



RGB Technology®
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RGB DIGITALE LED KLOKKEN



CLOCKS, CLOCKS SYSTEMS, THERMOMETERS

We offer the devices of different **digit heights: 5, 10, 15, 20, 27 and 40cm**. Such diversity of the glowing digit sizes enables adjusting the device to the mounting location and to the user's needs. .

APPLICATION

- inside buildings: production halls, receptions, swimming pools, workplaces, halls, corridors, waiting rooms, schools
- outside: over building entrances (as an element of the facade raising the prestige), open sports facilities
- stations, platforms, airports, passenger information, logistics centres
- inside public transport vehicles
- in pylons, welcome signs and advertising totems

ADVANTAGES OF THE DEVICES

(the equipment of the devices depends on the selected option)

	GPS time synchronization		Resistant to adverse weather conditions(IP66)		Function MASTER Clock		Built-in operational relay
	Automatic brightness control		IR remote control Or Web browser software		NTP time synchronization		Function CLOCK
	Function CALENDAR		Easy to keep clean		Function THERMOMETER		Readability In bright sunlight

SERIES COMPARISON

The devices of all series offer identical functionality, but differ in the time presentation format and the housing making technology.

Clock version Parameter	PrestigeLine	Built-in	Steel Case	Large digits
Available height of digits	5, 10, 15, 20 cm	10, 15, 20 cm	10 and 20 cm	27 and 40 cm
Format HH:MM (4 digits)	Yes, ZA version	Yes, ZAH version	Yes, ZAM version	Yes, ZA version
Format HH:MM:SS (6 digits)	Yes, ZB version	Only ZBH10	Unavailable	Yes, ZB version
Resistance to weather conditions	IP66	IP66	IP65	IP67
Front	Polycarbonate	Anti-reflection surface	Polycarbonate / glass	Anti-reflection surface

AVAILABLE MODELS / HOUSING TECHNOLOGIES

The comparison of the device housing technologies is shown below. The mechanical differences between the housing technologies enable the choice of an option appropriate for the mounting location and the method of installation.

PRESTIGELINE

PrestigeLine clocks have a housing made of polycarbonate, which is resistant to UV radiation and has a high mechanical strength. By using the thermo-moulded housing and a rear sealing layer, the device, when properly assembled, meets the IP66 tightness requirements.

Available height of digits: 5, 10, 15 and 20 cm,
Available ZA version (4 digits), and ZB version (6 digits),



BUILT-IN VERSION

Thanks to hermetic technology used, ZAH10 is resistant to UV radiation, has a high mechanical strength and when properly assembled, meets the IP66 tightness requirements.

The clock has no housing, it is very thin by what it can be built into various types of pylons, totems, etc.

Available height of digits: 10, 15 and 20 cm,
Available ZA version (4 digits), ZB version (6 digits) only with 10 cm digits



STEEL CASE

STEEL clocks are cased in a powder-coated steel housing. The properly installed device meets the IP65 tightness requirements.

It is possible to make a stainless steel version.

Available height of digits: 10 and 20 cm,
Available only ZA versions (4 digits),



LARGE DIGITS VERSION

The clock is made from LED modules mounted in a dedicated, powder-painted steel casing. It is corrosion resistant and characterised by increased strength. When properly installed, it meets the IP67 tightness requirements.

Available height of digits: 27 and 40 cm,
Available ZA version (4 digits), and ZB version (6 digits),



TIME SYNCHRONIZATION, CLOCKS SYSTEMS

Time in the clocks can be set manually by the user or using the function of automatic time synchronisation – available in two options:

1. GPS Time Synchronisation

Although the GPS has been created for positioning (i.e. defining the location), it can be also used for other purposes. In the received GPS signal there is embedded information about the current time and date. This time is very accurate, because it is determined on the basis of atomic standards. It may be slow or fast by just one millionth of a second per month. For the proper operation, it is required to place the receiver in the location providing the "visibility" of heaven.

Advantages of the GPS synchronisation:

- provides precise time synchronisation from the GPS satellites,
- does not require any configuration,
- does not require any connection to the Internet,
- operates in every location on the Earth,
- the LED signalling proper signal reception is embedded in the receiver.



To take advantage of the satellite time synchronisation, you should equip the clock with the optional **GPS Receiver**.

2. NTP time server client

NTP (Network Time Protocol) – is a communication protocol supporting precise, stable and safe synchronisation of clocks with any time server through the computer network. A great advantage of this solution is possibility of simultaneous synchronisation of a large number of devices. The synchronisation may be executed:

- from your own local time server – the Internet access is not required
- from a public remote time server – the Internet access is required

Every clock can be configured as a local NTP time server – as described below.

The advantages of the NTP synchronisation:

- provides precise time synchronisation with the NTP servers
- possibility of simultaneous synchronisation of many clocks from the same server
- operation of five different time servers (1 primary and 4 alternative) provides reliable synchronisation
- changing the time server from the primary to an alternative one is carried out automatically when a failure is detected.

The NTP time synchronisation is carried out via the Ethernet (the interface is included in the standard equipment of every clock).



Function of the local NTP time server

Every clock of ZA/ZB series may be a central clock (MASTER) which, in the LAN, will provide the time source for other clocks (Slave). In consequence, it is easy to create a clock system in which the central clock can receive time from different sources, such as: a GPS receiver, a public NTP server or its own internal clock. Providing synchronised time to all clocks guarantees that everybody uses the same time source. It is extremely important for workplaces, production halls, schools, stations, platforms, etc.

WIRELESS TIME SYNCHRONIZATION

The wireless radio system is based on a transmitter that sends the time signal (868 MHz) to the clocks which must be equipped with a special radio receiver module. The radio transmitter is synchronized by a GPS receiver directly.

Advantages:

- Flexibility in clock installation and realization of clock systems,
- No cabling due to wireless synchronization,
- Distribution over large distances (up to 200 m, depending on building structure),

SETTINGS MANAGEMENT – WEB PANEL

Every LAN device has a built-in **WEB PANEL**, which is available through the computer network in the Internet browser. The management through the **WEB PANEL** may be carried out using a computer, a tablet, a smartphone or another device providing the Internet browser.



The advantages of the solution:

- embedded functionality
- clear and tabular preview of the settings (the website)
- possibility of managing many devices from one place through the computer network
- possibility of remote management through the Internet – from every location in the World

SETTINGS MANAGEMENT – IR REMOTE CONTROL

To manage the devices you may use the IR remote control. Every remote control has a unique code preventing unauthorised individuals from making any changes in it. The remote control is assigned to one or more clocks. It is also possible to assign many remote controls to one clock.

The advantages of this solution:

- operation without a computer
- no need of installing a computer network
- direct verification of the applied changes on the device display

NOTICE:

- For the L (lan) clocks, the IR remote control is an optional accessory – see the table
- Some functions or settings may be unavailable



STOPWATCH FUNCTION

In addition to displaying the time, date and temperature, the clocks support counting time. There are 3 available modes:

- a) Stopwatch
- b) Timer Up - timer counting up from 0 to the preset value
- c) Timer Down – timer counting down from the preset value to 0

NOTICE:

Managing of the Stopwatch function is only possible by IR Remote.

OPERATIONAL RELAY

The clocks have an embedded operational relay which can signal up to 30 alarms. The duration of each alarm is set independently within the range of 1 second – 59 seconds. There is a possibility of setting the alarms in a weekly mode. The examples of the application:

- activating an industrial buzzer signalling e.g. breaks or changes at the workplace
- activating a school bell
- giving a time signal for another device /system

DAYLIGHT SAVING TIME / STANDARD TIME - DST

The clock supports the activation of the automatic time change from the standard time to the daylight saving time and from the daylight saving time to the standard time (DST – Daylight Saving Time). The change is made for Europe, USA, Canada, Australia and Israel.

AUTOMATIC BRIGHTNESS CONTROL - SENSOR

Only the automatic brightness control based on the measurement of ambient light by the sensor ensures real adjustment of the display brightness to the current lightning conditions of the surroundings. Current measurement by the sensor is always up-to-date, because it takes into account changes of the position of the Sun in relation to the display, changes of cloud cover during a day, and also shortening and lengthening of a day during a year.

In addition to the automatic brightness control based on the sensor, there is a possibility to manually select and block one of 10 brightness levels.

