

Setting up a Report Template

Introduction

The report template is a Word template file (.dotx or .dot) which gives the layout and contents for the required report. The template should be set up to contain any text, logos, headers, footers and so on as required. Where information from the acquired data is required an insertion tag is put in the report. When the report is generated the reporting add-on will replace the insertion tag with the corresponding graph, table or text. There are four main insertion types:

- A graph of pressure data against time.
- A table showing the numerical data values.
- A table showing all time markers.
- Text.

An example report template named Report.dotx is installed with the software and can be found in C:\Users\Public\Documents\ESI\ESI-USB.

Inserting a Graph

To insert a graph a Text Box has to be added to show the rectangular area in the report where the graph is to be inserted. To add a graph the steps are:

1. Go to the Insert ribbon tab.
2. Click on Text Box and select Draw Text Box.
3. Draw a rectangular area where the graph is to be placed.
4. In the text box type the text INSERT_Graph. By default, the graph will show a graph of all the pressure data in the data set. A graph for a particular sensor can be added using the syntax INSERT_Graph_<n>, where <n> is the number of the sensor. For example, INSERT_Graph_1 would give a graph of the data for the first sensor.
5. Add further tags if necessary. For example, a graph showing all data, including temperature, would be added with the text below.

```
INSERT_Graph  
ShowTemperature=True
```

Tag	Values	Description
ShowTemperature	True [False]	Whether temperature traces are shown in the graph.

Inserting a Data Table

A data table shows the times, pressures, and optionally temperatures stored within the data set. To add a data table the steps are:

1. Insert a text box as described above for a graph. Note that the size of the text box is not important when a table is inserted. The box will be removed and replaced with the table.
2. Type INSERT_DataTable in the text box. By default, the data table will show pressure and temperature values for all sensors in the data set. A data table for a particular sensor can be added using the syntax INSERT_DataTable_<n>, where <n> is the number of the sensor. For example, INSERT_DataTable_2 would give a table for the second sensor.
3. Add any further required tags. The available tags are described below.

Tag	Values	Description
ShowTemperature	True [False]	Whether temperature values will be shown in the table.
TimeUnits	[Seconds] Minutes Hours Graph	The units in which to display the time values. The Graph option specifies that the time units should be the same as shown in the graph in ESI-USB.
IdentifySensors	True [False]	Whether to show an additional header row identifying each sensor with a label and serial number. If True is selected then there must be a Sensor tag for each sensor in the data set.
Sensor<n>	Serial,Label	<p>Identification for a particular sensor. Each tag gives the serial number of the sensor and its label. For example:</p> <p>Sensor1=12345,Inlet Sensor2=23456,Outlet</p> <p>The order of these tags sets the order of the data columns in the table. Here, the inlet data will precede the outlet data. The label is used if IdentifySensors is set to True.</p>
IdentifySensorsByName	True [False]	Whether to show an additional header row identifying each sensor with its name. If this is True then if there are any Name tags they will be used to set the order of data columns.
Name<n>	Name	<p>Identification of a particular sensor to control the order of the data columns in the table. There must be one entry for each sensor in the data set. For example:</p> <p>Name1=Inlet Name2=Outlet</p> <p>These tags will ensure that the inlet data appears before the outlet data in the table.</p>
PassOnly	True [False]	Whether to show only data from sensors that have passed a leak test. This has no effect on measurements that weren't acquired via the leak test feature.

Inserting a Marker Table

A marker table tabulates the time markers stored in the file. The steps to define the table are as described for the data table except that the defining text is INSERT_MarkerTable. The possible tags are as tabulated below.

Tag	Values	Description
TimeType	[Absolute] Interval	Absolute gives the marker times as a date and time of day. Interval gives the times as the time elapsed since the start of the data set.
TimeUnits	[Seconds] Minutes Hours Graph	The units in which to display the time values when the interval time type has been selected. The Graph option specifies that the time units should be the same as shown in the graph in ESI-USB.
ShowPressure	True [False]	Whether pressure values will be shown in the table.
ShowTemperature	True [False]	Whether temperature values will be shown in the table.

Inserting Text

To insert custom text, a valid tag should be typed in the template. This can be placed within the cell of a table or as normal text. The available tags are given in the left hand column of the table below. When the report is generated the tag will be replaced with the corresponding text as described in the right hand column of the table.

Tag	Description
INSERT_CustomField_<n>	The nth custom field. In the tag <n> should be replaced with the custom field number <i>e.g.</i> INSERT_CustomField_2 for the second custom field.
INSERT_LeakRate<n>	The leak rate for the nth sensor <i>e.g.</i> INSERT_LeakRate1
INSERT_LeakRate<n>_<a>_	The leak rate for the nth sensor between the time markers a and b. For example, the leak rate between the first two markers for the first sensor would use the following tag: INSERT_LeakRate1_1_2.
INSERT_PressureDrop<n>	The pressure drop from the start to the end of the data set for the nth sensor <i>e.g.</i> INSERT_PressureDrop1.
INSERT_PressureDrop<n>>_<a>_	The pressure drop for the nth sensor between the time markers a and b. For example, the pressure drop between the first two markers for the first sensor would use the following tag: INSERT_PressureDrop1_1_2.
INSERT_TimeInterval_<a>_	The time interval between markers a and b in seconds. For example, the time interval between the first two markers would be INSERT_TimerInterval_1_2.
INSERT_TimeInterval_<a>__<u>	The time interval between markers a and b in units selected by u. When u is 1 the interval is in seconds. When u is 2 the interval is in minutes with a decimal fraction so 90 seconds is 1.5 minutes. When u is 3 the interval is shown as minutes and seconds so 90 seconds is 1:30.
INSERT_Marker_<n>	The date and time of the nth marker <i>e.g.</i> INSERT_Marker_1.
INSERT_Marker_<m>_Pressure_<n>	The pressure for the nth sensor at time marker m <i>e.g.</i> INSERT_Marker_1_Pressure_1.
INSERT_Marker_<m>_Temperature_<n>	The temperature for the nth sensor at time marker m <i>e.g.</i> INSERT_Marker_1_Temperature_1.
INSERT_PeakPressure<n>	The peak pressure for the nth sensor <i>e.g.</i> INSERT_PeakPressure1
INSERT_PeakPressure<n>_<a>_	The peak pressure for the nth sensor between the time markers a and b. For example, the leak rate between the first two markers for the first sensor would use the following tag: INSERT_PeakPressure1_1_2.
INSERT_EndTime	The end time for the data set.
INSERT_PressureUnits	The pressure units for the measurements.
INSERT_Sensor<n>_Calibration	The calibration date and time for the nth sensor. For example, INSERT_Sensor1_Calibration.

Tag	Description
INSERT_Sensor<n>_Manufacture	The manufacture date and time for the nth sensor. For example, INSERT_Sensor1_Manufacture.
INSERT_Sensor<n>_Serial	The serial number of the nth sensor. For example, INSERT_Sensor1_Serial.
INSERT_Sensor<n>_Name	The name of the nth sensor. For example, INSERT_Sensor2_Name
INSERT_StartTime	The start time for the data set.
INSERT_LeakTest_Result<n>	The leak test result for the nth sensor. This will be Passed, Failed or Incomplete.
INSERT_LeakTest_Drop<n>	The percentage pressure drop during leak testing for the nth sensor.
INSERT_LeakTest_Tolerance<n>	The leak test tolerance for the nth sensor.
INSERT_Report_OutputName	The name of the saved report file.
INSERT_Report_OutputPath	The full path of the saved report file.