Mansol Technologies

# SIMPLE-TIMER 2.0

## R4.4

Take your racing to the next level

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# OUR EXPERT TEAM

Over 30 years' experience in electrical and electronic industry, 30 years in the software industry and a further 20 years in the motorsport industry.

### Our Mission Statement

To provide industry leading technology to the motorsport and industrial sector whilst supporting our customers in gaining a leading edge on their competitors.

We love to hear feedback about our products and any recommendations or updates you would like us to make.
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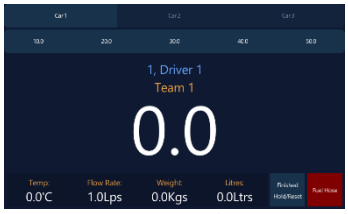
# SCREEN: FUELING / COUNTDOWN




The fuel countdown/transaction page is the main page for the simple timer.

To set the driver receiving the fuel transaction, click one of the car buttons at the top of the page, the driver will change to show the name of the person in that car.

The five times underneath show the quick fill times set from the driver setup page. (see Screen: Driver Setup) Selecting one of these times will set the timer on the screen to match the fill duration.

To manually change the time on the screen, press and hold time until it turns yellow in colour. Now swipe left or right to decrease or increase the time respectively. Releasing the time for five seconds will set the new time and the value will change back to white.

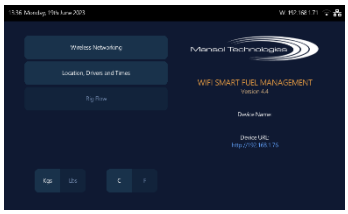
Once the fuel nozzle is connected to the car, the timer will begin to countdown for any time that has been set which is greater than 0.1 seconds and count up if the time has been set to zero. A percentage bar will appear behind the time to indicate visually the duration of fill complete and flash red when the Fuel-man needs to end fuelling.

Once fuelling is complete, press and release the "Finished - Hold/Reset" button. This will save the fuel transaction and send the finish request to EASI.

Pressing and holding the "Finished – Hold/Reset" button until it turns a red background will void the current transaction and reset the timer to its filling defaults ready for a new fill.

The Fuel Hose indicator shows the nozzle is connected to the car.

# SCREEN: MENU




The menu screen allows for navigation to the main setup and calibration pages of the Simple-Timer. In addition, we can see the URLs and network identifying addresses.

For Wireless Networking see Screen: Wireless Setup.
For Location, Drivers and Times see Screen: Driver Setup.
For RigFlow see Screen: RigFlow. (Only available if the RigFlow is connected)

The toggle switches at the bottom of the menu allow the user to change unit of measures between Kilograms and Pounds, and Centigrade and Fahrenheit.

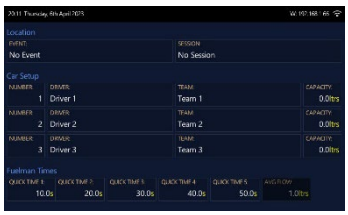
# SCREEN: WIRELESS SETUP


The Simple-Timer can be connected to the wireless network, giving access to all the features provided by the EASI interface and the APIs.

2.4ghz and 5ghz networks are supported, once your network is displayed in the list, simply press on your network and a popup keyboard will prompt you for the password. A delay will occur whilst it is connecting.

We recommend using an ethernet connection when the Simple-Timer is used in the pit lane as typically there are a lot of wireless networks occurring and sometimes it can cause issues with connection reliability.

# SCREEN: DRIVER SETUP




This screen allows you to configure the driver and timing setups for the Simple-Timer.

The Event and Session are recorded against transactions and allows the analysis of fuel transactions to be grouped and evaluated against each other in the countries they occurred in.

The Simple-Timer allows for up to three drivers to be specified and three cars also. Giving a possible back-up solution for teams where multiple cars and Simple-Timers are in use (Providing regulations permit it). The car capacity is used when determining if there is enough fuel in the tank to satisfy a full fill.

The times section configures the quick select buttons on the transaction screen (see EASI: Race Setup) to select commonly occurring fill amounts.

# SCREEN: RIG FLOW


The Rig-Flow screen is only available once a Sentronics Rig-Flow sensor is attached to the Fuel-Timer and the canbus device id has been configured.

The screen shows the sensor information coming from the Rig-Flow in real time, showing the amount of fuel that is going through the sensor and the amount that has flown through since manufacture.

Calculating the starting cumulative and ending cumulative amount we can calculate the amount of fuel delivered in a transaction and cross-reference this amount with the weight scales - giving us two points of fuel delivery information.

In some race championships, this independent fuel monitoring is mandatory – this system allows you to see what is being sent to the governing body.

This screen also shows us the current transaction details, the current car/driver and the progress of the fuelling that is about to, or has been done.

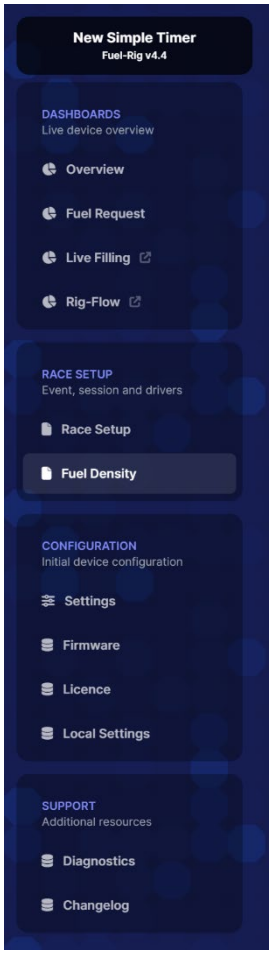
# EASI

The EASI software allows you to connect to the Simple-Timer from any web-based browser such as Google Chrome or Microsoft Edge. You can also connect to EASI using your mobile phone or tablet.

To find the web address for the Simple-Timer, ensure you have connected to your wireless network and click the menu button. The web address is shown under Device URL.


At the top of the EASI page we can see the name of the Simple-Timer we are connected too, this name can be changed in the EASI: Settings page. We can also see the firmware version and the IP address for the device.

## Dashboards




### Overview

The dashboard overview gives you details for the current event session, the last transaction and historic transactions. (see EASI: Overview)

### Fuel Request

Send a fuel request to the Simple-Timer for the Fuel-man. Default fills can able to set, ready for subsequent fuel fills. (see EASI: Fuel Request)

### Live Filling

This is a popout window allowing you to display information in a fast polled state about the current fuel transaction that is happening. (see EASI: Live Filling)

### RigFlow

This is a popout window showing a fast polled update on the connected RigFlow from Sentronics, displaying information on the fuel that has flowed and/or is flowing though the hose. (see EASI: RigFlow)

## Race Setup

### Race Setup

Setup the Simple-Timer ready for the current race. (see EASI: Race Setup)

### Fuel Density

Setup the fuel characteristics being used for the current race. (see EASI: Fuel Density)

## Configuration

### Settings

Overall settings for the Simple-Timer. (see EASI: Settings)

### Firmware

Check and install the latest firmware. (see EASI: Firmware)

### Licence

View the status of your Simple-Timer licence and manage your online account. (see EASI: Licence)

### Local Settings

Setup the local settings for use with the EASI interface. (see EASI: Local Settings)

## Support

### Diagnostics

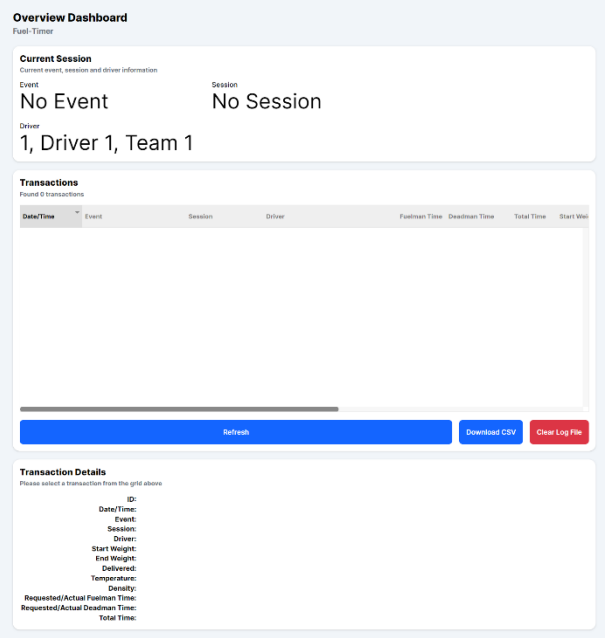
Debug information showing most key software values to aid in identifying potential issues. (see EASI: Diagnostics)

### Changelog

Details on changes to the Simple-Timer in the current and throughout previous versions.

# EASI: OVERVIEW

The overview page is the main page for running the simple timer, here you can see the current event and session you are currently running and the transactions that have occurred on the simple timer.




The transaction history shows all the transactions that have taken place on the Simple-Timer. By default, the newest transactions are shown at the top of the data grid. Changing the sort order column or sort by column will remember the settings in your local storage account within the browser.

Clicking on a transaction row will load the Transaction Details section with the full details of the transaction.

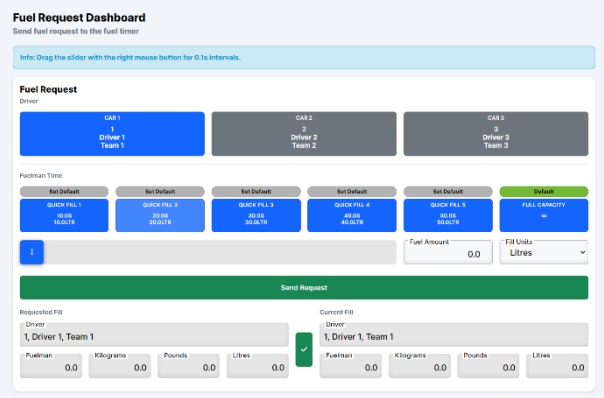
A count of transactions can be found under the sub heading Transactions.

The Refresh button will get the latest list of transactions from the Simple-Timer, or by clicking on the menu link.

Download CSV will download the list of transactions with all the details to a file which can be opened in Microsoft Excel.

Clear Log File, after a confirmation prompt, will clear ALL transactions and telemetry data.

# EASI: FUEL REQUEST




The fuel request dashboard allows you to control the times displayed on the screen. The settings on this page are driven by the settings defined on the page EASI: Race Setup.

### Driver

Select the car which is to be fuelled by clicking on of the three buttons, Car 1, Car 2 or Car 3. The selected car will be highlighted in blue.

### Fuel-man Time

There are six quick fuel buttons, giving quick response to commonly used fuel requests. The default, highlighted in green is the value the Fuel-man screen will default too when the Simple-Timer is powered on and when the Fuel-man has been reset after a fuel transaction. Clicking a grey **"Default"** button will set the corresponding time to become the new default time used.

Full capacity sets the timer to zero and once started will count-up in seconds, instead of counting down when the aim to deliver a set amount.

For amounts not defined on one of the quick select buttons, the slider can be adjusted up or down to set a new time. Using the left mouse button to drag the slider will change the time in increments of one second, using the right mouse button to drag will change the time in increments of 0.1 seconds.

The **"Fuel Amount"** indicates the amount of fuel to be requested, you can also edit this box directly and enter a new value.

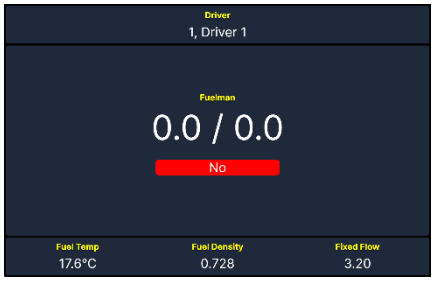
The **"Fill Units"** changes the conversion of fuel amount into seconds, ready to be sent to the Fuel-man. The default units are Litres and can be changed to Seconds, Kilograms and Pounds.

*Values in red indicate the values are not the same as currently on the Simple-Timer, these will synchronise when the Send Request button has been pressed.*

### Requested Fill vs Current Fill

This section shows the differences between which is currently being requested and what is currently in use on the Simple-Timer itself, indicated with red. To synchronise these values on screen, click the Send Request button.

# EASI: LIVE FILLING




The Live-Filling page opens in a new popout window and is designed to be placed on a standalone screen or snap-paired to the Fuel Request page to build a command centre to see all aspects of the Simple-Timer.

This popout uses a faster polling time of 200ms to display details on the current fuel fill as it is happening. Showing the times for both Fuel-man and Dead-man along with their targets. Underneath show percent bars for visual indication on how close to 100% both parties are to their targets.

# EASI: RIGFLOW

The RigFlow page opens in a new popout window and is designed to be placed on a standalone screen or snap-paired to the Fuel Request page to build a command centre to see all aspects of the Simple-Timer.

The information on this screen is only applicable when a Sentronics RigFlow sensor is connected to the Simple-Timer.

This popout uses a faster polling time of 200ms and shows fuel details directly from the RigFlow sensors - Instantaneous flow rates and cumulative amounts to aid with check and balances on delivery amounts against the Simple-Timer.

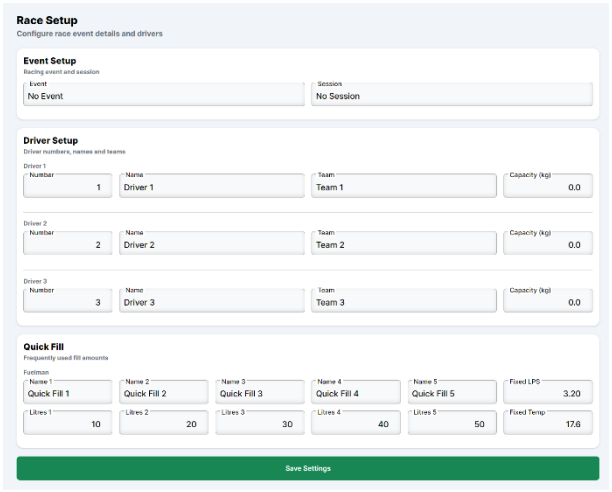
# EASI: RACE SETUP

This page allows you to configure the race event details and driver information.

## Event Setup

The race event holds the place name of where the race is taking place, such as Sebring, Portimão, Le Mans, Bahrain etc. This is a free text field.

The session records the race type, whether it is practising, qualifying, race or testing etc. This is a free text field.




## Driver Setup

The Simple-Timer allows for up to three driver details to be setup and used at any time for a fuel request. This allows for events such as the 24 hours of Le Mans where multiple drivers for one car are required.

In some instances, a single Simple-Timer can be used to manage multiple cars. This setup allows for this and will record the fuelled driver and car on the transaction record.

## Quick Fill

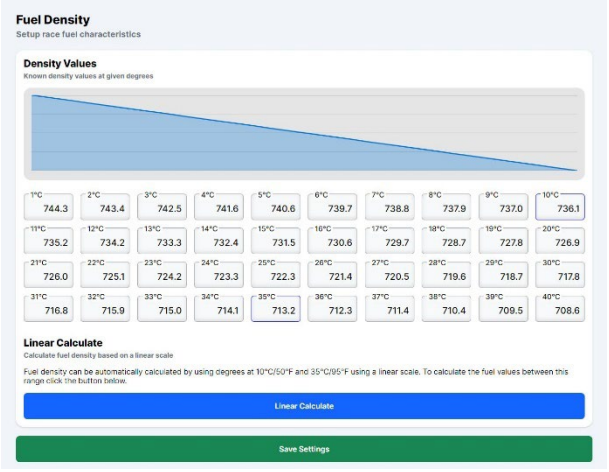
### Fuel-man

Five quick fill selections can be configured for commonly occurring fuel amounts, each quick fill can be named to appropriately match the amount in litres the fill is designed for.

The Fixed LPS aids in the conversion to deliver a given amount of fuel in seconds. This value will change depending on the amount of fuel in the tank, the height above sea level and what restrictors are on the fuel delivery to satisfy any conditions or regulations for a race event. This number is critical to accurate amount of fuel being delivered to the car and it is recommended to do a flow test prior to a race starting.

Once the race setup has been configured, click the Save Settings button to send the settings to the Simple-Timer.

# EASI: FUEL DENSITY




## Density Values

The fuel density is different for different manufacturers of race fuel. This screen allows you to enter the density value of fuel at known temperatures.

Typically fuel density is linear so only a few values are needed to calculate the other densities between 1 and 40 degrees centigrade. However, if need too you can enter each degree one by one.

## Linear Calculate

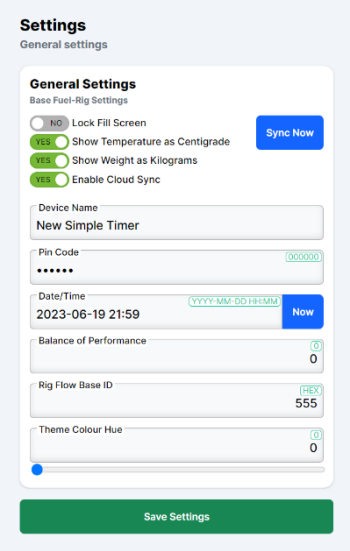
Knowing the fuel density values for both 10 degrees and 35 degrees you can get the system to work out the linear scale for

you automatically. Enter these values and click the Linear Calculate button.

Once done, click the Save Settings button to send the density values to the Simple-Timer.

# EASI: SETTINGS

## General Settings




### Lock Fill Screen

This setting prevents the fill screen from being able to change the driver and times. Only allowing updates to come from EASI or the API.

### Show Temperatures as Centigrade

This shows all the main temperatures on the Simple-Timer screen and on EASI to predominantly read as centigrade. In places where both Centigrade and Fahrenheit are shown, Centigrade will show first and Fahrenheit second.

### Show Weight as Kilograms

This shows all the main weight on the Simple-Timer screen and on EASI to predominantly read as kilograms. In places where both Kilograms and Pounds are shown, Kilograms will show first and Pounds second.

### Enable Cloud Sync

Upon power up, the server will synchronise its settings, transactions, and telemetry data to the Mansol Technologies cloud services. Additionally, any changes on the cloud account are synchronised back.

This synchronisation also occurs after each transaction or on an hourly period from the last synchronisation.

### Device Name

This device name appears in the top left corner of EASI and on UDP broadcasts, providing identification to the end user on which Simple-Timer they are connected too.

### Pin Code

All updates and requests sent to the Simple-Timer require pin code access. This applies to both the screens, EASI and API calls. This code is a 6-digit numeric code, and the default is 000000.

EASI can remember the pin code for the device you are using by toggling the Remember Pin Code on the popup prompt or by entering the pin code on the local settings page. (see EASI: Local Settings)

### Date/Time

The date and time on the Simple-Timer is set by NTP (Network Time Protocol). It also has an on-board RTC (Real Time Clock) for uses where the network is unavailable, to correct the time enter the current time in the format YYYY-MM-DD HH:MM.

### Balance of Performance

This adds an additional time to the Fuel-man timer, first counting down the balance of performance time before counting down the Fuel-man time. This is used for race series where rules apply to various classes, and they must keep the fuel hose connected to the car for a set amount of time.

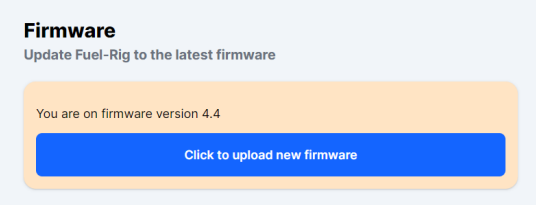
### RigFlow Base ID

This is the RigFlow base ID from Sentronics, this number is different on each sensor – to find this number, contact your Sentronics support or account manager.

### Theme Colour Hue

The side bar in EASI can cycle through a red, green, and blue hue to aid in differentiating the Simple-Timer when multiple rigs are being used at the same time.

# EASI: FIRMWARE




As new upgrades and firmware's become available, you can apply these to your Simple-Timer at a convenient time.

Simply click to upload a new firmware and select the new Simple-Timer firmware file.

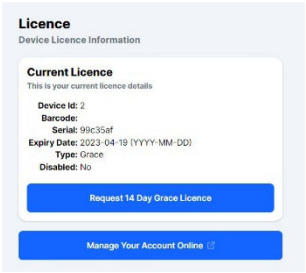
For the latest firmware visit us at Mansol Technologies.

# EASI: LICENCE

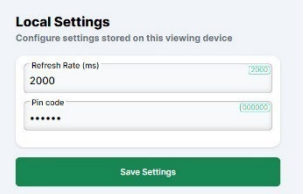
The Simple-Timer is a licenced product, and a valid licence must be held to use the device.

In the event of your licence expiring at the time of an event, a 14-day grace licence can be applied, giving you time to renew your licence later.

To update your licence, click the Manage Your Account Online button, this will open a new window taking you to the Mansol Technologies cloud account page.




# EASI: LOCAL SETTINGS




These settings are stored locally on your browser using local storage.

### Refresh Rate

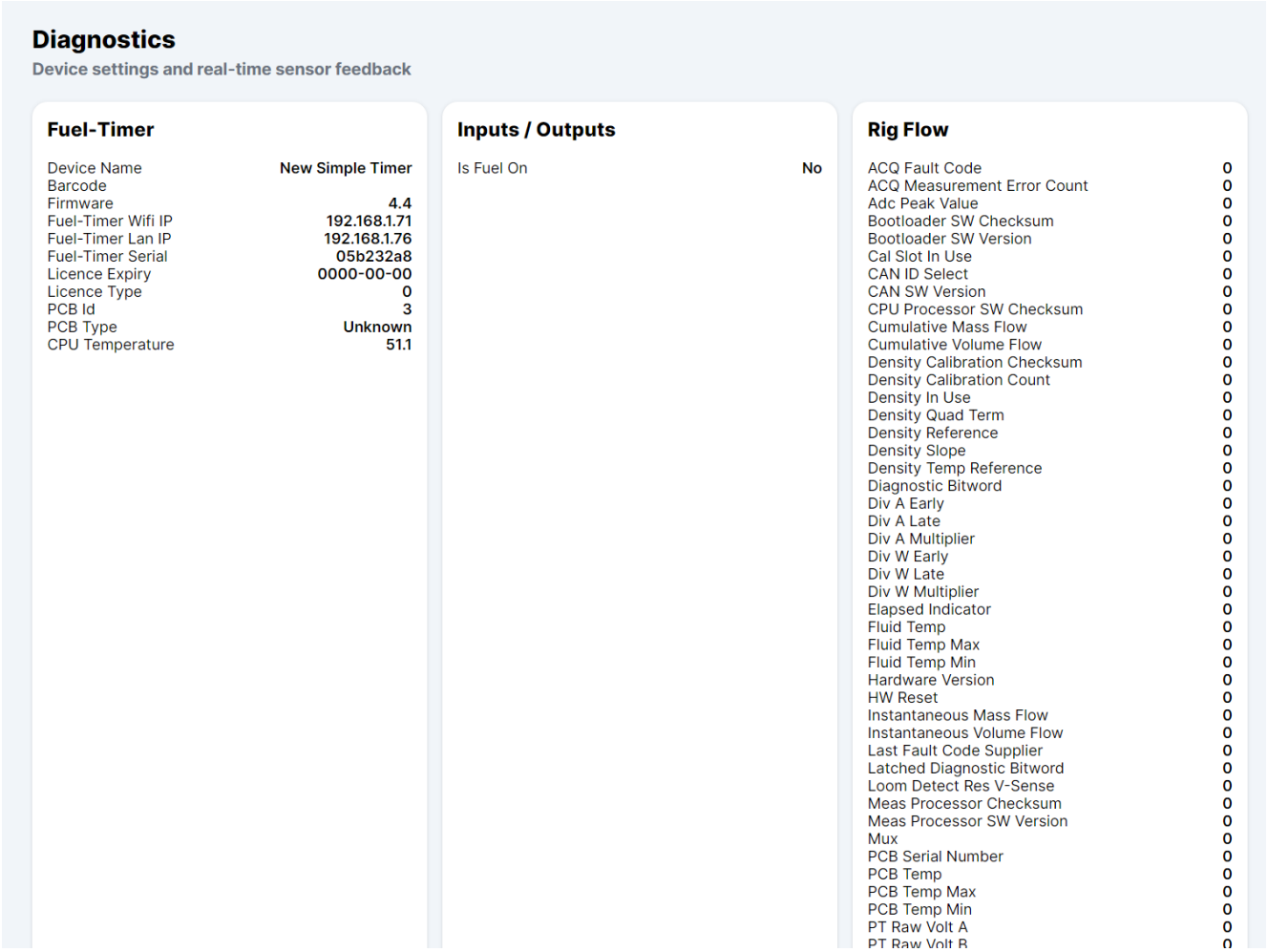
This is the polling frequency which updates the information in EASI in refreshed. The lower the number the faster the updates will occur.

### Pin Code

This stores the pin code locally so future updates to the Simple-Timer will no longer ask for the pin code to be entered.

# EASI: DIAGNOSTICS

The diagnostics page gives raw details on important sensors and settings on the Simple-Timer, this is an engineering page and used for device maintenance and fault finding.



# PARTS LIST

| Standard Parts List | |
|---|---|
| Part Number | Description |
| FT2.0-P01 | 9v DC power supply |
| FT2.0-SC06 | Fuel timer - Server cable (6m) |
| FT2.0-STRF3 | Screen power adapter cable (3m) |
| FT2.0-D01 | Screen assembly kit |
| FT2.0-KR/ATL01 | Krontec/ATL fuel-on switch |
| FT2.0-ST01 | Staubli fuel-on switch |
| FT2.0-WA | Wireless antenna (Pin) |

| Extended Parts List | |
|---|---|
| Part Number | Description |
| FT2.0-SC05 | Fuel timer - Server cable (5m) |
| FT2.0-SC07 | Fuel timer - Server cable (7m) |
| FT2.0-SC08 | Fuel timer - Server cable (8m) |
| FT2.0-RF-RO | RigFlow auxiliary communications cable (2m) |

| Complete Kits | |
|---|---|
| Part Number | Description |
| FT2.0-AUXKit | Auxiliary screen add-on |
| FT2.0-KITPRO | Simple-Timer kit pro |
| FT2.0-STDKit | Standard Fuel-Timer kit |
| FT2.0-STKit | Simple Timer kit |