CANgine Light

FMS

Product description

CANgineLight is the recent advancement of the highly popular CANgine 1, whose 8-bit controller is slightly outdated by now. Equipped with a modern 32-bit cortex-M0 microcontroller, the performance of CANgineLight takes another order of magnitude than its precursor. As it is clocked internally with 48 MHz, plenty of power reserves for further firmware extensions are readily available.
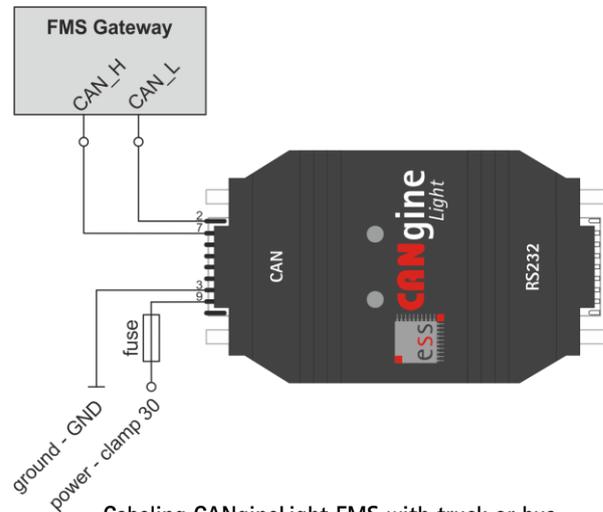
The variation presented in this datasheet is called CANgineLight FMS. As the successor of CANgine-FMS, CANgineLight FMS is completely compatible and can be used as a direct replacement for CANgine FMS. Needless to say, the new generation has some significant firmware improvements like integration of the FMS3-standard and a new user-friendly output format.

modern hardware combined with high-tech expertise from more than 10 years experience in FMS-RS232 converter-development.

FMS data sets are received in real time and are buffered internally. Configuration is performed using simple commandos via the serial interface. The timer-controlled output and the selection of the output data are parametrizable. Every message defined in the FMS3-standard system may be selected for data output.

For flexible subsequent processing of the FMS data, three different data output formats are available. Each of these three formats is optimized to either be read by the user, to be displayed in spread-sheet applications or for further software-processing.

Technical data	
Microcontroller	ARM Cortex-M0 48 MHz clock Full CAN 2.0B interface
CAN transceiver	ISO 11898-2 (high speed) compliant
CAN bitrate	250 kbit/s, 500 kbit/s or 667 kbit/s
CAN FMS protocols	FMS 1, 2, 3 Bus & Truck
RS232 baudrates	2.400 to 115.200 bit/s
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	~ 20 mA / 12 V
Operating temperature	-40 - 85 °C
Size	70 x 42 x 21 mm³
Weight	34 g

CANgineLight FMS is a small FMS-RS232 converter. It was developed to provide an easy access to FMS data in commercial vehicles. Information can be read out from every device equipped with a serial interface. By using ASCII strings as output format, CANgineLight is completely platform-independent, eliminating the necessity for specific software or drivers. CANgineLight is the newest addition to the CANgine family. You benefit from

Cabeling CANgineLight FMS with truck or bus

Power supply is provided via CAN connector. Status LEDs show operation mode and indicate error conditions. Timer-controlled output can be adjusted between 100ms and several hours. Additionally, CANgineLight has a trigger mode in which output will be performed by sending a character via serial interface.

CANgine Light FMS

Configuration commands

Command	Description
?[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
CVn[CR]	compatibility mode for CANgine FMS V 9.3
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
FMn[CR]	enable support for FMS 3
Mccccccccc[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
R[CR]	restart FMS polling (exit configuration mode)
Sn[CR]	set output format
V[CR]	send version information to serial link

Sample data output

```
0-03:53:54.977;35[CR][LF]
EEC1;2725,125;23;50[CR][LF]
EEC2;51,2;6b[CR][LF]
TCO1;78,12;1;0;0;0;0;0;1;3;1;0;2;7;4e[CR][LF]
CCVS;78,12;1;0;0;0;24[CR][LF]
VDHR;45342,125;26[CR][LF]
HOURS;975,05;41[CR][LF]
LFC;9839,0;5e[CR][LF]
ET1;+71;0d[CR][LF]
DD;60,4;1e[CR][LF]
VI;Vehicle;47[CR][LF]
FMS;03.03;0;0;76[CR][LF]
ETC2;5;5;5b[CR][LF]
DC1;1;0;0;07[CR][LF]
DC2;100;100;100;100;nnn;nnn;nnn;nnn;nnn;nnn;0e[CR][LF]
ASC4;2109,8;2234,5;2345,6;2456,7;5a[CR][LF]
AIR1;1984;1872;58[CR][LF]
AS;1;1;n;n;29[CR][LF]
TD;2006.07.06-14:45:16;3b[CR][LF]
AMB;31,8;58[CR][LF]
DI;0123456789012345;n;EST;9876543210987654;n;GER;24[CR][LF]
LFE;23,45;3,455;73[CR][LF]
FMS1;O;R;Y;I;O;R;Y;I;O;R;Y;I;O;R;Y;I;O;R;Y;I;O;R
;Y;I;O;R;Y;I;O;R;Y;I;O;R;Y;I;O;R;Y;I;O;R;Y;I;O;R
;Y;I;O;R;Y;I;5f[CR][LF]
HRLFC;9839,039;4e[CR][LF]
AT1T1I;23,2;17[CR][LF]
[CR][LF]
```

In addition to traditional CANgine FMS output formats, CANgineLight supports another format shown here which is optimized to get parsed by the host system. Each FMS message is displayed in one line with the message name as prefix. All information is separated by semicolons and sent without any physical units.

Every line is transmitted with an appended checksum. Because of this feature, the output format is suitable for a robust implementation in an environment with difficult conditions.

For more information about the whole CANgine product family or downloading the manual of CANgineLight FMS see

www.CANgine.com