User Guide

NDC Web Server

Software for setting the configuration parameters of NDC clock with USB or RS485 interface

Version 1.03.02

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This software is intended for setting configuration parameters of NDC digital LED wall clocks. The setting is done using a special PC application NDC Web Server. The clock must be connected to the computer via a USB connector or a serial RS485 interface.

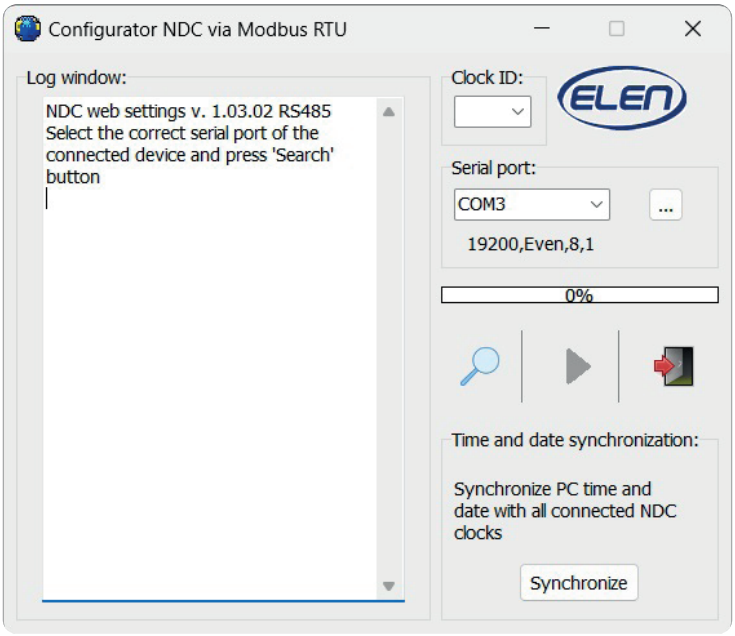
Setting the clock parameters consists of the following steps:

1. Connecting the NDC clock to the PC and finding the communication port.
2. Search for the ID (identification number/s) of NDC clock/s.
3. Starting the Web server in the Internet browser on the PC.
   (The web server is a built-in clock configuration application.)

1. Connecting clock with PC and finding communication port

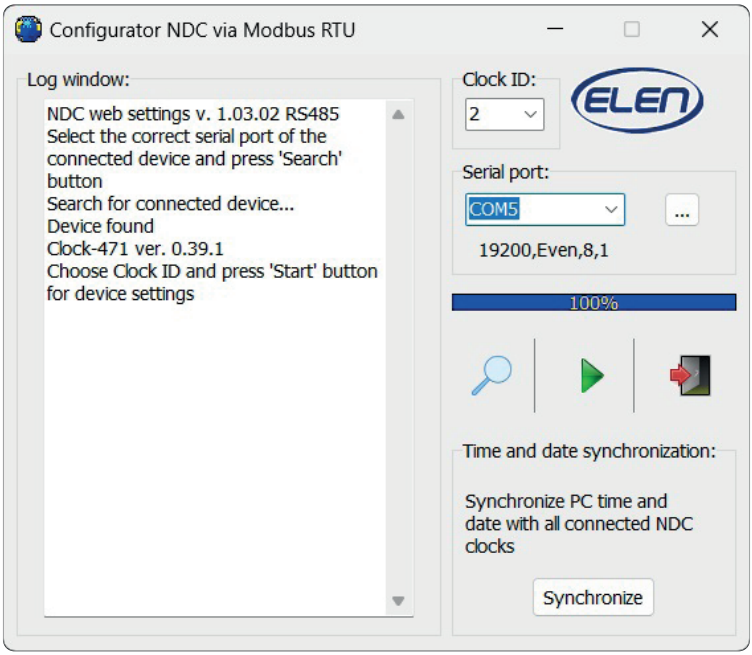
Unplug the NDC clock from the power supply and connect it to the computer using USB A-B cable. (The USB port is located on the rear panel under the protective cover.) Then reconnect the power supply.
If the clock is connected to the computer for the first time, and if the USB interface driver is not installed automatically, it is necessary to install the **CDM21228_Setup.exe** driver to create a serial port using the FTDI chip, which is located on the supplied CD, or this file can be downloaded from the Internet. After the successful connection and detection of the USB device under Windows OS, start the installation of the application **NDCWebServer_1_03_02_Setup.exe**.

After installation, the application starts automatically and a window called *Configurator NDC via Modbus RTU* appears. In the application, select the serial COM port according to your PC settings.



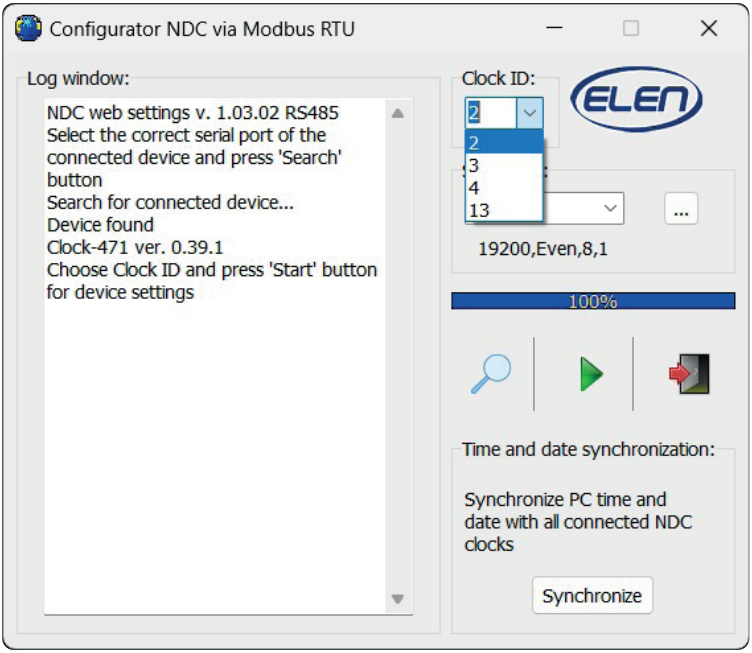
2. Searching for connected NDC clocks

Click the **Search** button to find the NDC clock that is connected to PC or RS485 serial line bus network. It's version and model will be displayed in the login window with the message *Device found*, and it's Clock ID number will be displayed in the **Clock ID** field. For simple one clock connection via USB line to PC only one Clock ID will be available. For RS485 network, all connected NDC clocks on the network will be found and their Clock ID numbers will be available in the Clock ID pull-down list.
If the application does not find any connected display, the **Start** button will not be available. It is necessary to check the power supply of the display and/or the connection of the USB cable, or whether the correct serial communication COM port is set.



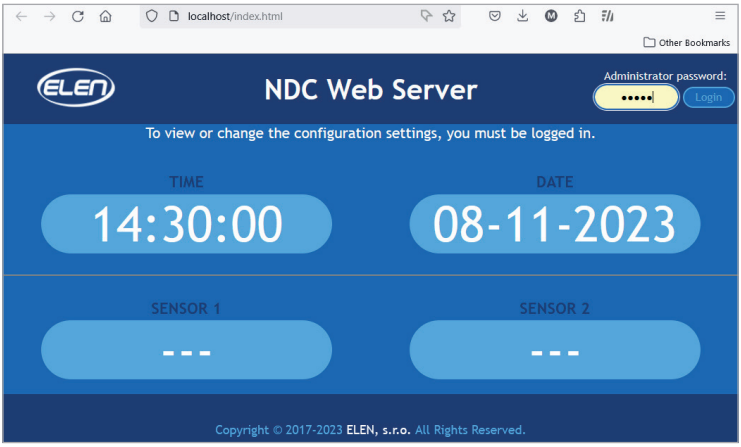
3. Synchronizing NDC clock time and date with PC

Click the **Synchronize** button to synchronize the time and date of all found NDC clocks with PC. This is particulary useful when more NDC clocks are connected to an RS485 network. For simple USB connection only one NDC clock will be found and synchronized.



3. Starting the web server

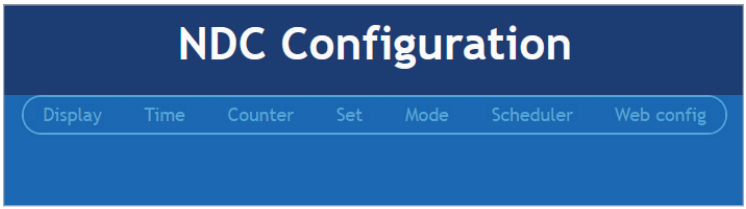
After selecting the Clock ID from the pull-down list, you can enter its configuration settings. Clicking the **Start** button will start the *NDC Web Server* in the default Internet browser on the PC, which will display the currently displayed time and date of the clock. Setting the configuration parameters of the clock will also become available after entering the administrator password.



The default password **„admin“** in the upper right corner is used to enter the clock configuration parameters setting. The password can be changed later in the admin menu.

4. Clock setting

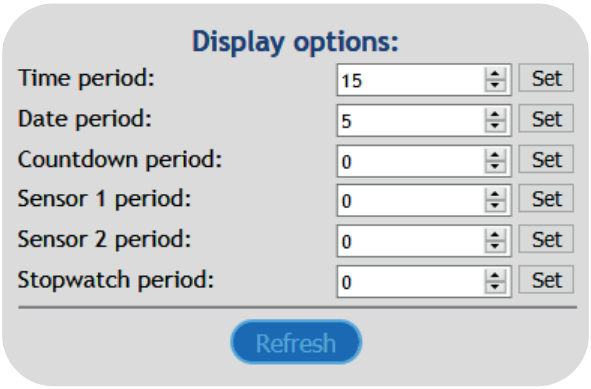
After entering the password, click the ***Login*** button to enter the web server settings menu. The web server settings menu – ***NDC Configuration*** – will appear in the browser window.



Selecting each menu item allows the user to change the settings of various NDC clock parameters. After clicking on the menu item, additional options for the given selection will be displayed. See description below.

Display options – setting the duration of displayed information

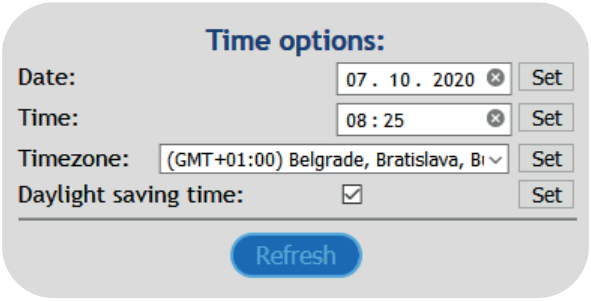
In this menu, it is defined for how long will be each information alternately displayed in seconds. The corresponding information is displayed during this time and in the order in which it is arranged in the menu. If any parameter is set to 0, the corresponding item will not be displayed.



Time period	duration of displaying time, in seconds
Date period	duration of displaying date, in seconds
Countdown period	duration of displaying countdown, in seconds
Sensor 1 period	duration of displaying measured value from sensor 1*, in seconds
Sensor 2 period	duration of displaying measured value from sensor 2*, in seconds
	* temperature and humidity sensors are available as optional accessories
Stopwatch period	duration of displaying stopwatch value, in seconds

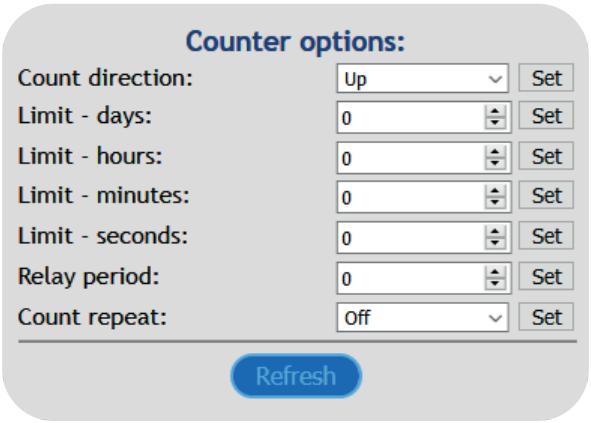
Don't forget to click the Set button after making any changes. Otherwise, the changes will not be accepted.

Time options – setting the time value



Date	setting of the current date in the format day:month:year
Time	time setting in hours:minutes format
Timezone	setting of the time zone (offset relative to UTC) for which the set time should apply. This is important for the correct transition to winter/summer time.
Daylight saving time	automatic switching of summer and winter time

Counter options – setting the Countup/Countdown counter



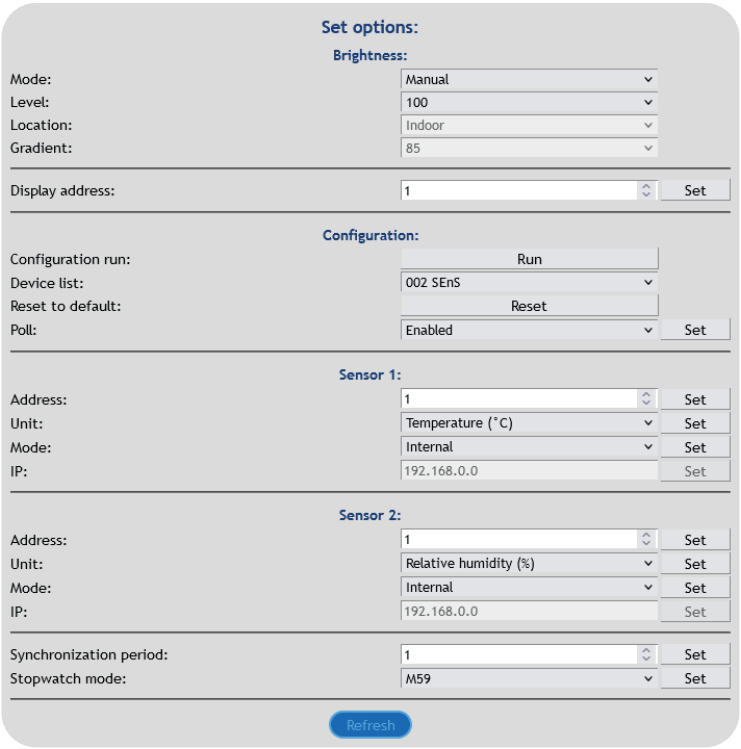
Count direction	**UP** – counting up. **DOWN** – counting down.
Limit - days	Limit value for days.

Limit - hours	Limit value for hours.
Limit – minutes	Limit value for minutes.
Limit – seconds	Limit value for seconds. The limit value is set to the initial or end time according to the selected counting direction.
Relay period	Switch ON time of the internal relay when the counter limit value is reached. Can be set from 0 s to 999 s. If the duration of relay switch ON period is set to 0 s, the relay will not be switched on after the selected limit has elapsed. The switching ON of the relay is signaled by the lighting of the LED dot in the lower right corner of the display (after the seconds or minutes) for the duration of the switching ON relay period.
Count repeat	**Off/On** – Enabling/disabling the counter to restart after reaching its final value. On – the counter starts again after reaching the limit. Off – the counter stops at the reached limit value.

Set options – general settings

Menu for general settings of clock hardware and connected internal or external sensors and devices.

Brightness	Brightness setting. **Auto** Automatic brightness control according to external light conditions. **1 – 15** Manual setting of brightness level value.
Display address	**2 – 126** the address of the device, which serves to uniquely identify the clock on the RS485 network of several NDC clocks.
Configuration run	Starts an automatic search for devices on the NDC-RS485 network (e.g. an external sensor with an RS485 interface).
Device list	Viewing the found devices on the NDC-RS485 network.
Reset to default	Reset all user settings to original factory values.
Poll	**Enabled/Disabled** Select **Disabled** if you are not using any external devices on the NDCRS485 network, or if this is not the Master clock with display address 1on the NDC-RS485 network. Select **Enabled** if you are using external devices connected to the RS485 interface of the clock, e.g. external temp./humidity sensor, or GPS time sync. module and the clock has Display address set to 1 (master clock). If the clock is not a Master clock (it's Display address is different than 1), select Disabled option, since only the Master clock will receive information from these external devices and will send it to other (slave) clocks on the NDC-RS485 network.
Sensor 1 Address	**0 – 126** Address of sensor 1 for identification on the network.
Sensor 1 Unit	Units of measured value of sensor 1 Temperature (°C), Temperature (°F), Humidity (%RH).
Sensor 2 Address	**0 – 126** Address of sensor 2 for identification on the network.
Sensor 2 Unit	Units of measured value of sensor 2 Temperature (°C), Temperature (°F), Humidity (%RH).
Synchronization period	Time update in seconds.
Stopwatch mode	**M59** After reaching 59, start at 0. **M99** After reaching 99, start at 0.



Scheduler – signaling of work shifts and breaks

If your NDC clock is equipped with sound signaling siren (offered as an optional accessory), you can set up to 20 different times for the signaling to start. Scheduler is a time plan for setting the time and length of a break period or the start and end of a work shift.

In the ***Time plan:*** table section set:

Event	**Work shift**	- select if the signaling designates the work shift
	Rest break	- select if the signaling designates the rest break
Start time		- enter the signaling start time, e.g. 06:00
Duration		- enter the length of the break in minutes, e.g. 30 min.

In the ***Buzzer settings:*** section you can set:

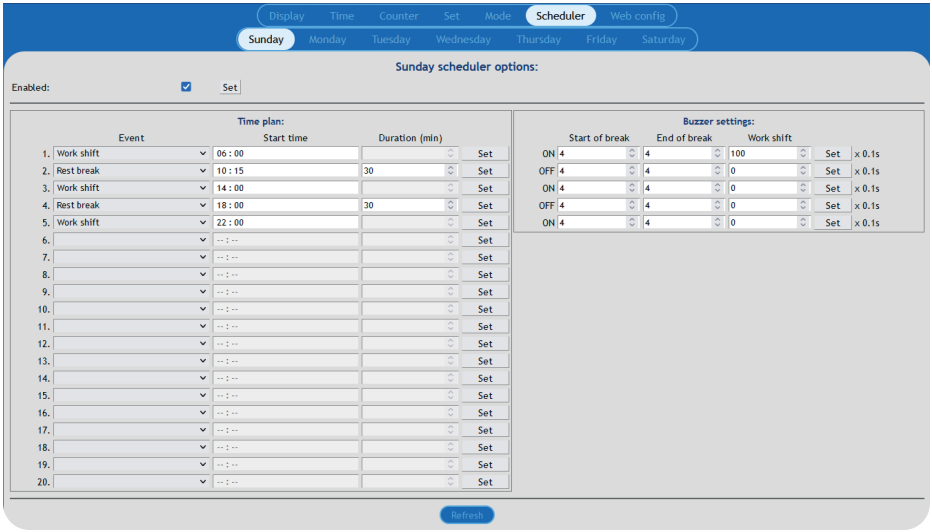
Start of break	In this table set the signalization, which will announce the beginning of rest break. If an intermittent tone is required, enter the ON time and OFF time period.

End of break

In this table set the signalization, which will announce the beginning of rest break. If an intermittent tone is required, enter the ON time and OFF time period.

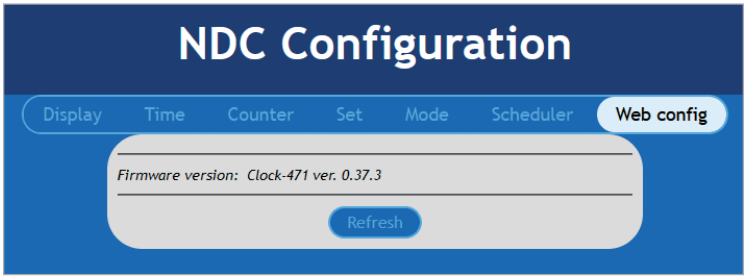
Work shift

Enter the duration of the signaling for the start and end of the work shift, e.g. 100 for 10 seconds.
This means that at the beginning of the shift, a sound signal will be triggered for 10 seconds and at the end of the shift, the signaling will also start for 10 seconds. This signaling will have a continuous (uninterrupted) tone.



Attention, after each change it is necessary to confirm the entry by clicking the **Set** button.

Web config – shows clock's internal firmware version



5. Exiting the application

To finish setting the NDC clock parameters, press the *Logout* button. Alternatively, just close the browser window. Don't forget to click the **Set** button after making any changes. Otherwise, the changes will not be accepted.

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