RGB Technology®
NOWOCZESNE TECHNOLOGIE

TECHNICAL AND OPERATIONAL DOCUMENTATION

IR remote control for the devices of ZA and ZB series

Product code:

102-02-07

RoHS COMPLIANT

CE

*Explanatory figure

Table of contents

1 Manufacturer

RGB Technology Sp. z o. o.
Karola Mytnika 28
75-129 Koszalin
POLAND

2 Specifications

IR remote control for the devices of ZA / ZB series

Dimensions [mm]:	86.2 x 40 x 8.3
Range[1]:	10m
Remote control power supply	CR2025 battery
Ingress protection rating[2] IP:	50
Weight:	19.5g

3 Transport and storage

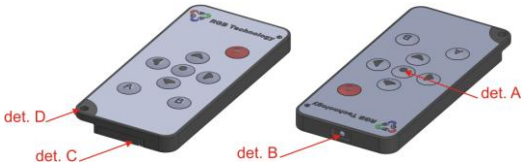
The device is sensitive to mechanical damages. Care should be taken to properly protect the device during transport so as to eliminate any damage. It is forbidden to transport the device components separately in a collective package – each component must be packed separately and cannot 'bump' during transportation.

Due to protective packaging, the device should be stored in the temperature -20°C ÷ +60°C at the humidity below 99%RH.

4 IR remote control construction

4.1 Device construction

The figure shows the IR remote control construction[3]:



det. A – function buttons; det. B – IR trasmitter; det. C - CR2025 battery; det. D – place for a strap.

Fig. 1

4.2 IR remote control dimensions

All dimensions shown in the figures are given in [mm].

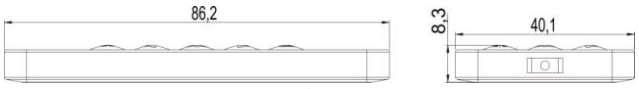


Fig. 2

[1] The range of the remote control is specified to be 10m.
Please, take into account that the range is influenced, among others, by the following factors:
- the angle at which the remote control is set in relation to the receiver – the maximum range is obtained when the remote control is set in front of the receiver, that is perpendicularly to the surface of the display and pointing towards it;
- the illumination of the device by the sunlight – has a negative impact on its range;
- the remote control battery status.

[2] Ingress protection rating is defined according to EN 60529 standard.
[3] Explanatory figure.

5 Configuration of the devices of ZA and ZB series using the IR remote control

The basic clock configuration method is by means of the remote control through the user menu.
Fig. 3 shows the remote control, along with the explanation of the function of each button. You enter the user menu using the **MENU** button. You navigate and modify the respective parameters using the buttons ↑ ,↓, ← and →.

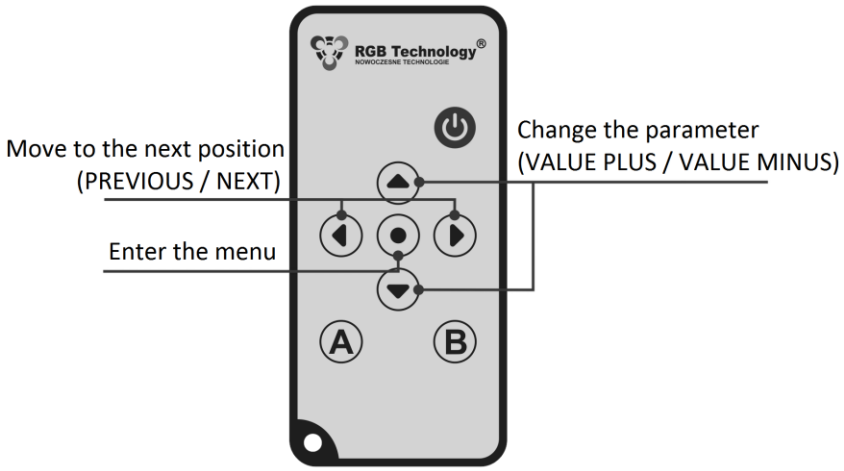


Fig. 3

Błąd! Nie można odnaleźć źródła odwołania. shows the structure of the main menu functions with the description.

Menu position	Function description
F1	Manual setting of the time and the date
F2	Configuration of the presented parameters
F3	Configuration of the date format
F4	Configuration of the time synchronisation, time zones, taking into account the daylight saving time and the Master Mode
F5	Configuration of the display brightness
F6	Configuration of the alarms
F7	Configuration of the ECO mode
F8	Configuration of the display font
F9	Restoring the default settings
F10	Configuration of the temperature offset
F11	Configuration of the synchronisation of displaying
F12	Displaying information about the signal strength or the disconnection of the GPS module

Table 1

5.1 Pairing of the IR remote control with the RGB Technology devices

For the RGB Technology devices with the IR control module, after connecting them to the power supply, the procedure of learning addresses is active for 60 seconds, and, during this time, the user can add the IR remote controls. When this time is over, the procedure will be blocked.
The procedure of adding the IR remote control consists in selecting the appropriate combination of the remote control buttons (time intervals between pressing the successive buttons should last about 1 second):

Sequence	1	2	3	4	5	6	7
Button	**A**	**B**	**↓**	**A**	**↓**	**↓**	**B**

Table 2

5.2 Removing the programmed remote controls

Carrying out the procedure of removing all programmed remote controls, proceed similarly as during the pairing process, but use a different combination of buttons:

Sequence	1	2	3	4	5	6	7
Button	**A**	**B**	**↓**	**B**	**A**	**A**	**↓**

Table 3

5.3 Manual setting of the time and date

To **set the clock (enter the current date and time),** you should:

1) Call the configuration menu by pressing the **MENU** key.
2) Select the **„F1"** function using the ↑ and ↓ keys and confirm it with the → key. **→.**
3) Using the ↑ and ↓ keys, modify the date and the time. Successively enter: the day of the month, the month, the year, the hour, the minute, and confirm the parameters with the → key.
4) After entering the complete time, the clock will automatically exit the menu.

NOTICE!
A blinking number indicates the time or date parameter which is being modified.
NOTICE!
To ensure that the device makes automatic changes between the daylight saving time and standard time correctly, it is necessary to properly configure the time zone and to activate taking into account the daylight saving time.
NOTICE!
When you set the clock on the last Sunday in March or on the last Sunday in October, take into account the information included in point **6. Daylight saving time.**

5.4 Configuration of the presented parameters

To **activate/deactivate displaying individual information and to modify the time of its presentation (the clock, the date, the thermometer)**, you should:

1) Call the configuration menu by pressing the **MENU** key.
2) Select the **„F2"** function using the ↑ and ↓ keys and confirm it with the → key.
3) To activate displaying the clock **(C)** set **Y** using the ↑ and ↓ keys and confirm it with the → key.
4) Next, using the ↑ and ↓ keys, modify the clock display time **„Cd"** and confirm it with the → key.
5) To activate the display of the date **(d)** set **Y** using the ↑ and ↓ keys and confirm it with the → key.
6) Next, using the ↑ and ↓ keys, modify the date display time **„dd"** and confirm it with the → key.
7) To activate the display of the thermometer **(t)** set **Y** using the ↑ and ↓ keys and confirm it with the → key.
8) Using the ↑ and ↓ keys modify the temperature display time **„td"** and confirm it with the → key.
9) The clock will return to the main menu; to exit the main menu, press the ← key.

NOTICE!
If the respective parameter of the presentation (the clock, the date or the thermometer) is deactivated by setting **N**, the parameter presentation time step will be skipped.

5.5 Configuration of the date format

To **change the displayed date format**, you should:

1) Call the configuration menu by pressing the **MENU** key.
2) Select the **„F3"** function using the ↑ and ↓ keys and confirm it with the → key.
3) Using the ↑ and ↓ keys, select your preferred format of displaying the date and confirm it with the → key.
   dny DD-MM YYYY
   ndy MM-DD YYYY
   ynd YYYY MM-DD
   ydn YYYY DD-MM
   dn DD-MM
   nd MM-DD
4) The clock will return to the main menu; to exit the main menu, press the ← key.

5.6 Configuration of the time synchronisation, time zones, taking into account the daylight saving time and the Master Mode

To **configure the time synchronization, time zone**[4]**, taking into account the daylight saving time or to activate the Master Mode**[5], you should:

1) Call the configuration menu by pressing the **MENU** key.
2) Select the **F4** function using the ↑ and ↓ keys and confirm it with the → key.
3) Using the ↑ and ↓ keys, select your preferred synchronization format and confirm it with the → key.
   S no synchronisation inactive **(inactive Master Mode)**
   S GP GPS satellite synchronisation
   S nt NTP network synchronisation
4) Using the ↑ and ↓ keys, select the time zone and confirm it with the → key.
   G -12 UTC zone -12
   … …
   G 14 UTC zone +14
5) Using the ↑ and ↓ keys, activate/deactivate taking into account the daylight saving time and confirm it with the → key.
   dst y yes
   dst n no
6) Using the ↑ and ↓ keys, activate/deactivate the Master Mode and confirm it with the → key.
   tb y Master Mode active
   tb n Master Mode inactive
7) The clock will return to the main menu; to exit the main menu, press the ← key.

NOTICE!
The satellite synchronisation requires the GPS module. The network synchronisation requires the network module and the Internet access.

NOTICE!
For the Polish official time, you should enter the UTC+1 (**G 01**) time zone and activate taking into account the daylight saving time „**dst y**"

NOTICE!
The Master Mode **cannot be activated**, if the reference clock does not have the active GPS or NTP synchronisation.

5.7 Configuration of the display brightness

To **activate the automatic display brightness control**, you should:

1) Call the configuration menu by pressing the **MENU** key.
2) Select the **F5** function using the ↑ and ↓ keys and confirm it with the → key.
3) Using the ↑ and ↓ keys, activate the automatic brightness control „**br A**" and confirm it with the → key.
   br 1 Minimum brightness
   … …
   br 10 Maximum brightness
   br A Automatic brightness
4) Using the ↑ and ↓ keys, select your preferred automatic brightness control profile and confirm it with the → key.
   Pr 1 Profile 1: Internal standard
   Pr 2 Profile 2: Internal dynamic
   Pr 3 Profile 3: External standard
   Pr 4 Profile 4: External dynamic

[4] Option available in the variant equipped with the network synchronisation module or the GPS module.
[5] Option available in the variant equipped with the network module or the GPS module.

To **set the display brightness manually**, you should:

1) Call the configuration menu by pressing the **MENU** key.
2) Select the **F5** function using the ↑ and ↓ keys and confirm it with the → key.
3) Using the ↑ and ↓ keys, select your preferred brightness and confirm it with the → key.
   br 1 Minimum brightness
   … …
   br 9 Maximum brightness
4) The clock will return to the main menu; to exit the main menu, press the ← key.

5.8 Configuration of the alarms

To **enter or modify the alarm**, you should:

1) Call the configuration menu by pressing the **MENU** key.
2) Select the **F6** function using the ↑ and ↓ keys and confirm it with the → key.
3) Using the ↑ and ↓ keys, select one of the available alarms **(from A1 to A30)** and confirm it with the → key.
   A 1 alarm 1
   …
   A 30 alarm 30
4) Using the ↑ and ↓ keys, activate an alarm (**On Y)** and confirm it with the → key.
5) Using the ↑ and ↓ keys, modify the time of activating the alarm. Successively enter: first the hour, next the minute, and confirm the parameters with the → key.
6) Using the ↑ and ↓ keys, enter the alarm duration period in seconds **(t)** and confirm it with the → key.
7) Using the ↑ and ↓ keys, select your preferred alarm mode: **ALLd** (every day) **SELd** (selected days) and confirm it with the → key.
8) If you choose the **SELd** mode (selected days), you should subsequently select the days in which the alarm is to be active (e.g. active on Monday **d1 Y**, inactive on Monday **d1 n**), every time proceeding by using the → key.
   d1 Monday
   d2 Tuesday
   …
   d7 Sunday

5.9 Configuration of the ECO mode

To **activate the ECO mode of the display,** you should:

1) Call the configuration menu by pressing the **MENU** key.
2) Select the **F7** function using the ↑ and ↓ keys and confirm it with the → key.
3) Using the ↑ and ↓ keys, activate the ECO mode „**ECO Y**" and confirm it with the → key.
   ECO Y yes
   ECO n no
4) Using the ↑ and ↓ keys, modify the value of the entered time of **activating the clock display**; next confirm it with the → key.
5) Using the ↑ and ↓ keys, modify the value of the entered time of **deactivating the clock display**; next confirm it with the → key.
6) The clock will return to the main menu; to exit the main menu, press the ← key.

NOTICE!
When the ECO mode is active (**ECO Y**) and the time of activating and deactivating the clock is the same, the clock will be **on** for 24 hours.

5.10 Configuration of the display font

To **change the display font shape,** you should:

1) Call the configuration menu by pressing the **MENU** key.
2) Select the **F8** function using the ↑ and ↓ keys and confirm it with the → key.
3) Using the ↑ and ↓ keys, select your preferred font shape and confirm it with the → key.
   Fnt1 rounded font
   Fnt2 seven-segment font

5.11 Restoring the default settings

To **restore the clock default settings by using the remote control,** you should:

1) Call the configuration menu by pressing the **MENU** key.
2) Select the **F9** function using the ↑ and ↓ keys and confirm it with the → key.
3) Using the ↑ and ↓ keys, select **res Y** and confirm it with the → key.

NOTICE!
The function mentioned above causes the resetting of all the settings of the device, but it doesn't reset the remote control codes. When the device is equipped with a LAN module, the network settings will be reset as well.

5.12 Configuration of the temperature offset

To **set the temperature offset** using the remote control, you should:

1) Call the configuration menu pressing the **MENU** key.
2) Select the **F10** function using the keys ↑ and ↓ and confirm it with the key →.
3) Using the keys ↑ and ↓ select „**Of Y"** and confirm it with the key →.
4) Using the keys ↑ and ↓ set the appropriate temperature offset value within the range of ±9.9°C and confirm it with the key →.
   Of Y yes
   Of N no

5.13 Configuration of the synchronisation of displaying

To **configure the synchronisation of displaying (content)** using the remote control, you should:

1) Call the configuration menu pressing the **MENU** key.
2) Select the **F11** function using the keys ↑ and ↓ and confirm it with the key →.
3) Using the keys ↑ and ↓ select „**SC Y"** and confirm it with the key →.
4) Using the keys ↑ and ↓ set the appropriate synchronisation mode „**SC Cb"** (Slave - Content Basic)**,** „**SC Cf"** (Slave - Content Full)**,** „**SC Sr"** (Master – Server Content) and confirm it with the key →.

NOTICE!
The **only** result of the above configuration is setting / switching over to the selected operational mode. Full configuration of the synchronisation of displaying requires configuring through the website. For a Slave device (basic or full), you should configure the IP address of the Master that is the synchronisation source.

5.14 Displaying the information about the signal strength or the disconnection of the GPS module

To **view the information about the signal strength or the disconnection of the GPS module** using the remote control, you should:

1) Call the configuration menu pressing the **MENU** key.
2) Select the **F12** function using the ↑ and ↓ keys and confirm it with the → key.

GP Un (GPS unconnected) GPS module unconnected
GP NO (GPS no signal) no signal of the GPS module
GP PS (GPS poor signal) poor signal of the GPS module
GP GS (GPS good signal) good signal of the GPD module

5.15 Hardware restoring of the clock factory settings

To **do the hardware restoring of the clock factory settings,** you should:

1) Disconnect the device from the power supply.
2) Make sure that a cable is not connected to the **GPS** connector (disconnect if it happens).
3) Connect the **GPS** pin to the **GND** pin in the connector.
4) Switch on the power.
5) Wait (about 3 seconds) until the clock signals the resetting of the settings by blinking of the middle segments of the digits.
6) Disconnect the **GPS** pin and **GND** pin

NOTICE!
The function mentioned above causes the resetting of all the settings of the device, but it doesn't reset the remote control codes. When the device is equipped with a LAN module, the network settings will be reset as well.

6 Daylight saving time

In accordance with EU Directive 2000/84/EC:
- the standard time is changed to the daylight saving time on the last Sunday in March (adding one hour),
- the daylight saving time is changed to the standard time on the last Sunday in October (taking away one hour).

Considering the above, in the countries following EU Directive 2000/84/EC, when the option of taking into account the daylight saving time is activated in the clock:

a) **On the last Sunday in March** there is no time interval between 01:00UTC + TimeZone and 01:59UTC + TimeZone. If you try to set the clock to the time within this interval, one hour earlier value is adopted, and it is assumed that the time has not yet been changed to the daylight saving time. As a result, within the nearest 60 minutes, the clock will take into account the change to the daylight saving time and will add one hour automatically.

b) **On the last Sunday in October,** the time interval between 01:00UTC + TimeZone and 01:59UTC + TimeZone appears twice. If you set the clock to the time within this interval, the clock will be set to the time indicated by the user, and it is assumed that the time has already been changed to the standard time.

7 Initial start-up

Step 1: Connect the clock to the power supply,

Step 2: Within 60 seconds proceed with the IR remote control pairing combinations,

Step 3: When properly paired, the clock will display the inscription "SAVE" and, next, will proceed to displaying the time.

8 Disposal and recycling

8.1 Packaging material recycling

The packaging elements must be segregated and, then, recycled in accordance with the local executive regulations on waste disposal.

8.2 Device disposal

The device must not be disposed of as urban waste!
In accordance with the directive 2002/96/EC (WEEE), if the repair of the device is not economically justified, the user must take the damaged or destroyed equipment to a special waste disposal centre.