




Allocation of the Sampling rates for 2D logging and memory modules



The allocation of the usable sampling rates over the available number of channels at 2D logging- or memory modules is not equal (=whether it acts as a multiplexed channel or not). That means, that the maximum sampling rate which can be provided by the logger can differ from channel to channel. Therefore it's up to the user to select a suitable channel for each signal he wants to log. The following table should allow a user to find out which channel should be used for the requested sampling rate of your signals. The table shows which maximum sampling rates can be set up for the different channels.

Applicable for the following modules:  LG-L6xxx  LG-CANMEM1C064/128 LG-CANMEM2C064/128 LG-CANMEM2C128/512 LG-CANMEM2C160/1000  LG-CANMEM2C160/1000TCP LG-CANMEM2C256/1000TCP	LG-L6xxx-000 }	AIN1 – AIN16 (=Analog Input #1 – Analog Input #16)	* Factor 1 / 1 * Factor 1 / 2 * Factor 1 / 4 * Factor 1 / 8	* Related to the "Base rate" (=settable in Wintlt) of the used logging- or memory module
	LG-CANMEMxCyyy/zzz-000 }	CANIN1 – CANIN16 (=CAN Input #1 – CAN Input #16)		
	LG-L6xxx-000 }	DIN1 – DIN8 (=Digital Input #1 – Digital Input #8) AIN1 – AIN8 (=Internal Analog Input #1 – Internal Analog Input #8) CANIN1 – CANIN16 (=CAN Input #1 – CAN Input #16)		
	LG-CANMEMxCyyy/zzz-000 }	CANIN17 – CANIN32 (=CAN Input #17 – CAN Input #32)		
	LG-L6xxx-000 }	CANIN17 – CANIN48 (=CAN Input #17 – CAN Input #48)		
	LG-CANMEMxCyyy/zzz-000 }	CANIN49 – CANIN80 (=CAN Input #49 – CAN Input #80)		
LG-L6xxx-000 }	CANIN49 – CANIN176 (=CAN Input #49 – CAN Input #176)			
LG-CANMEMxCyyy/zzz-000 }	CANIN81 – CANIN256 (=CAN Input #81 – CAN Input #256)			



Explanation:

A lot of measuring signals are transferred on a vehicle CAN bus. If a user would like to log the vehicle speed and the Water temperature, which are available on the vehicle CAN bus for example, we would suggest the following setup procedure.

1. The user has to decide with which sampling rate he needs to log the both signals. Naturally the speed signal is changing very fast while the water temperature has a very slow variation. Thus both signals should be logged with different sampling frequencies, the speed signal with a fast one and the temperature signal with a slow one.
2. The user has to select a base sampling rate for his logger. This base sampling rate should be related to the highest sampling rate the user requires. (→ refer chapter "Where can I set the Base rate ?")
3. By insertion of this base sampling rate in the table shown above, the maximum available sampling rate for each logger channel can be found.
4. Now the user has to choose the fitting sampling rate for his measurement value and to allocate this value to the chosen logger channel. If we assume a base rate of 3200 Hz for our example, the speed value on the vehicle CAN should be assigned to one of the channels CANIN1...CANIN16 of the logger, because they work on a sampling rate of 1600 Hz (=Selected Base rate * 1/2). The water temperature value on the vehicle CAN can be assigned to one of the logger channels CANIN49..CANIN176 resulting in a maximum sampling rate of 400Hz (=Selected Base rate * 1/8)



While setting up a 2D logging module, these tables should always be kept in mind. The allocation of slow signals to logger channels with small sampling rates saves recording performance and memory space which will increase the maximum possible recording time substantially.

In summary the following "rules of thumb" can be defined:

- The smaller the temporal change of a measuring signal, the smaller the sampling rate should be selected
 - The smaller the sampling rate is, the higher the "channel number" (=in Wintlt) must be chosen.
- Use this "mnemonic trick" if you set up 2D loggers with Wintlt.