



## QUICK INSTALLATION GUIDE: CLOCK, CALENDAR AND CHRONOMETER

### DISPLAY CONFIGURATION

Once the device is powered on, it goes directly to indicate the internal software version and then sequentially the data to be displayed that have been selected (current time HH:MM, date DD-MM and temperature in °C). Fully configurable and controllable via PC and USB cable with the **MP Tools** software (available on our website) and access to the configuration of the main parameters via infrared control (optional). It is possible, from a weekly calendar, to set up to two time slots for switching on and off per day

It is possible as an option to mount, among others, a relay output module with 12 configurable alarms in clock mode and up to 15 presets in chronometer mode, a GPS module for time synchronization, a module for Ethernet TCP/IP or WiFi communication and SNTP synchronization. , etc.

#### CONFIGURATION AND CONTROL FROM THE IR REMOTE CONTROL:

**Menu key:** Main key used to access the configuration menu. Register number appears on flashing mode on the left and the character "A" on the right.

**Keys "▲", "▼":** To go to the next register or to change the value of the selected register.

**Keys "+V" "-V":** To increase or decrease the luminosity without entering on configuration menu.

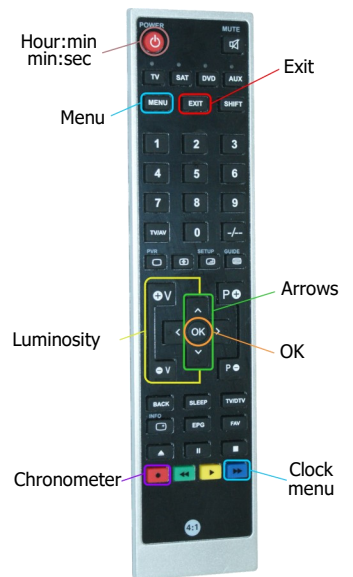
**Tecla "OK":** To validate changes. A new press shows "ST ?" and a following confirms to save the changes made. For the registers related to the clock (1 to 5) and chronometer (47 to 55), the menu is not exited until the configuration sequence of the same has been completed. Register settings are not lost when power is removed from the equipment.

**Keys "Exit":** To exit the menu without saving the changes. Also to return to clock mode from chornometer mode.

**Keys "▶▶":** Quick access to clock registers.

**Keys "●":** Switches from clock mode to chronometer mode.

**Keys "⌚":** Displays alternately with each press 'hour:minutes' or 'minutes:seconds'.



#### TABLE OF MENU REGISTERS FOR IR REMOTE CONTROL:

REG.	Value	Description	REG.	Value	Description
0	-	Test display	34	-	Shows the software version
1	0 a 99	Set the year	35	1 a 99	DTP address. Device identification number (ID)
2	1 a 12	Set the month	36	-	% of luminosity captured by the sensor
3	1 a 31	Set the day	37	-	% of instantaneous luminosity delivered by the sensor
4	0 a 23	Set the hour	38	-	Shows the internal temperature of the equipment
5	0 a 59	Set the minutes	39	-	Shows outside temperature
6	0 a 99	Brightness level (0:Auto; 1 to 99: Manual)	40	-	Shows the number of synchronized satellites (Only for GPS)
7	1 a 99	Minimum brightness (% of light defined for sensor)	41	-	Maximum temperature value reached inside the equipment
8	1 a 99	Maximum brightness threshold (%) defined for sensor	45	0 / 1	Shows clock-calendar or clock-calendar+chronometer (0=clock-calendar/1=clock-calendar+chronometer)
9	1 a 99	Speed of change of LED brightness according to external light	46	0 a 2	Chronometer work mode. 0=Up; 1=Down; 2=Up with final time
10	0 / 1	Enable alternative lighting that activates during set hours	47	0 a 23	(default time 1) Preset time 1 (asc./desc. chrono) (hours)
11	1 a 99	Alternative luminosity percentage	48/49	0 a 59	Preset time 1 (up/down chrono) (minutes and seconds)
12	0 a 23	Alternative brightness start time	50	0 a 23	Preset time 2 (down chrono) (hours)
13	0 / 1	Alternative brightness end time	51/52	0 a 59	Preset time 2 (down chrono) (minutes and seconds)
14	0 / 1	Shows or not the time in clock-calendar mode (0=NO/1=YES)	53	0 a 23	Preset time 3 (down chrono) (hours)
15	0 / 1	Time format (0=24H/1=12H)	54/55	0 a 59	Preset time 3 (down chrono) (minutes and seconds)
16	0 / 1	Shows or not the date in clock-calendar mode (0=NO/1=YES)	62	0 a 12	Selection of clock alarm number (activate relay 1).
17	0 / 1	Shows or not the temperature in clock-calendar mode (0=NO/1=YES)	63	0 / 1	Activate selected clock alarm (by default fixed from Monday to Sunday).
19	4 a 99	Time in seconds that the clock-calendar-temp is displayed	64	0 a 23	Define selected clock alarm minutes.
20	0 a 7	0:Random; 1:Immediate; 2:Ascending; 3:Descending; 4:Upward shutter; 5:Lower shutter; 6:Odometer; 7: Progressive brightness (7-segment clock only: 0, 1 and 7)	65	0 a 59	Define selected clock alarm minutes
21	1 a 99	Effect speed (pixels/s) (Only for matrix clocks)	70	1 / 0	Shows battery level. (1=OK/0=Replace)
23	-12 a +14	Define difference from default time zone (GMT+1)	72	1 / 0	Device On/Off auto. (0=Disabled 1= Enabled)
24	0 / 1	Enable/disable automatic time change (0=NO/1=YES)	73 a 76	0-23/59	Hour/minute auto power on. Hour/minute auto off.
33	± 9°C	Offset de temperatura. Suma o resta los grados indicados	99	-	Reset to return to factory settings

#### Chronometer:

To work with the chronometer press the "●" key. To exit press the "Exit" key.

When chronometer stopped, press the "OK" key to start.

When chronometer running, press "OK" again to pause.

When chronometer running, press the "●" key to reset the time to 0 or to a predefined value for down mode.

On down mode, press the "●"key to change between the three predefined times

## TECHNICAL SPECIFICATIONS

### POWER SUPPLY AND FUSES

**DMR21xF:** ..... 88-264V AC 47/63Hz or 125-373V DC  
 Maximum consumption ..... 70VA  
 Recommended fuse ..... T 5A

### VISUALIZATION

Approx. max. reading dist. .... ≤ 100m  
 LED type ..... Oval  
 LED diameter ..... Ø5mm  
 Digit number ..... 4  
 Digit height ..... 210mm  
 LED colors available ..... Amber, red, white, green, blue  
 (by default Amber or red . for the rest consult minimum order )  
 Automatic brightness intensity control or by software (0-100%)  
 Viewing angle ..... 70° horizontal, 35° vertical  
 Clock drift ..... < 2min./year  
 SNTP sync period ..... 10 minutes

## ENVIRONMENTAL CONDITIONS

Working temperature ..... -10°C ÷ 50°C  
 Relative humidity (non condensing) ..... <90% @ 40°C  
 Protection degree ..... IP54

## MATERIALS

Front. .... transparent polycarbonate  
 Case ..... Black aluminium  
 Weight ..... 7kg

## COMMUNICATION

Ports ..... Mini USB (default)  
 ..... RS232/RS485, Ethernet (10/100)  
 ..... WiFi (availability depending on radio regulation of the country)  
 Protocols ..... DTPM, SNTP  
 Transmission rate ..... 1200 to 115200 Baud (configurable)  
 Remote IR control range ..... max 10m (no sun light)

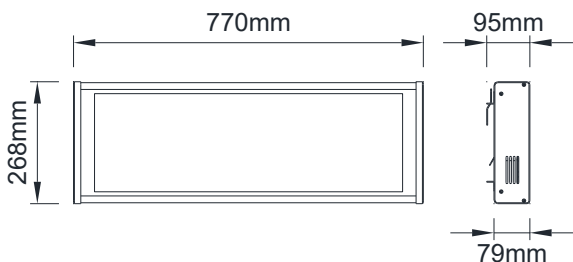
## TEMPERATURE PROBE

Accuracy (-15°C ÷ 60°C) ..... ≤ ±1.5°C

## RELAY OUTPUTS

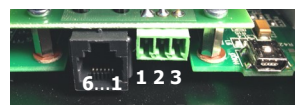
Type and maximum current ..... SPDT, 8A/250Vac

## DIMENSIONS



## CONNECTIONS

**OPTION /X:**  
(RS232 / RS485)



RS 232		RS 485		USB PORT
PIN 1	GND	PIN 1	B	
PIN 2,3	N.C.	PIN 2	NC	
PIN 4	TxD	PIN 3	A	
PIN 5	RxD			
PIN 6	5V DC OUT			

### 2 RELAY OUTPUTS



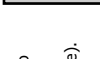
2 relay outputs	
PIN 1	NC 1
PIN 2	COM. 1
PIN 3	NO 1
PIN 4	N.C.
PIN 5	N.C.
PIN 6	N.C.

Depending on configuration each relay is activated by the clock or the chronometer.

**OPCIÓN /A:** (GPS\*)



**GPS CONNECTOR**



**OPTION /NE:**  
(ETHERNET)



**ETHERNET PORT**

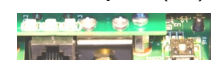
**USB PORT**

Connection terminals can be directly reached through rear right side of the device as shown in figure above.

The instrument provides 1, 2, 3 or 4 rear connectors depending on the option that it is mounted. See figures. Connectors type are: RJ45 (Ethernet), Mini-B (USB), RJ12 (RS232), Mini combicon (RS485/2 relay outputs), SMA (GPS/WiFi antenna). Cable alimentación implementado a través de prensaestopa.

Terminals for **RS485 and Digital inputs** connector admit cables with section from 0.14mm<sup>2</sup> up to 1.5mm<sup>2</sup> (AWG 28÷16).

**OPCIÓN /NW:** (WiFi)



**WiFi PORT**

**USB PORT**

\*GPS OPTION: Install the supplied GPS antenna in a place with good reception, to allow the equipment to synchronize from the signal received from at least 3 satellites.

**LED'S WIFI STATUS:**  
 Red: OFF (connected) / Blinking (no connect, check WiFi settings)  
 Green: Blink slow (OK) / OFF (fault)  
 Amber: Blink fast (configuration mode).  
 Data transmission.

**ALIMENTATION**  
 88-264V AC  
 125-373V DC  
 70VA



Recommended fuse: (5A)



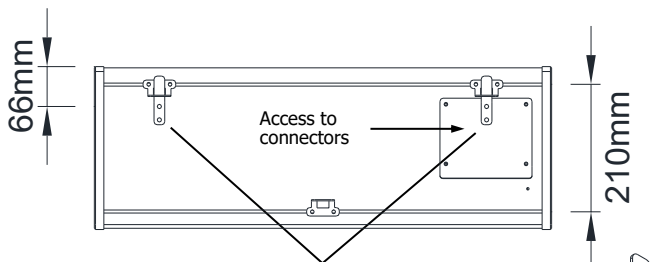
### WARNING

**Isolation:**  
 3000Vrms for 1 minute to input/output terminals and power terminals

THE ADVANCED CONFIGURATION OF THE PARAMETERS OF THE MODULES IS DONE THROUGH THE "MP Tools" APPLICATION AVAILABLE ON OUR WEBSITE.

## MOUNTING

The displays are supplied by default with the power cable, the remote control for its configuration (option), a mini USB cable, a temperature probe, WiFi/GPS antenna (option). For its installation, fix the brackets on the wall and hang the device



Rear view of the display with mounting brackets.

Mounting support



Wall support



## CE Conformity.

Directives	EMC 2014/30/EU	LVD 2014/35/EU
Standards	EN 61326-1	EN 61010-1



**WARNING: If this instrument is not installed and used in accordance with this instructions, the protection provided by it against hazards may be impaired.**

To meet the requirements of EN 61010-1 standard, where the unit is permanently connected to main supply, it is obligatory to install a circuit breaking device easy reachable to the operator and clearly marked as the disconnecting device.

### IMPORTANT!

To guarantee electrical safety according to EN 61010-1 a protective external fuse against overcurrents must be installed.



According to Directive 2012/19/EU, you cannot dispose of this appliance as normal urban waste. You can return it, free of charge, to the place where it was purchased so that controlled treatment and recycling can be carried out.