GREAVES 3D ENGINEERING

UNITED RACE PARTS®

ADVANCED PITLANE MANAGEMENT SYSTEM

Real-time telemetry and data logging for the sentronics RigFlow fuel sensor

System Overview

The RigFlow is specifically designed for accurately measuring dispensed fuel during a pit stop. The technology allows both teams and governing bodies to independently assess exactly how much fuel has been dispensed from the 200L FIA® pit tank.

Our hardware connects to the secondary port on the RigFlow and can be used in conjunction with the IMSA connection.

With EASI (Our web-based software), you receive real-time visuals on fuel flow, full transaction recording, along with complete telemetry. Showing instantaneous fuel flow and cumulative flow over time.

The hardware provides a network connection, allowing these visuals to be presented on any device though it's browser. (Phones, Tablets, PCs, or Macs)

Various accessories and sensors are available for the APMS Server to allow the expansion in to a full pitlane management system. These include external displays, weight scales, fuel pickup sensors, deadman valve positioning sensors and fuel-on sensors.

The APMS provides engineers with additional functionality to talk to the pit crew for fuel request amounts, pick-up to put-down telemetry, as well as information on the fuel in the fuel-rig tank.

Advanced API Integration

Using industry standard JSON requests over HTTP provides an interface to retrieve raw data from the device, this data can then be integrated into your own applications.

Cloud Synchronisation

Optional cloud storage synchronises all data on the device with Mansol Technologies cloud environment. Providing online backups, online data analysis and data recovery.

This service also provides online technical support and upgrades to the latest firmware.

Device Highlights

- Live real-time data visuals
- Transaction recording w/telemetry
- Wireless network integration
- API support for custom integration
- Cloud synchronisation and storage
- Part of a modular product suite

FULL MANUALS

SCAN ME

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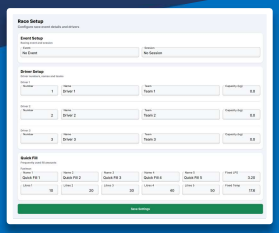

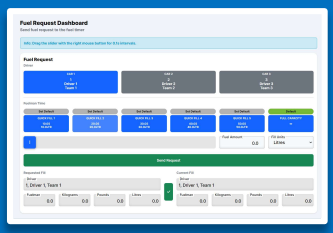

Evolution & Expansion

We offer 4 levels of hardware, APMS Simple, Standard, Standard w/Loadcells and Complete.

The APMS Simple version comes with a server to interface with the Sentronics RigFlow. The server receives the information from the RigFlow in real-time, logging and displaying the information in pages and graphs allowing for quick and easy interpretation. This information is made available when the server is connected to a network via Ethernet or Wi-Fi and can be accessed on any device through a browser if it is connected to the same network.

The APMS Standard. This builds upon the Simple version and includes a display which can be mounted on the re-fuelling nozzle, this allows the engineer to send refuelling information to the fueller, the engineer can request an amount of fuel (Litres, Gallons, Kilograms and Pounds) needed to go into the car. The display will provide the fueller with a count-down or count-up timer and a visual display of when to disconnect from the car.

The APMS Complete. This platform is our most advanced system utilising multiple sensors to provide the highest level of control and accuracy over the re-fuelling process. The APMS Complete includes two displays, one mounted on the re-fuelling nozzle, and one mounted under the tank visible to the deadman. The second screen is utilised in instances where regulations require virtual fuel (Hypercar/GTP). The two displays are able to receive different time requests from the engineer meaning the deadman time can be shorter, or the same as, the timer on the re-fuelling nozzle. The APMS Complete also utilises load cells and temperature sensors (RTD), both of which are shown on the display and available to view on any device connected to the network. The engineers can view the amount of fuel in the tank as well as fuel/ambient temperature at all times.

	APMS Basic	APMS Standard	APMS Standard + Loadcells	APMS Complete
Real-time RigFlow telemetry	Yes	Yes	Yes	Yes
RigFlow Telemetry logging and transaction history	Yes	Yes	Yes	Yes
On-board storage	Yes	Yes	Yes	Yes
Cloud storage	Yes	Yes	Yes	Yes
Technical support	Yes	Yes	Yes	Yes
Firmware updates	Yes	Yes	Yes	Yes
Ethernet & Wireless networking	Yes	Yes	Yes	Yes
API synchronisation and storage	Yes	Yes	Yes	Yes
External displays		One	One	Two
Fuel nozzle proximity switch		Yes	Yes	Yes
Fuel timing by request		Yes	Yes	Yes
Fuel timing using various trigger points		Yes	Yes	Yes
Ambient and Fuel RTD temperature sensors			Yes	Yes
Fuel-rig tank weighing system			Yes	Yes
Deadman positioning sensors				Yes

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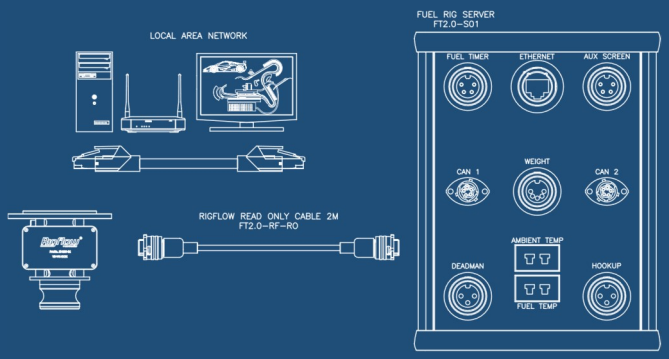
Each tier in our setup extends on the previous tier – this gives additional functionality, higher level of control and greater accuracy. For detailed information on our products, how they interface with the RigFlow and expand out in to a full refuelling solution - drop our sales team an email at info@greaves3d.com or info@unitedraceparts.com

APMS Basic

The basic APMS system provides you with our main server box, providing the basic connections to your network and the RigFlow device.

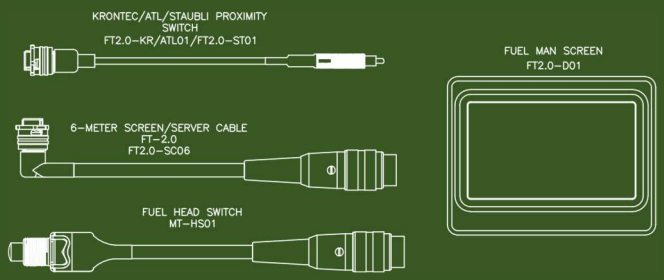
Giving you access to real-time data via a web browser.



APMS Standard

Standard tier includes a touch display, a pick-up sensor, and a nozzle to car proximity sensor.

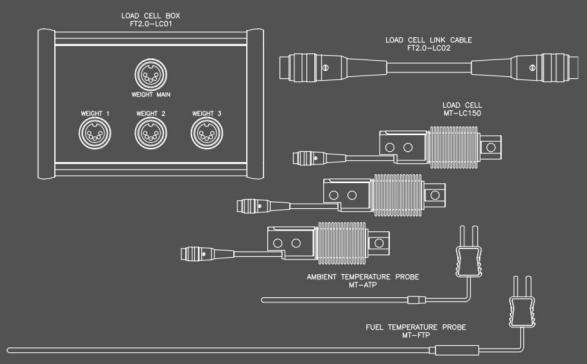
This setup extends the functionality to allow fuel requests to be sent to the touch display from the EASI interface. In addition, transactions are recorded for complete history and telemetry access.



APMS Standard w/Loadcells

Loadcells and temperature sensors allow for real-time information pertaining to the condition of your autonomous fuel tank.

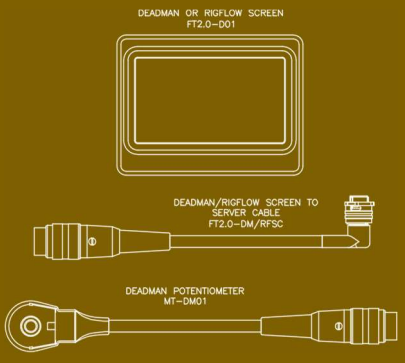
Allowing you to see the weight and volume of fuel available from a fuel density lookup table.



APMS Complete

Complete your fuel-rig setup with a display for the Deadman, this is in addition to the fuel timer display.

Independent timings are sent to this display and allow for fuel control where virtual time is required.



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