USER MANUAL

eDash

Document version: 0.2
Software version: 0.0.43 or later
Published on: 01 April 2026

ECUMASTER

Contents

1. Introduction

Ecumaster eDash is a mobile application that allows a smartphone or tablet to be used as a digital dashboard. The application displays real-time data received from the engine control unit (ECU). The app is available for iOS (16.1 or later) and Android (11 or later) devices. Communication with the ECU is performed via Bluetooth. This connection allows the application to receive live data and send basic commands.

Users can create and customize the dashboard layout. Multiple layouts can be saved and selected when needed. The application supports both horizontal and vertical screen orientation.
Users can also add custom background images and share layouts with other users.

Key Features

- Compatible with iOS and Android smartphones and tablets
- On-screen buttons for ECU control (two-way Bluetooth communication)
- Fully customizable dashboard layout
- Support for custom background images
- Horizontal and vertical screen orientation
- Save and switch between multiple layouts
- Layout sharing with other users

2. Connection

The eDash application connects to the ECU using a Bluetooth interface.

The application supports communication with the following devices:

- **EDL-1** https://www.ecumaster.com/products/data-logger-dl-1/
- **BT CAN** https://www.ecumaster.com/products/bt-module/
- **Bluetooth module** https://www.ecumaster.com/products/bt-module/

Required ECU Firmware versions:

- EMU BLACK V2 firmware 2.178
- EMU BLACK V3 firmware 3.064
- EMU Classic firmware 1.227
- EMU PRO firmware 103.0 or later

To establish a connection:

1. Make sure the ECU is powered and properly connected to a supported Bluetooth device (EDL-1, BT CAN, or Bluetooth module), and that the device is powered on
2. Enable Bluetooth on your mobile device
3. Launch the eDash application
4. Tap the Bluetooth icon in the top-right corner of the screen
5. Select the appropriate item from the list of available Bluetooth devices

   Devices may appear under the following names:

Device type	Bluetooth name
BT CAN	EMUCANBT_SPP
Bluetooth module	EMUBT
EDL-1	EMULOGGER

6. Wait for the connection to be established

Once connected, the application will begin receiving real-time data from the ECU.

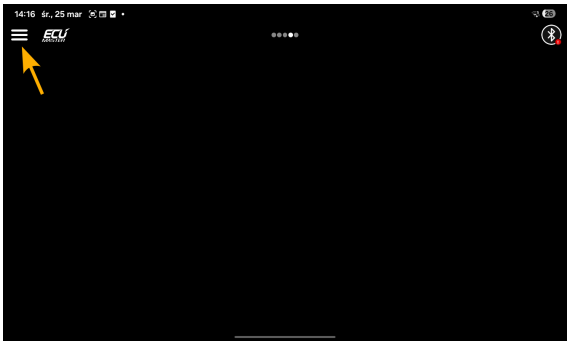
If using EDL-1 make sure to update the EDL-1 firmware to the version 1.25 or later. For more details, see https://www.ecumaster.com/files/EDL/EDL1_Manual.pdf

If the connection is lost:

- Ensure the ECU and Bluetooth device are powered
- Verify the Bluetooth connection status on your mobile device
- Restart the application if necessary

3. Main Menu

The main menu can be accessed by tapping the **menu icon (three horizontal lines)** in the top-left corner of the screen.



The menu provides access to the following sections:

- **Edit Layout** – opens the layout editor Layout edition *(on page 9)*
- **Alarms** – allows configuration and management of alarms Alarms *(on page 6)*
- **Settings** – application settings and unit configuration Settings *(on page 5)*
- **Export** – export current layout Import and Export *(on page 18)*
- **Import** – import a saved layout Import and Export *(on page 18)*

4. Settings

The Settings section allows the user to configure display units used in the application.

Display Units

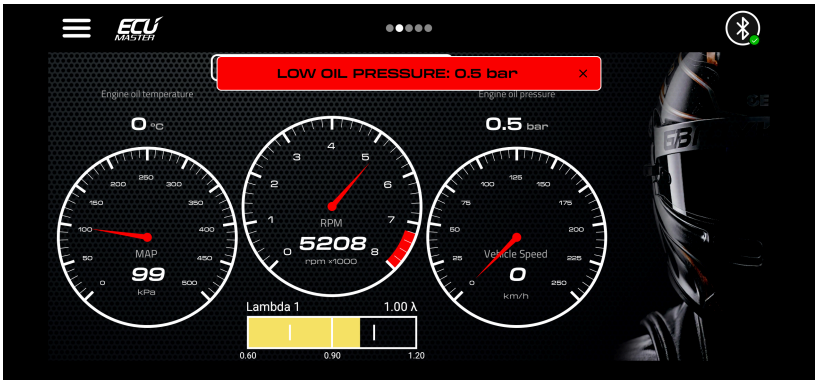
The following units can be configured:

- **Temperature unit**
  - Celsius (°C)
  - Fahrenheit (°F)
- **Speed unit**
  - km/h
  - mph
- **Pressure unit**
  - bar, kPa
  - psi

These settings affect how data is displayed across the entire application.

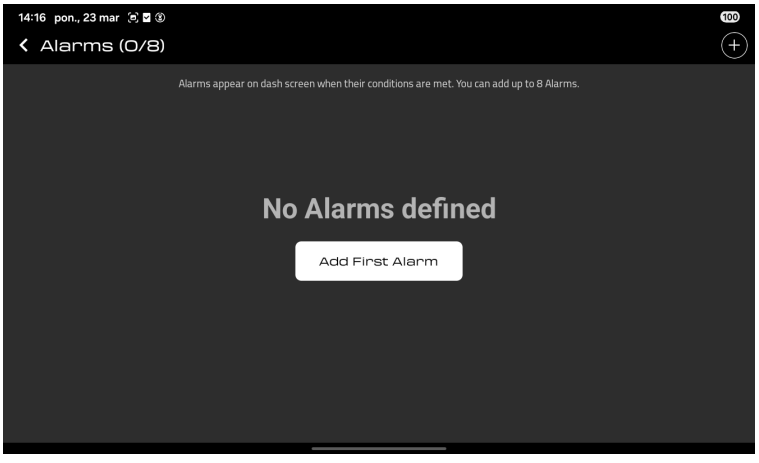
5. Alarms

The purpose of alarms is to inform the user about specific conditions detected in the incoming ECU data. When a defined condition is met, a message is displayed on the screen to alert the user.



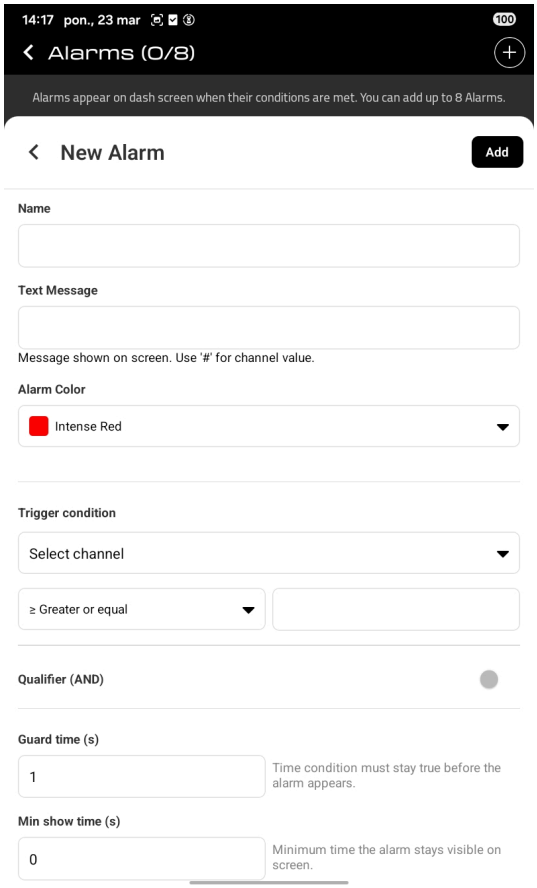
A screen with an active alarm shows clearly which alarm is triggered. The user can close (acknowledge) the alarm, but if the condition happens again, the alarm will appear again automatically.

If no alarms have been configured yet, the Alarms screen displays the message:
No Alarms defined
along with the ***Add First Alarm*** button.
Up to 8 alarms can be defined in the application.



Creating an Alarm

To create a new alarm, press the *Add First Alarm* button or the “+” icon in the top-right corner of the screen.



Each alarm consists of the following parameters:

- ***Name*** - defines the name of the alarm
- ***Text message*** - message displayed on the screen when the alarm is triggered

  The message can include the current value of a selected channel. To insert the channel value, use the **#** symbol

  Example: "Oil pressure low: #" may display “Oil pressure low: 2 bar”.
- ***Alarm color*** - defines the color of the alarm message displayed on the screen

Trigger Condition

The alarm is activated based on a defined condition:

- **Select channel** – choose the monitored parameter
- **Condition:**

  Greater or equal

  Less or equal

  Greater than

  Less than

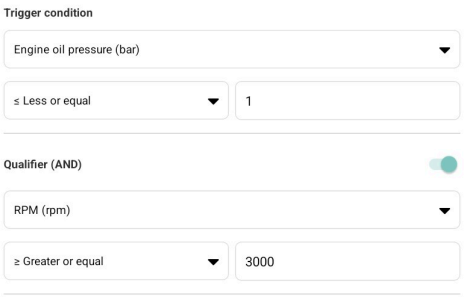
  Equal

Additional Condition (Qualifier AND)

An additional condition can be enabled if required.

When the **Qualifier AND** option is selected, a second channel and condition can be defined.

The alarm will be triggered only when both conditions are met.



Guard time (s)

Defines the minimum time for which the condition must remain true before the alarm is displayed

Minimum Display Time - Min show time (s)

Defines the minimum time the alarm remains visible on the screen

The alarm will remain visible even if the condition is no longer met.

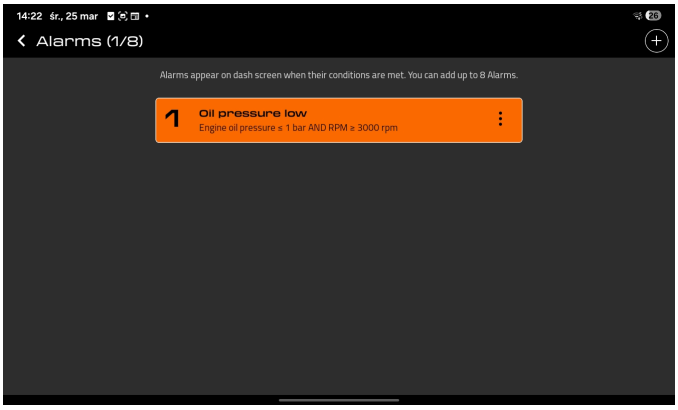
Managing Alarms

When alarms are already defined, they are displayed in a list.

Each alarm includes a three-dot menu with the following options:

- **Edit** – modify the alarm
- **Delete** – remove the alarm

A new alarm can be added using the **"+" icon** in the top-right corner.



Note:

A maximum of **8 alarms** can be configured

6. Layout edition

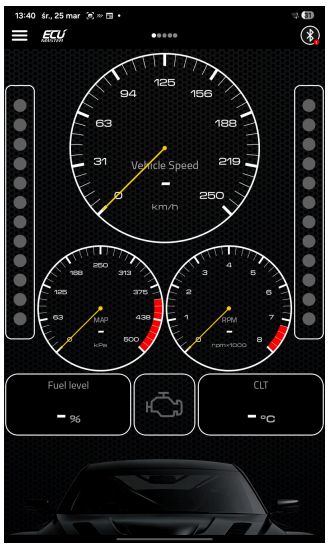
The Layout Edition feature allows users to create and customize their own dashboard screens.
To access the layout editor, open the main menu and select ***Edit Layout***.

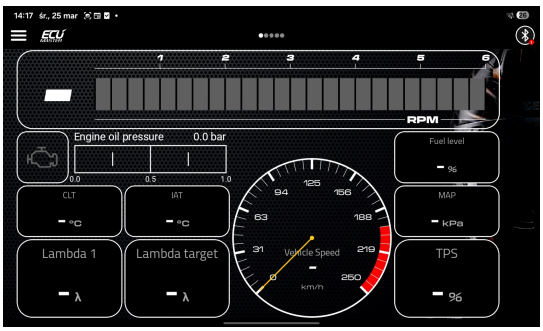
Users can:

- Add and arrange dashboard elements
- Customize the appearance of the layout
- Use custom background images
- Save multiple layouts and switch between them

Layout Orientation

The application supports both horizontal (landscape) and vertical (portrait) orientations. Layouts for each orientation are configured separately, allowing the user to fully customize how the dashboard looks in both views.





This means that:

- A layout prepared for landscape mode can be different from the one used in portrait mode
- Users can independently arrange and optimize elements for each orientation

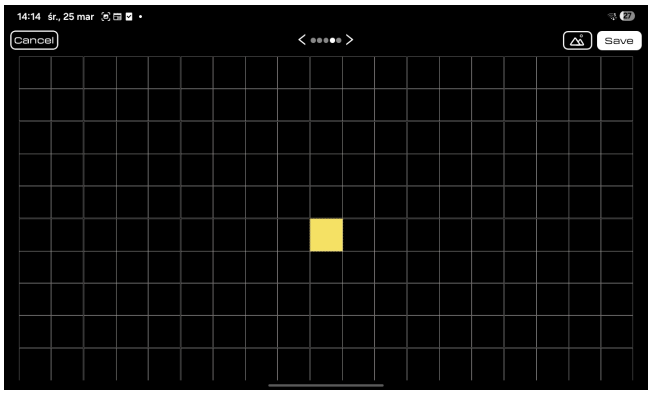
This allows the layout to be adjusted to different mounting positions or user preferences.

Note:
In most cases, users choose a single preferred orientation depending on how the device is mounted in the vehicle.

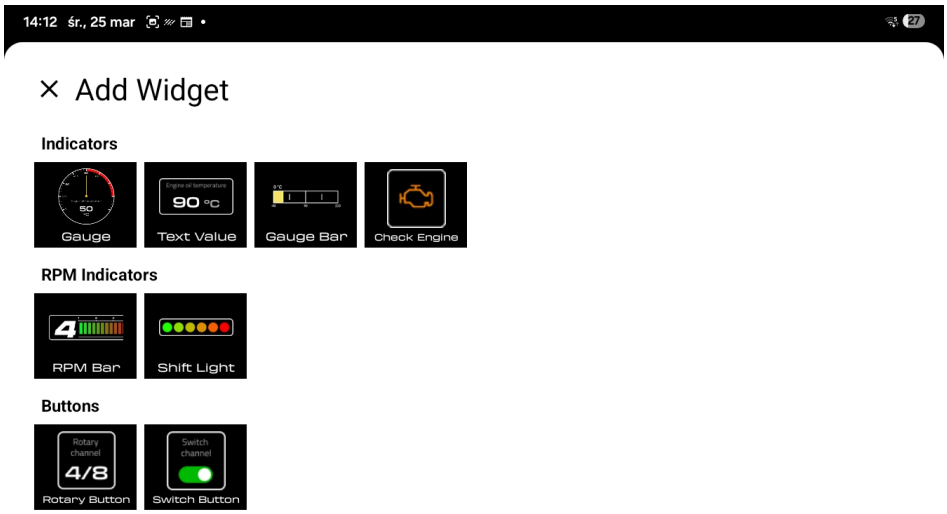
Adding Widgets to a Layout

To add widgets to a new or empty layout, enter Edit Layout mode from the main menu.

On an empty layout grid, select a free position (grid cell) by tapping it.



After selecting a cell, a list of available widgets will be displayed.



From this list, the user can choose the widget type that should be added to the layout.

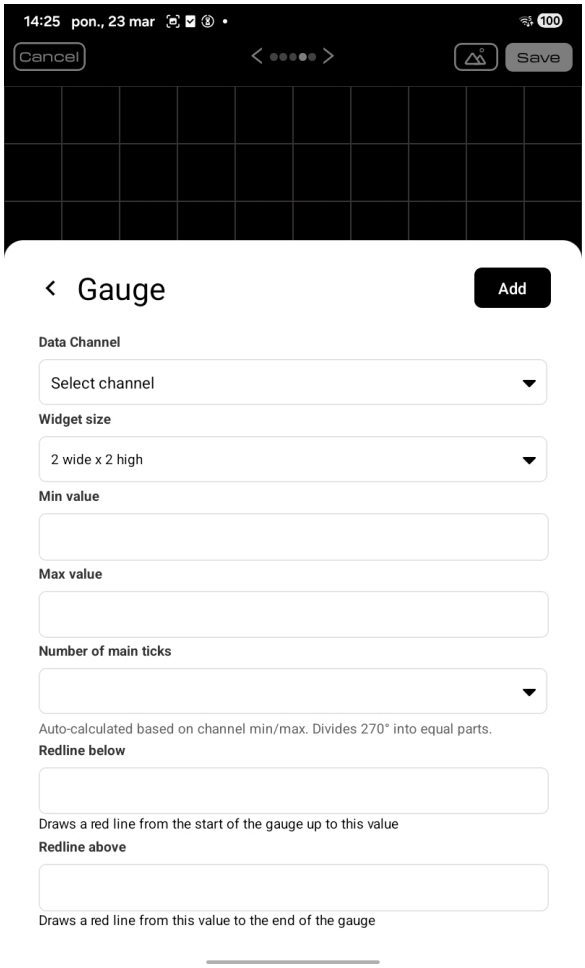
The selected widget will then be placed in the chosen grid position.

Each widget can be later resized or configured depending on its available parameters.

7. Widgets

7.1. Gauge

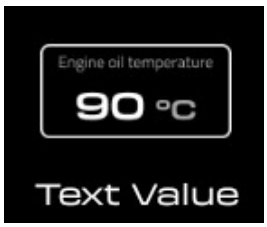
Gauge allows displaying a numerical value using a circular segment.



Parameter	Description
Data Channel	Channel to be displayed in the widget. Some channels are available only for selected devices. Refer to the compatibility list Appendix A - eDash Supported Channels *(on page 19)*
Widget size	Defines the size of the widget. Several configurations are available.
Min value	Minimum value displayed by the indicator.

Parameter	Description
Max value	Maximum value displayed by the indicator.
Number of main ticks	Auto-calculated based on channel min/max. Divides 270° into equal parts.
Redline below	Draws a red line from the start of the gauge up to this value.
Redline above	Draws a red line from this value to the end of the gauge.

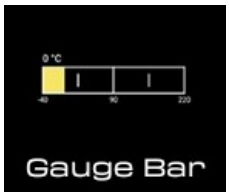
7.2. Text Value



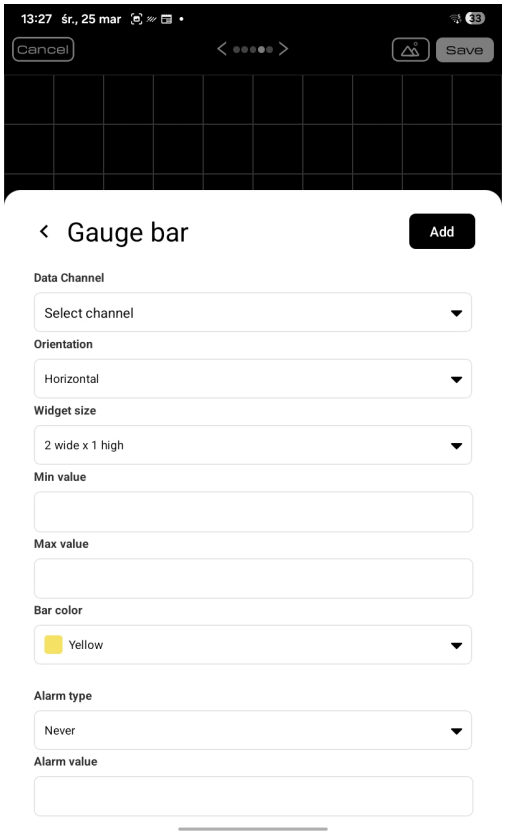
Text Value allows displaying text based on data from a selected channel or function, along with its unit.

Parameter	Description
Data Channel	Channel to be displayed in the widget. Some channels are available only for selected devices. Refer to the compatibility list Appendix A - eDash Supported Channels *(on page 19)*
Widget size	Defines the size of the widget. Several configurations are available.
Show border	Enables or disables the white border around the widget.
Transparent background	Enables or disables a transparent background for the widget.

7.3. Gauge Bar



Gauge Bar allows displaying values as a moving bar (horizontal or vertical).



Parameter	Description
Data Channel	Channel to be displayed in the widget. Some channels are available only for selected devices. Refer to the compatibility list Appendix A - eDash Supported Channels *(on page 19)*
Orientation	Selects the orientation of the gauge bar (horizontal or vertical).
Widget size	Defines the size of the widget. Several configurations are available.
Min value	Minimum value displayed by the indicator.
Max value	Maximum value displayed by the indicator.
Bar color	Defines the color of the indicator bar.
Alarm type	Sets the alarm trigger condition: Never, Below, Above. The bar turns red when the condition is met.

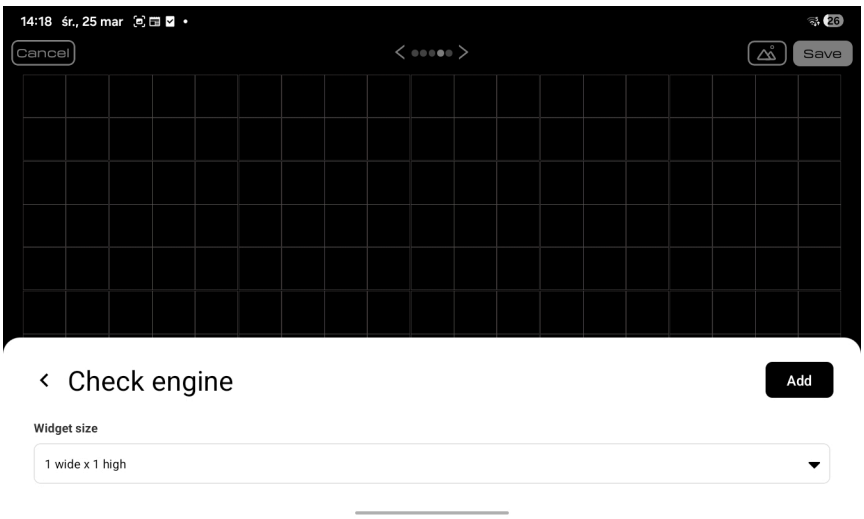
Parameter	Description
Alarm value	Alarm threshold value.

7.4. Check Engine

Check Engine displays the ECU check engine status.

The indicator is activated when the ECU reports one of the following conditions:

- Coolant temperature sensor failure
- Intake air temperature sensor failure
- Manifold pressure sensor failure
- Lambda 1 sensor failure
- Exhaust gas temperature sensor failure
- Exhaust gas temperature too high
- Knock detected
- Flex fuel sensor failure
- DBW (Drive-by-Wire) failure
- Fuel pressure relative error



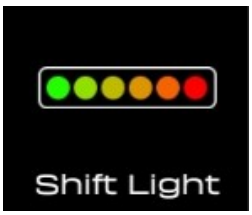
Parameter	Description
Widget size	Defines the size of the widget. Several configurations are available.

7.5. RPM Bar

RPM Bar allows displaying engine speed as a horizontal bar.

Parameter	Description
Widget size	Defines the size of the widget. Several configurations are available.
Max RPM	Maximum RPM value displayed by the bar.
Red line RPM	Red area starts from this value on the right side.

7.6. Shift Light



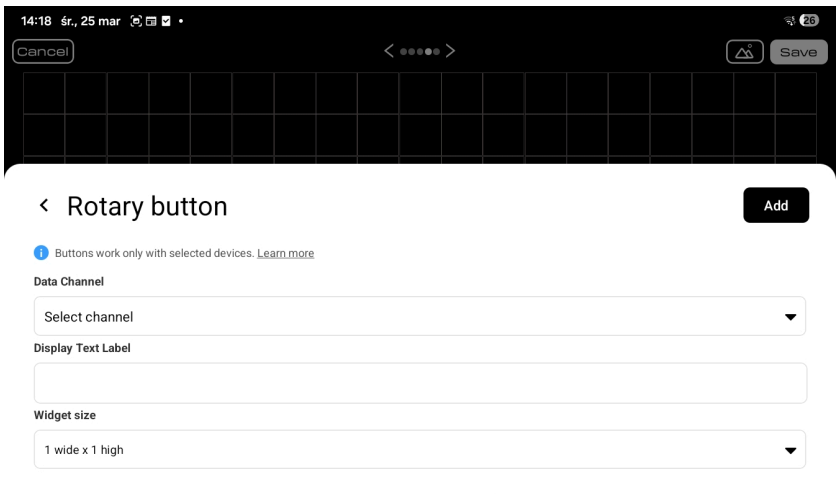
Shift Light displays engine speed using lights that light up with increasing RPM.

Parameter	Description
Widget size	Defines the size of the widget. Several configurations are available.
Max RPM	Minimum RPM value for the shift light activation.
Min RPM	Maximum RPM value for the shift light activation.

7.7. Rotary Button

Buttons work only with selected devices.

Rotary Button allows sending user input from a mobile device to control the ECU. The widget can send values from 1 to 8. Refer to Appendix B - How-to Set Up Buttons in eDash *(on page 25)* for more information.

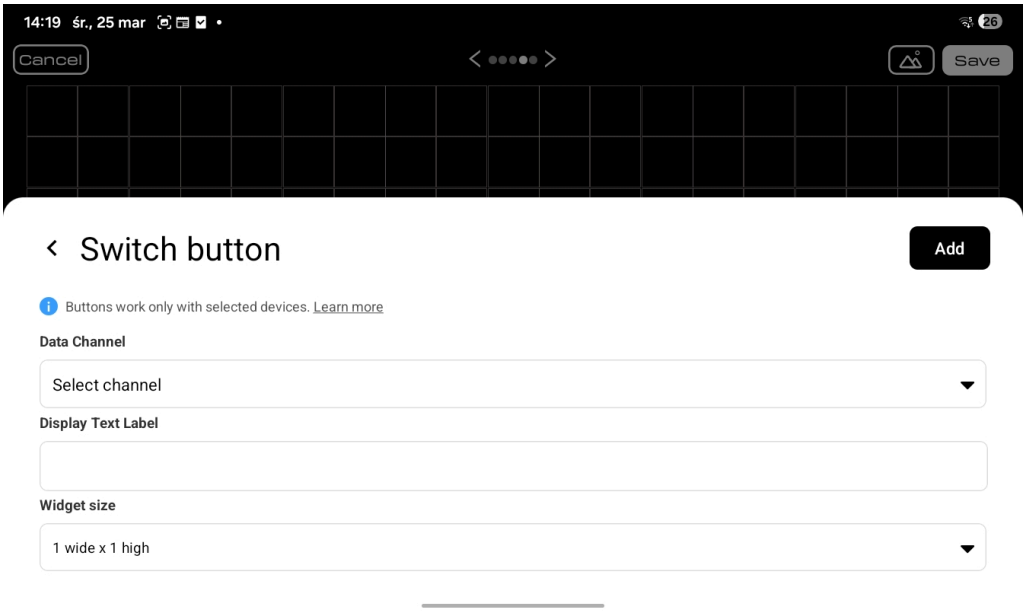


Parameter	Description
Data Channel	Refer to Appendix B - How-to Set Up Buttons in eDash *(on page 25)*
Display Text Label	Text displayed on the button.
Widget size	Defines the size of the widget. Several configurations are available.

7.8. Switch Button

Buttons work only with selected devices.

Switch Button allows sending user input from a mobile device to control the ECU. The widget can send values of 0 or 1 (off/on). Refer to Appendix B - How-to Set Up Buttons in eDash *(on page 25)* for more information.



Parameter	Description
Data Channel	Refer to Appendix B - How-to Set Up Buttons in eDash *(on page 25)*
Display Text Label	Text displayed on the button.
Widget size	Defines the size of the widget. Several configurations are available.

8. Import and Export

The application allows users to share and back up layouts.

- ***Export*** - saves the current layout for sharing or backup
- ***Import*** - loads a previously saved layout

Layouts can also be stored in the cloud for backup purposes.

9. Document history

Version	Date	Changes
0.1	2026.03.30	Initial release
0.2	2026.04.01	Updated information about required ECU firmware versions

10. Appendix A - eDash Supported Channels

10.1. Description

The list of supported channels depends on the user's configuration. The following channels are available in all configurations. Some configurations support additional channels - see the tables below for details.

Channel name	Unit
Analog inputs	
Analog 1	V
Analog 2	V
Analog 3	V
Analog 4	V
Analog 5	V
Analog 6	V
Engine	
Battery voltage	V
Check engine	
RPM	rpm
TPS	%
Fueling	
AFR	AFR
Ethanol content	%
Injectors PW	ms
Lambda 1	λ
Lambda target	
Secondary inj. PW	
Injectors DC	%
Ignition	
Dwell time	ms

Channel name	Unit
Ignition angle	°BTDC
Knock	
Knock level peak	V
Other	
Fuel level	
Tables set	
Pressure	
Barometric pressure	kPa
Engine oil pressure	bar
Fuel pressure	bar
Fuel pressure error	
MAP	kPa
Temperature	
CLT	°C
ECU temperature	°C
EGT 1	°C
EGT 2	°C
Engine oil temperature	°C
Fuel temperature	°C
IAT	°C
VSS and gears	
Gear	Gear
Vehicle speed	

EMU Black V3 + EDL-1 *(FW 1.25)* or EMU Classic V3 + EDL-1 *(FW 1.25)*

Channel name	Unit
Boost	
Boost	kPa g
Boost DC	%
Boost PID correction	%

Channel name	Unit
Boost target	kPa g
EWG position	%
Turboshaft speed	kRPM
Engine	
Engine torque	%
PPS	%
Rev limiter target	rpm
Fueling	
Fuel cut %	%
Lambda 2	λ
Lambda error mult.	%
Short term trim	%
Idle	
Idle ignition correction	°
Idle PID air % correction	
Idle target	rpm
Ignition	
CAM sync trigger tooth	
Spark cut %	%
Trigger errors count	
Wasted spark	
Knock	
Knock count	
Knock ignition retard	°
Other	
Firmware version	
Pressure	
AC pressure	kPa
Coolant pressure	kPa

Channel name	Unit
Nitrous pressure	bar
Pre throttle boost	kPa g
Wastegate dome pressure	kPa g
Temperature	
Diff oil temperature	°C
VVTi	
VVT CAM1 angle	°
VVT CAM2 angle	°

EMU Classic 1.227 + EDL-1 *(FW 1.25)*

Channel name	Unit
Boost	
Boost	kPa g
Boost DC	%
Boost PID correction	%
Boost target	kPa g
Fueling	
Fuel cut %	%
Short term trim	%
Idle	
Idle ignition correction	°
Idle PID air % correction	
Idle target	rpm
Ignition	
CAM sync trigger tooth	
Spark cut %	%
Knock	
Knock ignition retard	°
Pressure	
AC pressure	kPa

Channel name	Unit
VVTi	
VVT CAM1 angle	°
VVT CAM2 angle	°

EMU Black 2.178 + EDL-1 *(FW 1.25)*

Channel name	Unit
Boost	
Boost	kPa g
Boost DC	%
Boost PID correction	%
Boost target	kPa g
EWG position	%
Fueling	
Fuel cut %	%
Lambda 2	λ
Lambda error mult.	%
Short term trim	%
Idle	
Idle ignition correction	°
Idle PID air % correction	
Idle target	rpm
Ignition	
CAM sync trigger tooth	
Spark cut %	%
Knock	
Knock ignition retard	°
Pressure	
AC pressure	kPa
Coolant pressure	kPa
Temperature	

Channel name	Unit
Diff oil temperature	°C
VVTi	
VVT CAM1 angle	°
VVT CAM2 angle	°

11. Appendix B - How-to Set Up Buttons in eDash

11.1. Description

eDash allows the use of on-screen buttons to control selected ECU functions. This feature is currently available only for **EMU Black** and **EMU Classic** used with **EDL-1**.

Controlling ECU via eDash (2-way communication)

ECU	Bluetooth device	Supported
EMU Black V3	EDL-1	**Yes - full capabilities**[1]
	BT to CAN	No
EMU Black V2	EDL-1	**Yes - limited**[2]
	BT to CAN	No
EMU Classic V3	EDL-1	**Yes - full capabilities**[3]
	CAN module + BT to CAN	No
	BT module	No
EMU Classic V1	EDL-1	**Yes - limited**[4]
	CAN module + BT to CAN	No
	BT module	No
EMU PRO	BT to CAN	No

[1]Requires EMU Black V3 firmware 3.064 or later

[2]Requires EMU Black firmware 2.178 or later, rotary buttons are not supported

[3]Not available yet

[4]Requires EMU Classic firmware 1.227 or later, rotary buttons are not supported

Unsupported Configurations

If your setup does not support 2-way communication, this functionality will not be available. Support for additional devices is currently under development.

EMU Black – 2-way communication setup

1. **Update EDL-1 firmware**

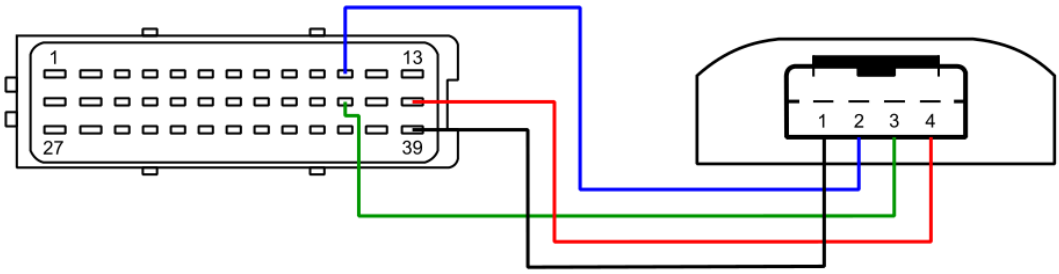
   Make sure the EDL-1 is using the latest firmware version (1.25). For more details, see https://www.ecumaster.com/files/EDL/EDL1_Manual.pdf

2. **Verify wiring**

   Two-way communication requires both TX and RX connections between the EMU Black and EDL-1 (shown as EMULOGGER in the device list).

   Connection to EMU Black

EMU Black	EDL-1
B39 Sensor Ground	**1** Ground
B11 RS232 TXD	**2** RXD
B24 RS232 RXD	**3** TXD
B26 +5V supply	**4** Power supply



Important:

EMU RX → EDL TX

EMU TX → EDL RX

3. **Connect via eDash**

   Open the eDash application and connect to the EDL-1 device.

4. **Add a Switch Button in eDash**

   - Open Edit Layout

   - Add a Switch button widget to the layout

   - Assign a BT Switch channel number (e.g. BT Switch 1, 2, etc.)

   This number will be used later in the ECU configuration.

   For more information about layout editing, refer to the main eDash manual: https://ecumaster.com/files/EDASH/eDash_Manual.pdf

5. **Verify switch operation in EMU software**

   In EMU Black software:

   - Open *Log / Switches BT* window

   - Toggle the button in eDash

   The corresponding switch value should change in real time.

6. **Assign the switch to a function**

   In the ECU configuration:

   - Go to the desired strategy (e.g. boost control, traction control, etc.)

   - Set the input to BT Switch #, matching the number configured in eDash

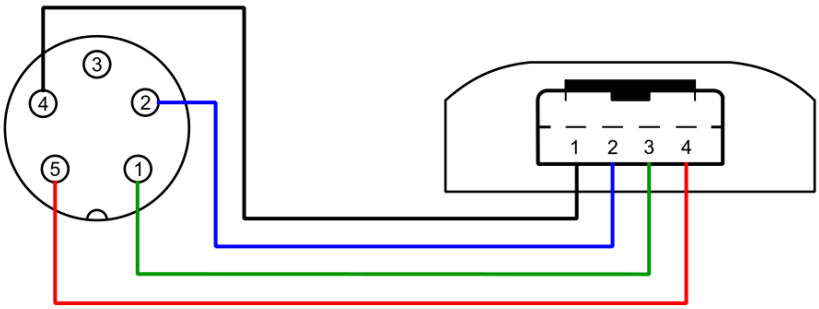
EMU Classic – 2-Way Communication Setup

The setup procedure is identical to EMU Black.

1. Update EDL-1 firmware to the latest version (1.25). For more details, see https://www.ecumaster.com/files/EDL/EDL1_Manual.pdf
2. Verify TX and RX wiring:

   Connection to EMU Classic

EMU Classic	EDL-1
4 Ground	**1** Ground
2 TXD	**2** RXD
1 RXD	**3** TXD
5 +5V supply	**4** Power supply



   EMU RX → EDL TX

   EMU TX → EDL RX

3. Connect to EDL-1 using eDash
4. Add a **Switch button widget** and assign a BT Switch number
5. Open ***Log / Switches BT*** window in EMU Classic software and verify operation
6. Assign the switch in the selected ECU strategy using the corresponding **BT Switch #**

11.2. Troubleshooting

Cannot connect from eDash app

Device not visible in eDash:

- Check EDL-1 power supply
- Verify EDL status LED
- Update EDL-1 firmware

Switch state not visible in Switches BT window

- Check TX/RX wiring
- Ensure both lines are connected correctly

Note:

Two-way communication requires compatible hardware and firmware.

Switch behavior depends on ECU configuration (strategy settings).

11.3. Document history

Version	Date	Changes
0.1	2026.03.30	Initial release
0.2	2026.04.01	Updated information about required ECU firmware versions