

How to read ELD data with FMX00A



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Terms and definitions

Acronyms and terms used in the document:

- **BT** - Bluetooth®;
- **ELD** - Electronic Logging Devices.

Introduction

This document contains information required for developing an application for receiving Electronic Logging Devices data via Bluetooth® from [FMC00A](#) and [FMM00A](#) series devices.

The ELD synchronizes with the CMV engine to automatically record:

- Engine power status
- Vehicle motion status
- Miles driven
- Engine hours
- Identification of driver/authorized user, vehicle, and motor carrier
- Duty status

Configurable parameters

ELD functionality has 3 additional parameters:

Parameter ID	Parameter Type	Default Value	Min	Value Range	Max	Value	Parameter Name
40000	UInt8	1	0		3	0 - Disable 1 - OBD 2 - ELD 3 - Non-OBD compliant	OBD Feature
40002	UInt16	10	2		65535	Seconds	ELD data send period
40008	UInt8	0	0		1	0 - Disable 1 - Enable	Send ELD data via Bluetooth®

ELD APP workflow

ELD functionality start to send data periodically via BT right after external BT device has been connected if OBD Feature (parameter ID 40000) is set to ELD (option 2). ELD data sending is paused if Configurator is connected. ELD data is resumed after configurator disconnects. ELD data sending resumes automatically when external BT device reconnects after connection loss.

ELD data packet structure

```
{
"obd_vin": "4V4NC9EH4FN187825",
"loc": "-10310092,3517679",
"time": "1675874086",
"can_data": "1",
"engine_hours": "315",
"dashboard_mileage": "919483",
"obd_rpm": "3224",
"obd_speed": "25",
"ignition": "1",
"total_fuel": "182",
"engine_idle_hours": "156",
"dtc_count": "2",
"fuel_level_1": "35",
"fuel_level_2": "46",
"battery_voltage": "24",
"total_idle_fuel": "3152",
"trip_distance": "306",
"fuel_economy": "12",
"ambient_air_temp": "21",
"engine_coolant_temp": "50",
"engine_load": "89",
"engine_throttle": "94",
"trip_fuel_used": "17",
"oil_temp": "90",
"oil_pressure": "6",
"seat_belt_status": "0",
"cruise_control_state": "3",
"throttle_pedal_pos": "90",
"engine_coolant_level": "60",
"engine_coolant_press": "4",
"transmission_oil_temp": "60",
"parking_brake_switch": "0",
"brake_application_press": "9",
"brake_pedal_pos": "32"
}
```

ELD J1939 Parameters definitions

AVL ID	Canaly ID	Parameter ID for JSON	J1939 PCN	J1939 SPN	Units	Description
1176	40020	dashboard_mileage	65217	917	km	Vehicle Total Distance
26	40160	obd_rpm	65444	190	rpm	Vehicle RPM
256	40410	obd_vin	65260	237		Vehicle VIN
1178	40650	ignition				Ignition state according to SPN, possible values: 0 - RPM=0 or 1 - RPM>0 Whisk based speed
24	50090	loc	65265	84	km/h	Current coordinates (longitude and latitude), example "value": "10310092;3517679", actual position is lon=-103.10092; lat=35.17679
24	50090	obd_speed	65132	1624	km/h	if PCN 65265 is not available data from PCN 65132 is used Indicates that the ignition for "can" state of the operator key switch is active. This state is also known in DIN 75552 as "RL15". * 005 = Ignition state is not active * 025 = Ignition state is active * 110 = Error * 115 = Not Available
1202	40890	ignition	64880	10145		

1177	40640	engine_hours	65253	247	h	Total Engine hours A point in time, defined as the number of seconds that have elapsed since 00:00:00 Coordinated Universal Time (UTC), Thursday, 1 January 1970. Current timestamp is record saving.
1180	40670	one_data	64777	5054	l	IN CAN data available or not
1181	40680	total_fuel	65257	182	l	Fuel consumed during all or part of a journey. High resolution used for calculations and fleet management systems.
1182	40690	engine_dhc_hours	65244	232	h	If PCN 64777 is not available data from PCN 65237 is used.
48	40280	dhc_count	40948	4196	h	Accumulated time of operation of the engine while under idle conditions.
1183	40700	fuel_level_1	65276	96	%	MIL On DTCs
1184	40710	fuel_level_2	65276	38	%	Ratio of volume of fuel to the total volume of fuel storage container. When Fuel Level 2 (SPN 36) is not used, Fuel Level 1 represents the total fuel in all fuel storage containers. When Fuel Level 2 is used, Fuel Level 1 represents the fuel level in the primary or left-side fuel storage container.
1185	40720	battery_voltage	61733	9025	V	Ratio of volume of fuel to the total volume of fuel in the second or right-side storage container. When Fuel Level 2 is not used, Fuel Level 1 (SPN 96) represents the total fuel in all fuel storage containers.
1186	40730	total_fuel	65244	236	l	S&I battery terminal voltage
1187	40740	trip_distance	65217	918	m	Accumulated amount of fuel used during vehicle operation while under idle conditions.
1188	40750	fuel_economy	65266	184	km/L	Current fuel economy of current vehicle velocity.
1189	40760	ambient_air_temp	65269	171	°C	Temperature of air surrounding vehicle.
1190	40770	engine_coolant_temp	65262	119	°C	Temperature of liquid found in engine cooling system.
1191	40780	oil_temp	64777	5053	l	Temperature of oil in engine lubrication system as provided by oil pump.
1192	40790	oil_pressure	64751	7408	kPa	State of which used to determine if Fuel Lock is enabled
1194	40810	wat_bat_status	57344	1856	h	Fuel consumed during all or part of a journey. The desired position of the Throttle valve 1 (SPN 51) that is regulating the fuel, usually artificial restriction to the engine as commanded by the Engine Control unit. 0% represents no supply and 100% in full supply. If PCN 65262 is not available data from PCN 65188 is used. Gauge pressure of oil in engine lubrication system as provided by oil pump. State of which used to determine if Fuel Lock is enabled • 000 = Not Backed • 001 = OK - Fuel Lock is Backed • 002 = Error - Sensor data cannot be determined • 110 = Not Available Indicates the status of the P.C. controller: • 0000 = Disabled • 0010 = Enabled • 0010a = Enabled, but not functional due to vehicle position not available • 0010b = Enabled, but not functional due to ramp position not available • 01000 = Enabled, but not functional due to road grade info not available • 0100a = Enabled, but not functional due to predicted path not available • 01100 = Enabled, but not functional due to vehicle speed below speed threshold • 0110a = Enabled, but not functional due to predicted path not available • 01110 = Enabled, but not functional due to inhibited by driver • 1110 = Error • 11110 = Not Available Accelerometer Pedal Position Ratio of volume of liquid found in engine cooling system to total cooling system volume. Typical monitoring location is in the coolant expansion tank. Gauge pressure of liquid found in engine cooling system. Transmission Oil Temperature Switch signal which indicates when the parking brake is set. • 000 = Parking brake not set • 010 = Parking brake set • 110 = Not available • 111 = Not available Gauge pressure of compressed air or fluid in vehicle braking system measured at the brake chamber when brake shoe (or pad) is placed against brake drum (or disc). Ratio of brake pedal position to maximum pedal position.
1195	40820	cruise_control_status	64651	7317	h	
1196	40830	throttle_pedal_pos	61443	91	%	
1197	40840	engine_coolant_level	65263	111	%	
1198	40850	engine_coolant_press	65263	109	kPa	
1199	40860	transmission_oil_temp	65272	177	°C	
1179	40600	parking_brake_switch	65265	70	h	
1120	40670	brake_application_press	65274	116	kPa	
1201	40800	brake_pedal_pos	61441	521	%	

ELD functionality settings

ELD settings

Teltonika.Configurator 1.7.53.E.ELD_R4

IMEI 350544507710435
FW 03-28.03 Rev:403
Configuration 9.4.7.0

Load from device

Save to device

Update firmware

Reset configuration

Load from file

Save to file

Read records

Reboot device

General

General OBD settings

OBDD Feature	Disable	OBDD (Auto)
ELD	Non-OBDD compliant	

OBDD VIN settings

VIN Source

Auto Manual

Send ELD data via Bluetooth

ELD data sending

Disable Enable

ELD data send period (s) 5

OBDD Features

Feature Set

Ignition Monitoring

Odometer unit type

Automatic No conversion

Convert from miles

OEM Reset

OBDD II

Input Name	Current Value	Units	Priority	Low Level	High Level	Event Only	Operand
Distance Traveled MIL On	-	km	None Low High Panic	0	0	Crash Yes No	Monitoring
Relative Fuel Rail Pressure	-	kPa	None Low High Panic	0	0	Crash Yes No	Monitoring
Direct Fuel Rail Pressure	-	kPa	None Low High Panic	0	0	Crash Yes No	Monitoring
Commanded EGR	-	%	None Low High Panic	0	0	Crash Yes No	Monitoring
EGR Error	-	%	None Low High Panic	0	0	Crash Yes No	Monitoring
Fuel Level	81	%	None Low High Panic	0	0	Crash Yes No	Monitoring
Distance Traveled Since Codes Clear	-	km	None Low High Panic	0	0	Crash Yes No	Monitoring
Barometric Pressure	-	kPa	None Low High Panic	0	0	Crash Yes No	Monitoring
Control Module Voltage	-	V	None Low High Panic	0	0	Crash Yes No	Monitoring
Absolute Load Value	-	%	None Low High Panic	0	0	Crash Yes No	Monitoring
Ambient Air Temperature	-	°C	None Low High Panic	0	0	Crash Yes No	Monitoring

J1939 IO elements



IMEI 350544507710435
 FW 03.28.03 Rev:403
 Configuration 9.4.7.0

- Status
- Security
- System
- GPRS
- Data Acquisition
- SMS \ Call Settings
- GSM Operators
- Features
- Accelerometer Features
- Auto Geofence
- Manual Geofence
- Trip \ Odometer
- Bluetooth
- Bluetooth 4.0
- Beacon List
- I/O
- OBD II
- ELD**

ELD parameters

Input Name	Current Value	Units	Priority				Low Level	High Level	Event Only			Operand
ELD Mileage	12	km	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
Engine RPM	224	rpm	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Ignition	1		None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Ignition Switch Status	3		None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Total Fuel Used	73	l	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Engine Idle Hours	81	h	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD DTC Count	48		None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
Fuel Level	30	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Fuel level 2	23	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Battery Voltage	1	V	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Total Idle Fuel Used	152	l	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Trip Distance	6	km	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Fuel Economy	15	km/l	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Ambient Air Temperature	6	°C	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
Coolant Temperature	-26	°C	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Engine Load	62	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Engine Throttle	49	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Oil Temperature	-62	°C	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Trip Fuel Used	63	l	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring
ELD Oil Pressure	12	kPa	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring

