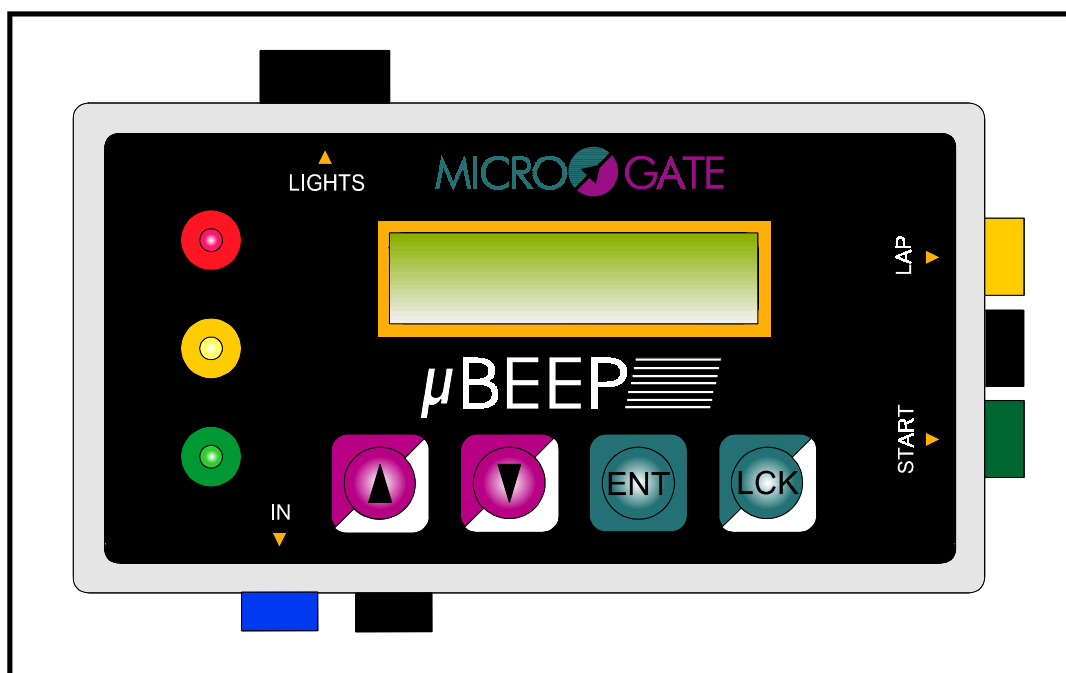


μBEEP

USER MANUAL



MICROGATE

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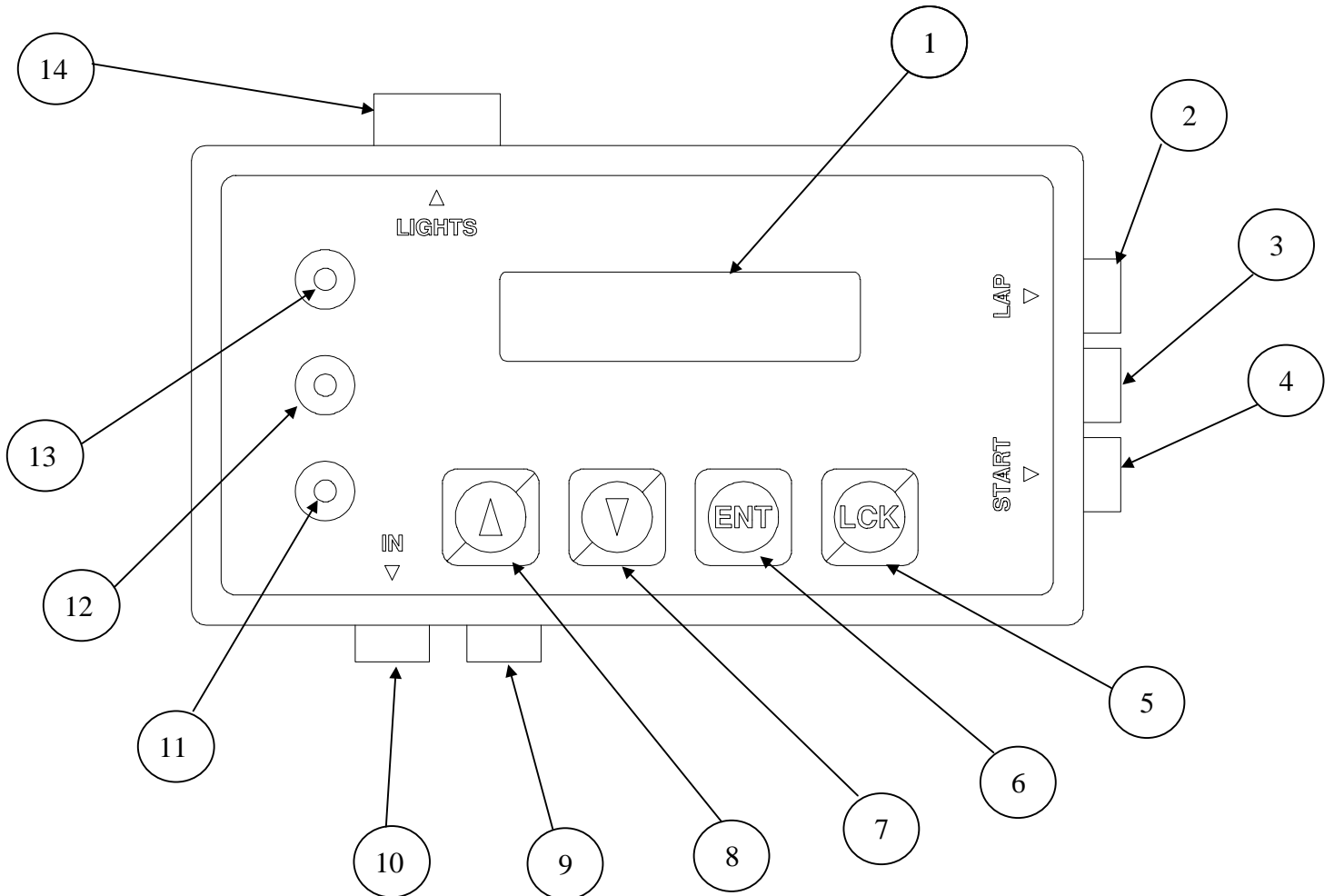
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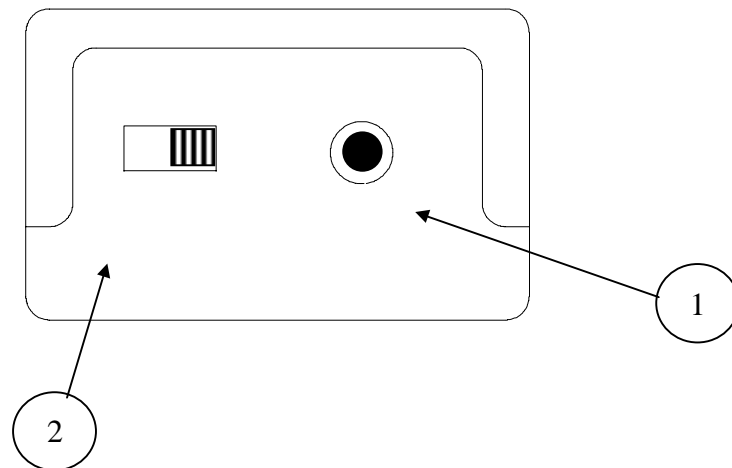
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Description



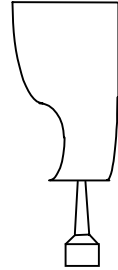
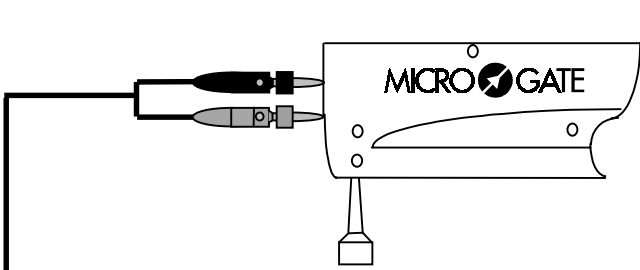
1. Alphanumeric display 2 lines x 16 characters
2. LAP output
3. GND
4. START output (end of cycle)
5. LCK key (Activates/Disactivates outputs: Beeper and signal lights)
6. ENTER key (to put into effect modifications and selections)
7. DOWN ARROW key
8. UP ARROW key
9. GND
10. Photocell input
11. Red LED (Synchronized with Red light signal output)
12. Yellow LED (Synchronized with Yellow light signal output)
13. Green LED (Synchronized with Green light signal output)
14. 6 pole Amphenol socket for connection to signal lights



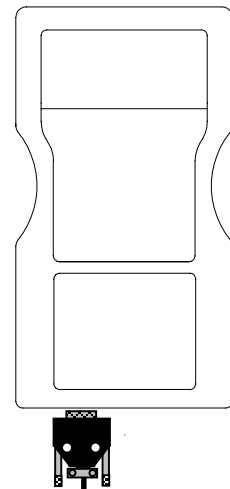
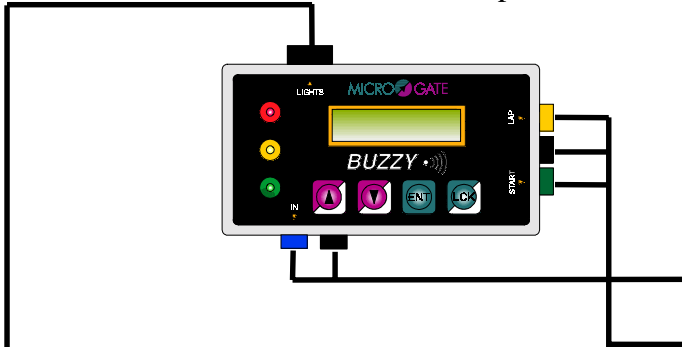
1. BATTERY RECHARGE JACK input (V_{in} = 9÷18V)
2. ON/OFF switch

Connections

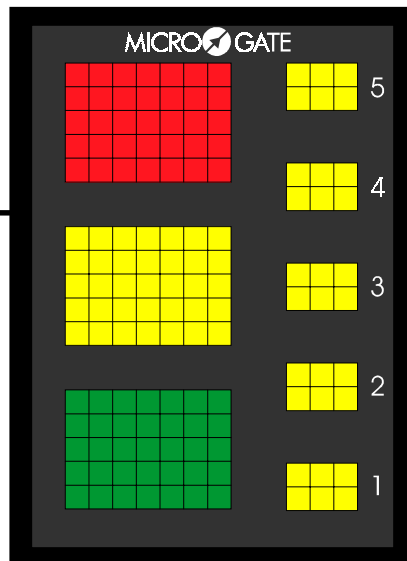
Photocell



Beeper



Chronometer



Signal lights

How to use μBeep

As soon as it is switched on the beeper sets itself to a base configuration (Alpine Skiing with a cycle time of 20 seconds) with all the outputs de-activated, the 3 LEDs on and the time counter blocked. From this configuration it is possible to set a mode of use suitable for the race to be managed and an appropriate cycle time.

An arrow '→' appears on the left of the display. If the arrow is on the first line, pressing ENTER will take you to the selection of function mode, if the arrow is on the second line, to the selection of cycle time. The arrow can be moved from one line to the other with the "Up Arrow", "Down Arrow" keys.

Function modes:

The current program has the following function modes:

MODE 1

Name : Alpine Skiing

Explanation line: "-10R -5G -3<V<3"

Available cycle times:

20s	45s	2 min
30s	1 min	2 min 30s
40s	1 min 30s	

This mode emits a long BOOP at -10s from the start with the red light coming on, at -5 countdown begins with a BIP every second and the yellow light coming on, at -3 the green light comes on UNTIL +3.

At the end of every cycle an impulse is given on the START output.

Time	-10	-5	-4	-3	-2	-1	0	+3
Beeper	Long BOOP	BIP	BIP	BIP	BIP	BIP	BIP	
Lights	RED	YELLOW	YELLOW	GREEN	GREEN	GREEN	GREEN	OFF

MODE 2

Name : Cross-country skiing

Explanation line: "Green from -5 to +5"

Available cycle times :

20s	45s	2 min
30s	1 min	2 min 30s
40s	1 min 30s	

This mode emits a long BOOP at -10s from the start, at -5 countdown begins with a BIP every second and the green light coming on UNTIL +5.

MODO 5

Name : Rally 2

Explanation line : "-10G -3V +3R "

Available cycle times :

20s	45s	2 min
30s	1 min	2 min 30s
40s	1 min 30s	

This mode turns on the yellow light at -10s from the start, at -3 the green light comes on and at +3 the red light comes on and remains on until the next -10.

At the end of the cycle it gives an impulse on the START output.

Time	-10	-3	0	+3
Beeper	OFF	OFF	BIP	OFF
Lights	YELLOW	GREEN	GREEN	RED

MODE 6

Name : Rally 3

Explanation line : "-10R -5GP 0<V<+20"

Available cycle times :

	45s	2 min
30s	1 min	2 min 30s
40s	1 min 30s	

This mode turns on the red light at -10s from the start, at -5 the yellow light comes on when countdown begins and a pixel goes off every second.

At the end of the cycle the green light comes on UNTIL +20 and gives an impulse on the START output

Time	-10	-5	-4	-3	-2	-1	0	+20
Beeper	OFF	OFF	OFF	OFF	OFF	OFF	BIP	OFF
Lights	RED	YELLOW + PIXEL	YELLOW + PIXEL	YELLOW + PIXEL	YELLOW + PIXEL	YELLOW + PIXEL	GREEN	GREEN

MODE 7

Name : Rally 4

Explanation line : "-10R -5GP 0<V<+20"

Available cycle times :

	45s	2 min
30s	1 min	2 min 30s
40s	1 min 30s	

This mode turns on the red light at -10s from the start, at -5 the yellow light comes on. At the end of the cycle the green light comes on UNTIL +10 and gives an impulse on the START output.

Time	-10	-5	-4	-3	-2	-1	0	+10
Beeper	OFF	OFF	OFF	OFF	OFF	OFF	BIP	OFF
Lights	RED	YELLOW	YELLOW	YELLOW	YELLOW	YELLOW	GREEN	GREEN

MODE 8

Name : User

Explanation line : Autodefined

Available cycle times : according to the sequence set

This mode allows the user to construct with complete freedom an on/off sequence for signal lights and sounds inserted within a cycle time.

The sequence is constructed by selecting in succession:

- *event time* : the beginning/end of the cycle is indicated by T=0. With the arrows the time value is increased or decreased within a range of variability from -127 to +127.
- *type of sound* : the following options are possible
 1. Silent
 2. Bip
 3. Boop
 4. Long bip
 5. Long boop
- *type of signal light* : the following options are possible
 1. Off
 2. Red
 3. Yellow
 4. Green
 5. Pixel
 6. Yellow+Pixel

The signal light options set for the instant of time are kept until the value of the next event time selection. The device sets the insertion of the beeper and signal light values for the instant T=0.

On the basis of the value limits of the sequence set, the system then determines the minimum value permitted for the cycle time. Subsequently the user must select the cycle time from the values suggested by the device.

Example:

The user wishes to construct the following sequence:

Time	-10	-5	-1	+5
Beeper	OFF	BOOP	OFF	OFF
Lights	RED	YELLOW	GREEN	OFF

with a cycle time of 30 seconds

The user must insert the data in the following way:

Time	-10	-5	-4	-1	0	+5
Beeper	SILENT	BOOP	SILENT	SILENT	SILENT	SILENT
Lights	RED	YELLOW	YELLOW	GREEN	GREEN	OFF

Selection of the time cycle

After choosing a function mode or directly selecting time cycle selection from the main menu, the user must choose the repetition time of the sequence currently set.

For each function mode only those times consistent with the choice entered are presented.

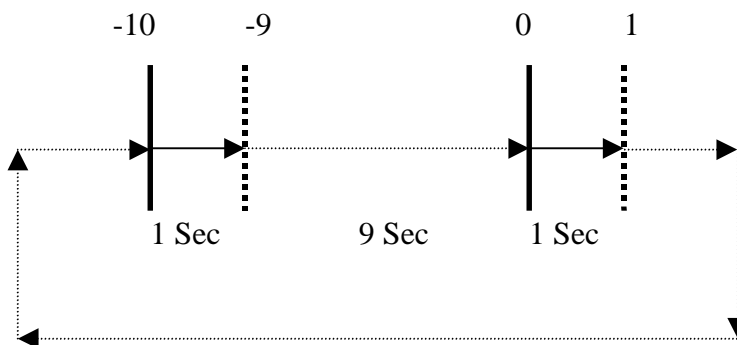
The up and down arrows are used for selection of the time required; when the desired time has been set, press 'ENTER' for confirmation.

Bear in mind that the insertion of an event time with the relative sound and color characteristics mean the "employment" of a second. The settings chosen are attributed to a minimum time unit of one second. This characteristic must be kept in mind in the calculation of the minimum duration of the cycle.

Example

Time	-10	0
Beeper	SILENT	BIP
Lights	RED	GREEN

In this situation the minimum duration of the cycle is 11 seconds.



Minimum T of cycle = 11 seconds

Outputs towards the chronometer

There are two different modes of operation :

Photocell always active

In this mode in the case of a false start the photocell impulse is transmitted to the START output of the beeper at any moment of the sequence, while the following end of cycle impulse is transmitted to the LAP output of the Beeper.

Analysis of the impulses on the start chronometer makes it possible to detect false starts and times which deviate from the official start.

Active photocell only with yellow signal light active

In this mode the photocell impulses are only retransmitted to the chronometer if they have been emitted after the yellow signal light has come on. Also in this case false starts are transmitted to the START output of the beeper whereas the subsequent end of cycle impulse is transmitted to the LAP output of the Beeper.

Analysis of the impulses on the start chronometer makes it possible to detect false starts and times which deviate from the official start.

When one of the Rally modes is selected the user must select one of the two work modes.

The LCK (Lock) key

The LCK key makes it possible to deactivate the outputs without losing synchronization of the cycle time.

When the key is pressed, the letters “LK” appear at the top right of the display to signal the status of the system.

When the Lock is deactivated, the outputs (Beep and Signal Light Set) will be activated for the next cycle sequence. When the outputs block is active the indicator LEDs are still lit to give an idea of the current situation of the sequence.

Battery recharge

To recharge the batteries simply insert a power supply tension between 11 and 18V in the appropriate jack (see fig3). The complete recharge cycle lasts 8 hours.

When the batteries are low, this is signaled on the display by the appearance of a “B” in the bottom right corner of the display.

The device can also function with an external power source once more using the recharge jack with tensions of between 11 and 18V.