USER MANUAL

Ecumaster Data Logger EDL-1

Document version: 2.1
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ECUMASTER

Contents

1. Device description

The data logger module is designed to work with **EMU Classic** and **EMU Black** using serial communication and allows saving data streams on an SDHC card.

Note:
This device is NOT compatible with EMU PRO. EMU PRO uses a different logging system and logs data directly to a USB drive.

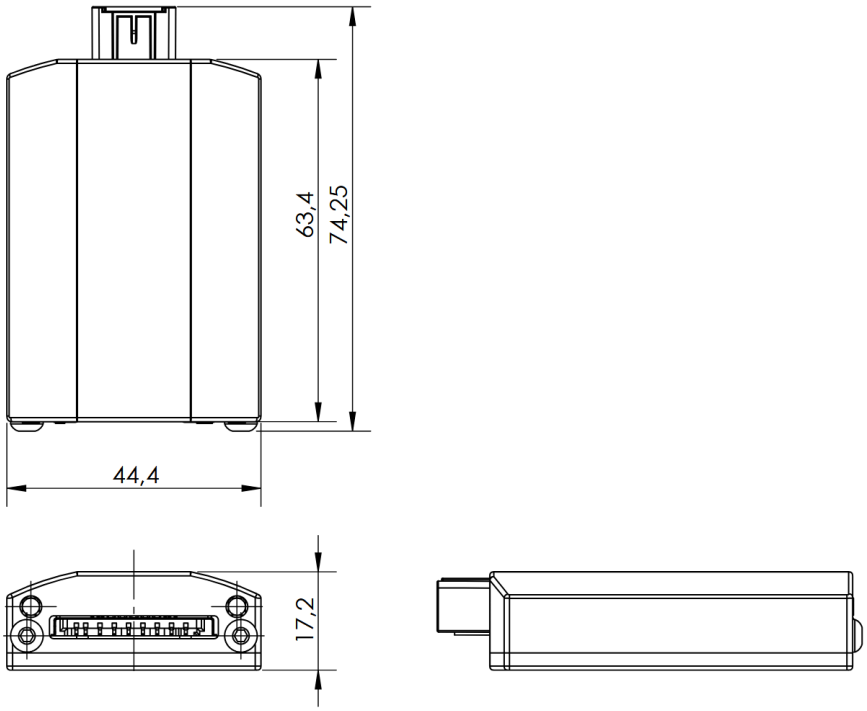
When using EMU Classic and EMU Black, all channels available when logging to a PC are also recorded by the EDL-1 device. Additionally, the EDL-1 features a Bluetooth module, enabling live data streaming to Android devices.

An SDHC card of 4 GB or larger should be used (logging time is approximately 11 hours per 1 GB). The file format is FAT32.

2. Specification

	Specification
Dimensions	64 x 45 x 18 mm
Weight	50 g
Connector	Molex 34793-0040
Status indicator	2 LEDs
Temperature range	-40 to +85 °C
Operating supply voltage	5-20 V
SDHC memory cards format	FAT32
Supported SDHC memory card size	Maximum 32 GB, 4GB recommended
Bluetooth communication	Yes, live data transmission
Real-time clock	Yes, battery powered

All dimensions in mm



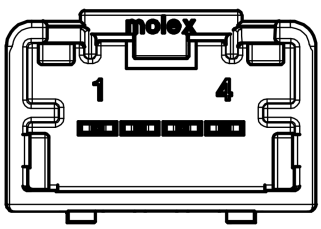
3. Installation

The EDL-1 device requires power in the range of 5-20V and a connection to the serial outputs of EMU Classic or EMU Black.

The EDL-1 can be powered with a +12V supply and chassis ground or with 5V supply and sensor ground of the ECU as in the following examples.

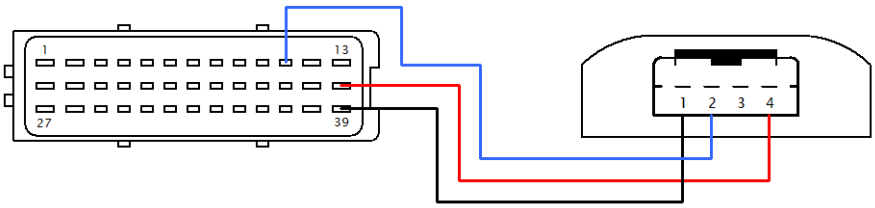
Important:
A shielded cable should be used for the RXD and TXD signals.

Pinout

	1 Ground
	2 RXD
	3 TXD
	4 Power supply

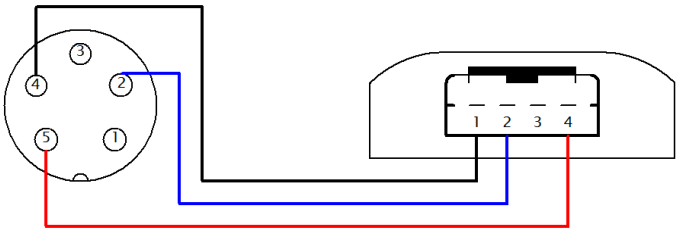
Connection to EMU Black

EMU Black	EDL-1
B11 RS232 TXD	**2** RXD
B26 +5V supply	**4** Power supply
B39 Sensor Ground	**1** Ground



Connection to EMU Classic

EMU Classic	EDL-1
4 Ground	**1** Ground
2 TXD	**2** RXD
5 +5V supply	**4** Power supply



4. Data logging

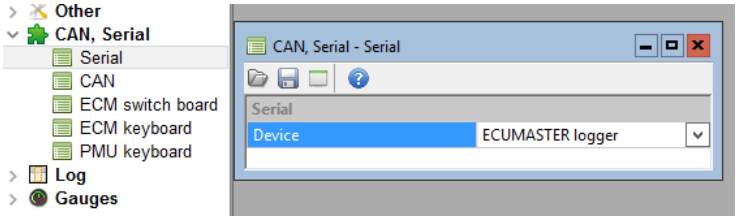
The EDL-1 creates a new log file each time it is power cycled or the ECU is power cycled. In other words, both the ECU and the EDL-1 must be powered on in order to start logging. It organizes these logs by creating folders for each date, which contain the logs for that specific day. This method provides a convenient way to access logged data without needing to carry a laptop.

The SD card is the only method available for transferring logged data from the EDL-1 to a PC; (alternative connection methods, such as direct PC connection or Bluetooth, are not supported for data transfer.)

To save data on the SD card, the Ecumaster logger data stream must be selected in the EMU Classic or EMU Black ECU.

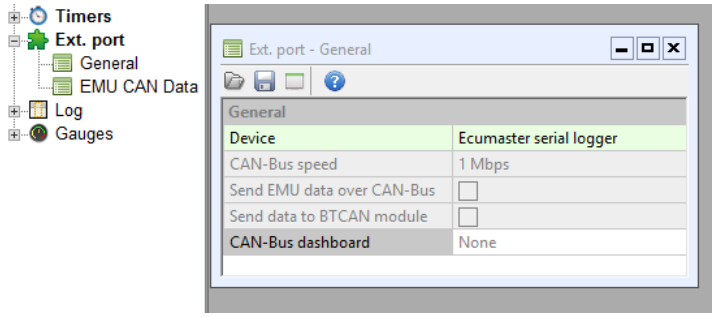
EMU Black

In **CAN, Serial/Serial**, for **Device** set ***Ecumaster logger***



EMU Classic

In **Configuration/Ext. port**, for **Device** set ***Ecumaster serial logger***



To import logged data, use the **Files/Import log/Ecumaster log** function.

For logging, an SDHC card of 4 GB or larger should be used. The file format must be FAT32. The logging time per 1 GB varies depending on the version of the EMU:

- **EMU Classic:** 40 hours per 1 GB
- **EMU Black V2:** 35 hours per 1 GB
- **EMU Black V3:** 20 hours per 1 GB

5. LED status

LED	Description
	**Red LED** flashing fast – boot loader mode **Red LED** double flash - SDHC card error
	**Orange LED** on – no SDHC card inserted

LED	Description
	**Blue LED** on – date and time set
	**Green LED** on – SDHC card inside, device ready to work **Green LED** flashing fast – incoming is saving
	**Blue LED** off – no communication with BT module **Blue LED** on – communication with BT module **Blue LED** flashing – communication error

6. Firmware upgrade

When a new version of firmware is released, the device firmware can be upgraded. The firmware can be found at https://www.ecumaster.com/products/data-logger-dl-1/.

To upgrade the firmware, unpack and save the ***firmware.bin*** file to the root directory of an SDHC card and insert the card into the slot. The upgrade process will start automatically. During the upgrade procedure, the LED will flash.

7. Time and date setup

The EDL-1 device has a built-in real-time clock and a backup battery to maintain the time and date when the main power is off.

To set a new time and date, the device must be connected to the EMU Classic or EMU Black and powered on. In the EMU Client application's **Tools** menu, select the **Set datalogger time** function. The current system date from the PC will be set (the status LED will blink blue).

8. Bluetooth support

The EDL-1 device is equipped with a Bluetooth module that allows one-way communication with Android devices. One of the applications that supports this communication is RealDash, which can be downloaded from: https://realdash.net/support.php.

Warning:
Only Android systems are supported.

The **EDL-1** communicates via RS232 in one direction only, as does its Bluetooth module (receive-only), allowing users to view parameters but not modify them. This one-way communication means that, regardless of the app used, it is not possible to change settings in the EMU Black or EMU Classic through a Bluetooth app on the EDL-1.

9. Document history

Version	Date	Changes
Preliminary	2016.11.08	Initial release
2.0	2024.10.14	Document layout changed to the Ecumaster standard format The text has been refined and improved for better readability and clarity
2.1	2024.11.14	Added information about one-way communication in Device description chapter Added clarification on power supply in Installation chapter Added details on log file creation and data transfer method in Data logging chapter