



CANgine

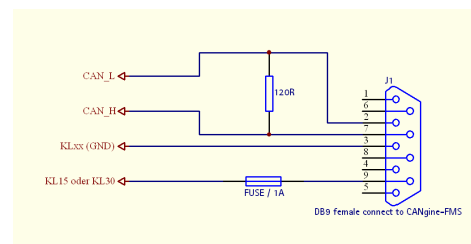
FMS

Product Brief

CANgine FMS is a smart FMS (fleet management standard) to RS232 converter for use on any serial port. CANgine FMS 'speaks' pure ASCII code, so handling the device is easy. No special drivers are needed and with a few commands in configuration mode CANgine FMS can be set to the customers needs. From incoming FMS frames real time data is extracted and transmitted via RS232 with selectable cycle time and data contents. CANgine FMS is based on the FMS standard defined in mid 2002 by DaimlerChrysler, MAN, Scania, Volvo, Iveco and DAF. The later defined Bus FMS standard is also supported by CANgine FMS.

The basic CANgine FMS module is a small (only 53 x 34 x 16 mm³) device which is powered by two pins of the 9 pin D-Sub CAN connector.

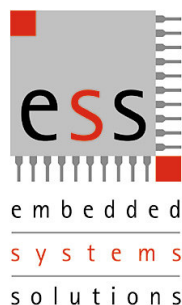
Technical Data	
Internal Microcontroller	40 MHz internal clock Full CAN 2.0B interface
CAN transceiver	ISO 11898-2 (high speed) compliant
CAN baudrates	250k according to FMS standard
RS232 baudrates	2.400 to 115.200 baud
CAN (FMS) connector	D-Sub 9 male
RS232 connector	D-Sub 9 female
Display	LED RUN (green) and LED ERR (red)
Power supply	7 ..30 VDC
Supply current	~ 35 mA / 12 V
Operating temperature	-40 .. 80 °C
Size	53 x 34 x 16 mm ³ 2.08 x 1.34 x 0.63 inch ³
Weight	22 g



Cabling CANgine FMS with the truck

CANgine FMS has two LEDs signaling operating status (running or configuration mode) and errors. Sophisticated FMS data filtering and the possibility to configure the cycle time for serial transmission allow adapting CANgine FMS to users needs.

The bit rate of the serial link can be set between 2400 and 115200 baud. Running the serial link with 115200 baud gives the fastest throughput. The cycle time for transmission of data via serial link can be set between 100 ms (10 data packages per second) and infinite (data request mode). With a mask register the data transmitted to the serial link can be individually selected between the 21 data items defined in the FMS standards. The output format of serial data can be switched between a readable screen format and a packed database format without variable names and physical units.



CAN*gine*

FMS

Command Overview

?[CR]	show parameter settings
An[CR]	set axle count for serial transmission
ASn[CR]	set autostart feature on or off
Cn[CR]	set cycle time for serial transmission
CUc[CR]	set cycle time unit for serial transmission
Dc[CR]	set decimal separator for serial output
En[CR]	set RS232 echo on or off
F[CR]	send error register info to serial link
Mccccccc[CR]	set mask for data selection
P	send data set (in normal operation mode if data request mode is selected)
Pc[CR]	set protocol to truck or bus FMS protocol (in configuration mode)
R[CR]	restart FMS polling (exit configuration mode)
Sn[CR]	set screen or database format
V[CR]	send version information to serial link

Sample data output in screen format:

```

0-00:11:56.961
EngSpeed 2725,125 rpm
Accel 51,2 %
TCO 78,12 km/h MD:1 OS:0 DI:0 TP:0 HI:0 EV:0 D1:1/3/1 D2:0/2/7
Speed 78,12 km/h CC:1 BR:0 CS:0 PTO:1
Service +3205 km
Distance 45342,125 km
EngHours 975,05 h
FuelC 9839,0 L
Weight 1000,0 kg (n) 2000,0 kg (n) 3000,0 kg (n)
EngTemp +71 degr
FuelLev 60,4 %
VehID CANgine
FMS 01.00 Diag:0 Requ:0

```

In database format, all values are separated by ';' and neither name nor physical units are transmitted.

ESS Embedded Systems Solutions
 Industriestr. 15
 D-76829 Landau
 Phone: (49) 6341/3487-0
 Fax : (49) 6341/3487-29
www.ESSolutions.de

For more information about the whole CANgine product family or downloading the manual of CANgine FMS see www.CANgine.com