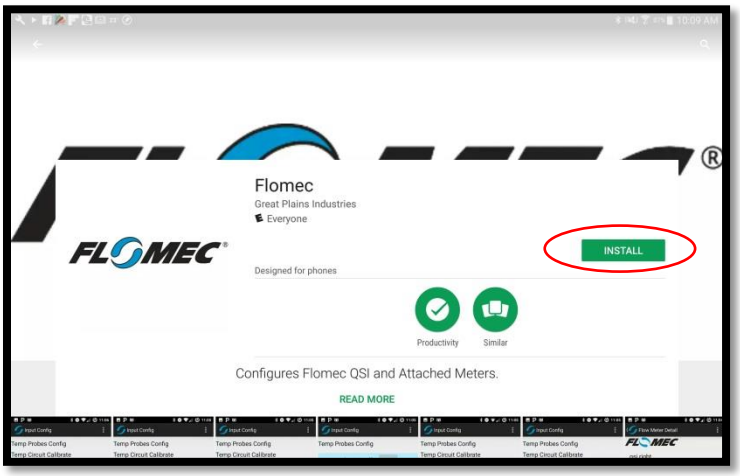
Note: The following FLOMEC® user's guide has images that may vary slightly from what is shown on your device. The images in this document were taken from an Android tablet running Android OS version 5.1.1. Android phone images or different Android OS versions will vary slightly.

Note: The minimum requirements of the Android device is Android OS version 4.4.2 or newer and Bluetooth Wireless capability.

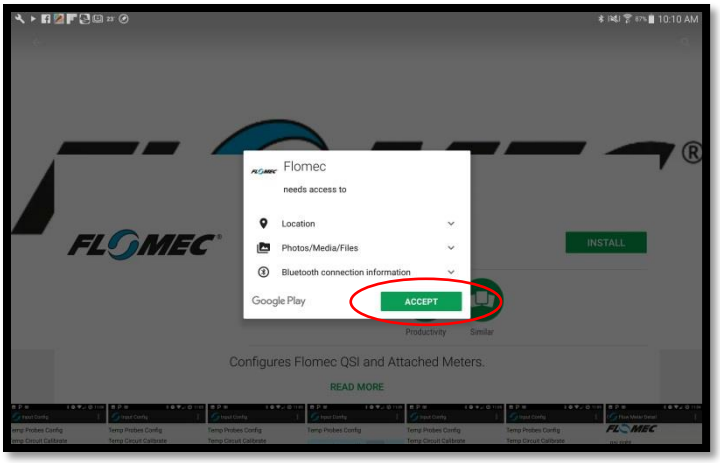
Download the FLOMEC Android Application from the Google Play Store

To download the FLOMEC app from the Google Play Store, open the Play Store App on your Android device and enter "FLOMEC" into the search bar. The Play Store should find the FLOMEC App and should allow you to download it for free. See below image for reference.

To start the download process, select the app box (shown above) with the FLOMEC logo.

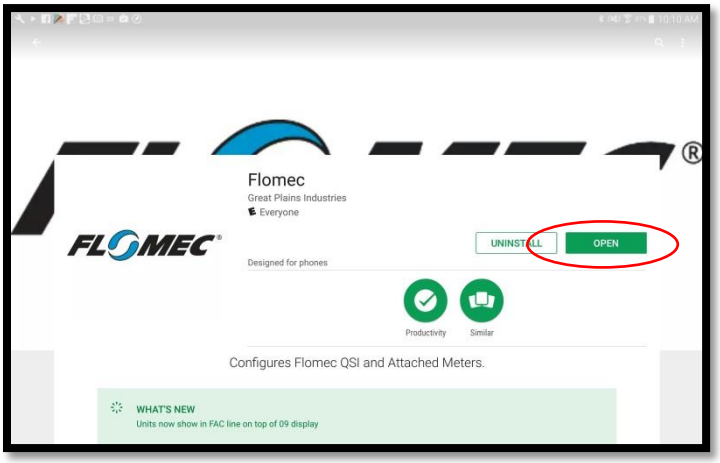


To start the download, select the INSTALL button shown above.

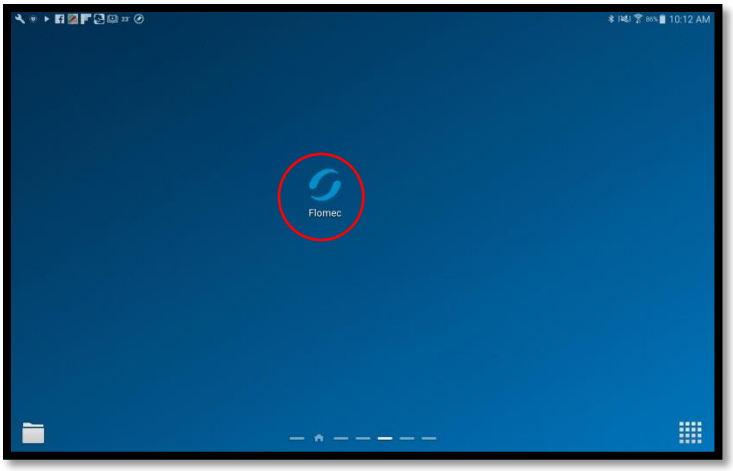


To complete the download process, select the ACCEPT button shown above.

Congratulations! The FLOMEC Application is now installed and ready to use to monitor and configure your FLOMEC meter. To begin using the FLOMEC app you can either select the OPEN button in the Play Store screen shown below or…



…you can also start the app from the Android system applications menus by selecting the FLOMEC app icon. The FLOMEC app icon will look like the icon in the image below.


10:12 AM
Flomec

Note: The FLOMEC app requires that at least one FLOMEC meter (equipped with QSI electronics) is within a distance of 100 feet of the Android device and that the FLOMEC meter is also powered ON.

Starting the FLOMEC App for the first time

When you start the FLOMEC app for the first time after installation the main screen will look very empty as shown below.

This is because the app will need to initially search for and pair your Android device with any FLOMEC meters within range (typically less than 100 feet) of the Bluetooth wireless interface. To search for nearby devices press the Android devices menu button and you will see 'Search' in the pop up menu. Select the 'Search' menu option as shown in the image below.

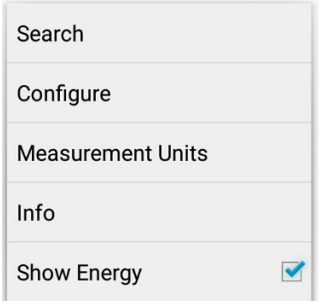
Your Android device will now begin to search for FLOMEC meters nearby and populate them in a list on the left side of the screen. In the following image, you can see that the Android device has found three different FLOMEC meters. Select the meter you would like to connect to by selecting it from the list on the left side of the screen.

Note: Your device list will not be the same as what is shown throughout this document.

Note: As the FLOMEC app connects to the meter, the Android OS will "pair" with the meter. This pairing process may popup a message that asks permission to "pair" with the meter. If successful connection is made with the meter, the meter's device name will populate into the Android device's OS memory and can be seen in the paired devices list in the Android OS settings under the Bluetooth settings. To "unpair" from a meter, you will need to navigate to the Android device's Bluetooth settings and "unpair" from the device in the Bluetooth settings list.

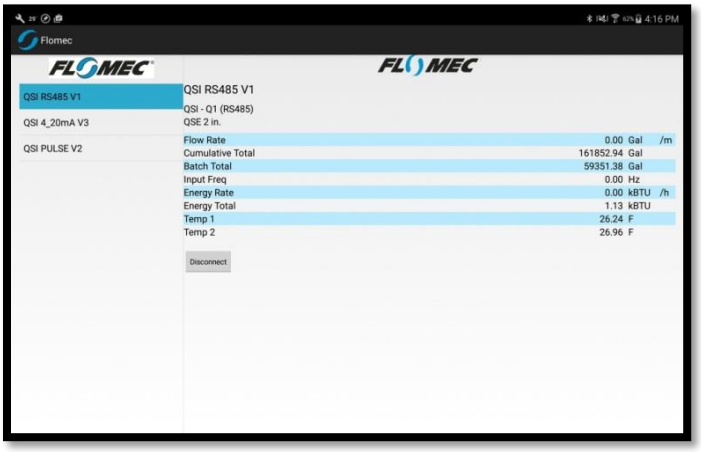
In this first example, I have chosen to connect to a meter with a QSI version 1. This version of QSI has temperature inputs and MODBUS (RS485) communication. As such, the main screen of the app may look different than the meter which you connect to if your meter has a different QSI version.

Note: For QSI version 1 and version 2, if the 'Show Energy' option is not selected in the main screen menu (see image below) of the app then the Energy Rate, Energy Total, Temp 1, and Temp 2 variables will not show on the main screen. After you first install the app, the default of the 'Show Energy' option is disabled. Select the 'Show Energy' option in the main screen menu if you intend to use your FLOMEC meter as a BTU meter.

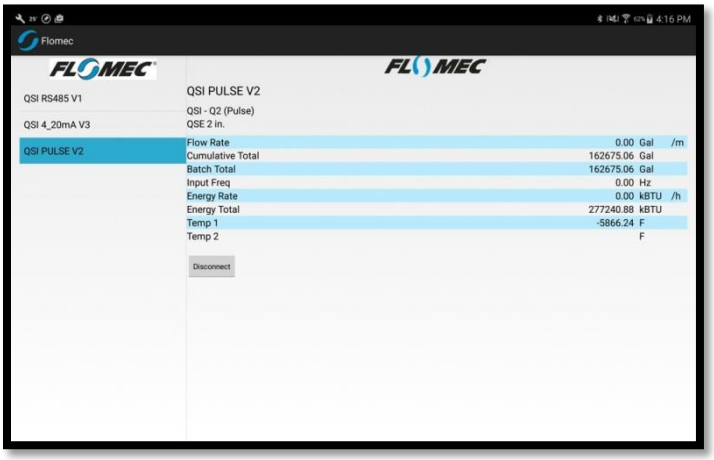


After successful connection to your meter, you should get one of the following three screens on the right side of the main screen. The FLOMEC brand logo will start spinning the “O” in the FLOMEC logo to indicate that the meter is successfully communicating with your Android device. If the “O” in the logo does not start spinning, then there is a communication problem that will need to be corrected.

For QSI version 1 the main screen should look similar to the image below if the ‘Show Energy’ option is selected.



For QSI version 2 the main screen should look similar to the image below if the ‘Show Energy’ option is selected.

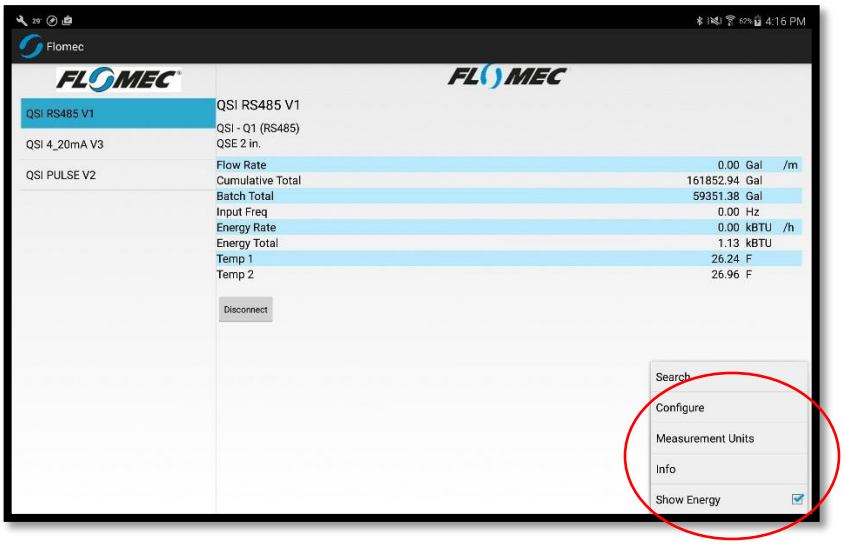


For QSI version 3 the main screen should look similar to the image below.

Note: Because the QSI version 3 does not have temperature sensor capabilities, the temp and BTU features are disabled.

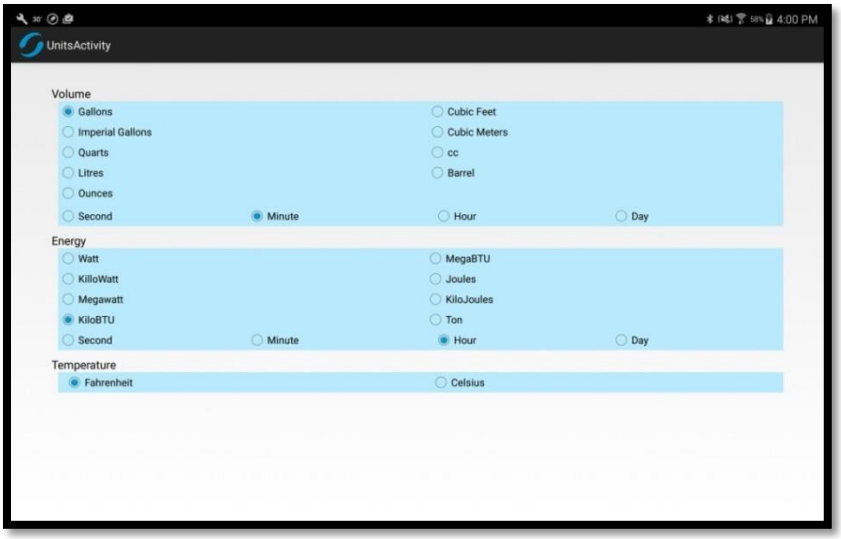
Navigating the main screen menu options

After connecting to a meter, the app's menu options will update with four additional items. These items are 'Configure', 'Measurement Units', 'Info' and 'Show Energy'. See image below. This section of the manual only covers the 'Measurement Units' and 'Info' screens. The 'Configure' screen is covered in its own section of this manual.



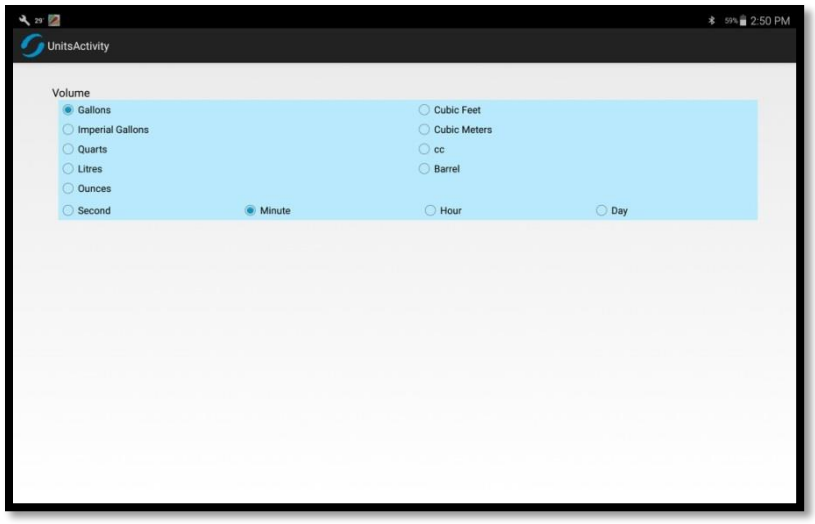
Measurement Units Screen

If you select the 'Measurement Units' option from the menu list, the screen shown below should show if you are connected to either a QSI version 1 or version 2 and the 'Show Energy' option is 'checked'.



If you prefer to change the Volume, Energy, Temperature, and Time base units displayed in the app, you can simply select the appropriate units. This procedure changes what is shown by the app, it does not change the meter configuration. It will not change the measurement units on the meter's local digital display for example.

The screen shown below should show if you are connected to a QSI version 3, or if you are connected to a QSI version 1 or version 2 and the ‘Show Energy’ option is ‘unchecked’.



Note: The default settings after installing the FLOMEC App is that ‘Seconds’ is selected for both the Volume and Energy as the unit of time. This may not be the desired time base for most applications. Changing the time base or unit of measure will change the way the app displays the measured variables monitored from the meter. However, changing the time base or unit of measure in the app will not change either of the meter’s display (if attached to the meter) or the MODBUS interface units (if connected to a QSI version 1).

Info Screen

Press the Android device’s ‘back’ button and select ‘Info’ from the main screen’s popup menu. This will bring up the meter’s basic information. This information screen can be useful to retrieve serial number information for warranty and customer service purposes. This screen is informational only.

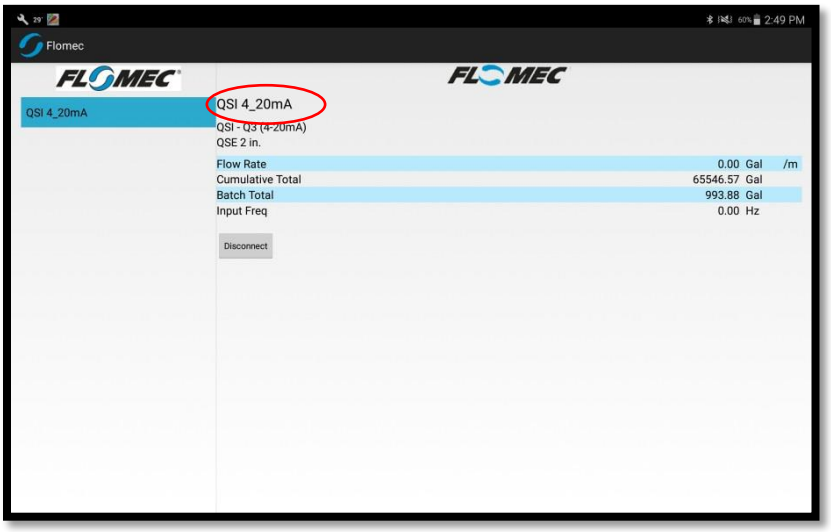
If connected to a QSI version 1, a screen similar to the one shown above should be visible.

If connected to a QSI version 2, a screen similar to the one shown below should be visible.

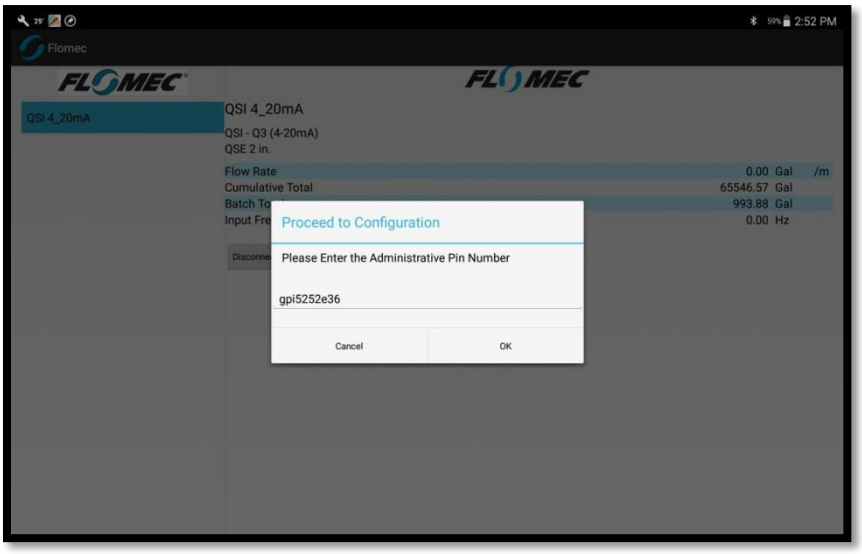
If connected to a QSI version 3, a screen similar to the one shown below should be visible.

Changing Device Name

To change a device name to a custom name, select the device name of the device you want to rename on the main screen as shown below. You must be connected to the device you want to rename.

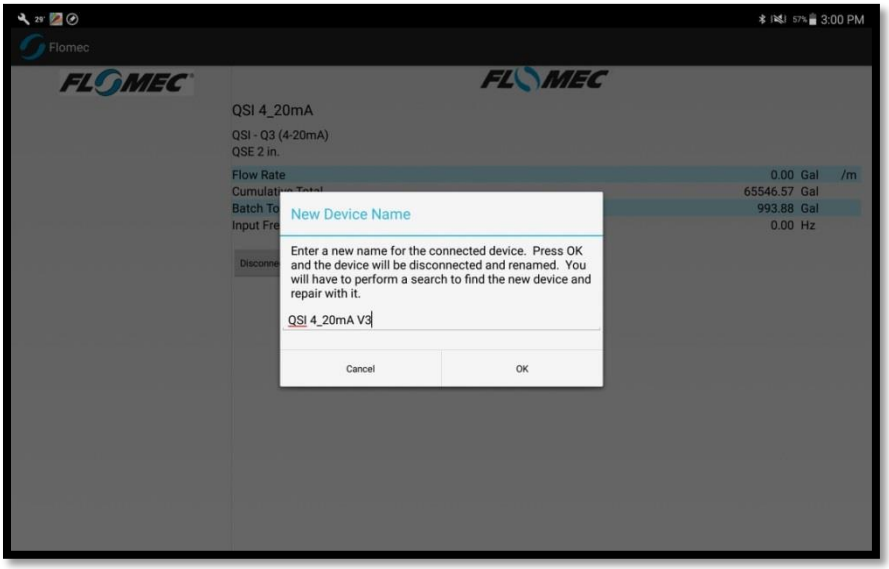


The following administration password popup box will ask you to enter the administration password. The default password for the initial release of the app is 'gpi5252e36'. Enter this password to continue to changing the device name.

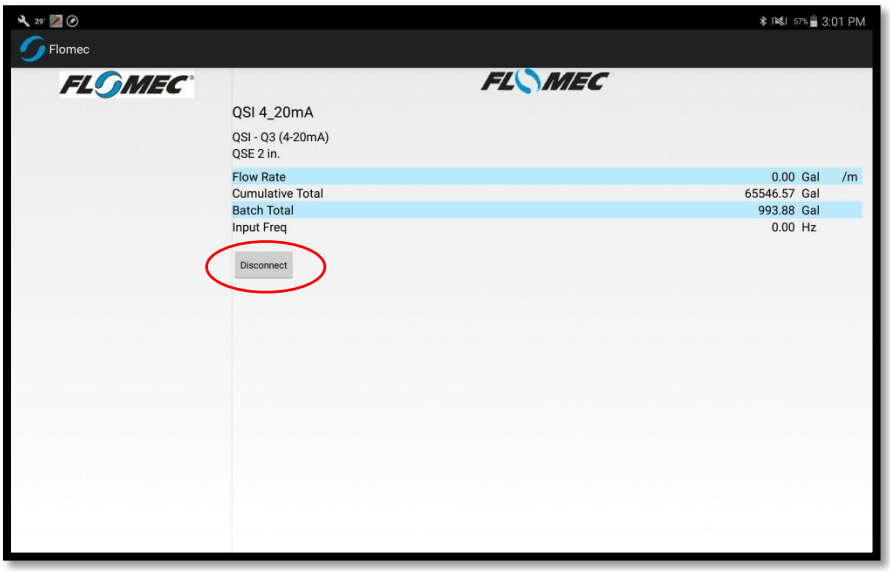


Note: This password is not user customizable for the initial release of the FLOMEC application, but GPI plans to allow the meter administrator to change the administration password in future releases of the app.

On the next screen, enter the new device name. The name field allows up to 16 ASCII characters.



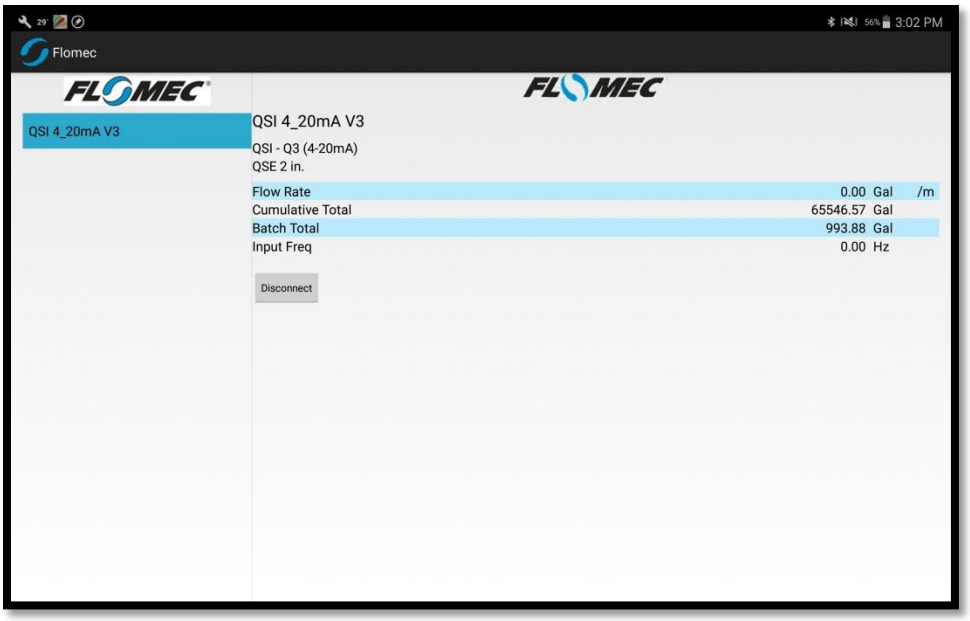
After the FLOMEC app sends the new name to the device, the meter's device name will be permanently changed to its new name. Therefore the FLOMEC app will also automatically disconnect from the device and remove it from the Android device's Bluetooth settings as a paired device. Therefore the user must press the disconnect button as shown below.



To find the device with its new name, select ‘Search’ to start a Bluetooth scan for new devices and new device names.

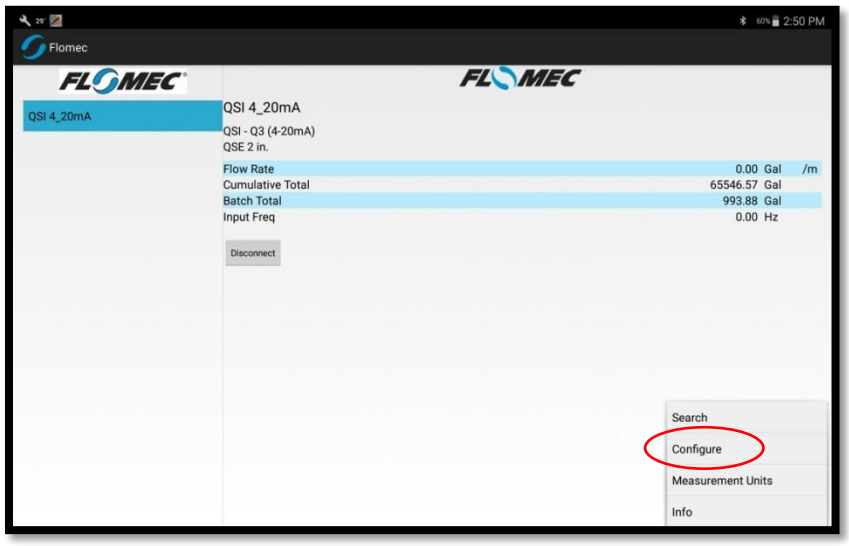
The search will allow the Android device to show the new device name in the device list as shown below. Select the new device name from the list on the left of the main screen and the Android device will “pair” with the new device name.

If the device is successfully “paired”, then the main screen should start showing the monitoring variables.



Configure Screen

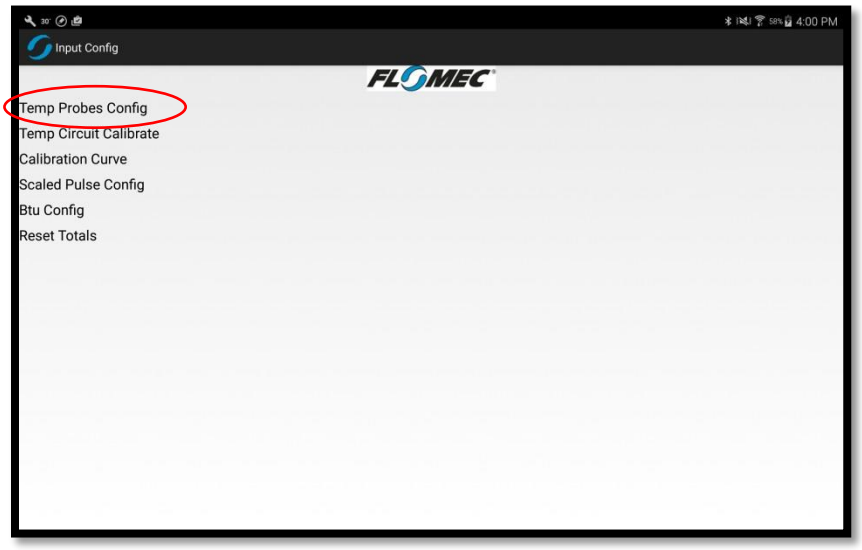
To enter the meter configuration screen, select the ‘Configure’ option from the main screen popup menu list as shown below.



Note: The configure screen images shown in this section will change depending on the version of QSI that your meter has installed.

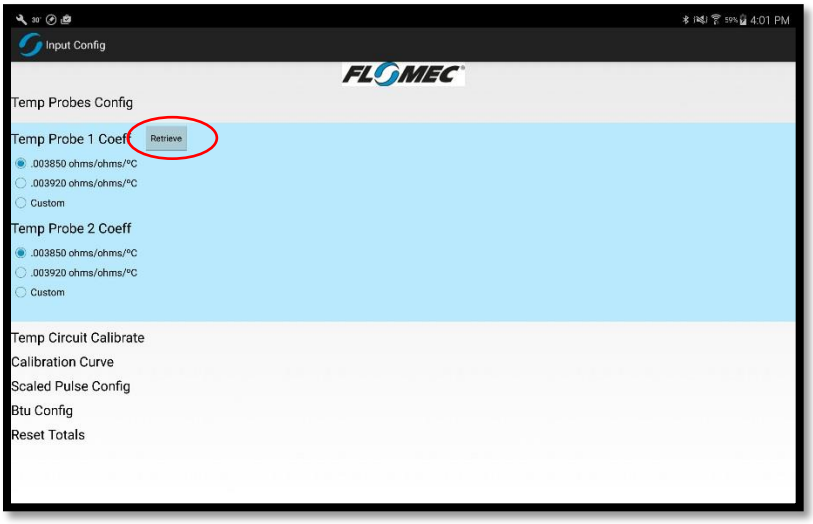
Temp Probe Configuration

If your meter has either a QSI version 1 or 2, you have the option to install temperature probes (sold as an accessory option with the meter) for BTU metering purposes. The Android application allows the administrator to install and calibrate the temperature probes. To configure the probe type for the meter, select the ‘Temp Probes Config’ option from the list as shown below.

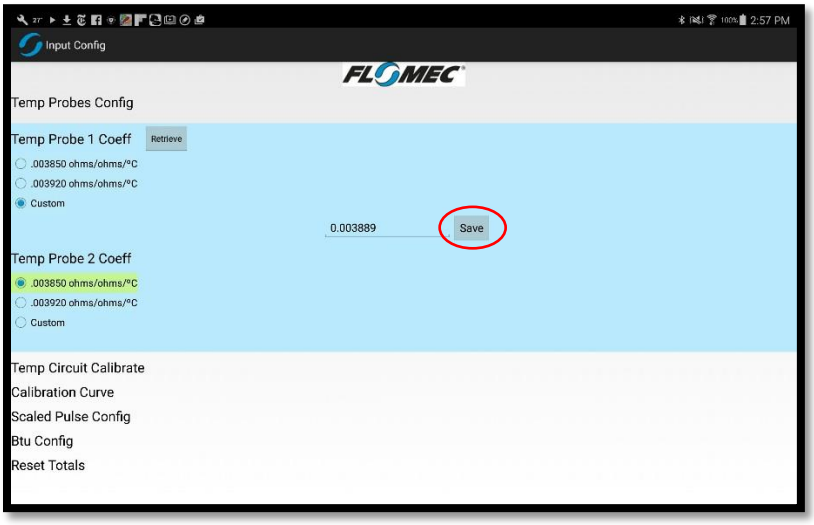


The default setting for the temperature probes is a 0.003850 ohms/°C coefficient, which is the standard for platinum RTDs. The temperature probes that are sold as an accessory with the QSE meter are 3-wire 100 ohm platinum RTDs with a temperature coefficient of 0.003850 ohms/°C. These are the recommended RTDs to use with the QSI. However, if the meter administrator is comfortable other RTD brands, the QSI can also support the use of 0.003920 ohms/°C RTDs, this is another standard coefficient. Either can be selected from the radio button options in this menu.

Note: It is always best to press the 'Retrieve' button for any of the options on the Configuration screen. The FLOMEC will often show default values that are not what is actually set in the meter. Pressing the 'Retrieve' button will get the actual meter settings. Each section of the Configuration screen has an independent 'Retrieve' button.



It is also possible to select a custom coefficient by selecting the 'custom' radio button and entering a value and selecting the 'Save' button as shown below.

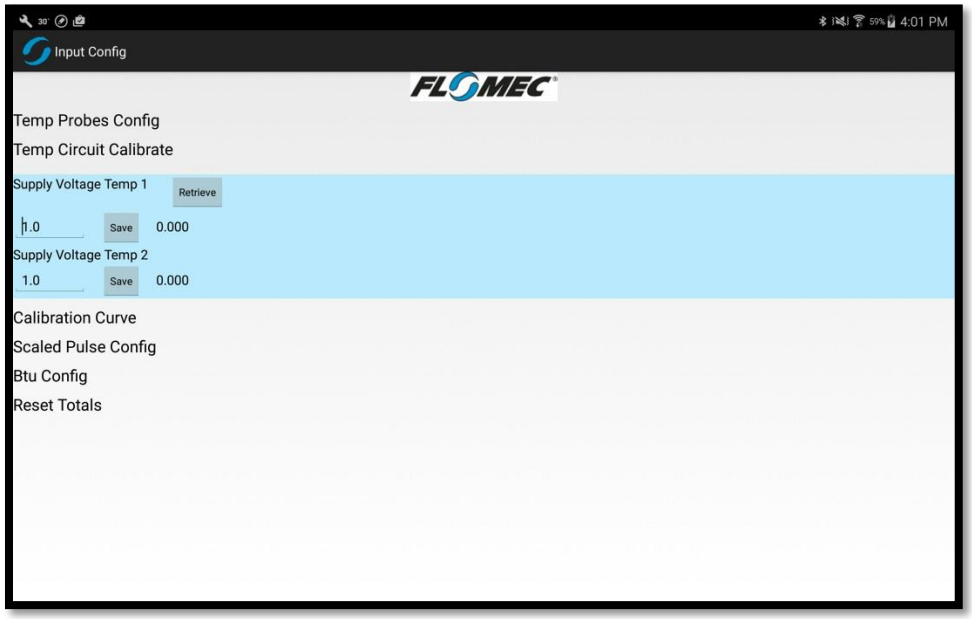


Temp Circuit Calibration

For meters with temperature sensors, the temperature circuit is already calibrated at the factory. However, the FLOMEC app allows a field calibration of the temperature sensor circuit by doing the following:

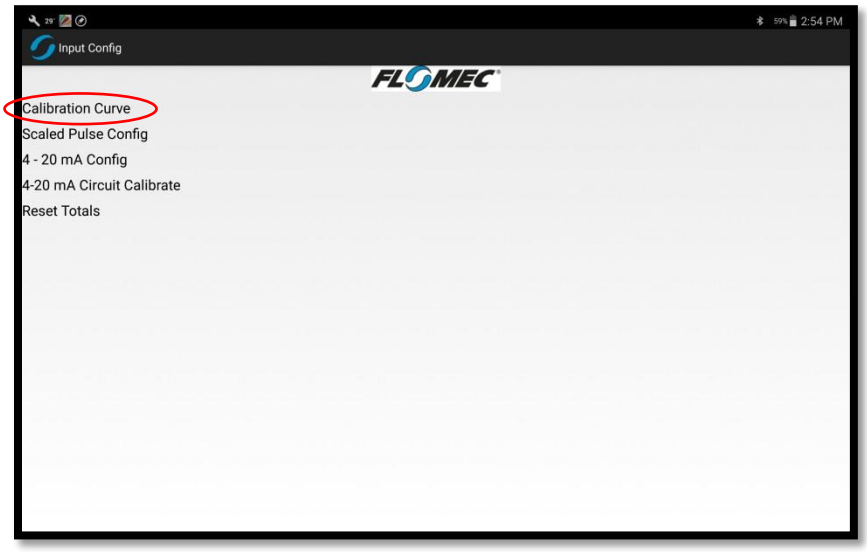
Note: the temperature sensors need to be removed during the calibration procedure. The expected reading is approximately 1.0V DC.

1. Always start this process by selecting 'Retrieve' and writing down the values set by the factory.
2. Connect a digital DC voltmeter with a resolution of at least +/- 0.001 Volts between J3 pin 1 (+) and J3 pin 3 (-). Enter the voltage shown on the voltmeter display into the text field below 'Supply Voltage Temp 1' and select the 'Save' button next to the entered value.
3. Connect a digital DC voltmeter with a resolution of at least +/- 0.001 Volts between J4 pin 1 (+) and J4 pin 3 (-). Enter the voltage shown on the voltmeter display into the text field below 'Supply Voltage Temp 2' and select the 'Save' button next to the entered value.

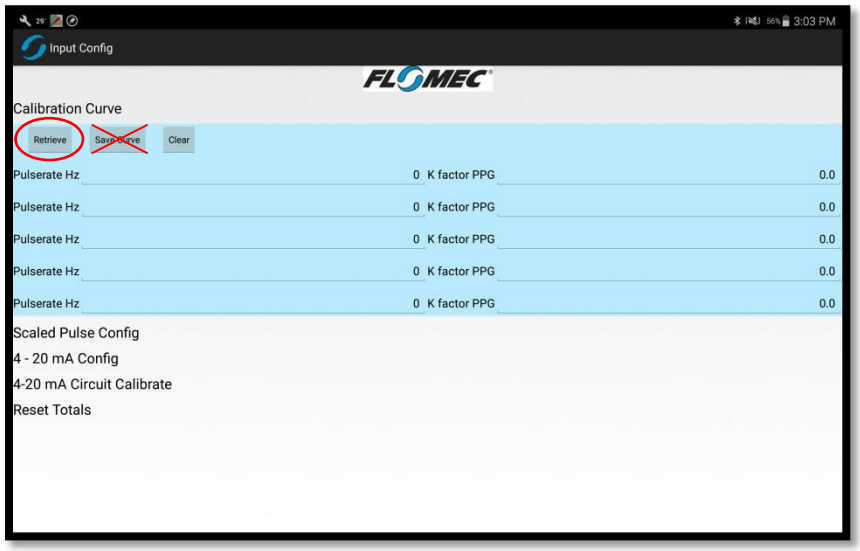


Calibration Curve

The calibration curve options are the most important settings of the meter as changing or entering these values will determine the accuracy of the meter. This section could also be referred to as 'linearizing the meter output'. To start the configuration of this section, select the 'Calibration Curve' menu item as shown below.



The calibration curve table will then show up on the screen as shown below. To see the Calibration Curve values already programmed into the meter, select the 'Retrieve' button.



Warning: All of the values will default to zeros as shown above. Do NOT press 'Save Curve' before you retrieve the values or you will overwrite the device's factory calibration settings with all zeros and the device will no longer measure flow or calculate energy correctly.

The FLOMEC app should retrieve the values stored on the meter as shown below. Although not recommended, these values can be changed and saved to the meter by selecting the ‘Save Curve’ button.

Recovery of Factory Calibration

The factory calibration settings have been printed on the Certificate of NIST Traceability which is shipped with each meter in the meter packaging. If you have changed your settings and wish to change them back to factory calibration settings, you can enter the numbers from your NIST Certificate and select the ‘Save Curve’ button.

From your NIST certificate (example on next page), enter the Pulse rate Hz (PPS) into the column of numbers on the left. Then enter the Kfactor numbers (PPG) into the column of numbers on the right. Then save the values to the meter by selecting the ‘Save Curve’ button.

FLOMEC®
5252 East 36th Street North
Wichita, KS USA 67220-3205
TEL: 316-686-7361
FAX: 316-686-6746

Certificate of NIST Traceability

The equipment used in the calibration of this flowmeter is traceable to the National Institute of Standards & Technology (NIST). Evidence of this traceablility is on file at our factory and is available on request.

UUT Model #		Fluid Type	Water
UUT Serial #		Fluid Conductivity	789 uS/cm
Operator Name		Fluid Temperature	45 C
Date	11/18/2016	Fluid Density	1.253 lbs/gal
Time	1:16 PM	Default Kfactor	121 PPG
Order #		Default Kfactor	31.965 PPL

Target Setting	Actual Measured Values		UUT Calculated Values		
Flow Rate (GPM)	Mstr Flow Rate (GPM)	UUT Freq (PPS)	Kfactor (PPG)	Flow Rate (GPM)	% err
4.500	4.500	9.000	120.000	4.463	-0.826%
30.000	30.000	60.500	121.000	30.000	0.000%
75.000	75.000	151.000	120.800	74.876	-0.165%
150.000	150.000	302.000	120.800	149.752	-0.165%
300.000	300.000	604.000	120.800	299.504	-0.165%

GPM = Gallon Per Minute
Mstr = Master Meter
UUT = Unit Under Test
PPS = Frequency measured in Pulses per second
PPG = Pulses Per Gallon
% err = accuracy statement in percent of error

Cal Slope
Cal Offset

Target Setting	Actual Measured Values		UUT Calculated Values		
Flow Rate (LPM)	Mstr Flow Rate (LPM)	UUT Freq (PPS)	Kfactor (PPL)	Flow Rate (LPM)	% err
17.034	17.034	9.000	31.701	16.894	-0.826%
113.562	113.562	60.500	31.965	113.562	0.000%
283.906	283.906	151.000	31.912	283.436	-0.165%
567.812	567.812	302.000	31.912	566.873	-0.165%
1135.623	1135.623	604.000	31.912	1133.746	-0.165%

LPM = Liter Per Minute
Mstr = Master Meter
UUT = Unit Under Test
PPS = Frequency measured in Pulses per second
PPL = Pulses Per Liter
% err = accuracy statement in percent of error

Calibration data is raw pulse data from the electromagnetic meter assembly. This data, or its average, is programmed into the integral electronics that power the readout, or it can be programmed into another readout device to provide an output that will meet or exceed advertised product accuracy over recommended flow range.

The instrument reference above was calibrated using standards traceable to the National Institute of Standards and Technology. Evidence of traceability is on file at our laboratory and is available upon request. The volumetric flowrates reported are within an uncertainty of +/- 0.05% of reading
Controlling specifications, ISO 10012, ANSI/NCSL.

Calibrator ID | Calibrator Calib. Date | Calibrator Calib. Due

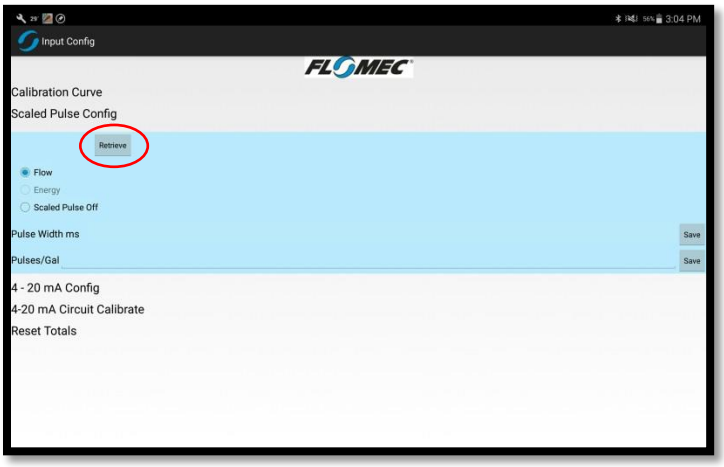
Name *Title*

Note: The NIST Certificate above shows the location of the values to be used in the Calibration Curve table, do not use the values shown above, use the values on the NIST Certificate that was provided with your meter.

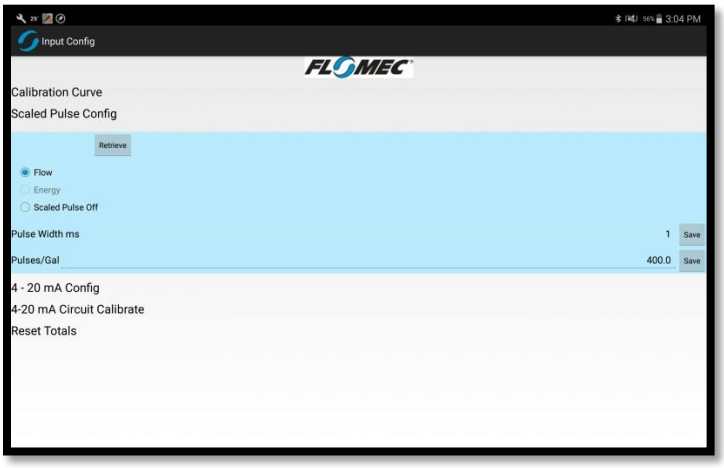
Scaled Pulse Configuration (Volumetric Flow)

All QSI versions allow for a scaled pulse output for remote totalization of the fluid volume. The scaled pulse output options can be configured under the 'Scaled Pulse Config' section as shown below.

Note: The QSI Version 3 cannot generate scaled pulses for energy because it does not have temperature sensor inputs. Therefore the 'Energy' option is not selectable. The QSI Version 1 and 2 can support energy pulse output.



Select the 'Retrieve' button as shown above to read the configuration values from the meter.



The application allows the user to set two values. The first is the Pulse Width in milliseconds of the low going edge of the pulse output. The second value is a custom Kfactor (Pulses/Volume Unit) for the pulse output of the meter. The Volume Unit is selectable on the "Measurement Unit" screen shown previously.

Both of the Pulse Width and Pulses/Volume Unit values can be set to any custom value that the meter administrator requires, however care must be taken when setting these values as there are limitations.

1. The Pulses/Volume Unit in the Scaled Pulse Config options cannot be larger than the largest Kfactor value in the Calibration Curve settings stored on the meter. The QSI cannot scale up the pulses/Volume Unit. The QSI can only scale down.

Note: If the Pulses/Volume Unit in the Scaled Pulse Config options is set larger than the largest Kfactor of the meter's Calibration Curve, the scaling will be set to 1:1.

2. The Pulse Width (ms) option cannot be larger than the highest frequency output of the meter will allow. To calculate it use the following formulas:

To calculate max flow rate based on known positive and negative pulse widths; use this formula:

$$\boldsymbol{Max\ Flow\ Rate\ (GPM)} = \frac{\mathbf{60{,}000}}{(\boldsymbol{Neg\ Pulse\ Width\ in\ mSec + Min\ Pos\ Pulse\ Width\ in\ mSec}) * \boldsymbol{Scaled\ Output\ Kfactor\ PPG}}$$

To calculate the maximum negative pulse width based on the expected max flow rate for your application and a known minimum positive pulse width; use this formula:

$$\boldsymbol{Max\ Neg\ Pulse\ Width\ (ms)} = \left(\frac{\mathbf{60{,}000}}{\boldsymbol{Max\ GPM\ of\ Application} * \boldsymbol{Scaled\ Output\ Kfactor\ PPG}}\right) - \boldsymbol{Min\ Pos\ Pulse\ Width\ (ms)}$$

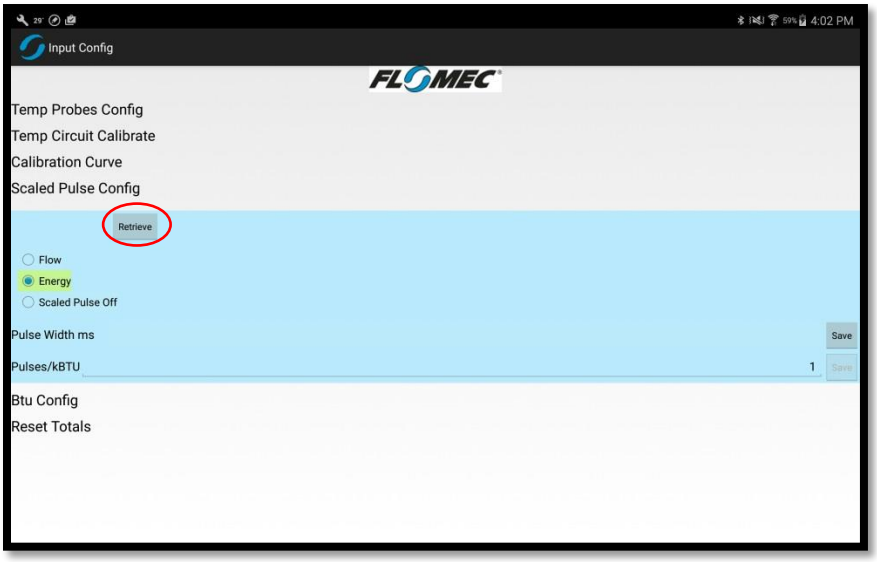
Note: If the Pulse Width is set too high and the meter's flow rate increases above the max flow rate from the calculations above, this could cause the frequency of the meter's pulse output to exceed the application's min positive and min negative pulse width settings. This could result in one of two situations:

1. **The negative pulse width is a guaranteed value, so the min positive pulse width might begin to fall below the value used to calculate the max flow rate. Having a positive pulse width fall below the applications requirement could result in attached equipment from properly receiving pulses.**
2. **If the flow rate continues to increase above the max flow rate limit, the positive pulse width will eventually decrease to zero time. Therefore; the positive side of the pulses will appear to stop and the pulse output will remain at 0VDC until the flow rate drops below the max flow rate value calculated above.**

WARNING: If the max flow rate for the required pulse widths is exceeded, the consequential result of no pulses coming from the meter on the pulse output is that the attached equipment will very likely incorrectly interpret the loss of pulses as a loss of flow, but the meter is actually operating above the max flow set by the administrator. Careful attention to the intended application's max flow rate and pulse width requirements must be observed when configuring this function of the meter.

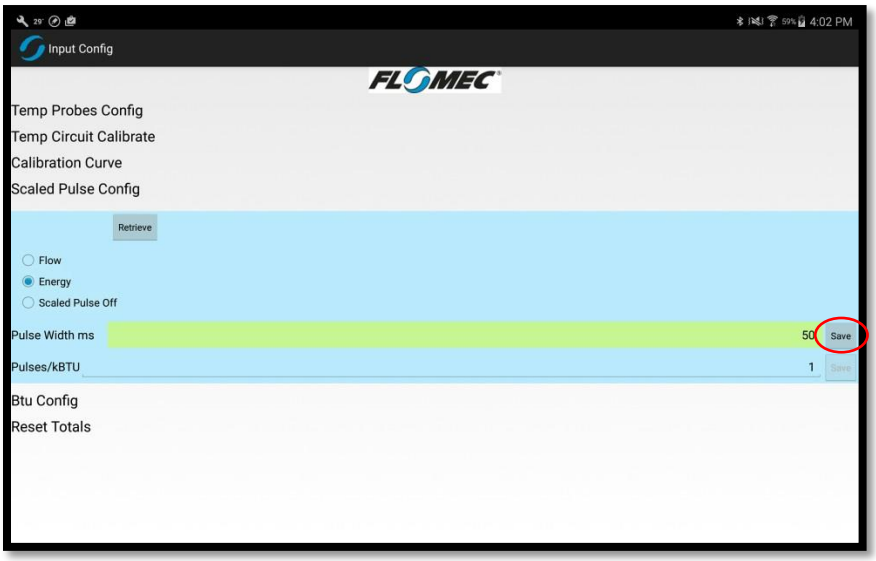
Scaled Pulse Configuration (Energy)

QSI version 1 and version 2 allow for a scaled pulse output for remote totalization of the Energy Consumption measured by the meter. To select the energy consumption as the scaled output variable, select the 'Energy' radio button as shown below. Select 'Retrieve' to view the meter's current setting.



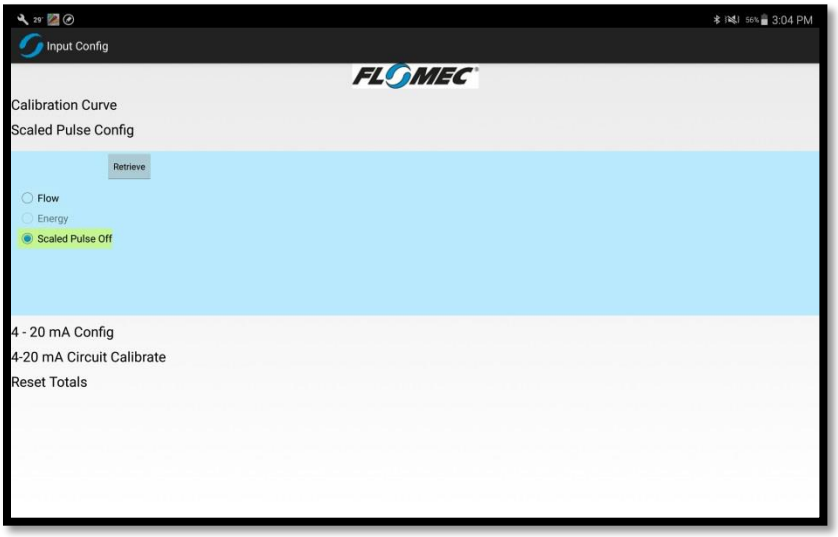
Note: The Pulses/kBTU is not adjustable. The QSI will output one pulse for every kBTU totalized by the meter. The option to adjust the energy unit and energy Kfactor may be available in future releases of the app and meter firmware.

The Pulse Width (ms) field can be changed to any required value for your application. The value will be saved to the meter by selecting the 'Save' button as shown below.



Scaled Pulse Config (Raw Volumetric)

All versions of QSI allow for the raw volumetric pulse input from the meter's flow sensor to be output on the pulse output connector. To configure the meter to output the raw pulse from the meter's flow sensor, select the 'Scaled Pulse Off' radio button. This will disable scaling and the true raw volumetric pulse from the meter will be available on the pulse output connector. This option does not turn the meter's pulse output off.



4-20mA Config

QSI version 3 allows for configuration of a 4-20mA output. Both QSI version 1 and version 2 do not have this capability and therefore the screen below will not be available on these versions of QSI. To view the current meter's 4-20mA settings, select the 'Retrieve' button.

Note: The 'Energy' option is not available for the 4-20mA output.

Note: The units for the Zero and Span value are selectable on the 'Measurement Units' screen.

4-20mA Config (Volumetric Flow)

To set the 4-20mA output to act as a 4-20mA sensor for volumetric flow, select the 'Flow' radio button as shown below. As the meter administrator you can set the zero and span values to whatever volumetric flow rates the meter application is expected to experience during normal operation.

As an example, the screen shot below shows a 4.0 GPM setting for the Zero Value and a 20.0 GPM setting for the Span Value. This means that at 4.0 GPM the meter will sink 4.0mA of current and that at 20.0 GPM the meter will sink 20.0mA of current. The measured flow rate range of this example is approximately 0 GPM to 24.0 GPM, with best accuracy between 4.0 to 20.0mA.

Note: The Zero value is the volumetric flow rate at which point the meter is programmed to sink 4.0mA of current. The Span value is the volumetric flow rate at which point the meter is programmed to sink 20.0mA of current. The meter will set the current sink at an appropriate value between 0.025mA to 24.0mA based on the measured flow rate of the meter and the Zero and Span settings. The 4-20mA output is limited to a minimum value of 0.025mA due to the 4-20mA circuit design.

4-20mA Config (4-20mA Off)

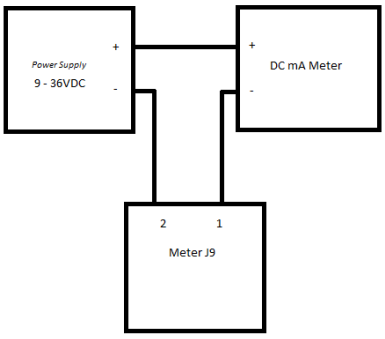
To turn the 4-20mA output Off, select the '4-20mA Off' radio button. This will completely disable the current sinking of the 4-20mA output regardless of the measured flow rate.

4-20mA Circuit Calibration

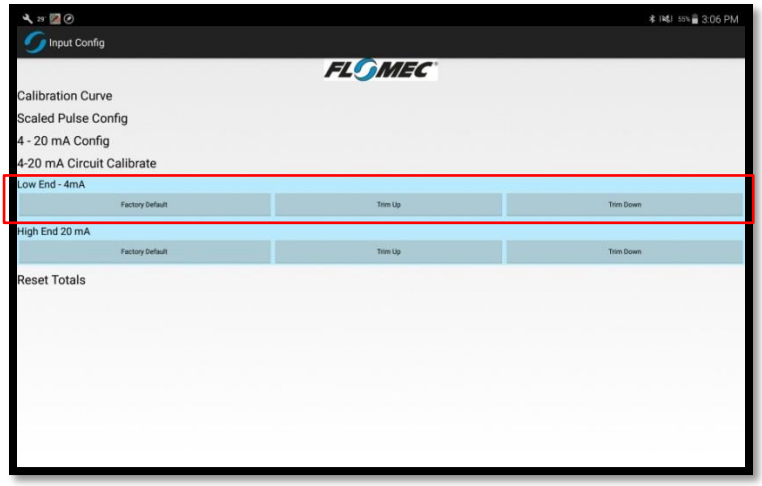
QSI version 3 also allows for the meter administrator to perform a field calibration of the 4-20mA output. The 4-20mA circuit has been calibrated at the factory. However, the FLOMEC app allows a field calibration of the 4-20mA output circuit by doing the following:

Warning: The following steps will adjust the 4-20mA output of the meter regardless of the measured flow rate. It is not recommended to attempt calibration of the meter while the meter is currently being used in an active flow control loop. To perform the calibration, it is best to connect the meter to an external power supply and DC milliamp meter or similar equipment.

1. Connect a DC milliAmp meter with a resolution of at least +/- 0.01 mA in series with a DC voltage source (+9 to +36VDC) to J9 pin 1 (+) and J9 pin 2 (-). See connections in the following image:



2. Select the 'Factory Default' button below the 'Low End – 4mA' text. Selecting this button will change the 4-20mA output to approximately 4.00mA regardless of the measured flow rate passing through the meter when the button is selected.
3. View the result on the attached milliamp meter connected to the flow meter. If the value shown on the milliamp meter is less than 4.00mA, then select the 'Trim Up' button for the 4mA output setting. If the value shown on the milliamp meter is greater than 4.00mA, then select the 'Trim Down' button for the 4mA output setting. Using the buttons shown in the image below, set the output as close to 4.00mA as possible.



4. Select the ‘Factory Default’ button below the ‘High End 20 mA’ text. Selecting this button will change the 4-20mA output to approximately 20.00mA regardless of the measured flow rate passing through the meter when the button is selected.
5. View the result on the attached milliamp meter connected to the flow meter. If the value shown on the milliamp meter is less than 20.00mA, then select the ‘Trim Up’ button for the 20mA output setting. If the value shown on the milliamp meter is greater than 20.00mA, then select the ‘Trim Down’ button for the 20mA output setting. Using the buttons shown in the image below, set the output as close to 20.00mA as possible.

6. Select the back button on the Android device to return to the main screen and allow the meter to return to normal operation where the measured flow rate is output to the 4-20mA circuit in real time.

BTU Config

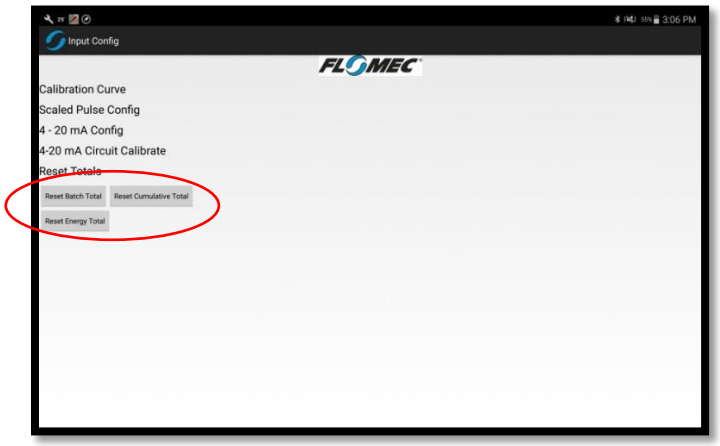
QSI version 1 and version 2 have the ability to calculate energy numbers based on the measured flow rate and a measured temperature differential of the two RTDs. In addition to the measured variables, the BTU calculations require that the user enter values for both the Specific Weight and Specific Heat of the process fluid flowing thru the meter.

Select the 'Retrieve' button to view the programmed values. The default factory values as seen in the image below are the typical values for water. The meter administrator should change these values to whatever process fluid is being used in the application. To save the changed values to the meter, select the 'Save' button next to each variable.

In addition to the variables for Specific Heat and Specific Weight, the app also allows the user to pick whether Temp 1 or Temp 2 is greater than the other. This selection can be used to determine if the calculated BTU value is negative or positive. This is important because the energy is not only measured as a rate per unit of time, but is also totalized. If the user always wants energy to accumulate a positive total amount regardless of the differential of the temperature sensor readings, the administrator should chose 'Absolute Difference'.

Totalizer Resets

All versions of QSI allow the QSI to accumulate totals for Cumulative Total, Batch Total, and Energy Total. Each of these totalizing accumulators can be reset under the Configure screen/Reset Totals, unless a display is attached. If a GPI09 display is attached then only the Energy accumulator is resettable with the app. Please see the additional sections of this document regarding resetting the Batch and Cumulative totals with a GPI09 display. If no display is attached, reset each of the totals independently by selecting the respective button.

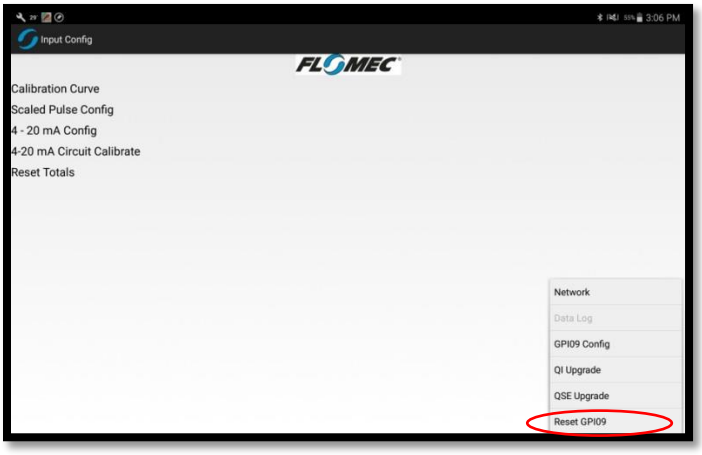


Resetting Batch Totalizer on Meter with GPI09 Display

The Batch Total and Cumulative totals are accumulated and stored on the QSI and GPI09 display if a display is attached. With a display attached, the batch must be reset on the display by pressing and holding the 'Display' button while the Batch total is showing on the display. Resetting the batch totalizer on the display while it is connected to the QSI will also reset the batch total stored on the QSI.

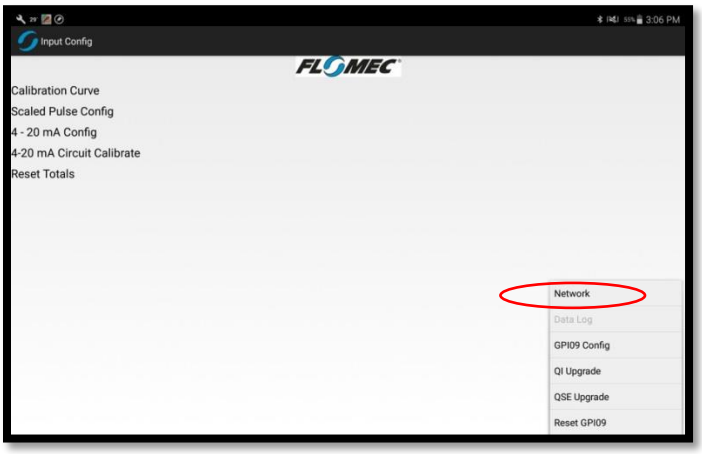
Resetting Cumulative Totalizer on Meter with GPI09 Display

With a display attached, the cumulative total must be reset on the display by pressing and holding the 'Display' button while the display is reset with the app. To reset the display with the app select the 'Reset GPI09' option from the Configure Screen popup menu item. Resetting the cumulative totalizer on the display while it is connected to the QSI will also reset the cumulative total stored on the QSI.



Network Configuration (RS-485 Setup)

The QSI version 1 allows serial communication to external equipment via an RS-485 communications bus. This bus is currently used for MODBUS configuration only. In the future this bus will also be allowed to be used for BACNET communication. To set the communications options on the QSI select the 'Network' option from the Configure screen popup menu as shown in the menu below.



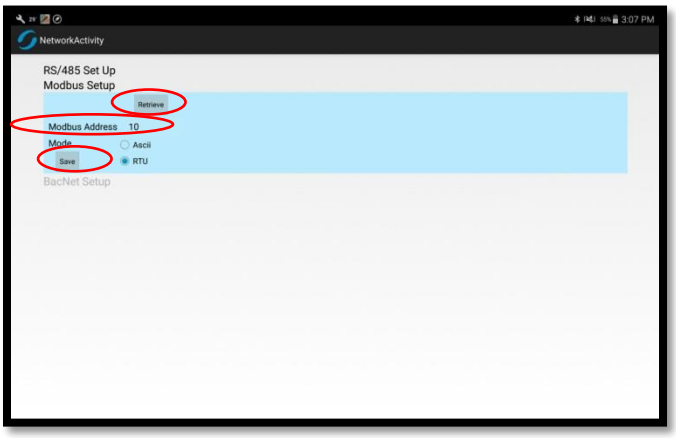
Under the 'RS/485 Set Up' item, the first step is to 'Retrieve' the current settings programmed into the QSI. If you need to change any of the settings, simply select the radio button you require for your application. To save your settings and restart the RS-485 hardware interface, select the 'Reset 485' button as shown below. The default configuration for the RS-485 interface is 9600-8-N-1.

RS-485 Default Settings:

Serial Port: 9600-8-N-1
Address: 10 (each meter requires a unique address to be configured as shown previously)
Protocol: MODBUS RTU

Network Configuration (MODBUS Setup)

The QSI version 1 serial interface currently only allows for the MODBUS protocol to be run on the serial port. The configuration for the QSI is simple to choose the MODBUS address. To change the MODBUS address enter the new MODBUS address and select the 'Save' button. It is always a good idea to select 'Retrieve' button to verify that the change was saved correctly. The default address for the meter is address 10. Each meter will need its own unique address to properly communicate with the MODBUS master.



Note: Currently only the RTU version of the MODBUS protocol is supported. ASCII may be supported in future versions of the QSI firmware.

Network Configuration (External Master MODBUS Map)

Your external MODBUS master will need to be configured for communication with the meter using the following mapping:

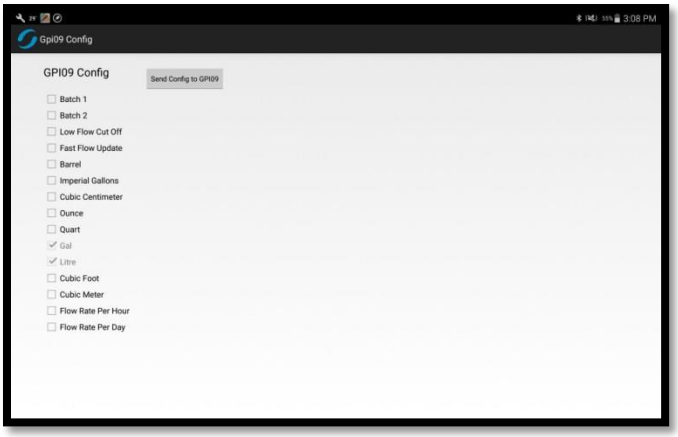
All values below are **Holding Registers**, byte order is **normal**, and parity is **none**.

Address	TYPE	Multiplier	Label	Units
41001	UINT16	x0.01	Flow Rate	Gal/Min
41002	UINT32	x0.01	Cumulative Total	Gal
41004	UINT32	x0.01	Batch Total	Gal
41006	UINT32	x0.01	Energy Rate	KBTU/Hr
41012	INT32	x0.01	Energy Total	KBTU
41008	UINT32	x0.01	Input Frequency	Hz
41010	INT16	x0.1	Temp Sensor #1	°C
41011	INT16	x0.1	Temp Sensor #2	°C

All holding register values above are 'read only' for monitoring and data logging purposes. The meter does not support writing to the MODBUS registers or configuration of the meter via the MODBUS interface.

GPI09 Config

If a GPI09 display is attached to the meter, the ‘FLOMEC’ app will allow the administrator to change the appearance of the display. The administrator can turn on/off the Batch totalizers, the Low Flow Cut Off, the Fast Flow Update, the measurement units for totalization, and the time bases for rate.



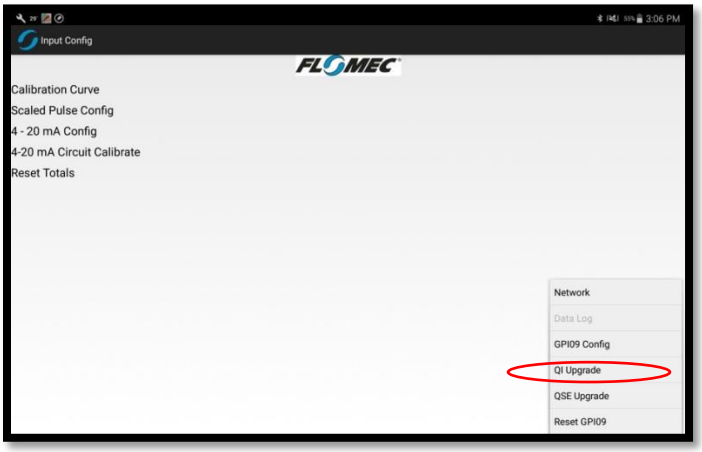
Note: Some settings (like Cumulative Total, Gallons, Liters, and Flow Rate per Min) are always enabled and cannot be disabled.

Firmware Updates

QSI Firmware Update

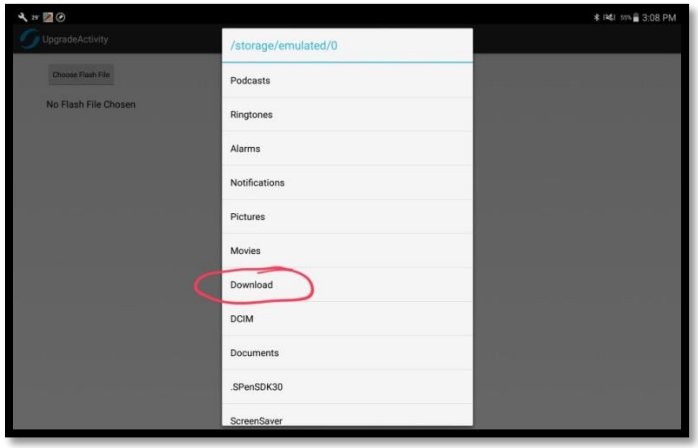
This section assumes that the administrator has already downloaded the appropriate firmware update files from either email or another appropriate source.

To enter the meter firmware update screen for the QSI, select the ‘QSI Upgrade’ option from the Configure screen popup menu list as shown below.

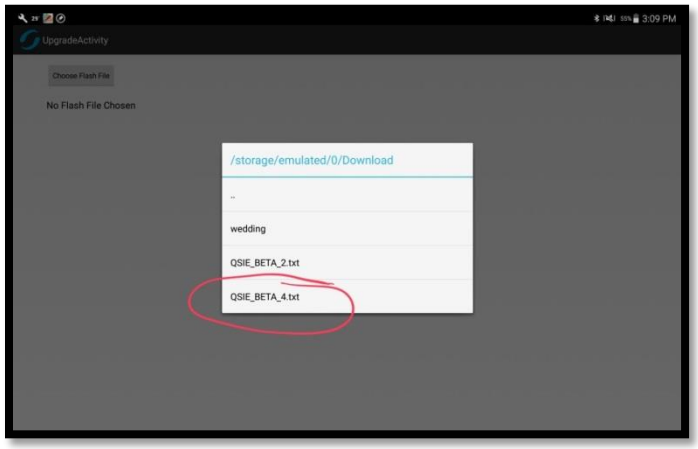


To choose the correct firmware file from the download folder, select the ‘Choose Flash File’ button shown below.

Then select the ‘Download’ folder by selecting it from the popup menu list as shown below.



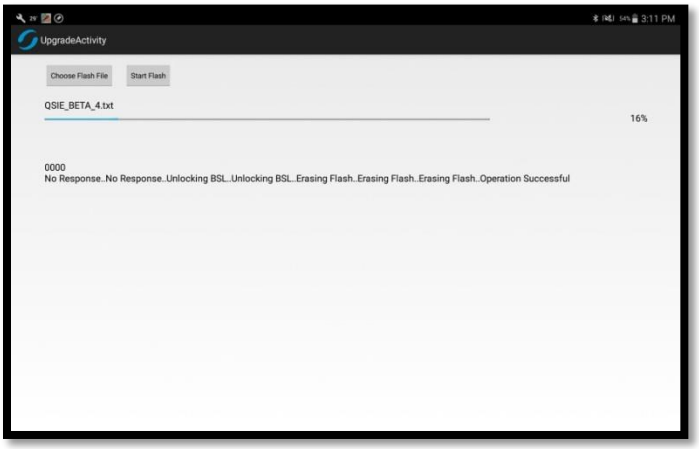
In the ‘Download’ folder, select the “QSIE.txt” file



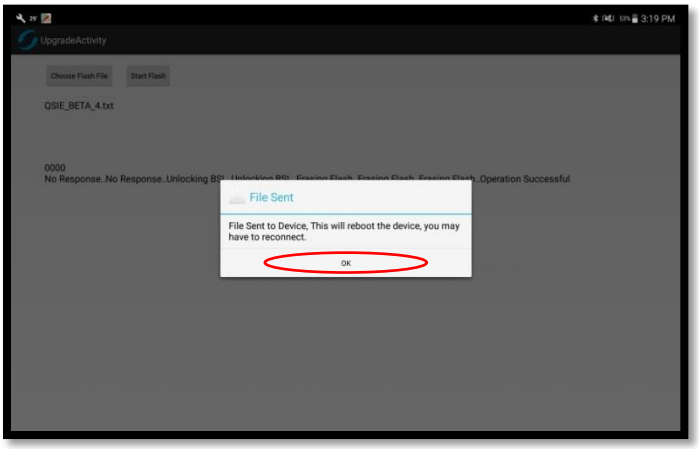
To start the flashing of the new firmware to the QSI electronics on the meter, select the ‘Start Flash’ button as shown below.

After pressing ‘Start Flash’ the Android device will send the flash programming file to the QSI as it is programming. This process will take approximately 8 min to complete depending on the speed of your Android device’s Bluetooth connection.

Warning: It is best to make sure you do not take the Android device more than 100 feet from the meter or you risk losing the Bluetooth connection and potentially disconnecting and corrupting the programming process. Additionally, you should also make sure to not turn off the meter during the flashing process.



After the meter has successfully downloaded and flashed the new firmware to the QSI, the app will attempt to restart the QSI electronics. Select ‘OK’ from the popup message to continue.

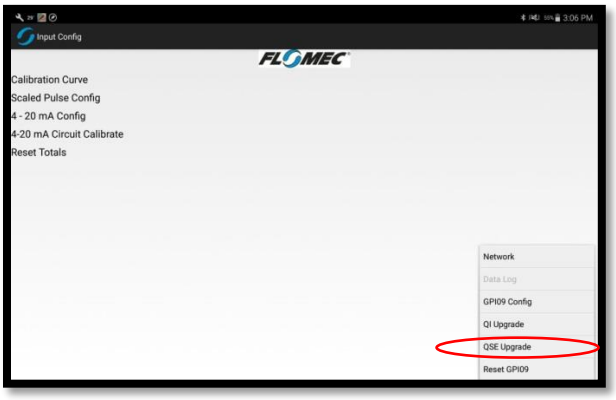


After selecting ‘OK’, select the Android device’s ‘Back’ button until you get back to the main menu. On the main menu, make sure that the new QSI firmware is running by verifying that the measured variables are being updated appropriately. If the measured variables are not updating properly, or the FLOMEC logo is not properly spinning, power cycle the meter and re-connect to it with the FLOMEC app.

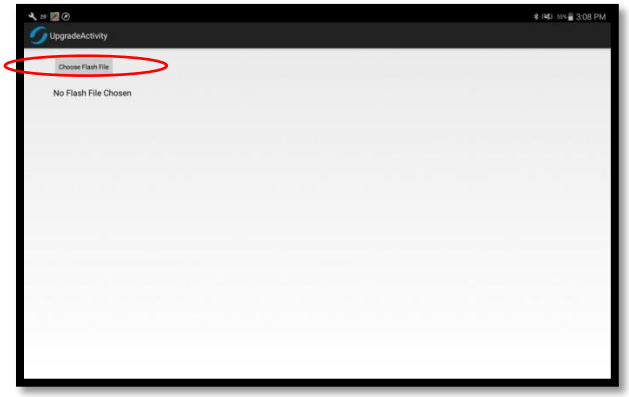
QSE Firmware Update

This section assumes that the administrator has already downloaded the appropriate firmware update files from either email or another appropriate source.

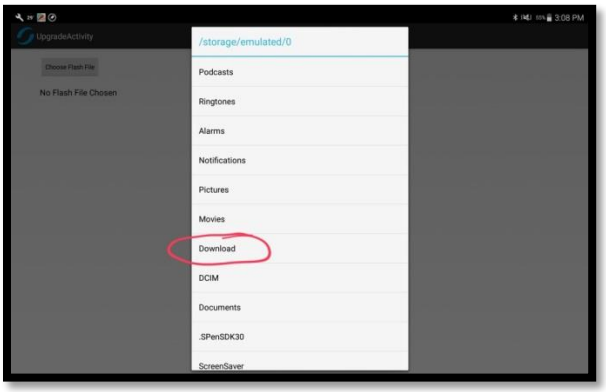
To enter the meter firmware update screen for the QSE, select the ‘QSE Upgrade’ option from the Configure screen popup menu list as shown below.



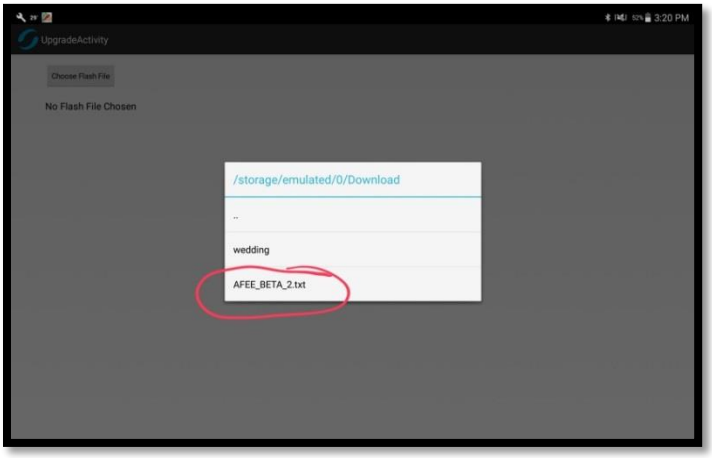
To choose the correct firmware file from the download folder, select the ‘Choose Flash File’ button shown below.



Then select the ‘Download’ folder by selecting it from the popup menu list as shown below.



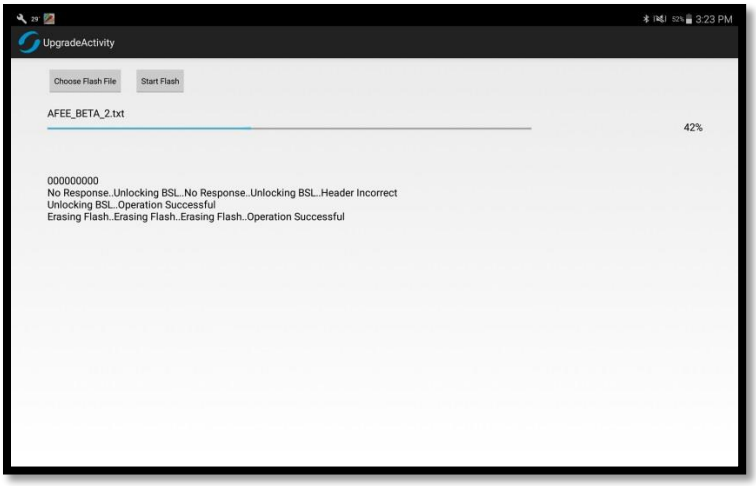
In the ‘Download’ folder, select the “AFEE.txt” file.



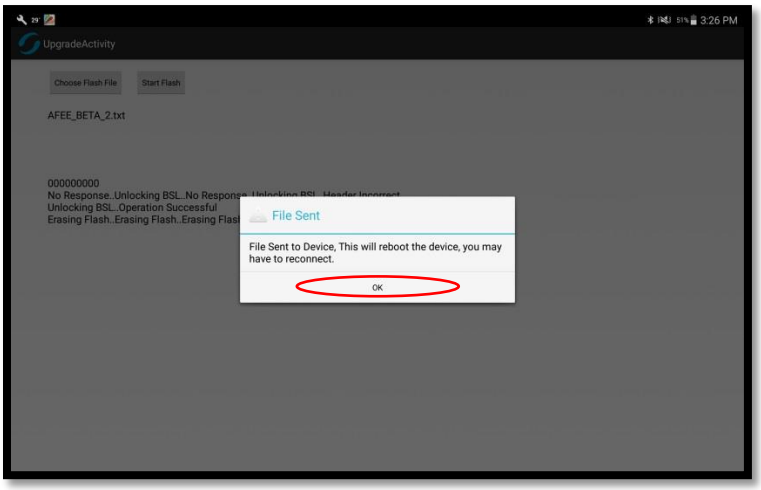
To start the flashing of the new firmware to the QSI electronics on the meter, select the ‘Start Flash’ button as shown below.

After pressing ‘Start Flash’ the Android device will send the flash programming file to the AFE as it is programming. This process will take approximately 4 min to complete depending on the speed of your Android device’s Bluetooth connection.

Warning: It is best to make sure you do not take the Android device more than 100 feet from the meter or you risk losing the Bluetooth connection and potentially disconnecting and corrupting the programming process. Additionally, you should also make sure to not turn off the meter during the flashing process.



After the meter has successfully downloaded and flashed the new firmware to the AFE, the app will attempt to restart the AFE electronics. Select 'OK' from the popup message to continue.



After selecting 'OK', select the Android device's 'Back' button until you get back to the main menu. On the main menu, make sure that the new QSI firmware is running by verifying that the measured variables are being updated appropriately. If the measured variables are not updating properly, or the FLOMEC logo is not properly spinning, power cycle the meter and re-connect to it with the FLOMEC app.