Field Maintenance Terminal User Guide

	Field Maintenance Terminal User Guide	24/03/2020
		Version: 1.0
Field Maintenance Terminal Guide		

1. Contents

2. Overview

The Field Maintenance Terminal User Guide covers all the aspects on how to setup and use the Field Maintenance Terminal software.

3. Terminology

AMC - Automatic Meter Configuration
AMR - Automatic Meter Reading
Field Maintenance Terminal (FMT) - The FMT is a Windows based software package running on any Laptop for doing basic diagnostic tests and configuration of the meter. The FMT uses the PWC400 Data Collector, which is a RF dongle that remotely communicates with the meter. The FMT is also used for doing Automated Meter Reading (AMR) by merely driving past the meters from a vehicle.
Prepaid Number – A prepaid meter has 2 numbers. The mechanical meter number engraved or printed on the water meter, and the prepaid number starting with 31.... printed on the PWC Controller.
The Prepaid number is required for the purchasing of credit for the meter.
PWC100 – Prepaid Water Controller distributed by Elster Kent (Owned by Honeywell).
PWC200 – Prepaid Water Controller distributed by Sensus (Owned by Xylem).
PWC400 - RF dongle that plugs into a USB port of a laptop, used to remotely communicate with a PWC.
SGC – Supply Group Code

4. Getting started

Download the software by visiting www.telbit.co.za, click on Downloads.
Download this User Manual, by selecting FMT User Guide.pdf/
Log In credentials: Username: telbitguest, password: guest2021
Locate FMT Software package, and click on the download link.
Locate the downloaded file "Field Maintenance Terminal Vx.x.x.exe" in your Downloads folder.
Run as Admin, and follow all the steps.

Plug the PWC400 into the computer.
The driver should already be installed.

In order to change meter configurations your need an authorization file.
Contact Lloyd at Lloyd@telbit.co.za, and request this file, stating your unique SGC code as displayed on the PWC100,200 and PWC300 devices.

When starting FMT for the first time it will ask you for an Operator name and Password.
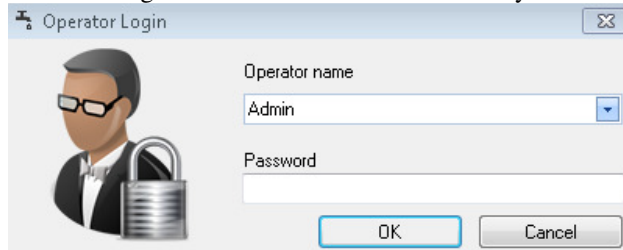
The default is:
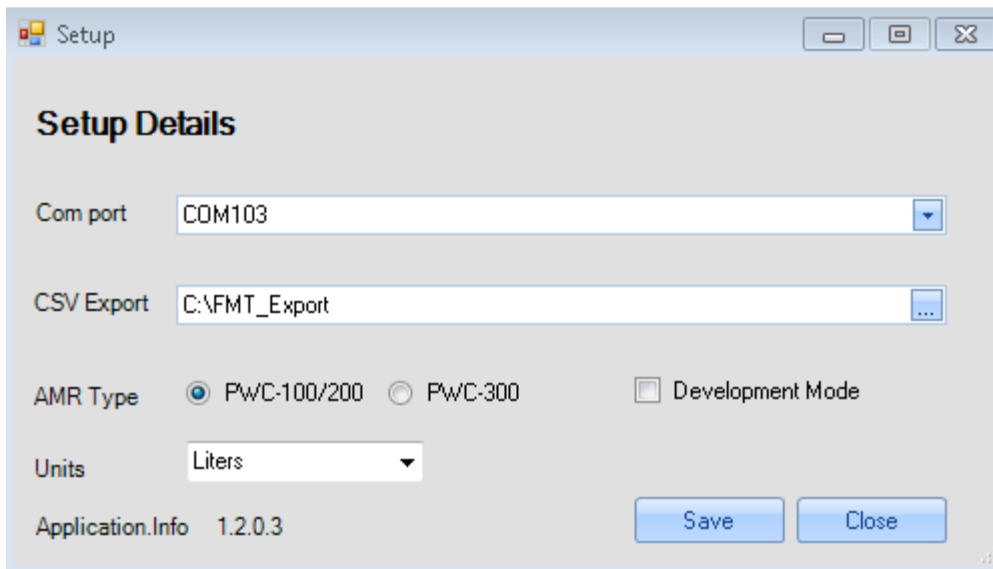**Operator name: Admin**
 Password: 1

5. Settings

Let's start by going to settings:

5.1 App Settings
Then click on App Settings which opens the window below:

Select the correct Com port for your PWC400 and the folder where you would like to export all your CSV files.
The AMR type should match your device you would like to use, for now we select PWC-100/200 and our units is set to Litres.
Click on Save and then close. It is better to close the FMT software and open it again if any changes was done.

5.2 Users

Click on Settings and then on Users, the following window will open:
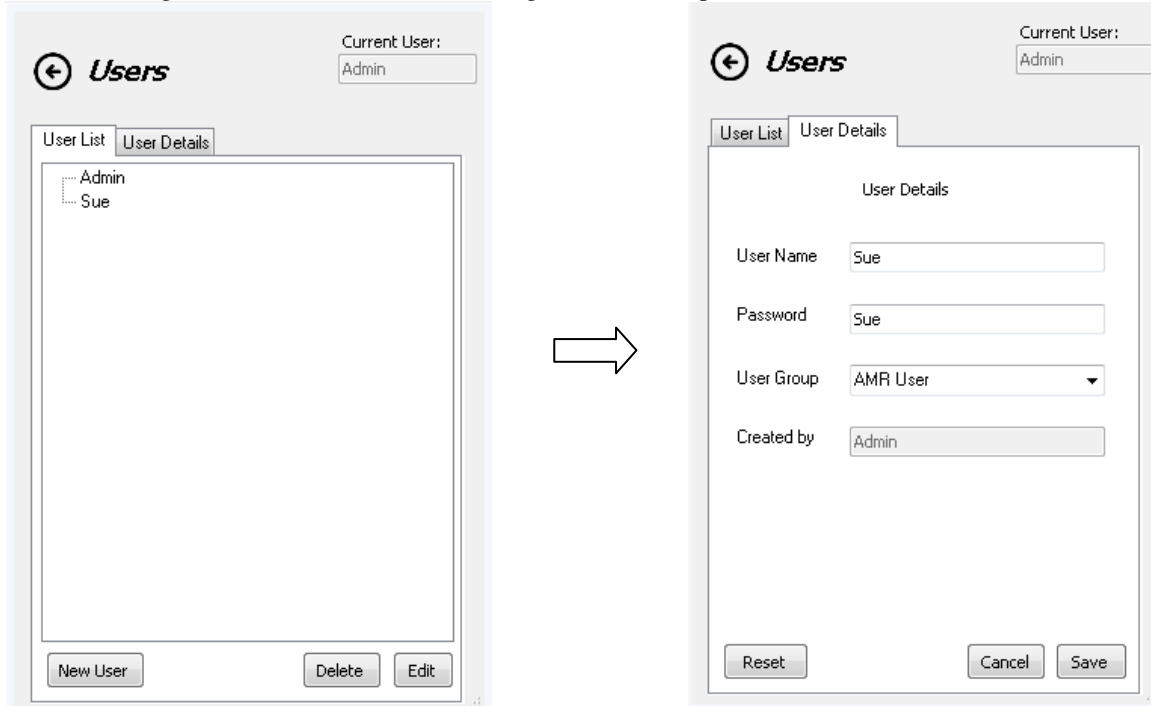

As an example I've added a new user "Sue", this can be done by clicking on the new user button.
You can create new users and give them different level access to the FMT software. To do this you have to assign a user to a specific group.
Have a look at the window of the example above; Sue has been given AMR user access.

Click on the arrow next to Users at the top to leave the Users window.

5.3 User Groups

Now let us go to User Groups by clicking Settings and then User Groups.

This will open the following window:
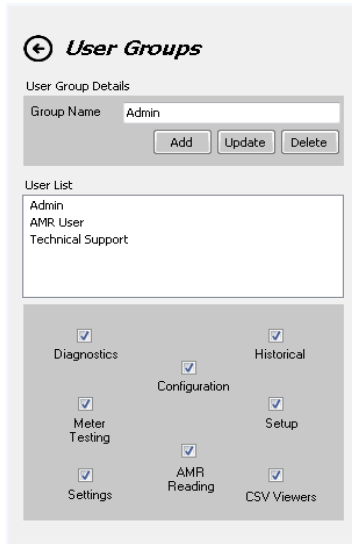
In user groups the different access levels can be defined. In the example above Admin has access to all the functions of FMT.
To change the group access level click on the user list for the specific group that must be modified tick or un-tick the access boxes as required and then click on update.
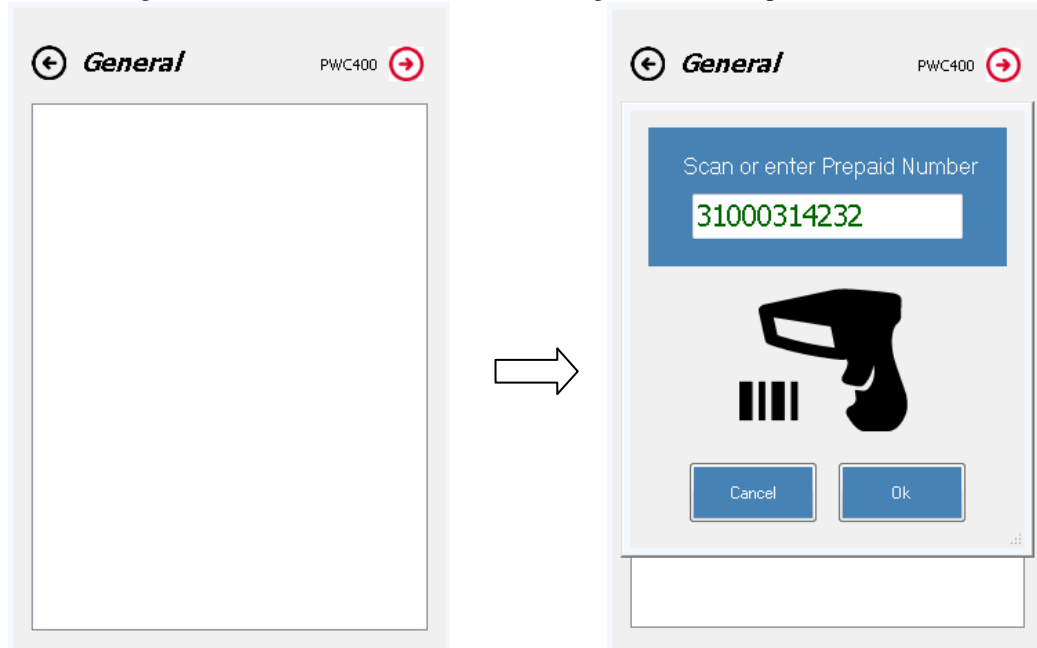
6. Diagnostics

The following will describe all the different options under diagnostics, which is usually used when trying to find a problem with a specific meter.
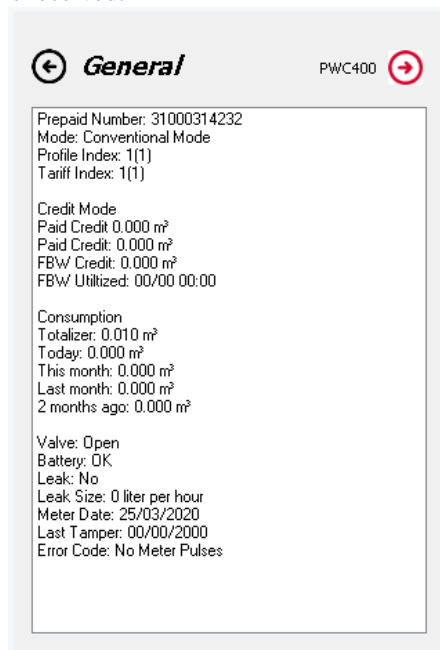
6.1 General

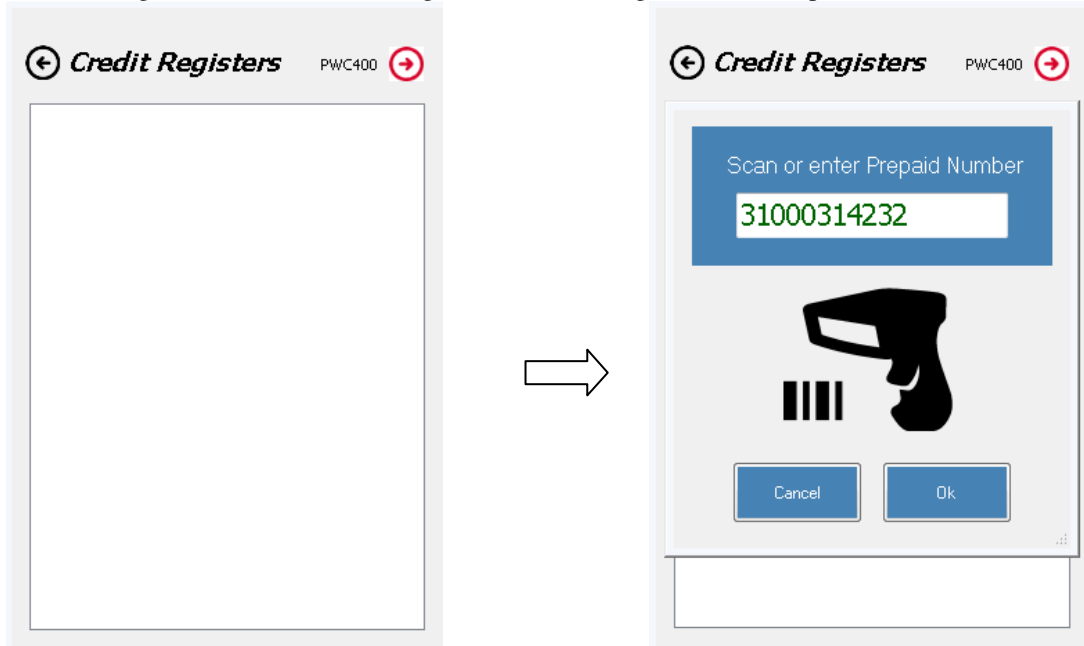Click on Diagnostics and then on General, the following window will open:

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232 and is in green. If the number you entered is in red something is wrong with the number. Check that you have the correct number and try again when it is green. Make sure the PWC100/200 is in Radio range of your PWC400.Click on the OK button and wait while the PWC400 connects to the meter and retrieves the general data. The window below shows an example of the data that is received.
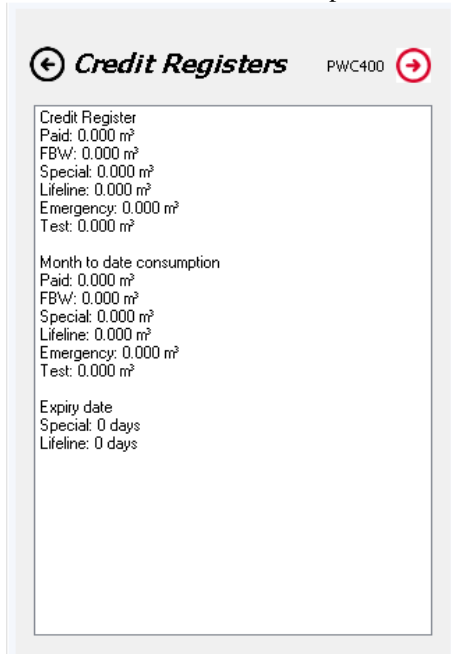

Click on the arrow next to General to exit back to the main menu.

6.2 Credit Registers

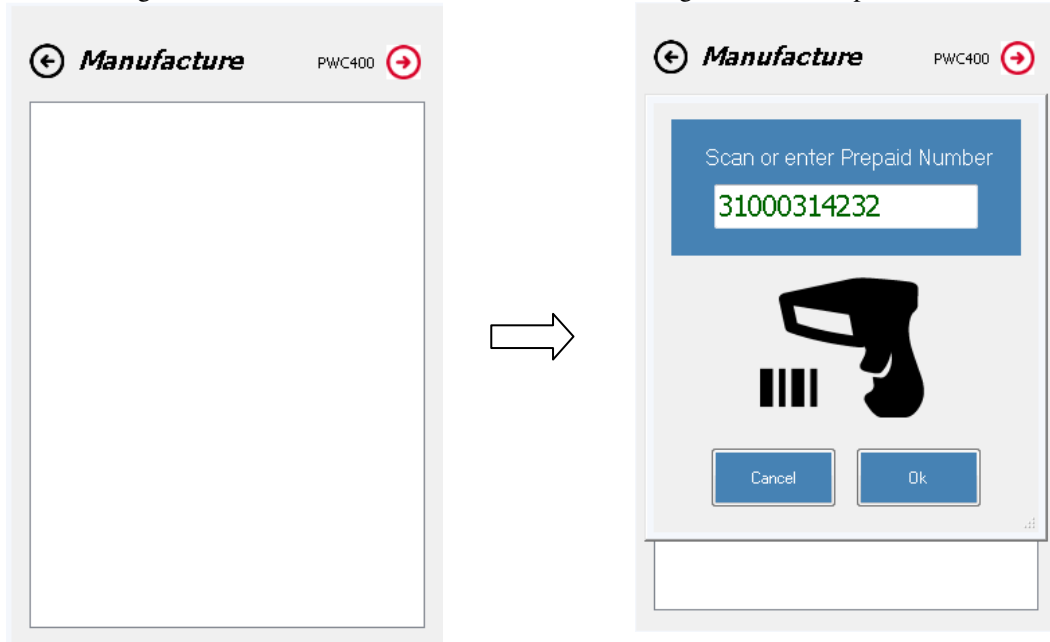Click on Diagnostic and then Credit Registers, the following window will open:

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and retrieves the Credit Register data. The window below shows an example of the data that is received.
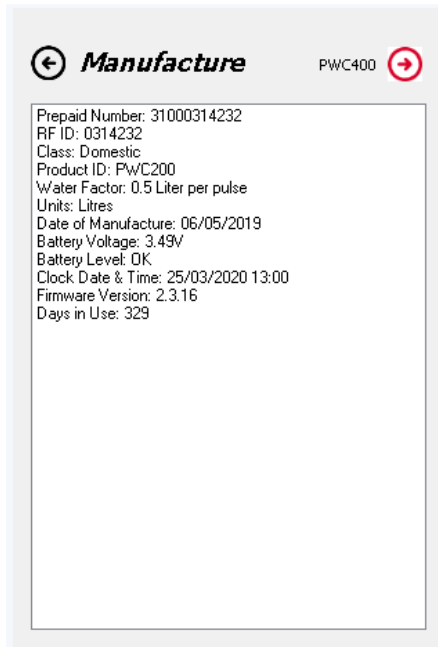

Click on the arrow next to Credit Registers to exit back to the main menu.

6.3 Manufacturers Info

Click on Diagnostics and then Manufacturers Info, the following window will open:
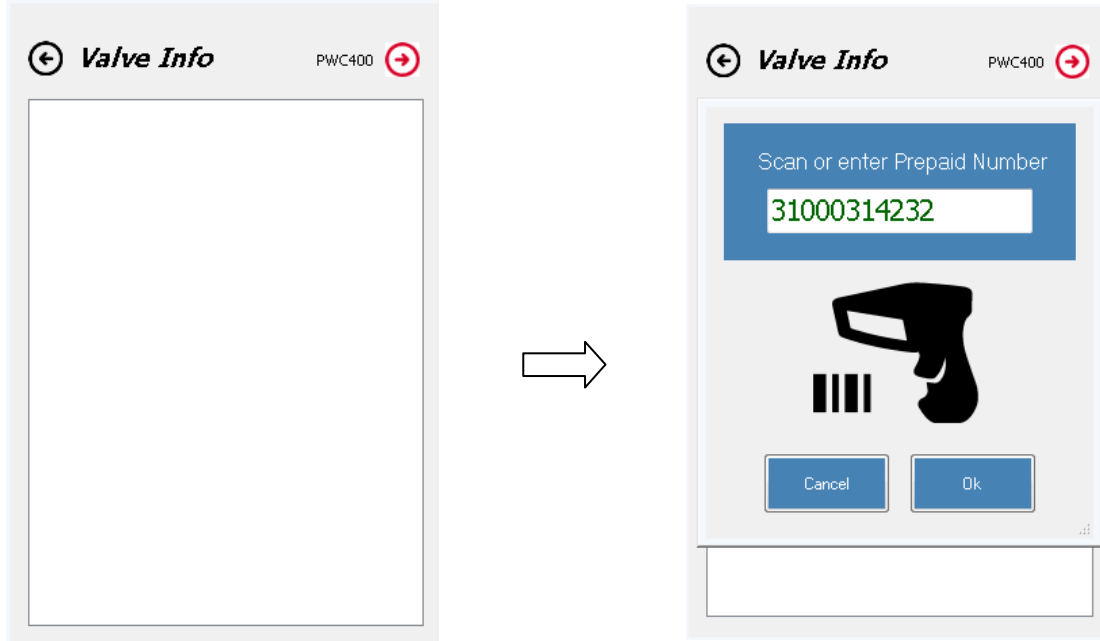

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and retrieves the Manufacturers Info
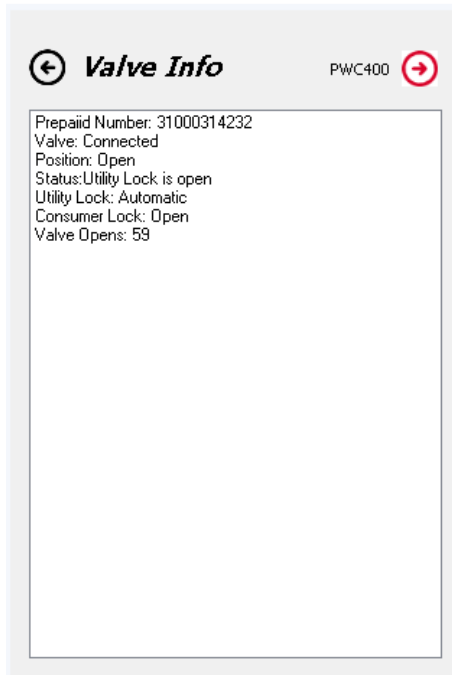

Click on the arrow next to Manufacture to exit back to the main menu.

6.4 Valve Info

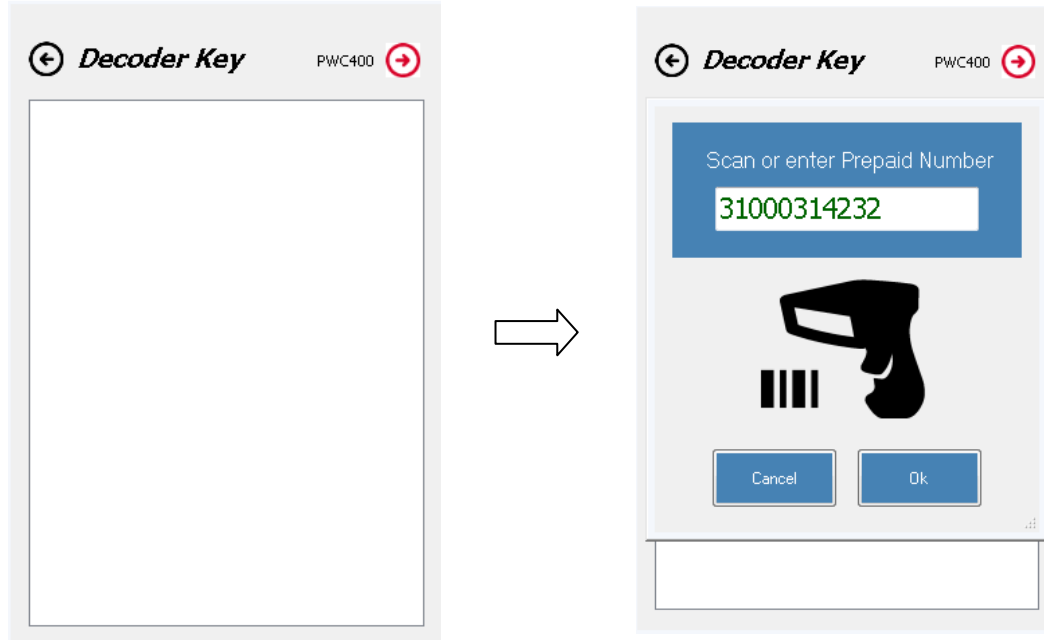Click on Diagnostics and then Valve Info, the following window will open:

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and retrieves the Valve Info
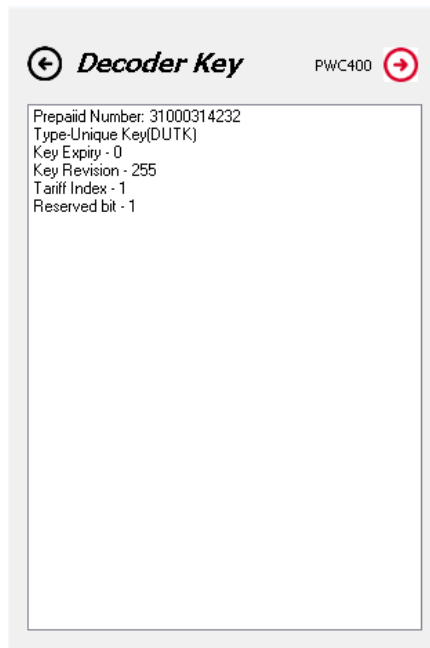

Click on the arrow next to Valve Info to exit back to the main menu.

6.5 Decoder Key

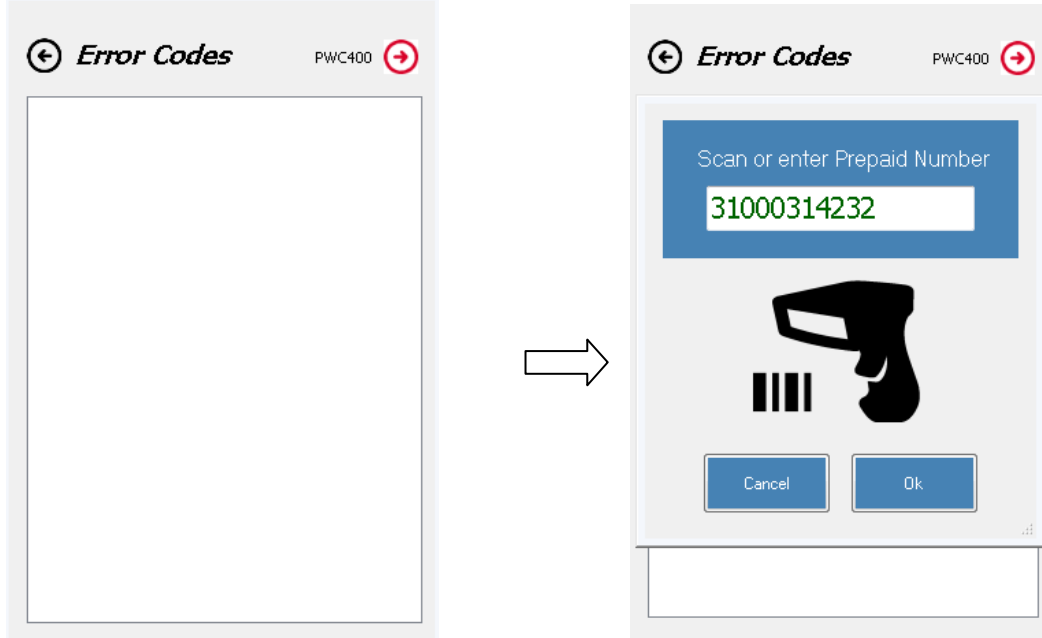Click on Diagnostics and then Decoder Key, the following window will open:

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and retrieves the Decoder Key information.
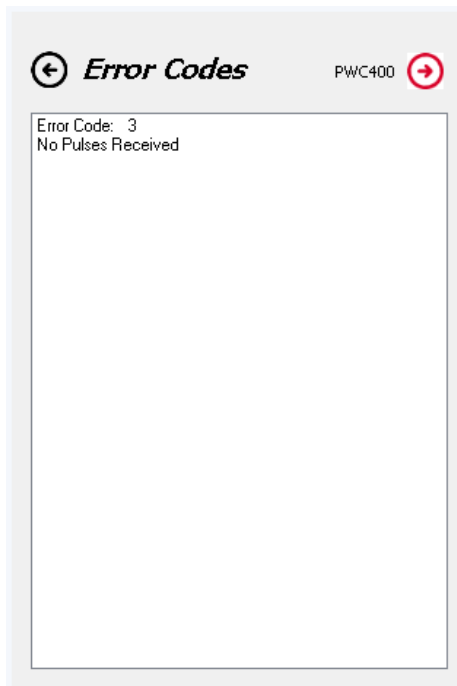

Click on the arrow next to Decoder Key to exit back to the main menu.

6.6 Error Codes

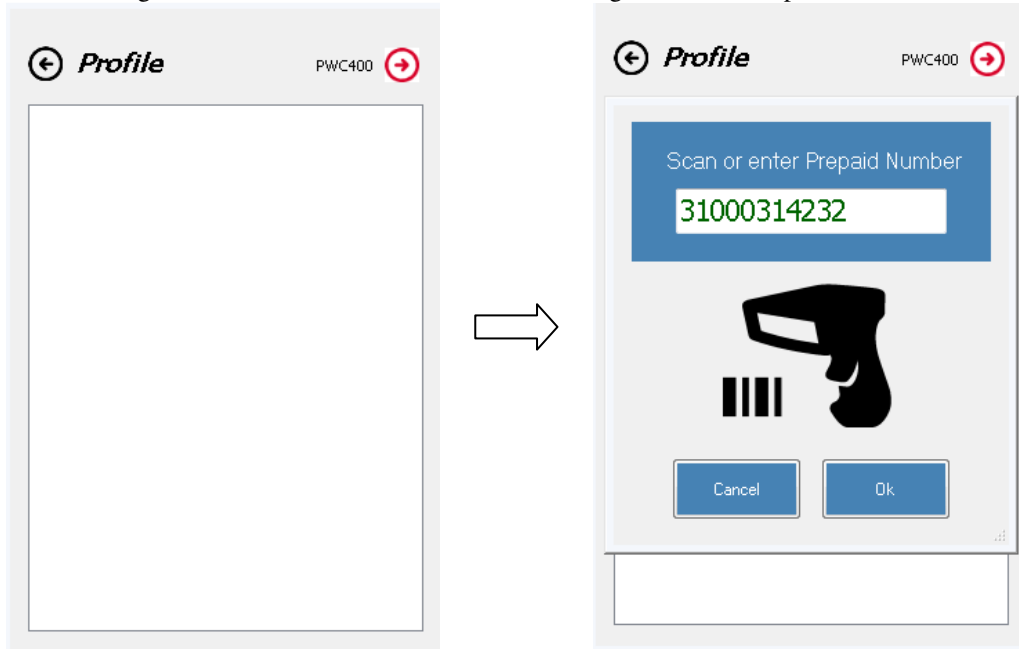Click on Diagnostics and then Error Codes, the following window will open:

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and retrieves the Error Code information.
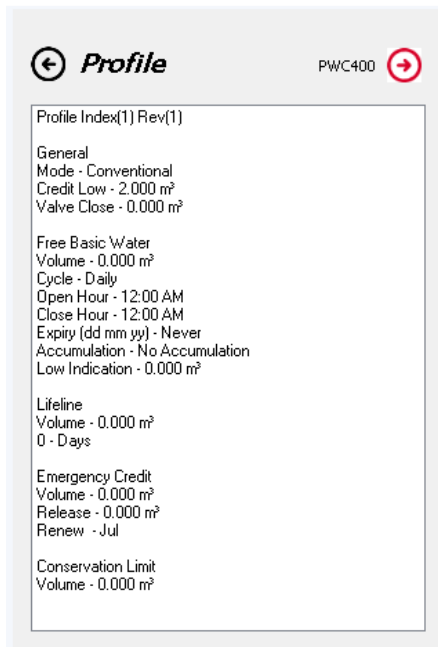

Click on the arrow next to Error Codes to exit back to the main menu.

6.7 View Profile

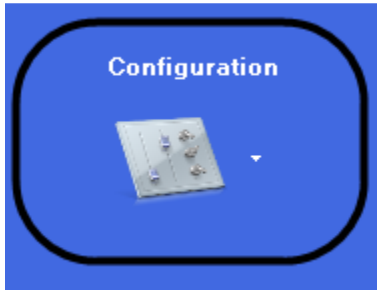Click on Diagnostics and then View Profile, the following window will open:

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and retrieves the Profile information.

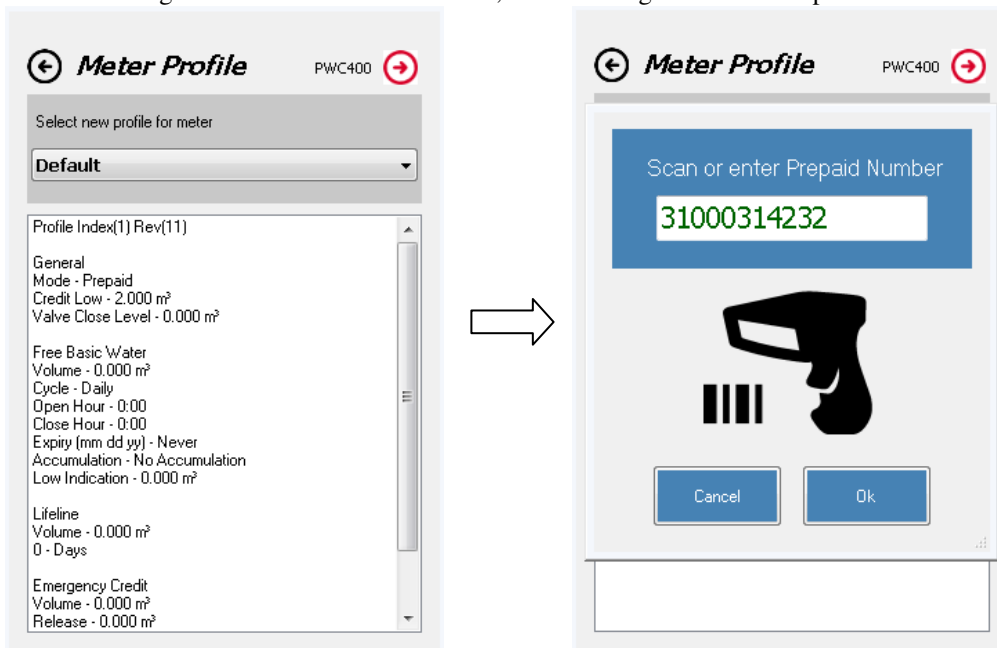Click on the arrow next to Profile to exit back to the main menu.

7. Configuration

The following will describe all the different options under Configuration, it is important to note that settings done incorrectly could lead loss of revenue.


7.1 Meter Profile

Click on Configuration and then Meter Profile, the following window will open:

Later on in this document we will discuss the setting of different profiles for meters. These profiles can be selected here and programmed to the meter.

When you are ready to program a new profile to the meter select it on the drop down list. Click on the red arrow next to PWC 400 and enter the meter number to be programmed, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and programs the Profile information. Confirmation of success will be shown in the window below:
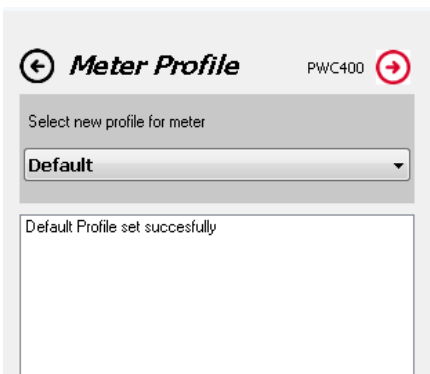
7.2 Clear Registers

Click on Configuration and then Clear Registers, the following window will open:
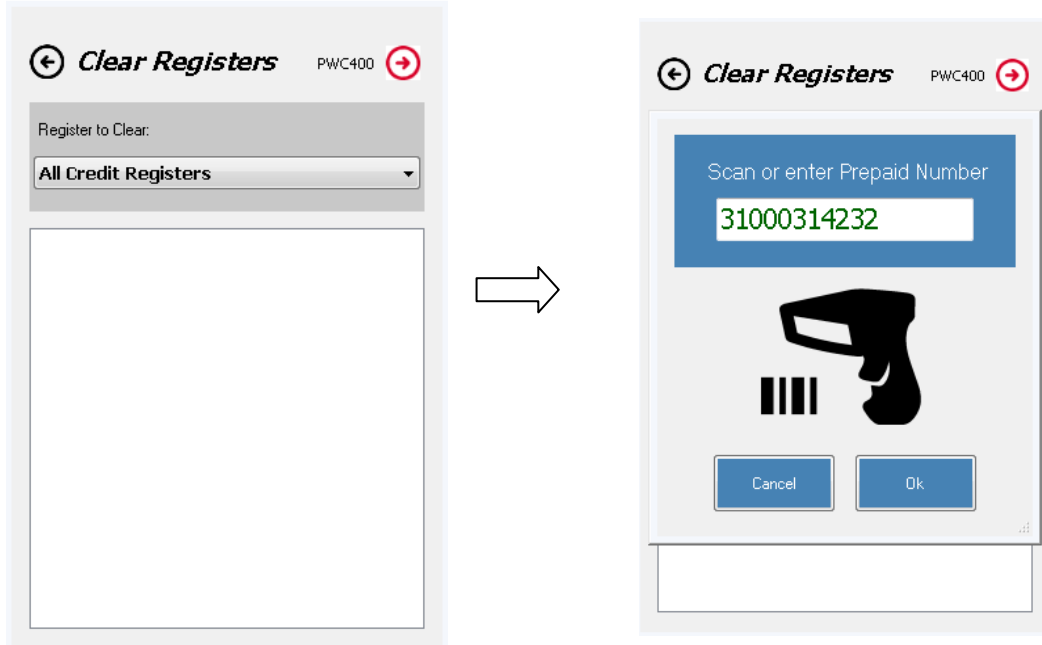
Credit for a specific credit register or all credit registers can be cleared here by selecting the appropriate register on the drop down list.

When you are ready to clear the selected credit register on the meter, click on the red arrow next to PWC 400 and enter the meter number of the register to be cleared. The example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and programs the Profile information. Confirmation of success will be shown in the window below:
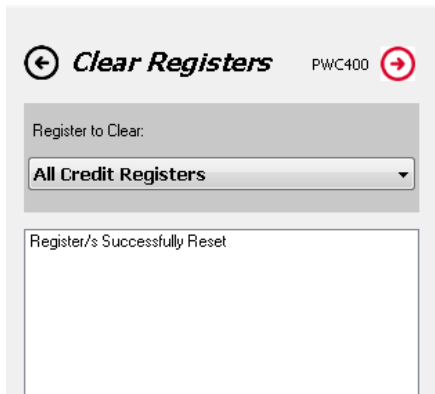
7.3 Utility Lock

Click on Configuration and then Utility Lock, the following window will open:
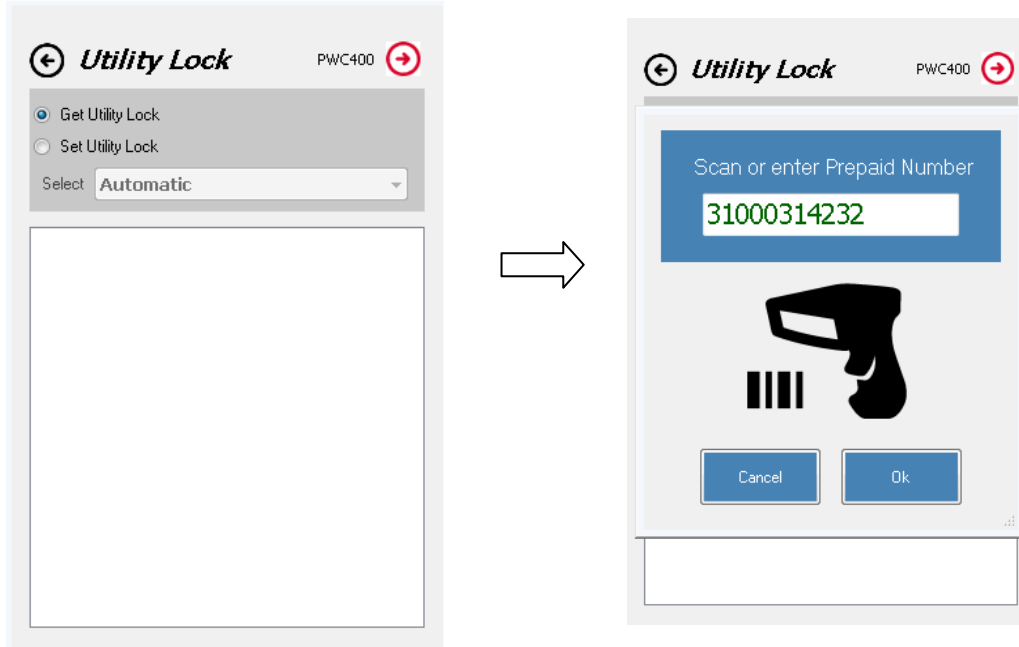
Utility lock can be read and the programmed if needed. Automatic mode means the valve will open and close according to the credit registers.

When you are ready to read the Utility Lock on the meter, select Get Utility Lock and click on the red arrow next to PWC 400, then enter the meter number of the meter to be read. The example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and reads the Utility Lock status. The Utility Lock status will be shown in the window below:
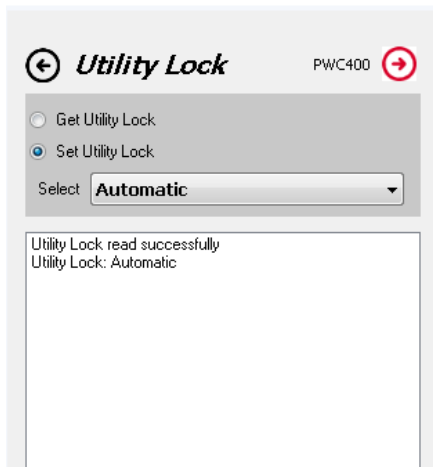
7.4 Consumer Lock

Click on Configuration and then Consumer Lock, the following window will open:
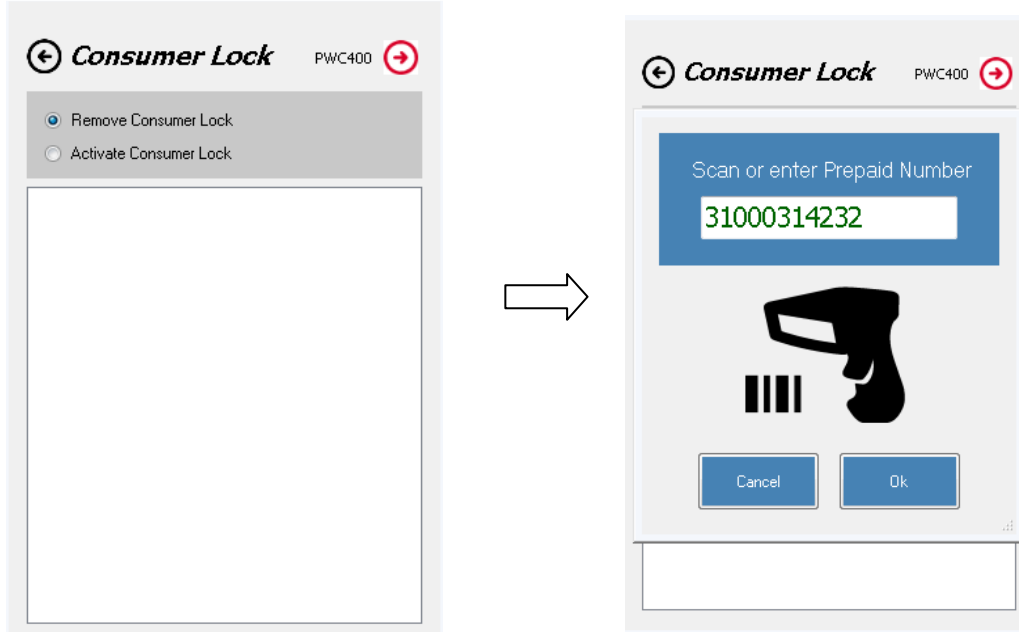
There are only 2 options available either Remove Consumer Lock or Activate Consumer Lock.
Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and Removes the Consumer Lock as in the example below:
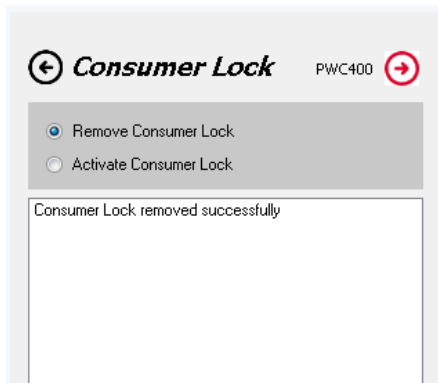
7.5 Sync Clock

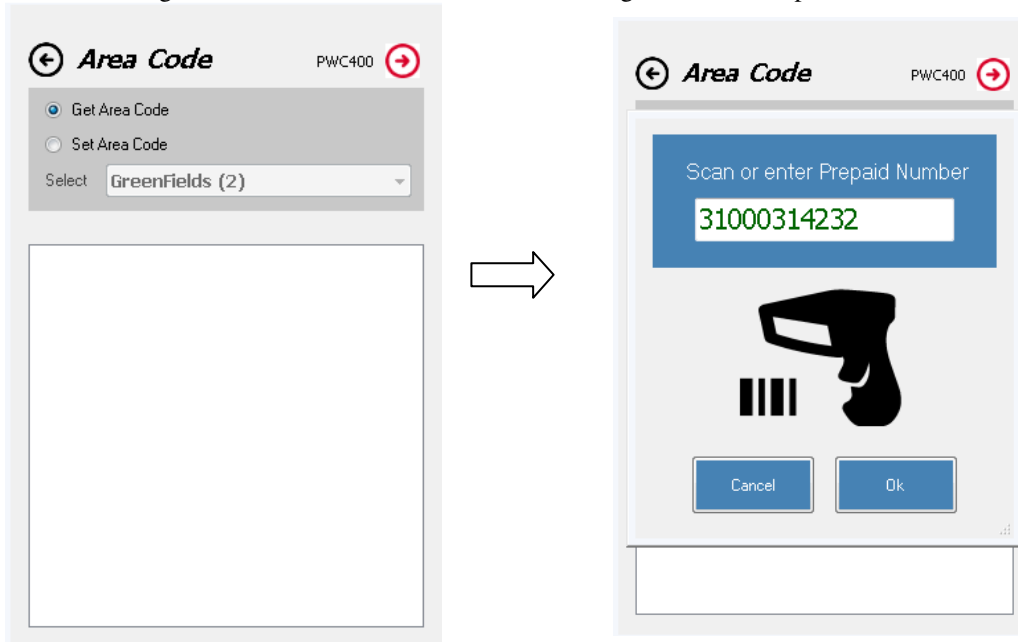Click on Configuration and then Sync Clock, the following window will open:
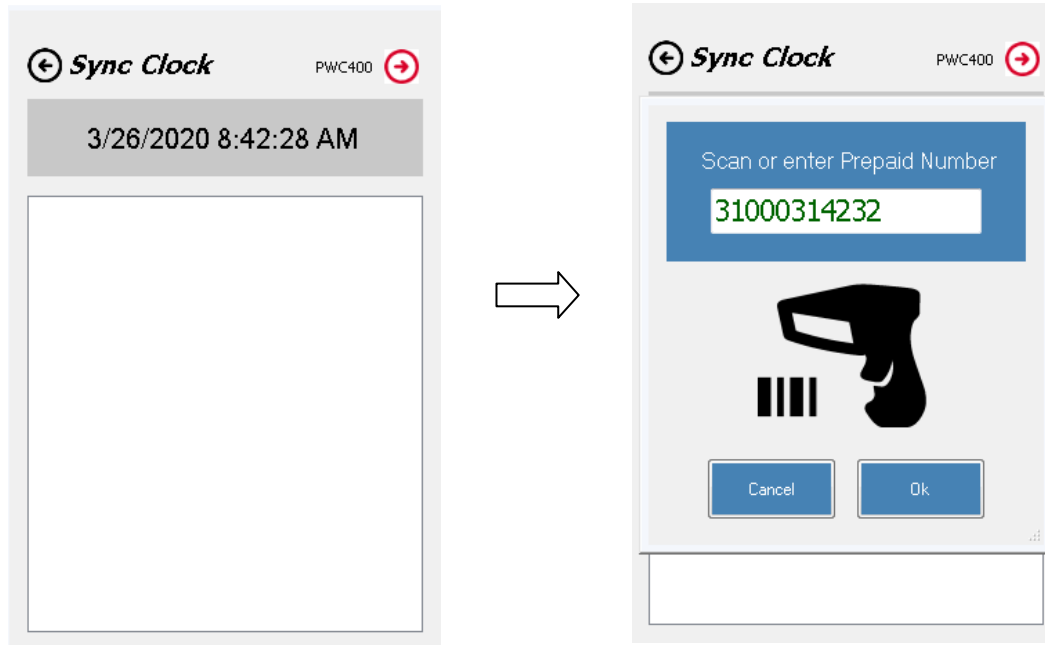
Sync Clock is used to set the meter to the current date and time. Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and synchronizes the clock as in the example below:
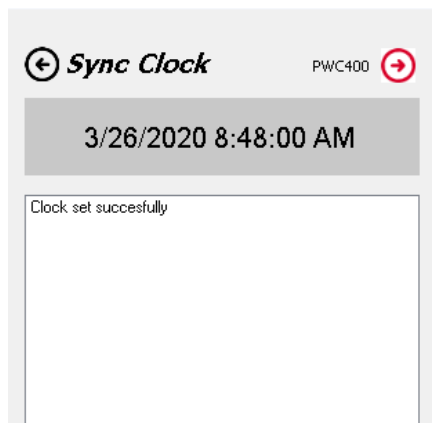
7.6 Area Codes

Click on Configuration and then Area Codes, the following window will open:

Area codes can be used if you have different installations areas and you would like to group them together. How to set the different area codes will be discussed later in this document.

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and gets the Area Code.

In the example below the Area Code 2 corresponds to "Greenfields".
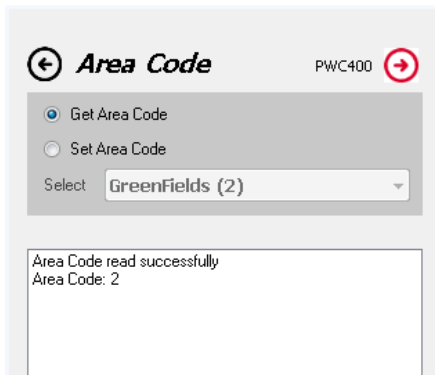
7.7 Supply Group Code

Click on Configuration and then Supply Group Code, the following window will open:

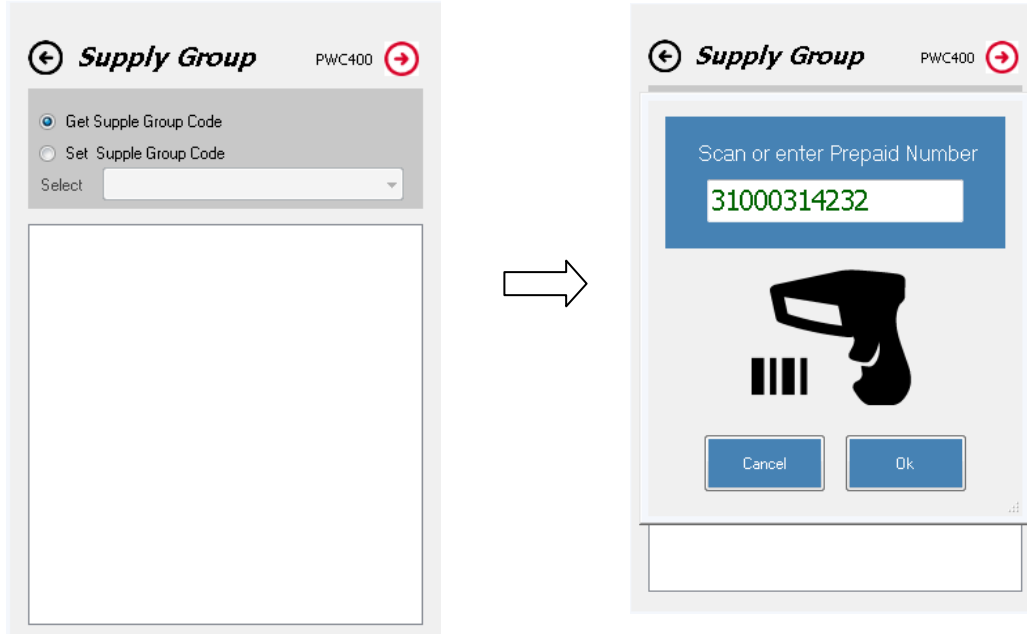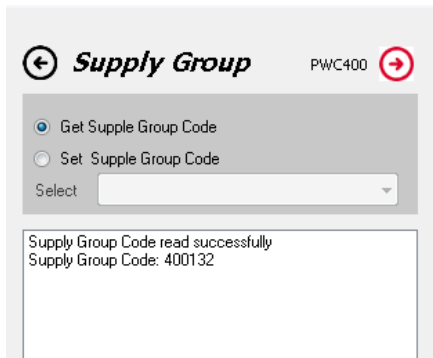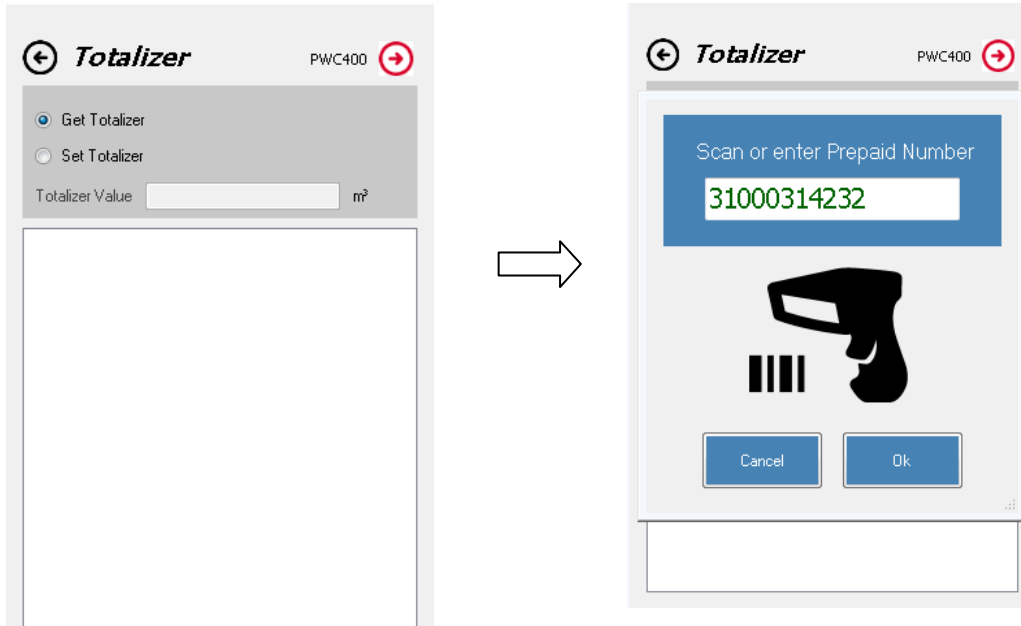Supply group codes are pre-programmed in the factory for a specific supplier.
Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and gets the Supply Group Code. In the example below the Supply Group Code is 400132.

7.8 Totalizer

Click on Configuration and then Totalizer, the following window will open:

Get or Set Totalizer is a very handy tool to synchronize the mechanical meter reading with the pre-paid meter reading.

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and gets the Totalizer reading. In the example below the Totalizer value of 2.136m³ is shown.

Note: When setting the Totalizer it is done in litres not m³.
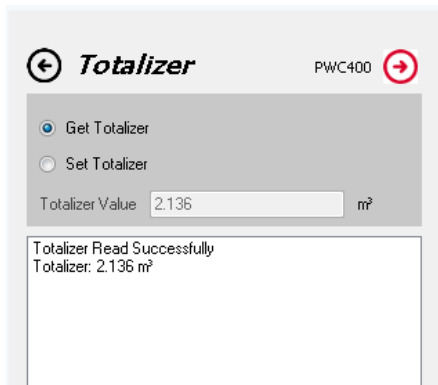
7.9 Alternative Reference

Click on Configuration and then Alternative Reference, the following window will open:

Alternative Reference can be used if there is some information you want to link to the meter, default it is set to the meter model name (PWC100/200).
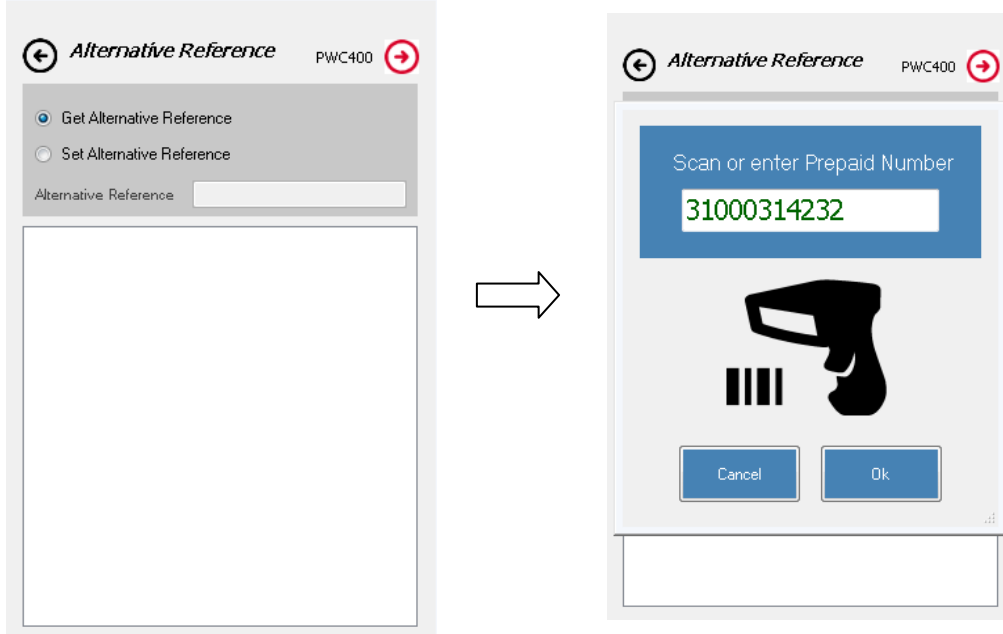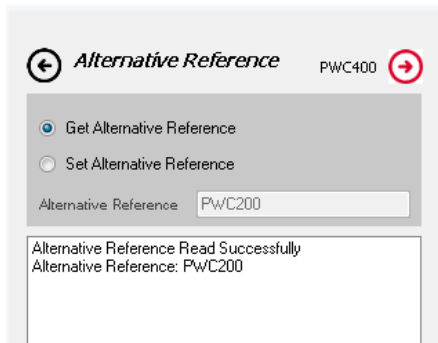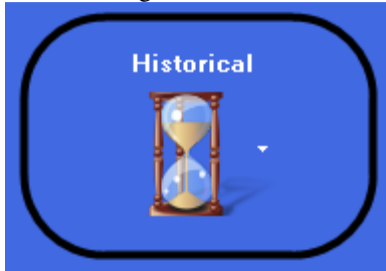
Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and gets the Alternative Reference reading.

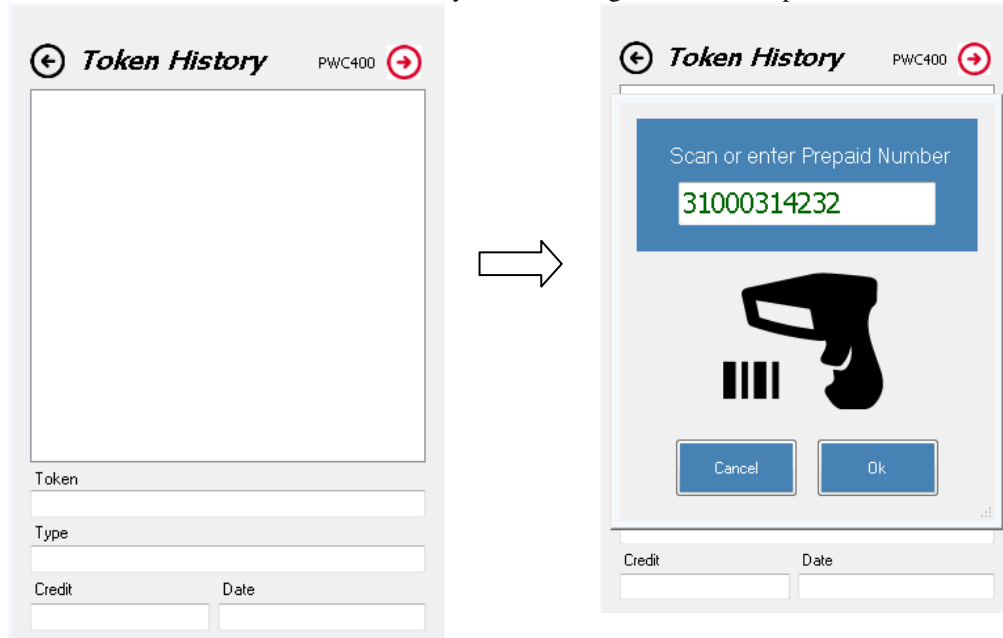In the example below the Alternative Reference is PWC200:

8. Historical

The following will describe all the different options under Historical.

8.1 Token History

Click on Historical and then Token History, the following window will open:

Token History shows the last 10 tokens used by the specific meter. If you click on any token in the list it shows more detail for that token.

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and gets the Token History.

8.2 Monthly Consumption

Click on Historical and then Monthly Consumption, the following window will open:
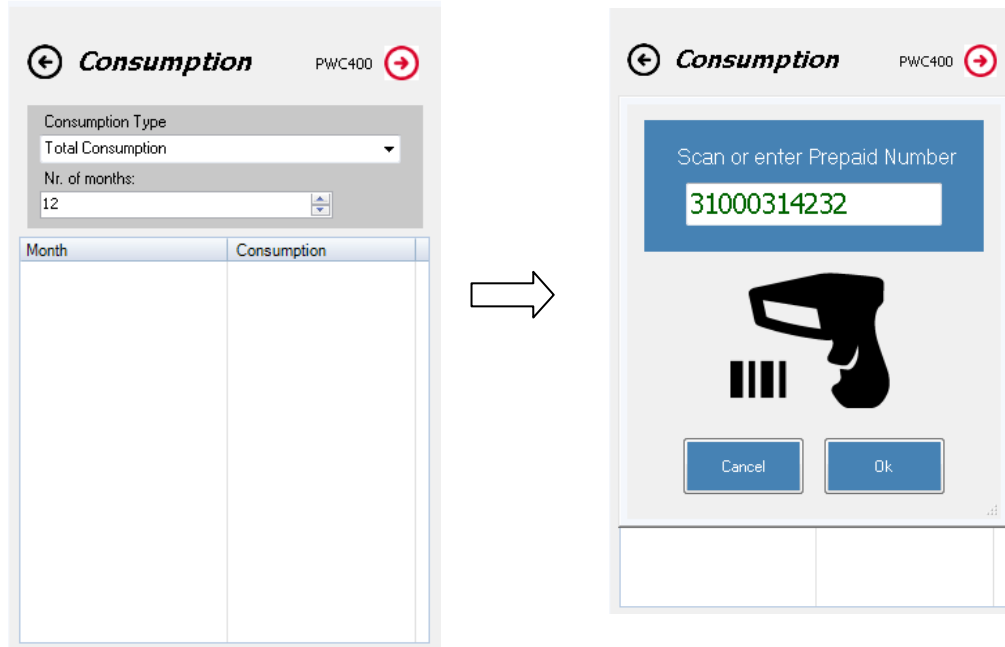

Monthly Consumption is used to view up to 12 months of consumption. Different Consumption types are also available in the drop down list.

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and gets the Consumption History for the selected number of months and the type of consumption. Below is an example:
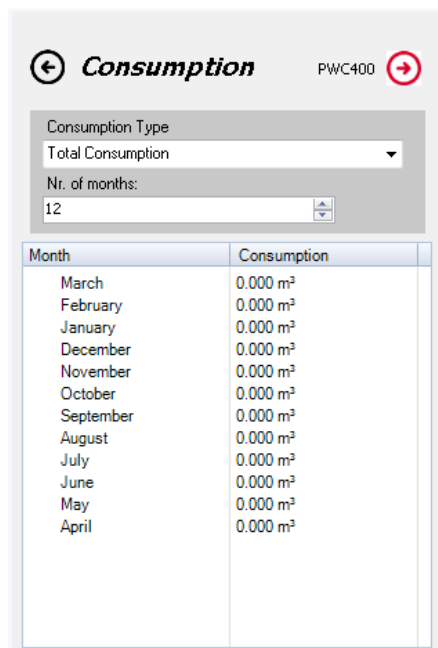
8.3 Totalizer

Click on Historical and then Totalizer, the following window will open:
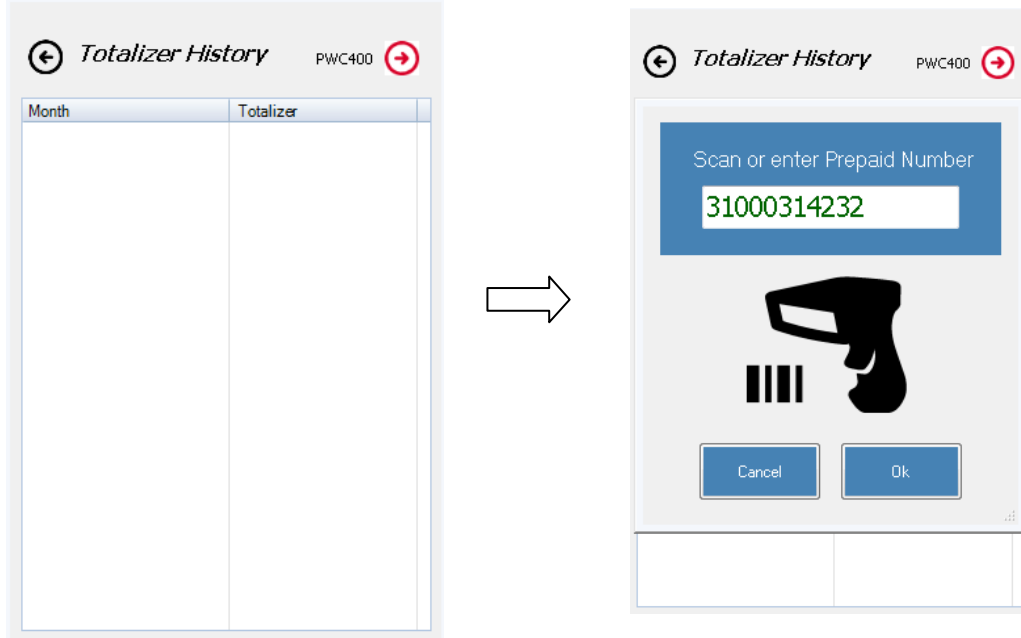
Totalizer History shows the totalizer data for the past 12 months.

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and gets the Totalizer History. Below is an example:

8.4 Credit Usage

Click on Historical and then Credit Usage, the following window will open:

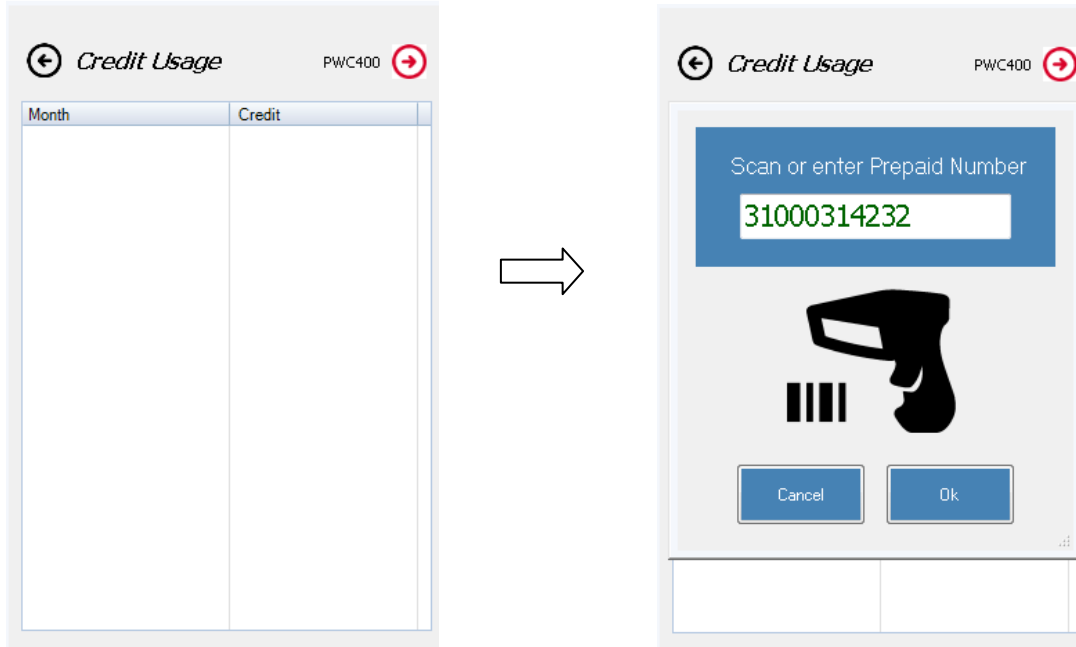Credit Usage shows the last 12 months of credit consumed.

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and gets the Credit Usage history. Below is an example:

8.5 Month end Credit

Click on Historical and then Monthend Credit, the following window will open:

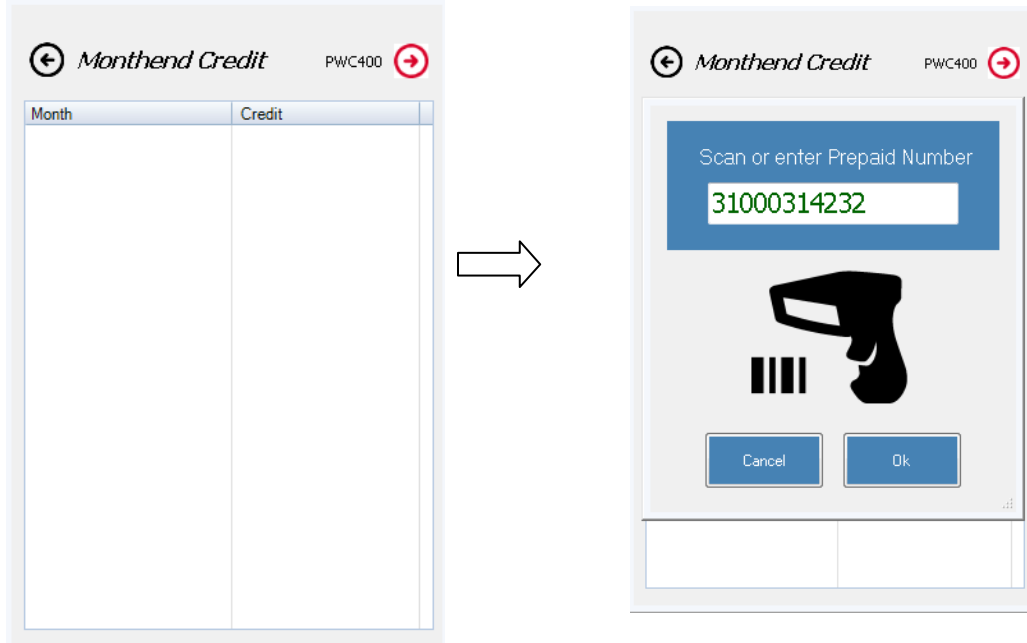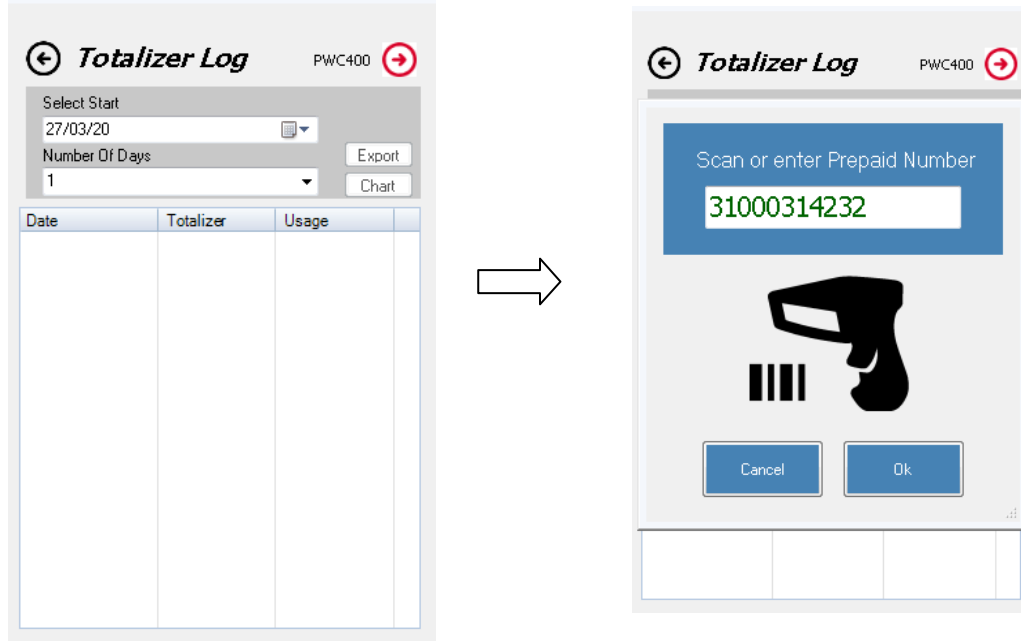Month end Credit shows the available credit at the end of each month for the last 12 months.

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and gets the Month end Credit history. Below is an example:

8.6 Totalizer Log

Click on Historical and then Totalizer Log, the following window will open:

Totalizer log gives a detail log of the totalizer every hour for a specific day for up to six days. By selecting a start date and the number of days required to get a detailed totalizer record.

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and gets the Totalizer Log history. Below is an example:

9. Meter Testing

The following will describe all the different options under Meter Testing.

9.1 Test Credit

Click on Meter Testing and then Test Credit, the following window will open:
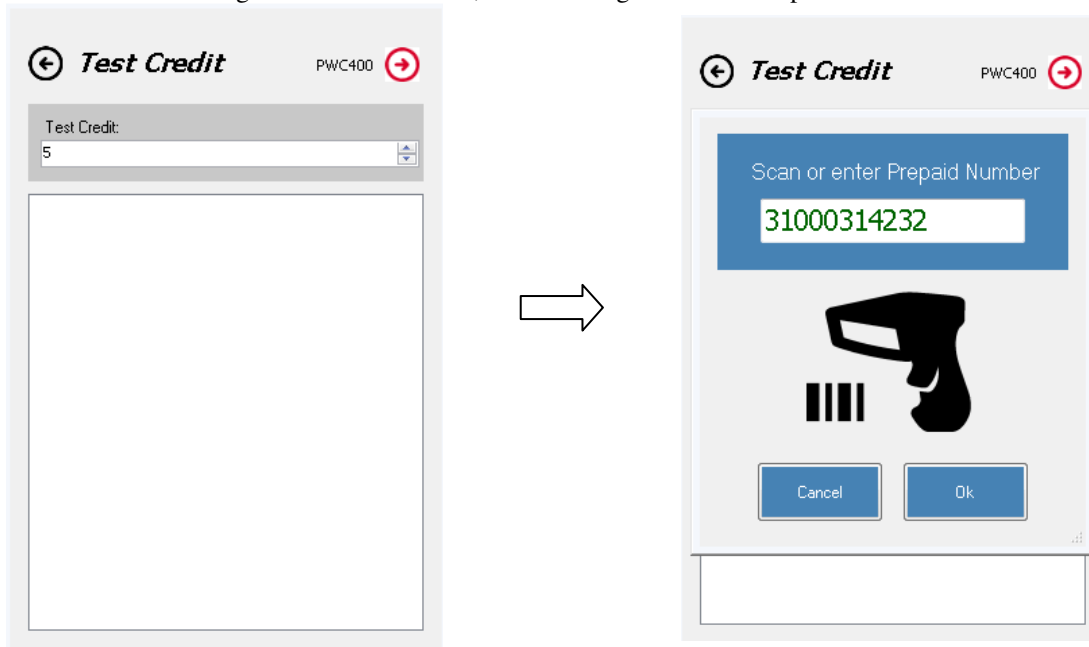
Test Credit can be loaded to any specified meter. Enter the amount of test credit to be loaded in the space provided.

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and sends the Test Credit to the meter. Below is an example:
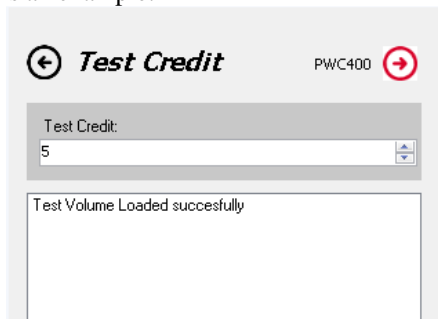
9.2 Send Token

Click on Meter Testing and then Send Token, the following window will open:
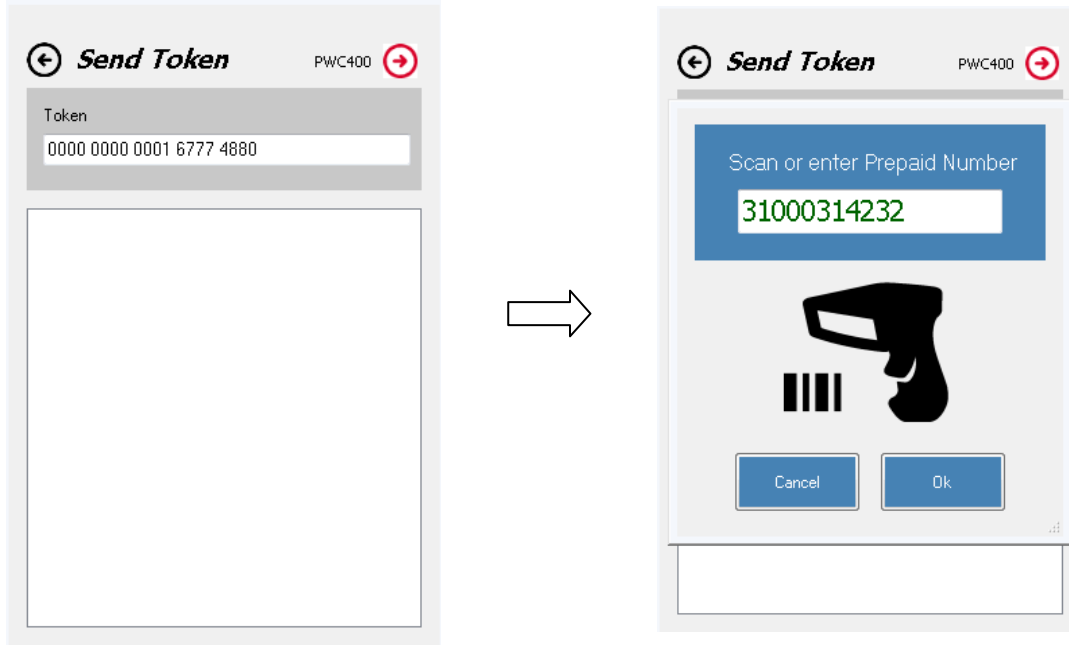
Send Token allows you to send a token to the specified meter.

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and sends the Token to the meter. Below is an example of an LCD test Token that was send:

9.3 Valve Test

Click on Meter Testing and then Valve Test, the following window will open:
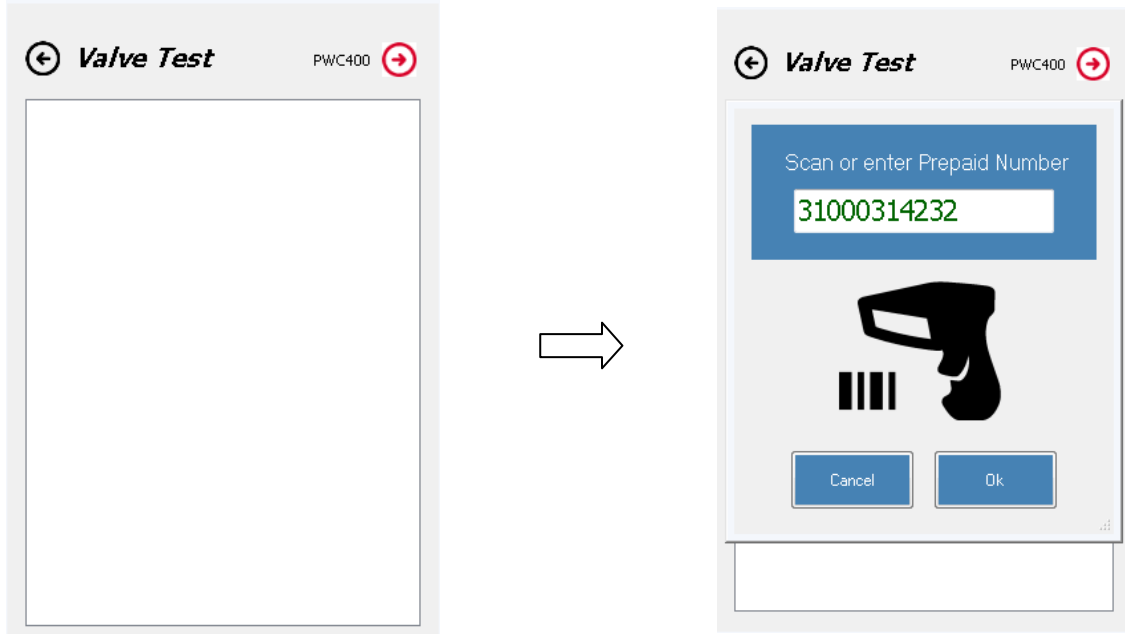
Valve Test allows you to test the valve function of the specific meter.

Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and sends the Valve Test command to the meter. Below is an example, you should be able to hear the valve open and close:
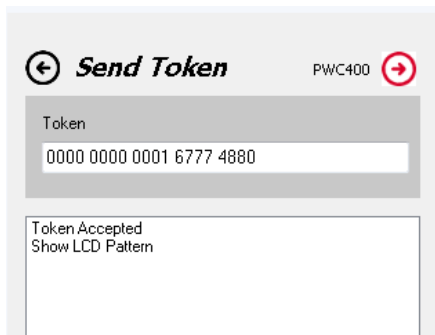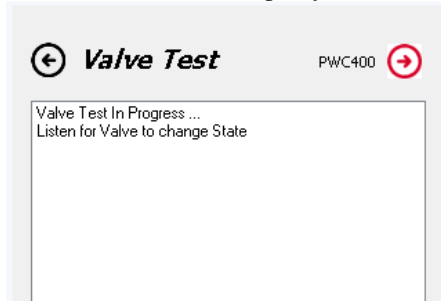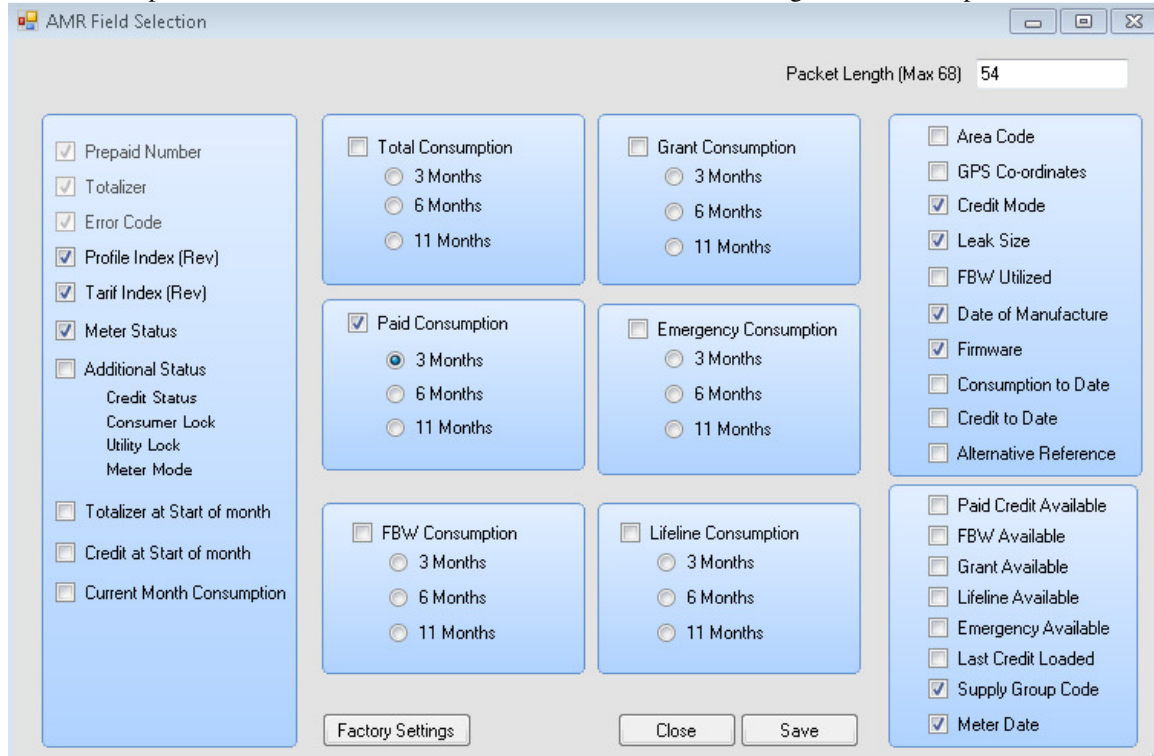
10. Setup

The following will describe all the different options under Setup.
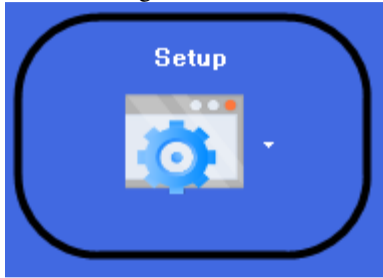
10.1 AMR Field Selection PWC100/200

Click on Setup and then AMR Field Selection PWC100/200, the following window will open:

Select all the fields of interest, but keep an eye on the Max Packet Length on the top right corner. These selections will later be used when the AMR is activated. When you are done selecting the relevant fields click on the save button and then the Close button to exit. The Factory Settings button can be used to set all selections to default.

10.2 Area Codes

Click on Setup and then Area Codes, the following window will open:

Area codes are used to group meters together that are in the same street, complex or set of flats. The above settings are done by selecting the Area Details tab and entering the Details, after this is done click on the save button, go back to the Area List tab the newly created area with its corresponding number should appear. In the above example GreenFields was created.

10.3 Meter Profile

Click on Setup and then Meter Profile, the following window will open:
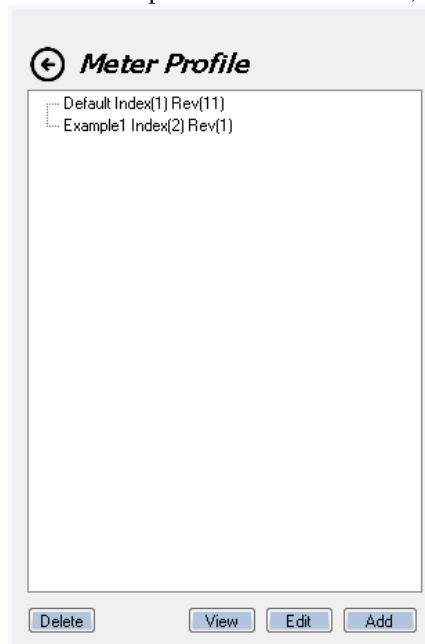
Click on the Add button to add a new Meter Profile.

Meter Profile

Profile Name	Example1		
Profile Index	3	Revision	1

Meter

Mode	Prepaid	▼
Credit Low	2	m³
Valve Close	0	m³

Free Basic Water ☐

Volume	0.200	m³
Cycle	Daily	▼
Open	04:00AM ▼ Close	Disable ▼
Expiry (mm/dd/ yy) ☐	01/01/00	▼
Accumulation	No Accumulation	▼
Low Indication	0.050	m³

LifeLine ☐

Volume	0.000	m³	0 days

Emergency Credit ☐

Volume	0.000	m³
Release	0.000	m³
Renew	Jul	▼

Conservation Limit ☐

Volume	0.000	m³

Save

Insert a new profile name as in the above example and select all the options for this new meter profile, click on the save button when done.

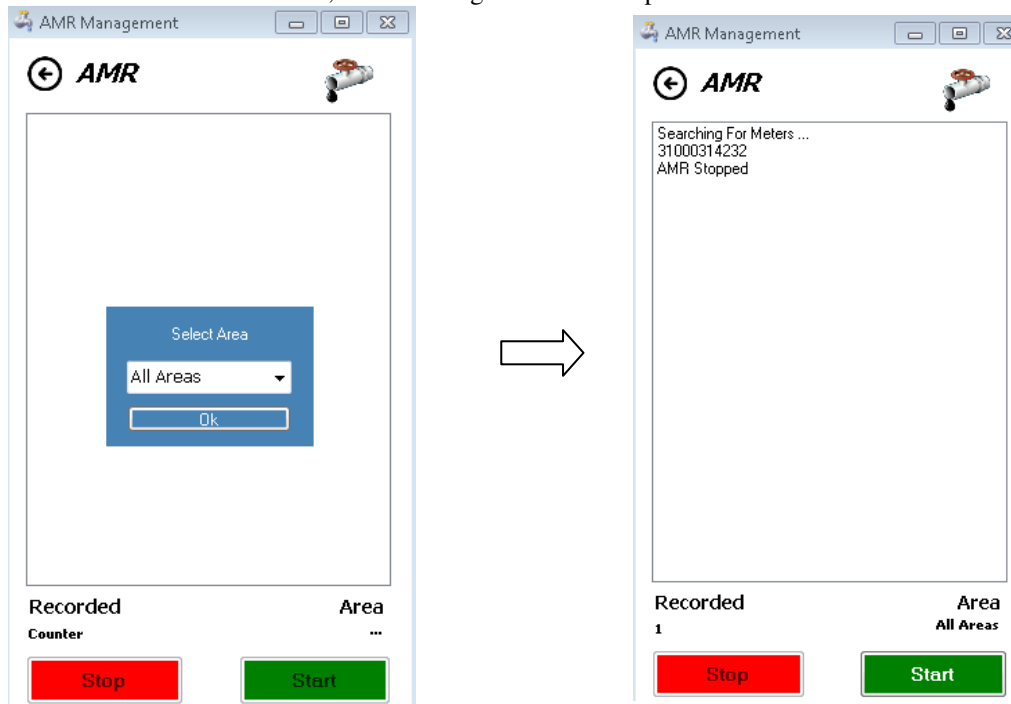This new profile can be selected when doing AMC .

12. AMR

The following will describe all the different options under AMR. AMR stands for Automatic Meter Reading.


12.1 AMR

Click on AMR and then AMR, the following window will open:

If you are only interested in a specific Area this can be selected here. Click on the start button to begin AMR process. The different fields for AMR can be selected under Setup as discussed in the previous section. Press the Start button, in the example above only one meter was in range.

12.2 Manual AMR

Click on AMR and then Manual AMR, the following window will open:
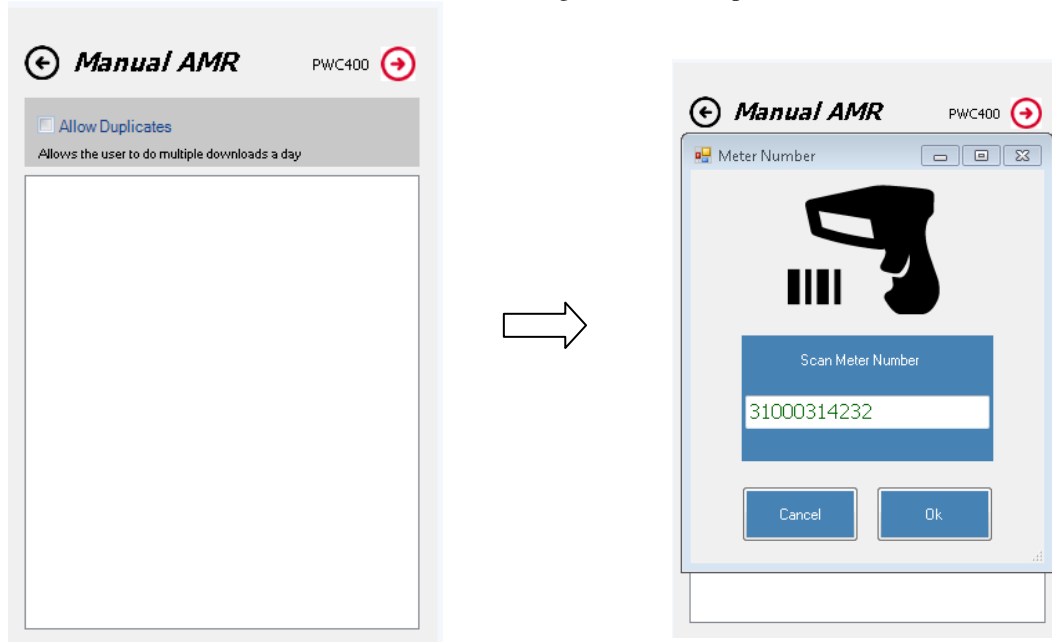
Manual AMR can be done for a specific meter.
Click on the red arrow next to PWC 400 and enter the meter number of interest, the example above shows meter number 31000314232. Make sure the PWC100/200 is in Radio range of your PWC400. Click on the OK button and wait while the PWC400 connects to the meter and gets the Manual AMR data.

12.3 Automated Meter Configuration (AMC)

AMC function allows for the meter configuration profiles to be changed on the fly when driving past the meters, similar to AMR

Every Meter is configured with a Profile Index and a Revision. Factory default is Index 1, Revision 1. When the profile needs to be changed, the changes are made, and saved as Revision 2.

For any changes to the Configuration Profile, you need to do that under Setup / Meter Profile.

Click on AMR and then AMC, the following window will open:
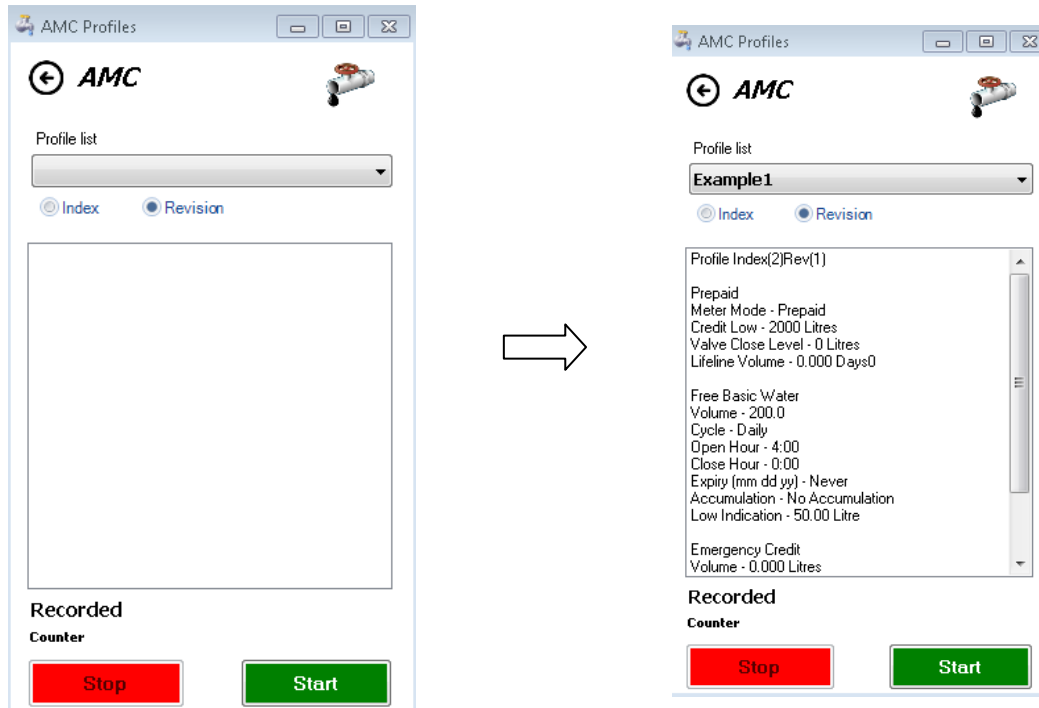
Choose the Configuration Profile that you want to change from the list.

Select if you want to change the Index, or just update to a newer Revision of the same Index.

Index: Will change all meters that comes in range, to the new specified Index, regardless of on what Index The meter currently is.

Example: Change all meters to Profile Index 2, Revision 1.

Revision: Change all meters that is on the same Index as the Profile selected, but with an older (lower) or the same Revision
For example   Change all meters currently on Index 1, Revision 1 to Revision 2.

The CSV is created with the Meter Number of all meters that was updated.
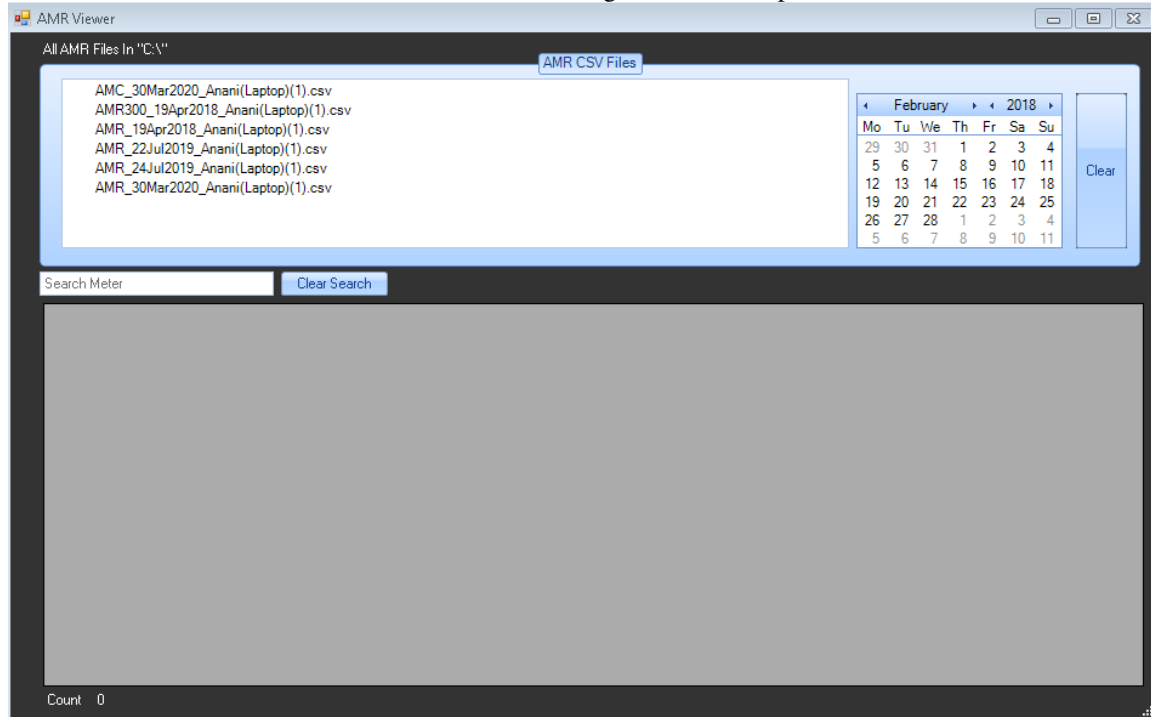
13. CSV Viewer

The following will describe all the different options under CSV Viewer.
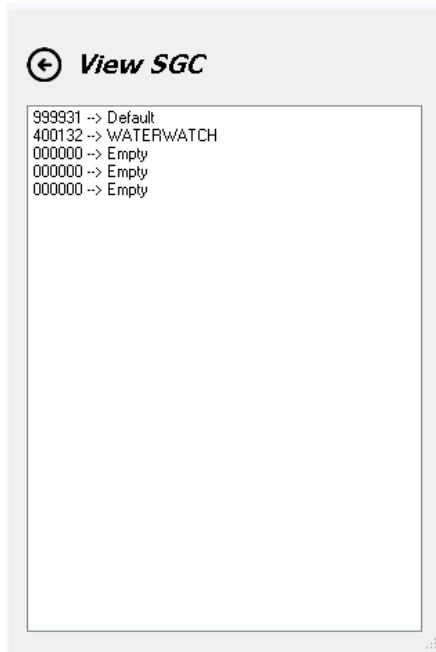

13.1 AMR Data

Click on CSV Viewer and then AMR Data, the following window will open:

Choose the appropriate file to view. All the AMR data that was recorded will be show in the window.

13.2 SGC List

Click on CSV Viewer and then SGC List, the following window will open:

SGC List displays the currently used SGC codes.

14. Exit

This button is used to exit the FMT software.