



**RGB Technology**<sup>®</sup>  
MODERN TECHNOLOGIES

# OPERATION AND MAINTENANCE MANUAL

ZBS10-L PoE CLOCKS

Product code:

301-E3-53



\*Explanatory figure

## Table of content

1	Manufacturer .....	3
2	Specifications .....	3
3	Transport and storage .....	3
4	Device construction .....	3
4.1	Dimensions of the ZBS10-L PoE device .....	4
4.1.1	Mounting the ZBS10-L PoE device .....	4
5	Installation of the device .....	4
5.1	ZBS10-L PoE application .....	5
5.2	ZBS10-L PoE configuration .....	5
5.2.1	Configuration of the device through the embedded website - Web panel .....	5
5.2.2	Configuration of the device through the IR remote .....	5
6	Accuracy .....	6
7	DHCP .....	6
8	Automatic brightness control of the device .....	6
9	Additional options .....	6
9.1	Cooperation between clocks .....	6
10	Initial start-up .....	7
11	Disposal and recycling .....	7
11.1	Recycling of the package .....	7
11.2	Disposal of the device .....	7
12	Most common installation errors .....	7

## 1 Manufacturer

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## 2 Specifications

### ZBS10-L PoE

Dimensions of the device (WxHxD):	486mm x 170mm x 44mm / 19.1in x 6.7in x 1.7in
Display format:	HH:MM:SS
Digit height:	101,6mm / 4in
Weight of the device:	2.4kg / 5.3lbs
Casing tightness rating <sup>1</sup> IP:	4X
Power supply:	IEEE 802.3af(PoE), IEEE 802.3at (PoE+)
Device operation temperature (ambient):	-25°C ÷ 45°C / -13°F ÷ 113°F
Device operation temperature (device surface)	-25°C ÷ 60°C / -13°F ÷ 140°F

## 3 Transport and storage

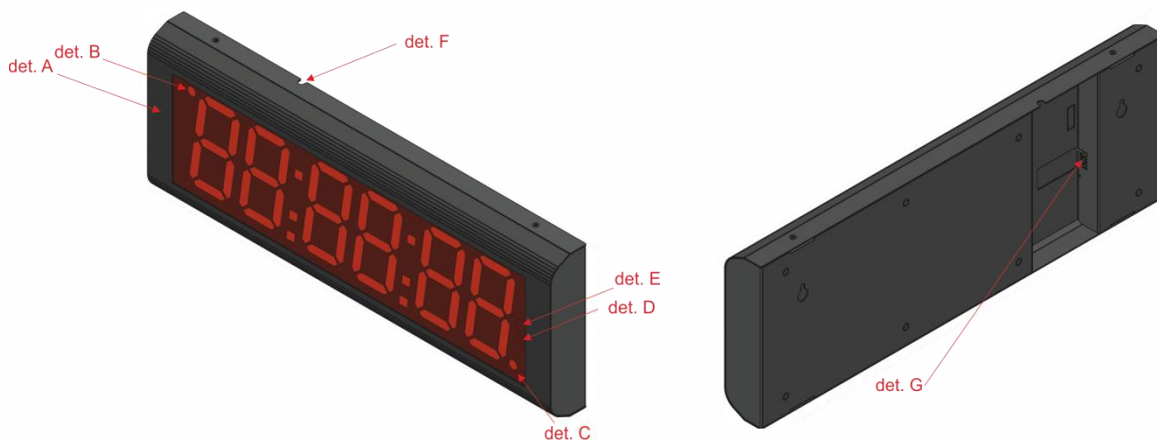
Care should be taken to properly protect the devices so as to eliminate any damage during transport. It is forbidden to transport the devices in a collective package without adequate amortisation - each device must be packed separately and cannot have freedom of movement during transportation.

Due to the protective packing the module should be stored in the temperature not lower than -25°C and not higher than +60°C at the humidity below 99%RH.

## 4 Device construction

ZBS10-L PoE is cased in a powder-coated steel housing. The properly installed device meets the IP4X tightness requirements.

The figure shows ZBS10-L PoE clock<sup>2</sup>.



det. A - case; det. B - AM/PM indicator; det. C - synchronization error indicator; det. D - lighting sensor; det. E - IR sensor;  
 det. F - cable outlet; det. G - Ethernet connector

fig. 1

<sup>1</sup> Specified on the basis of EN 60529.

<sup>2</sup> Explanatory figure.

## 4.1 Dimensions of the ZBS10-L PoE device

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

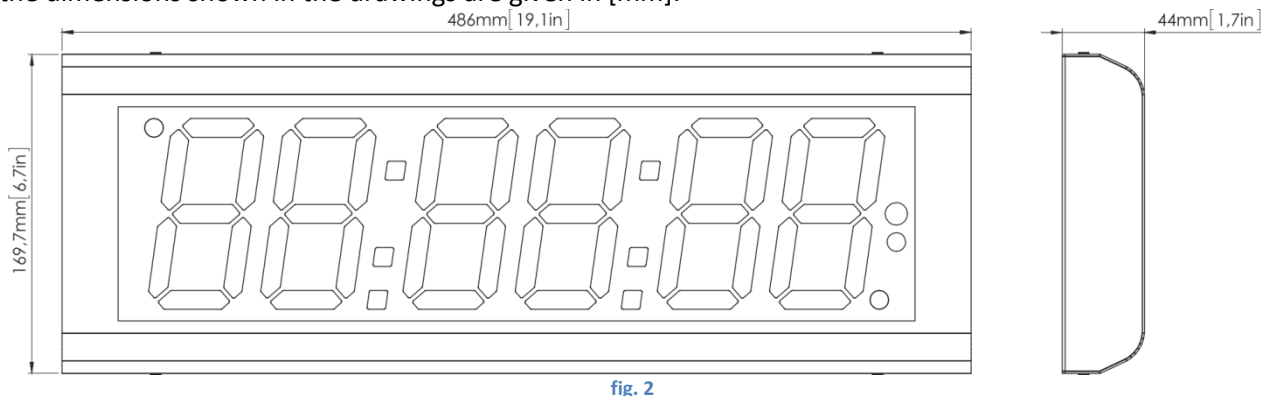


fig. 2

### 4.1.1 Mounting the ZBS10-L PoE device

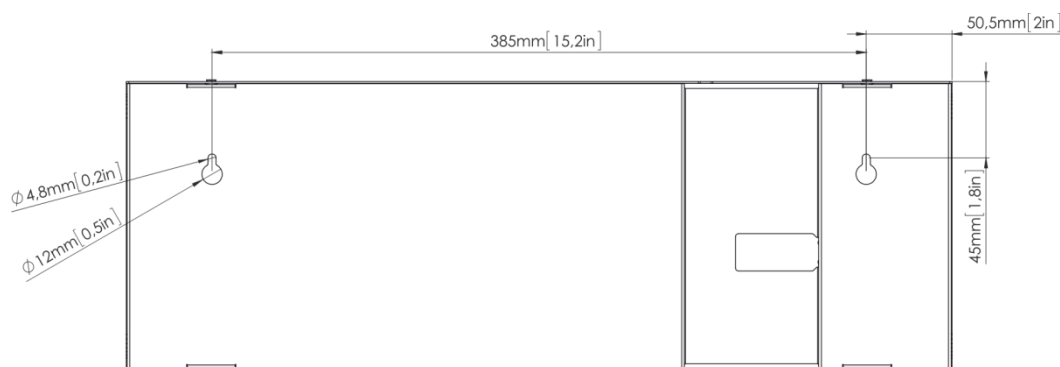


fig. 3

## 5 Installation of the device

Proper installation consists in mounting the device in one of ways proposed by Producer. Only the correct installation of the device ensures its proper operation and maintaining the device parameters. The housing, due to its construction, does not protect the device against water ingress and water impact. Therefore, avoid placing it the areas where there is a risk of flooding.

### NOTICE!

Before any installation or maintenance operations refer to the manual supplied by the manufacturer. Improper connection to the mains power supply, incautious device installation, or improper use may cause the property damage, loss of health or death from electrical shock! In addition, any failure to follow the manufacturer's instructions may void your warranty.

### NOTICE!

It is forbidden to make any additional mounting points or any holes in the device assembly components.

In standard way the device is mounted on flat surface using the factory mounting holes on the back of the device.

## 5.1 ZBS10-L PoE application

The ZBS10-L PoE device is designed to display time and date. Additionally the clock could be used as a time standard for other devices. For the proper operation of the device, it should be correctly configured.

## 5.2 ZBS10-L PoE configuration

The configuration process consists in personalising the device by a user. In standard the device is configured using LAN interface and optionally it could be done using IR remote sold separately.

### 5.2.1 Configuration of the device through the embedded website - Web panel

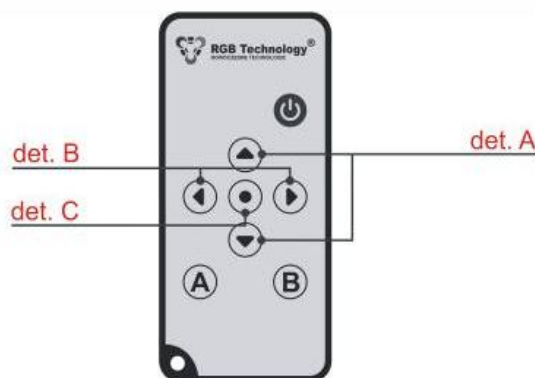
To connect with the clock, first you should configure the network card of the computer to which it is connected. The proper configuration of the network card can be downloaded from <http://rgbtechnology.pl/soft/>. Having configured the network connection correctly, you can, through a Web browser, connect with the embedded website (Web panel), where you can personalise the device. On the embedded clock website, you may use the following tabs:

- TIME -> tab allowing you to configure the parameters connected with time;
- DISPLAY -> tab allowing you to configure the parameters connected with the device display;
- ADVANCED -> tab allowing you to configure the advanced parameters of the device;
- STATUS -> tab allowing you to read the device status.

The detailed description of the tabs is available in the device operation manual *instr\_hardware\_037*.

### 5.2.2 Configuration of the device through the IR remote

The basic configuration method is by means of the remote control through the user menu. fig. 4 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 **→**.



- det. A – Change the parameter (VALUE PLUS/VALUE MINUS)
- det. B – move to the next position (PREVIOUS/NEXT);
- det. C – „MENU” button

fig. 4

Main menu structure:

Menu position	Function description
F1	Manual setting of the time and the date
F2	Configuration of the presented parameters
F3	Configuration of the time and date format, time colon behavior
F4	Configuration of the time synchronization
F5	Configuration of the display brightness
F6	Unavailable
F7	Configuration of the ECO mode
F8	Unavailable
F9	Restoring the default settings
F10	Unavailable
F11	Configuration of display synchronization
F12	Unavailable
F13	Regional settings, such as location, time zones, daylight saving time/standard time
F14	Stopwatch function / timer counting up / timer counting down
F15	Configuration IP addressing mode

## 6 Accuracy

In standard the accuracy of the device is based on the built-in RTC quartz crystal oscillator. Declared accuracy with a stable power supply and at the operating temperature of 25°C is +/- 1 minute per month.

To eliminate the RTC clock aberration (loss or gain) and increase accuracy, the device can be synchronized with the alternative time standard. Declared in Table 1 aberration in regard to the time standard is non-recurring and non-cumulative.

Time standard	Communication method	Aberration in regard to the time standard
NTP time server	LAN	depends on server, maximum: +/- 20 ms
Master clock	LAN	depends on accuracy of the master clock

Table 1

Notice! During the first time synchronization or resume (e.g. after signal loss), the device recovers full accuracy after 40 to 80s.

## 7 DHCP

The device has a DHCP client function. Thanks to this, it can automatically obtain configuration data such as IP address, gateway IP address and subnet mask from a DHCP server (e.g. router).

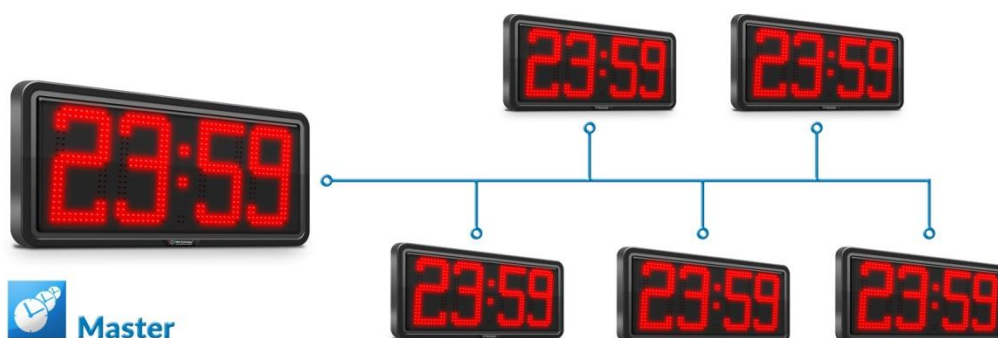
## 8 Automatic brightness control of the device

In the standard version, a lighting sensor is included. The device, in response to the ambient lighting conditions, adjusts the brightness of the clock display.

## 9 Additional options

### 9.1 Cooperation between clocks

The device with LAN support has an option to cooperate with other clocks through the network. In this system the Master clock is a time standard for Slave clocks. Also it controls the displayed information. Thanks to that all the clocks show exactly the same time and type of information e.g. display the temperature simultaneously. The cooperation is possible between different models of RGB Technology clocks.



## 10 Initial start-up

- Step 1: Connect the device to the IEEE 802.3at compliant power supply,  
Step 2: Properly connected system should display pre-set (current) time and date.

## 11 Disposal and recycling

### 11.1 Recycling of the package

The packaging materials must be segregated , then recycled in accordance with local regulations for waste disposal regulations.

### 11.2 Disposal of the device

The device can not be disposed with regular household waste!

According to Directive 2002 / 96 / EC ( WEEE ) , when repair is not economically reasonable, user is obligated to hand over damaged or destroyed device to an appropriate disposal facility .



## 12 Most common installation errors

1. Device installed contrary to the instructions,
2. Drilling additional holes in the casing.

**Due to the fact that the product is constantly being developed, the data presented are subject to change without notice.**