DST start. The user then selects the month, the place of the day in that selected month(Ex.: The selection of the "second" parameter in the "second Saturday of September". It is selected as the week of the month.), the day, the time on which it will be turned backward for DST finish.

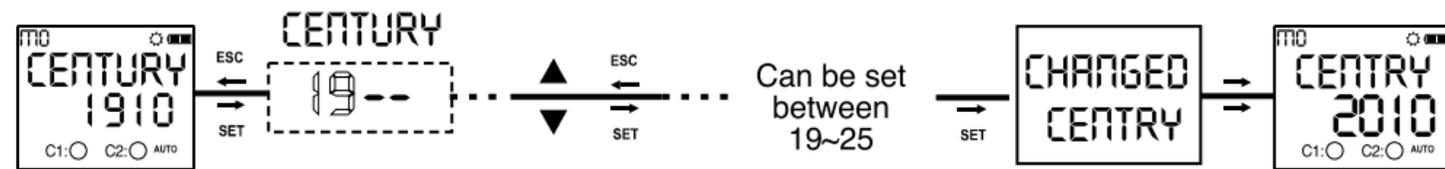
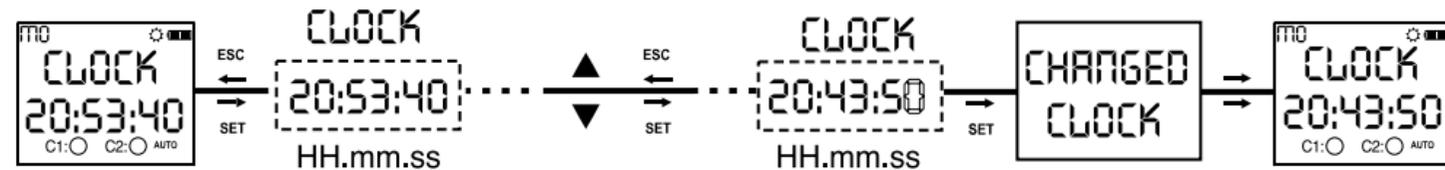
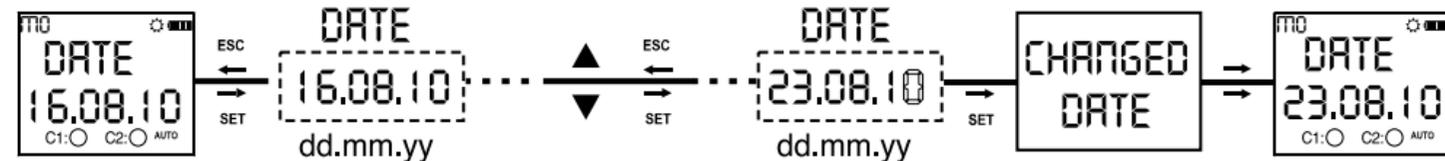
### • Time Settings Menu:

The time settings are done in this menu. There are 3 sub-menus. The changes which are made in this menu are immediately applied.

**Date Menu (DATE):** It is displayed as dd.mm.yy.

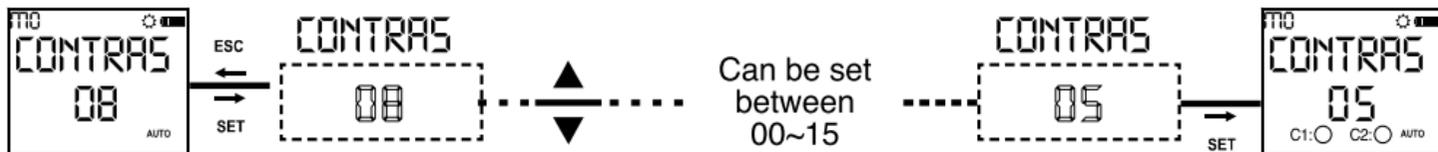
**Clock Menu (CLOCK):** It is displayed as HH.mm.ss.

**Century Menu (CENTURY):** The first two digits of the year which you're in is set in this menu. It is displayed as yyyy. The last two digits come from the date setting. When the user wishes to set this value it changes to yy--. It can be set between 19 and 25.



**• Display Settings Menu:**

The contrast is adjusted between 00 and 15 in this menu.



**• Manual Mode Menu:** The setting for leaving the manual mode after the device is set in manual mode is done in this menu. There are 3 parameters. The user can leave the manual mode with the DOWN button regardless of what parameter he chooses in this menu.

**Disabled Parameter (DISABL):** When this parameter is selected; after the manual mode is enabled with the UP/DOWN buttons for any of the outputs, it must be disabled again with the UP/DOWN buttons.

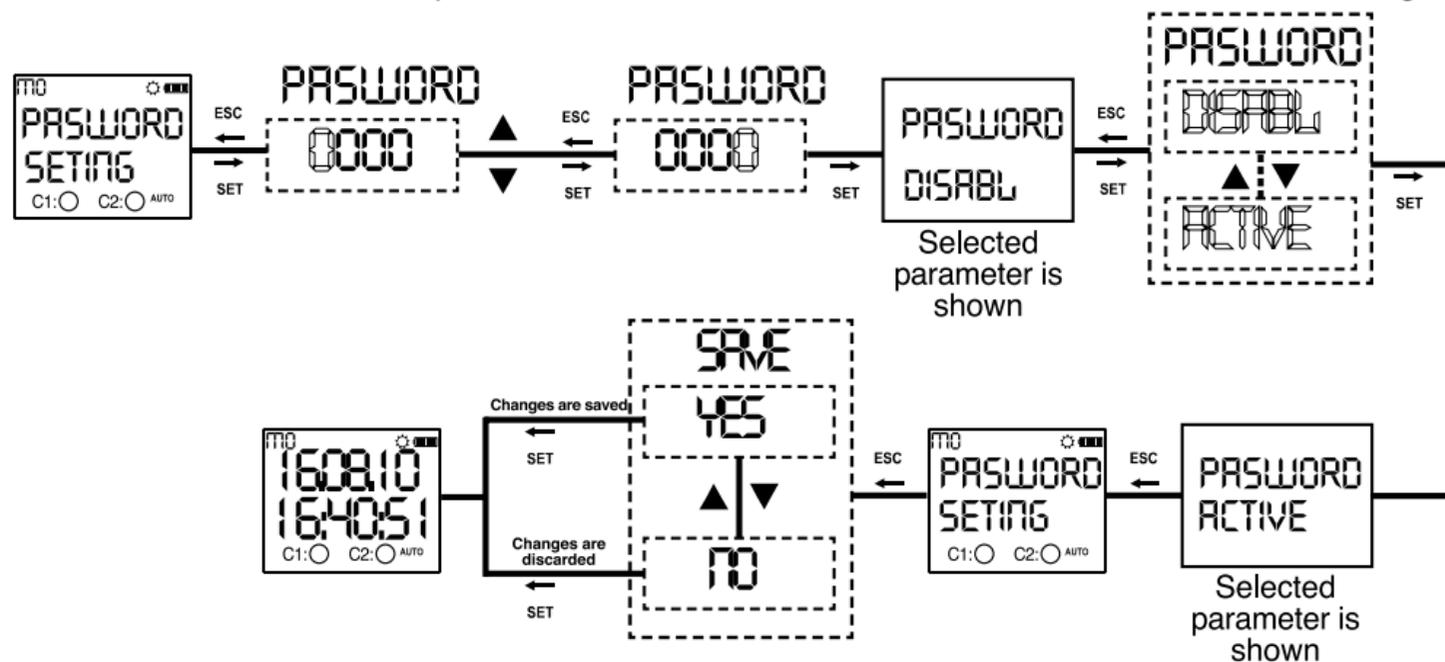
**Program Parameter (TEXT-P):** When this parameter is selected; after the relay/relays is/are activated or deactivated by a program in the program flow, the manual mode for the relay/relays will be disabled.

**Timer Parameter (TIMER):** When this parameter is selected; the user will be prompted to enter the time as HH:mm. The device will start to count back from the entered time when the manual mode is enabled for the relay/relays. If the time is entered as 23:59, the manual mode will be disabled after 23 hours and 59 minutes. If the time is entered as 00:01, the manual mode will be disabled after 1 minute. There is a special case if the time is entered as 00:00. With this entered time, the manual mode will be disabled after 1 minute too.

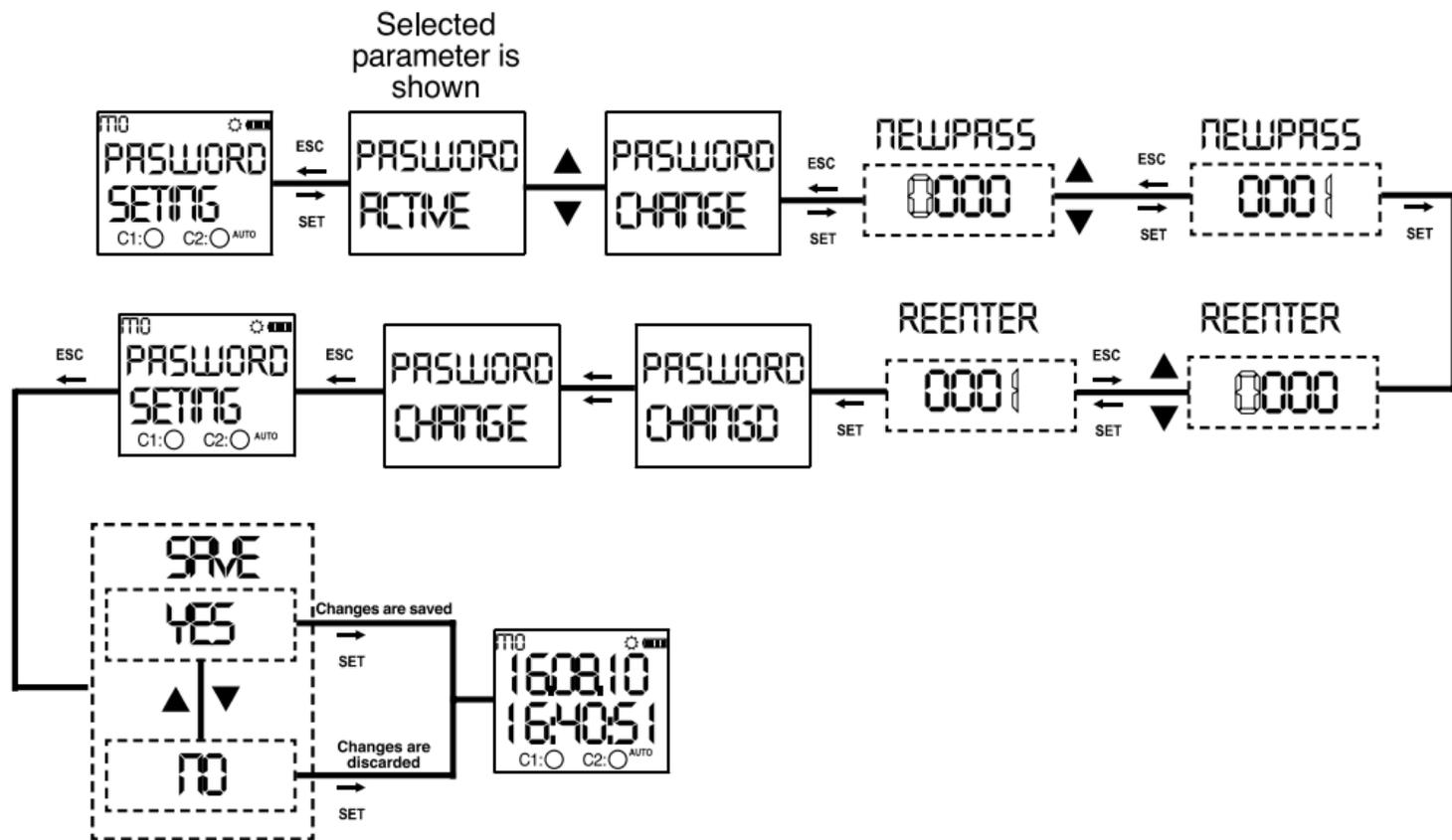
**• Password Settings Menu:**

The activation and changing of a password is done in this menu. The factory default value for the password is "0000". The 4 digit password is prompted before entering this menu. If the password is activated, it isn't prompted again before entering this menu since the password was entered before entering the main programming menu.

**Password Activation Menu:** The password is activated or deactivated in this menu. It is activated as following:



**Password Change Menu:** The password is changed in this menu. It is done as following:



**• Factory Setting Menu:**

The device is returned to its factory settings in this menu. The 4 digit password is prompted before entering this menu. If the password is activated, it isn't prompted again before entering this menu since the password was entered before entering the main programming menu. The device returns to its factory settings when the "SAVE" query is confirmed by the user while returning to the monitoring menu. Time settings, relay operation count and relay operation time doesn't change.

**• Version Information Menu:**

The software and hardware versions of the device is shown in this menu.

**• Exit from Main Programming Menu:**

This menu is used to exit from the main programming menu. The ESC button can be used for this, too. If any changes are committed in the menus while in the main programming menu, an approval prompt is shown. If there aren't any changes, the monitoring menu is shown directly.

**Factory Settings:**

**Program**

- P01: C1 relay will be activated everyday at sunset and will be deactivated everyday at sunrise.
- P02: C2 relay will be activated everyday at sunset and will be deactivated everyday at sunrise.
- P03....P15: FREE

**Password**

PASSWORD:0000  
PASSWORD  
STATUS:INACTIVE

**Regional Settings**

POSITION: ISTANBUL  
TIME ZONE: 2:00  
DAYLIGHT SAVING:  
EUROPEAN

**Display Settings**

CONTRAST:08

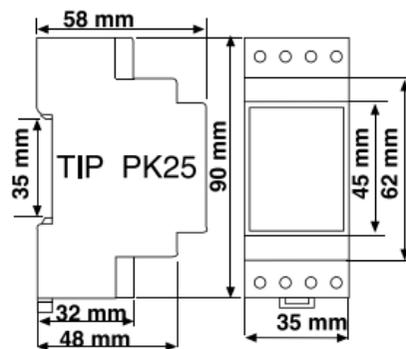
**Manual Mode**

RECOVERY : DISABLE

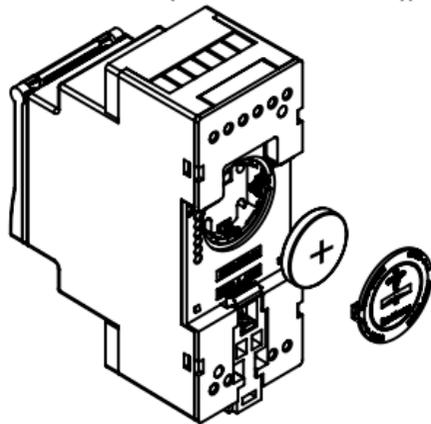
**Activation Time**

C1 TIME :0  
C1 SHOT :0  
C2 TIME :0  
C2 SHOT :0

## DIMENSIONS

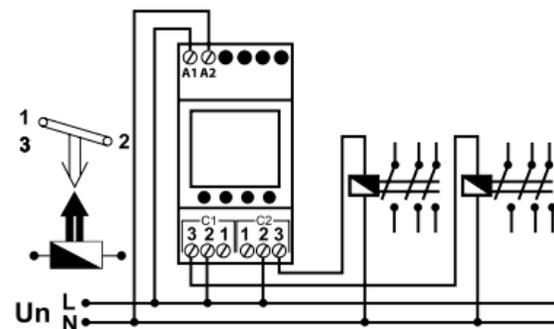


**Not:** The contact resistance at ohmic load ( eg: Incandescent bulb, Resistance devices ) is 16A.It is recommended to use a contactor if the inductive load (eg: AC motor, fluorescent,etc.) or capacitive load (eg: Led Drivers, UPS, Fluorescent ( Electronic Ballast), etc.) switch. Otherwise adhesion may occur in relay contacts.



- 1) When the battery is replaced , disconnect the mains connection. Open the battery cover.
- 2) Place new battery ( the " + " sign on top of the battery ).
- 3) Close the battery cover

## CONNECTION DIAGRAM



## TECHNICAL FEATURES

Electrical Features	
Operating Voltage (Un)	Please look at the side label
Output Contact	2 C/O , 16 A / 4000 VA
Refresh Time	1 sec
Power Consumption	< 5 VA
Accuracy	≤1 sec. /Day
Screen Size	1,3" LCD
Program Number	15
Battery Reserve Time	5 years
Mechanical Features	
Equipment Protection Class	Class II (  )
Ambient Temperature	-10°C, +55°C
Protection Class	IP20
Installation	Rail Mount
Dimensions	PK25
Weight	0,2 kg
Quantity in 1 Package	16 pcs

Due to the structure of LCD screens, the liquid inside them starts to freeze below its operating temperature. This causes the screen to respond slower or not respond at all. Device's other functions are not affected from this and it opens/closes its relays as programmed. After the device temperature rises back to the operating range, LCD screen starts to work normally.

## City Names and Their Screen Displays for the Language set in the Regional Settings

Cities	Displayed Name	Time Zone
Accra, Ghana	ACCRA	+0:00
Addis Ababa, Ethiopia	ADDISA	+3:00
Aden, Yemen	ADEN	+3:00
Algiers, Algeria	ALGER	+1:00
Amman, Jordan	AMMAN	+2:00
Amsterdam, Netherlands	AMSTER	+1:00
Andorra la Vella, Andorra	ANDORA	+1:00
Athens, Greece	ATHENS	+2:00
Baku, Azerbaijan	BAKU	+4:00
Beirut, Lebanon	BEIRUT	+2:00
Bangkok, Thailand	BANGKO	+7:00
Bern, Switzerland	BERN	+1:00
Bogotá, Colombia	BOGOTA	-5:00
Brussels, Belgium	BRUSSE	+1:00
Buenos Aires, Argentina	BUENOS	-3:00
Cairo, Egypt	CAIRO	+2:00
Caracas, Venezuela	CARACA	-4:30
Casablanca, Morocco	CASABL	+0:00
Copenhagen, Denmark	COPENH	+1:00
Damascus, Syria	DAMASC	+2:00
Dhaka, Bangladesh	DHAKA	+6:00
Doha, Qatar	DOHA	+3:00
Dubai, United Arab Emirates	DUBAI	+4:00
Dublin, Ireland	DUBLIN	+0:00

Berlin, Germany	BERLIN	+1:00
Glasgow, Scotland	GLASGO	+0:00
Helsinki, Finland	HELSIN	+2:00
Havana, Cuba	HAVANA	-5:00
Hong Kong, Hong Kong	HONGKON	+8:00
Islamabad, Pakistan	ISLAMAB	+5:00
Istanbul, Turkey	ISTANB	+2:00
Johannesburg, South Africa	JOHNBURG	+2:00
Khartoum, Sudan	KHARTUM	+3:00
Kuala Lumpur, Malaysia	KUALALUMPUR	+8:00
Kiev, Ukraine	KYIV	+2:00
Lagos, Nigeria	LAGOS	+1:00
Lefkosa, TRNC	LEFKOSA	+2:00
Lima, Peru	LIMA	-5:00
Lisbon, Portugal	LISBON	+0:00
London, England	LONDON	+0:00
Madrid, Spain	MADRID	+1:00
Manila, Philippines	MANILA	+8:00
Mexico City, Mexico	MEXICO	-6:00
Monrovia, Liberia	MONROVIA	+0:00
Moscow, Russia	MOSCOW	+3:00
Nairobi, Kenya	NAIROBI	+3:00
New Delhi, India	NEWDEL	+5:30
Oslo, Norway	OSLO	+1:00

Paris, France	PARIS	+1:00
Pyongyang, North Korea	PYONGYANG	+9:00
Rarotonga, Cook Islands	RAROTONGA	-10:00
Reykjavik, Iceland	REYKJAVIK	+0:00
Rio de Janeiro, Brazil	RIOJANEIRO	-3:00
Riyad, Saudi Arabia	RIYADH	+3:00
Rome, Italy	ROME	+1:00
San José, Costa Rica	SANJOSE	-6:00
Santiago, Chile	SANTIAGO	-4:00
Seoul, South Korea	SEOUL	+9:00
Shanghai, PRC	SHANGHAI	+8:00
Sofia, Bulgaria	SOFIA	+2:00
Singapore, Singapore	SINGAPORE	+8:00
Stockholm, Sweden	STOCKHOLM	+1:00
Sydney, Australia	SYDNEY	+10:00
Taipei, Taiwan	TAIPEI	+8:00
Tehran, Iran	TEHRAN	+3:30
Tripoli, Lebanon	TRIPOLI	+2:00
Tokyo, Japan	TOKYO	+9:00
Vienna, Austria	VIENNA	+1:00

## Parameter in Turkish selection

Cities	Displayed Name	Time Zone
Adana	ADANA	+2:00
Adıyaman	ADIIYAM	+2:00
Afyon	AFYONK	+2:00
Ağrı	AGRI	+2:00
Aksaray	AKSARA	+2:00
Amasya	AMASYA	+2:00
Ankara	ANKARA	+2:00
Antalya	ANTALY	+2:00
Ardahan	ARDAHAN	+2:00
Artvin	ARTVIN	+2:00
Aydın	AYDIN	+2:00
Balıkesir	BALIKES	+2:00
Bartın	BARTIN	+2:00
Batman	BATMAN	+2:00
Bayburt	BAYBUR	+2:00
Bilecik	BILECI	+2:00
Bingöl	BINGOL	+2:00
Bitlis	BITLIS	+2:00
Bolu	BOLU	+2:00
Burdur	BURDUR	+2:00
Bursa	BURSA	+2:00
Çanakkale	CANAKK	+2:00
Çankırı	CANKIR	+2:00
Çorum	CORUM	+2:00

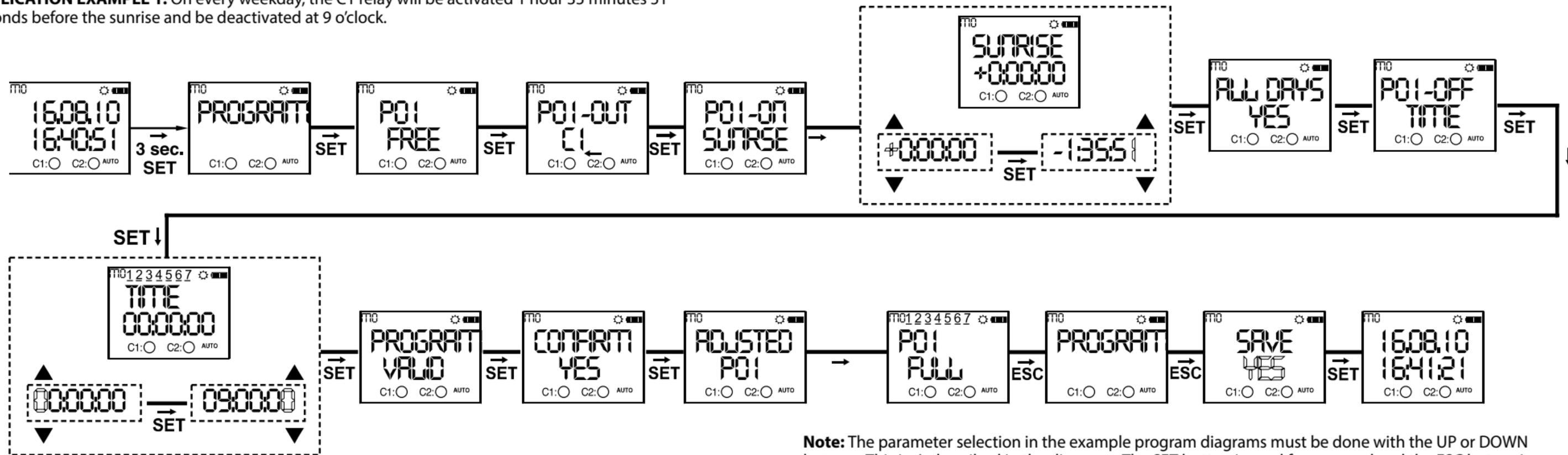
Denizli	DENZLI	+2:00
Diyarbakır	DIYARBAKIR	+2:00
Düzce	DUZCE	+2:00
Edirne	EDIRNE	+2:00
Elazığ	ELAZIG	+2:00
Erzincan	ERZINCAN	+2:00
Erzurum	ERZURU	+2:00
Eskişehir	ESKISEH	+2:00
Gaziantep	GANTEP	+2:00
Giresun	GIRESU	+2:00
Gümüşhane	GUMUSHA	+2:00
Hakkari	HAKKAR	+2:00
Hatay	HATAY	+2:00
İğdir	IGDIR	+2:00
İsparta	ISPART	+2:00
İstanbul	ISTANB	+2:00
İzmir	IZMIR	+2:00
Kahramanmaraş	KAMARAS	+2:00
Karabük	KARABU	+2:00
Karaman	KARAMA	+2:00
Kars	KARS	+2:00
Kastamonu	KASTAM	+2:00
Kayseri	KAYSER	+2:00
Kırıkkale	KIRIKK	+2:00

Kırklareli	KIRKLARELI	+2:00
Kırşehir	KIRSEH	+2:00
Kilis	KILIS	+2:00
Kocaeli	KOCAEL	+2:00
Konya	KONYA	+2:00
Kütahya	KUTAHY	+2:00
Malatya	MALATY	+2:00
Manisa	MANISA	+2:00
Mardin	MARDIN	+2:00
Mersin	MERSIN	+2:00
Muğla	MUGLA	+2:00
Muş	MUS	+2:00
Neşehir	NESEH	+2:00
Niğde	NIGDE	+2:00
Ordu	ORDU	+2:00
Osmaniye	OSMANT	+2:00
Rize	RIZE	+2:00
Sakarya	SAKARYA	+2:00
Samsun	SAMSUN	+2:00
Siirt	SIIRT	+2:00
Sinop	SINOP	+2:00
Sivas	SIVAS	+2:00
Şanlıurfa	SURFA	+2:00
Şirnak	SIRNAK	+2:00

Tekirdağ	TEKIRDAG	+2:00
Tokat	TOKAT	+2:00
Trabzon	TRABZO	+2:00
Tunceli	TUNCEL	+2:00
Uşak	USAK	+2:00
Van	VAN	+2:00
Yalova	YALOVA	+2:00
Yozgat	YOZGAT	+2:00
Zonguldak	ZONGUL	+2:00
Alanya	ALANYA	+2:00
Bodrum	BODRUM	+2:00

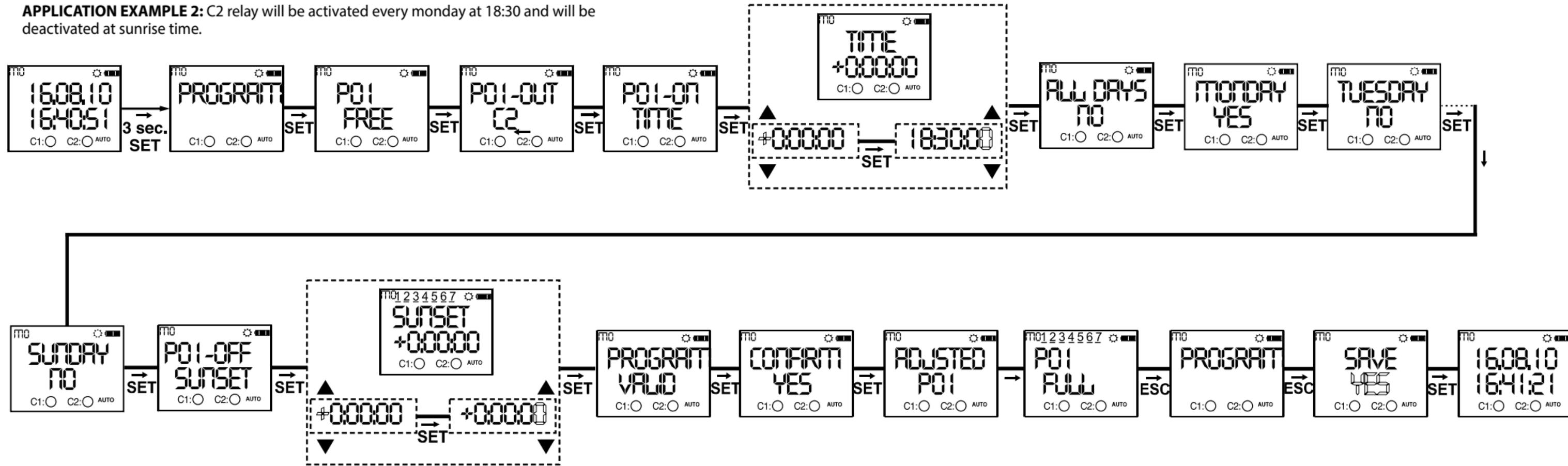


**APPLICATION EXAMPLE 1:** On every weekday, the C1 relay will be activated 1 hour 35 minutes before the sunrise and be deactivated at 9 o'clock.

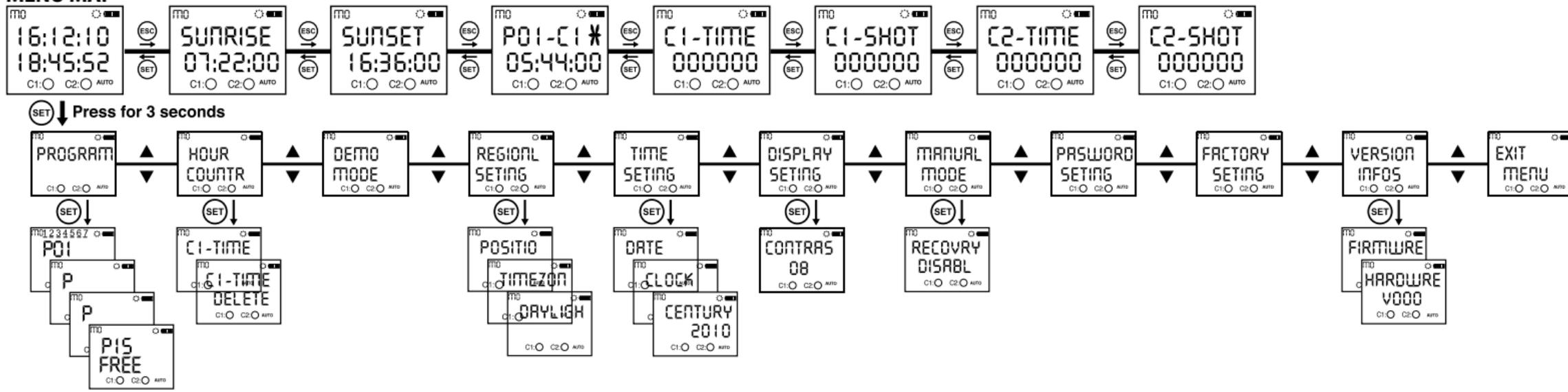


**Note:** The parameter selection in the example program diagrams must be done with the UP or DOWN buttons. This isn't described in the diagrams. The SET button is used for approval and the ESC button is used for returning to the previous selection. The diagrams are for P01 and the programming is done the same way for the other programs.

**APPLICATION EXAMPLE 2:** C2 relay will be activated every monday at 18:30 and will be deactivated at sunrise time.



## MENU MAP

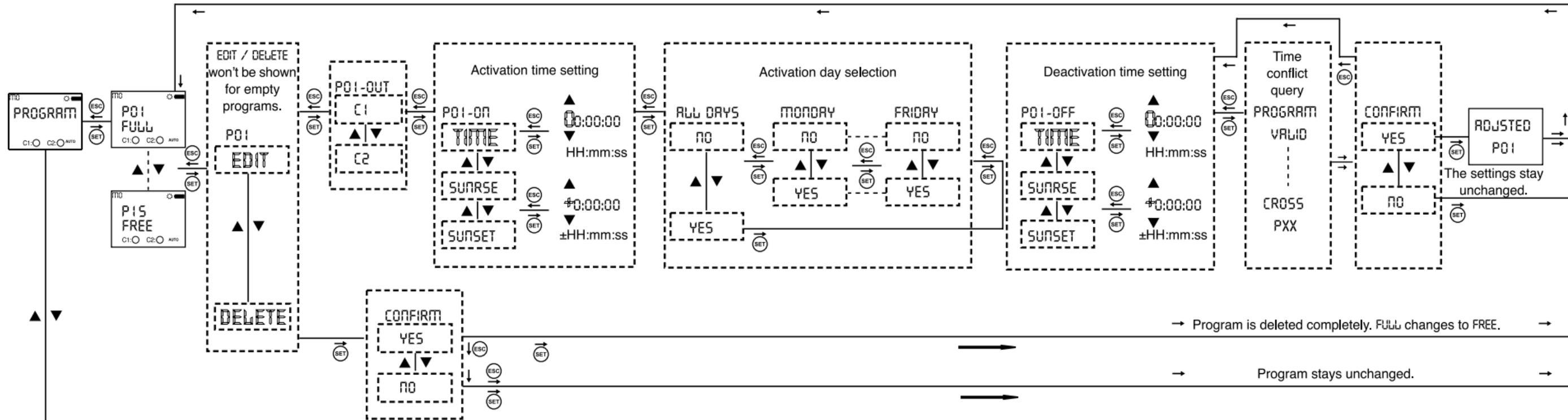


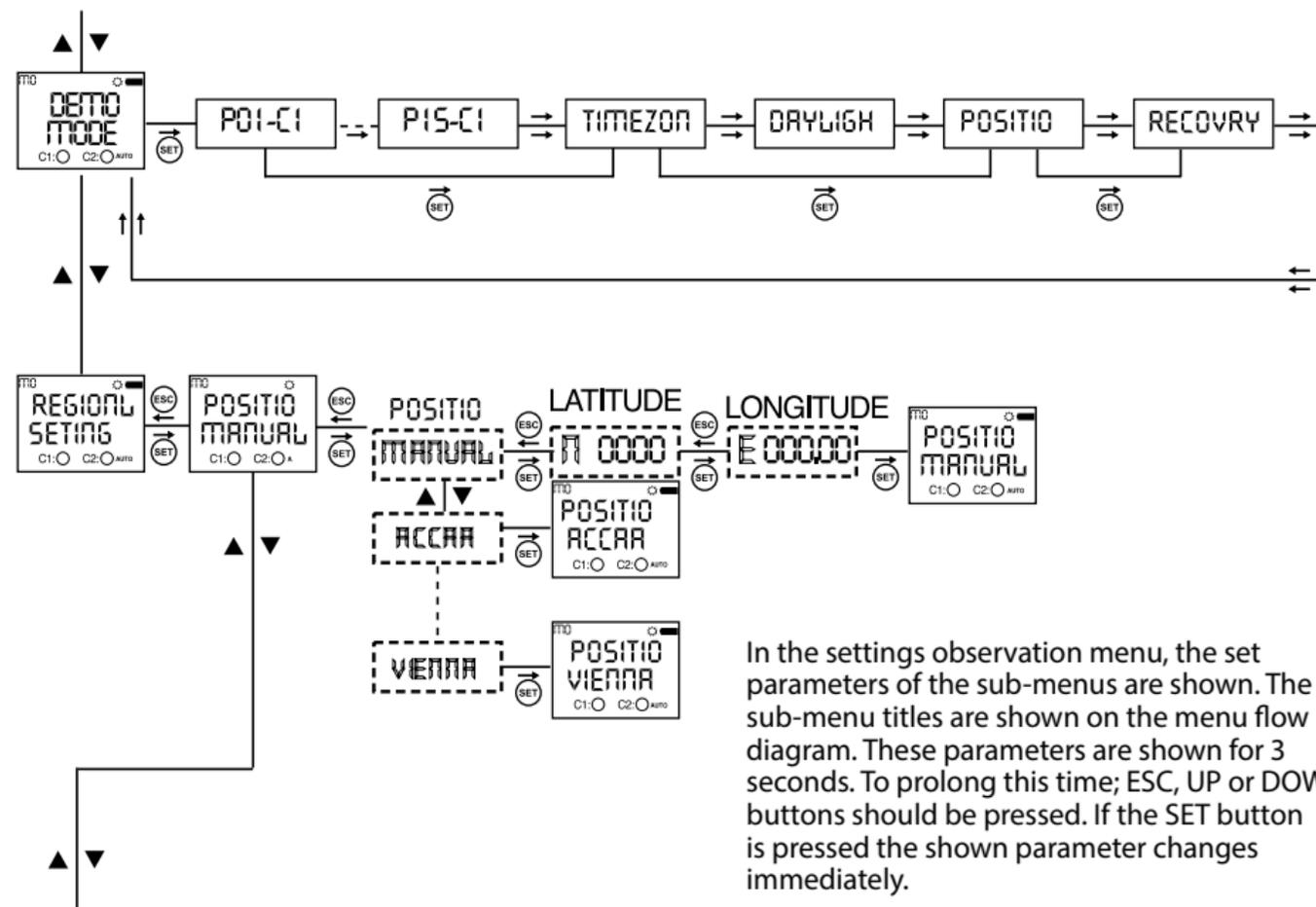
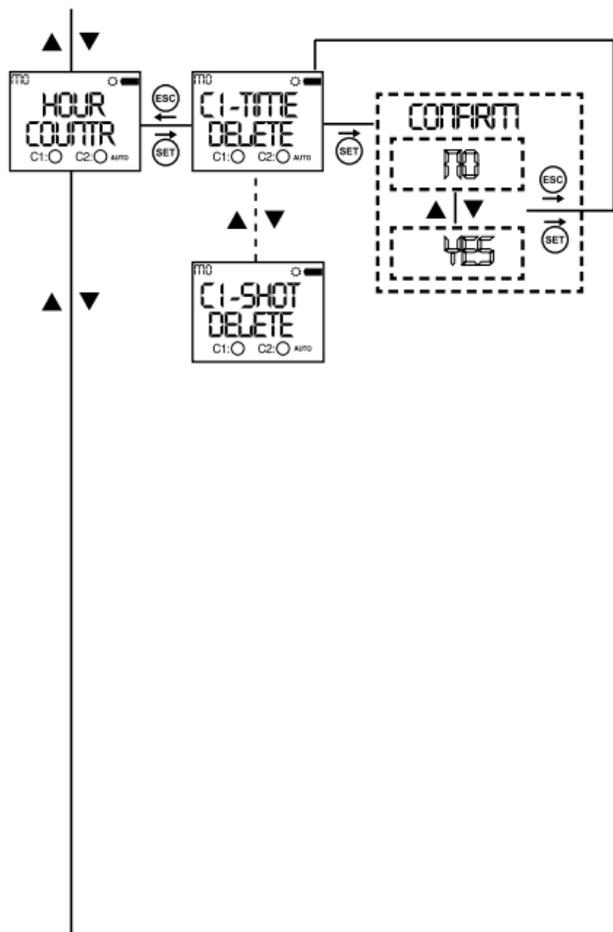
If the "SAVE" query is not confirmed by the user while returning to the monitoring menu, the changes which are committed in the menus will be discarded (This doesn't apply to the Time Settings Menu).

\* The device shows the entered programs in the order of their program flow in the menu display. The programs can be browsed with the UP or DOWN buttons. The programs with a \* symbol next to them are the programs which didn't run yet.

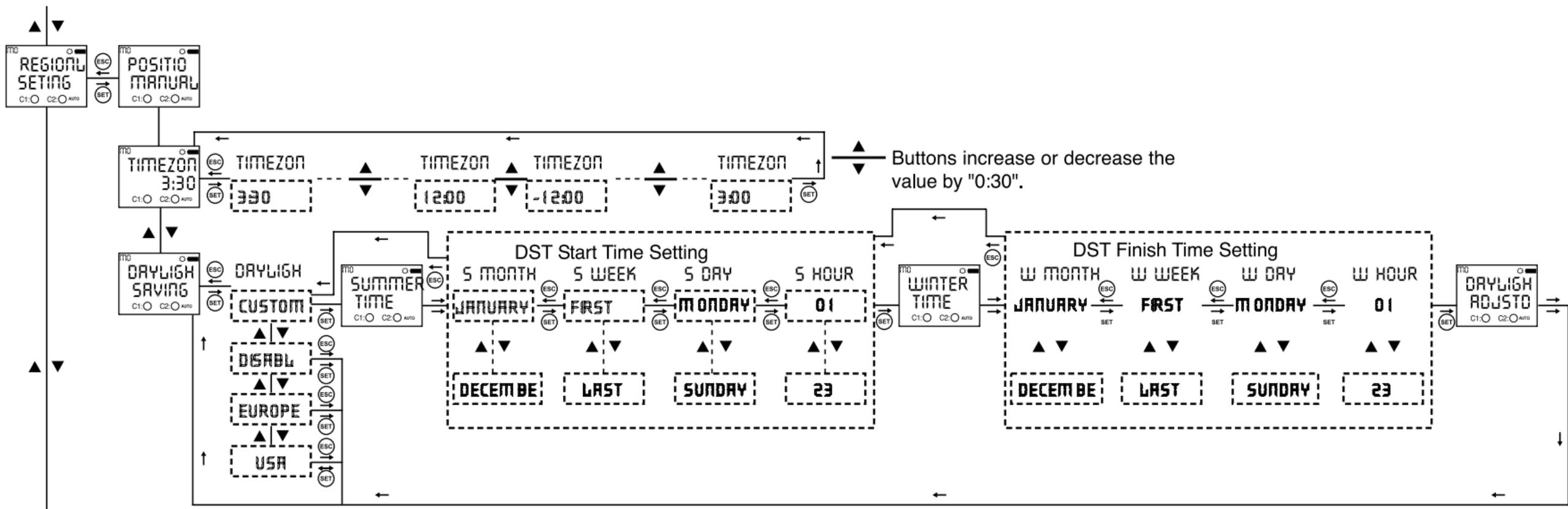
Monitoring Menu and Main Programming Menu screens are shown).

Ⓢ Press for 3 seconds.

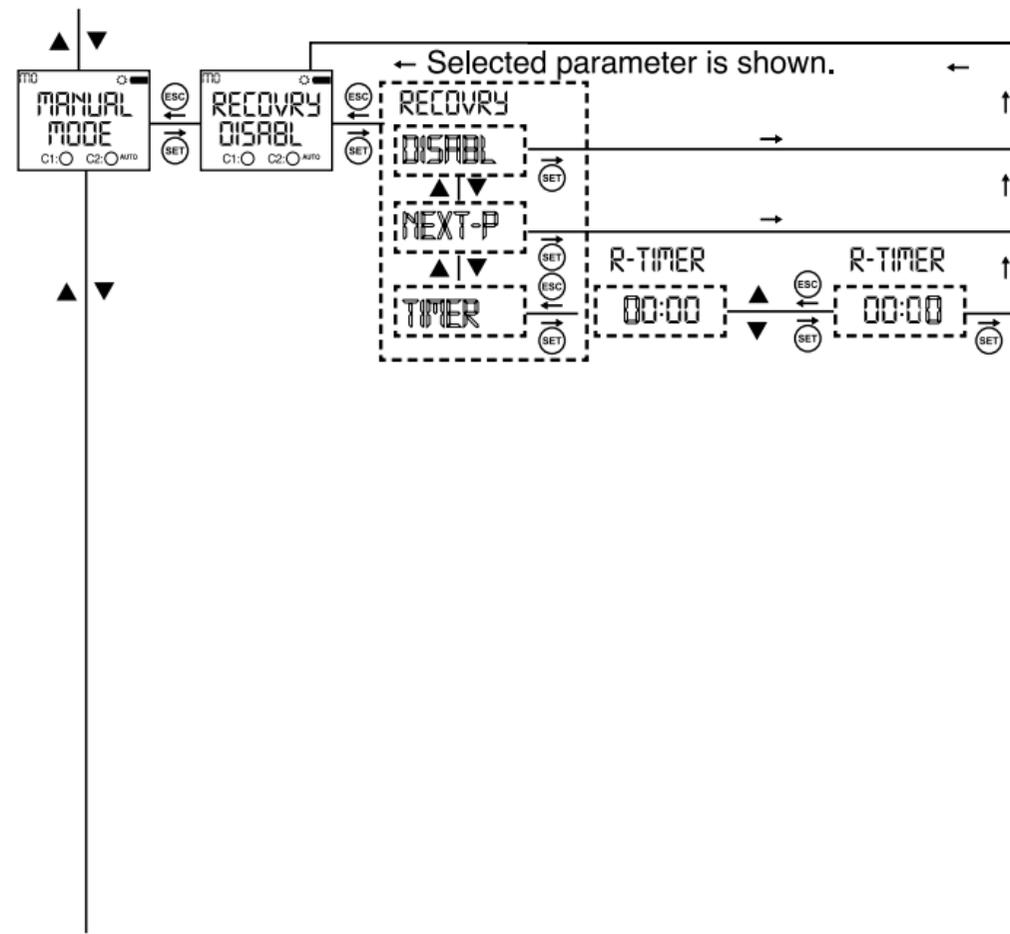
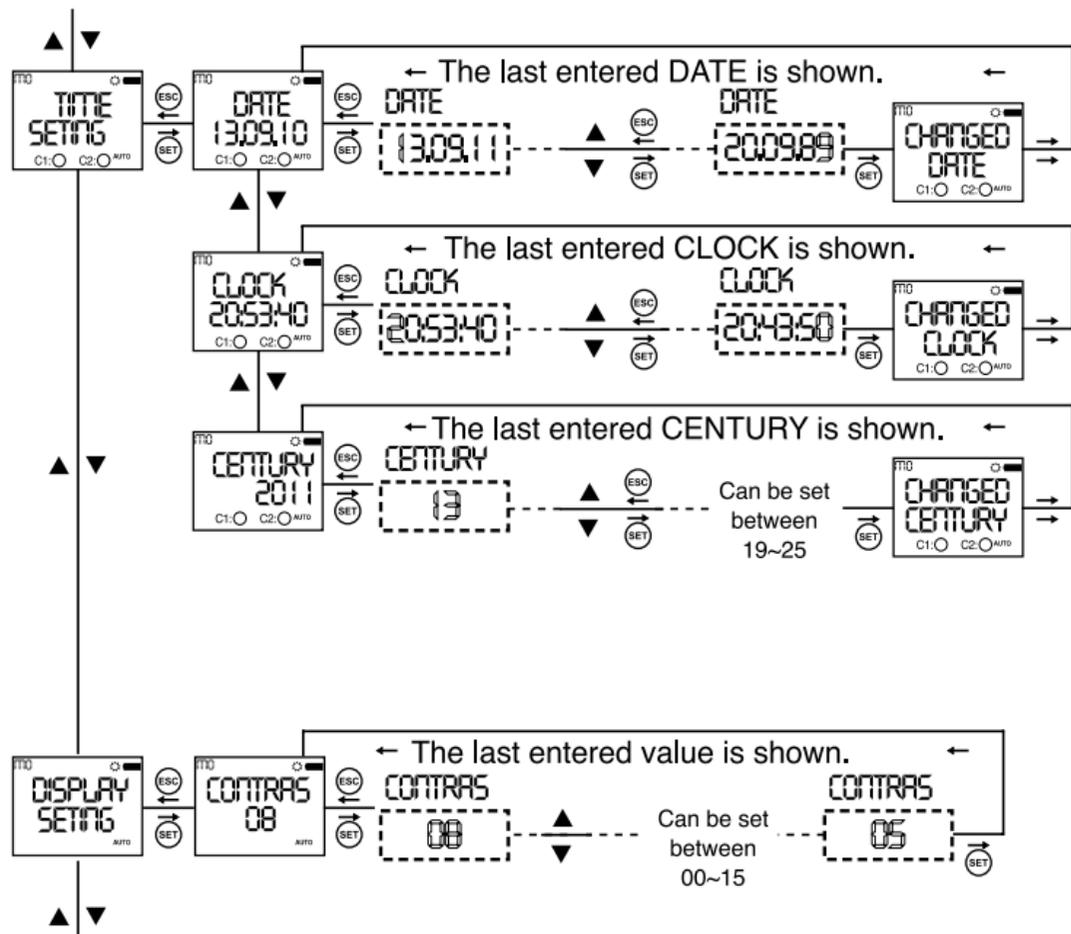


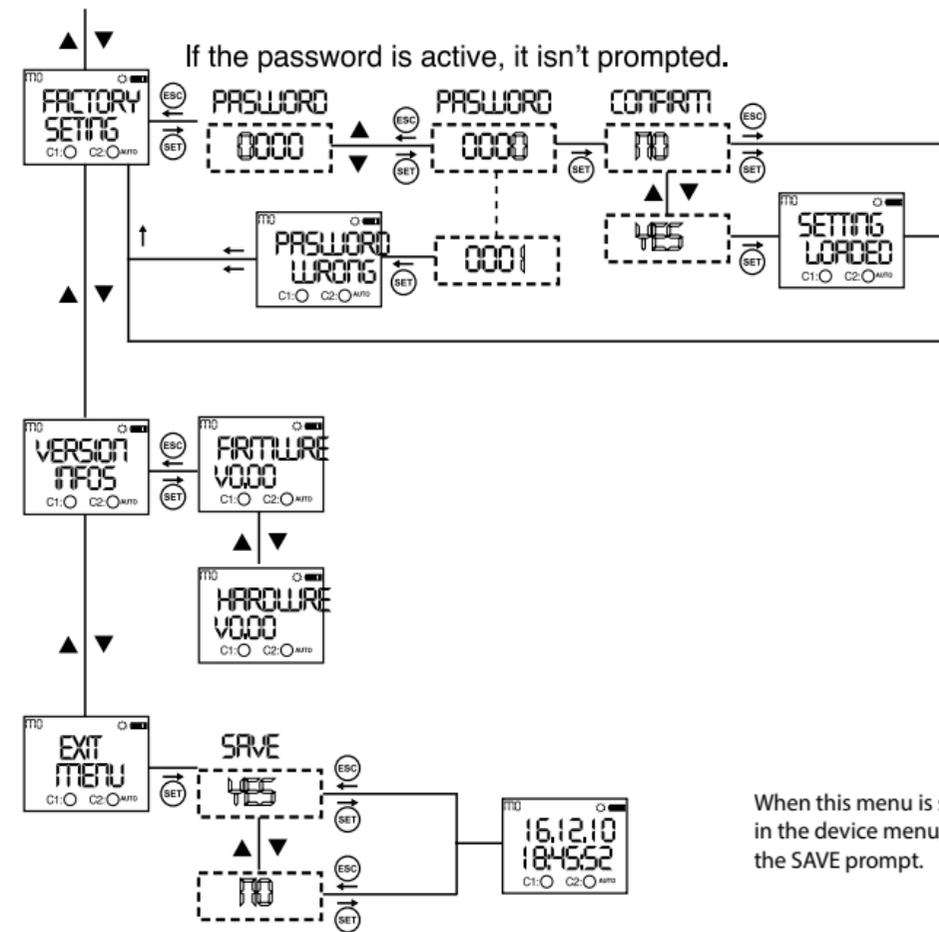
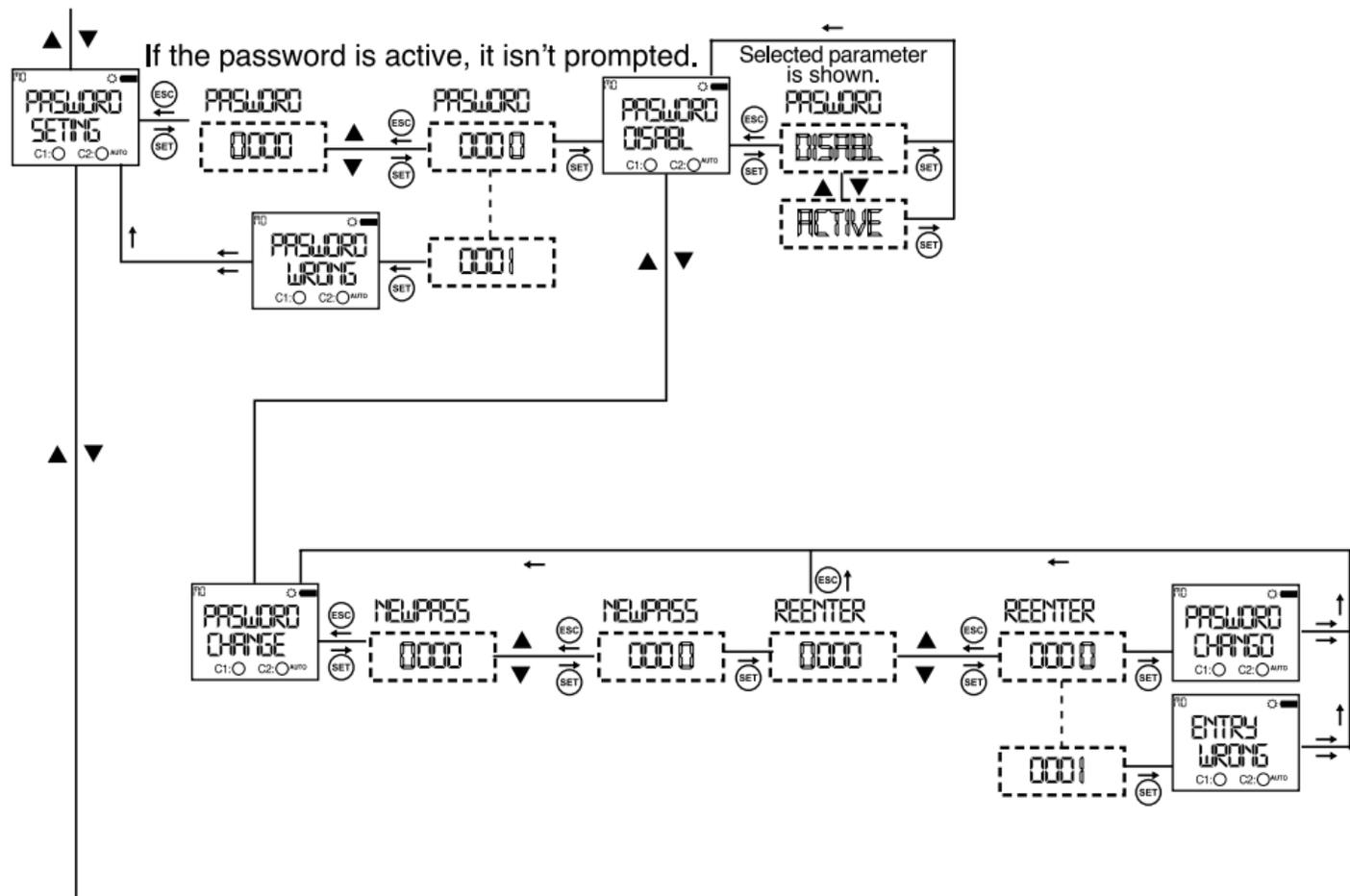


In the settings observation menu, the set parameters of the sub-menus are shown. The sub-menu titles are shown on the menu flow diagram. These parameters are shown for 3 seconds. To prolong this time; ESC, UP or DOWN buttons should be pressed. If the SET button is pressed the shown parameter changes immediately.



Buttons increase or decrease the value by "0:30".





When this menu is selected without making any changes in the device menu, monitoring menu is shown without the SAVE prompt.