



CASSYS: Canadian Solar System Simulation Software
Interface User Manual

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1. Interface Layout

- User-defined cells have a white background and have a border around the cell.

Project Name					
Country					
Region					
City					
GEOGRAPHICAL DATA					
Latitude	0.00	0	0	0	North
Longitude	0.00	0	0	0	East
Elevation (m)	0				
Time Zone (hours GMT)	0.00				

Figure 1: Example of User-Defined cells

- Cells containing calculated values have a purple background and a border around the cell.

Resultant Iron Loss (kW)	0.00
Iron Loss (%)	0.00%

Figure 2: Example of Calculated cells

- Cells containing values from the database have a light blue background.

SUB-ARRAY 1			
PV MODULE MODEL	CS6D - 60M		Search
Manufacturer	Canadian Solar Inc.		
Data Source	CSSim 0.1		
Power (W)	60	Isc Current (A)	3.78
Current at Pmpp (A)	3.43	Voc Voltage (V)	21.9
Voltage at Pmpp (V)	17.5	Rshunt (Ohm)	250
Number of Cells	36	Rseries (Ohm)	0.38

Figure 3: Example of cells containing database values

- All links have no underline, are colored black, and are in bold print.

Helpful Links	Save	OUTPUT FILE LOCATION
Description Colour Coding and User Guide Online Manual Copyright Info		<input type="text"/> Browse

Figure 4: Example of Links

- On each page is a Navigation panel used to go to the previous page, the Intro sheet, or the next page respectively.



Figure 5: Navigation Panel

2. Creating a New Site Definition

Intro Page

On the Intro page click 'New' to clear out all the fields. After all the fields are cleared, you can click on one of the links on the side to start entering information about the solar site. It is recommended to start on the 'Site' page first.

The screenshot displays the CASSYS (Canadian Solar System Simulation Program for Grid-Connected PV Systems) interface. The header includes the CASSYS logo and the CanadianSolar logo. A sidebar on the left contains three sections: 'Helpful Links' (Description, Colour Coding and User Guide, Online Manual, Copyright Info), 'Worksheets and Definitions' (Site, Orientation and Shading, System Definition, Loss Characterization, Soiling, Transformers, Input File, Output File, Error Log), and 'Databases' (Module Database, Inverter Database). The main content area is titled 'WELCOME TO CASSYS' and features a central graphic of solar panels with the CASSYS logo. To the left of the graphic are four buttons: 'New', 'Load', 'Save As', and 'Save'. To the right is a 'Simulate' button. Below the buttons are input fields for 'File Name:' and 'Project Name:'. The 'New' button is highlighted with a red rectangular box.

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WELCOME TO CASSYS

Helpful Links
Description
Colour Coding and User Guide
Online Manual
Copyright Info

Worksheets and Definitions
Site
Orientation and Shading
System Definition
Loss Characterization
Soiling
Transformers
Input File
Output File
Error Log

Databases
Module Database
Inverter Database

New
Load
Save As
Save
Simulate

File Name:
Project Name:

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Figure 6: Intro Page - Creating a new site definition

Site Page

Fill out all of the fields except for albedo. The albedo can be defined as either a single yearly value or have separate values for each month. Click the 'Frequency' box for a drop-down list and select either 'Yearly' or 'Monthly' based on your needs.

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CanadianSolar

MAKE THE DIFFERENCE

SITE DEFINITION

Save

Project Name

Country

Region

City

Please specify the name of the site

Please specify the country the site is located in

Please specify the region the site is located in

Please specify the city the site is located in

GEOGRAPHICAL DATA

Latitude

Longitude

Elevation (m)

Time Zone (hours GMT)

0.00

0.00

0

0.00

0

0

0

North

0

0

0

East

[N] is positive, [S] is negative - Enter either format

[E] is positive, [W] is negative - Enter either format

Also known as altitude, above sea level

[+] if E, [-] if W of GMT, Difference in hours with respect to GMT

RADIATION PROCESSING

Use Local Standard Time

Transposition Model

Yes

Hay

Reference Meridian

0

The reference longitude or meridian used for Local Standard Time.

Hay or Perez Model can be used. Hay is a classic model, Perez requires the use of very good horizontal irradiance measurements

ALBEDO DEFINITION

Frequency

Yearly

Yearly

Monthly

Yearly Albedo

0.20

Ground reflected component of solar irradiance. Single value - select "Yearly"

0.25

0.2

0.15

0.1

0.05

0

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Version 0.1

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Figure 7: Site Page – Overview

The chart and rows will update based on your selection, as shown below:

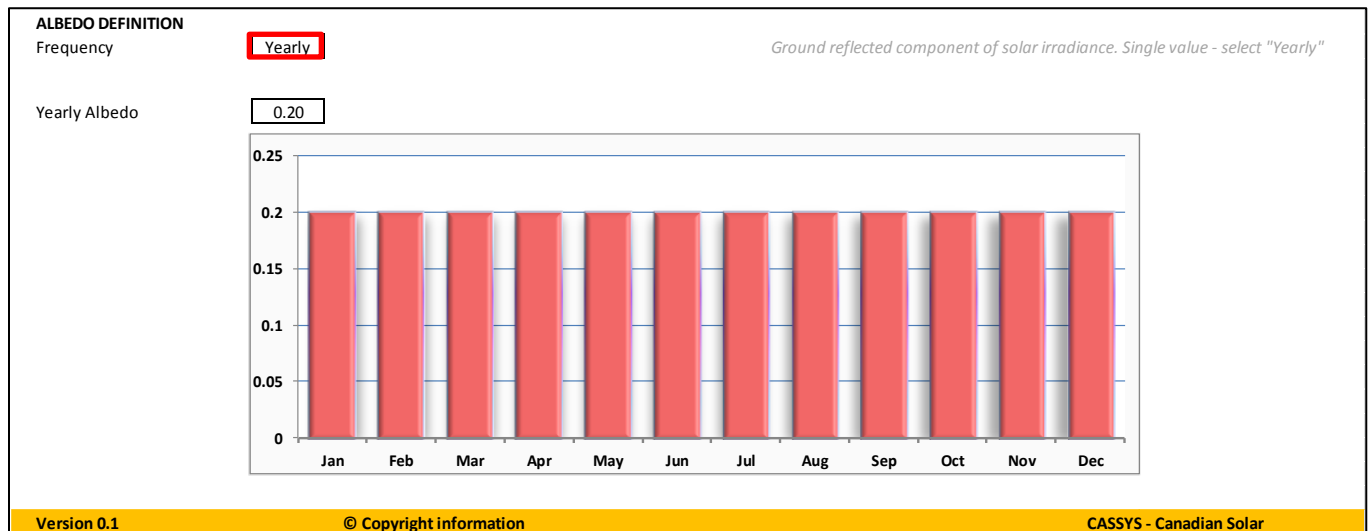


Figure 8: Site Page - Yearly Albedo

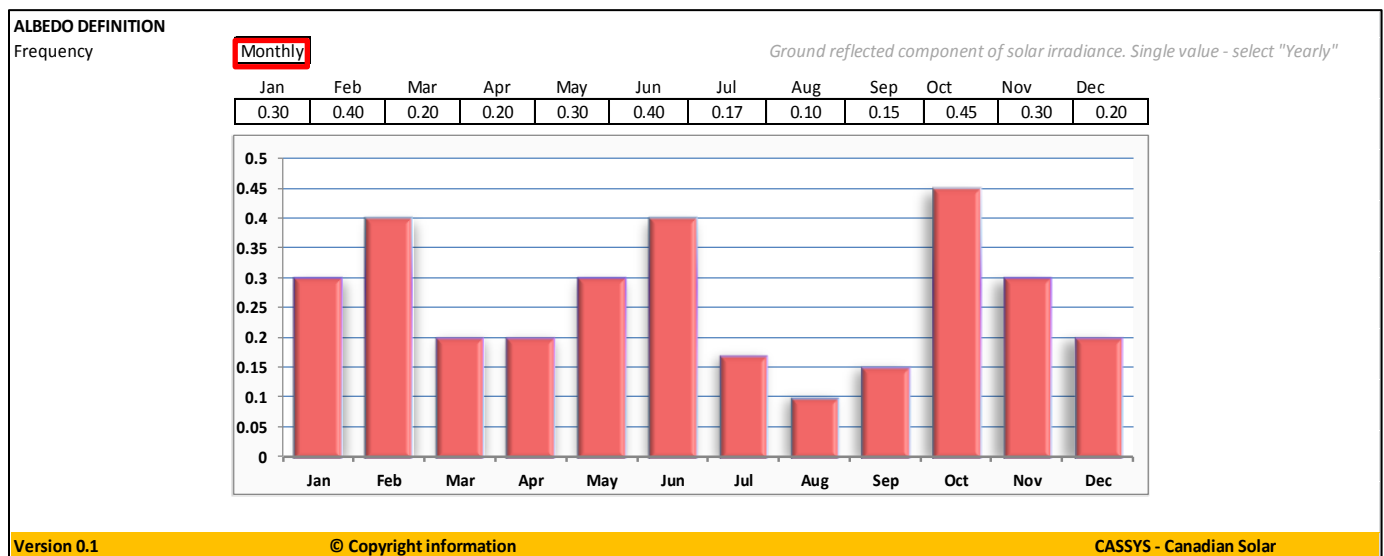



Figure 9: Site Page - Monthly Albedo

Orientation and Shading Page

On the Orientation and Shading page, use the drop down menu to choose an array type. Currently CASSYS supports the choice of Fixed Tilted Plane or Unlimited Rows. The type of array you choose will show or hide the fields relevant to the array type. If Unlimited Rows is selected you will also have the option to use cell based shading effect. Select in the drop down whether you wish to use this or not. Afterwards, fill in the rest of the fields.

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ORIENTATION AND SHADING

NEAR SHADINGS

Select Array Type

Fixed Tilted Plane

Plane Tilt (Degrees)

30.00

Angle the panel is raised with respect to the ground


Azimuth (Degrees)

0.00

Angle the panel is facing with respect to true south, [+] if W, [-] if E

Figure 10: Orientation and Shading Page - Fixed Titled Plane

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ORIENTATION AND SHADING

NEAR SHADINGS

Select Array Type

Unlimited Rows

Plane Tilt (Degrees)

30.00

Angle the panel is raised with respect to the ground

Azimuth (Degrees)

0.00

Angle the panel is facing with respect to true south, [+] if W, [-] if E

Pitch (m)

8.51

Distance between the rows

Coll. Band width (m)

3.63

Length of the active area of the rows

Top Inactive Band (m)

0.00

Length of inactive area above the active area of the rows

Bottom Inactive Band (m)

0.00

Length of inactive area below the active area of the rows

Ground Area Occupation Ratio

0.43

The ratio of the shed total length of the shed, and the distance between rows

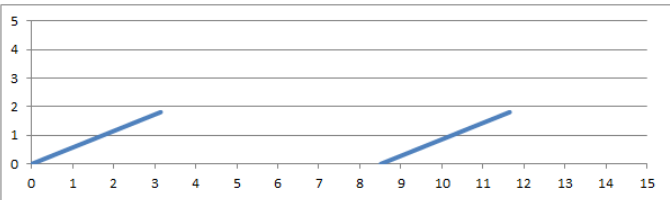
Shading Limit Angle (degrees)

18.69

The angle formed between the top of one row, and the bottom of the next row.

Number of Rows

99.00



CELL BASED SHADING EFFECT

Use Cell Based Shading Effect

Yes

Number of Strings in the Width

4

Cell Size (cm)

15.6

Width of One String (m)

0.9075

Figure 11: Orientation and Shading Page - Unlimited Rows

System Page

On the System page you can specify the number of sub-arrays in a field. To choose an array PV module or inverter, you must click the 'Search' link and pick the manufacturer, model and data source of the module or inverter using the list in the GUI. Fill in the loss fraction fields as well as the other user defined fields for the PV modules and inverters. (To add a new module or inverter, see [Add Module or Inverter](#))

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SYSTEM SUMMARY Save

Number of Sub Arrays: 1
Number of Modules: 1 Pnom DC (kW): 0
Number of Inverters: 1 Pnom AC (kW): 0

SUB-ARRAY 1

PV MODULE MODEL
Please click 'Search' to select a module. Search
Manufacturer:
Data Source:
Power (W):
Current at Pmpp (A):
Voltage at Pmpp (V):
Number of Cells:
Isc Current (A):
Voc Voltage (V):
Rshunt (Ohm):
Rseries (Ohm):

INVERTER MODEL
Please click 'Search' to select an inverter. Search
Manufacturer:
Data Source:
Pnom (kW):
I Max (A):
Output (V):
Type:
Frequency (Hz):
P max (kW):

Modules in a String: 1
Modules in Sub-Array: 1
Number of Strings: 1
Total Pnom (kW): 0.0

WIRING DC LOSSES
Loss Fraction (at STC): 1.50%
Global Wiring Resistance (mOhm): 0.000

WIRING AC LOSSES
Loss Fraction (at STC): 1.50%

Figure 12: System Page - Specifying Number of Sub-Arrays

CASSYS Select Module:

Manufacturer: Please first select a manufacturer. -->
Model:
Origin:
Max Power (W): 0
Current at Pmpp (A): 0
Voltage at Pmpp (V): 0
Max Current (A): 0
Max Voltage (V): 0
Rshunt (Ohm): 0
Rseries (Ohm): 0
Select Cancel
Add a PV Module

Figure 13: PV Module Selection GUI

CASSYS Select Inverter:

Manufacturer: Please first select a manufacturer. ----->
Model:
Origin:
P Max (kW): 0
I Max (A): 0
Output (V): 0
Type:
Frequency (Hz):
Pnom (kW): 0
Select Cancel
Add an Inverter


Figure 14: Inverter Selection GUI

Losses Page

On the Losses page, first set 'Use Measured Module Temperature' to TRUE or FALSE by clicking on it and using the drop-down list. This field should be set to TRUE if you can provide reliable module temperature data in the input file. If the field is set to FALSE, then heat loss factors must be provided and the Faiman model will be used during simulation.


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LOSS CHARACTERIZATION

Save



Thermal

Use Measured Module Temperature (deg C)

FALSE

Constant Heat Loss Factor ($\text{W/m}^2\cdot\text{K}$)

20.00

Convective Heat Loss Factor ($\text{W/m}^2\cdot\text{K/ m/s}$)

0.00

Select 'True' if reliable measurements of panel temperature are available. Otherwise, values will be calculated
Constant coefficient of the convective heat loss model
Wind dependent coefficient of the convective heat loss model

Module Quality Losses

Loss Fraction

0.90%

May account for Light Induced Degradation, or reflect confidence in manufacturer's specifications

Module Mismatch Losses

Loss Fraction at MPP

2.00%

Loss Fraction at Fixed Voltage

0.00%

Losses occurring due to the variability in the electrical properties of modules installed in an array
This loss is defined for both MPP and Fixed Voltage operation

Incidence Angle Modifier

ASHRAE Model Parameter b_0

0.05

Parameter used to modify the incident radiation according to the ASHRAE IAM Model

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Figure 15: Losses Page – Overview

Soiling Page

The Soiling page, like the Orientation and Shading page, has a drop-down list that shows or hides the yearly and monthly soiling losses depending on what is chosen.

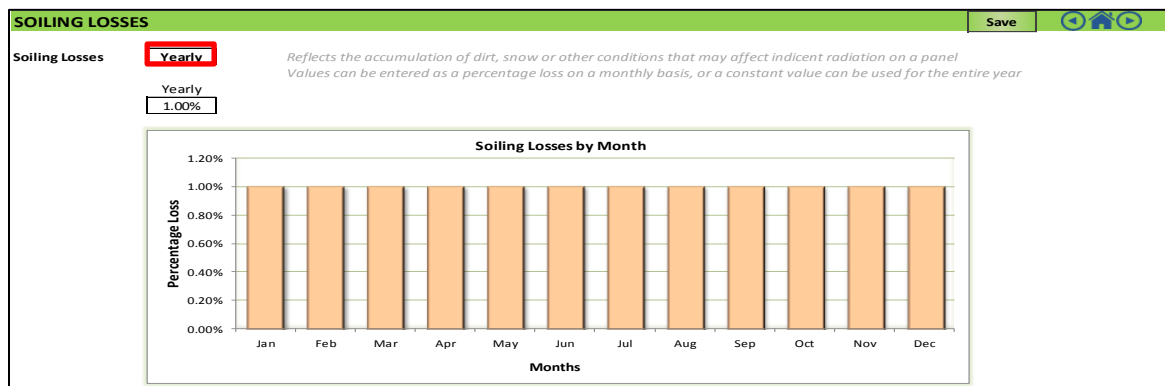


Figure 16: Soiling Page - Yearly Soiling Losses

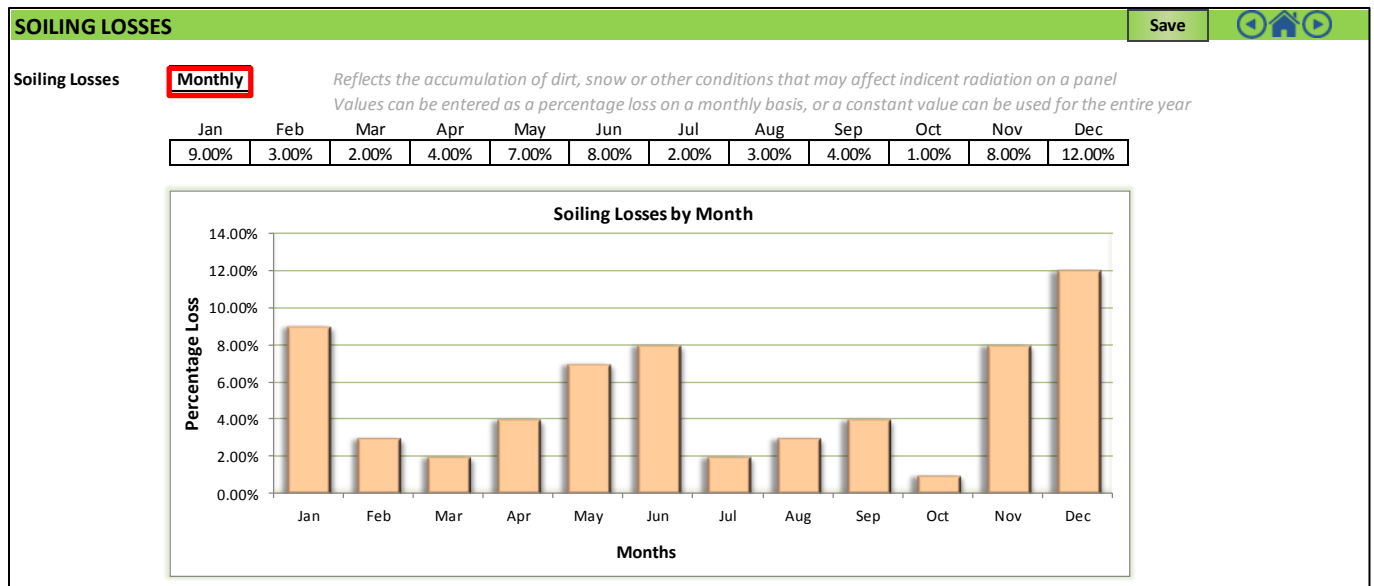


Figure 17: Soiling Page - Monthly Soiling Losses

Transformer Page

On the transformer page, fill in the the nominal power of the transformer, nominal voltage, iron loss and resistive loss. In the drop down list choose whether or not it is disconnected at night. This sheet contains a graph to illustrate the iron and resistive losses based on the amount of power being fed into the transformer.

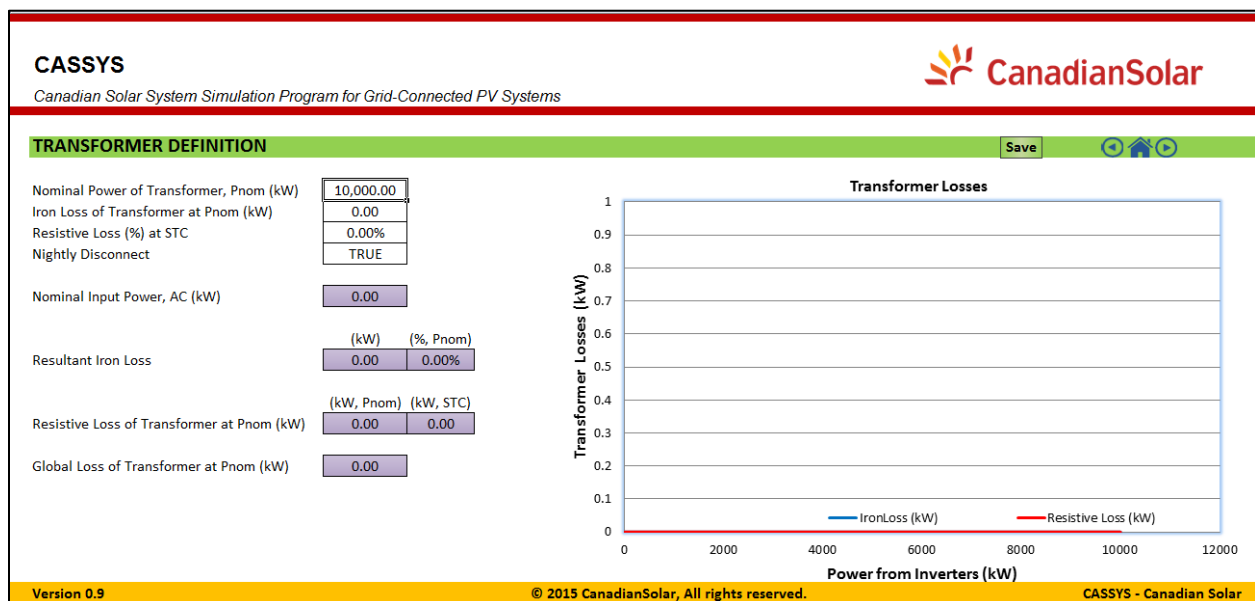


Figure 18: Transformer Page – Overview

Climate File Page

On the Input File page, click the browse link and select the input file (in .csv format) for the simulation from the dialog box. Alternatively, you can type in the path to the input file in the field. If the file is valid, a preview of the first 11 lines of the input file should appear in the bottom half of the page. In the delimiter field, type in the delimiter used to separate the cell values of the csv file. Enter the number of rows to skip in the input file (if the numerical data begins on line 3, then change the value of 'Rows to Skip' to 2 so that CASSYS starts reading the file from the third row; the column headers are always assumed to be on line 1 and skipped over). Finally, in the Time Series Characteristics box select when the time intervals are averaged at (Beginning, Middle, or End) from the drop-down list and enter the nominal time step.

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CLIMATE FILE DEFINITION

Rows to Skip
Delimiter

INPUT FILE LOCATION
 *CASSYS requires .csv, .TM2 or .TMY3 files as input

METEOROLOGICAL DATA POSITION

Data Type	Column Number	Units
Timestamp		yyyy-MM-dd HH:mm:ss
POA Irradiance		W/m ²
Horizontal Irradiance		W/m ²
Horizontal Diffuse		W/m ²
Temp Ambient		°C
Temp Panel		°C
Wind Speed		m/s

Time Series Characteristics

Interval Recorded At The time stamp refers to the beginning, middle or end time of the record interval
Nominal Time Step (min) The nominal duration of a recording interval
Data Begins At
Data Ends At

PREVIEW

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

ORIGINAL FORMAT

Figure 19: Input File Page - Overview

Once you select an input file, the following preview should appear:

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CLIMATE FILE DEFINITION
 Rows to Skip: 2
 Delimiter:

INPUT FILE LOCATION
 C:\Data Files-1HR\TestSite-Input.csv
 Browse

METEOROLOGICAL DATA POSITION

Data Type	Column Number	Units
Timestamp	1	yyy-MM-dd HH:mm:ss
POA Irradiance	2	W/m ²
Horizontal Irradiance		W/m ²
Horizontal Diffuse		W/m ²
Temp Ambient	3	°C
Temp Panel	5	°C
Wind Speed	4	m/s

Time Series Characteristics
 Interval Recorded At: End
 Nominal Time Step (min): 60.00
 Data Begins At: 2014-01-05 00:00:00
 Data Ends At: 30/09/2014 23:00

PREVIEW

	1	2	3	4	5	6	7	8
	Timestamp	POA Irradiance	Temp Ambient	Wind Speed	Temp Panel			
	BegHour	Htilt (W/m ²)	TAmbient (C)	WindSpeed (m/s)	TPanel (C)	SumInvDCPwr (kW)	SumInvACPwr (kW)	GridACExport (kW)
1								
2								
3	05/01/2014 0:00	0	9.5	6.5	8.65	0	0	0
4	05/01/2014 1:00	0	9.3	5.8	8.48	0	0	0
5	05/01/2014 2:00	0	9.28	5	8.44	0	0	0
6	05/01/2014 3:00	0	8.91	4.5	8.13	0	0	0
7	05/01/2014 4:00	0	8.57	4.3	7.84	-0.4	0	0
8	05/01/2014 5:00	3.8	8.57	2.6	7.94	40.3	42.9	33.5
9	05/01/2014 6:00	23.2	9.09	2.6	8.74	261.4	261.9	286.3
10	05/01/2014 7:00	76.6	10.37	3.1	11.31	866.1	862.3	826.4
11	05/01/2014 8:00	95.5	11.45	4.3	13.56	1071.5	1067.7	1026.8

ORIGINAL FORMAT
 1 BegHour ,Htilt (W/m²) ,TAmbient (C) ,WindSpeed (m/s) ,TPanel (C) ,SumInvDCPwr (kW) ,SumInvACPwr (kW) ,GridACExport (kW)
 2 #####
 3 05/01/2014 0:00,0,9.5,6.5,8.65,0,0,0
 4 05/01/2014 1:00,0,9.3,5.8,8.48,0,0,0
 5 05/01/2014 2:00,0,9.28,5,8.44,0,0,0
 6 05/01/2014 3:00,0,8.91,4.5,8.13,0,0,0
 7 05/01/2014 4:00,0,8.57,4.3,7.84,-0.4,0,0
 8 05/01/2014 5:00,3.8,8.57,2.6,7.94,40.3,42.9,33.5
 9 05/01/2014 6:00,23.2,9.09,2.6,8.74,261.4,261.9,286.3
 10 05/01/2014 7:00,76.6,10.37,3.1,11.31,866.1,862.3,826.4
 11 05/01/2014 8:00,95.5,11.45,4.3,13.56,1071.5,1067.7,1026.8

Figure 20: Input File Page - Example Input File

Enter the corresponding column number of each input parameter for the input file you have provided. For example, 'TAmbient' is shown as column 3 in the input file preview. Simply enter a '3' into the Column Number box next to Temp Ambient; a header label should appear for you to confirm if you selected the correct column. If you do the same for the Timestamp column (in this case column 1) a preview for the beginning and end dates will appear so that you can verify whether or not the input file data is correct. Also notice that the 'Rows to Skip' field in the top left corner is set to 2, since the data starts on the third line as seen in the preview.

Output File Page

The output file page allows you to specify the parameters which appear in the output file and the Summary sheet after running a simulation. To select the output file where the simulation data is inserted, click 'Browse' or alternatively type in the file path manually. On the left side, you can collapse or expand sections by clicking directly on the '+' or '-' buttons.

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OUTPUT FILE DEFINITION

Save

OUTPUT FILE LOCATION

Browser

AVAILABLE OUTPUTS LIST		Units	Description	Click For Help	Export PDF Report of Site Definition
Input Timestamp	Required Field	yyyy-mm-dd hh:mm:ss	Time stamp read from climate file		
Timestamp Used for Simulation	Required Field	yyyy-mm-dd hh:mm:ss	Time stamp used for sun position calculations. Accounts for sunrise/sunset and interval recording mode (beg., middle or end)		
METEOROLOGICAL AND SUN POSITION VARIABLES <input type="checkbox"/> Click to set all sections and outputs to 'Summarize'					
Sun Azimuth Angle	-	°	Angle between the direction of the sun and due south		
Sun Zenith Angle	-	°	Angle between the direction of the sun and the zenith		
Extraterrestrial Irradiance	-	W/m ²	Intensity of solar radiation outside the earth's atmosphere on a surface perpendicular to the sun's rays		
Horizontal Global Irradiance	-	W/m ²	Intensity of radiation received from above by a surface horizontal to the ground		
Normal beam irradiance	-	W/m ²	Intensity of solar radiation received directly from the sun by a surface perpendicular to the sun's rays		
Horizontal beam irradiance	-	W/m ²	Intensity of solar radiation received directly from the sun by a horizontal surface.		
Horizontal diffuse irradiance	-	W/m ²	Intensity of solar radiation received from the sky dome, excluding the area around the sun, by a horizontal surface.		
Ambient Temperature	-	°C	Temperature of the ambient air		
Wind Velocity	-	m/s	Horizontal speed of air motion near the surface of the array		
Albedo	-	-	Reflectivity of the ground.		
IRRADIANCE INCIDENT IN COLLECTOR PLANE <input type="checkbox"/> Click to set the entire section to 'Summarize'					
Global Irradiance in Array Plane	-	W/m ²	Total irradiance received by the front surface of the array		
Beam Irradiance in Array Plane	-	W/m ²	Irradiance received directly from the sun by the front surface of the array		
Diffuse Irradiance in Array Plane	-	W/m ²	Irradiance received from the sky dome (excluding the area around the sun) by the front surface of the array		
Ground Reflected Irradiance in Array Plane	-	W/m ²	Irradiance reflected by the ground and reaching the front surface of the array		
SHADING <input type="checkbox"/> Click to set the entire section to 'Summarize'					

Figure 21: Output File Page Overview

To specify a desired output parameter that will appear in the output file, change its corresponding box to the right to 'Yes'. There are multiple ways to select output parameters, as shown below:

AVAILABLE OUTPUTS LIST <input type="checkbox"/> Click to set all sections and outputs to 'Summarize'	
Input Timestamp	Required Field
Timestamp Used for Simulation	Required Field
METEOROLOGICAL AND SUN POSITION VARIABLES <input type="checkbox"/> Click to set the entire section to 'Summarize'	
Sun Azimuth Angle	-
Sun Zenith Angle	-
Extraterrestrial Irradiance	-
Horizontal Global Irradiance	Summarize
Normal beam irradiance	Summarize
Horizontal beam irradiance	Detail
Horizontal diffuse irradiance	-
Ambient Temperature	Detail
Wind Velocity	-
Albedo	-
INVERTER <input checked="" type="checkbox"/> Click to set the entire section to 'Detail'	
Inverter Loss Due to Power Threshold	Summarize
Inverter Loss Due to Voltage Threshold	Summarize
Inverter Loss Due to Nominal Inv. Power	Summarize
Inverter Loss Due to Nominal Inv. Voltage	Summarize
AC Output Power of each Sub-Array	Summarize
Available Power at Inverter Output	Summarize

Figure 22: Output File Page - Selecting Output Parameters

Figure 18 demonstrates the selection of parameters with either individual selections or a checkbox. To select outputs individually, click on the box to the right of an output parameter and select 'Summarize', 'Detail' or '-' from the drop-down list. If a particular section is of interest/unwanted, you can check the checkbox next to the section title to set all the parameters in that section to 'Summarize', 'Detail', or '-', as shown in Figure 23. Last, if you would like to change all outputs at once, check the checkbox at the top of the page next to 'Available Outputs List', which will change all output parameters at the same time. When an option is selected, the cell row will be highlighted with a bright green or light green, or white based on if Summarize, Detail, or '-' was selected, respectively.

A brief description of the three options:

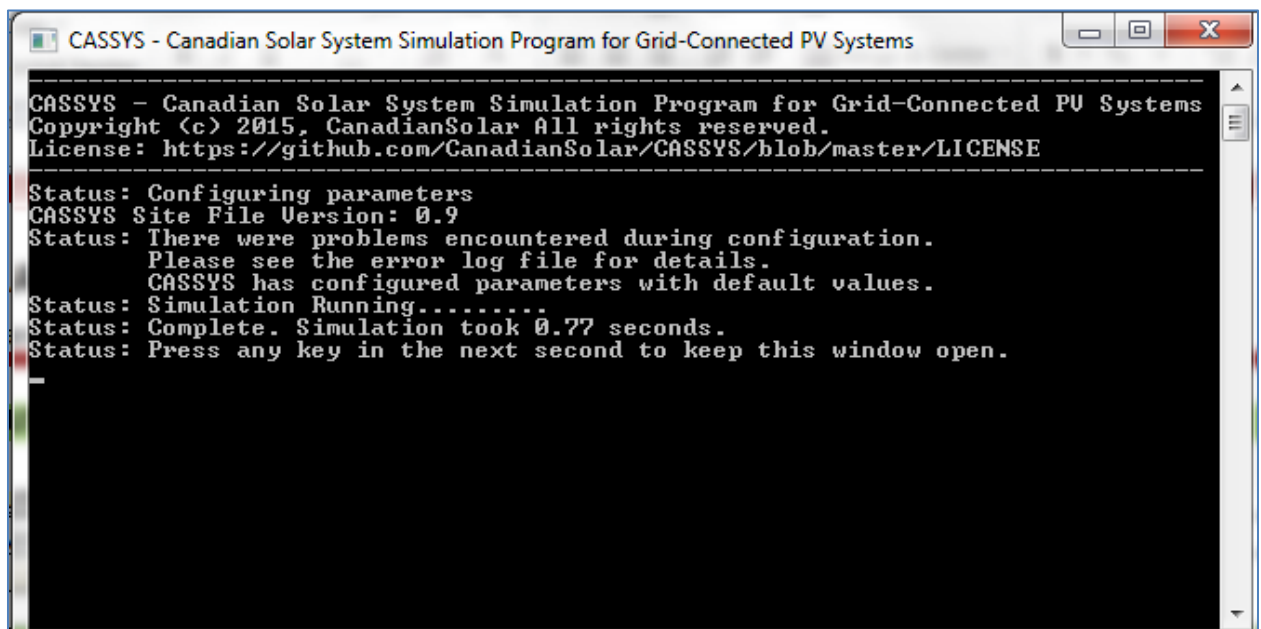
1. The 'Detail' option will write the simulation results of the selected parameter into the output file.

2. The 'Summarize' option not only prints the simulation results into the output file and Results sheet, but the selected parameter will also be summarized on the Summary page by a pivot table using the most logical method (either Sum or Average).
3. Selecting '-' means that the parameter will be ignored during simulation; no simulated data for this parameter will be output.

At this point, it is recommended that you click on the 'Save' button on the banner or on the Intro page to save all your site information to a .csyx file, or you can return directly to the Intro page by clicking on the house icon on the banner to simulate the current site.

3. Running the Simulation

- To simulate the current site definition, click the Simulate button on the Intro page. If you would like to simulate another site definition that you previously saved as a .csyx file, then load it first (see [Loading a Site Definition](#)) before clicking on Simulate.



```
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License: https://github.com/CanadianSolar/CASSYS/blob/master/LICENSE
-----
Status: Configuring parameters
CASSYS Site File Version: 0.9
Status: There were problems encountered during configuration.
Please see the error log file for details.
CASSYS has configured parameters with default values.
Status: Simulation Running.....
Status: Complete. Simulation took 0.77 seconds.
Status: Press any key in the next second to keep this window open.
```

Figure 23: Simulation Console

- When the simulation is completed, the results page, report page and chart builder page will be unhidden and the site will be loaded onto the interface.
- The results page contains the simulated data which has been saved to the output file.
- The report sheet is a detailed report of the simulated site definition.
- The chart builder allows the user to create charts using the data in the results sheet (see [Chart Building](#))

4. Loading a Site Definition

1. To load a previously saved site definition, go to the Intro sheet and click the load link
2. Select the .csyx file containing the Farm configuration information from the dialog box

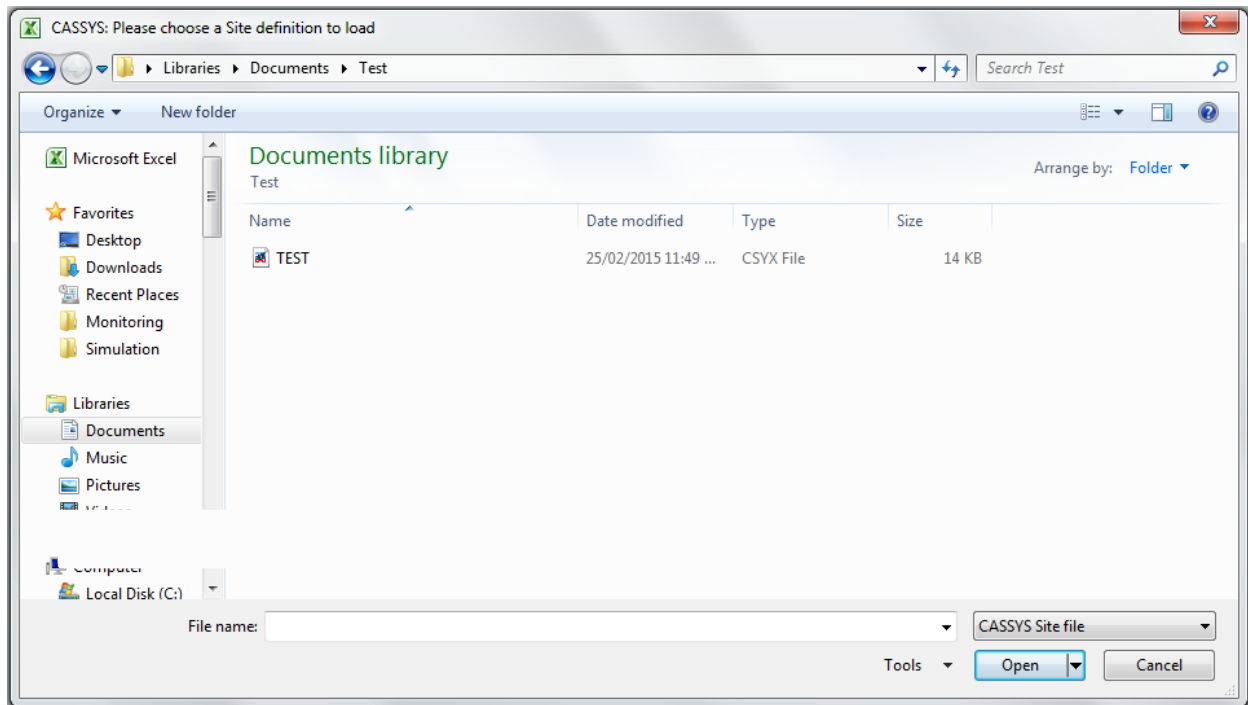


Figure 24: Loading a Site Definition

5. Chart Building

1. To define the number of y values, just select the number from the list in the corresponding chart section
2. To define the x and y values, select them using the x and y values lists

The screenshot shows the CASSYS interface with the 'CHART BUILDER' section. It contains three chart configuration panels:

- CHART 1:** 'Number of Y Values' is set to 1 (highlighted with a red box). 'X Values' is 'Global_Incident_in_Coll._Plane'. 'Y Values' is 'Beam_Incident_in_Coll._Plane'. A 'Display' button is present.
- CHART 2:** 'Number of Y Values' is set to 2. 'X Values' is 'Current (A)'. 'Y Values' are 'OhmicLoss (kW)' and 'AC Ohmic Loss (kW)'. A 'Display' button is present.
- CHART 3:** 'Number of Y Values' is set to 1. 'X Values' is 'Month'. 'Y Values' is 'Module Soiling Loss (kW)'. A 'Display' button is present.

Figure 25: Chart Builder Sheet – Declaring number of y-values

3. To create the chart click the display button, you will be automatically taken to the new chart when it is completed

6. Adding New PV Modules and Inverters

1. You can add or define a new PV Module or Inverter either by using the 'Add or Import PV module/Inverter' button at the top of the Database sheets, or on the 'Search' userform on the System page. Both buttons will open up the following selection box:

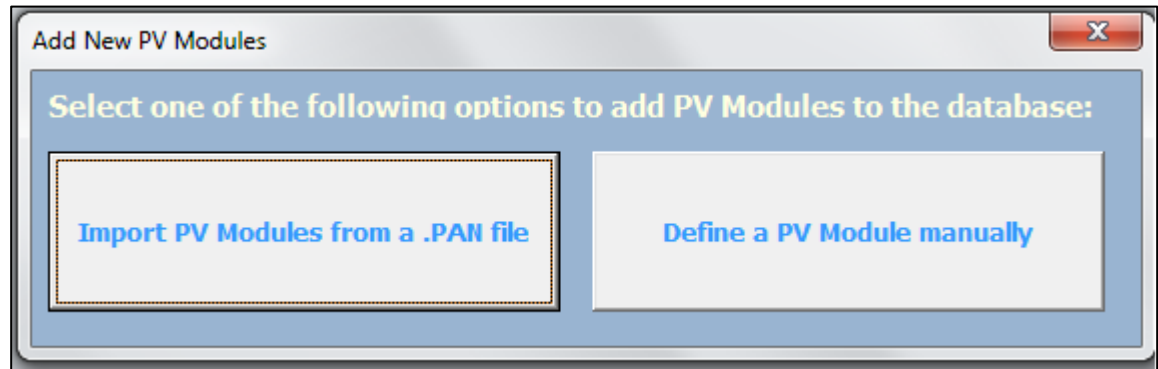


Figure 26: Adding PV Module or Inverters

The left option allows you to choose a PVSyst PAN file (or OND file in the case of inverters) to import into the CASSYS database. Note that CASSYS only supports OND files before PVSyst version 6 and above (this restriction does not apply to PAN files). Clicking the option on the right opens the following GUIs:

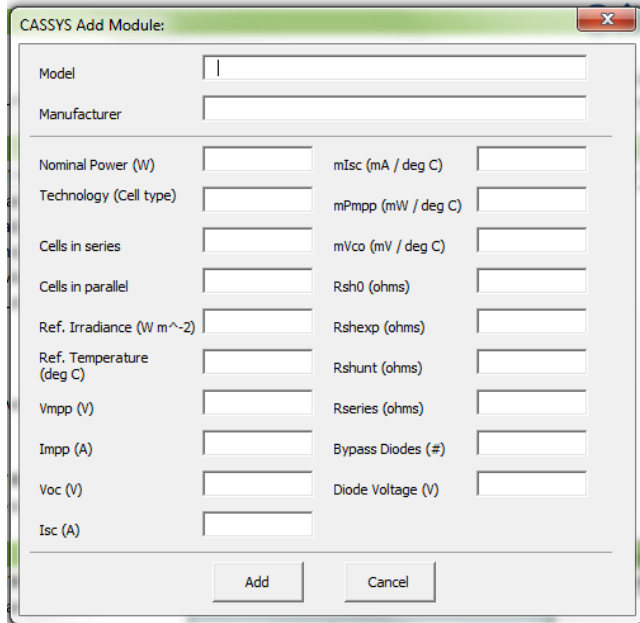


Figure 27: Add PV Module GUI

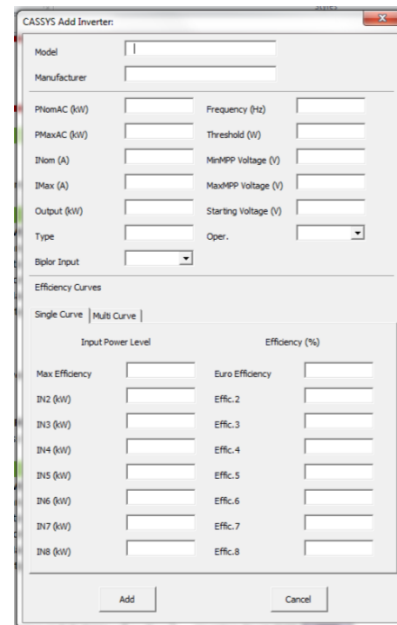


Figure 28: Add Inverter GUI

1. A GUI will appear, fill in all of the fields with the appropriate values

2. Creating an Inverter also has the option of choosing between single or multiple curve efficiencies
3. Depending on which efficiency sheet is selected the new inverter will either contain single or multiple efficiency curves
4. Choose you desired efficiency curve format, note that you must define all three of the curves for the multiple curve formats
5. When you are finished click the add button.

7. Saving a Report

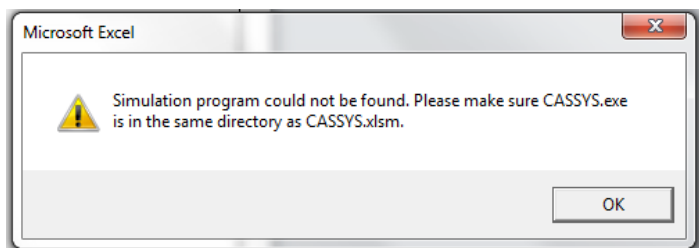
CASSYS supports a PDF export of the site definition for future reference or when replicating a simulation when a .csyx file is not available to load.

Simply navigate to the Output File page, and click on the 'Export PDF Report of Site Definition' button.

A Browse dialog box should appear. Navigate to the location where you would like the report to be saved, enter the desired filename and click 'Save'. The report will be exported to the specified location and the file should automatically open for your verification.

8. CASSYS Troubleshooting

Simulation program could not be found:



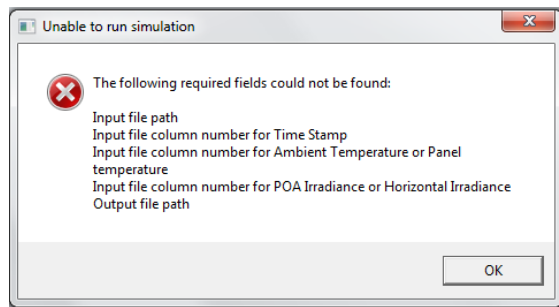
Error description:

The program used to run the simulation is separate from the CASSYS interface, and is named CASSYS.exe. If you encounter this message, this means that CASSYS.exe is not in the same directory as the CASSYS interface.

Solution:

Place the CASSYS.exe file into the same parent folder or path as the CASSYS interface (for example, if the CASSYS interface (CASSYS.xlsm) is saved in "C:\ExampleFolder\CASSYS.xlsm" then make sure that CASSYS.exe is in the location "C:\ExampleFolder\CASSYS.exe". If further issues persist or you can not locate CASSYS.exe, then re-download CASSYS from the website.

Unable to run simulation, the following fields could not be found:



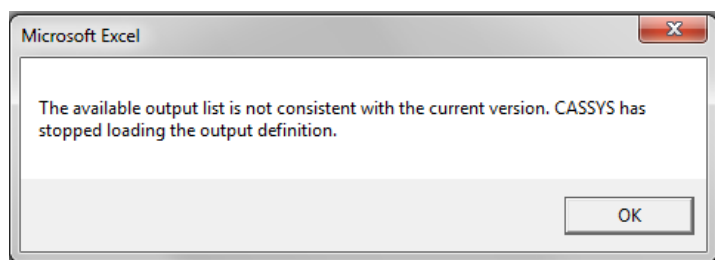
Error description:

This error occurs when the Simulate button is clicked but the fields required to run the simulation were not filled in.

Solution:

Fill in all of the fields listed by the message with valid inputs, or verify that a file is properly loaded before clicking the Simulate button again.

The Available Output List is not consistent with the current version:



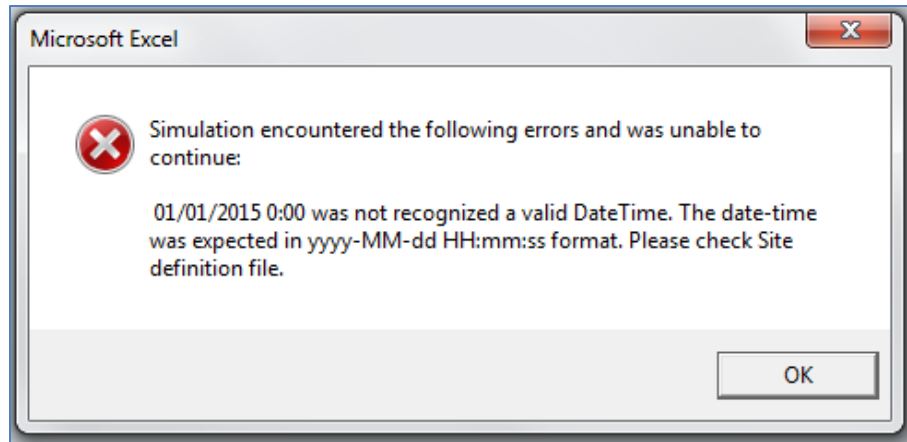
Error Description:

The .csyx file is incorrectly defined as the output file list has no parameters.

Solution:

Load the .csyx file you were trying to simulate first, click 'Save' and then simulate the file again.

Simulation error: “Not recognized as a valid DateTime”



Error Description:

The simulation requires the ‘Timestamp’ column of the input file to be formatted as a date to run.

Solution:

1. First go to the Input File page and ensure that the column number you have inputted for ‘Timestamp’ is correct. The following is a picture of a correctly numbered input file:

CASSYS
Canadian Solar System Simulation Program for Grid-Connected PV S

INPUT FILE DEFINITION

Rows to Skip: 1
Delimiter: ,

INPUT POSITION

Input	Column Number	Units
Timestamp	1	yyyy-MM-dd HH:mm:ss
POA Irradiance		W/m ²
Horizontal Irradiance	5	W/m ²
Horizontal Diffuse		W/m ²
Temp Ambient	3	°C
Temp Panel		°C
Wind Speed		m/s

PREVIEW

	1 Timestamp	2 GloIncl	3 Temp Ambient
1	DateTime		Tamb
2	2015-01-01 00:00:00	0	-0.0003
3	2015-01-01 01:00:00	0	-8.0001
4	2015-01-01 02:00:00	0	-6.3995
5	2015-01-01 03:00:00	0	-5.1002
6	2015-01-01 04:00:00	0	-4.2004
7	2015-01-01 05:00:00	0	-3.6
8	2015-01-01 06:00:00	0	-3.6
9	2015-01-01 07:00:00	0	-2.2997
10	2015-01-01 08:00:00	65	-2
11	2015-01-01 09:00:00	151	-2

2. Next, make sure that the ‘Units’ dropdown box on the ‘Timestamp’ row corresponds to the units provided in the input file (which can be seen from the ‘Original Format’ preview). In the following picture, the format “mm/dd/yyyy hh:mm:ss” should be selected:

ORIGINAL FORMAT		Input	Column Number	Units
1	DateTime,Global,Tamb,Nextra,Ghorz,Nbeam,Hdiffuse,WindDir,WindSpeed	Timestamp	1	yyyy-MM-dd HH:mm:ss
2	01/01/2015 0:00,-0.0003,0,0,0,0,0	POA Irradiance		yyyy-MM-dd HH:mm:ss
3	01/01/2015 1:00,0,-8.0001,0,0,0,0,210,5.3	Horizontal Irradiance	5	yy-MM-dd HH:mm:ss
4	01/01/2015 2:00,0,-6.3995,0,0,0,0,220,5.3	Horizontal Diffuse		dd/MM/yyyy HH:mm:ss
		Temp Ambient	3	MM/dd/yyyy HH:mm:ss
		Temp Panel		mm-dd HH:mm:ss
		Wind Speed		dd/mm/yyyy hh:mm:ss

- Try to run the simulation again. If the simulation fails with the same error again, then the problem lies in the input file itself. Open the input file and make sure that the dates of the 'Timestamp' column are in a DateTime format (e.g mm/dd/yyyy hh:mm:ss).
- Save the input file, close it and run the simulation again. The error should no longer occur.

Enable Macro Page Visible:



Error Description:

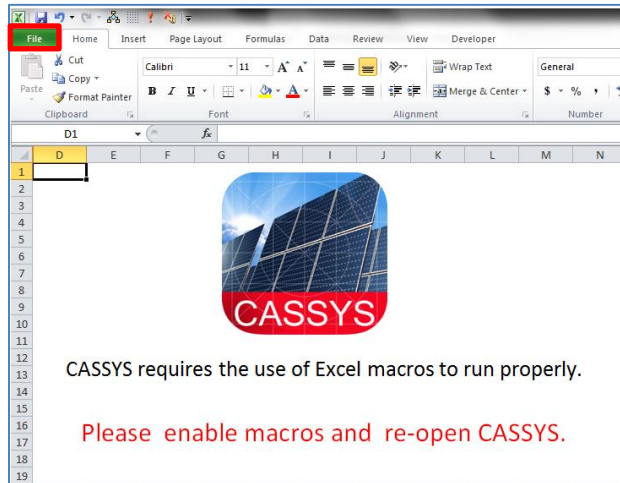
If you see this page, it means that macros have not been enabled in your Excel program. Macros are necessary for CASSYS to function, and it is critical that macros are enabled before continuing.

The following page provides several different methods of enabling macros.

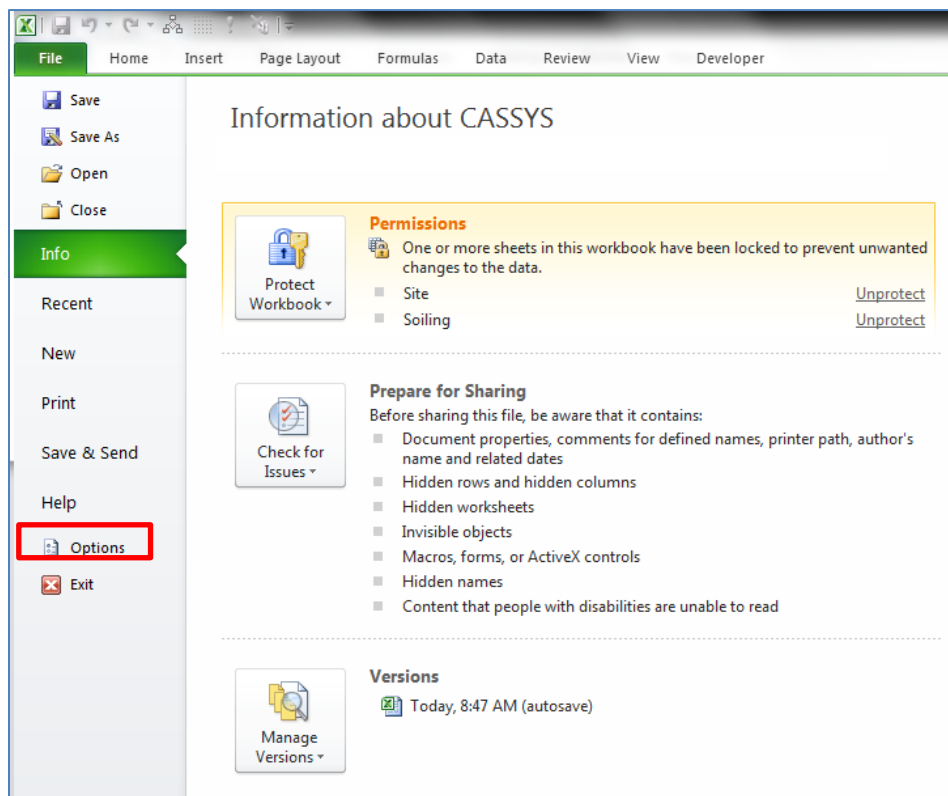
Solution:

Excel 2010

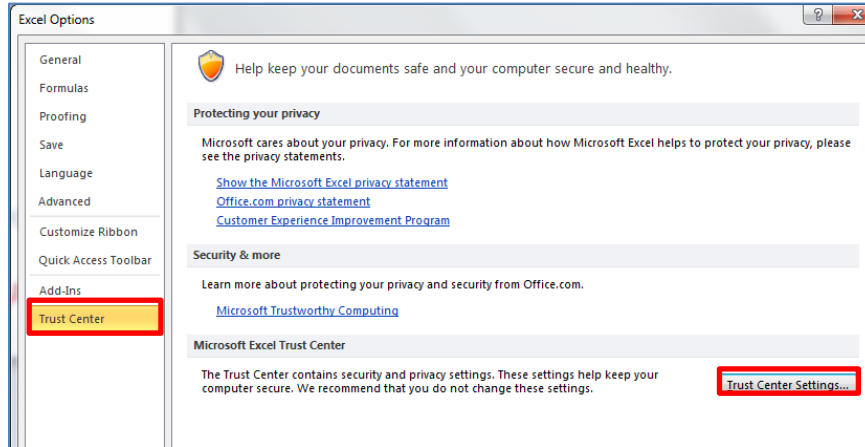
1. Click on the 'File' tab in the top left corner of Excel.



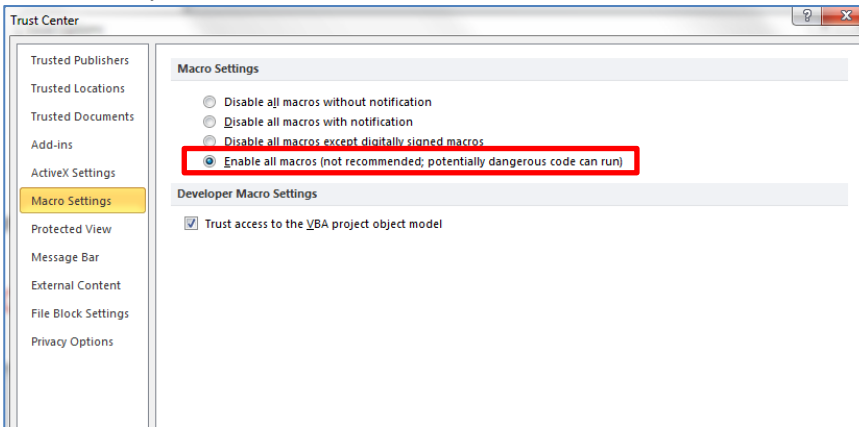
2. On the left side bar, click on the button named 'Options'



3. Click on the 'Trust Center' Tab and then on 'Trust Center Settings'



4. Finally, make sure that 'Enable all macros' is selected.



5. Alternatively, if you only want CASSYS macros to run, you can select 'Disable all macros with notification' in the window above and when CASSYS opens, click 'Enable content'.

