SQI Test and Report Manual (PC)

Introduction

The SQI Test and report app has 3 primary functions

1. A professional way to easily collect data during steam quality testing.
2. A simple way to turn that data into a report.
3. A way to view and collect the temperature data from the SQI-TM1 dual input temperature indicator.

This document is written to aid the use of the SQI PC App and explain its features

Installation

We really recommend only downloading it from the Microsoft Store via this link. Microsoft Store SQI Test and Report

We cannot guarantee its safety if downloaded from anywhere else.

ADDED SYSTEMS REQUIREMENTS

If you want to monitor the output of the SQI-TM1 temperature indicator on your PC you will need to have the SQI-BTR dongle available from TJB Systems Ltd. PCs do not have the capability to read the Bluetooth data format sent from the SQI-TM1. Android and other devices however are not limited and will function correctly. At this time Graphing is not possible and has been disabled. Real time and statistics will function correctly

Note, to keep file size to a minimum, the app will download any extra files it needs at first run time. These are Java files and downloaded directly from Oracle. You have to grant permission for the Oracle installer to have internet access, or the app will not function correctly.
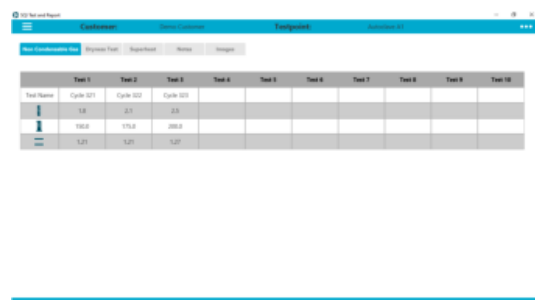
Fundamentals

The Screens

Main Screen
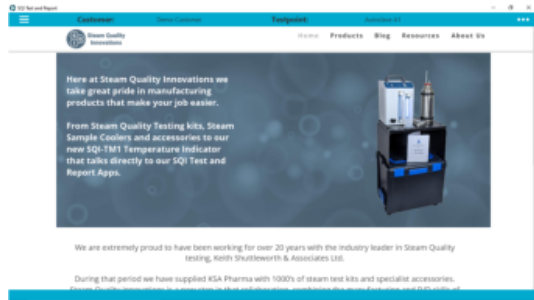
Menus

Files and Factory

Non-Condensable Tests

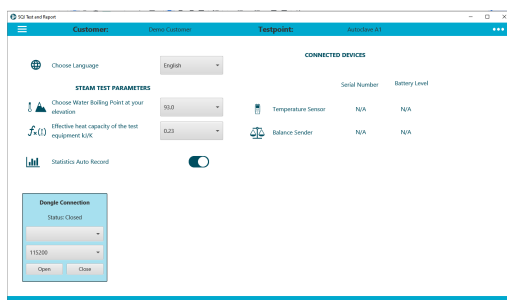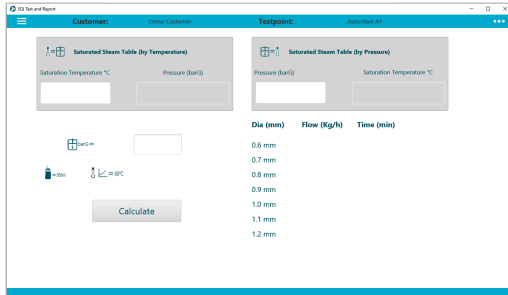### Dryness Tests

Superheat Tests

Reports

Settings

Utilities

Customers and Test Points

Once installed, the app is now ready to use.
There is one fundamental requirement to enable you to proceed to evaluate and use the App.

As all the data is collected with reference to a particular test point, you need to have a test point open to add or view any data. But before you can open a test point, you need to open the Customer the test point is stored in.

The hierarchy of the file system used is a folder system

There are Customer folders. Inside a Customer Folder there are Test Point Folders and inside that folder are all the data, images, notes etc for that test point.

The data is stored in your Documents folder:-

 Documents\SQI Test and Report\Customers
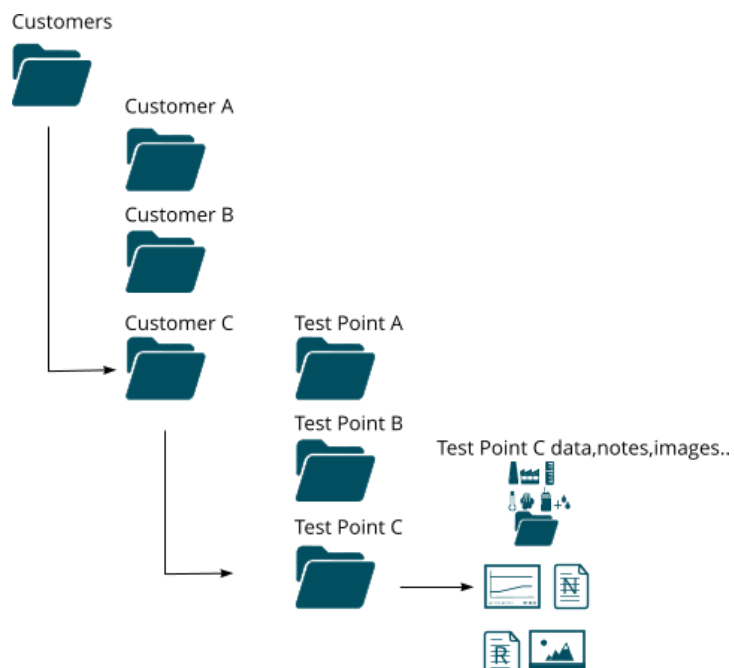
Customer Select/New
Select an existing customer or add a new customer

Test Point
Select an existing test point or add a new test point

Rename Customer
Rename, an existing Customer

Delete Customer
Delete an existing customer, Note you need to have deleted all the test points in that customer folder before you will be able to proceed with the deletion

Delete Test point
Delete an existing test point. Note, you need to be in the Customer folder with that test point to be able to delete the test point

Export Customer
Exporting customers is one of the most useful features of the app. We will cover more on the recommend operation using this feature later

Save As
Save a test point As, here we can make a copy of the currently open test point. Simply give it the new name. Note, it does not copy any of the notes or images associated with the original test point. It is just the database. We will cover more on the recommend operation using this feature later

Import Customer
Import a Customer, and all its associated test points and files into the apps file system. We will cover more on the recommend operation using this feature later

Close Selected
Close the current Customer and Test point.

Recommend use of Customers and Test Points

The app is primarily aimed at the engineering teams performing the Steam Tests. It may be the case that the same engineer is not the one performing the tests every time, so the new engineer will be lacking the nuanced knowledge of the plant or its history.

The Android App and the PC app are designed to work in conjunction. The PC is the home for all the files and reports, enabling the details of the test points to be passed onto the test engineer before testing.

This can be done by sending the "Customer" file to the engineer in an email or using one of the other file import options like G Drive or some other online storage system.

Once the customer is imported, the engineer now has all the previous test history on hand, along with notes on fittings and valve isolation points.

At the end of the test, the engineer can then export the latest test points back to the PC app to be included in the customer information. Having access to a full keyboard will also aid adding any modifications to the reports.

Recommended procedure for new customers

This is the recommended procedure when using the app, when starting with a new customer.

1. Make a new customer with the name and site as required
2. Make a test point and call it "Blank"
3. Fill in the Factory details but leave the Test point information blank

Thereafter when you want to start a test you open the Customer, open the Blank test point and then using **Save As** give it the test point name and finally fill in the test point name on the factory screen.

You can fill in the test data and when needed to make a new test point using the blank test point as a partially filled in reference.

Filling in the Test Data

The App has been designed to make the test person's life as easy as possible.

After opening the Tests page, you will be presented with 3 possible tests. Click on the section at the top of the screen.

Non-Condensable Gas

Dryness Test

Superheat

The icons used to indicate the data to be entered will be familiar to any steam quality test engineer.

Notes on test details

Built into the Dryness test input system, there are safeguards in place to prevent you making silly mistakes.

Like the order in which you enter the data. For instance, entering the final weight of the flask before entering the end temperature, and ensuring the values are in range. For instance, that the volume of cold water added to the Flask is in the range of 650ml +/- 50ml or that the water temperature is below 27oC

Adding notes and Images to the Test Point Data

On each of the test page, you have the ability to add notes and images.

This enables you to make notes on the test or the fittings required. Handy for the next engineer. Images are added via the file system on your PC.

In the image section, you can delete an image by right-clicking on it.

Producing Reports

The ability to produce reports is the 2nd feature the app was designed for. This feature is a fantastic tool to make testing as simple as possible, fulfilling Steam Quality Innovations' no 1 am to make your life easier.

Import Report Template
Import via your file system, a report template

Select Report Template
Select a report template from your list

Delete Template
Delete a one of your report templates

Select the Test Cycles
Select tests to include in report

Report name
Enter the Report Name you want to use. One is automatically generated, but you can alter it

Generate Report
Generate a report using the selected report template, entering the test data you selected

View report
View a report. This requires you have an appropriate application that is capable of viewing .RTF files. At the very least, Google Docs can and do this, however we recommend you use the app that the template was generated with.

Email report

Send a report via email. Note, as there is no mechanism to automatically attach reports to an email using your default email application in Windows, so we open a file explorer window at the appropriate location to enable you to drag and drop the file into the application. You may have to look on the taskbar to find the open file explorer.

Delete report

Delete a report

View our document on producing your own report templates at

www.steamqualityinnovations.com/resources-documents-manuals-software

Settings

Choose a language

Select a language, all text in the app will be displayed in the language of your selection

Water Boiling Point

Enter the water boiling point for your elevation

Effective heat capacity

Enter the value to use as the effective heat capacity of the flask and tube and bung assembly (the value is 0.23 for the equipment supplied by SQI)

Temperature Sensor

Displays the serial number and Battery level of the currently connected SQI-TM1 temperature indicator

Balance Sender

Not currently in use

Dongle Connection

Select the port the SQI-BTR dongle is plugged into

Utilities

Saturated Steam Temperature to Pressure
Convert your steam temperature to pressure

Saturated Steam Pressure to Temperature
Convert your steam pressure to temperature

Pitot Tube Selector
Work out the right pitot tube size for a given steam pressure based to get a consistent dryness test time

## Using the app In conjunction with the SQI-TM1 dual input temperature indicator.

The SQI-TM1 temperature indicator has been designed to work seamlessly with the SQI Test and Report App when using the SQI-BTR dongle. Simply turn the SQI-TM1 on and the device is automatically seen, and the temperatures are visible. No pairing is required.

Along with the ability to capture and manipulate the data generated during the steam quality tests, the primary function of the app is to act as a remote to the temperature meter.

There are a number of ways the data sent from the meter can be used in the application.

As the temperature data is only needed during the Dryness and Superheat test, the temperatures sent are only available in those tests.

When entering data you will have within the data entry box the ability to enter manual data, Current T1 or the last T? Temperature (? Being Start, End or T2 Average)
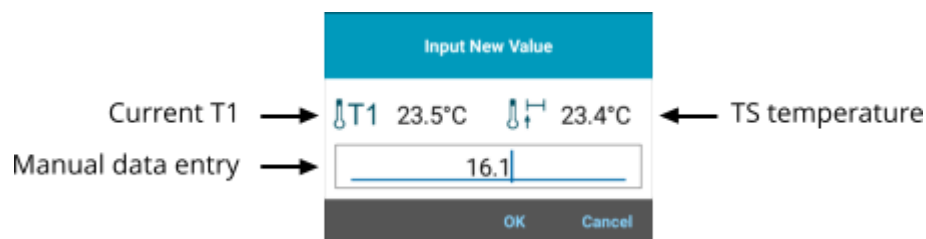
To enter the Current T1/T2 or TS,TE or average T2 temperatures, click on the appropriate icons. Note, the Auto recorded options will change based on the data entry.

Recording the Temperature Statistics

The basic temperature statistics are at the bottom of the screen in the Dryness test and the Superheat Tests. You can also view them on the chart tab.
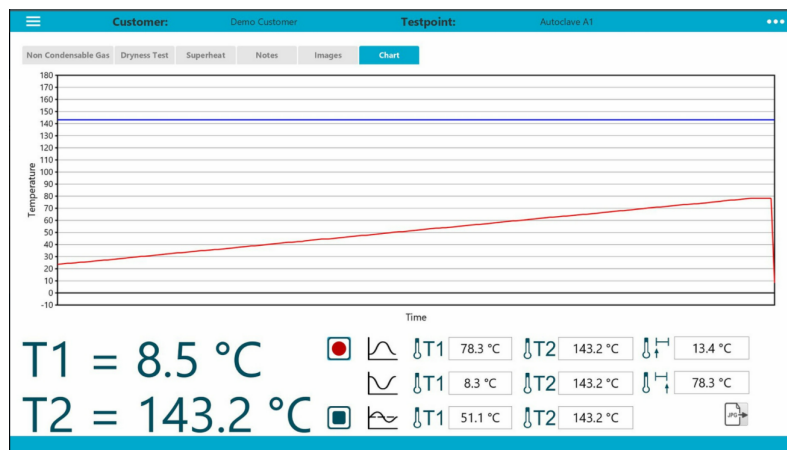
When you start a test on the SQI-TM1, the app will automatically start recording the data sent from the meter. Outside a test you can start recording the SQI-TM1 data using the start and stop icons to manually record the incoming data. This is a handy way to record the superheat test and get the max/min temperatures for both probes.

At any time you can capture an image of the chart screen. Perhaps to be included in your reports. Each time you save the image, the application will also save a CSV file for each Probe that includes the data used to generate the graph.

Example "T2_Data Suite 1 OV-01-0113 (11-08-2021 124957).csv is the data for probe T2

The last number in the name eg 124957 is a time stamp that will match the image file

Chart Suite 1 OV-01-0113 (11-08-2021 124957).jpg

To find out the time the image was taken, navigate to the file and right click on it and select properties.