

SQI Test and Report Manual (Android)

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 Android App and explain its features

Installation

The app is available on the Google Play Store using this link

<https://play.google.com/store/apps/details?id=com.tjbsystems.sqi> as well as via “side loading” for regions where the Google Play Store is not available. We really recommend only downloading it from the SQI website. See www.steamqualityinnovations.com/androidapp

We cannot guarantee its safety if downloaded from anywhere else.

The SQI Tests and Report App is designed to work on most Android devices. Running Android version 5 and higher. It has been tested on a number of devices from phones, tablets and even Chromebooks capable of running Android apps.

The app, while written to work with many types of devices, is not guaranteed to work with **your** device. During development we encountered issues on phones, due to their BLE radios not operating properly. While you can contact us, we can only offer limited support for issues experienced on your particular device. Use without the SQI-TM1 temperature indicator will not be affected.

Follow the onscreen instructions to instal. Note that to enable proper functionality, you need to allow all access requests. We recommend you view our privacy policy to gain a fuller understanding of the requirements.

www.steamqualityinnovations.com/privacy-policy-2

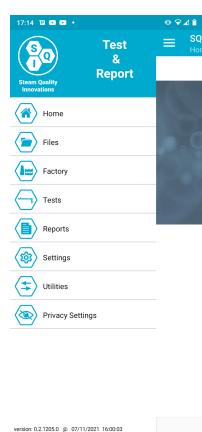
Fundamentals

The Screens

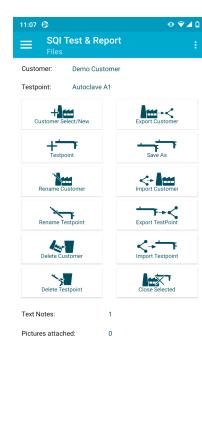
Home



Menu



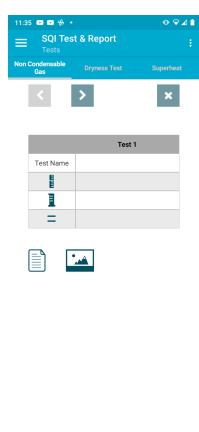
Files



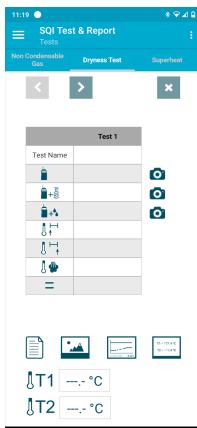
Factory



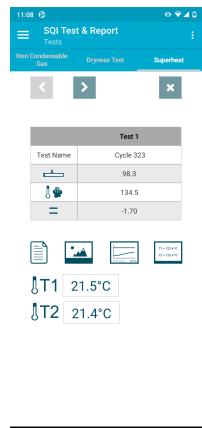
NC Tests



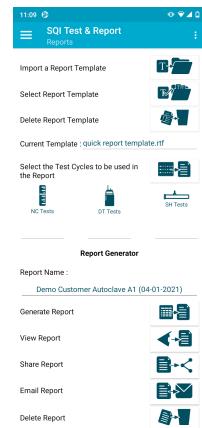
Dryness test



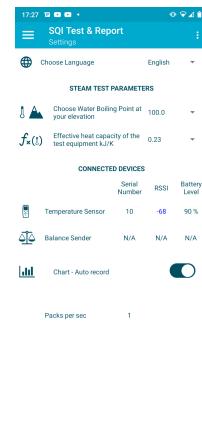
Superheat test



Reports



Settings



Utilities



Customers and Test Points

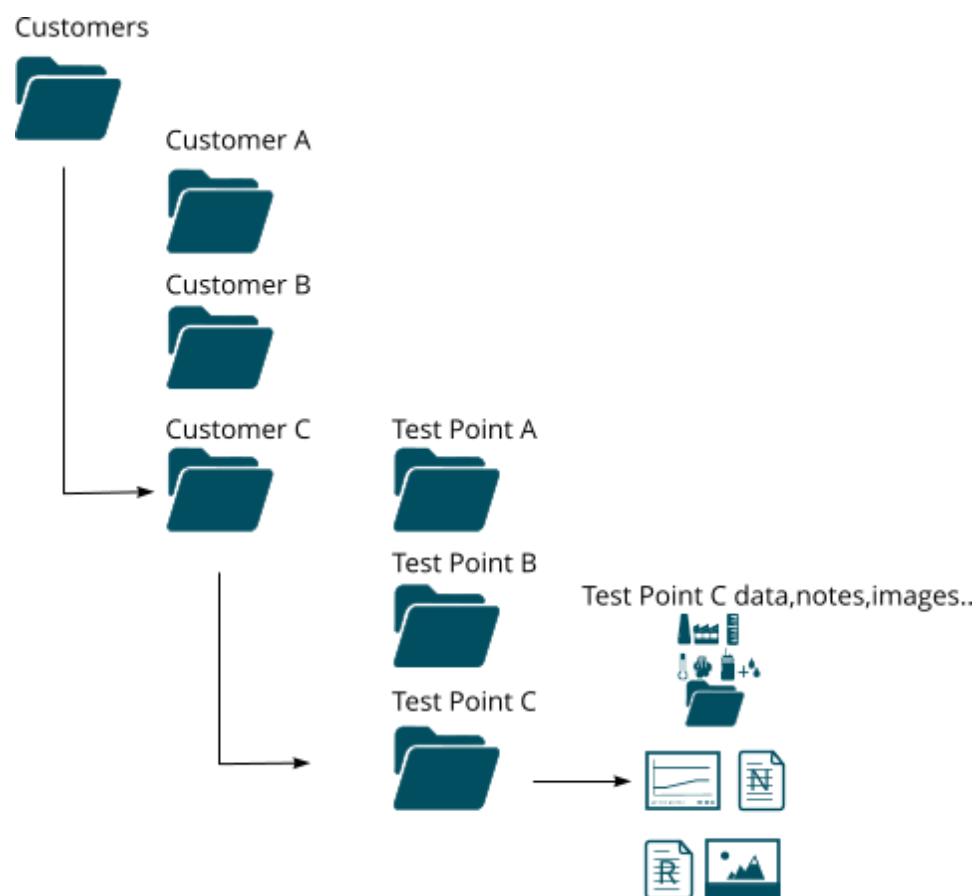
Once installed, the app is now ready to use.

There is one fundamental requirement to enable you to proceed to evaluate and use the App.

As all data is collected in relation 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 like 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. Note that due to Android privacy, you do not have access to the file system. You have to use the options the app offers to export any data.



With the file system explained we can now look at the features offered in the Files section.

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 Testpoint

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 Testpoint.

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

Now 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.

Now you can fill in the test data and when you need 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. Tap the appropriate 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.

In the latest version of the software we have added the ability to take a photo of the balance reading. This is from our experience invaluable to get reassurance that you wrote the right value down. You can view or change the photo by tapping on the icon again or looking the photo gallery at the bottom of the page

The file names follow this convention. f?-??-xxxxx

Where f? is the data point (fs is flash start, f6 is flask + 650ml and fe is flask end). ?? is the test number The final section is the test point name.

Test Name	
	
	
	
	

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

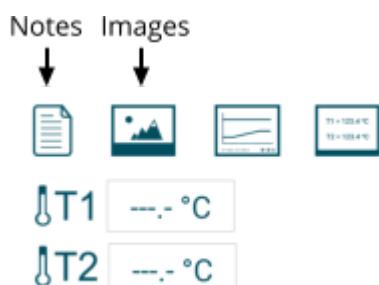
Adding notes and Images to the Test Point Data

On each of the test pages, you have the ability to add notes and images. Each screen will enable you to enter text data to the same note file.

This enables you to make notes on the test or perhaps the fittings required. Handy for the next engineer.

You can also add images. Either using the camera or from a gallery.

In the image section, if you delete an image by long pressing 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

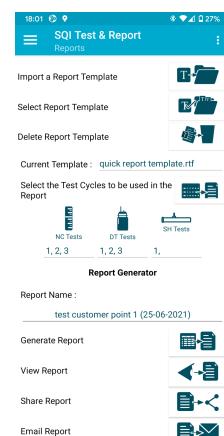
Select tests to include in report

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 compatible with the template you generated.

Share report

Share a report using one of the many share options available in Android. Note the report is the .RTF format

Email report

Send via email, a report

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, RSSI and Battery level of the currently connected SQI-TM1 temperature indicator

Balance Sender

Not currently in use

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

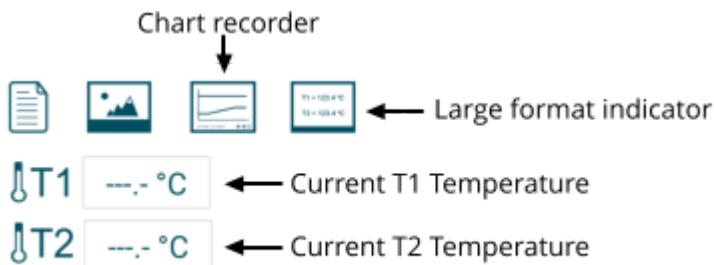
Using the app In conjunction with the SQI-TM1 dual input temperature indicator

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

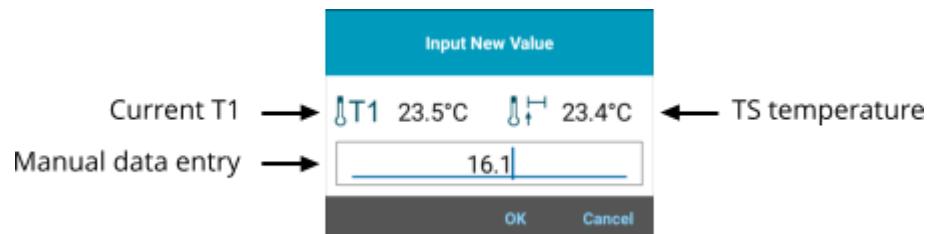
Along with the ability to capture and manipulate the data generated during the steam quality tests, the primary function of the app is to act as a remote to the temperature meter.

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 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, TS/TE or average T2 temperatures, tap on the appropriate icons. Note, the Auto recorded options will change based on the data entry.

Large format Indicator

Use this feature to display the current T1 and T2 temperatures

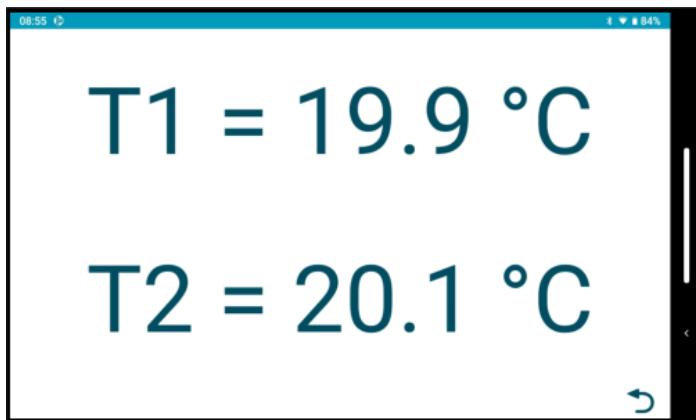
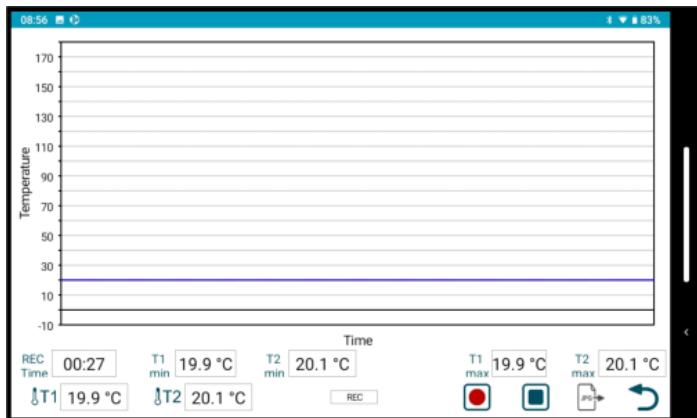


Chart recording and Statistics



When you start a test on the SQI-TM1, the app will automatically start recording the data sent from the temperature meter in a chart.

It's a great feature to be able to analyse the way the temperatures are reacting during the test. From excessive steam pressure drops to dips in the smooth heating of the flask.

During the test, you can get the real time max and min values of T1 and T2.

Outside a test started using the SQI-TM1 you can manually start and stop recording the incoming data using the record stop and start button.

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