TSI Link™ Report Creator – Basic Analytics Trend & Control Reports

Worksheet Guide (US)

Contents

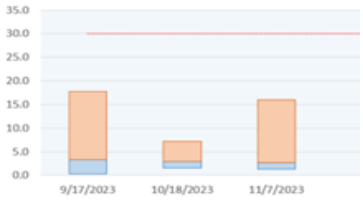
Overview

The Trend Report and Control Charts worksheets support trending a sequence of measurements over time.

The main difference between these two worksheets is the type of charts they use. The Control Chart uses stacked bar charts, while the Trend Report uses high / low whisker charts. Trend analyses are useful for a wide variety of industrial and commercial applications, including:

- Quantifying seasonality (yearly, weekly, daily, etc.)
- Spotting patterns
- Extrapolating or predicting future outcomes
- Ensuring that processes remain under control
- Verifying that an engineering control remains effective
- Checking that external factors do not adversely impact the environment

Control Report with stacked bar chart



Trend Report with whisker charts

These worksheets support a variety of measurands including sound, particulate matter, and gases. Each worksheet is described below.

If you are new to Report Creator, check out the Report Creator Product Page *for guides and videos including: setting up an account, installing the application, using the study manager, using the layout view, customizing report creator templates, etc.* This application guide builds upon those guides, it does not duplicate them.

Worksheet Templates

This guide covers the worksheets below. The RESOURCES section of the Report Creator Product Page has guides to other Basic Analytics worksheets: Data Table, Multi-Parameter Chart, Correlation Report.

Worksheet Template	Supported Measurements	Supported Instruments	Examples of Applications
Control Report **Trend Report**	Select up to three measurements from a list of 30, which is in Appendix A	OmniTrak™ Solution DustTrak™ Monitors Q-Trak™ XP Monitor	Studying the Air Quality during a school day, working shift, cleaning process, remediation effort, etc. Studies in which the span of trends – min, max and range per period – are especially important.

Worksheet Operation

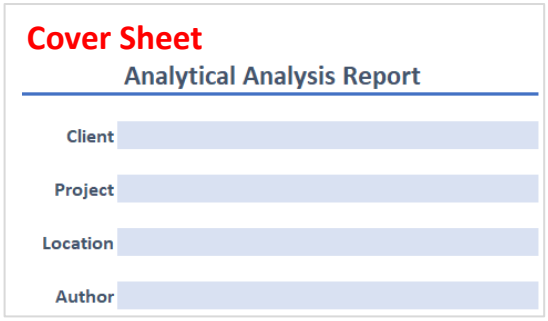
These two worksheet templates have similar structure. This section outlines the basic operating steps for them.

Step 1 Select a Worksheet

The Basic Analytics Workbook is one of many that are available. To better understand the options, an overview of the workbooks is available on the Report Creator product page. The Trend Report and Control Report are two of the worksheets within the Basic Analytics workbook.

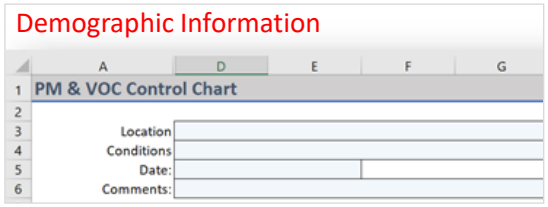
Step 2 Cover Sheet

This workbook contains a simple Cover sheet that can be customized to suit your needs. See the *Customizing Report Creator Templates* in the RESOURCES section on the Report Creator Product Page.



Step 3 Demographic Information, Parameters, & Target Limits

After you have created a blank worksheet, you can enter whatever demographic information you want into your report.

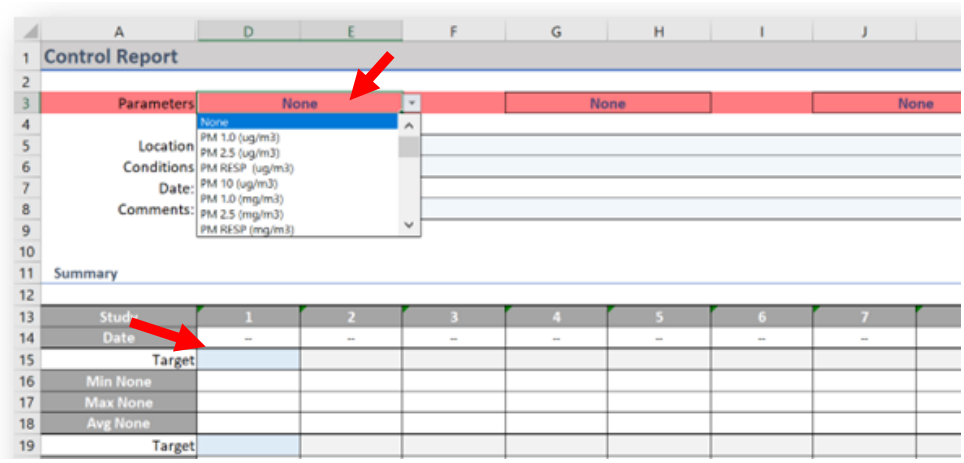


Select Parameters

The TSI® instrument portfolio can generate a wide range of measurements and these workbooks support many different measurement types. After you have created a worksheet, **select between one and three parameters. Before importing any measurement data.** The Parameter row is colored red to remind you of this.

Enter Target Limits

Once the parameters are entered, you may enter target limits for the selected parameters. If the limit remains constant over the course of the trending analysis, you only need to enter the limit in the blue cell. It will automatically be copied across the worksheet. But if the limit changes over time, you can simply overwrite the limits in the appropriate cells.



Step 4 Import Study Data

Typically, trend analysis studies are performed over a period of time. You will likely be importing a new study at some established period – every hour, day, week, month, etc. Simply select the latest study and c*lick* **Add Data** to import data into the worksheet.

NOTICE

*The **Layout View*** functionality is not supported in the Basic Analytics Workbook.

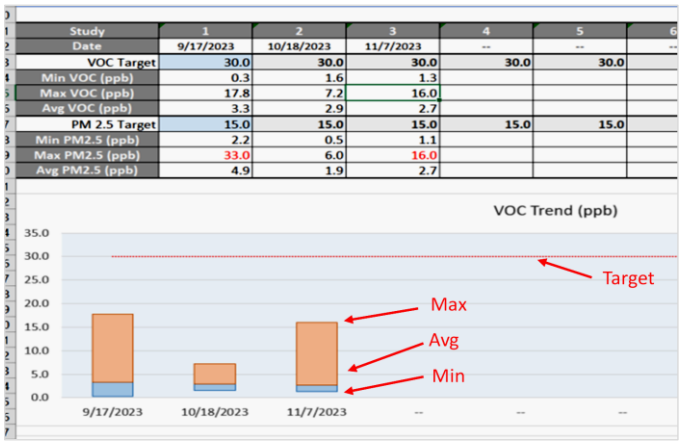
Data files are typically loaded via the Study Manager This feature securely saves and backs up the data and makes it easier to move data from the devices to the Report Creator Application. Alternatively, data can be Imported.

Step 5 Analyze Data

Metrics summaries are displayed in both a summary table and charts.

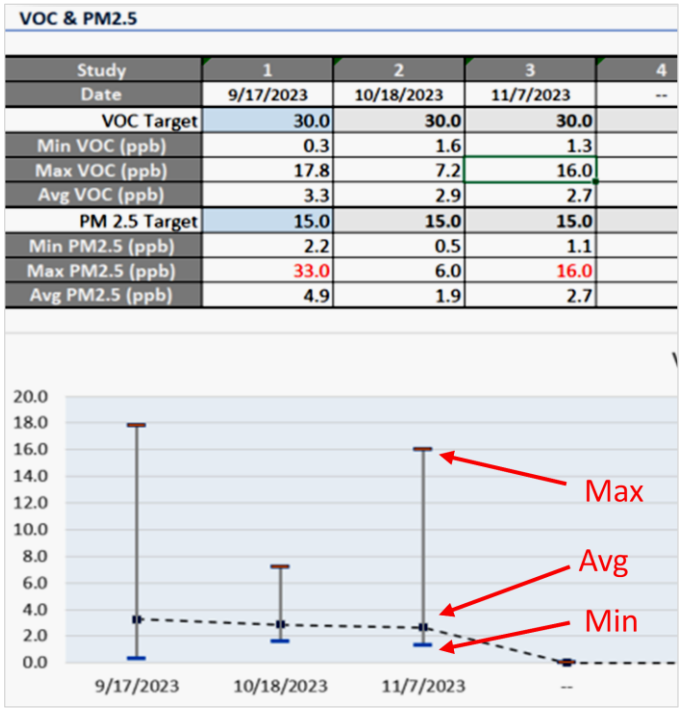
The **Test Results** section includes tables that display minimum, maximum, and average for each measurement. If a target value has been entered and the limit is exceeded, the cell text is highlighted in red.

The ***Control Chart worksheet includes a column chart*** as shown in image. The average value is the line between the blue and tan bars. Minimum is the bottom of the blue bar. Maximum is the top of the tan bar. Target limits are shown as a dotted red line.



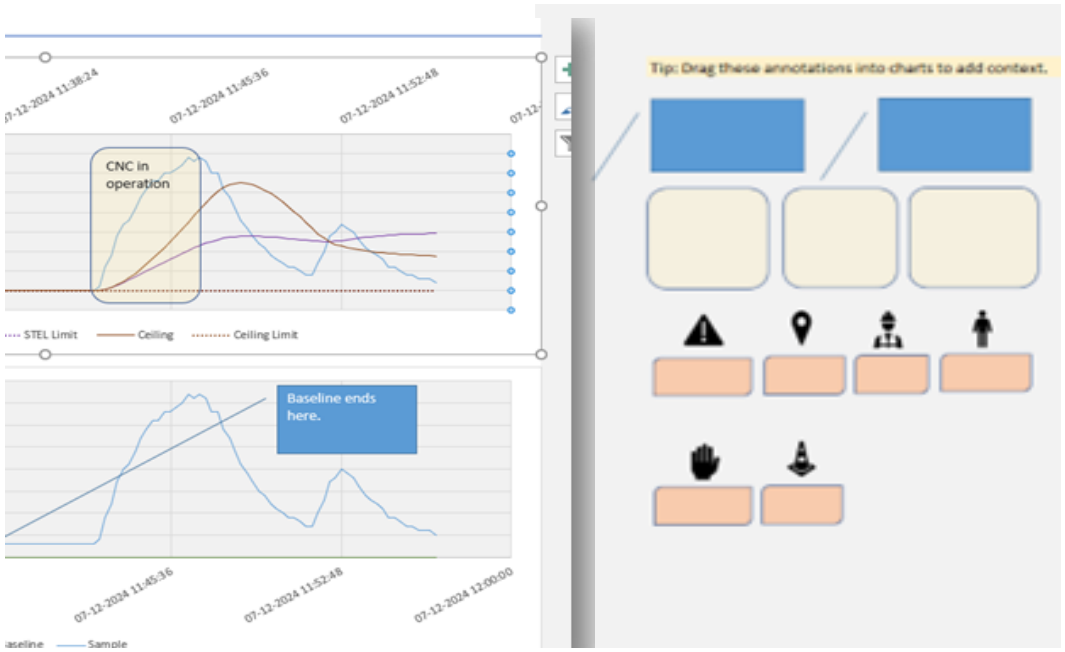
The **Trend Report worksheet has a whisker chart** with a slightly different visualization. Averages are a bar connected with a dashed line. Min and max are the "whiskers" of the line. Due to limitations of Microsoft® Excel® whisker charts, control limits cannot be displayed on these charts.

For either of these chart types, you may wish to add additional context to the chart. Refer to *Annotation Tools* below for more information.



Annotation Tools

These worksheet templates contain a set of useful annotations outside of the printable range of the report, on the right side of the charts. These annotations can be simply dragged into the report. You can type information into the text boxes and position the line markers where you like.



Step 6 Complete the Assessment

To complete the report, you can add recommendations under the Conclusions section.

The print layout for this sheet does not include the measurement data in the blue tables at the bottom of the sheet. They will not appear in a PDF export either.

Appendix A – Available Parameters

Below is a list of the 30 parameters available for these workbook templates.

Metric	Units
PM 1.0 (ug/m^3)	MICROGRAMS_PER_CUBIC_METER
PM 2.5 (ug/m^3)	MICROGRAMS_PER_CUBIC_METER
PM RESP (ug/m^3)	MICROGRAMS_PER_CUBIC_METER
PM 10 (ug/m^3)	MICROGRAMS_PER_CUBIC_METER
PM Total (ug/m^3)	MICROGRAMS_PER_CUBIC_METER
PM 1.0 (mg/m^3)	MILLIGRAMS_PER_CUBIC_METER
PM 2.5 (mg/m^3)	MILLIGRAMS_PER_CUBIC_METER
PM RESP (mg/m^3)	MILLIGRAMS_PER_CUBIC_METER
PM 10 (mg/m^3)	MILLIGRAMS_PER_CUBIC_METER
PM Total (mg/m^3)	MILLIGRAMS_PER_CUBIC_METER
NC 0.3 - 0.5 (#/m^3)	COUNT_PER_CUBIC_METER
NC 0.5 - 1.0 (#/m^3)	COUNT_PER_CUBIC_METER
NC 1.0 - 2.5 (#/m^3)	COUNT_PER_CUBIC_METER
NC 2.5 - 4.0 (#/m^3)	COUNT_PER_CUBIC_METER
NC 4.0 - 10 (#/m^3)	COUNT_PER_CUBIC_METER
NC 0.3 - 0.5 (#/ft^3)	COUNT_PER_CUBIC_FOOT
NC 0.5 - 1.0 (#/ft^3)	COUNT_PER_CUBIC_FOOT
NC 1.0 - 2.5 (#/ft^3)	COUNT_PER_CUBIC_FOOT
NC 2.5 - 4.0 (#/ft^3)	COUNT_PER_CUBIC_FOOT
NC 4.0 - 10 (#/ft^3)	COUNT_PER_CUBIC_FOOT
CO_2 (ppm)	PARTS_PER_MILLION
Formaldehyde (ppb)	PARTS_PER_BILLION
CO (ppm)	PARTS_PER_MILLION
SO_2 (ppb)	PARTS_PER_BILLION
Ozone (ppb)	PARTS_PER_BILLION
NO_2 (ppb)	PARTS_PER_BILLION
CL (ppm)	PARTS_PER_MILLION
NH_3 (ppm)	PARTS_PER_MILLION
VOC (ppm)	PARTS_PER_MILLION
VOC (ppb)	PARTS_PER_BILLION

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Distributed by:

Kenelec Scientific Pty Ltd
1300 73 22 33
sales@kenelec.com.au
www.kenelec.com.au

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TSI Incorporated – Visit our website **www.tsi.com** for more information.

USA	**Tel:** +1 800 680 1220	**India**	**Tel:** +91 80 67877200
UK	**Tel:** +44 149 4 459200	**China**	**Tel:** +86 10 8219 7688
France	**Tel:** +33 1 41 19 21 99	**Singapore**	**Tel:** +65 6595 6388
Germany	**Tel:** +49 241 523030		

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