



# BCSGRAIN SOFTWARE MANUAL

(For version 2.0.7. and up only)

SPECIAL NOTE

READ THIS ENTIRE BOOKLET  
BEFORE PROCEEDING WITH  
THE INSTALLATION

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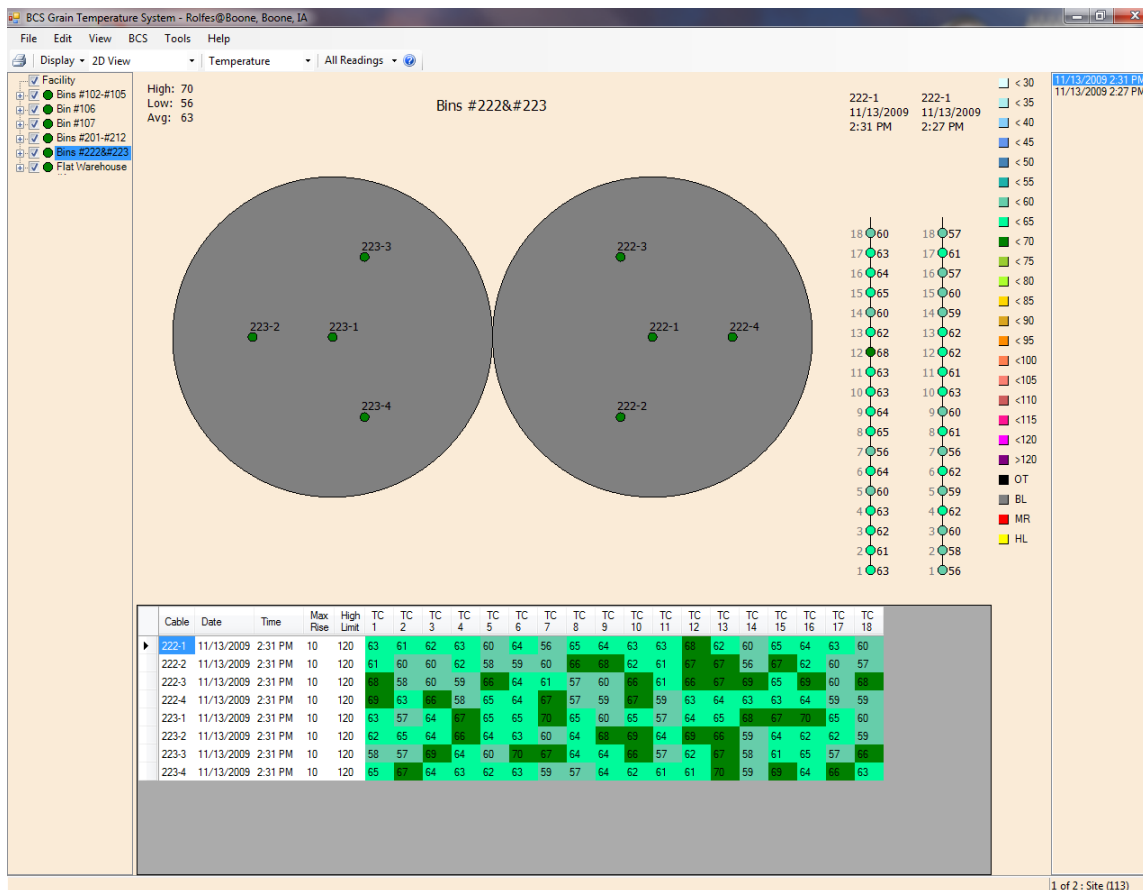
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# 1 GENERAL

Boone Cable Works & Electronics, Inc. offers a comprehensive line of temperature monitoring equipment. Our complete product range and extensive systems experience allows us to offer effective solutions to a wide spectrum of your practical requirements. Our extensive background in temperature monitoring along with a constant program of innovation and technological development, allows us to offer cost-effective and user orientated solutions. This manual covers the Windows software version for the BCSE 1000 and KTX Wireless Systems which are P.C. based systems of commodity temperature measurement.

### 1.1 Main Screen



The main screen consists of the following elements

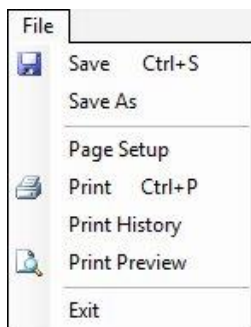
- Menu Bar
- Tool Bar
- Facility List
- Text View
- Graphics View
- Color Legend
- Date Time List

The **Facility List** shows all bin/cable groups. The data (temperature or resistance values) can be displayed in one of three ways: A Text View, 2D overview or 3D view. The Text software package offers only the text view capability. The 3D Graphics software package offers all three options.

To go from the facility overview to the cables in a bin/cable grouping, place the mouse arrow on the selected grouping and left click.

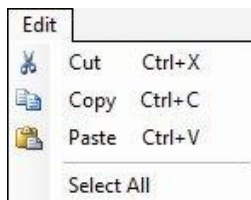
## 1.2 Menu Bar

### File



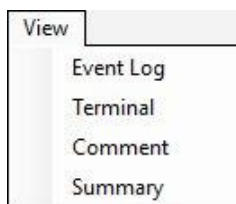
Save or print data reports or exit from the program.

### Edit



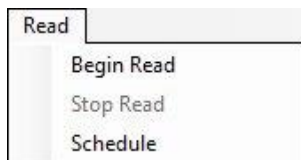
Cut, Copy, and Paste, or Select all cables.

### View



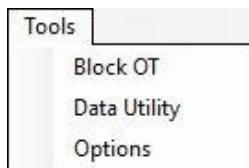
Access Event Log, Terminal, Comment, and Summary Screens.

### Begin Read



Read the cables in Manual Mode, Cycle Read, or Schedule Read.

## Tools



Access Options screen, Block OT Sensors, and Data Utility.

## Help



Select About to display the Program Version.

### 1.3 Tool Bar

Print Icon  
Display  
View List  
Temperature/Resistance  
All Readings

### 1.4 Facility List

Tree View that lists all bins and cable in facility. The top item (Facility) is used to select the entire facility. Items in the facility list are selected by clicking on the item name. Individual bins or cables can be included in the next read by the check box next to the item.

A colored dot located by the bin/cable in the facility list is an indication of the hottest point on the cable or an alarm condition color.

























### 1.5 Text View

Text View is a grid (spreadsheet) view of the currently selected read data. It includes the cable name, date and time of read, Max Rise, High Limit, and the data read for each thermocouple.

### 1.6 Graphics View

Graphics view is a 2D or 3D representation of the actual facility or bin. In the Facility list select Facility to show the overview of the entire facility or select any bin or cable to zoom into a view of an individual bin.

## 1.7 Color Legend

	< 30
	< 35
	< 40
	< 45
	< 50
	< 55
	< 60
	< 65
	< 70
	< 75
	< 80
	< 85
	< 90
	< 95
	<100
	<105
	<110
	<115
	<120
	>120
	OT
	BL
	MR
	HL

On the right side of the screen is a vertical row of colors and numbers. The colors beside the numbers indicate the color that the temperature will be displayed. Below the last temperature is OT. **OT** represents an Open Thermocouple. **BL** is for Blocked Cables. **MR** stands for Maximum Rise alarm. **HL** stands for the High Limit alarm. Change the color by right clicking on the color block and selecting a new color.

## 1.8 Date Time List

5/16/2018 4:19 PM
5/16/2018 9:31 AM
5/16/2018 7:31 AM
5/16/2018 5:31 AM
5/16/2018 3:31 AM
5/16/2018 1:31 AM
5/15/2018 11:31 PM
5/15/2018 9:31 PM
5/15/2018 7:31 PM
5/15/2018 5:30 PM
5/15/2018 3:30 PM
5/15/2018 1:30 PM

The list of Date Times is on the far right of the screen. It is used to select the current read. The top item in the list is the last read taken.

## 2 Menu Bar

### 2.1 File

#### 2.1.1 Save

Save current data to a text file on the computer. The file name includes the date and time of the read.

#### 2.1.2 Save As

Save the text file to any folder on the computer.

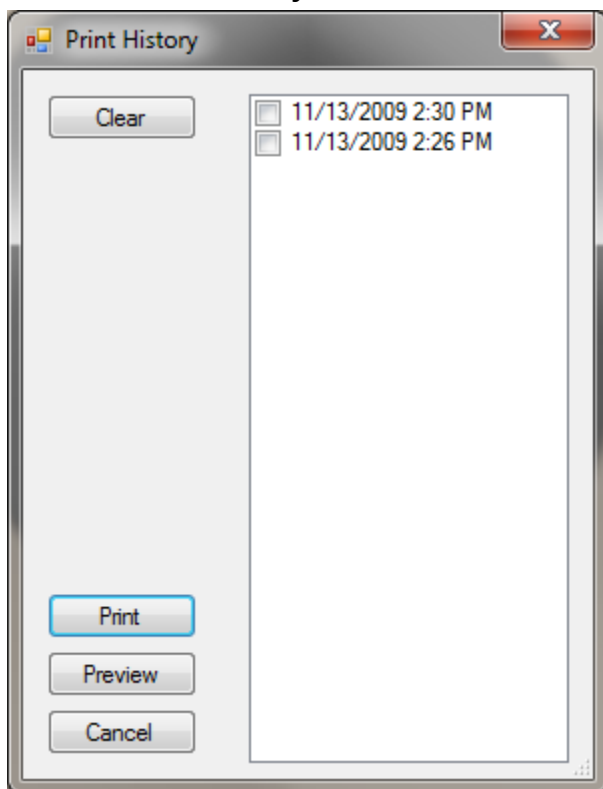
#### 2.1.3 Page Setup

Open the standard Page Setup dialog for setting the paper size, source, orientation, and margins.

#### 2.1.4 Print

Prints the temperature or resistance of the cables enabled in the facility list. The print dialog box is used to select the current printer. In temperature mode, temperature data will be printed and in resistance mode, resistance data will be printed.

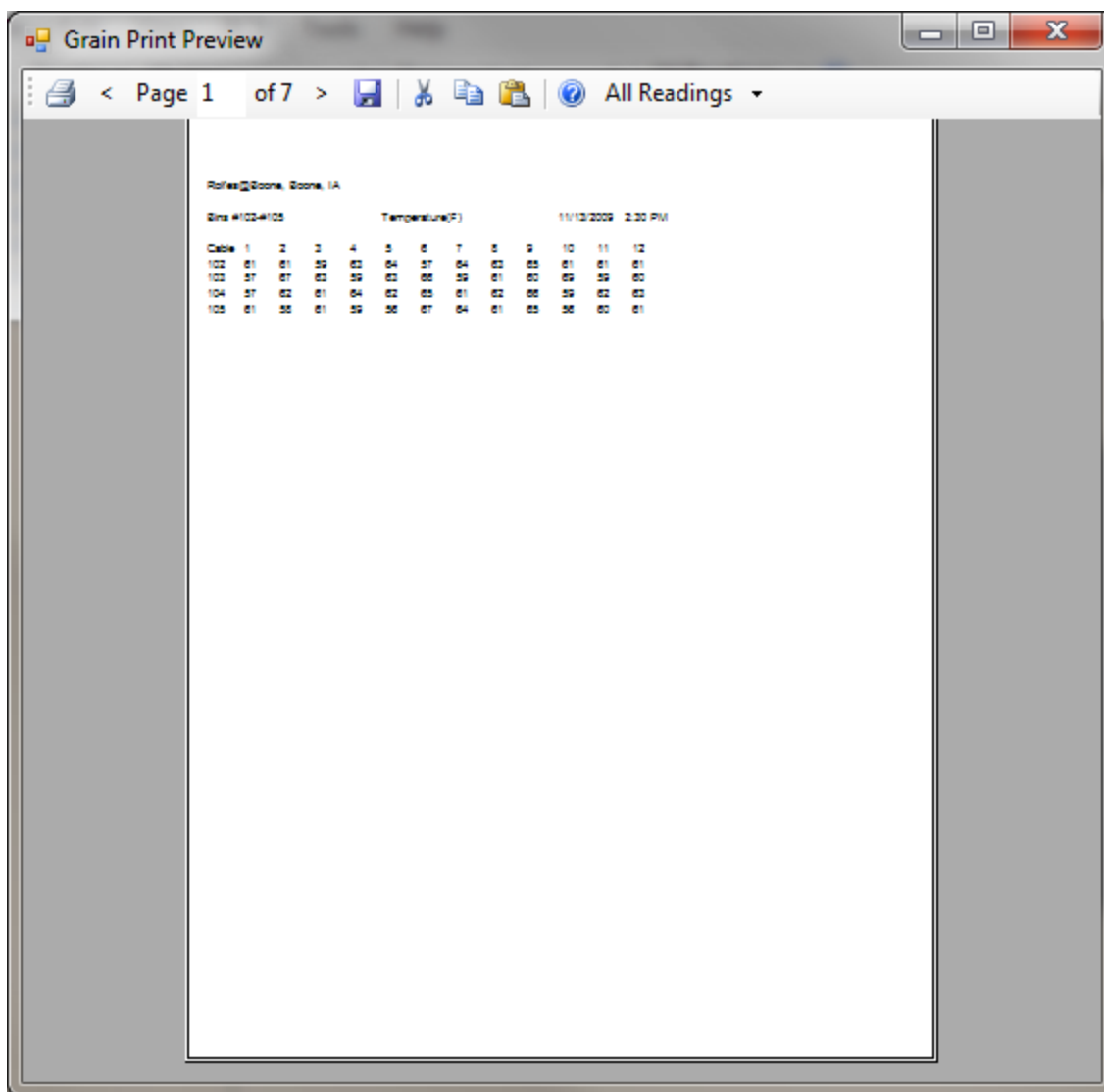
#### 2.1.5 Print History



Prints the history data for all currently enabled bins and cables. Check the dates in the date time list, and then select Print or Preview.



## 2.1.6 Print Preview



Open a Print Preview Screen with the same data as the Print button. The data can be previewed before printing. Toggle between All Readings and Alarms Only by clicking on the button in the toolbar.

## 2.2 Edit

### 2.2.1 Select All

Check this to select all the bins/cable in the facility.

## 2.3 View

### 2.3.1 Event Log

All Events are displayed in this log screen. Events are temperature alarms and system events.

### 2.3.2 Terminal

This is a feature for Boone Cable Works & Electronics service personnel. **DO NOT USE THIS FEATURE WITHOUT CONSULTING Boone Cable Works & Electronics. THIS FEATURE MAY CAUSE THE SYSTEM TO MALFUNCTION.**

### 2.3.3 COMMENT (Cable Comment Area)

Select this option and a notepad window opens on the screen. This allows notes on each cable to be stored in the system. In the facility level the notes are about the whole facility. At the bin level the notes are for the cable displayed at the right side of the screen. The comments will be shown in the bottom right area of the screen.

### 2.3.4 Summary

Display summary information for the currently selected read. This is the same information that can be emailed after each read. The summary data can also be sent directly from this screen.

## 2.4 READ

The **Begin Read** Button starts to read the cables that have been enabled. Enable by checking the box in the facility list. In temperature mode temperature data will be read and in resistance mode resistance data will be read. These readings will be stored in the BCSGrain database on the computer.

### 2.4.1 Begin Read

Start a read of the cables that have been enabled. A report can be printed or emailed after the read is completed. Enable these features in the Grain Options dialog box in Tools menu.

### 2.4.2 Halt Read

Halt the current read. The read can be restarted by selecting **Begin Read**. This item is only enabled while a read is in progress.

## 2.4.3 Schedule

The screenshot shows a window titled "Grain Schedule". It contains three radio buttons: "Manual" (selected), "Cycle", and "Schedule".

- Manual:** Selected.
- Cycle:** Unselected. Below it is the text "Enter Time between reads: (d.hh:mm or nnn MIN or nnn HR)" and a text input field containing "00:00:00".
- Schedule:** Unselected. To its right is a list of days with checkboxes: Sun, Mon, Tues, Wed, Thurs, Fri, Sat. To the right of this list is a time dropdown menu showing "12:00:00 PM".

At the bottom of the dialog are two buttons: "OK" and "Cancel".

### 2.4.3.1 Manual

The system reads all the currently enabled bins/cables one time only.

### 2.4.3.2 Cycle

The system will read the cables that have been enabled at the interval time that was selected. As an example, enter 01:00:00 (one hour) and the cables that are selected will be read every hour.

### 2.4.3.3 Schedule

Select what day/days in the week and at what time. The system will read the cables that have been selected at the days and times selected. As an example, input 12:00 am on Monday, Tuesday and Wednesday and the cables will be read every week at those days and times.

## 2.5 Tools

### 2.5.1 Options

#### 2.5.1.1 System

##### 2.5.1.1.1 Default Colors

On the main screen the colors for each temperature can be changed by selecting each box and modify its color. Check this option and select OK to restore the colors to default settings for all temperature, resistance, and alarm colors.

##### 2.5.1.1.2 Color Print

When checked, this will enable color printing. By default, it will print in black and white.

##### 2.5.1.1.3 Bin FormFeed

When this is checked, it will print a separate page for each bin. Uncheck this option to print continuously.

##### 2.5.1.1.4 External Server

Check this option when using external data-server. Set the port number to match the server port.

##### 2.5.1.1.5 Print Report after Read

Check this option to enable a report to be printed after each read.

### **2.5.1.1.6 Save CSV File after Read**

This will save the readings as a file with CSV extension (Excel format) to a pre-made folder after read is complete. Use the Browse button to select the folder.

### **2.5.1.1.7 RFC 4180**

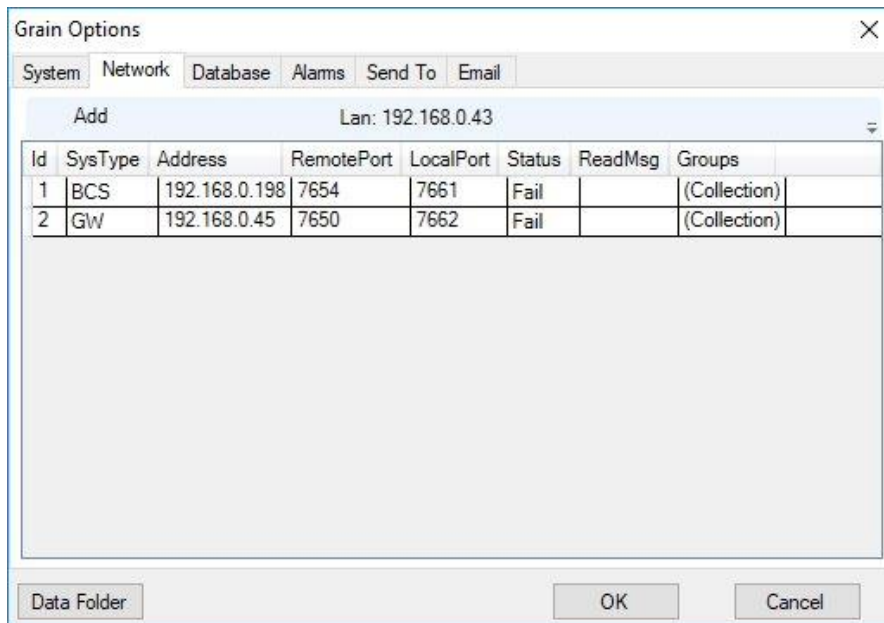
It makes the Comma-Separated Value (CSV Excel) file format compatible with the 2005 technical standard RFC 4180. This is mostly used with PLC's.

The following two features are for Boone Cable Works & Electronics service personnel. **DO NOT USE THIS FEATURE WITHOUT CONSULTING Boone Cable Works and Electronics. CHANGING THE VALUES MAY CAUSE THE SYSTEM TO MALFUNCTION.**

### **2.5.1.1.8 BCS Wait Times**

### **2.5.1.1.9 BCS Read**

### 2.5.1.2 Network



When first time using this window, select **Add** to add the interfaces to be read.

Each interface will have its own **ID** number. To remove an ID number, highlight the number and click on the Delete button on the keyboard.

The **SysType** defines what kind of interface is assigned to be read. Double click the box to select the different system types:

- GW** - for the Gateway Connectport X2D wireless system
- BCS** - for the BCSE1000 system
- BCS\_AR** - for the BCSE1000 AR system
- MUX** - for a single mux on a Digi-One SP system (or wireless system version 1.0.96 and older)
- ALARM** - for the alarm module

The **Address** should be the IP address(es) of the interface(s) to be read. By default the IP address will be 192.168.0.198. Double click the box to change the number.

The **RemotePort** is a UDP port each interface is operating on. For the BCS and BCS-AR type, select 7654. For the GW type, select 7650. Double click the box to change these numbers.

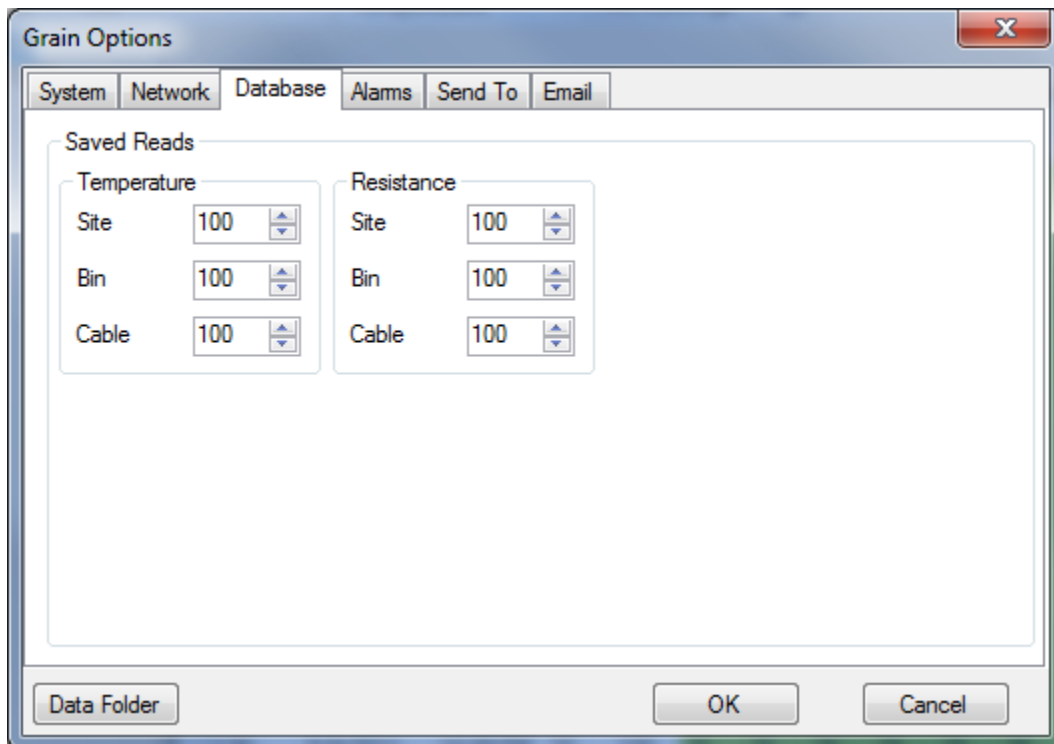
The **LocalPort** is a UDP port the computer is connecting to the interface. Each ID in the list will have a sequential number, starting at 7661 and up. By default it will start at 7661. Double click the box to change the number.

The **Status** box indicates the status of the interface. When the box reads OK, the interface is ready to be read. When it reads Fail, the interface or part of the system is not communicating. Action is required to indicate what the problem is.

The **Lan** address at the top of the bar is the current IP address of the computer.

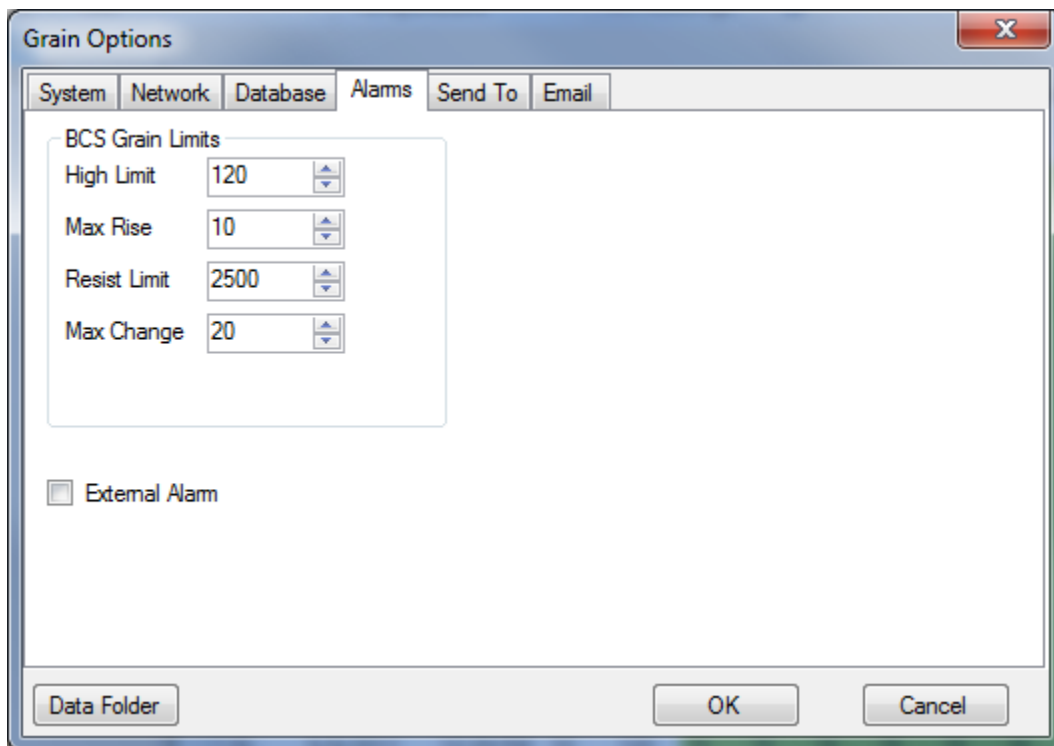
When everything is configured in this window, select OK and close the program. Restart the program and when it indicates **Ready** in the bottom left corner, begin a read.

### 2.5.1.3 Database



This is where the number of saved reads can be changed. All the reads will be stored in a database file. If a new database is created, the old database will be stored under a date and time stamp. The database is located under C:\ProgramData\BCSGrain (hidden folder).

### 2.5.1.4 Alarms



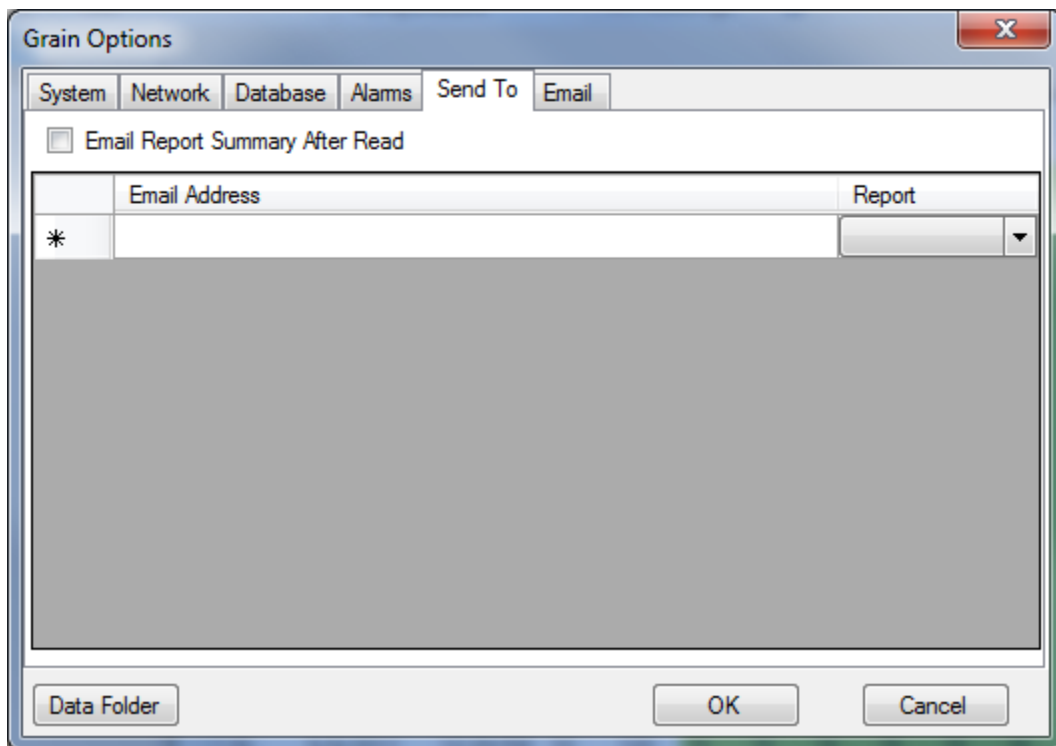
Alarm set points of high limit and maximum rise can be changed. The high limit is an absolute number; if any readings are above it an alarm will be activated. The maximum rise is a check on the temperature rise on the cable. If the temperature has risen more than the maximum rise number since the last reading an alarm will be activated.

#### **2.5.1.4.1 External Alarm**

An external alarm contact on the BCSE 1000 Ethernet module can be enabled. Check to enable or uncheck to disable the external alarm.



### 2.5.1.5 Send To



This feature is for sending the reads as an email to selected email recipients. Check the box **Email Report Summary After Read** to activate this option. Type in any email addresses under the **Email Address** list. Select which type of **Report** to send; either in TXT format (Word) or CSV format (Excel). Configure the email settings under the Email tab first.

### 2.5.1.6 Email

The screenshot shows a dialog box titled "Grain Options" with a close button (X) in the top right corner. The dialog has several tabs: "System", "Network", "Database", "Alarms", "Send To", and "Email". The "Email" tab is selected. Inside the dialog, there are two sections: "Smtip Information" and "Logon Information".

**Smtip Information:**

- From Address:
- Mail Server:
- Port:

**Logon Information:**

- Account Name:
- Password:

At the bottom of the dialog, there are three buttons: "Data Folder", "OK", and "Cancel".

Use this window to configure the email settings. Use the email settings from the default email account settings of the user on this computer. You may have to contact your IT department to help you with this setup.

Under the **Smtip Information** the user will need his own email address in the **From Address** box and the **Mail Server** address taken from his default email account settings. Check with your Administrator what the Port should be for outgoing email. For some email servers such as Gmail, I-Cloud, Office365, etc., the port number is 587.

Most email accounts require **Server Logon** information. This is the users **Account name** (usually the users email address) and **Password**.

### 2.5.2 Block OT

Automatically blocks all cables/thermocouples that are currently in OT.

### 2.5.3 Data Utility

Opens a dialog box to check, backup, or create a new database. When creating a new database, make sure the program closes and re-opens. If not, close both programs and restart it. The history will be stored in a Graindata file with a date and time stamp.

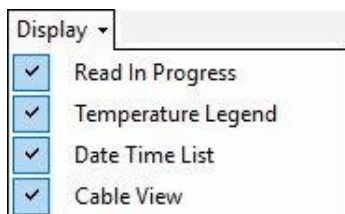
## 3 Tool Bar

### 3.1 Print Icon



Selecting this opens the print screen window. Select a printer from the list to print out the current read or select 'print to pdf' to create a PDF file of the current read.

### 3.2 Display



Check or uncheck a list of features that can or cannot be displayed on the main screen.

#### 3.2.1 Read in Progress

While the system is reading, the readings can be displayed in real time. To stop the readings from being displayed as they are read, click on this option and the readings will stop updating on the screen.

#### 3.2.2 Temperature Legend

Hide/Show the temperature legend on right side of screen.

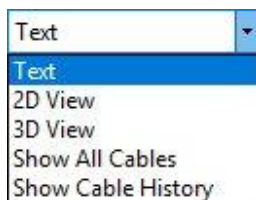
#### 3.2.3 Date Time List

Hide/Show the Date Time list on right side of screen.

#### 3.2.4 Cable View

Hide/Show the Cable View in Graphics View (2D or 3D only).

### 3.3 Tool Bar List



The temperature/resistance data can be shown in a variety of views. This list shows the current view type and allows the view to be changed.

### 3.3.1 Text

The Text view shows the currently selected read data in a spreadsheet type view. The data can be changed by selecting a new date time from the Date Time list on the right side of the screen.

### 3.3.2 2D View

On the Graphics View shows a 2D overview of the site if Facility is selected. Shows a 2D overview of the bin selected. This is only available if the 3D color overview software package was purchased.

### 3.3.3 3D View

On the Graphics View shows a 3D view of the site. The mouse can be used to rotate the facility and adjust the vertical viewing angle. This is only available if the 3D color overview software package was purchased.

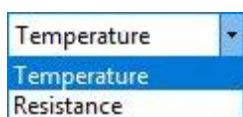
### 3.3.4 Show All Cables

The cables in the selected bin/cable grouping will be displayed across the screen. (D/T buttons) up/down arrows on the top of the right-hand column to scroll back and forth in time. Use the scroll bar on the bottom of the view to show more cables.

### 3.3.5 Show Cable History

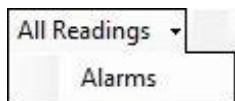
In the graphics view, a single cable is located on the right side with its two last readings. This cable is selected by clicking on the desired cable in the facility list. Select this option, then that cable is listed across the entire screen with its readings back in history. The most current read is on the left with each previous read to the right. Use the scroll bar on the bottom of the right view to show more cables.

## 3.4 Temperature/Resistance



Switch between the temperature and resistance display modes. In temperature mode, temperature readings can be taken and displayed. In resistance mode, resistance readings can be taken and displayed.

## 3.5 All Readings/Alarms Only



Toggle between all readings and alarms only. Alarms Only shows reads that have at least one alarm in the read data.

## 4 Facility List

The **Facility** list allows selected cables to be read or printed. Jump around the system selecting individual cables and/or bin/cable groupings

### 4.1 *Enable Entire Site*

Check the top item in the facility list to enable all bins/cables in the entire site. To disable all bins/cables, clear the box.

### 4.2 *Select TC(s) to Block/Unblock*

Right click on any cable/thermocouple to bring up a menu. Select Block on menu to enable or disable block.

## 5 Text View

Text view (spreadsheet format) of all data for currently selected read.

## 6 Graphics View

### 6.1 *Home 3D View*

Use the mouse to rotate/zoom the view of the facility or bin. Click the H key in the center for the screen to default back to a preset rotation angle.

## 7 Color Legend

### 7.1 *Change Temperature Colors*

The colors associated with various temperatures, resistances and alarms can be changed by clicking on the desired color in the color legend. A standard color dialog will appear where the colors can be changed. Click **OK** to accept or **Cancel** to reject the color changes. The default colors can be restored view the Options menu.

## 8 Date Time List

The **Date/Time List** moves through all of the saved reads on the cables. The last read is on the top of the list. Use the mouse or arrow keys to select a new Date Time, the current view will be updated with the data from that read.

## 9 Help

### 9.1 *ABOUT*

Clicking on the option brings up a dialog box displaying the version, Boone Cable Work's address and phone number, user information, and serial number.

## 10 TYPICAL APPLICATION

To read and then print the entire facility:

Click BCS on main menu.

Click on **Begin Read**.

The system reads the entire facility.

Click on **Print**.

Verify all printer options and select printer.

Click on **Print**.

The system prints the reading for the entire facility.