

Fuel information system ECOsens[®]



Analyze fuel consumption
Avoid fuel theft
Check fuel invoices

SYSTEM ECOsens®

The new fuel information system ECOsens provides relevant information around truck fuel consumption. You will benefit in significant fuel cost savings between two and more than ten per cent using the data provided by the system.

In addition to a stand-alone operation, the system may be connected to suitable fleet management systems to provide additional value.

FUNCTION

AUTOMATIC FUEL DATA VERIFICATION

VERIFICATION OF FUEL INVOICES

ECOsens measures the precise refill quantity, and compares the acquired values with available quantity figures from accounting.

DETECTION OF FUEL THEFT

Detected withdrawals from the fuel tanks are recorded along with timestamp and other relevant parameters.

HOW TO DETECT FUEL FRAUD

	WHEN ?	HOW MUCH ?	HOW ?
Consumption analysis		???	
Checking fuel invoices		??	
Observation	✓	?	✓
System ECOsens	✓	✓	✓

PRECISE FUEL CONSUMPTION FIGURES

The included software package ECOsens fuel report provides precise and clear figures of both individual truck and fleet consumption with additional details if required.

Due to the patented sensing technology even small variations of fuel consumption become visible.

Weekly report													from 11.03.2007 to 05.05.2007		
Vehicle ID:	TRUCK ID 01		Internal: TRUCK001		Blackbox: 1048910				1048910						
Week:	Start	drive km	km	total	steht h	drive h	idle h	Stp	km/Stp	Stph	Cons.L/100km				
11-07	11.03.2007	3.789	73	634.230	116,17	51,83	1,67	58	65	1	1.203	31,7			
12-07	18.03.2007	3.787	67	638.017	111,48	56,54	3,71	124	31	2	1.342	35,4			
13-07	25.03.2007	4.828	71	642.845	100,36	67,64	2,91	117	41	2	1.491	30,9			
14-07	01.04.2007	3.765	73	646.610	116,84	51,36	2,02	84	59	1	1.181	31,4			
15-07	08.04.2007	4.285	67	650.895	104,47	63,53	1,75	87	49	1	1.256	29,3			
16-07	15.04.2007	3.778	68	654.673	112,55	55,45	3,39	96	39	2	1.148	30,4			
17-07	22.04.2007	1.971	67	656.644	138,62	29,38	1,46	61	32	2	556	28,2			
18-07	29.04.2007	1.841	77	658.485	143,98	24,02	1,18	49	38	2	652	35,4			
TRUCK001		28.044	70	658.485	400			12	43	2	8.829	31,5			
Vehicle ID:	TRUCK ID 02	Internal:	TRUCK002	Blackbox:	1048904										
15-07	14.04.2007	311	85	378.035	20,34	3,66	0,11	6	52	2	110	35,4			
16-07	15.04.2007	3.936	67	381.971	109,09	58,91	2,29	157	25	3	1.297	33,0			
17-07	22.04.2007	3.789	61	385.760	121,38	46,62	1,85	106	36	2	1.166	30,8			
18-07	29.04.2007	2.153	69	387.913	136,83	31,17	1,15	63	34	2	728	33,8			
TRUCK002		10.189	73	387.913	140			15	31	2	3.301	32,4			

ECOsens enables you to analyze each and every time period of any truck or group of trucks of your fleet.

All fuel consumption values are accurate and reliable independent from times and specifics of any refill.

Additional reliability of the fuel consumption values is provided by compensation of fuel thefts which are separately analyzed and printed. This avoids wrong fuel consumption analyzes caused by missing or wrong fuel invoices as well as wrong figures due to fuel thefts.

FEATURES

SUITABLE FOR ALL TRUCK TYPES AND BRANDS

The system is especially designed for easy installation into heavy trucks of any type and any brand.

All specific parameters like tank shapes and sizes can either be preset before delivery or may easily be modified later on without loss of data. The system is ready for operation immediately after installation.

SIMPLE INSTALLATION PROCEDURE

We provide the know how as well as tools for easy and quick installation of the system. Fuel tanks can either be empty or full and will not have to be cleaned.

Average time for installation is 1-2 hours for semi trailers and 2-3 hours for truck trailers.

INCLUDED SOFTWARE PACKAGE

The reporting package enables you to print reports easily and quickly.

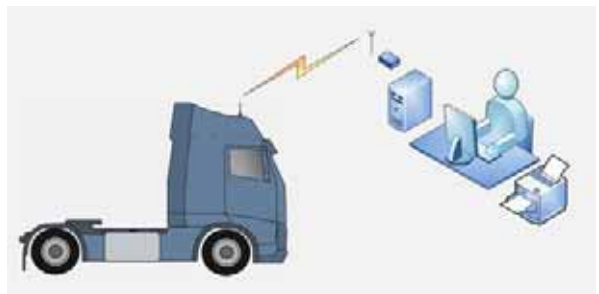
Many adjustable interfaces allow flexible and automatic import from many data sources like the acquisition of data from fuel invoices of several tank card providers.

There are also some options to export data to third party products.

AUTOMATIC DATA FLOW

FUEL DATA ACQUISITION

Blackboxes placed in each truck are recording fuel and other important data using to our patented data acquisition algorithm.



FUEL DATA TRANSFER

After return of each truck, the recorded data is transferred to the base station using the integrated radio module with no additional cost.

The blackboxes may also be connected to suitable fleet management systems to use online data transfer for fuel data and for enabling online alarm features.

FUEL REPORTING

Transferred fuel data is stored into a database and available for the creation of flexible reports using the Fuel Report client software.

TANK GRAPHICS

ECOsens provides for every truck a complete graph of fuel content and driven distance. This unique visualisation enables you to analyze events and alarm messages as well as every time period regarding fuel consumption, driven distance, and average speed.

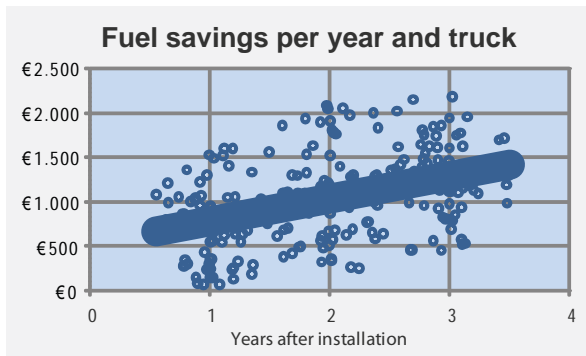
YOUR BENEFIT

FUEL SAVINGS

In the last years our customers could achieve significant fuel savings.

There is an initial decrease of fuel consumption immediately after installation of the new ECOsens system. That positive effect is mainly caused by the sudden reduction of usual fuel fraud.

Additionally, there are remarkable long term and repeating savings based on the availability of actual fuel consumption data, which enables our customers to take proper decisions in time.



It is a fact that the major part of economic driving will be done by highly motivated drivers getting feedback about their performance as well as about the importance of economies for their company.

The use of ECOsens and the availability of accurate fuel data supports or even enables the economic implementation of incentive and cash bonus programs for drivers.

REDUCTION OF FUEL FRAUD

FUEL INVOICE VALIDATION

ECOsens measures the precise refill quantity and compares the acquired values with the quantities available from accounting.

DETECTION OF WITHDRAWALS

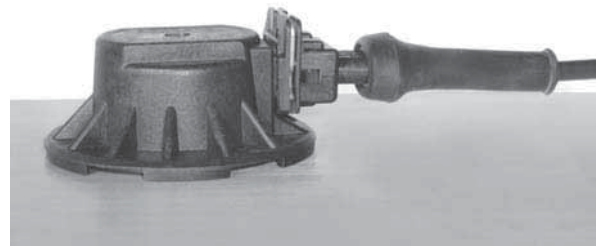
Withdrawals from the fuel tanks are detected by the system and measured quantity is recorded with a timestamp and other relevant parameters.

ECONOMIC FUEL SAVING PROJECTS

High quality and availability of fuel data enable fast and economic analysis for important fuel saving decisions for example for truck selection, aerodynamics, tyre selection, or lubrication.

Example for annual fuel savings of truck

Durchschnittsverbrauch	34.0	L / 100 km
Verbrauch optimiert	32.5	L / 100 km
Verbrauchsreduktion	1.5	L / 100 km
	4.4	%
Kilometerleistung	125.000	Km / a
Dieselskosten	0.80	EUR / L
Ersparnis	1.875	L / a
Ersparnis	1.500	EUR / a



TECHNICAL DATA

BLACKBOX WITH RADIO MODULE

Dimensions of blackbox LxWxH	85 x 115 x 33 mm ³
Material of housing	Aluminium
Power supply blackbox	12 - 24 VDC, 15 - 40 mA
Internal electric fuse (reversible)	100 mA
RS232 serial interfaces	1 (with option for 2nd)
Digital input	2 x counter, 2 x status
Radio module EN 300 220-3, class 1k	869 MHz
Communication range of radio module	50 - 500 m
Antenna type	windshield or roof top antenna

BASE STATION

Operation	controlled by PC or server
Dimensions of blackbox LxWxH	85 x 115 x 33 mm ³
Radio module	same like in blackbox
Antenna type	specific to application



SENSORS

Standard lengths	385, 485, 545, 610, 690 mm
Level measuring principle	absolute, digital
Fuel temperature sensor	-35°C bis 85°C
Material of construction	POM-GF20, Aluminium
Communication/supply	via Blackbox

REPORTING SOFTWARE, BASESTATION SOFTWARE

Software requirement	Windows 2k, NT, XP, Vista
Support of multiple languages	yes
Ability for server and network installation	yes
Multiple clients	yes

OPERATION WITH MULTIPLE BASE STATIONS

The system will organize the data transfer using one or more base stations. The use of multiple base stations requires internet or network connection between single base stations and central database.

Data can also be transferred between base stations using a preformatted USB pendrive, or directly from a blackbox with connection to a suitable fleet management system (tracking system).



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Technical modifications reserved

fueldata

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DISTRIBUTION
