

CHRONOLED

Timer/Stopwatch Display



Installation and operating manual



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Ref. 606985F

Upon receipt, always check the product for damage during shipment. If any is found, you may file a damage claim with the carrier.

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I - Overview

The Chronoled is an outdoor count up/countdown timer.

- Very high luminosity SMD LED with 6 digits and 3 dots.
- Display: time of day with second, timer (count up, countdown, day), score.
- Supply voltage: 110/230 v AC.
- Aluminum housing.
- Available Led colours: Red (R).
- Automatic luminosity management according to light conditions (sunny, cloudy or night time). On 2 sided units, each side manages its own brightness.

CAUTION : *installation and maintenance of this equipment must be performed by a authorized person. This is a dual voltage product that can be powered power by 110v AC or 240v AC. The installation must comply with the IEC 364 standard (NFC 15-100 for France).*

A 16 Amps circuit breaker (phase + neutral) must be installed in the power source line to protect the equipment and must be tripped off when performing maintenance. The equipment must be powered up only after the installation has been completed.

Any modification on the product cancels the warranty.

II - Mechanical installation

II.1 Opening the ChronoLed

To access the programming push-buttons, remove the 2 screws (Chronoled 15 and 25) or the 4 screws (Chronoled 45) on the right side to remove the side cover.

If needed, access to other elements is possible (power supply, driver board, module wiring...) by removing the glass front cover. Slide the glass sideways 5 to 10 cm, then lift it up and pull it toward you to extract it from the lower profile of the Chronoled.

II.2 Wall mounting

Fasten the unit to the wall using 4 (Ø6) screws for the Chronoled 15 and 25 or 4 (Ø8) screws for Chronoled 45 (the screws are not supplied) and the appropriate wall anchors (wall plugs).

Note: see last page.

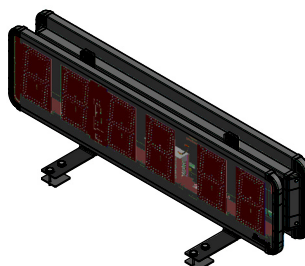
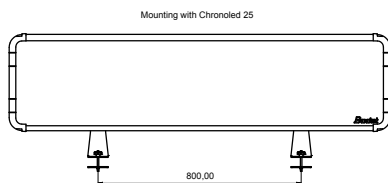
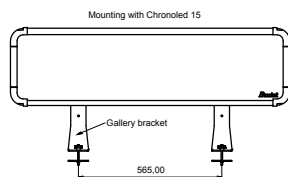
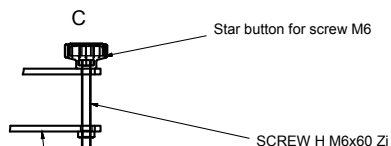
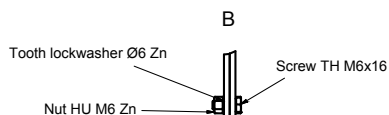
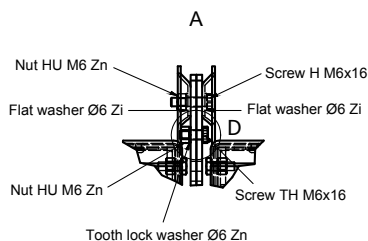
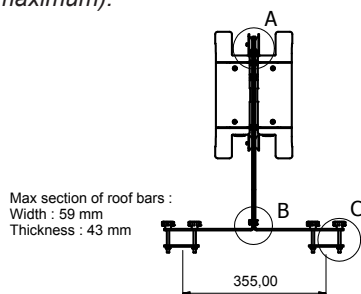
II.3 Mounting on car roof rack (Chronoled 15 and 25 only)

1/ Assemble the roof rack brackets as shown in B and D.

2/ Fasten the Chronoled (or both Chronoleds if double side) on the brackets as in A.

3/ Install the Chronoled-brackets assembly on the roof rack bars using the the hand-screws as in C

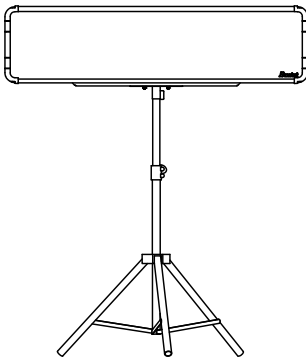
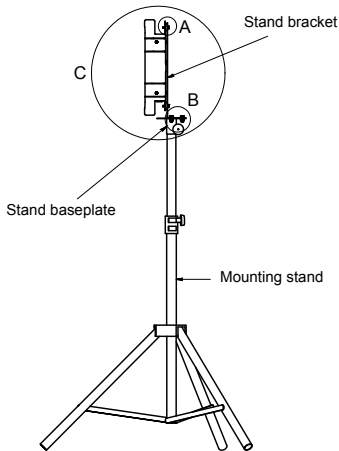
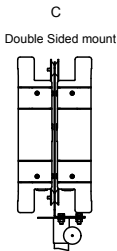
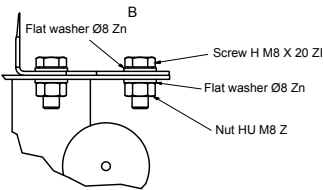
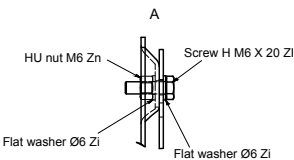
Caution : when the Chronoled is mounted on the roof, drive the vehicle slowly (60 km/h maximum).



II.4 Mounting on tripod stand (Chronoled 15 and 25 only)

1/ Fasten the Chronoled bracket onto the base plate of the stand with the 4 screws as in B.

2/ Fasten the Chronoled (or both Chronoleds if double side) on the bracket with 4 screws as in A.



III - Electrical installation

III.1 Power supply

The power supply is a dual voltage unit. The selection of the input voltage is done by mean of a slide switch located on the side of the power supply. By default the selected input voltage is 230v 50/60Hz. To set it for 115v, first remove the digit card in front of the power supply and then the Z shape bracket to have access to the switch.



CAUTION: 115/230VAC INPUT VOLTAGE
CAN BE SELECTED BY SWITCH. CHECK INPUT
VOLTAGE AVOIDING DAMAGE BEFORE POWER ON.

Connect the Chronoled power cord to 115/230v AC mains or the 12v DC power inverter (cigarette lighter) if it is used.

Note 1: remove the glass to gain access to the power supply unit (see § II. 1).

Note 2: the adhesive protection delivered must be stuck above the terminal strips of the power supply at the end of the wiring, preventing direct contact with hazardous voltages.

III.2 Connecting a double-sided Chronoled

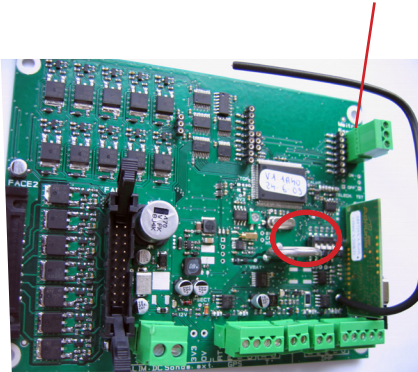
In the case of a double-sided Chronoled, one panel must be master and the other one slave. A synchronization cable kit made of two sections must be used. The male section connects to the RS485 connector of the master and the female section to the slave. Connect the 2 sections together.



III.3 Configuring the dips

The dips are set at the factory, however if several Chronoleds are to be connected together then dips 3 to 5 need to be set according to following table (next page).

RS 485 connector for slave sync.



Clock type	Dip 1	Dip 2
CHRONOLED	1	0

Clock type		Dip 1	Dip 2	Dip 3	Dip 4	Dip 5
MASTER	HMT LED	0	0	/	/	/
	HMS LED	0	1	/	/	/
SLAVE	Slave 1	1	0	0	0	1
	Slave 2	1	0	0	1	0
	Slave 3	1	0	0	1	1
	Slave 4	1	0	1	0	0
	Slave 5	1	0	1	0	1
	Slave 6	1	0	1	1	0
	Slave 7	1	0	1	1	1

III.4 Chronoleds in series

Up to 8 Chronoleds can be connected in series (1 master and up to 7 slaves).

- Set one Chronoled as master via the dips, then all the other Chronoled as slave (each slave Chronoled must have a unique number). See table above.
- Connect the RS485 synchronization cable to the RS485 connector of each Chronoled. See the above illustration.

III.5 Pairing an HF remote control

Using the HF remote control to operate the Chronoled requires pairing. This operation is performed in the factory.

Pairing is accomplished during a limited time of 30sec after powering up the Chronoled by holding down the [T] key for 1 sec, 88 is then displayed.

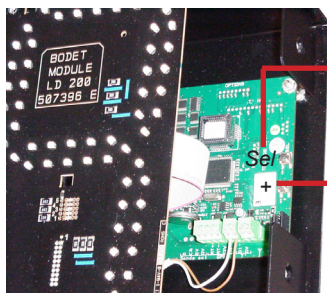
Unpairing a remote control is performed identically to pairing.

Note: everytime a Chronoled is powered up, a remote control which is already paired is inactive for 30 seconds.

IV - Parameter Setting

To set the parameters of the Chronoled, use the 2 push-buttons located inside the Chronoled or the HF remote control. The push-buttons are accessible by removing the right side of the Chronoled.

Caution: to prevent short circuits, do not insert any metallic objects in the Chronoled.



Programming push-buttons

S : 'S' key
+ : 'R' key
M : menu key
T : version / Test key



HF remote control

[Sel] push button (inside Chronoled only)

- To call the main menu (chro/time/scor/prog/test) hold down this push-button for 1 second.
- To exit a menu, hold down this push-button for 1 second.
- Press briefly on this push-button to validate the menu or the parameter previously selected.

[+] push button (inside Chronoled only)

- While displaying a menu, press this button to select the next menu or parameter.

[S] Remote control key

- While displaying a menu, press this key briefly to validate the menu or the parameter previously selected.
- In timing mode, press this key to start the timer, and press this key again stop the timer.

[R] Remote control key

- Selects the next menu or next parameter.
- In timing mode, resets the timer when it is stopped.

[M] Remote control key

- Hold down this key (1 sec) to call the main menu (chrono / time / scor / prog / test).
- Press this key briefly to exit a programming menu.

[T] Remote control key (called test key)

- Hold down this key for 1 sec. to perform a display test and to display the software version number.

Note on remote control and Chronoled keys

- During the process of data entry, if no key is pressed for 30 sec, automatic menu exit is performed, without validating the currently selected parameter. A parameter is validated only after pressing [S].

IV.1 Main menu

The main menu provides access to all setting functions of the Chronoled display. It contains 5 menus :

CHRO : sets timing functions (count up/count down).

TIME : sets time of day and date.

SCOR : manages 2 scores, Home and Visitors, from 0 to 99.

PROG : sets brightness of the display LEDs, sets a countup/countdown loop, sets the time of the relay at end of timing.

TECH : Allows the selection of the display mode 12/24h and the display order month/day (31.12 or 12.31), to set the time synchronisation mode, to set the options of time zone and summer/winter change-over, to modify the time base, to select the temperature unit (C or F), temperature display mode, to apply an offset to the temperature and the humidity and to set the channel of the HF transmitter.

This menu is for technician only.

TEST : tests the display panel to check that each LED runs properly and displays the software version number.

Just validate one of these first 3 menus (CHRO, SCOR and TIME) to display the corresponding mode.

For example, to display the time when the Chronoled displays a time countdown, just enter the TIME menu and validate.

1. The display is idle while displaying the time. Press [M] on the remote control (or the [Sel] key for 1 sec) to call the main menu.
2. The first menu displayed is the CHRO menu, to go to the next menu (TIME), press the [R] key.
3. Press [S] to validate the chosen menu. Conversely, pressing [M] lets you exit the menu (or the [Sel] key for 3 sec).



IV.2 CHRO menu: count and countdown setting

1. Enter the CHRO menu (see page 10).
2. A message flashes (up, down or day). Choose the count mode with the [R] key. «Up» starts timing, «down» starts countdown timing, «dayd» starts a day countdown and «dayU» starts a day count up (the counting will stop on the last day at midnight).
3. Press the [S] key to validate your choice.



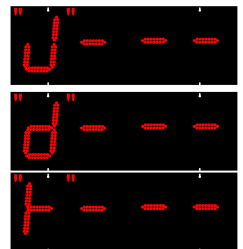
4. Enter hours with the [R] key. Press the [S] key to validate. Then enter minutes with the [R] key. Press the [S] key to validate. And finally, enter the seconds with the [R] key. Press the [S] key to validate.



Note : the value entered is the max value to reach in counting mode and the starting value in the countdown mode.

5. If Day chosen:

a. Choice between J (jour in French), d (day in English) and (tage in German) using the [R] key. Press the [S] key to validate the choice.



b. Enter the unit of days to count down with the [R] key. Press the [S] key to validate.



c. Enter the tens of days to count down with the [R] key. Press the [S] key to validate.



d. Enter the hundreds of days to count down with the [R] key. Press the [S] key to validate.



Note that on the last day the countdown changes to Hours / minutes / seconds countdown.

6. In the «dayd» programming select the time (hour/minute) at which the countdown should stop (programming «00H00» the countdown will stop at midnight on the last day).



The hour digits blink(0 to 23h). Edit with the *[R]* key.

Press *[S]* to validate the hours and move on to set the minutes



The minutes digits blinks (0 to 59). Edit with the *[R]* key.
Press *[S]* to validate

Nota: On the last day the countdown changes to Hours/ Minutes. On the last hour the countdown Changes to Minutes/ Seconds countdown.

7. The display returns to the normal mode with the timer mode being selected (see '[Sel] push button (inside Chronoled only)', page 9 for the operation of the timer).



V.3 SCORE menu: entering scores

1. Enter the SCORE menu (see page 10).
2. The S or + key (top left) increments home scores by one point.
3. The M or – key (bottom left) decrements home scores by one point.
4. The R or + key (top right) increments visitor score by one point. A long press resets all scores.
5. The T or – key (bottom right) decrements the visitors score by one point.



IV.4 TIME menu: setting the time of day

1. Enter the TIME menu (see page 10).
2. Time flashes (0 to 23h). Modify using the [R] key.
3. Press the [S] key to validate time and go to minutes setting.
4. Minutes flash (0 to 59). Modify with the [R] key.
5. Press the [S] key to validate the minutes.
6. The year blinks. Modify with the [R] key.
7. Press [S] to validate the year.



8. The day flashes. Modify with [R].

9. Press [S] to validate the day.



10. The month flashes. Modify with [R].

11. APress [S] to validate the month.



12. The display goes back to the normal mode after the time and date setting has been validated.



IV.5 PROG menu: setting brightness, relay, time base

1. Enter the PROG menu (see page 10).
2. The brightness value flashes (A1 to A3 then M1 to 9). Modify with the [R] key. The values A1 to A3 are automatic brightness adjustments (brightness varies according to ambient light). The values M1 to M9 are manual brightness settings (brightness is fixed regardless of ambient light).
Brightness of the display is modified in real time, and in a multi-panel installation, each panel manages its own brightness..



3. Press the [S] key to validate brightness to set the time base.
4. The selected timing mode (*) flashes (ru or St). Modify with the [R] key.

The 'ru' mode (run) allows to restart automatically and permanently the same count/countdown (at the end of a count/countdown, the Chronoled returns automatically to its initial value and restarts the same count/countdown).

The 'St' mode (stop) stops at the end of count/countdown.



5. Press the [S] key to validate the parameter and go to setting the time of the count/countdown end relay (*).
6. The time of activation of the automatic relay (horn) at the end of count/countdown (*) flashes (from 0 to 9 or – to deactivate the relay). Modify with the [R] key.



7. Press the [S] key to validate.
9. Press the [S] key to validate the timing mode. The display returns to the normal mode.



(*) These menus exist only when the timing mode is activated.

IV.6 Menu TECH :

1. Enter TECH menu: press «SEL» or «S» or «M» for 1 sec. Select the menu by pressing [+]. Validate with [S] and proceed to the selection of the synchronisation mode.

2. The synchronisation mode flashes (Independent «Ind», Radio «rAd», GPS «GPS» see chapter V - Types of time synchronisation - for additional information of the time synchronisation types). Select with [R].

3. Display of the dynamic reception.
4. Choose a pre-recorded time zone and summer/winter change-overs or choose the programmable mode (prog) with the [R] key.

Programmable mode «GMT»: only the time shift can be entered. The winter/summer change-over programming is not possible.

- a. If GMT was selected, press [S] to validate.
- b. The hours of the time difference flash (from -11h +11h).
Modify with [R].
- c. Validate the hours with [S].
- d. The minutes of the time difference flash (00 or 30).
Modify with [R].
- e. Validate the time difference with [S].

Programmable «PrG» mode: mode to enter the summer/winter and winter/summer change-over dates.along with the time difference.

- a. If «PrG» was selected, press [S] to validate.
- b. The winter/summer change-over month flashes. Modify with [R].
- c. Validate the month with [S].

- d. The 3rd digit corresponding to the day within the month of the change-over flashes.

On a non Fixed date:

- Modify the 3rd digit corresponding to the week number within the month (1 to 5) with [R]. Validate with [S].
- Modify the 4th digit corresponding to the number of the day within the week (1 to 7: 1 Monday and 7 Sunday) with [R]. Validate with [S].



On a Fixed date:

- Choose F on the 3rd digit with [R]. Validate with [S].
- Select the number of the day within the month (1 to 31) with [R]. Validate with [S].



e. The summer/winter month number flashes . Modify with [R].

f. Validate the month with [S].

g. The 3rd digit, corresponding to the day within the month of the summer/winter change-over flashes.

On a non Fixed date:

- Modify the 3rd digit corresponding to the week number within the month (1 to 5) with [R]. Validate with [S].
- Modify the 4th digit corresponding to the number of the day within the week (1 to 7: 1 Monday and 7 Sunday) with [R]. Validate with [S].



On a Fixed date:

- Choose F on the 3rd digit with [R]. Validate with [S].



- Select the number of the day within the month (1 to 31) with [R]. Validate with [S].



h. The hours of the time difference flash (from -11h +11h). Modify with [R]. Validate the hours with [S].



j. The minutes of the time difference flash (00 or 30). Modify with [R]. Validate the time difference with [S].



Central Europe zone "Eur" (France, Germany, etc.) (GMT +01 hour).
Winter > Summer = last Sunday of March at 2h00.
Summer > Winter = last Sunday of October at 3h00.



Wertern Europe zone "Eu_1" (England, Portugal, Irlanda) (GMT +00 hour).
Winter > Summer = last Sunday of March at 1h00.
Summer > Winter = last Sunday of October at 2h00.



Eastern Europe zone "EASt" (Greece, Finlande, etc.) (GMT +02 hours).
Winter > Summer = last Sunday of March at 3h00.
Summer > Winter = last Sunday of October at h00.



Eastern USA "USAE" (New York, Toronto, etc) (GMT -05 hours).
Winter > Summer = second Sunday of March at 2h00.
Summer > Winter = first Sunday of November at 2h00.



Central USA "USAC" (Chicago) (GMT -06 hours).
Winter > Summer = second Sunday of March at 2h00.
Summer > Winter = first Sunday of November at 2h00.



Montain USA "USAM" (Denver) (GMT -07 hours).
Winter > Summer = second Sunday of March at 2h00.
Summer > Winter = first Sunday of November at 2h00.



Pacific USA "USAP" (Los Angeles) (GMT -08 hours).
Winter > Summer = second Sunday of March at 2h00.
Summer > Winter = first Sunday of November at 2h00.



Australia "AUS" (Sydney) (GMT +10 hours).
Winter > Summer = first Sunday of October at 2h00.
Summer > Winter = first Sunday of April at 3h00.



5. Press **[S]** to validate. The display goes back to normal mode.



IV.7 TEST menu: test and version display

1. Enter the TEST menu (see page 10 and page 9).
2. All LEDs must be lit.
3. Press the [S] or [T] key to go to the next test.
4. All LEDs must be off.
5. Press the [S] or [T] key to go to the next test.
6. Display the addressing number of each module (the 3-point module stays off). The number normally corresponds to the example in the right-hand diagram. For HMS, the display is 1 2 3 4 5 6.
7. The Chronoled software version number is displayed.
8. Press the [S] or [T] key to return to the normal mode.



V - Types of time synchronisation

Independent Mode «Ind»

- The clock is entirely independent, the time information comes from its own time base. .

FI or DCF Radio Synchronised Mode «rAd»

- The clock is independent, the time information comes from its own time base which is compared with the signal sent by the FI or DCF transmitter and is corrected in case of a drift.
- The radio synchronisation allows displaying the time with absolute precision.

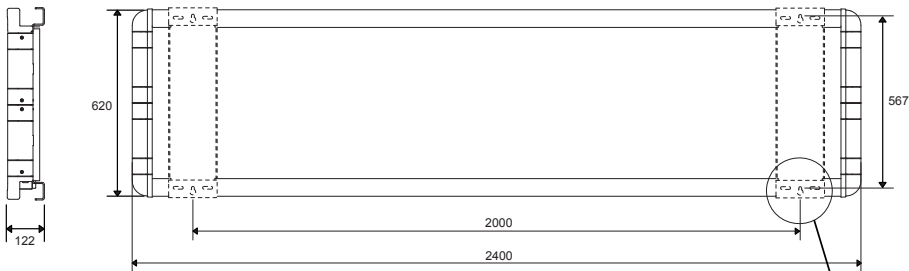
GPS Mode «GPS»

- The clock is independent, the time information comes from its own time base which is compared with the signal received from the GPS system and is corrected in case of a drift.
- The radio synchronisation allows displaying the time with absolute precision..

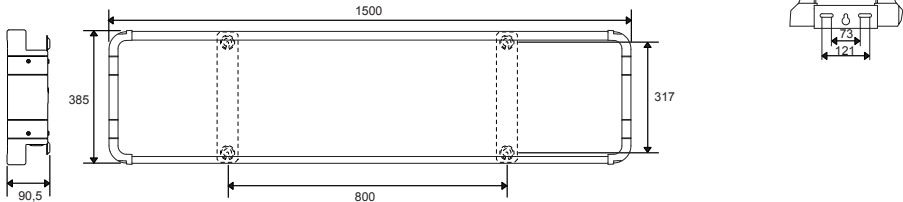
V - Technical specifications

Designation	Specifications
Power supply	115V / 230V -10/+6% 50/60HZ
Installation diagram	Diagram TT, TN or IT
Electric isolation	Class I
Main power supply	3 (phase, neutral and earth) terminals for 0.75mm² to 2.5mm² wires
Time base precision	≤ 0.2 sec/day
Remote control frequency and coverage distance	433 MHz/ Maximum 100 metre in open space
Cable input by sealed grommets	Mains supply cable: M23 – sheath Ø 10 to 14 mm
Dimensions	Repeater or mains: M20 – sheath Ø 7 to 10 mm
Settings saved in case of mains power off	Permanent
Operating temperature	-20°C to +50°C
Protection rating	IP 54 / IK 07

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CHRONOLED 25



CHRONOLED 15

