



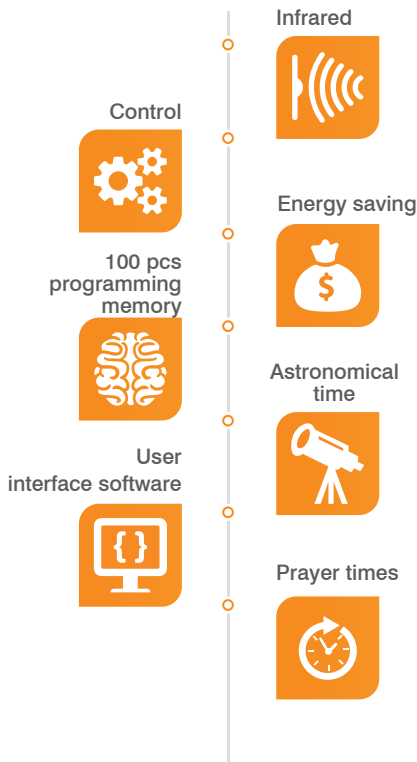
Klemmsan®

MEASTRO Astronomical Time Relay

MEASTRO is an astonomic time relay which calculates sunrise and sunset times for the given coordinates or city selections and switches the relay contacts on and off to control connected systems without any need of photocells or external sensors. Meastro can be used as digital time relay as well.

- 100 pcs programming memories
- 2x (AgSnO₂) contact
- Automatically calculates sunrise, sunset and prayer times according to the set location.
- Quick and easy programming with MAESTRO-R via infrared communication
- Free programming software
- And with many more features, MAESTRO provides the best solution for you.

Which actions are executed?



Thanks to the MAESTRO **infrared** port and remote control, the program, time, location and prayer information prepared by the computer is transferred within seconds.

MAESTRO **controls** devices connected to relay outputs according to user-programmed hours, sunrise and sunset times.

Street lighting, mosque lighting and air conditioning by controlling the astronomical time clock provides **energy savings**.

It has a total of **100 programming memories** for 2 contacts

With the **user interface software** you can program your program much faster. You can also double your speed with the control that provides infrared data transfer from the device to the controller or from the controller to the device bidirectionally.

It calculates **prayer times** according to the province-district or coordinate information you have set.

Which market are they used frequently?

- Street lighting
- Site lighting
- University and college
- Mosque lighting and conditioning systems.
- Parks, gardens and farm irrigation
- ATM's, shop windows, advertising boards, lighting

Benefits and Advantages

- Fast programming with user interface program and infrared control
- 7 year battery reserve time
- 100 programming memories
- High electromagnetic compatibility (EMC) and maximum resistance to electromagnetic noise
- User-friendly menu structure
- Perfect fit with the modular panel
- High mechanical strength
- Self-extinguishing plastic outer structure

Street Lighting



MEASTRO 221
MEASTRO 321



In open areas such as streets, streets, parks and gardens, in closed areas such as universities, schools and buildings where lighting elements need to be turned on and off in certain periods, MEASTRO astronomical time relay is used independent of human power. Meastro, which calculates the change of the sunrise and sunset time over the next 100 years, saves energy. In addition, different programs according to the days of the week, the lighting system provides periodic control.

Mosque, Site Lighting and Air Conditioning



MEASTRO 321



The MEASTRO astronomical time relay can be used for the programming of periodic running systems such as large air conditioning and lighting in industrial, residential or residential areas.

ATM, Store Showcase, Billboards Lighting



MEASTRO 221
MEASTRO 321



ATMs, showcase, billboards and many more areas are used MEASTRO with the aim of saving energy.

Park, Garden and Field Irrigation



MEASTRO 110
MEASTRO 120
MEASTRO 121
MEASTRO 221
MEASTRO 321



The control of the water pumps to be operated in agricultural areas, park or garden irrigation systems before one or more times a day is determined easily by the programming of the astronomical time relay.

Digital Timer



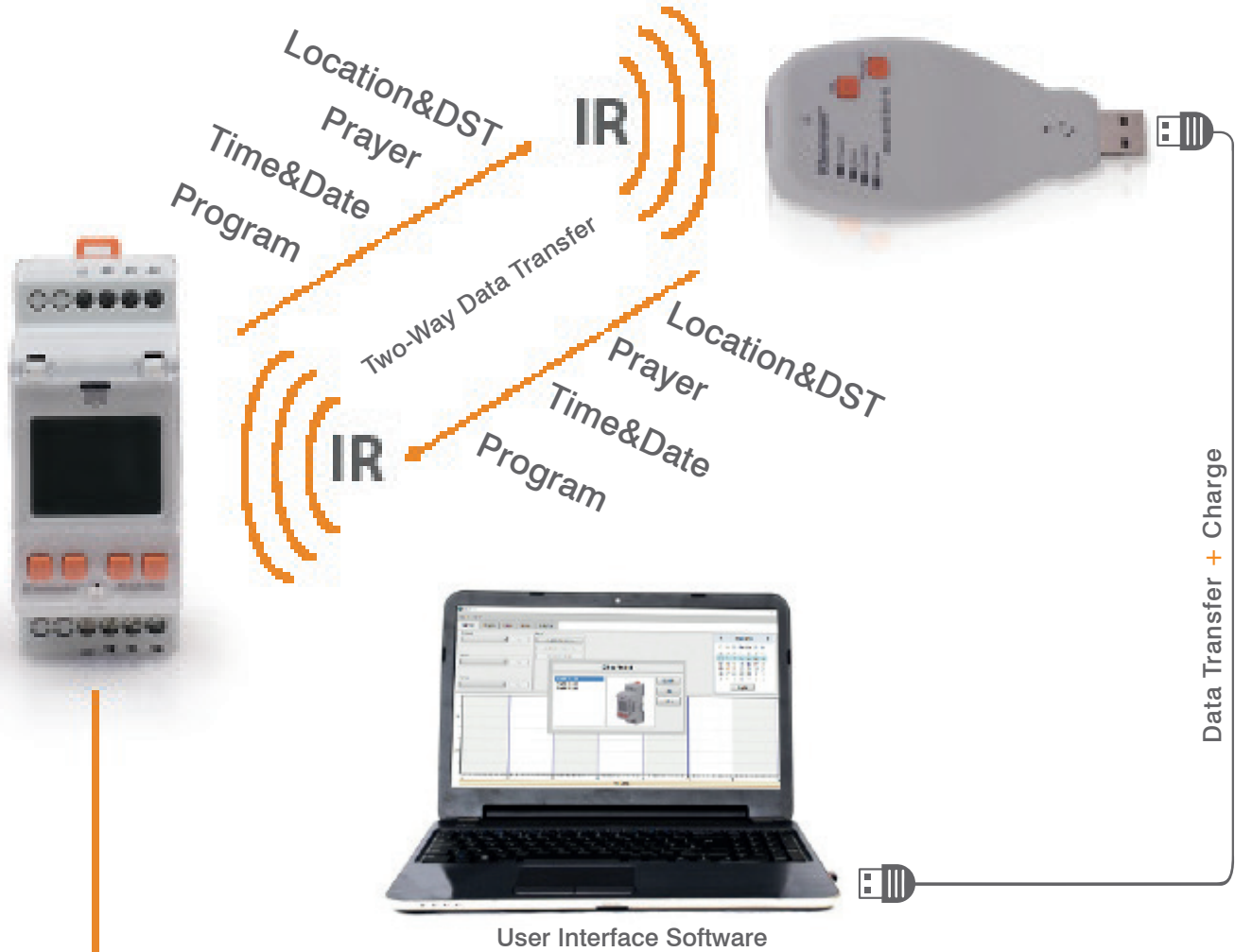
MEASTRO 110
MEASTRO 210



MAESTRO also has models that are independent of the astronomical time, and can only be used as digital time relays on the days and times set by the user.

MAESTRO-R (Infrared Controller)

By uploading the data generated by the user interface program to the infrared data transfer controller, the program, time, location and prayer data can be transferred to the device separately. The program, clock, location and prayer data in the device memory can be transferred to the remote control. In this way, the time spent to transfer the program from one device to another is reduced. The data which is taken from the device to the controller is transferred to the desired device within the seconds and the time saving is achieved.



Street Lighting



Mosque, Site Lighting
and Air Conditioning

ATM, Store Showcase,
Billboards
Lighting

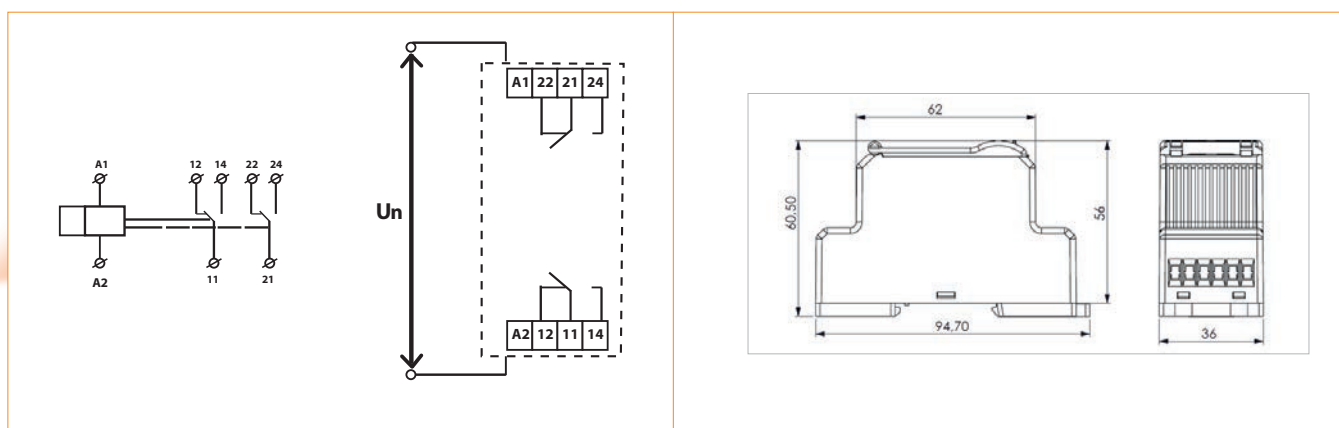


Park, Garden and Field
Irrigation

Order Numbers and Technical Specifications

Device Model	Meastro 121	Meastro 221	Meastro 321	Meastro 110	Meastro 120
Order Number	270 702	270 703	270 704	270 700	270 701
Mounting Type	Rail mount	Rail mount	Rail mount	Rail mount	Rail mount
Digital Program	✓	✓	✓	✓	✓
Astronomical Program	-	✓	✓	-	-
Prayer Program	-	-	✓	-	-
Relay number	2	2	2	1	2
Infrared	✓	✓	✓	-	-
Supply Voltage	165-265VAC			165-265VAC	
Supply Terminals	A1-A2			A1-A2	
Relay number	2X (AgSnO2)			1X(AgSnO2)	2X (AgSnO2)
Maximum Switching Current	16A/250VAC			16A/250VAC	
Power Consumption	AC Max. 11 VA			AC Max. 11 VA	
Accuracy	1 sec/day			1 sec/day	
Renewal Time	0,5sec			0,5sec	
Display Type	LCD			LCD	
Screen Size	1.5"			1.5"	
Number of Programs	100			100	
Battery Reserve Time	7 years			7 years	
Protection Class (CAT)	IP20			IP20	
Operating Temperature	-20 °C..+70 °C			-20 °C..+70 °C	
Storage Temperature	-30 °C..+80 °C			-30 °C..+80 °C	
Relative Humidity (Non-condensing)	Max. 95%			Max. 95%	
Mounting	Rail			Rail	
Weight	126,4 gr			126,4 gr	
DST setting	Automatic			Automatic	
IR distance	550 mm			-	

Wiring Diagram and Dimensions



MEASTRO - 110 / 120 DIGITAL TIMER / DİJİTAL ZAMAN RÖLESİ

GENERAL FEATURES

MEASTRO 1X0 is a multifunction controller designed for MEASTRO astronomical time relay. The program created by the user interface by installing the infrared data transmission control program, time, location and prayers data separately transferred to the device. Also it can separately transfer program,time,location and prayer datas to controller from relay.

GENEL ÖZELLİKLER

MEASTRO 1X0, 24 saat göstergeli, haftanın 7 günü veya istenilen gün ve saatlerde programlama yapılabilen 1 veya 2 röleli seçenekleri ile 100 adet program hafızasına sahip dijital zaman rölesidir. İzleme menüsü sayesinde, Olayların takibi, hafıza durumu, hafızadaki programlar kolaylıkla izlenebilir.

Device model (Cihaz modeli)	Order Number (Sipariş numarası)	Number of Programs (Program Adeti)	Number of Relays (Röle Sayısı)	Battery (Pili)	LCD	Connection (Montaj)
MEASTRO 110	270 700	100	1	✓	✓	Rail mount (Ray Montaj)
MEASTRO 120	270 701	100	2	✓	✓	Rail mount (Ray Montaj)

PROPER USE AND SAFETY CONDITIONS

- Installation and connections should be established in accordance with the instructions set out in the manual by authorized persons. Unless the connection is built properly, device should not be operated.
- Before wiring the device up, make sure that energy is cut off
- Use a dry cloth to remove the dust from the device / clean the device. Avoid using alcohol, thinner or a corrosive material.
- Device should be engaged only after all the connections are made.
- Do not open the inside of the device. There are no parts which the users can intervene inside.
- Device should be kept away from humid, wet, vibrant and dusty environments.
- It is recommended to connect a breaker or automatic fuse (2 amper) between the voltage inputs of the device and the network

DOĞRU KULLANIM VE GÜVENLİK ŞARTLARI

- Montaj ve bağlantılar yetkili kişiler tarafından kullanma kılavuzundaki talimatlara uygun olarak yapılmalıdır. Bağlantı doğru bir şekilde yapılmadan cihaz çalıştırılmamalıdır.
- Cihazı şebekeye bağlamadan önce, enerjinin kesildiğinden emin olunuz.
- Cihazı temizlemek-tozunu almak için kuru bir bez kullanınız Alkol, tiner veya aşındırıcı bir madde kullanmayınız.
- Cihaz, ancak bütün bağlantılar yapıldıktan sonra, devreye alınmalıdır.
- Cihazın içini açmayınız. İçinde kullanıcıların müdahale edebileceği parçalar yoktur.
- Cihaz rutubetli, ıslak, titreşimli ve tozlu ortamlardan uzak tutulmalıdır.
- Cihazın gerilim girişleri ile şebeke arasına, devre kesici veya otomatik sigorta (2 amper) bağlanması tavsiye edilir.

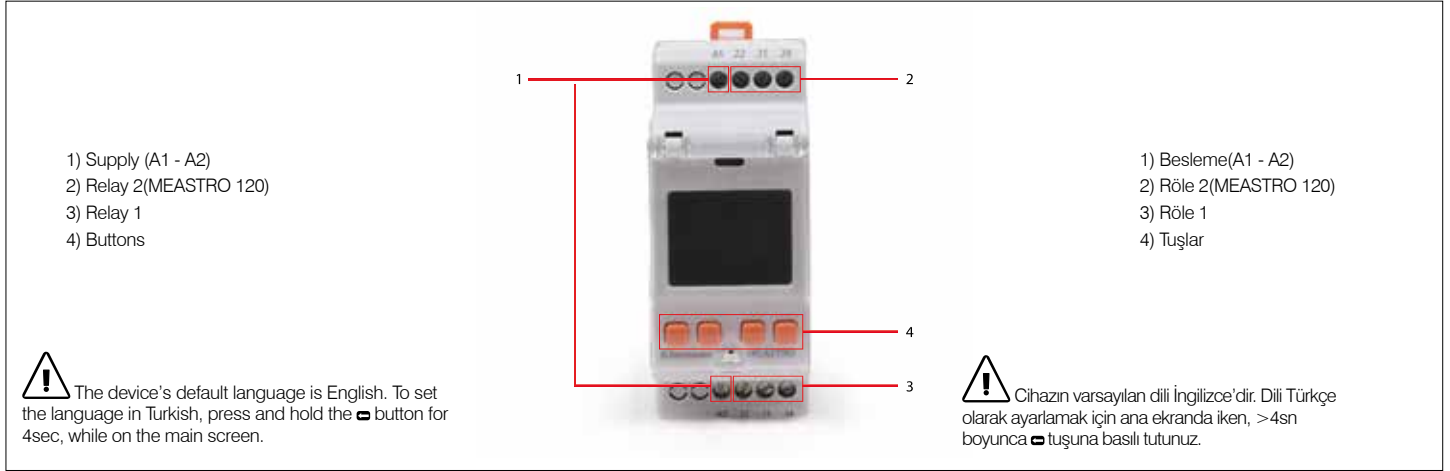


The manufacturing company may not be kept responsible for unfavorable incidents that arise out of the failure to follow the above cautions.

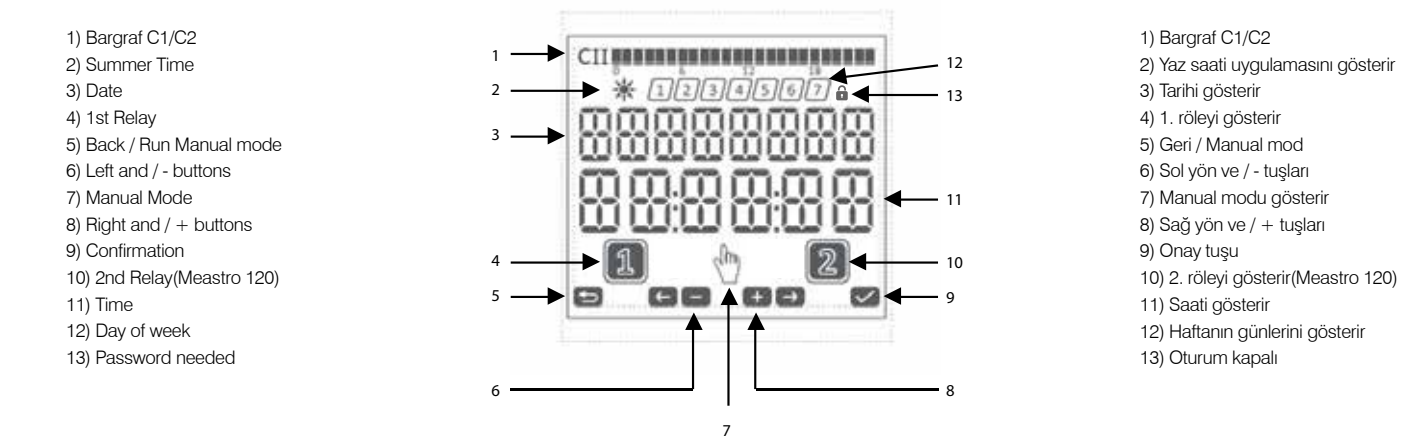


Yukarıdaki önlemlerin uygulanmaması sonucu doğacak istenmeyen durumlardan üretici firma sorumlu değildir.

GENERAL VIEW & DEFINITIONS / GENEL GÖRÜNÜM ve TANIMLAMALAR



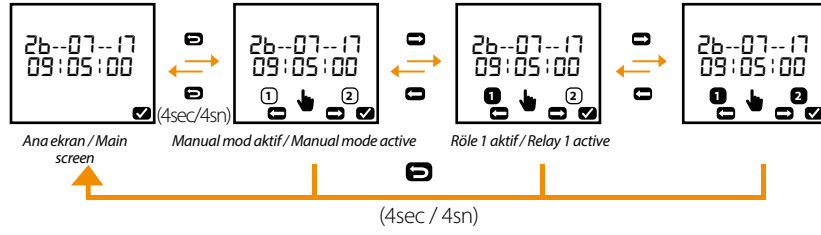
ICONS & LEDS / İKONLAR ve LEDLER



Display descriptions/ Ekran açıklamaları

MANUAL TEST MODE / MANUEL TEST MODU

Manual test mode using for relay testing. When you press the button for 4 seconds, flashing symbol becomes permanent light and ① and ② icons will appear on the screen. That means C1 and C2 relays are passive condition and directional keys, respectively, C1 and C2 relays can be activated. Pressing the same button again, the relay that you want, became inactive. The active relays are indicated by symbols on the screen ① and ②. To exit manual mode, press the button for 4 seconds again.



Manuel test modu, röleleri test etmek için kullanılır. Tuşuna 4 saniye boyunca bastığınızda ekranda yanıp sönen semboller kalıcı hale gelir ve ekranda C1 ve C2 rölelerinin pasif olduğunu ifade eden, ①, ② ikonları belirir. ve yön tuşları ile sırasıyla C1 ve C2 rölelerini aktif edilebilir. Aynı tuşa tekrar basılarak ilgili röle pasif edilir. Aktif olan röleler ekranda ① ve ② sembolleri ile gösterilir. Manual moddan çıkmak için yine tuşu 4 sn boyunca basılı tutulmalıdır.

SETTINGS MENUS

Time and date, location, summer time, holiday mode for each relay, prayer settings and device settings can be made under the settings menu. If the button is pressed on the home screen reveals the settings menu. You can browse settings menu by using, keys. To make the necessary settings, press to enter the desired menu.



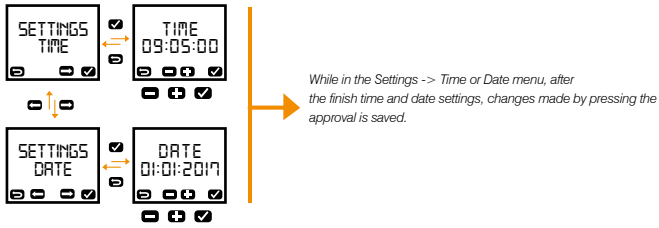
AYAR MENÜLERİ

Ayar menülerinde, güncel saat ve tarih ayarları, cihazın kullanılacağı konum, yaz saati ayarı, her röleye ait tatil modu ayarı, namaz ayarları ve cihaz ayarları yapılır. Ana ekranda iken tuşuna basıldığında ayarlar menüsü ekranda belirir. Menüler arasında geçiş, yön tuşları ile sağlanır. Seçilen menü ayarlarını yapmak için, tuşu ile o menüye giriş sağlanır.



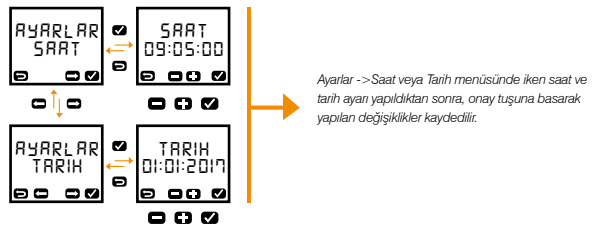
TIME AND DATE SETTINGS

In this menu, time and date settings are made.



SAAT VE TARİH AYARLARI

Bu menüde saat ve tarih ayarları yapılır.



DAYLIGHT SAVING TIME SETTINGS

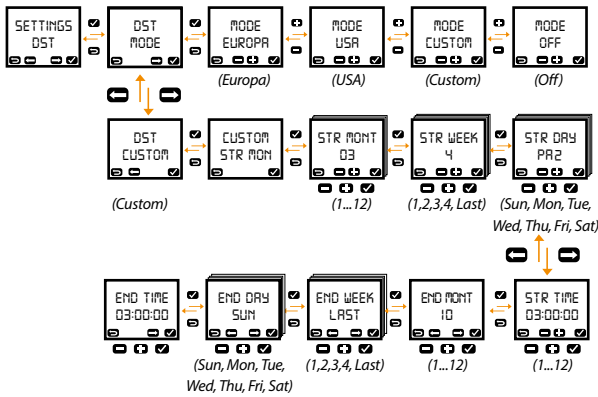
In this menu, daylight saving time settings are made. There are 4 different parameters, Europe, USA, Custom and OFF.

Europe: For summer time, clocks go forward 1 hour at 3am on the last Sunday in March, and for winter time, back 1 hour at 3am on the last Sunday in October.

USA: Summer time starts on the second Sunday in March. The clocks are moved forward from 2:00 a.m. to 3:00 a.m., and ends on the first Sunday in November, and in fall they are moved back from 2:00 a.m. to 1:00 a.m.

Custom: Daylight saving time start and end dates will be set to specific in this menu.

OFF: This option turns off the daylight saving time.



STR MONT: Beginning month of the daylight saving time should be adjusted in this menu.
STR WEEK: Beginning week of the daylight saving time should be adjusted in this menu.
STR DAY: Beginning day of the daylight saving time should be adjusted in this menu.
STR TIME: Beginning time of the daylight saving time should be adjusted in this menu.
END MONT: Ending month of the daylight saving time should be adjusted in this menu.
END WEEK: Ending week of the daylight saving time should be adjusted in this menu.
END DAY: Ending day of the daylight saving time should be adjusted in this menu.
END TIME: Ending time of the daylight saving time should be adjusted in this menu.

YAZ SAATİ AYARARI

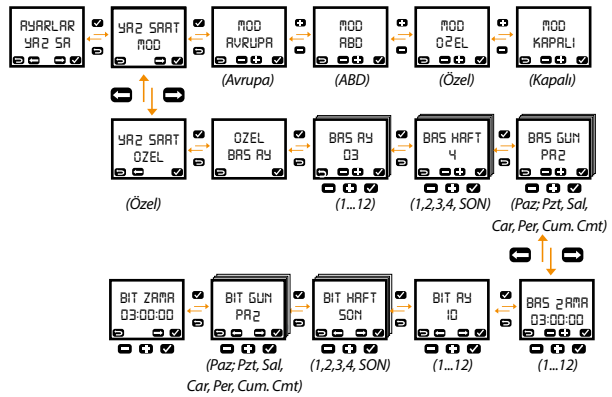
Bu menüde yaz saati ayarları yapılır. 4 farklı parametre mevcuttur, Avrupa, ABD, Özel ve Kapalı.

Avrupa: Mart ayının son haftasının Pazar günü gecesi 2:59:59'dan 4:00:00'a 1 saat ileri olacak şekilde yaz saati uygulamasına, Ekim ayının son haftasının Pazar günü gecesi 2:59:59'dan 2:00:00'a 1 saat geri olacak şekilde kış saati uygulamasına geçiş sağlanır.

ABD: Mart ayının ikinci haftasının Pazar günü gecesi 2:59:59'dan 4:00:00'a 1 saat ileri olacak şekilde yaz saati uygulamasına, Kasım ayının ilk haftasının Pazar günü gecesi 2:59:59'dan 2:00:00'a 1 saat geri olacak şekilde kış saati uygulamasına geçiş sağlanır.

Özel: Yaz saati uygulamasına ne zaman başlanacağı kullanıcı tarafından yapılandırılmak istenilirse tercihler bu parametreden ayarlanır.

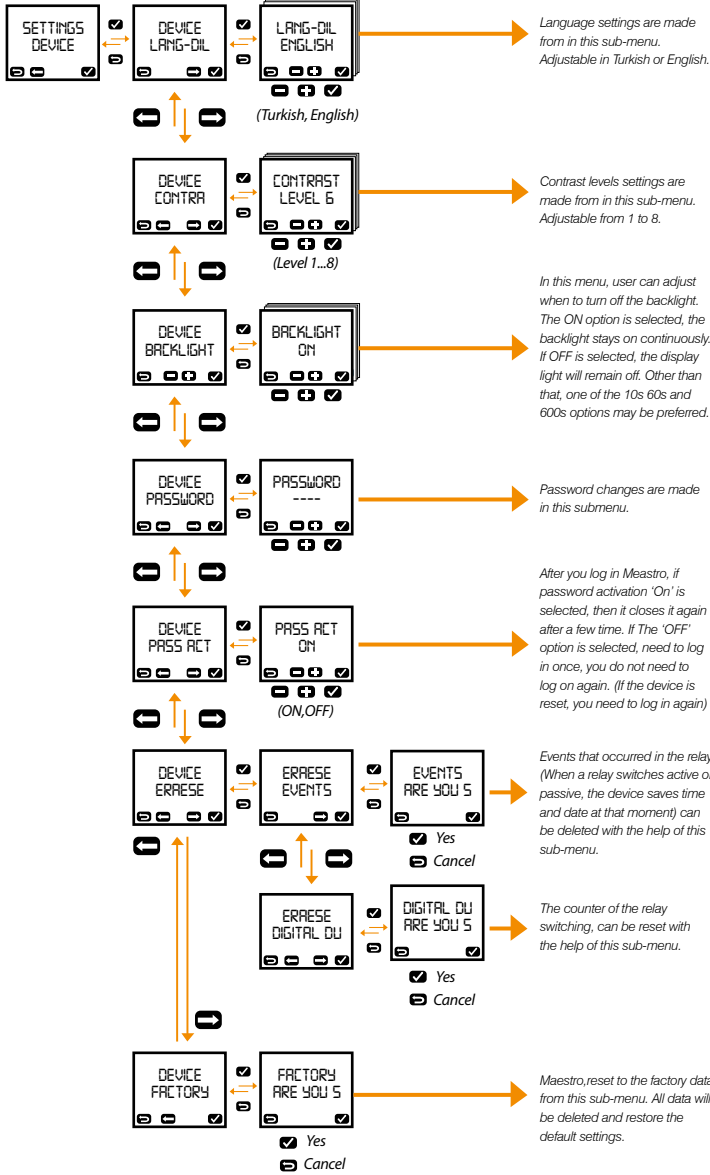
Kapalı: Bu seçenek yaz saati uygulamasını devre dışı bırakır.



BAS AY: Yaz saati uygulamasının başlayacağı ay ayarlanır.
BAS HAFTA: Yaz saati uygulamasının başlayacağı hafta ayarlanır.
BAS GÜN: Yaz saati uygulamasının başlayacağı gün ayarlanır.
BAS ZAMAN: Yaz saati uygulamasının başlayacağı zaman ayarlanır.
BIT AY: Yaz saati uygulamasının biteceği ay ayarlanır.
BIT HAFTA: Yaz saati uygulamasının biteceği hafta ayarlanır.
BIT GÜN: Yaz saati uygulamasının biteceği gün ayarlanır.
BIT ZAMAN: Yaz saati uygulamasının biteceği zaman ayarlanır.

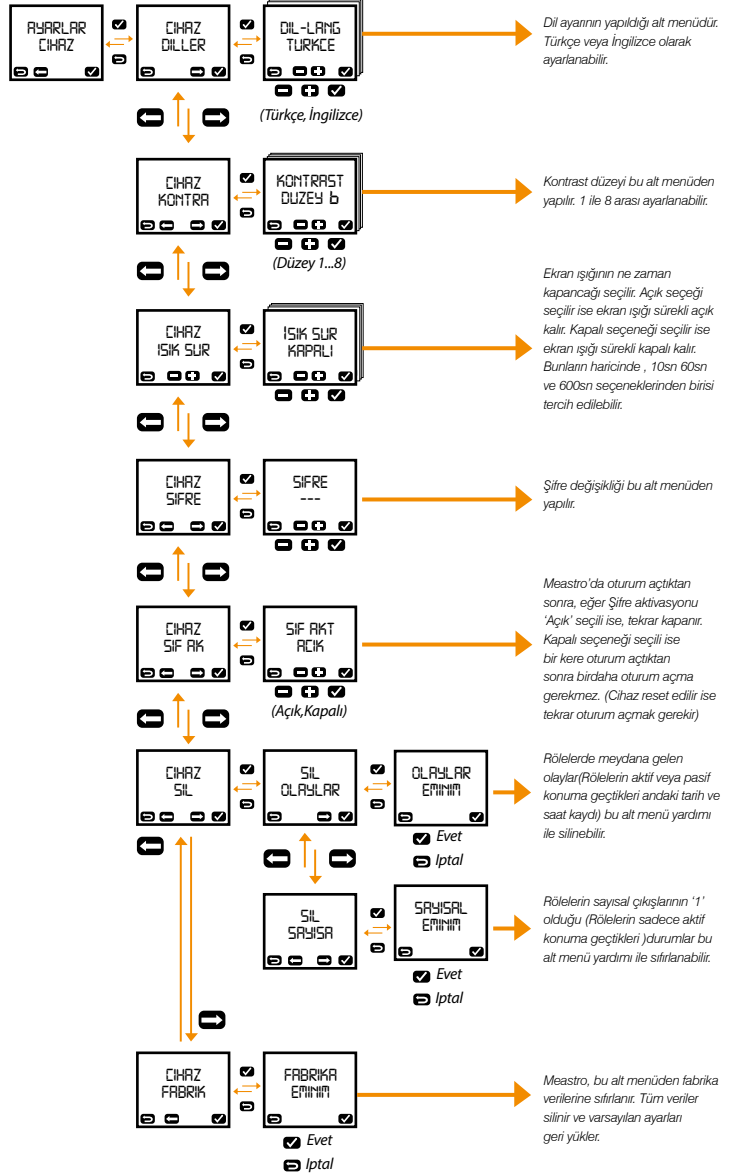
DEVICE SETTINGS

The device settings adjusted by changing the parameters under this menu.



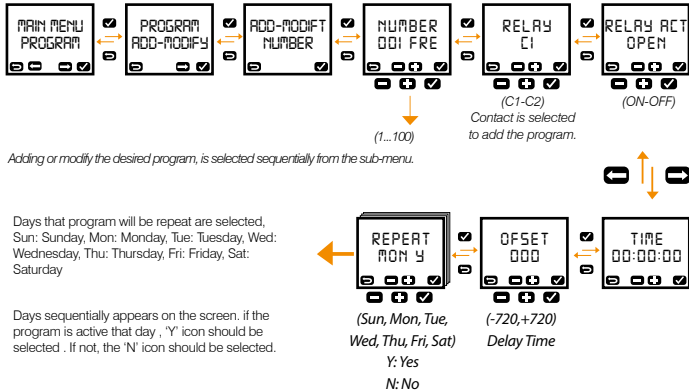
CİHAZ AYARLARI

Cihaz ayarları bu menü altındaki parametreler değiştirilerek yapılır.



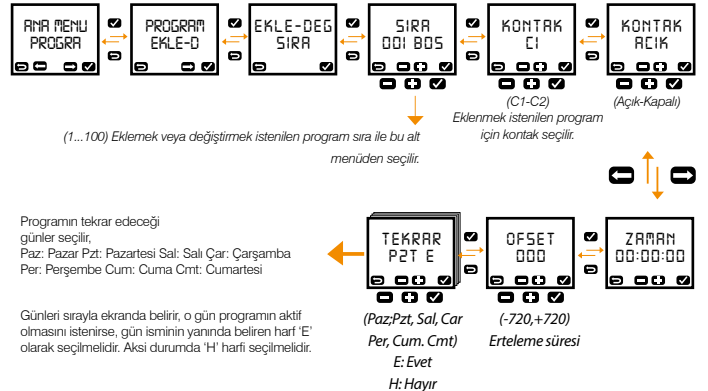
ADD or MODIFY PROGRAMS

Adding - modification operations in Meastro are performed from this menu. The program is scheduled weekly and weekly repeats.



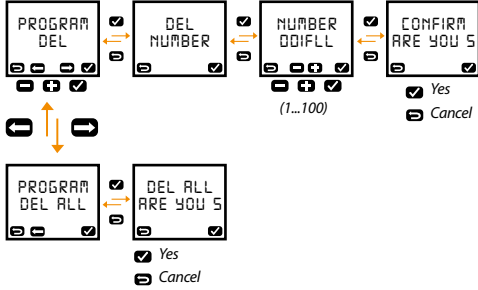
PROGRAM EKLE-DEĞİŞTİR

Meastro'ya cihaz üzerinden program ekleme veya değiştirme işlemleri bu menüden yapılır. Program haftalık olarak programları ve haftalık olarak tekrar eder.



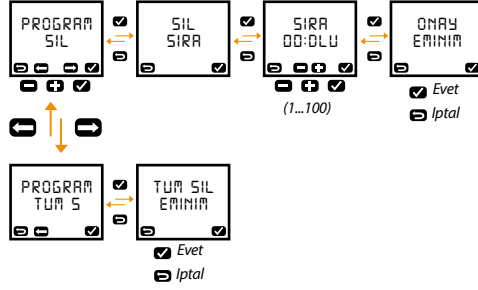
DELETING PROGRAMS

Deletion of created entire programs or delete one by one, should be made from this menu. If you want to delete the program, the user confirmation needed. This process is completed with the approval of the User.



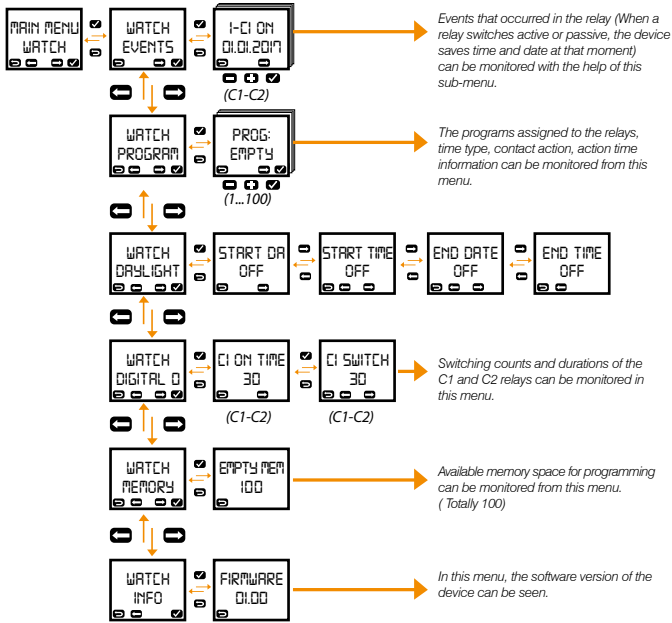
PROGRAM SİLME

Oluşturulan programları tek tek yada tamamını silme işlemi bu menüden yapılır. Tek tek yada tamamını silme işlemlerinde kullanıcıdan onay istenir. Kullanıcının onayı ile istenilen işlem tamamlanır. olarak programlanır ve haftalık olarak tekrar eder.



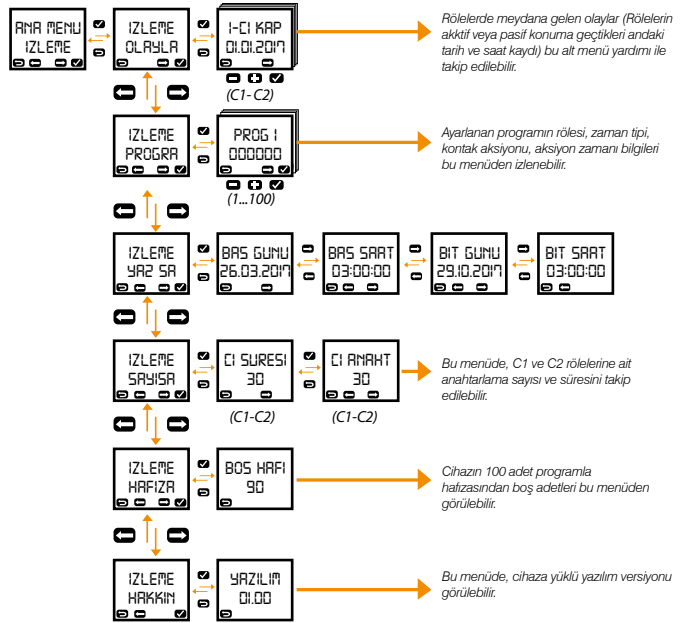
MONITORING

Logs, programs, operating time and switching counters of the relay can be monitored. Also sunrise-sunset, prayer time, holiday and location settings, memory status and the software version of the device can be monitored from this menu.



İZLEME

Rölelerin log kayıtları, programları, çalışma süreleri ve anahtarlama sayılarını, ayrıca gün doğumu-gün batımı, namaz vakitleri, tatil ve konum ayarları, hafıza durumu ve cihazın yazılımı ile ilgili durumları bu menüden takip edilebilir.



LOGIN

The user login should be done from this menu, or can control the login status.

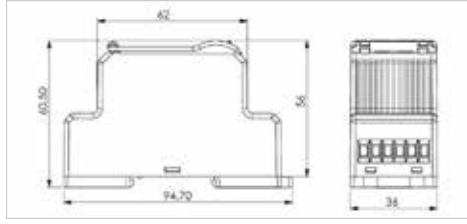


OTURUM AÇMA

Kullanıcının oturumu aktif ettiği veya oturumunun durumunu kontrol ettiği menüdür.



DIMENSIONS / BOYUTLAR



TECHNICAL SPECIFICATIONS

Operating voltage	165-265VAC
Supply terminals	A1-A2
Number of contacts	2X (AgSnO ₂)
Rated current	16A/250VAC
Power consumption	AC Max. 11 VA
Accuracy	Max. $\pm 1s$ / day at 23°C
Renewal period	0,5sec
Display type	LCD
Display size	1.5"
Number of program	100
Duration of battery reserve	7 years
Protection class	IP20
Operating temperature	-20 °C..+70 °C
Storage temperature	-30 °C..+80 °C
Relative humidity	Max. %95
Mounting	Ray
Weight	126,4 gr
DST Set.	Automatic

TEKNİK ÖZELLİKLER

Besleme Gerilimi	165-265VAC
Besleme Terminalleri	A1-A2
Röle Sayısı	2X (AgSnO ₂)
Röle Çıkışı	16A/250VAC
Güç Tüketimi	AC Maks. 11 VA
Doğruluk	1 sn/gün
Yenilenme Süresi	0,5sn
Ekran Tipi	LCD
Ekran Boyutu	1.5"
Program Adedi	100
Pil Rezerv Süresi	7 yıl
Koruma Sınıfı (CAT)	IP20
Çalışma Sıcaklığı	-20 °C..+70 °C
Saklama Sıcaklığı	-30 °C..+80 °C
Bağıl Nem (Yoğuşmasız)	Maks. %95
Montaj	Ray
Kutu Ağırlığı	126,4 gr
Yaz saati ayarı	Otomatik