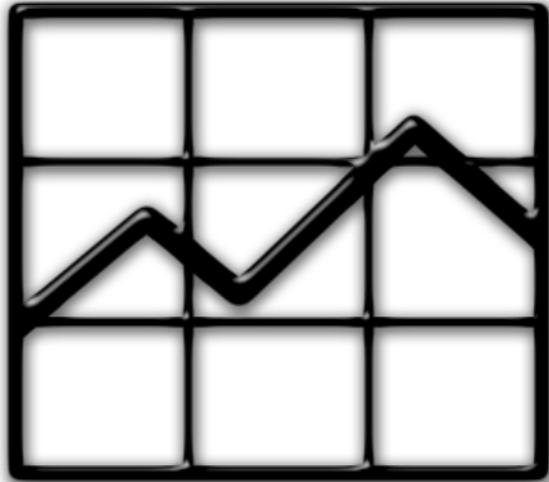


Software for temperature recording

USER MANUAL



Version 2022.02

neoterm

Program: B&S Temperature Recorder

Controller: **KXP4**

ZAKŁAD ELEKTROMECHANICZY NEOTERM

PROGRAM B&S Temperature Recorder

User manual

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B&S Temperature Recorder is a free software and can be used only with NEOTERM products.

I. Hardware requirements

- **Processor:** Intel Celeron **2,0** GHz or better;
- **RAM:** 2 GB or more;
- **HDD:** at least 4 GB of free space;
- **Video adapter and screen** with a resolution of 1024 x 768 or more, (recommended 1920x1080);
- **Optical drive:** CD-ROM or DVD-ROM;
- **Keyboard and mouse;**
- **Bluetooth adapter;**

In order to take full advantage of the software, it is required to connect the computer to the internet (the connection speed should be at least 2 Mbps).

II. System requirements

Recommended operating systems:

- **Windows 10**
- **Windows 11**

Support for other Windows operating systems is not covered in this manual.

Additional requirements:

- Microsoft .NET Framework 4.8
- Microsoft.VisualBasic.PowerPacks Version 10.0.0.0

If the computer is connected to the internet, the installation of the above components should take place automatically during the installation of the B&S Temperature Recorder. However, if for some reason the installation of the above components does not take place automatically, you must install them manually.

III. Automatic installation

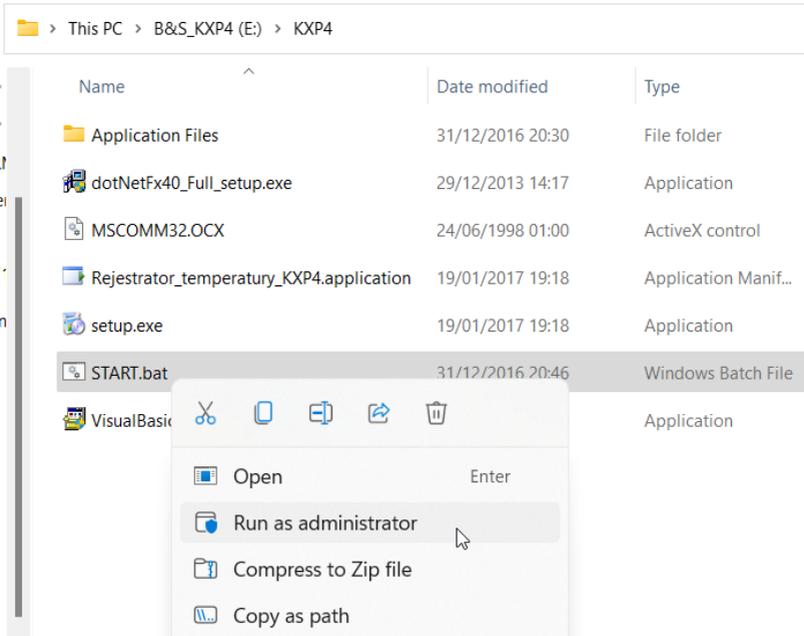
Please follow the steps below:

1. Insert the CD with B&S Temperature Recorder into the CD \ DVD ROM drive.

2. Windows 10 and 11:

Run the START.bat file as administrator from the files on the CD.

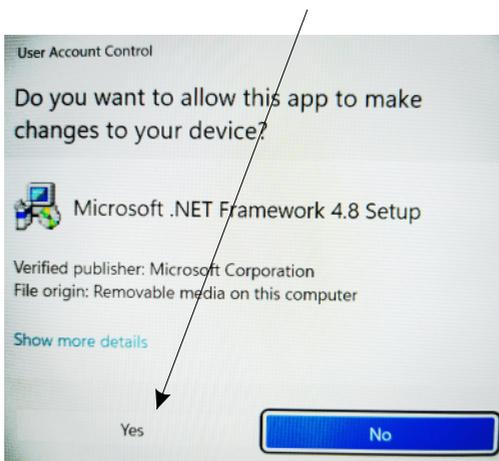
To do that, **right-click on the START.bat** file, then select **Run as administrator** from the drop-down menu.



3. Windows 11 and 10:

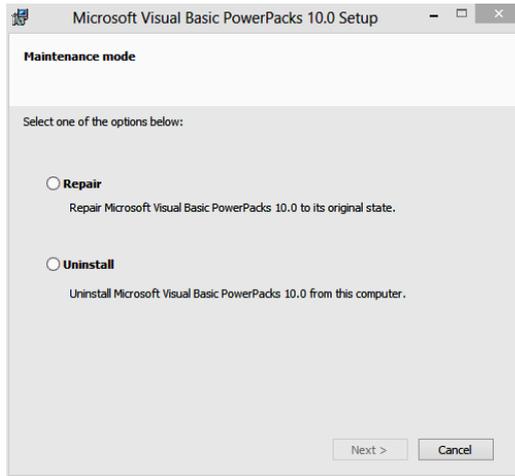
To the question **"Do you want to allow this app to make changes to your device? Windows Command Processor"** answer **YES**.

4. When the following window appears, click **YES**.

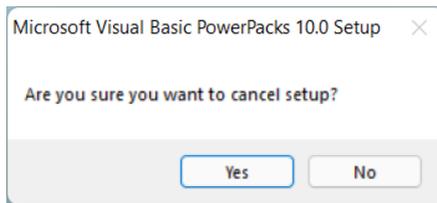


Then follow the information displayed by Framework 4.8.

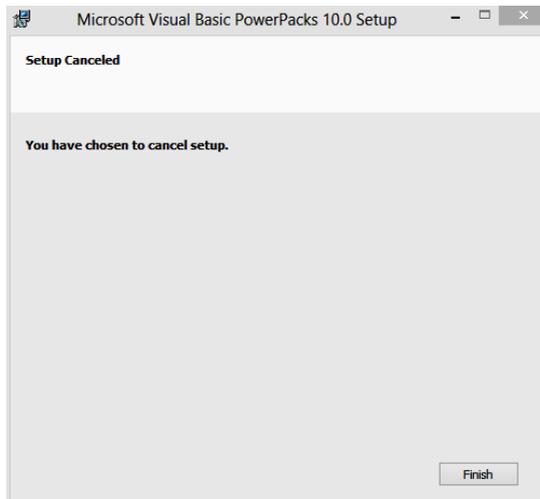
5. If the following window appears, select **Cancel**.



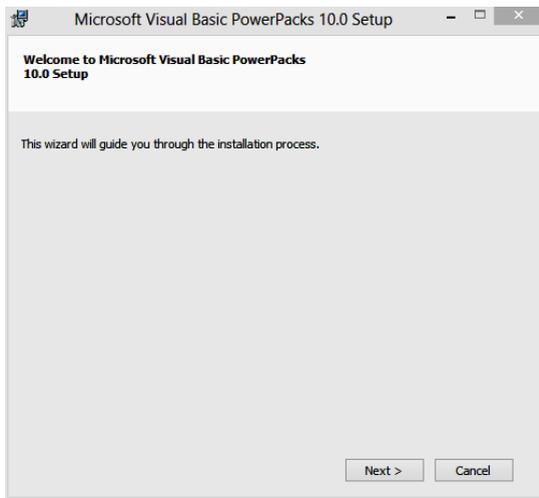
Then **Yes**



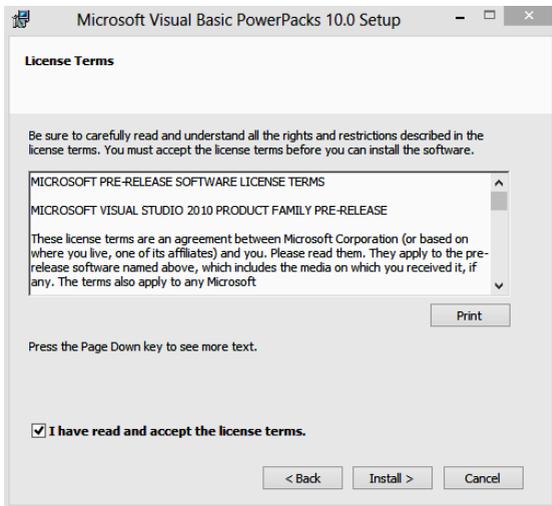
and **Finish**



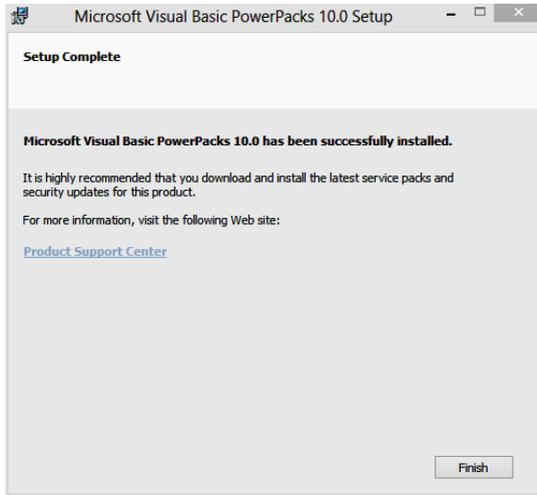
6. If the window below appears select **Next>**.



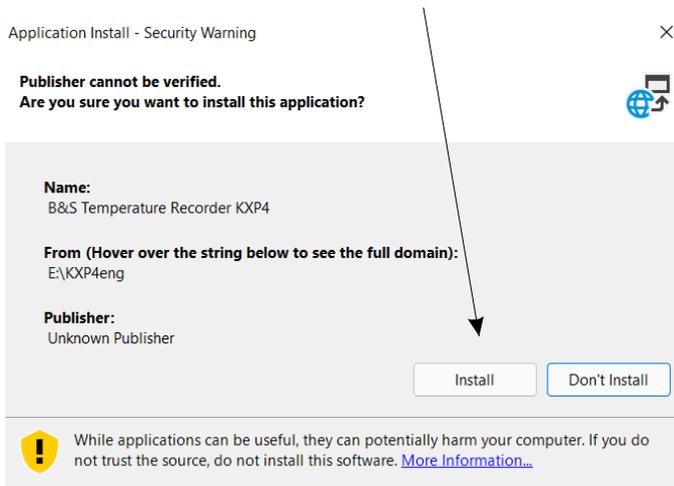
Then check the box next to the text “I have read and accept the license terms.” and select **Install >**.



Then **Finish**.



7. When the following window appears, select **Install**.



8. After the installation is complete, the program B&S Temperature Recorder should start automatically.

IV. Manual installation

Manual installation should be performed by a system administrator when automatic installation is not possible.

Before manual installation, make sure that the minimum hardware and system requirements are met (see section I and II).

Then follow the steps below:

1. Make sure that Microsoft .NET Framework 4.8 is installed, if not then install it.
2. Insert the B&S Temperature Recorder CD into the CD \ DVD ROM drive.
3. Run **Windows Command Processor** (cmd.exe) with **administrator rights**.
4. Enter the command:
 - mkdir c:\REC_temperature_KXP4
5. Check what letter is assigned to the CD \ DVD ROM drive in your system.
Then, in step 6, enter it in place of the letter Q.
6. Enter the commands: (remember to replace the letter Q as instructed in step 5)
 - copy Q:\MSComm32.ocx c:\Windows\SysWOW64
 - copy Q:\MSComm32.ocx c:\Windows\System32
 - Regsvr32 MSCComm32.ocx
 - Q:\VisualBasicPowerPacksSetup.exe
 - Q:\setup.exe

The B&S Temperature Recorder installer will start after entering the last command from step 6. Next follow the information displayed on the screen.

V. Before starting the program for the first time

Follow the steps below:

- 1.** Make sure the Bluetooth adapter is properly connected and installed.
To do that refer to the Bluetooth adapter manual.
- 2.** Switch on the furnace.
- 3.** Make sure your computer is connected to the internet as you may find that the system will need to download drivers.

Then, depending on your operating system, go to Va (Windows 10) or Vb (Windows 11).

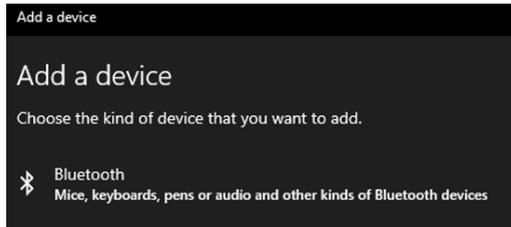
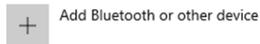
Va. Windows 10

1. **Right-click on the Bluetooth icon** (located in the notification area at the bottom right corner of the screen) and select **Show Bluetooth Devices** from the drop-down menu.



Then select **Add Bluetooth or other device** and select **Bluetooth** from the **Add a device** menu.

Bluetooth & other devices

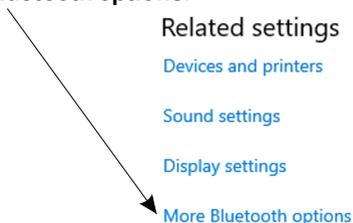


Then select **KXP4-xxx** from the device list and click **Pair**.

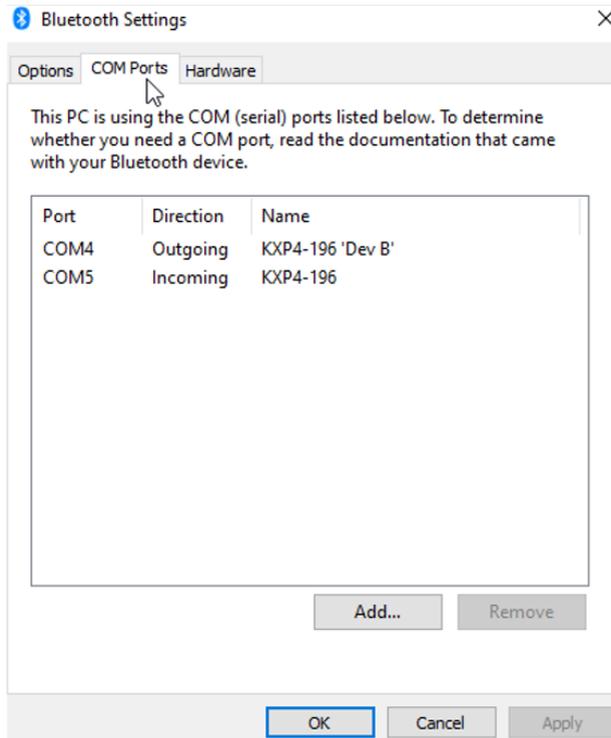
When you are asked to enter your **access code** write **"1234"**.

After the pairing process is complete, select **Done**.

2. At the bottom of the **Bluetooth & other devices** menu, find **Related settings** and select **More Bluetooth options**.



3. Make sure that in **Bluetooth Settings** in the tab **COM Ports** in column **Name** the name of your furnace appears “KXP4-xxx”.



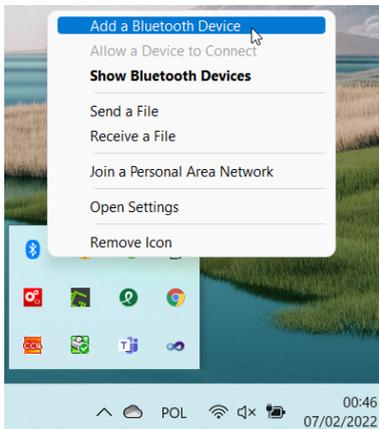
The number of the port whose **Direction** is **Outgoing** must be written down to fill it later in B&S Temperature Recorder program.

If the name of the furnace does not appear, press the button **RESET** located on the front panel of the furnace, remove from the Bluetooth device list KXP4 -xxx and repeat the steps starting from step 1 in pt. Va.

To close the window click **Cancel**.

Vb. Windows 11

1. Right-click the Bluetooth icon (located in the notification area in the lower-right corner of the screen) and from the drop-down menu select **Add a Bluetooth Device**.



Then click

Add device

and next click  Bluetooth
Mice, keyboards, pens, audio devices, controllers, and more

Select from the devices list **KXP4 -xxx**, enter the **PIN „1234"** and click **Connect**.



If the process was successful, you will get the following message.

Your device is ready to go!

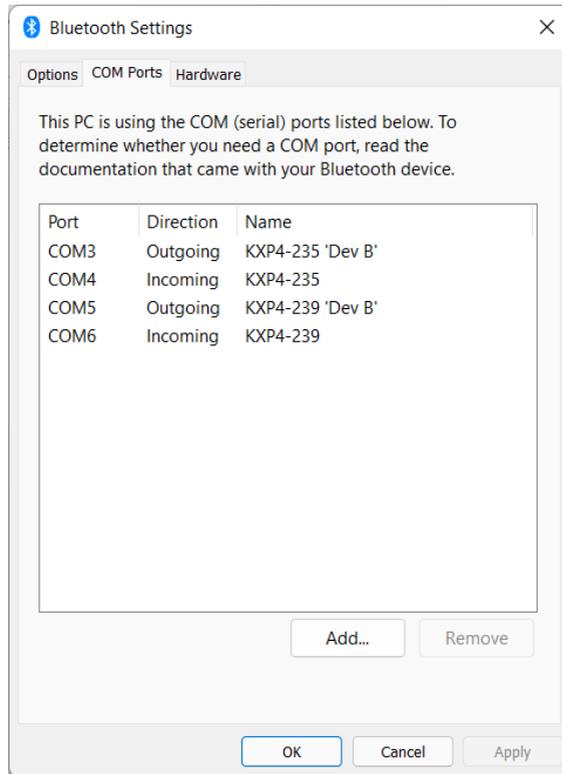


Otherwise, try to connect again.

2. Click „More Bluetooth settings” from the system „Settings” window.



3. Check that in **Bluetooth Settings** in the tab **COM Ports** in column **Name** the name of your furnace appears “KXP4-xxx”.



The number of the port whose **Direction** is **Outgoing** must be written down to fill it later in B&S Temperature Recorder program.

If the name of the furnace does not appear, press the button **RESET** located on the front panel of the furnace, remove from the Bluetooth device list KXP4 -xxx and repeat the steps starting from step 1 in pt. Vb.

To close the window click **Cancel**.

VI. First program launch

Vla. Setting a user and connecting the furnace

1. A shortcut icon to the B&S Temperature Recorder program is located on the desktop.



2. Start the B&S Temperature Recorder program and make sure that:
 - the furnace is on,
 - blue LED, marked as Bluetooth on the furnace control panel, is off (if the LED is on, press the RESET button on the furnace panel).
3. When the following window appears, enter the **Username** and **Access Code**, correctly entered data will be green.

Creation of the new user

Username (11 characters):

Access code to data on the server (4 digits):

CURRENT User 

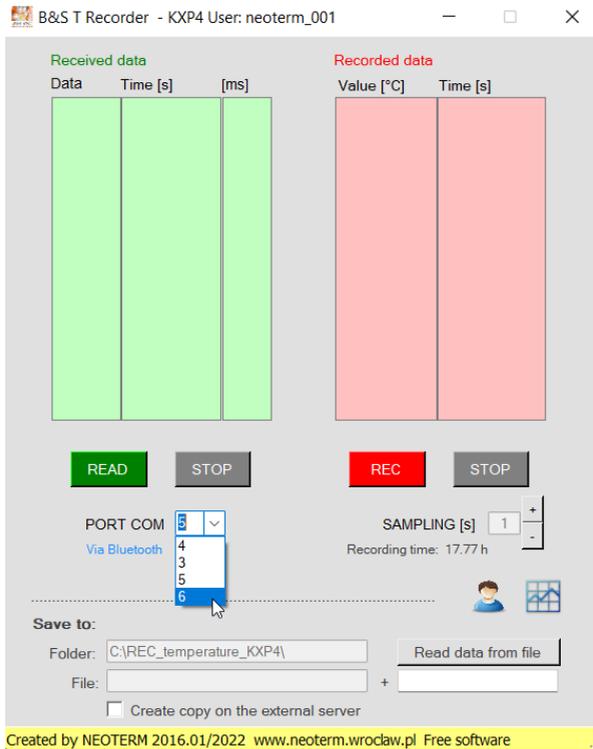
MISSING

Select 'Save' only if you agree to the following requirements:

1. Entering the username and code cannot be omitted.
2. Files can be stored on the external server free of charge.
3. The files should not contain any confidential data.
4. Files stored on the server will be automatically deleted after 2 months.
5. Uninterrupted access to the server with the data is not guaranteed.
6. Entering the same username and code on another computer will grant access to the user's files.

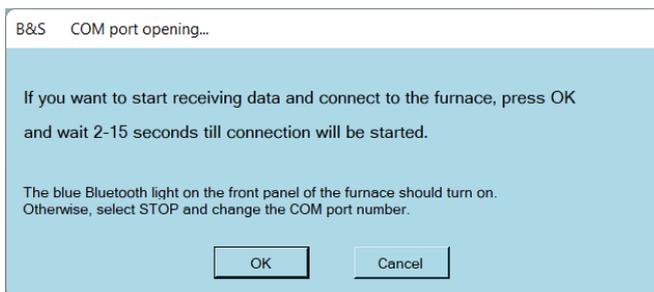
You must click Save if you accept points 1 to 6.

4. From the PORT COM drop-down list, select the port number that has been written down in section V of this manual.

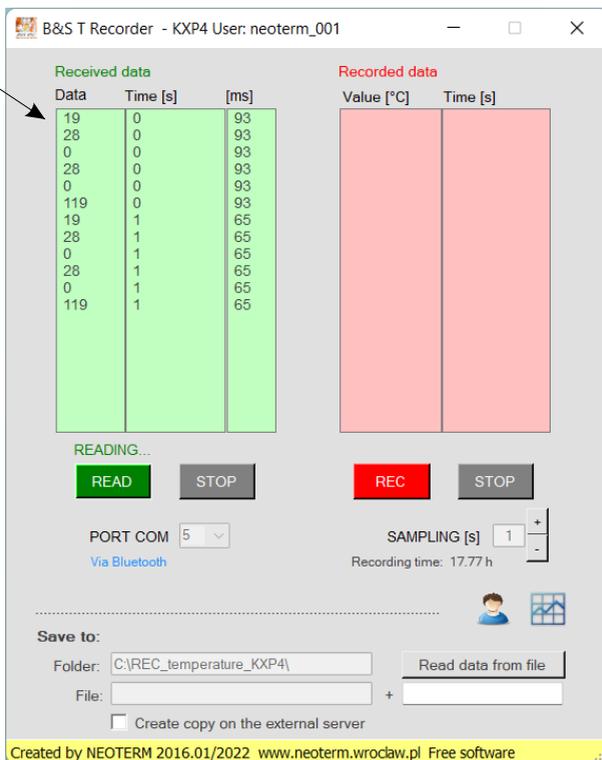


Then click the green **READ** button.

When the following window appears, please select **OK**.



The **Received data window** should display data received from the furnace (as below).



If the data does not appear in the window after a maximum of 15 seconds, go back to step 4 and select a COM port number other than the one before.

When the message **"THE SELECTED PORT CANNOT BE OPEN! Change the port number"** appears, please select a different port number.

Vlb. Data recording

1. By clicking respectively + \ - you should choose sampling period ranging from 1 - 60 sec.
When doing so, pay attention to the Recording time that is the maximum time of data recording.

Value [°C]	Time [s]
------------	----------

REC STOP

SAMPLING [s] 1 + -

Recording time: 17.77 h

At section **Save to:** after the + sign in the text field, you can add a suffix that will bear the name of the file in which the recorded data will be saved.

You can also choose whether the data is to be saved on the external server or only locally by checking or unchecking the option **Create copy on the external server**.

If you cannot select this option, check the connection to the Internet (including Windows firewall and antivirus settings).

Save to:

Folder: C:\REC_temperature_KXP4\ Read data from file

File: +

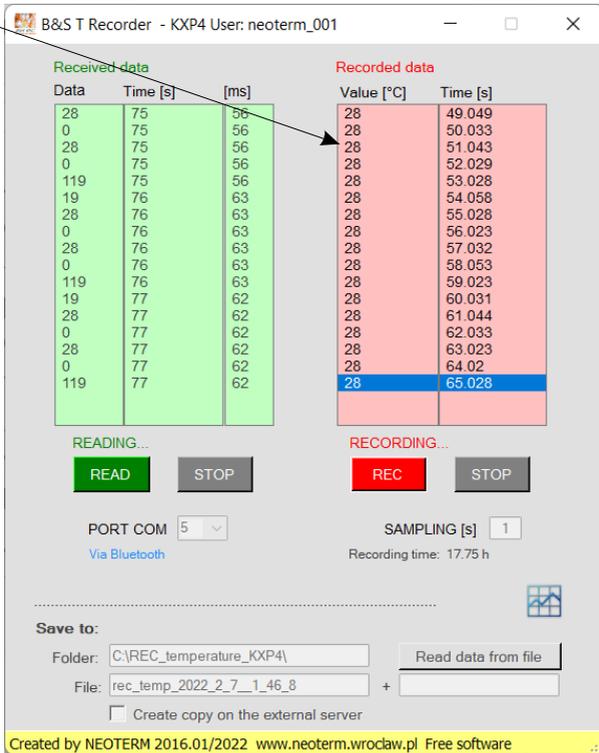
Create copy on the external server

Recorded data are saved to the file with the extension **.csv** in the folder C:\REC_temperature_KXP4\.

The core of the file name is **rec_temp**, the date and time are automatically added to the core.

Then click on the red button **REC**.

The Recorded data window should display the data received from the furnace. (as below).



If the following message appears after clicking the REC key, wait 5-10 seconds and click the REC key again. If the message persists, click the STOP button in the section Received data, when the blue window appears, select OK and follow all steps from Section VIa starting from 4 inclusive.

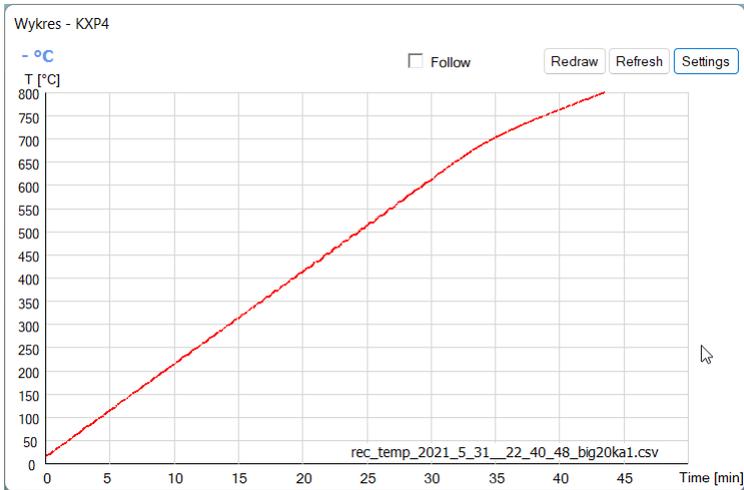
CANNOT TURN ON RECORDING! Enable reading or change COM port.

Data recording will continue until the **STOP** button in the Recorded data section is clicked or the **Recording time** expires.

ATTENTION ! The system clock must not be changed during data recording.

VII. Graph

The graph is plotted automatically after the recording is started.



To change the range for the X and Y axes, click in the top right corner **Settings**. Select the desired settings and click **OK**.

Chart settings

Time axis:

from to [min]

axis scale every

Temperature axis:

from to [°C]

axis scale every

Hide the temperature and the Follow control

Background color

Line color

Default settings OK Cancel

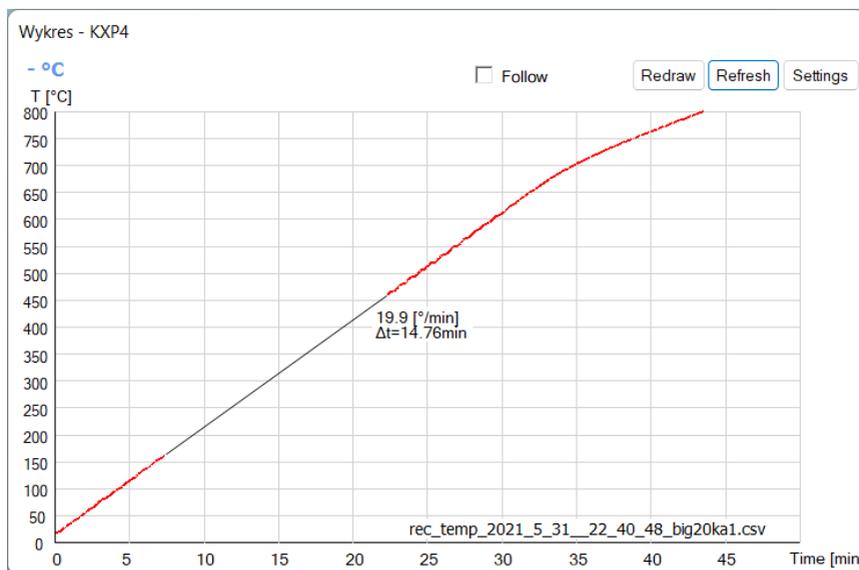
Maximum ranges::

- for X axis: 240 hours (14400 min) *
- for Y axis: 1900°

* Depending on the selected sampling period, the maximum range for the X axis may be different.

To specify the rate of temperature increase, **left-click on any point on the graph**, then drag the line to the end point and **click the left mouse button again**.

The following message should appear on the screen: **line, rate of increase [°/min] i Δt [min]**.



You can draw **ten lines** on one graph.

The last drawn line is deleted by pressing **Delete**.

All lines will be deleted after selecting **Refresh**.

To redraw the graph without removing the lines, select **Redraw** or right-click when the cursor is over the graph.

If you **check the Follow** option, the values on the X axis will be automatically shifted to the current data recording time.

The **Load** button will be visible only when the data file has been loaded from the external server. To re-load data file, click the **Load** button again.

VIII. Lost frames

If the information about lost frames appears during data recording, it means that the distance between the computer and the furnace is too large. The computer should then be brought closer to the furnace.

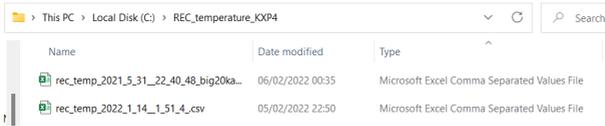
The recommended distance of the recording computer and the furnace is 1 meter in a straight line. There should be no obstacles in the path of the signal (e.g. other devices or walls).

If you are using a Bluetooth adapter connected to the USB port to eliminate lost frames, you can try plugging the adapter into a different USB port.

During registration, the data from the lost frame is replaced with the data from the last good frame.

IX. Data file

After switching on the data recording, the data are saved to the file with the extension **.csv**
This file is in the directory **C:\REC_temperature_KXP4**

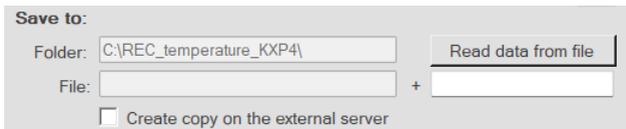


The core of the file name is "rec_temp", the date and time are automatically added to the core.

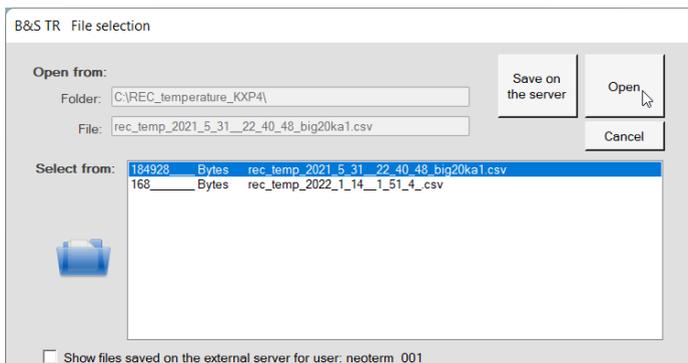
The data in the file are separated by a semicolon, example file content:

	A	B	C
1	Recorded by B&S NEOTERM Software KXP4		
2	Probkowanie [sek] = 1		
3	Temperatura [stopnie C]	Czas [sek]	
4		26	0.008
5		27	0.993
6		27	1.995
7		27	3.008
8		27	4.006
9		27	5.009
10		27	6.014
11		27	7.028
12		27	7.986
13		27	8.987
14		27	9.988

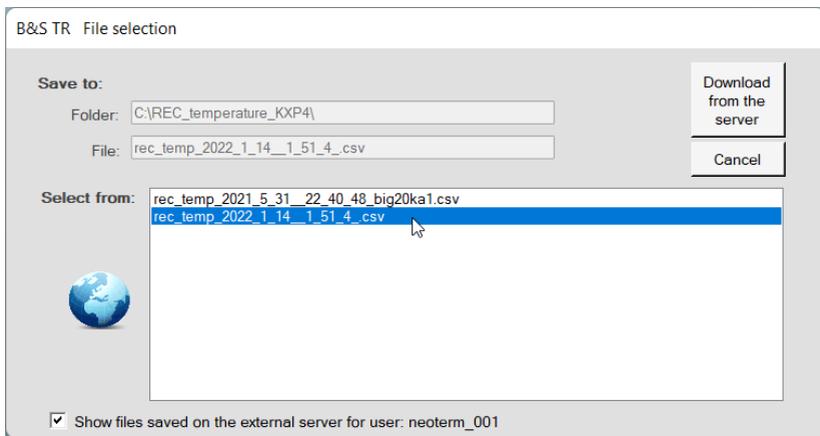
The saved file can be reopened in B&S Temperature Recorder. To do this, click **Read data from file**.



Then select the file you want to open and click **Open**.

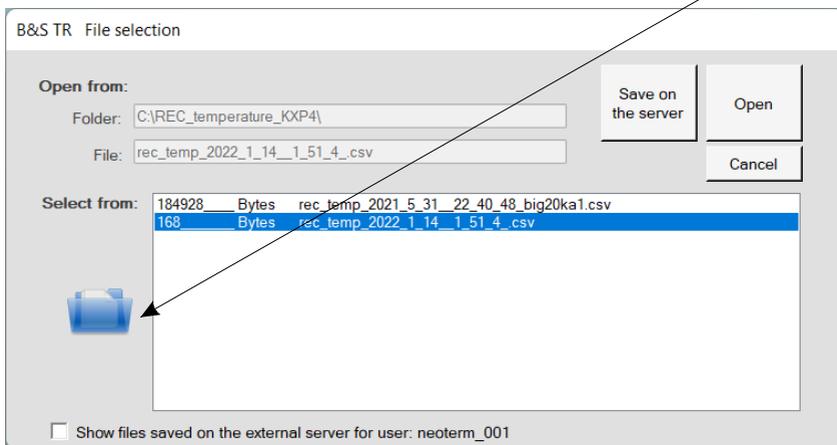


The files saved on the external server can be opened in the B&S Temperature Recorder. To do that, please select **Show files saved on the external server for the user: XXXXXXXXXXXX**. If it is impossible to select this option please check the internet connection.



Then click on the file you want to open and select **Download from the server** and click **Open**.

To open the selected file in the Windows Explorer, double-click the **blue folder** icon.



To save the selected file to the external server, click Save on the server. Correct saving will be confirmed by a green color in the file window and on the button.

X. Uninstalling

1. To uninstall the program you must open:

Control Panel \ Programs \ Programs and Features

Then search on the list: **B&S Temperature Recorder KXP4**, right-click on it and select **Uninstall**.