

BCSoft Version: 3.x

PC-Software for Burner controls

User Manual

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BCSoft
PC-Software for Burner controls
Version 3.x

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1 Features

The **BCSoft** PC software package has been developed by Kromschröder in order to permit units of type BCU/PFU to be serviced quickly and effectively.

The units can be programmed conveniently using a PC. The program can be used to assist in laboratory and service measurements. The operating state of the equipment is displayed on screen. The program provides you with the following functions:

- Display of the operating states of burner control unit and burner
- Graphic display of process data (continuous-line recorder function)
- Logging of process data
- Programming and management of burner configurations
- Evaluation and statistics functions

1.1 Mode of operation

Data is exchanged between equipment and **BCSoft** via the PC opto-adapter which is connected to a free serial port on the PC. The unit must be switched on in order to transfer data. Since data transfer does not influence operation of the unit, process data can be logged with **BCSoft**.

Please refer to Section 3 for a detailed description of the **BCSoft** functions.

2 Installation

2.1 System requirements

To install **BCSoft** on a PC, the PC should have the following requirements:

- PC with 80486 processor or higher
- Operating system Win95/98/ME or Win NT4.0, Win2K, Win XP
- A free serial interface COM 1,2, 3 or 4
- Or USB-Port using an external USB-RS232-converter
- Minimum 32MB RAM
- Windows-compatible mouse
- 800x600 graphic/small fonts

2.2 Installation of the software

- Connect your opto-adapter to the PC. Choose a free serial port for this, e.g. COM2 . Fit the PC opto-adapter, with the aid of the magnet adapter, onto the optical interface of the device after switching the device on.
- Insert the installation CD in your CD-ROM-Drive.
- In the Task Bar, click on *Start* and then on *Run*. Enter **D:\SETUP.exe** and then click on *OK*. If your drive has a drive letter other than "D", you must enter the corresponding letter in place of "D".
- Please follow the advise in order to install the software.
- At first start of the program **BCSoft** you have to configurate the interface. Choose the used serial interface and click the *Connect*-button. Then close the windows using the *Close*-button.
- The communication between **BCSoft** and the connected device starts automaticaly. The PC and the connected device are shown in the windows *Devices...* .
- Visualizing is started by a doubleclick on the selected device in the window *Devices...* .
- If no device is detected, after 8 seconds a message appears(*No device found. Please check connection.*)
- Check that the PC opto-adapter is correctly connected to the PC and the device. If communication is still not possible despite the PC opto-adapter being correctly connected, you must program the serial port.
- In order to do this, choose the in the *Extras* menu the *Options\Interface\Scom2*

function. The interface-dialog opens: Click the *Disconnect*-button, select the used serial interface and click the *Connect*-button. Close the window using the *Close*-button.

- Choose item *Scan* in the *Extras* menu or function key **F3** in order to communicate with the device. The connected device is displayed in the *Devices...* window and you can start working with **BCSoft**.

3 Operation

BCSoft is used for programming and logging of BCU/PFU and IC40.

The different functions can be selected by using the menu.

In the menu bar of **BCSoft** you see 4 different items:

- Menu **File**
- Menu **Window**
- Menu **Extras**
- Menu **Info**

The program can be operated with a mouse and keyboard. The functions are selected using menus. Functions frequently used can be selected directly with function keys.

Quit the program using the *Close*-function under menu *File*.

Using key **F6**, you can switch between the open function windows. You can close the relevant, active window with key **ESC**.

3.1 Program start

BCSoft then attempts to establish contact with a connected device. You will see the *Devices...* window during this process, providing you with information on the connected device type and the software version (firmware).

Visualizing is started by a doubleclick on the selected device in the window *Devices...*

3.2 Visualizing a connected device

The visualization of a connected device happens in a seperate window.

Concerning to the step of the device the visualization is different:

Registry cards for devices BCU4xx/PFU up to step D (Firmware 12).

- **Process values**
- **Adjustable parameters**
- **Fixed parameters**
- **Statistics**
- **Plotter**

Registry cards for devices BCU4xx/PFU from step E (Firmware 13).

- **Process values**
- **Burner**
- **Main burner*** (only BCU480 / PFU 798)
- **Air valve*** (not BCU440 /BCU460)
- **Statistics**

Registry cards for IC40 step A (Firmware 01):

- **Process values**
- **Adjustable parameters**
- **Analog parameters*(analog device)**
- **Works settings**
- **Statistics**
- **Initial operation**

Registry cards for IC40 step B (Firmware 02):

- **Process values**
- **Operating behaviour**
- **Inputs/outputs**
- **Works settings**

- **Statistics**
- **Statistics customer**
- **Initial operation**

Registry cards for BCU370:

- **Process values**
- **Burner**
- **Control/Air control**
- **Statistics**
- **User statistics**
- **Fault history**

During the first call of every registry card data automatically read out of device.

3.2.1 Visualization of devices BCU4xx/PFU up to step D (Firmware 12)

3.2.1.1 Process values

This registry card visualizes the actual state of the burner control.
The states of inlets and outlets and the current of the flame are shown and permanent refreshed.
Besides the actual program state and a alarm message are shown.
While the registry card is shown, data are permanent refreshed.

3.2.1.2 Adjustable parameters

With this registry card adjustable parameters can be changed und managed.
Click the *Read*-button to read out the actual parameter settings of the connected device.
To change parameters, select the parameter using mouse or keyboard and edit it.
If you move the mouse pointer on an edit field of a parameter the parameter limits are shown.
To transfer modified parameters into the device click the *Write*-button (see also *Options>Password*).
Notice the effects of the parameter setting on the safety function of your system.
Parameters can be saved in a file (see 3.2.1.5).

3.2.1.3 Fixed parameters

This registry card is responsible for managing of fixed parameters.
These parameters are fixed by Kromschröder and characterize the behaviour of the device.
Click the *Read*-button to read out the actual parameter settings of the connected device.
If you move the mouse pointer on a edit filed of a parameter the parameter limits are shown.
Parameters can be saved in a file (see 3.2.1.5).

3.2.1.4 Statistics

This registry card visualizes the amount of different alarms and hours of operation burner control stored in the device.
Click the *Read*-button to read out the actual statistic data of the connected device.
To reset the amount of alarms click the *Reset*-button.
The hours of operation and the counter can not be reseted.

3.2.1.5 Saving and Loading data records

You can save the parameter sets and statistic data of the device to your PC's hard disk and also load them from your hard disk.
In order to do this, click on the *Save*-button in the selected registry card.
In order to load a stored parameter set, click on the *Load*-button. The loaded parameter set can be transferred into the device using the *Write*-button.

Furthermore you can save the parameter sets and statistic data of the device in one file to your PC's hard disk.

In order to do this, click on the *Save/print-* button in the *Statistics* registry card. The *Save/print-*button is enabled after all data are read out of the device. With an editmask a header with additional informations can be added.

3.2.1.6 Plotter

This registry card contains a plotter.

The plotter has the following functions:

- *Select data*: Opens the data-selection-display.
- *All data*: If you choose this option all selectable data are selected. Alternative single data can be selected.
- *Sample rate*: Choose a sample rate between 0,5 and 60 s.
- *Temporary file*: If you choose this option, data are cyclically saved in a temporary file (Protocol.tmp). So there is no loss of data in case of a PC-crash.
- *Start*: Starts the data transfer between plotter and device.
- *Stop*: Stops the data transfer between plotter and device.
- *Save data*: Save the recorded data in a protocol file.
- *Save Graphic*: Save a snapshot of the actual diagram in a graphic file (Bitmap or WMF).

3.2.2 Visualization of devices BCU4xx/PFU from step E (Firmware 13)

3.2.2.1 Process values

This registry card visualizes the actual state of the burner control.
The states of inlets and outlets and the current of the flame are shown and permanent refreshed.
Besides the actual program state and a alarm message are shown.
While the registry card is shown, data are permanent refreshed.

3.2.2.2 Burner

With this registry card the parameters concerning the burner (Safety parameters and non safety parameters) can be changed und managed.
Click the *Read*-button to read out the actual parameter settings of the connected device.
To change parameters, select the parameter using mouse or keyboard and edit it.
If you move the mouse pointer on an edit field of a parameter the parameter limits are shown.
To transfer modified parameters into the device click the *Write*-button (see also *Options\Password*).
Notice the effects of the parameter setting on the safety function of your system.
Parameters can be saved in a file (see 3.2.2.6).

3.2.2.3 Main burner

With this registry card the parameters concerning the main burner (Safety parameters and non safety parameters) can be changed und managed.
Click the *Read*-button to read out the actual parameter settings of the connected device.
If you move the mouse pointer on a edit filed of a parameter the parameter limits are shown.
Notice the effects of the parameter setting on the safety function of your system.
Parameters can be saved in a file (see 3.2.2.6).

3.2.2.4 Air valve

With this registry card the parameters concerning the air valve can be changed und managed.
Click the *Read*-button to read out the actual parameter settings of the connected device.
If you move the mouse pointer on a edit filed of a parameter the parameter limits are shown.
Notice the effects of the parameter setting on the safety function of your system.
Parameters can be saved in a file (see 3.2.2.6).

3.2.2.5 Statistics

This registry card visualizes the amount of different alarms and hours of operation burner control stored in the device.
Click the *Read*-button to read out the actual statistic data of the connected device.
To reset the amount of alarms click the *Reset*-button.
The hours of operation and the counter can not be reseted.

3.2.2.6 Saving data records

You can save the parameter sets and statistic data of the device to your PC's hard disk and also load them from your hard disk.
In order to do this, click on the *Save*-button in the selected registry card.
In order to load a stored parameter set, click on the *Load*-button. The loaded parameter set can be transferred into the device using the *Write*-button.

Furthermore you can save the parameter sets and statistic data of the device in one file to your PC's hard disk.

In order to do this, click on the **Save/print-** button in the *Statistics* registry card. The **Save/print-**button is enabled after all data are read out of the device. With an editmask a header with additional informations can be added.

3.2.3 Visualization of IC40 step A (Firmware 01):

3.2.3.1 Process values

This registry card visualizes the actual state of the device.
The states of inlets and outlets and the current position are shown and permanent refreshed.
Besides the actual program state and a alarm message are shown.
While the registry card is shown, data are permanent refreshed.
Furthermore the IC40 can be set into manual operation

3.2.3.2 Adjustable parameters

With this registry card adjustable parameters (Operation behaviour, positions, switching points) can be changed und managed.
Click the *Read*-button to read out the actual parameter settings of the connected device.
To change parameters, select the parameter using mouse or keyboard and edit it.
If you move the mouse pointer on an edit field of a parameter the parameter limits are shown.
To transfer modified parameters into the device click the *Write*-button (see also *Options\Password*).
Notice the effects of the parameter setting on the safety function of your system.
Parameters can be saved in a file (see 3.2.1.5).

3.2.3.3 Analog parameters* (analog device)

With this registry card analog parameters can be changed und managed.
Click the *Read*-button to read out the actual parameter settings of the connected device.
To change parameters, select the parameter using mouse or keyboard and edit it.
If you move the mouse pointer on an edit field of a parameter the parameter limits are shown.
To transfer modified parameters into the device click the *Write*-button (see also *Options\Password*).
Notice the effects of the parameter setting on the safety function of your system.
Parameters can be saved in a file (see 3.2.1.5).

3.2.3.4 Works settings

This registry card is responsible for managing of works settings.
These parameters are fixed by Kromschröder and characterize the behaviour of the device.
Click the *Read*-button to read out the actual parameter settings of the connected device.
If you move the mouse pointer on a edit filed of a parameter the parameter limits are shown.
Parameters can be saved in a file (see 3.2.1.5).

3.2.3.5 Statistic

This registry card visualizes the amount of different alarms and hours of operation control stored in the device.
Click the *Read*-button to read out the actual statistic data of the connected device.
To reset the amount of alarms and the custom counters click the *Reset*-button.
The hours of operation and the counter can not be reseted.

3.2.3.6 Initial operation

On this registry card the calibration of IC40 can be done.

3.2.3.7 Saving and Loading data records

You can save the parameter sets and statistic data of the device to your PC's hard disk and also load them from your hard disk.

In order to do this, click on the *Save-* button in the selected registry card.

In order to load a stored parameter set, click on the *Load-* button. The loaded parameter set can be transferred into the device using the *Write-*button.

3.2.4 Visualization of IC40 step B (Firmware 02):

3.2.4.1 Process values

This registry card visualizes the actual state of the device.

The states of inlets and outlets and the current position are shown and permanent refreshed.

Besides the actual program state and a alarm message are shown.

While the registry card is shown, data are permanent refreshed.

Furthermore the IC40 can be set into manual operation

3.2.4.2 Manual operation

Pressing the button *Manual operation* opens a separate window.

Via this window the manual operation mode can be activated or deactivated.

In manual operation mode either inputs can be simulated or positions can be reached directly.

After finding parameters for high-, middle and low-position these positions can be written into the IC40.

3.2.4.3 Operating behaviour

With this registry card parameters (Operation behaviour, positions) can be changed und managed.

Click the *Read-*button to read out the actual parameter settings of the connected device.

To change parameters, select the parameter using mouse or keyboard and edit it.

If you move the mouse pointer on an edit field of a parameter the parameter limits are shown.

To transfer modified parameters into the device click the *Write-*button (see also *Options\Password*).

Notice the effects of the parameter setting on the safety function of your system.

Parameters can be saved in a file (see 3.2.1.5).

3.2.4.4 Inputs/outputs

With this registry card parameters for inputs/outputs can be changed und managed.

Click the *Read-*button to read out the actual parameter settings of the connected device.

To change parameters, select the parameter using mouse or keyboard and edit it.

If you move the mouse pointer on an edit field of a parameter the parameter limits are shown.

To transfer modified parameters into the device click the *Write-*button (see also *Options\Password*).

Notice the effects of the parameter setting on the safety function of your system.

Parameters can be saved in a file (see 3.2.1.5).

3.2.4.5 Works settings

This registry card is responsible for managing of works settings.

These parameters are fixed by Kromschröder and characterize the behaviour of the device.

Click the *Read-*button to read out the actual parameter settings of the connected device.

If you move the mouse pointer on a edit filed of a parameter the parameter limits are shown.

Parameters can be saved in a file (see 3.2.1.5).

3.2.4.6 Statistics

This registry card visualizes the amount of different alarms and hours of operation control stored in the device.

Click the *Read*-button to read out the actual statistic data of the connected device.

The counters can not be reseted.

3.2.4.7 Statistics customer

This registry card visualizes the amount of different alarms and hours of operation control stored in the device.

Click the *Read*-button to read out the actual statistic data of the connected device.

To reset the amount of alarms and the custom counters click the *Reset*-button.

3.2.4.8 Initial operation

On this registry card the calibration of IC40 can be done.

3.2.4.9 Saving and Loading data records

You can save the parameter sets and statistic data of the device to your PC's hard disk and also load them from your hard disk.

In order to do this, click on the *Save*-button in the selected registry card.

In order to load a stored parameter set, click on the *Load*-button. The loaded parameter set can be transferred into the device using the *Write*-button.

3.3 Visualization of BCU370:

3.3.1 Process values

This registry card visualizes the actual state of the burner control.

The states of inlets and outlets and the current of the flame are shown and permanent refreshed.

Besides the actual program state and a alarm message are shown.

While the registry card is shown, data are permanent refreshed.

3.3.2 Burner

With this registry card the parameters concerning the burner (Safety parameters and non safety parameters) can be changed und managed.

Click the *Read*-button to read out the current parameter settings of the connected device.

To change parameters, select the parameter using mouse or keyboard and edit it.

If you move the mouse pointer on an edit field of a parameter the parameter limits are shown.

To transfer modified parameters into the device click the *Write*-button. After the password was inserted the parameters are transferred (see also *Options>Password or Password BCU*).

Notice the effects of the parameter setting on the safety function of your system.

3.3.3 Control/Air control

With this registry card the parameters concerning the control/ air control can be changed und managed.

Click the *Read*-button to read out the current parameter settings of the connected device.

To change parameters, select the parameter using mouse or keyboard and edit it.

If you move the mouse pointer on a edit filed of a parameter the parameter limits are shown.

To transfer modified parameters into the device click the *Write*-button. After the password was inserted the parameters are transferred (see also *Options\Password or Password BCU*).

Notice the effects of the parameter setting on the safety function of your system.

3.3.4 Statistics

This registry card visualizes the amount of different alarms and hours of operation burner control stored in the device.

Click the *Read*-button to read out the current statistic data of the connected device.
The counter can not be reseted.

3.3.5 User statistics

This registry card visualizes the amount of different alarms and hours of operation burner control stored in the user statistics of the device.

Click the *Read*-button to read out the current statistic data of the connected device.
To reset the counter click the *Reset*-button.
The complete counter will be reseted.

3.3.6 Fault history

This registry card visualizes the fault history of the BCU370. The last 10 errors are displayed with time stamp.

Click the *Read*-button to read out the current data of the connected device.
To reset the fault history click the *Reset*-button.

3.3.7 Saving data records

You can save the parameter sets and statistic data of the device to your PC's hard disk.

In order to do this, click on the *Save*-button in the *Statistics* registry card. The *Save*-button is enabled after all data are read out of the device. All parameter sets and statistic data are saved in one file. With an editmask a header with additional informations can be added.

3.4 Menu File

This menu contains the functions:

- **Open**
- **Print**
- **Printer settings**
- **Close**

3.4.1 Open

The menu *Open* offers you a choice of different types of BCU-files (graphic files, protocol files, parameter files and statistic files). Select a kind of file you want to open.

3.4.2 Print

If you select this function the active window will be printed. Besides the active window can be printed by using **STRG+P**.

3.4.3 Printer settings

This menu opens the printer setup dialog.

3.4.4 Close

With this function **BCSoft** is closed.

3.5 Menu Window

This menu offers you the standard functions to display/arrange the different windows in **BCSoft**.

Every opened window can be selected und brought to front.
Windows can be displayed in cascade.

3.6 Extras

This menu offers the following functions:

- **Scan**
- **Terminal**
- **BCU**
- **DataLogger**
- **Extra access**
- **Options\Interface**
- **Options\Language**
- **Options>Password**
- **Options\PIN BCU (only BCU370)**

3.6.1 Scan

This function (function key **F3**) is used to read out the identity of the connected device.

Choose item **Scan** in the *Extras* menu or function key **F3** in order to communicate with the device.

The connected device is displayed with information about type and software version (firmware) in the *Devices...* window.

If no device is detected, after 8 seconds a message appears(*No device found. Please check connection*).

3.6.2 Terminal

This function opens the terminal window. The terminal window visualizes the communication between **BCSoft** and a connected device.

With right-click of the mouse the menu of the terminal window opens.

For diagnosis communication can supervised:

Use the *Clear*-function to clear the contents of the terminal window.

To start logging use the *Start*-function.

Choose *Stop* to end logging.

Use *Save* to save the contents of the terminal window.

3.6.3 BCU

If no BCU/PFU is connected, you can start visualization with a doubleclick on this function (See 3.2).

There is no communication!

If a device was detected, this function is disabled.

3.6.4 DataLogger

The Datalogger is opened from this menu item. That Datalogger features a large number of functions and can be used either with or without a connected BCU/PFU.

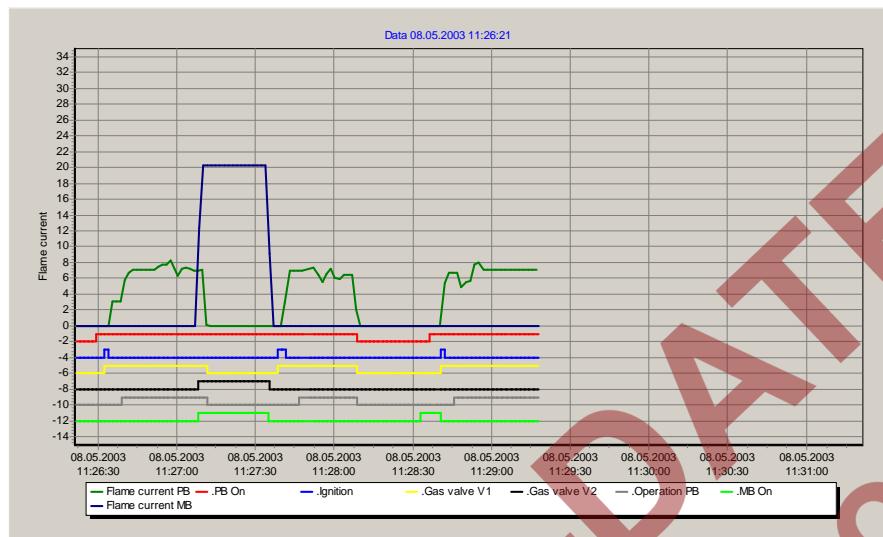
The scanning rate set is displayed in the status bar. The display interval set is indicated beside it.

The line width in use is displayed further to the right.

In the right-hand section, the co-ordinates are displayed when the mouse cursor is moved inside the diagram.

The various functions can be selected by means of buttons. When the mouse cursor is moved onto a button, a brief description of the button's function is displayed.

The following functions are available, working from left to right:



- *Print preview:* Displays a preview of how the current diagram will be printed out.
- *Read protocol file:* Reads a saved protocol file and displays it as a diagram.
- *Save protocol file:* Saves the diagram displayed as a protocol file.
- *Save diagram:* Saves the diagram displayed as a Bitmap or Windows metafile.
- *Start:* Starts data transmission.
- *Stop:* Stops data transmission.
- *Break:* Interrupts data transmission. Press again to restart data transmission.
- *scroll 10 pages back*
- *scroll 1 page back*
- *scroll 1 page forward*
- *scroll 10 pages forward*
- *Sample rate:* The scanning rate is set here.
- *Interval:* The display interval is set here.
- *Select data:* If a device is connected, those values which can be displayed for the device are shown here.
- *Start ... Stop:* Displays the complete diagram on a screen page.
- *Min...Max:* Settings for vertical axis.

3.6.5 Extra Access*

Use this function to transfer a parameter file created by Kromschröder.

3.6.6 Options\Interface\SCom2

This is where you must select the port (communication port COM 1... 4) to which you have connected the PC opto-adapter so as to allow it to communicate with the device. To change the settings click the *Disconnect*-button.

The following settings can be changed:

- *Comport*
- *USB*
- *Hardware echo*

If the opto-adapter is connected to a serial interface, these serial interface must be selected under *Comport*.

If the opto-adapter is connected to an USB-port via USB-RS232-converter, select the under *Comport* virtual serial port of the converter and mark *USB*.

Hardware echo must be selected for devices of BCU4xx and PFU778/ PFU798 (standard setting).

After changing the settings click the *Connect*-button.

Clicking on the *Close*-button closes the window.

3.6.7 Options\Language

To change the language of BCSoft use this function.
BCSoft can be run in the following languages:

- German
- English
- English USA
- French
- Spanish
- Italian

3.6.8 Options\Password

Use this function to change the user level in BCSoft.

There are 3 user levels in BCSoft:

- *Custom Version* (Read out all parameters and statistics of the connected device).
- *Service Version* (Like *Custom Version*, besides writing of adjustable parameters and reset statistics possible).
- *Profi Version* (Like *Service Version*, besides function *Extra access*).
- *Laboratory Version* (Like *Profi Version*, besides writing of safety parameters).

A PC-Safety-Key is needed!

The user level is reduced to the *Custom Version* entering an invalid password.

The user level is displayed in the program header.

3.6.9 Options\PIN BCU (only BCU 370)

This menu item is enabled, if access level is minimum *Service Version*.

With this function a PIN can be written into the BCU370 to lock the device.

The PIN is a number between 0000 and 9999 saved in the device.

Writing of parameters is only possible with PIN (Note: In the *Laboratory Version* no password is necessary).

3.7 Menu Info

Information about the manufacturer and the used software version.

3.7.1 About

This window displays information about the version of BCSoft.

Calling the manufacturer cause of questions give information about the version of BCSoft installed on your PC.