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 conection 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 >.

#	Microsoft Visual Basic PowerPacks 10.0 Setup	-		×
Licens	se Terms			
Be sur license	re to carefully read and understand all the rights and restrictions descr e terms. You must accept the license terms before you can install the s	ibed in ti oftware.	he	
MICR	OSOFT PRE-RELEASE SOFTWARE LICENSE TERMS		^	
MICR	OSOFT VISUAL STUDIO 2010 PRODUCT FAMILY PRE-RELEASE			
These where releas any. 1	: license terms are an agreement between Microsoft Corporation (or by 2 you live, one of its affiliates) and you. Please read them. They apply se software named above, which includes the media on which you rece The terms also apply to any Microsoft	ased on to the p ived it, i	re- f	
		Prir	nt	
Press	the Page Down key to see more text.			
V 1	have read and accept the license terms.			
	< Back Install >	С	ancel	

Then Finish.



7. When the following window appears, select Install.

Application Install - Security Warning		×
Publisher cannot be verified. Are you sure you want to install this application?		د
Name: B&S Temperature Recorder KXP4 From (Hover over the string below to see the full d E:\KXP4eng Publisher: Unknown Publisher	lomain):	
	Install	Don't Install
While applications can be useful, they can poter not trust the source, do not install this software.	ntially harm your cor More Information	mputer. If you do

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 MSComm32.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.



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".

😣 Bluete	ooth Setti	ngs		×
Options	COM Port	s Hardware	e	
This PC whethe with yo	ि is using f er you nee our Blueto	the COM (se d a COM po oth device.	erial) ports listed below. To determine ort, read the documentation that came	
Port	D	irection	Name	1
СОМ	4 C)utgoing	KXP4-196 'Dev B'	
COM	5 Ir	ncoming	KXP4-196	
			Add Remove	
			OK Cancel Apply	

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**.

		Add a Blu	etooth [Device	de			
		Allow a D	evice to	Connect				
		Show Blue	etooth l	Devices				
	ale de la Trans	Send a File Receive a	e File		a succession			
		Join a Pers	ional Are	ea Network	A CARDINA			
	And a second second	Open Sett	ings		And Press			
	8	Remove lo	on					
			0					
		1 T	~					
		~ 🔿	POL	奈 ଏ× 🍽	00:46 07/02/2022			
Then click	Add device	e						
and next click 👌	Blueto Mice,	ooth keyboards,	pens, a	audio devic	es, controll	ers, and mor	e	
Select from the o	devices	list KXP4	l-xx	(, enter th	ne PIN "1	2 34" and	click Conn	ect.

<u>.</u> .	KXP4-239 Connecting		
	Enter the PIN for KXP4-239.	-	
	1234		×
	Connect 🔓	Cancel	

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

Your device is ready to go!

<u>б.</u>]	KXP4-239
سن	Paired

Otherwise, try to connect again.

2. Click "More Bluetooth settings" from the system "Settings" window.

Z

More Bluetooth settings

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

Biuetooti	Parte un t	
otions COM	Ports Hardwar	e
This PC is u determine documenta	using the COM whether you n ation that cam	(serial) ports listed below. To eed a COM port, read the e with your Bluetooth device.
Port	Direction	Name
COM3	Outgoing	KXP4-235 'Dev B'
COM4	Incoming	KXP4-235
COM5	Outgoing	KXP4-239 'Dev B'
COM6	Incoming	KXP4-239
		Add Remove

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

VIa. Settting 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.

	CURRENT Us	ser 🧑
Username (11 characters): Access code to data on the server (4 digits):	MISSING	
 Select 'Save' only if you agree to the following requirements: Entering the username and code cannot be omitted. Files can be stored on the external server free of charge. The files should not contain any confidential data. Files stored on the server will be automatically deleted after 2 months. Uninterrupted access to the server with the data is not guaranteed. Entering the same username and code on another computer will grant access to the user's files. 	55	
Cano	cel Save	

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.

💆 B&S T Recorder - KXP4 User: neoterm_00)1	-		\times
Received data	Recorded dat	a		
Data Time [s] [ms]	Value [°C]	Time [s]	
			,	
READ STOP	REC	ST	OP	
PORT COM Via Bluetooth 5	SAMPI Recording tim	LING [s] ne: 17.77 h		8
Save to:				_
Folder: C:\REC_temperature_KXP4\	R	ead data	from file	
File:	+			
Create copy on the external s	erver			
Created by NEOTERM 2016 01/2022 www.peote	rm wrocław pl	Free soft	are	

Then click the green **READ** button.

When the following window appears, please select OK.



	B&S T Rec	order - KXP4	User: neot	term_001	- (×		
	Received	data		Recorded da	ata			
	Data	Time [s]	[ms]	Value [°C]	Time [s]			
	19 28 0 28 0 119 19 28 0 28 0 119	0 0 0 0 1 1 1 1 1 1	93 93 93 93 93 65 65 65 65 65 65 65					
	READ	NG						
	RE	AD ST	OP	REC	STOP	þ		
	POF Via I	RT COM 5		SAM Recording t	PLING [s] 1 me: 17.77 h	+		
					🙎			
	Save to:							
	Folder: C:\REC_temperature_KXP4\ Read data from file							
	File: +							
Create copy on the external server								
Crea	ated by NEO	TERM 2016.01	/2022 ww	w.neoterm.wroclaw.p	Free software	e;		

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.

VIb. Data recording

 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.



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 0	to 5 [min]
axis scale every	0.5 ~
Temperature axis:	
from 0 ~	to 1600 [°C]
axis scale every	100 ~
🗌 Hide the temper	rature and the Follow control
Background color	White
Line color	Red ~
Default settings	OK Cancel

Maximum ranges::

- for X axis: 240 hours (14400 min) *
- for Yaxis: 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**.

Wykres - KXP4 - °C Follow Redraw Refresh Settings T [°C] 800 750 700 650 600 550 500 450 19.9 [°/min] ∆t=14.76min 400 350 300 250 200 150 100 50 rec_temp_2021_5_31__22_40_48_big20ka1.csv 0 0 5 10 15 25 30 35 40 45 Time [min] 20

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\

-	> This PC > Local Disk (C:) > REC_temperature	_KXP4		\sim	C	0	Search
	Name	Date modified	Туре	^			
	rec_temp_2021_5_31_22_40_48_big20ka	06/02/2022 00:35	Microsoft Excel Comm	na Sej	parated	/alues	File
,	rec_temp_2022_1_141_51_4csv	05/02/2022 22:50	Microsoft Excel Comm	na Sej	parated 1	Values	File

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:

	А	В	С
1	Recorded by B&S NEOTER	M Softwar	e 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 $\ensuremath{\textit{Read}}$ data from file.

Save to:			
Folder:	C:\REC_temperature_KXP4\		Read data from file
File:		+	
	Create copy on the external server		

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

B&S TR File selection		
Open from: Folder: C:\REC_temperature_KXP4\ File: rec_temp_2021_5_31_22_40_48_big20ka1.csv	Save on the server	Open Cancel
Select from: 184928	l.csv	
Show files saved on the external server for user: neoterm_001		

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**.

|--|

B&S TR File selection	
Save to: Folder: C:\REC_temperature_KXP4\	Download from the server
File: rec_temp_2022_1_141_51_4csv	Cancel
Select from: rec_temp_2021_5_31_22_40_48_big20ka1.csv rec_temp_2022_1_14_1_51_4_csv	
Show files saved on the external server for user: neoterm_001	

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.

B&S TR File selection		
Open from: Folder: C:\REC_temperature_KXP4\ Ette: Fectemp 2022 1 14, 1 51 4, csv	Save on the server	Open
		Cancel
Select from. 184225_bytes_rec_temp_2021_5_3_22_40_80_big20k81 168	.csv	
Show files saved on the external server for user: neoterm_001		

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**.