

Sparr Electronics Limited



User Manual

CAN Data Logger

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Manual Revision	Revision Date	List of Updates
00	23/09/2016	
01	27/07/2017	1. Contact Information

1. Overview

- CAN (Controller Area Network) DATA LOGGER is a standalone data collecting unit, which can collect and store the data from CAN bus by sending appropriate queries.
- It has storage capacity up to 16 GB using SD Card.
- The device supports Communication Rate from 20 Kbps to 500 Kbps

2. Technical Specifications

Bit Rate	20 Kbps to 500 Kbps
Connectors	OBD2 Male Connector & USB micro Connector
Storage	Up to 16 GB using SD Card
Indicators (LED)	
Power	
Red	ON when powered from OBD2 Connector
Green	ON when powered from USB
Status	
Yellow	ON – When there is no response from CAN Slave device. Slow Blink -When there is response from CAN Slave device. Fast Blink– When the Memory is full.
Power	
Input	12 V DC, 50 mA
Environmental	
Operating	0 °C to 55 °C
Storage	0 °C to 85 °C
Packaging	
Dimensions (LxWxH)	100 mm(L) x 54 mm(W) x 32 mm (H)
Weight	80 g
Warranty	12 Months

3. Applications

- Automobiles
- Aerospace
- Bus Load Monitoring
- CAN device development and test
- Industrial Automation.

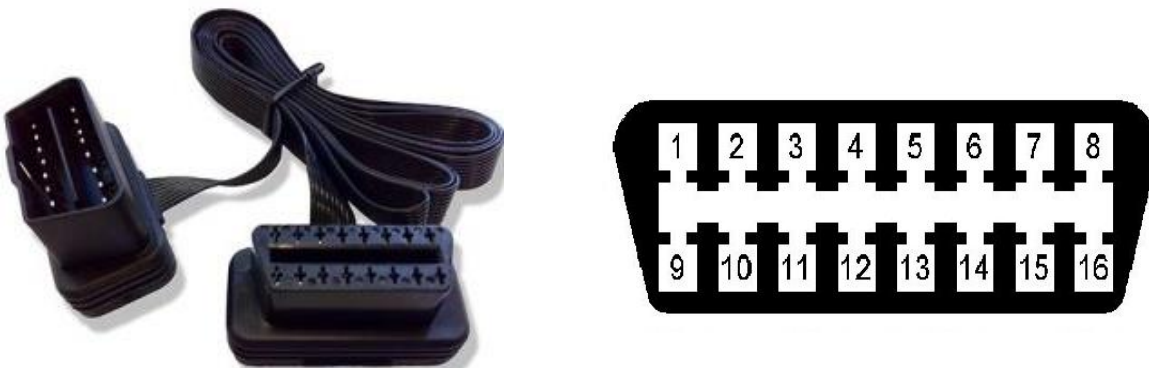
4. Package Contains

SL NO	ITEM	QUANTITY
1	CAN DATA LOGGER	1
2	ODB2 Male to Female cable 60CM	1

5. LED Indications

LED	Color	Function
Power indication	Red	The Red LED glows when the device is getting power from the connected CAN Port over OBD2 connector.
	Green	The Green LED glows when the device is getting power from the connected PC over USB interface.
Device status	Yellow	ON – When there is no response from CAN Slave device. Blink 800 ms ON, 200 ms OFF – When there is response from CAN Slave device. Blink 40 ms ON, 40 ms OFF – When the Memory is full.

6. BD2 Connector Pin Description



OBD2 Connector Cable & Pin Outs

PIN	DESCRIPTION	PIN	DESCRIPTION
1	Vendor Option	9	Vendor Option
2	Positive bus line	10	Negative bus line
3	Vendor Option	11	Vendor Option
4	Classic Ground	12	Vendor Option
5	Signal Ground	13	Vendor Option
6	CAN High	14	CAN High
7	K Line	15	L Line
8	Vendor Option	16	Battery Power

OBD2 Connector Pin Descriptions

7. Modes of Operation

It has two basic modes of operation:

- Mass storage device mode and
- Data Logging mode

The device detects which mode to activate based on the connection. If the device is connected by USB to a PC during start-up, it will activate Mass storage device mode. Otherwise, it will activate Data Logging mode.

1) Mass storage device mode (USB Connection)

If the device is powered on by the USB-cable connected to a PC, the device will behave as Mass storage device. In this mode the internal memory will be reserved for PC to access. The PC will recognize the device as a standard USB memory device Drive such that the device storage can be easily accessed. The logged data can now be transferred to the PC without the need of any special software. Additionally, the device configuration can be accessed and modified (refer section 7).

2) Logging mode (CAN BUS Connection)

If the device is powered on through the OBD2 connector, it will activate the Data Logging mode. When the device enters Data Logging mode the internal memory is reserved/allocated for data-logging and cannot be accessed through the USB-port. As the device enters Data Logging mode it will attempt to read the device configuration file located on the memory-card (the device configuration is described in section 7). If a valid configuration file is found, the configuration is loaded into the device. If no valid configuration is found, a previous configuration is written to the memory-card and loaded into the device. The device is now ready to communicate with the CAN-bus and log messages according to the loaded device configuration file.

Note: DO NOT CONNECT USB TO PC WHEN CAN BUS IS CONNETED TO OBD2 FOR DATA LOGGING.

8. Configuration:

The device configuration files (config*.txt and rtc.txt) is used to configure the CAN Data Logger. The configuration file can be accessed from a PC when connected via USB Cable. While powering ON, the device will check for these 2 files if they are present then the device will copy the parameters and delete both the files and start working accordingly.

7.1. config.txt file Configuration:

All Configurable parameters will start with “#”, followed by “Parameter name”, “=”, “value of the parameter” and ends with “%”.

Configurable Parameters

- 1) CAN Bitrate
- 2) Model ID
- 3) File Size

CAN Bitrate: Device supports bitrate from 20 Kbps to 500 Kbps. The bit rate can be configured as mentioned below.

#CAN Bitrate=*%

Where * is the corresponding number of the bit rate selected.

Example: #CAN Bitrate=6%

Where 6 is for 500Kbps.

Value	Bit Rate in KB/s
0	20 Kbps
1	83.3 Kbps
2	125 Kbps
3	175 Kbps
4	225 Kbps
5	250 Kbps
6	500 Kbps

Bit Rate Table

Model ID: The Model Id for identifying device, this can be configured based on from where the device will be collecting the data. It can be up-to 255.

Model ID is configured as mention below

#Model ID=***%

Where *** is the ID number.

Example: #Model ID=18%

Where 18 is the Model ID.

File Size: This value is the maximum file size in megabytes, this can be configuring from 1MB to 999MB Based on the size configured the logger will record. If a file becomes longer than this, the logger will save the file which is currently recording and begin a new log file with the current date and time (dd/mm/hh//mm format).

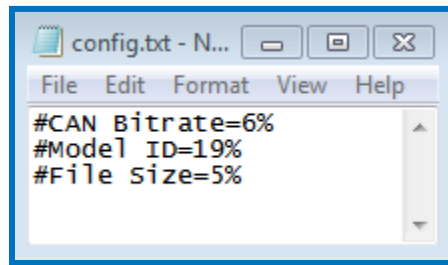
#File Size=***%

Where *** is the file size in MB

Example: #File Size=10%

Where 10 in the file size (10MB).

All parameters configured config.txt file look as shown below



Note: Device will take previous configured value if any parameter is missing in the config.txt file.

7.2. RTC Configuration:

The [RTC] section configures the real-time-clock of the device. The real-time-clock enables the CAN Data Logger to add timestamps to log-files, such that the absolute date and time of a message can be determined from the log-file. Internal RTC will start from the set date and time. The date and time from RTC is used to create new text file.

Date setting: Date can be set in the dd/mm/yy day format as mention below.

#DATE=dd/mm/yy day%

Where dd is Date, mm is Month and yy in Year.

- 1 for Monday
- 2 for Tuesday
- 3 for Wednesday
- 4 for Thursday
- 5 for Friday
- 6 for Saturday
- 7 For Sunday

Example: #DATE=19/11/15 2%

Where 19 is date, 11 is month, 15 is year and 2 for Tuesday.

Time Setting: Time can be set in the hh:mm:ss format as mention below.

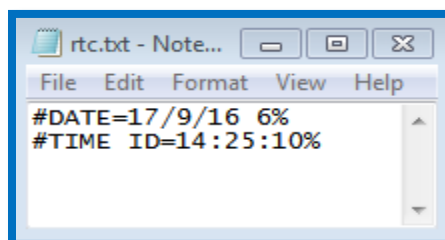
#TIME=hh:mm:ss%

Where hh is Hours, mm is Minutes, ss is Seconds.

Example: #TIME=14:25:10%

Where 14 is hour, 25 is Minute and 10 is second.

All parameters configured rtc.txt file look as shown picture.



9. Factory Default Values

Default config.txt file contain CAN Bitrate value as 500kbps, Model ID as 19, File Size as 5 MB. Default rtc.txt file contains dispatching Day Date & time. It is recommended to configure config.txt & rtc.txt files as per your requirement before connecting the device

10. Troubleshooting

Problems	Solutions
1) Power Red LED is not glowing when connected to ODB2?	Check whether the power is available in the OBD2 Connector. Check the OBD2 Cable used between data logger and the slave device.
2) If the Device is not detecting as Drive?	Check whether USB Cable is connected properly. USB Port of the PC is functioning properly. Check Green (Power) LED is ON
3) Data is not logging?	Check Power Red LED is ON when connected to OBD2 connector. Check Status (Yellow) LED is blinking slowly. Check Status (Yellow) LED if it is blinking fast indicating that memory is full. Check config.txt file is edited properly and copied to the device.

11. Contact and Support

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