

Script.CAN.J1939.250KBPS.ACK_ENBL.v1.32.0.9_MG

250 KBPS J1939 CAN Script

The compatibility if this script can only be guaranteed for:

1. The script supports SAE J1939 Protocol

This script can be used with the following devices:

1. MiX 4000
2. MiX 6000
3. FM3316 and FM3306 Communicators
4. FM3517i and FM3507i Communicators
5. FM3617i and FM3607i Communicators
6. FM3717i and FM3707i Communicators
7. FM3817i and FM3807i Communicators

Version History

| Reference | Version | Changes |
|--|---------------------------------|---|
| SCR-1455 SCR-1469 | V1.14.1.0 | First version of new generation scripts. Based on Script.CAN.J1939.DM TT_FEF1_FE6C_FE6E_FEF2_FEE9.0250KBPS_02.2019.v1.13.0.0_DC |
| SCR-1487 | V1.14.1.1 | The filter of the Brake Switch accepted values of 3, which is not correct. This caused false triggers. |
| | V1.14.1.2 | Increment version to match the other variants. |
| SCR-1518 | V1.15.0.0 | delta speed, delta RPM and delta fuel pulses added. Trip fuel parameter also added. Added Engine Hours Sync. |
| SR-8548 | V1.16.0.0 | Torque fuel added. |
| SR-8699 | V1.17.0.0 [SR-8699] test | Debug parameters specific to this SR added |
| SR-8699 | V1.17.0.0 [SR-8699] test1 | Speed sync after speed is received instead of in 1 second timer. |

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| <u>SR-8699</u> | V1.17.0.0 | Speed and one second timer toggle debug parameters added.Speed sync after speed is received instead of in 1 second timer to reduce false harsh braking and harsh acceleration events. |
| <u>SR-9195</u> | V1.18.0.0 | Fix engine hour synchronization. |
| <u>SCR-1712</u> | V1.19.0.0 | Add Park Brake Signal. |
| <u>SCR-1751</u> | V1.20.0.0 | Speed sync now only happens for lower priority speed sources when the counters for the higher priority speed sources have increased to 3 or more seconds. The values for Catalyst Tank Level, Coolant Level, Engine Oil Level and Fuel Level have been initialized to -1. A value of zero for these signals now means the signal is present and zero valued instead of being initialized to zero by default irrespective of whether the signal is present or not. |
| <u>SR-10286</u> | V1.21.0.1 | Fixed fuel increase and decrease timer in FMS. Changed DIV value for total fuel used in XML |
| <u>SR-10154</u> | V1.21.0.2 | Lifetime Fuel initialization value change. |
| <u>SR-10425</u> | V1.22.0.2 | The priority of the speed sources have been changed to V3, V1, V2. This is due to V3 being the closest to the actual vehicle speed. Wheel-based, tachograph and front axle speed initialization values changed. V1, V2 and V3 flags have been added to the script and are used to confirm if the corresponding speed sources are present on the CAN bus. Only the highest priority source with it's flag set will now sync speed. A value between 2km/h and 199km/h (both included) can set the flags. Lower priority speed sources are no longer reverted to once a higher priority speed source has been confirmed. Timers no longer used to determine which speed source is used. Checks are also done for lower priority sources to determine if higher priority flags have been set. The source that was used to sync speed now also sets the V1Used, V2Used and V3Used parameters. These parameters are no longer set to zero when ignition is turned off. The delta speed debug parameter, the one second speed test debug parameters, the speed source parameter and the sync speed parameter have been removed to simplify the script. |
| <u>SCR-2013</u> | V1.22.0.3 | Fixed Fuel Sync Issues. |
| <u>SR-12165</u> <u>SCR-2111</u> | V1.23.0.3 | Initialized the Catalyst Tank Level, Coolant Level, Engine Oil Level and Fuel Level to 0xFFFFFFFF instead of -1 to clearly indicate the value is unavailable. Can ID Format in XML changed from 1 to 2 |
| <u>SR-12750</u> | V1.24.0.4 | Added "FMS At Least One PTO Engaged" param to script |
| <u>SCR-2238</u> | V1.25.0.5 | Added Gross Vehicle Weight (FE70) |
| <u>SR-13601</u> | V1.26.0.5 | Added 3 second ignition timeout after which speed and RPM are reset to zero. |
| <u>ESCR-42</u> | V1.27.0.6 | Added the "FMS Transmission Oil Temperature", "FMS Brake Primary Pressure" and "FMS Brake Secondary Pressure" parameters to the script. |

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| | | Corrected the CANFL fuel scaling in the XML file. |
| <u>SR-15278</u> | V1.28.0.6 | Speed and RPM messages are processed and synced irrespective of Ignition state. Quiet Bus Timeout logic (formerly Ignition Timeout logic) prevents final non-zero speed or RPM values from persisting trips. Torque fuel is now inactive while quiet bus timeout flag is high. |
| <u>SR – 17725</u> | V1.29.0.7 | Update seatbelt status only after receiving 3 consecutive signals with the same state |
| <u>SR – 17725</u> | V1.29.1.7 | Updated seatbelt logic and reset telltale data on 5 seconds timeout |
| MX46-1297 | v1.30.0.7 | Added simple source address targeting mechanism for fuel sources. Script will now lock onto first ECU address of major fuel messages after ScriptStart. Target ECU address reset with each load of new Config – Dependent on unit running FW v5.8.13+ |
| MX46-1296 | V1.31.0.8 | Added Odo source address selection. This includes sampling Odo sources for 4 seconds at the start of trip to find the closest to System Odo. The closest source is chosen as the target HRESO source address. – Dependent on unit running FW v5.8.13+ Also updated legacy HRESO handling and syncing. |
| <u>ESCR-127</u> | V1.32.0.9 | Added Engine Emission Filter Regeneration Alarm telltale signal; Added GFC Gas Parameters (including source address targeting); Added fuel source timeout. |

Supported Parameters

Currently there is no configuration group to automatically configure the new events in this script.

The following system generated parameters are supported by the script:

- Road Speed (FEF1 or FE6C or FE6E)
- Engine Speed (Revs).
- High-Res ODO Sync. (With 20 km Threshold)
- Fuel Consumption (FEF2 or FEE9 or FD09 or FEAF or Torque fuel)
- ECMST (ELD detection)

Refer to the following link for instructions on how to set up events for the new parameters:

- [Events and Parameter Names - J1939](#)
- [FMS Telltale Events and Parameter Names - J1939](#)

| ACRONYM | PARAMETER NAME | PARAMETER DESCRIPTION | Return values/states (if applicable) |
|---------|----------------|--|---|
| DM1DA | FMS.DM1DA | FMS Active Diagnostic Trouble Codes | |
| DM2PA | FMS.DM2PA | FMS Previously Active Trouble Codes | |
| FMSRT | FMS.FMSRT | FMS Retarder Torque | |
| FMSPP | FMS.FMSPP | FMS Brake Pedal Position | |
| FMSA1 | FMS.FMSA1 | FMS Aftertreatment 1 SCR Catalyst Tank Level | |
| SBAP1 | FMS.SBAP1 | FMS Service Brake Air Pressure Circuit 1 | |
| SBAP2 | FMS.SBAP2 | FMS Service Brake Air Pressure Circuit 2 | |
| FMSFD | FMS.FMSFD | FMS Fan Drive State | |
| FMTEH | FMS.FMTEH | FMS DM Total Engine Hours | |
| AXLW0 | FMS.AXLW0 | FMS Vehicle Weight Axle 0 | |
| AXLW1 | FMS.AXLW1 | FMS Vehicle Weight Axle 1 | |
| AXLW2 | FMS.AXLW2 | FMS Vehicle Weight Axle 2 | |
| AXLW3 | FMS.AXLW3 | FMS Vehicle Weight Axle 3 | |
| AXLW4 | FMS.AXLW4 | FMS Vehicle Weight Axle 4 | |
| FMSCT | FMS.FMSCT | FMS Engine Coolant Temperature | |
| FMSET | FMS.FMSET | FMS DM Engine Oil Temperature | |
| FMSCL | FMS.FMSCL | FMS Coolant Level | |
| FMSEO | FMS.FMSEO | FMS Engine Oil Level | |

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| FMSOP | FMS.FMSOP | FMS DM Engine Oil Pressure | |
| FMSBA | FMS.FMSBA | FMS Battery Current | |
| FMSBV | FMS.FMSBV | FMS Battery Voltage | |
| FMBPS | FMS.FMBPS | FMS Brake Pedal Switch | 0 = Brake released 1 = Brake depressed 2 = Error 3 = Not Available |
| FMSPT | FMS.FMSPT | FMS PTO State | 0 = Off/Disabled 1 = Hold 2 = Remote Hold 3 = Standby 4 = Remote Standby 5 = Set 6 = Decelerate/Coast 7 = Resume 8 = Accelerate 9 = Accelerator Override 10 = Preprogrammed set speed 1 11 = Preprogrammed set speed 2 12 = Preprogrammed set speed 3 13 = Preprogrammed set speed 4 14 = Preprogrammed set speed 5 15 = Preprogrammed set speed 6 16 = Preprogrammed set speed 7 17 = Preprogrammed set speed 8 18 = PTO set speed memory 1 19 = PTO set speed memory 2 20 = PTO set speed memory 3 21-30 = Reserved 31 = Not available |
| FMSCC | FMS.FMSCC | FMS Cruise Control Active | 0 - Off/Disabled 1 – Active |
| FMSCS | FMS.FMSCS | FMS Clutch Switch | 0 = Clutch released 1 = Clutch depressed 2 = Error 3 = Not available |

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| DRTNS | FMS.DRTNS | FMS Distance remaining to next service | |
| TTDW1 | CAN.TELLTALE.TTDW1 | TT: DWORD 1 | |
| TTDW2 | CAN.TELLTALE.TTDW2 | TT: DWORD 2 | |
| B#S## | CAN.TELLTALE.B#S## | TT: Block # Status ## (Block 0-4, Status 1-15) | |
| SBLTS | System.FM.CAN.SBLTS | FM CAN: Seat Belt State | 0 = Not present 1 = Engaged 2 = Disengaged 3 = Reserved |
| FMMIL | FMS.FMMIL | FMS Engine fault | |
| FMAPP | FMS.FMAPP | FMS AcceleratorPedalPosition | |
| HRESO | FMS.HRESO | FMS High resolution odometer | |
| FMSFL | FMS.FMSFL | FMS Fuel level | |
| CANTF | System.CAN.CANTF | Total fuel pulses for trip | |
| FMSPB | FMS.FMSPB | FMS Park Brake Switch | 0 = Parking brake not set 1 = Parking brake set |
| RAWFL | System.CAN.RAWFL | Raw FEE9 Life Fuel | |
| PTOEN | FMS.PTOEN | FMS At Least One PTO Engaged | |
| GRSVW | System.CAN.GRSVW | Gross Vehicle Weight | |
| FMSTT | FMS.FMSTT | FMS Transmission Oil Temperature | |
| BRKPP | FMS.BRKPP | FMS Brake Primary Pressure | |
| BRKSP | FMS.BRKSP | FMS Brake Secondary Pressure | |
| EEFRA | System.CAN.EEFRA | Engine Emission Filter Regeneration Alarm | 0 = OFF 1 = Red 2 = Yellow 3 = Info 4-6 = Reserved 7 = Not Available |

Installation Notes

1. Industry standard for heavy vehicles with a physical layer running - CAN 250kb/s, 29bit IDs
2. This script supports SAE J1939 via a FMS gateway or contact less CAN sensor and should not be directly connected to the hot-bus of a vehicle
3. **The CAN jumpers must be in a position to allow ONLY allow Read actions on the CAN bus (Passive Mode). The only exception is when the FMS gateway requires ACK messages to broadcast the data.**
4. **ODO Synchronization will only take place if the MIX OBC ODO setting and the value read from the CAN bus is within 20 km distance from each other or when the MiX OBC ODO is set to zero.**
5. **Torque fuel is dependent on Engine type - Therefore manual calibration of Fuel must be done if scripts selects Torque Fuel.**
6. **Source address targeting mechanism on fuel and odometer is dependent on unit running FW v 5.8.13+**