



SuperSystems
incorporated

SDS2 COLOR TOUCH SCREEN DATA LOGGER



and SDS REPORTER 2 SOFTWARE OPERATIONS MANUAL

Super Systems Inc.
7205 Edington Drive
Cincinnati, OH 45249
513-772-0060
Fax: 513-772-9466
www.supersystems.com

Super Systems Inc.

USA Office

Corporate Headquarters:

7205 Edington Drive

Shipping Address:

7245 Edington Drive

Cincinnati, OH 45249

Phone: (513) 772-0060

<http://www.supersystems.com>

Super Systems Europe

Unit E, Tyburn Trading Estate,

Ashold Farm Road, Birmingham

B24 9QG

UNITED KINGDOM

Phone: +44 (0) 121 306 5180

<http://www.supersystemseurope.com>

Super Systems México

Sistemas Superiores Integrales S de RL de CV

Acceso IV No. 31 Int. H Parque Industrial

Benito Juarez

C.P. 76120 Queretaro, Qro.

Phone: +52 442 210 2459

<http://www.supersystems.com.mx>

Super Systems China

No. 369 XianXia Road

Room 703

Shanghai, CHINA

200336

Phone: +86 21 5206 5701/2

<http://www.supersystems.cn>

Super Systems India Pvt. Ltd.

A-26 Mezzanine Floor, FIEE Complex,

Okhla Indl. Area, Phase - 2

New Delhi, India 110 020

Phone: +91 11 41050097

<http://www.supersystemsindia.com>

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Getting Started

The following instructions will guide you through the basic process of setting up your system, performing a survey, and printing a report. More detailed instructions and additional functionality are addressed later.

Step 1: Install SDSReporter2 on your computer.

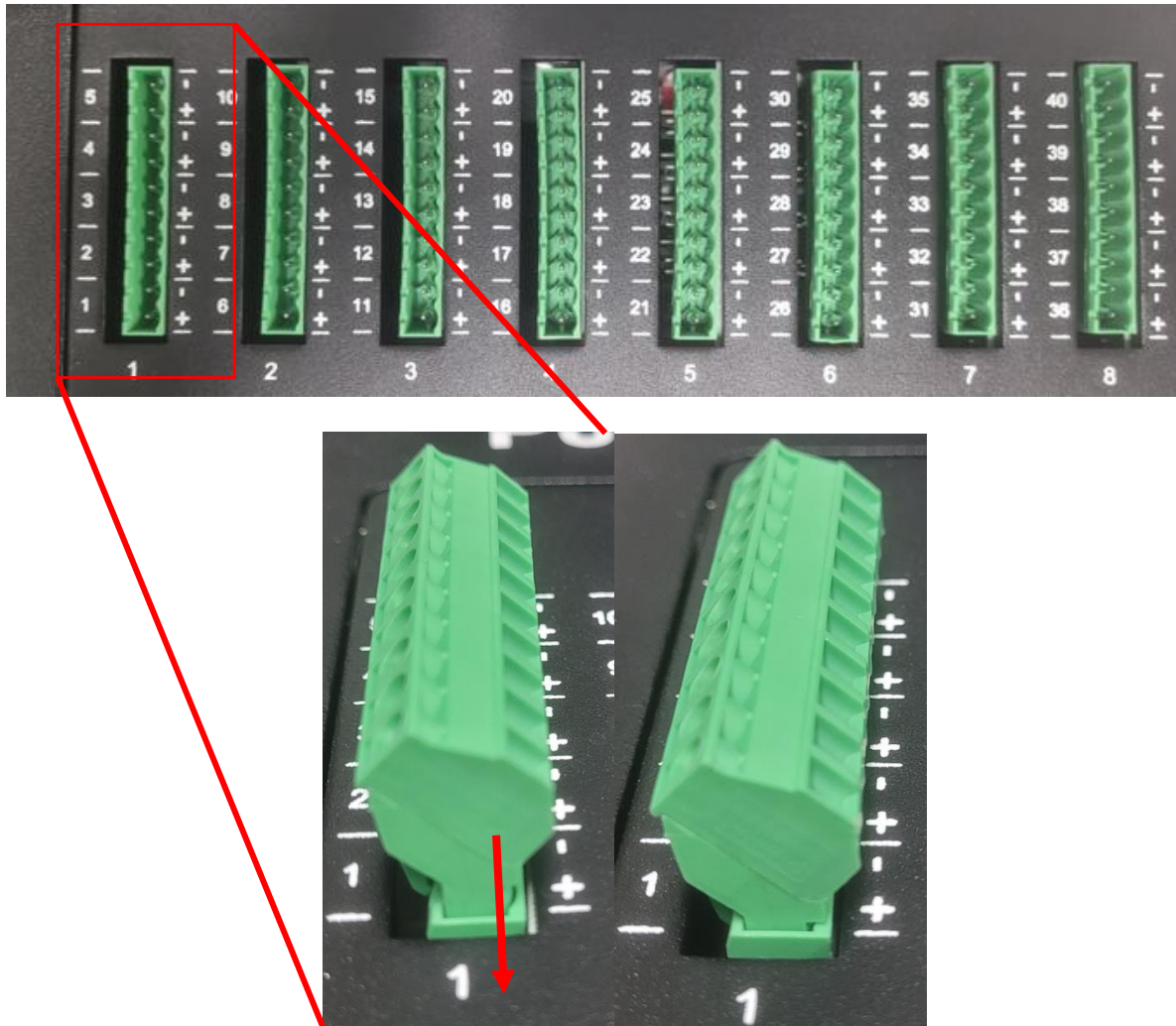
Install SDSReporter2 using the USB drive that shipped with your SDS. The install file will be called "setup.exe."

Step 2: Connect and power up your SDS.

Connect the SDS to your network with a USB cable (provided), an Ethernet cable, or directly to your computer using a crossover cable.. Turn the SDS on using the power switch to the left of the touchscreen.



Step 3: Insert terminal strips into SDS as needed and connect T/C wires to terminal strips.





Step 4: Create a Survey Template on SDSReporter2.

Run SDSReporter.exe.


Before creating a survey, go to the Help menu and check for updates. Once any updates have been downloaded and installed, proceed with the instructions below.

Go to Setup > Survey Templates.

Click  to add a new survey template. Click to highlight <Template Name>.




NOTE: If the template name in the list is bold and italicized, that means it contains unsaved changes. At any time, click  to save the highlighted template.

- In the **Template** Panel, Enter a new name for the Template. If desired, enter any notes for this template.
- In the **Equipment** Panel, enter Furnace Details:
 - Asset Number
 - Make/Model
 - Type
 - Use
 - Operating Temperature Range
 - Dimensions
 - Class
 - Instrumentation Type

NOTE: Click  to view reference charts for Class and Instrumentation Type.

Next, enter Temperature Controller information (Manufacturer and Model #).





Setpoints will be entered in the next panel.


- In the **Survey** Panel, enter desired Setpoints for this template.
 - Click  to add a new setpoint. Enter the desired Setpoint, Tolerance, Stabilization Time, and Survey Duration. NOTE: Click  to view reference chart for Tolerance.
 - Repeat as needed to create all desired setpoints. Click  to delete a highlighted setpoint.

Enter Survey Details:



- Company Name
- Performed By
- Specifications
- Simulated Load Weight




If desired, create User-Defined Fields:


- Click  to add a new field. Enter the desired Name, Value, and Report Tag.
- Repeat as needed to create all desired fields. Use  and  to re-order fields.
- Click  to delete a highlighted field.


- In the **TCs** Panel, click to toggle desired TCs and assign TC types. Click the controller icon  by a TC to note it as a Control TC. A note may be added to this TC as well.
- In the Certs Panel, click the checkbox if you wish to use Wire Certs in this template.

Click  to create a new Cert. For each cert:

- Click  in the TCS column to select and deselect the desired T/Cs.
- Click  in the CERT# column to edit information for this Wire Cert. Here you can enter info for: Certification #, Wire Serial #, TC Type, Cert Date, Due Date, Calibrated By, TC Gauge, and Degree Type.

You can also enter any necessary corrections. Click  to generate a new correction. Enter in the Temperature and Correction information. Click  to delete the highlighted correction, and click  to re-order the existing correction.

NOTE: Later, any previously entered certs can be loaded by clicking .

Review all changes made above. Click  to save the current template. Close the Survey Template window.

You are now ready to upload your survey template to the SDS and perform a survey.

Step 5: Upload Template and Certs to SDS.

Go to SDS > Survey Templates.

SDSReporter2 will scan to find your SDS on the network or via the USB cable. Make sure your computer is on the same network as the SDS. If your SDS cannot be found, contact SSI for assistance.

Click “Upload Survey Templates to SDS.” Click to highlight the desired template. You can again review the information here before uploading. When ready, Click “Use Selected.” Your Survey will upload to the SDS.

Step 6: Start a Survey

On your SDS, tap “Survey” to begin the process.

Page 1: Select Template

Tap “Select Survey Template” to bring up a list of templates on the device. Tap to highlight the survey template you created above, then tap “OK” to continue.

Once the template is selected, you can tap “View” to see the details of that template, or “Next Page” to move onto Page 2.

Page 2: Select Setpoints

If you need to add or edit any setpoints to the survey template, you can do it here. If not, tap “Next Page” to move on to Page 3.

Tap “Add” to add setpoints. Assign figures for Setpoint, Tolerance, Stabilization Minutes, and Survey Minutes by clicking the appropriate button and entering the desired numbers. When finished entering values, tap “OK” and the Setpoint will appear in a list. Repeat as desired.

Tap “Edit” to edit existing setpoints. Assign figures for Setpoint, Tolerance, Stabilization Minutes, and Survey Minutes by clicking the appropriate button and entering the desired numbers. When finished entering values, tap “OK” and the Setpoint will appear in a list. Repeat as desired.

To delete a setpoint, tap to highlight, then tap “Delete.”

To rearrange your setpoints, tap to highlight, then tap “Up” or “Down” to re-order.

Tap “Next Page” to move onto Page 3.

Page 3: Select TCs

This page will display TCs assigned to this template. If no changes are necessary, tap “Next Page” to move on to Page 4.

Tap a TC number to select TC type.

Tap below the TC number to toggle the TC on or off for this survey.

Click “Next Page” to move onto Page 4.

NOTE: You cannot denote a TC as a Control TC from the SDS, but this can be assigned retroactively in SDSReporter2.

Page 4: Select Wire Cert

This page will display Wire Certs associated with this template. If no changes are necessary, tap "Next Page" to move onto Page 5.

Tap "Add" to add a Wire Cert.

From here you can select an existing Wire Cert or Edit to create a new one. To edit, tap a field to highlight, then tap "Edit" to enter in the desired information. Tap "OK" when finished editing.

Tap "TCs" to select or deselect TCs for this Cert. Tap to highlight desired TCs then tap "OK."

Tap "View Wire Cert" to view the information for this Cert.

To delete a cert, tap to highlight, then tap "Delete."

Click "Next Page" to move onto Page 5.

Page 5: Start Survey

Tap "Review Template Info" if desired. Otherwise, tap "Start Survey" to begin.

While the survey is running, you have several options:

"Review Template" will display the template for reference purposes.

"End Stabilizing" will skip the Stabilization step for the current setpoint and begin the survey for that temperature.

"End Survey" will skip the survey for the current setpoint and begin the ramp and stabilization for the next setpoint (or end the survey if this is the last step).

"End Overall" will stop the entire survey and bring you back to the Live Data Screen.

Step 7: Download Survey results to SDSReporter2

On SDSReporter2, go to SDS > Download Surveys.

SDSReporter2 will scan to find your SDS on the network or via the USB cable. Make sure your computer is on the same network as the SDS. If your SDS cannot be found, contact SSI for assistance.


Click "Start Download" to download Surveys from the SDS to your computer. Once download is finished, close the "Download Surveys" window.

On the “Report Properties” tab – “Report” panel, click the  button in the “Survey” window.

Click to highlight the survey you just downloaded. Then click “Select Survey.” The “Survey” and “Survey Template” windows will auto-populate with information from the survey.

Step 8: View Survey results and print a Report.

You can now view the survey results by clicking on the “Chart” or “Data” tabs. More detailed information on this functionality can be found later in the manual.

Click to return to the “Report Properties” tab. Click  to select a Report Template by browsing your computer for saved files. There are several pre-loaded Templates created by SSi, or you can create your own template as a Word file. (To do so, see Appendix A for information on SDS <tags>. Custom template files can be saved anywhere, but the default location is the \SDS2\ReportTemplates folder.)

You can then add/edit Report Heading/Title, Survey Results, and Notes.

To create a report based on the selections made above, go to File > Create Report. You can choose a report based on all data, or only the setpoints defined in the survey template.

SDSReporter2 will then generate the report in a Word format. You can save the file in other formats and in your desired location using the Word “File” menu.

Live Data Screen

The SDS opens with the Live Data screen. Here you can view the current readings for all connected inputs, as well as the current system time. The data on this screen is view-only.

From this screen, you can go to the Main Menu, view a Trend Chart, or start a Survey by using the navigation buttons on the bottom of the screen.

Trend Chart

The Trend Chart screen shows a chart of recent input data.

Use the “Data” button to view the information in numerical format.

Use the “Zoom” button to zoom in on a section of the chart. After tapping the button, use your stylus to drag a rectangle around the desired area of the chart. Tap “Unzoom” to return to the default view.

Scroll forward and backward on the trend chart using the “<” and “>” buttons.

Tap “Close” to return to the Live Data Screen.

Start Survey

The Start Survey option guides you through 5 pages of options to manage your survey.

Page 1: Select Template

Click “Select Survey Template” to bring up a list of templates on the device. Click to highlight, then tap “OK” to select. (If there are no templates on the device, they must be created in SDSReporter2 and uploaded to the SDS.)

Once the template is selected, you can click “View” to see the details of that template.

Click “Next Page” to move onto Page 2.

Page 2: Select Setpoints

Click “Add” to add setpoints to your survey template (these will likely already be included). Assign figures for Setpoint, Tolerance, Stabilization Minutes, and Survey Minutes by clicking the appropriate button and entering the desired numbers. When finished entering values, tap “OK” and the Setpoint will appear in a list. Repeat as desired.

To delete a setpoint, tap to highlight, then tap “Delete.”

To rearrange your setpoints, tap to highlight, then tap “Up” or “Down” to re-order.

Click “Next Page” to move onto Page 3.

Page 3: Select TCs

This page will display TCs assigned to this template. This can be set up in SDS Reporter as well as on the SDS.

Tap a TC number to select TC type.

Tap below the TC number to toggle the TC on or off for this survey.

Click “Next Page” to move onto Page 4.

NOTE: You cannot denote a TC as a Control TC from the SDS, but this can be assigned retroactively in SDSReporter2.

Page 4: Select Wire Cert

This page will display Wire Certs associated with this template. These can be added in SDS Reporter as well as on the SDS.

Tap “Add” to add a Wire Cert.

From here you can select an existing Wire Cert or Edit to create a new one. To edit, tap a field to highlight, then tap “Edit” to enter in the desired information. Tap “OK” when finished editing.

Tap “TCs” to select or deselect TCs for this Cert. Tap to highlight desired TCs then tap “OK.”

Tap “View Wire Cert” to view the information for this Cert.

To delete a cert, tap to highlight, then tap “Delete.”

Click “Next Page” to move onto Page 5.

Page 5: Start Survey

Tap “Review Template Info” if desired. Otherwise, tap “Start Survey” to begin.

Survey Running

While the survey is running, you have several options:

“Review Template” will display the template for reference purposes.

“End Stabilizing” will skip the Stabilization step for the current setpoint and begin the survey for that temperature.

“End Survey” will skip the survey for the current setpoint and begin the ramp up and stabilization for the next setpoint (or end the survey if this is the last step).

“End Overall” will stop the entire survey.

Main Menu

From the Main Menu, you can access the Surveys Menu, the Instrument Info Menu, or the Advanced Menu (if logged in with the correct privileges). You can also Log In to access advanced options, or return to the Live Data screen using the buttons on the bottom of the screen.

Survey Menu

From the Survey Menu, you can start a survey, view survey history, manage certs, and manage survey templates. You can also return to the Main Menu using the button at the bottom of the screen.

Start Survey

This functionality is identical to the Start Survey section covered above.

Survey History

This functionality allows you to view information from previous surveys.

To view survey information, tap to highlight a survey from the list, then tap “Show.”

From the ensuing screen, you can view Template Details or view a Chart of the survey results.

Tap “Close” to return to the Survey History screen.

To filter the list by dates, tap “Dates” and set the desired begin and end dates.

To return to the Survey Menu, tap “Close.”

Certs

This functionality allows you to view Certs for the SDS and for the T/C wires in use.

Tap “Instrument Cert” to view the SDS cert information. This is view-only and cannot be edited.

Tap “Wire Certs” to view any wire cert information.

You can also toggle between using the instrument cert and using manual instrument offsets by tapping the appropriate button. The SDS comes loaded with offsets from its factory calibration, and these figures do not need to be manually entered.

When in Manual Offset mode, you will have the option to enter Manual Offsets. To enter an offset for an input, tap the desired input and enter the offset from the numeric keypad. To save changes, tap “Offsets OK” and to return to the menu without saving changes, tap “Cancel.” Note that these offsets will automatically reflect in survey reports.

Tap “Survey Menu” to return to the Survey Menu.

Survey Templates

This option allows you to view detailed information on any templates loaded to the SDS. This information is read-only, and changes to the template must be made in SDSReporter2.

Instrument Menu

Instrument Info

Tapping “Instrument Info” will display information on the SDS. This information is read-only and cannot be edited.

Current Input Types

Tapping “Current Input Types” will display the current T/C types in use. This information is read-only and cannot be edited from this screen.

Set Input Types

To edit input types, tap on the desired input number, then tap the correct input type.

Advanced Menu (requires login)

Calibrations

Voltage Calibration and Cold Junction Trim have similar functionality.

To perform a Voltage Calibration, first select the desired voltage from the drop-down list. Tapping “?” will display the correct voltage to choose for each T/C type.

To select specific inputs for calibration, tap the “Use selected” box, then tap “Select Inputs.” On the ensuing screen, tap to highlight an input, then tap “Select Highlighted” to mark it for calibration. Repeat this process for all inputs you wish to calibrate. Tap “Return” to go back to the Voltage Calibration screen.

Alternately, tap the “All” box from the Calibration screen to calibrate all inputs.

Tap to select a Zero or Span Calibration (always perform a zero before performing a span calibration). Use copper wire for zero and span calibration.

Tap “Calibrate” when ready to proceed. The SDS will show its progress and when the Calibration is completed.

To perform a Cold Junction Trim, first select the desired T/C type from the drop-down list. Use the T/C that is being calibrated for and set the temperature at the nominal value of the operational range.

Note that a Cold Junction trim can only calibrate T/C types that the unit is set up for, otherwise the inputs will be grayed out and unavailable.

Then tap “Select Inputs.” On the ensuing screen, tap to highlight an input, then tap “Select Highlighted” to mark it for trim. Repeat this process for all inputs you wish to trim. Tap “Return” to go back to the Cold Junction Trim screen.

Tap to select a target value.

Tap “Calibrate” when ready to proceed. The SDS will show its progress and when the Calibration is completed.

Set Degree Type

Tap the button to toggle between Fahrenheit and Celsius.

Datalog Deletion

Tap the Start and End Dates to set the range to delete Datalogs. When ready, tap “Delete Log Data” or “Delete Survey and Log Data” as appropriate. Note that this cannot be undone.

Shutdown Software

This will shut down the SDS software and return you to the system screen.


SDS Reporter Software

The SDSReporter2 software is used in conjunction with the SDS. It contains some of the same features.

Report Properties Tab

Report Panel

Survey

Click the  button to select a survey.

SDS Tab

If selecting from SDS, use the dropdowns to select the desired SDS, Template, Survey Types, and date range. This will generate a list. Click to highlight the desired survey. You can also adjust the interval from the dropdown menu as needed. When ready, click "Select Survey."

You can also create a manual survey if desired. Click "Create Manual Survey" and select the SDS, Template, and date range desired. Click "OK" to continue or "Cancel" to leave without creating.

Once the survey has been selected, the results of the survey will be visible in the Chart Tab and Data Tab (see below).

Import Data Tab

Use this feature to import trend data from another program or other equipment to generate a report in SDS Reporter 2. Data must be in Excel format.

1. Select a start date and an interval.
2. Copy only the numeric data from excel (see image for required format).
3. Once copied, click the "paste survey data" button to paste into the import data tab.
4. Click the "Default" button under Select Template to select a survey template. (NOTE: The "default" option will not work for this feature.)

5. After a survey template has been selected, click the “Select Survey” button. The imported data can now be viewed in the chart and data sections of SDS Reporter 2.
6. Under the chart tab, set the survey start and end time as follows:
 - a. move the vertical magenta line to the desired survey start time then right click and select “Survey begins at cursor”.
 - b. Move the vertical magenta line to the desired survey end time, right click and select “survey ends at cursor”.
 - c. Move the vertical magenta line to the desired approach survey time then right click and select “Approach segment begins at cursor”.

This data can also be manually entered in the setpoints box in the survey section of report properties.


1	Time	CH1	CH2	CH3	CH4	CH5
2	5:50:00 PM	345	261	313	345	315
3	5:51:00 PM	345	267	316	344	319
4	5:52:00 PM	344	273	319	344	322
5	5:53:00 PM	344	278	322	344	324
6	5:54:00 PM	344	283	325	344	327
7	5:55:00 PM	343	288	327	344	329
8	5:56:00 PM	343	292	328	344	331
9	5:57:00 PM	342	296	330	344	332
10	5:58:00 PM	343	299	332	344	334
11	5:59:00 PM	343	302	333	344	335
12	6:00:00 PM	343	306	334	344	336
13	6:01:00 PM	342	308	335	344	337
14	6:02:00 PM	342	311	336	344	337
15	6:03:00 PM	342	314	337	344	338
16	6:04:00 PM	342	316	338	344	338
17	6:05:00 PM	342	318	338	344	339
18	6:06:00 PM	342	320	339	344	339
19	6:07:00 PM	341	322	339	343	339
20	6:08:00 PM	341	323	339	344	340
21	6:09:00 PM	341	325	340	344	340
22	6:10:00 PM	341	326	340	344	340
23	6:11:00 PM	341	328	340	344	341
24	6:12:00 PM	341	329	341	344	341
25	6:13:00 PM	341	330	341	343	341
26	6:14:00 PM	341	331	341	344	341
27	6:15:00 PM	342	332	341	344	341
28	6:16:00 PM	342	333	341	344	341
29	6:17:00 PM	341	334	341	344	341
30	6:18:00 PM	341	335	342	344	341
31	6:19:00 PM	341.7	335.8	342.8	344.8	341.8
32	6:20:00 PM	341.7	336.8	342.8	344.8	342.8
33	6:21:00 PM	341.7	337.8	342.8	344.8	342.8

Excel format for importing data

7. To generate the report, select “create report” from the File menu, and click “all”.

Survey Template


When a survey is loaded, the Survey Template should prepopulate based on that Survey information. To change the template information, follow the instructions below.

Click the  button to select a survey template. Use the “Filter” option to help search for desired templates. Click to highlight a template from the list. You can then enter/edit the following information on the ensuing tabs:

Template Tab:

Enter Template Name and any notes.

Equipment Tab:

The first window allows you to enter Furnace Details (Asset Number, Make/Model, Type, Use, Operating Range, Dimensions, Class, and Instrumentation Type). For easy reference to relevant standards information, click .

The second window allows you to enter Temperature Controller information (Manufacturer and Model #).

The bottom window will display Setpoint information (Setpoint and Tolerance) and allow you to enter information for P [Gain], I [Rate], D [Reset], Cycle Time, Dead Band, and Output Limit for each SP.

Edit Load Map

This option allows you to customize an image to reflect the information for this survey.



Use the dropdown to select the appropriate shape for the furnace.

Use the "Size" button to adjust the displayed size of the furnace.



Click and drag the numbers as desired to reflect T/C placement. You can also add custom labels by clicking "Add Label," entering the label information, and clicking and dragging in the same way as the T/C numbers. To delete a label, right click on it and select "Delete."

When finished, click "Save."

Survey Tab

The first window allows you to enter and delete setpoints for this survey (Setpoint, Tolerance, Stabilization time, and Survey duration). Click  to create a new setpoint and enter the information. Click to highlight a setpoint and click  to delete.

The second window allows you to enter survey detail information (Company name, Performed By, Specifications, Simulated Load Weight).

The bottom window allows you to generate custom user-defined fields for reference to your specific situation. Click  to create a new field, enter the Name, Value and Report Tag. Use the up and down arrows to reorder the fields as needed, and click  to delete the highlighted field.



TCs Tab




Click to toggle T/Cs on and off. Click the controller icon to denote a control T/C. Use the dropdowns to select T/C type. Toggle all T/Cs on and off using the Toggle All switch.


Certs Tab

Click to select if wire certs will be used in this template.

Click  to create a new Cert. For each cert:

- Click  in the TCS column to select and deselect the desired T/Cs.
- Click  in the CERT# column to edit information for this Wire Cert. Here you can enter info for: Certification #, Wire Serial #, TC Type, Cert Date, Due Date, Calibrated By, TC Gauge, and Degree Type.


You can also enter any necessary corrections. Click  to generate a new correction. Enter in the Temperature and Correction information. Click  to delete the highlighted correction, and click  to re-order the existing correction.

- Click  to select a wire cert (made using the Setup>Wire Certs functionality).

When finished with the Survey Templates window there are several options. You can Ctrl-click or Shift-click to highlight desired templates in the list, then click “use selected” to select them all. Through the File Menu, you can also save the selected surveys as a Package, or load a previously saved package.

Through the File Menu, you can also import old SDS surveys from a file location on your computer.

Report Template

Click  to select a Report Template by browsing your computer for saved files. There are several pre-loaded Templates created by SSi, or you can create your own template as a Word file. (To do so, see Appendix A for information on SDS <tags>. Custom template files can be saved anywhere, but the default location is the \SDS2\ReportTemplates folder.)

You can then add/edit Report Heading/Title, Survey Results, and Notes.

To create a report based on the selections made above, go to File > Create Report. You can choose a report based on all data, or only the setpoints defined in the survey template.

Equipment Panel

The functionality for the Equipment Panel is identical to that of the Equipment Tab described earlier.

Furnace Details

The first window allows you to view and edit Furnace Details (Asset Number, Make/Model, Type, Use, Operating Range, Dimensions, Class, and Instrumentation Type) associated with the currently loaded Survey Template. For easy reference to relevant standards information, click



Edit Load Map

This option allows you to customize an image to reflect the information for this survey.

Use the dropdown to select the appropriate shape for the furnace.

Use the "Size" button to adjust the displayed size of the furnace.

Click and drag the numbers as desired to reflect T/C placement. You can also add custom labels by clicking "Add Label," entering the label information, and clicking and dragging in the same way as the T/C numbers. To delete a label, right click on it and select "Delete."

When finished, click "Save."

Temperature Controller

The second window allows you to view and edit Temperature Controller information (Manufacturer and Model #) associate with the currently loaded survey template.



Setpoints

The bottom window will display Setpoint information (Setpoint and Tolerance) and allow you to enter information for P [Gain], I [Rate], D [Reset], Cycle Time, Dead Band, and Output Limit for each SP.

Survey Panel

Setpoints


The first window allows you to view, edit, add, and delete setpoints for the currently loaded survey template.


Click  to create a new setpoint and enter the information. Click to highlight a setpoint and click  to delete.

Survey Parameters

This window allows you to view/edit Survey Parameters (Overtemp setpoint, Simulated Load Weight, Microns, and to select Heating or Cooling from the dropdown menu) for the currently loaded survey template.

User Defined Fields

This window allows you to view, edit, add, and delete custom user-defined fields for reference to your specific situation. Click  to create a new field, enter the Name, Value and Report Tag.

Use the up and down arrows to reorder the fields as needed, and click  to delete the highlighted field.

Survey Details

This window allows you to view/edit survey detail information (Company name, Performed By, Specifications, Simulated Load Weight, Next Survey Due).

Survey Instrument

This window allows you to enter and view information on the survey instrument (Make/Model, Serial Number, Calibration Date, and Calibrate By). If "From Cert" is selected, this information will be taken from any certs associated with the currently loaded template. If this option is not selected, information can be entered manually.


TCs Panel



Click to toggle T/Cs on and off. Click the controller icon to set a T/C as a control. Use the dropdowns to select T/C type. Toggle all T/Cs on and off using the Toggle All switch.




Certs Panel


Wire Certs Selection

Click "Use Wire Certs" to select if wire certs will be used in this template.

Click  to enter new Cert information. For each cert:


- Click  in the TCS column to select and deselect the desired T/Cs.
- Click  in the CERT# column to edit information for this Wire Cert. Here you can enter info for: Certification #, Wire Serial #, TC Type, Cert Date, Due Date, Calibrated By, TC Gauge, and Degree Type.




You can also enter any necessary corrections. Click  to generate a new correction. Enter in the Temperature and Correction information. Click  to delete the highlighted correction, and click  to re-order the existing correction.

- Click  to select pre-existing wire cert information.




Instrument Cert Selection

Click to select if instrument certs will be used in this template.

Click  to Edit Cert information (this includes entering new info).

Enter the Instrument Serial #, then click  to edit or enter Board Cert information. On the Board Certs window, click  to add a new Board Cert. Enter the relevant Metadata and Corrections, then click  to save.

Click  to delete the highlighted Cert, and  to duplicate.

Click  to load previously saved instrument cert information. Click to highlight an instrument from the list (sortable by Serial # or Due Date). This will display the Board Certs for this Instrument. From here you can click  to edit Cert info (this may require a passcode) or  to view Metadata and Corrections without editing.

Click the “Use Selected” button to use a highlighted Instrument.

Manual Instrument Offsets Selection

(this option is only available if Instrument Certs are not selected)

Click “Set Manual Instrument Offsets” to select if Manual Instrument Offsets will be used in this template.


Click  to manually enter corrections for TCs as necessary. Click “OK” to save or “Cancel” to discard entered info.

Chart Tab

From the Chart Tab you can view graphical chart data. Click to select or deselect TCs. Use the appropriate buttons to zoom in and out and pan across the graph.

Data Tab

Calculations

This screen displays:

- raw data,
- applicable corrections for the raw data,
- pre-rounded data, and
- the data as reported and recorded,

for the selected survey.

Report Properties Chart Data

CALCULATIONS (SETPOINT=350)					
	CH1	CH2	CH3	CH4	CH5
Raw Values	341.0	336.0	342.0	344.0	342.0
Instrument Corrections	-0.05	0.10	0.10	0.10	0.10
Wire Corrections	0.75	0.75	0.75	0.75	0.75
Pre-Rounded Values	341.70	336.85	342.85	344.85	342.85
Reported Values	341.7	336.8	342.8	344.8	342.8

Reported Values

This panel will display applied correction factors in the current survey.

File Menu


From the File Menu, you can:




- Start a new report
- Open an existing report
- Save the current report
- Save the current report as a new filename
- Create a report from the currently selected survey and template
- Import an old sdsreport file type
- Export current report data to .csv format

Setup Menu




From the Setup Menu, you can manage Instrument Certs, Wire Certs, and Survey Templates.

Instrument Certs


Click  to Edit Cert information (this includes entering new info).



Enter the Instrument Serial #, then click  to edit or enter Board Cert information. On the Board Certs window, click  to add a new Board Cert. Enter the relevant Metadata and Corrections, then click  to save.




Click  to delete the highlighted Cert, and  to duplicate.


Click  to load previously saved instrument cert information. Click to highlight an instrument from the list (sortable by Serial # or Due Date). This will display the Board Certs for this Instrument. From here you can click  to edit Cert info (this may require a passcode) or  to view Metadata and Corrections without editing. Click the “Use Selected” button to use a highlighted Instrument.

Wire Certs


Click  to enter new Cert information. For each cert:

- Click  in the TCS column to select and deselect the desired T/Cs.
- Click  in the CERT# column to edit information for this Wire Cert. Here you can enter info for: Certification #, Wire Serial #, TC Type, Cert Date, Due Date, Calibrated By, TC Gauge, and Degree Type.

You can also enter any necessary corrections. Click  to generate a new correction. Enter in the Temperature and Correction information. Click  to delete the highlighted correction, and click  to re-order the existing correction.

- Click  to select pre-existing wire cert information.


Survey Templates

Click the  button to select a survey template. Use the “Filter” option to help search for desired templates. Click to highlight a template from the list. You can then enter/edit the following information on the ensuing tabs:

Template Tab:

Enter Template Name and any notes.

Equipment Tab:

The first window allows you to enter Furnace Details (Asset Number, Make/Model, Type, Use, Operating Range, Dimensions, Class, and Instrumentation Type). For easy reference to relevant standards information, click .

The second window allows you to enter Temperature Controller information (Manufacturer and Model #).

The bottom window will display Setpoint information (Setpoint and Tolerance) and allow you to enter information for P [Gain], I [Rate], D [Reset], Cycle Time, Dead Band, and Output Limit for each SP.

Edit Load Map

This option allows you to customize an image to reflect the information for this survey.



Use the dropdown to select the appropriate shape for the furnace.

Use the "Size" button to adjust the displayed size of the furnace.



Click and drag the numbers as desired to reflect T/C placement. You can also add custom labels by clicking "Add Label," entering the label information, and clicking and dragging in the same way as the T/C numbers. To delete a label, right click on it and select "Delete."

When finished, click "Save."

Survey Tab

The first window allows you to enter and delete setpoints for this survey (Setpoint, Tolerance, Stabilization time, and Survey duration). Click  to create a new setpoint and enter the information. Click to highlight a setpoint and click  to delete.

The second window allows you to enter survey detail information (Company name, Performed By, Specifications, Simulated Load Weight).

The bottom window allows you to generate custom user-defined fields for reference to your specific situation. Click  to create a new field, enter the Name, Value and Report Tag. Use the up and down arrows to reorder the fields as needed, and click  to delete the highlighted field.



TCs Tab




Click to toggle T/Cs on and off. Click the controller icon to denote a control T/C. Use the dropdowns to select T/C type. Toggle all T/Cs on and off using the Toggle All switch.


Certs Tab

Click to select if wire certs will be used in this template.

Click  to create a new Cert. For each cert:

- Click  in the TCS column to select and deselect the desired T/Cs.
- Click  in the CERT# column to edit information for this Wire Cert. Here you can enter info for: Certification #, Wire Serial #, TC Type, Cert Date, Due Date, Calibrated By, TC Gauge, and Degree Type.

You can also enter any necessary corrections. Click  to generate a new correction. Enter in the Temperature and Correction information. Click  to delete the highlighted correction, and click  to re-order the existing correction.

- Click  to select a wire cert (made using the Setup>Wire Certs functionality).

When finished with the Survey Templates window there are several options. You can Ctrl-click or Shift-click to highlight desired templates in the list, then click “use selected” to select them all. Through the File Menu, you can also save the selected surveys as a Package, or load a previously saved package.

Through the File Menu, you can also import old SDS surveys from a file location on your computer.

SDS Menu

From the SDS Menu, you can:

- Download Surveys from an SDS
- Perform Advanced downloads from an SDS
- Manage Instrument certs from an SDS
- Manage Wire certs from an SDS
- View a Live chart from an SDS

Help Menu

From the Help Menu you can view information about the software and install any needed updates.

Appendix A: SDS Data Tags

Tag	Description	Usage
SDS:OS	Survey overall start	<SDS:OS>
SDS:OE	Survey overall end	<SDS:OE>
SDS:AE	Survey approach dates	<SDS:AE>
SDS:AT	Survey approach times	<SDS:AT>
SDS:STST	Survey stable start times	<SDS:STST>
SDS:SU	Stabilization Time	<SDS:SU>
SDS:FILE	The filename the report is saved as	<SDS:FILE>
SDS:PD	The current date when the report is printed	<SDS:PD>
SDS:PT	The current time when the report is printed	<SDS:PT>
SDS:FID	The furnace ID	<SDS:FID>
SDS:FM	Furnace make/model	<SDS:FM>
SDS:FT	Furnace type	<SDS:FT>
SDS:FU	Furnace use	<SDS:FU>
SDS:FD	Furnace dimensions	<SDS:FD>
SDS:FC	Furnace Class	<SDS:FC>
SDS:FOR	Furnace operating range	<SDS:FOR>
SDS:SD	Survey date	<SDS:SD>
SDS:ST	Survey time	<SDS:ST>
SDS:SDR	Survey date range	<SDS:SDR>
SDS:DUR	Duration of the survey	<SDS:DUR>
SDS:OP	Operator. Survey performed by	<SDS:OP>
SDS:APP	Survey approved by	<SDS:APP>
SDS:TITLE	The heading, or title, of the report	<SDS:TITLE>
SDS:NOTE	Notes for the survey	<SDS:NOTE>
SDS:TOL	Survey tolerance / uniformity required	<SDS:TOL>
SDS:OTS	Overtemp setpoint	<SDS:OTS>

Tag	Description	Usage
SDS:SP	Survey setpoint	<SDS:SP>
SDS:TCN	Number of thermocouples	<SDS:TCN>
SDS:TCT	Thermocouple type	<SDS:TCT>
SDS:TCS	Thermocouple spool number	<SDS:TCS>
SDS:TCC	Thermocouple calibrated by	<SDS:TCC>
SDS:TCCD	Thermocouple calibration date	<SDS:TCCD>
SDS:TCCF	Thermocouple spool correction factor	<SDS:TCCF>
SDS:SDN	Next survey due date	<SDS:SDN>
SDS:SDSM	Survey box make/model	<SDS:SDSM>
SDS:SDSS	Survey box serial number	<SDS:SDSS>
SDS:SDSC	Survey box calibrated by	<SDS:SDSC>
SDS:SDSCD	Survey box calibration date	<SDS:SDSCD>
SDS:SDSDD	Instrument Certification Due Date	<SDS:SDSDD>
SDS:SDSCF	Survey box correction factor	<SDS:SDSCF>
SDS:SPEC	Specifications the survey meets	<SDS:SPEC>
SDS:INT	Sample interval	<SDS:INT>
SDS:T	Temperature character - F or C	<SDS:T>
SDS:SIM	Simulate load, in pounds	<SDS:SIM>
SDS:OVS	Overshoot (Deprecated)	<SDS:OVS>
SDS:MIC	Microns	<SDS:MIC>
SDS:RES	Survey result	<SDS:RES>
SDS:GRAPH600x400	Inserts a 600X400 image of the graph	<SDS:GRAPH600x400>
SDS:GRAPH600x400overview	Inserts a 600X400 overview chart image	< SDS:GRAPH600x400overview>

Tag	Description	Usage
SDS:COM	Company name	<SDS:COM>
SDS:UDUR	User defined survey duration	<SDS:UDUR>
SDS:UTCN	User defined number of thermocouples	<SDS:UTCN>
SDS:PCT	PID cycle time	<SDS:PCT>
SDS:PDB	PID dead band	<SDS:PDB>
SDS:POL	PID output limit	<SDS:POL>
SDS:PPB	PID PB (gain)	<SDS:PPB>
SDS:PR	PID rate	<SDS:PR>
SDS:PRE	PID reset	<SDS:PRE>
SDS:CMF	Temperature controller manufacturer	<SDS:CMF>
SDS:CMA	Temperature controller make/model	<SDS:CMA>
SDS:IT	Controller instrument type	<SDS:IT>
SDS:TCG	Thermocouple gauge	<SDS:TCG>
SDS:OV	Overshoot - yes or no	<SDS:OV>
SDS:OD	Outputs TC and temp if overshoot occurred	<SDS:OD>
SDS:OVT	Time the overshoot occurred	<SDS:OVT>
SDS:CTD	Inserts a note regarding the control thermocouple. Inserts nothing if no control thermocouple was chosen	<SDS:CTD>
SDS:CTN	Control thermocouple. Inserts "None" if none is defined	<SDS:CTN>
°#	°degree type	°#
SDS:ED	Survey end date	<SDS:ED>
SDS:ET	Survey end time	<SDS:ET>
SDS:TCM	Thermocouple map (image)	<SDS:TCM>

Tag	Description	Usage
SDS:ApproachTables	Inserts tables with approach data	<SDS:ApproachTables>
SDS:SurveyTables	Inserts tables with survey data	<SDS:SurveyTables>
SDS:UD1	User defined field 1	<SDS:UD1>
SDS:UD2	User defined field 2	<SDS:UD2>
SDS:UD3	User defined field 3	<SDS:UD3>
SDS:UD4	User defined field 4	<SDS:UD4>
SDS:UD5	User defined field 5	<SDS:UD5>
SDS:UD6	User defined field 6	<SDS:UD6>
SDS:UD7	User defined field 7	<SDS:UD7>
SDS:UD8	User defined field 8	<SDS:UD8>
SDS:UD9	User defined field 9	<SDS:UD9>
SDS:UD10	User defined field 10	<SDS:UD10>
SDS:UD11	User defined field 11	<SDS:UD11>
SDS:UD12	User defined field 12	<SDS:UD12>
SDS:UD13	User defined field 13	<SDS:UD13>
SDS:UD14	User defined field 14	<SDS:UD14>
SDS:UD15	User defined field 15	<SDS:UD15>
SDS:UD16	User defined field 16	<SDS:UD16>
SDS:UD17	User defined field 17	<SDS:UD17>
SDS:UD18	User defined field 18	<SDS:UD18>
SDS:UD19	User defined field 19	<SDS:UD19>
SDS:UD20	User defined field 20	<SDS:UD20>

*** Survey scope data tags – {*n*} where *n* is the survey number – are used to display survey information for the multiple survey report feature. See the section *Print Multiple Surveys* for more information on how to use these data tags ***

Sample Output

Tag	Sample Output
SDS:FILE	SDSReport1.sdsreport
SDS:PD	2/16/06

Tag	Sample Output
SDS:PT	11:30:00 AM
SDS:FID	Batch 1
SDS:FM	Furnace Mfg.
SDS:FT	Batch Gas Draw
SDS:FU	Temper
SDS:FD	24 x 15 x 12
SDS:FC	A
SDS:FOR	650 - 1000°C
SDS:SD	2/16/06
SDS:ST	11:30:00 AM
SDS:SU	10 min
SDS:SDR	2/13 THRU 2/14
SDS:DUR	00:30:00
SDS:OP	Shaun Scott
SDS:APP	Scott Brown
SDS:TITLE	Test Survey 1
SDS:NOTE	This is a test survey
SDS:TOL	[+/-] 10
SDS:OTS	+10
SDS:SP	750
SDS:TCN	20
SDS:TCT	K
SDS:TCS	Z458
SDS:TCC	Soandso
SDS:TCCD	1/15/06
SDS:TCCF	-1
SDS:SDN	2/28/06
SDS:SDSM	SSI SDS8120
SDS:SDSS	SDS60293201
SDS:SDSC	Super Systems Inc
SDS:SDSCD	1/15/12

Tag	Sample Output
SDS:SDSDD	2/6/2020
SDS:SDSCF	-1.0
SDS:SPEC	AMS 2750-D and E
SDS:INT	10s
SDS:T	F
SDS:SIM	500
SDS:OVS	None
SDS:MIC	N/A
SDS:RES	Passed
SDS:GRAPH600x400	[An image of the graph]
SDS:COM	Company Name
SDS:UDUR	30 mins
SDS:UTCN	20
SDS:PCT	20
SDS:PDB	2
SDS:POL	2
SDS:PPB	2
SDS:PR	2
SDS:PRE	2
SDS:CMF	Super Systems
SDS:CMA	7EK
SDS:IT	B
SDS:TCG	16
SDS:OV	Yes
SDS:OD	TC6 - 1700°
SDS:OVT	5:30
SDS:CTD	TC5 is the control TC, and is not used in uniformity survey results
SDS:CTN	TC5
°#	°F
SDS:ED	2/16/06
SDS:ET	11:30:00 AM

Tag	Sample Output
SDS:TCM	[Thermocouple image]

TC Offsets

Tag	Description	Usage
#o1#	Offset for TC1	#o1#
#cf1#	Individual correction factor for TC1	#cf1#
#o1#	-1	#o1#

Min/Max/Mean/Spread/Deviation

Tag	Description	Usage
#n1#	Minimum temp for TC1 within the selected survey region. Substitute numbers for other TCs	#n1#
#x1#	Max temp for TC1	#x1#
#m1#	Mean temp for TC1	#m1#
#s1#	Spread for TC1	#s1#
#vn1#	Deviation @min temp from setpoint for TC1	#vn1#
#vx1#	Deviation @max temp from setpoint for TC1	#vx1#
#vm1#	Deviation @mean temp from setpoint for TC1	#vm1#
#mtcn#	Minimum TC number	#mtcn#
#mtan#	Minimum TC number during approach segment	#mtan#
#mtav#	Minimum TC value during approach segment	#mtav#
#mtcv#	Minimum TC value	#mtcv#
#mtcx#	The maximum temperature of the minimum TC	#mtcx#
#md#	Minimum calculated survey TC absolute deviation from setpoint	#md#
#rect#	Recovery Time – the time between the when the first TC comes into tolerance the time when the last TC comes into tolerance	#rect#
#xtcn#	Maximum TC number	#xtcn#
#xtan#	Maximum TC number during approach segment	#xtan#
#xtav#	Maximum TC value during approach segment	#xtav#

#xtcm#	Minimum temperature of the maximum TC	#xtcm#
#xtcv#	Maximum TC value	#xtcv#
#xd#	Maximum calculated survey TC absolute deviation from setpoint	#xd#
#sxd#	Maximum TC value – setpoint	#sxd#
#smd#	Minimum TC value – setpoint	#smd#
#itct#	Initial Threshold Cross Time	#itct#
#itctc#	Initial Threshold Cross TC Number	#itctc#
#ftct#	Final Threshold Cross Time	#ftct#
#ftctc#	Final Threshold Cross TC Number	#ftctc#
#mtct#	Minimum TC Time	#mtct#
#xtct#	Maximum TC Time	#xtct#
#mtav#	Minimum TC Approach Value	#mtav#
#mtan#	Minimum TC Approach Number	#mtan#
#xtav#	Maximum TC Approach Value	#xtav#
#xtan#	Maximum TC Approach Number	#xtan#

Tag	Sample Output
#n1#	183
#x1#	183
#m1#	183
#s1#	12.5
#vn1#	383
#vx1#	383
#vm1#	383
#mtcn#	2
#mtan#	2
#mtav#	150
#mtcv#	1
#mtcx#	500
#md#	201.0
#rect#	3 mins 30 secs
#xtcn#	1

#xtan#	6
#xtav#	1500
#xtcm#	500
#xtcv#	183
#xd#	383.0
#ts#	13.8
#itct#	11:04 PM
#itctc#	1
#ftct#	11:10 PM
#ftctc#	2
#mtct#	11:33 PM
#xtct#	11:20 PM
#mtav#	314.7
#mtan#	2
#xtav#	344.7
#xtan#	4

Appendix B: Setting the Time on the Data Logger

1. Go to the menu and login with the number “2”
2. Return to the menu list and select “Advanced” then “Shut down Software”
3. Select “Yes” to confirm. This will bring up the Windows CE interface.
4. Double-tap the time on the toolbar at the bottom of the screen.
5. Be sure that your time zone is set correctly, then adjust the date and time as needed.
6. Tap “Apply” to set the time, then tap “OK” to close the Date and Time window.
7. Tap the “Start” button at lower left.
8. Select “Programs” then “Advantech”
9. Scroll down and select “Registry Saver.” Tap “OK” when you see the “Success” message.
10. To restart the SDS, reboot by double-tapping the computer icon next to the date/time on the toolbar.
11. Click “Yes” to confirm.

Revision History

Rev.	Description	Date	MCO #
-	Initial Release	7/5/2023	2337
A	Added new tags to Appendix A	8/15/2023	2340
B	Added new tags to Appendix A	11/27/2023	2344
C	Added instructions to set time.	4/3/2024	2350