



CANgine

FMS ECO

Product Brief

Using the option ECO the CANgine FMS can record many additional parameters (besides the cyclic reported vehicle parameters).

The telematics main processor may start and stop the data recording with two new commands provided. During the entire recording time (which can last for up to 99 days) all vehicle data related to fuel consumption is monitored. Profiles are generated reporting speeds, acceleration (positive and negative), throttle position and RPM. Basic data like average fuel

consumption and speed is calculated as well. The calculations are based on multiple base values, including total distance and time, engine running times, vehicle in motion times. Where possible the calculations are separated for the two drivers.

The physical dimensions of the CANgine FMS are also in the ECO version very small with 53 x 34 x 16 mm³.

```

Trip      trip-test1
Start     2008.01.18-16:30:00
End       2008.01.18-16:45:00
Duration  00.00:15:00
Ignition  00.00:05:37
Motor     00.00:05:18
Motion    00.00:04:54
TotalTime 00.00:06:58
PTO v=0   00.00:00:00
PTO v=1   00.00:00:00
Start km  57672,520
End km    57674,235
Distance  1,715
FuelStart 16508,5
FuelEnd   16509,0
FuelTotal 0,5
l/100km   29,1
l/h       5,5
Times-----Driver1-----Driver2-----Total
Driving   0:04:57  0:00:00  0:04:57
work      0:00:00  0:00:00  0:00:00
Rest      0:01:28  0:01:28  0:02:56
Avail     0:00:00  0:04:57  0:04:57
km/h-----Driver1-Driver2-----Trip
Absolute  21,00    0,00    14,76
Motor on  21,14    0,00    19,17
Motion    21,14    0,00    21,00
km/h-----<35    35-70    70-90    >90    Total
Driver 1 CC off  0:03:56  0:00:56  0:00:00  0:00:00  0:04:52
Driver 1 CC on   0:00:00  0:00:00  0:00:00  0:00:00  0:00:00
Driver 2 CC off  0:00:00  0:00:00  0:00:00  0:00:00  0:00:00
Driver 2 CC on   0:00:00  0:00:00  0:00:00  0:00:00  0:00:00
Trip CC off     0:03:56  0:00:56  0:00:00  0:00:00  0:04:52
Trip CC on      0:00:00  0:00:00  0:00:00  0:00:00  0:00:00
Acc/Dec -----Driver1  Driver2  Trip
BrakePedalCount  11      0      11
BrakePedalTime   0:00:41  0:00:00  0:00:41
AcceTime         0:00:01  0:00:00  0:00:01
BrakingTime      0:00:13  0:00:00  0:00:13
Acce1Max[m/s2]   +1,17    +0,00    +1,17
BrakingMax[m/s2] -1,80    +0,00    -1,80
m/s2-----<-3    -3..-2    -2..-1    -1..+1    +1..+2    +2..+3    >+3
Driver 1  0:00:00  0:00:00  0:00:13  0:04:38  0:00:01  0:00:00  0:00:00
Driver 2  0:00:00  0:00:00  0:00:00  0:00:00  0:00:00  0:00:00  0:00:00
Trip      0:00:00  0:00:00  0:00:13  0:04:38  0:00:01  0:00:00  0:00:00
GasPed---<L1    L1..L2    L2..L3    >L3
Driver 1  0:03:10  0:01:53  0:00:03  0:00:00  0:00:00  0:00:00  0:00:00
Driver 2  0:00:00  0:00:00  0:00:00  0:00:00  0:00:00  0:00:00  0:00:00
Trip      0:03:10  0:01:53  0:00:03  0:00:00  0:00:00  0:00:00  0:00:00
Rpm-----<L1    L1..L2    >L2
Driver 1  0:03:49  0:01:04  0:00:13  0:00:00  0:00:00  0:00:00  0:00:00
Driver 2  0:00:00  0:00:00  0:00:00  0:00:00  0:00:00  0:00:00  0:00:00
Trip      0:03:49  0:01:04  0:00:13  0:00:00  0:00:00  0:00:00  0:00:00

```

The green LED signals the operation mode (active without data recording, active with data recording or configuration mode).

The cyclic data collection or the command based collection is unchanged in the ECO version. All commands and functions previously present in the CANgine FMS are also available in the ECO version.

The data recording is independent of the cyclic data record transmission configured.

The output of the recorded data can happen in four different formats. The detailed debug format is shown in the picture left.

FMS ECO

Additional Commands and Configuration Options

TS	Trip Recording Start	name, date, time
TE	Trip Recording Stop	name, date, time
TR	Trip Record Request	
TO	Trip Time Format	{s h}
TV	Trip Speed value	{1 .. 3} {speed}
TA	Trip Acceleration value	{1 .. 6} {±acceleration}
TG	Trip Throttle position	{1 .. 3} {level}
TN	Trip RPM value	{1 .. 2} {level}



The telematics processor controls the data recording using the first 3 commands listed above. The following five parameters are for min/max limitation. These parameters get stored in non-volatile memory of the CANgine FMS ECO.

```
trip-test1;2008.01.18-16:30:00;2008.01.18-16:45:00;900;337;318;294;418; [CR] [LF]
0;0;57672;520;57674;235;1;715;16508;5;16509;0;0;5;29;1;5;4; [CR] [LF]
297;0;297;0;0;0;88;88;176;0;297;297; [CR] [LF]
14;76;21;00;0;00;18;82;21;14;0;00;21;00; [CR] [LF]
236;56;0;0;292;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;236;56;0;0;292;0;0;0;0;0; [CR] [LF]
11;0;11;41;0;41;1;0;1;13;0;13;+1;17;+0.00;+1;17;-1;80;+0.00;-1;80; [CR] [LF]
0;0;13;278;1;0;0;0;0;0;0;0;0;0;0;0;13;278;1;0;0; [CR] [LF]
190;113;3;0;0;0;0;0;190;113;3;0; [CR] [LF]
229;64;13;0;0;0;229;64;13; [CR] [LF]
```

The compressed output format neither shows the table formatting characters nor names for the output values.

The total number of values is 136. The values are separated by ';' and grouped into 10 lines as shown in the table on the right.

Line	Data	No. of values
1	Basic data1: Tripname to TotalTime	8
2	Basic data2: PTO v=0 to FuelC Idle	13
3	Fuel Consumption	6
4	Time values for both drivers	12
5	Average speeds	7
6	Velocity profile	30
7	Braking and acceleration values	18
8	Barking and acceleration profile	21
9	Profile of gas pedal	12
10	Profile of engine speed	9
Total		136

Time values can be reported in hours or seconds, that option is available in both regular and compressed format.

The option ECO is available for all versions of the CANgine FMS:

- CANgine FMS _____ FMS to RS232
- CANgineBT FMS _____ FMS to Bluetooth
- CANgine FMSIA-CC _____ FMS chip

Information about technical data and basic functionality can be found in the product data sheet of the CANgine FMS.

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**More information about the
 CANgine product family at**
www.CANgine.com