

How to create a J1939 Template

J1939 Basics

Communication is based on **29 bit message identifiers** according to CAN 2.0B at a **fixed data rate of 250 kbit/s**.

Parameter groups are CAN messages with well-defined identifiers and message cycle times specifying the length and position of each specific parameter within the 8 byte data payload.

The document *SAE J1939-71 Vehicle Application Layer* that is part of the J1939 standard collection lists all specified parameter group numbers (PGN) definitions as well as the suspected parameter numbers (SPN's)

A good Documentation of a J1939 Slave should include these numbers aswell.

For further Reading on J1939 take a look here:

[Application Note J1939 for Communicator CAN](#)

J1939 Device Documentation

The Documentation of your J1939 Device should include Information on the available Data:

5.3.29 ENGINE FLUID LEVEL/PRESSURE

Transmission repetition rate:	0.5 s	1
Data length:	8 bytes	2
Data page:	0	
PDU format:	254	
PDU specific:	239	
Default priority:	6	
Parameter group number:	65 263 (00FEEF16)	3

Byte:	1	Fuel delivery pressure	5.2.5.27
	2	Extended crankcase blow-by pressure	5.2.5.241
	3	Engine oil level	5.2.5.72
	4	Engine oil pressure	5.2.5.28
	5,6	Crankcase pressure	5.2.5.40
	7	Coolant pressure	5.2.5.38
	8	Coolant level	5.2.5.73

5.2.5.72 Engine Oil Level—Ratio of current volume of engine sump oil to maximum required volume.

Data Length:	1 byte
Resolution:	0.4%/bit gain, 0% offset
Data Range:	0 to +100%
Type:	Measured
Suspect Parameter Number:	98 4
Reference:	5.3.29

Adding a Parameter to a J1939 Template on Argos

After creating a J1939 and adding a Parameter to a Group, here is an example how to configure the Information of the "Engine oil level" Parameter.

Options available: reading (for Monitoring), up to 32bit Values.

Points **1** - **4** can be found in the Devicmanual as indicated above

For **5** the choice is between **Cyclic** (The J1939 Device is sending the Data on it's own in the indicated TTL Cycle and the Netbiter just needs to wait for the transmission of the J1939 Device) and **Direct** (the Netbiter needs to request the Data from the device and will do so in the TTL Cycle defined above)



- all Parameters of the same PGN need to have the same TTL time.
- only reading up to 32bit Values is supported [as of FW 1.8.1]
- Diagnostics (for example

Netbiter Gateway Settings

Management > [choose Netbiter]>Configuration > Gateway settings

Baudrate (Bus speed) should be 250 kbit/s but all devices need to use the same Baudrate in the CAN-Network

For the Gateway address choose for example 1. (Only natural numbers - Value is not important [as of FW 1.8.1])

Add Device

Management > [choose Netbiter]> Configuration > configure device > click on add Device

1.Choose the Template you created above

2. Source address is part of the CAN ID that is created (together with the PGN's in the Template) to communicate on J1939.