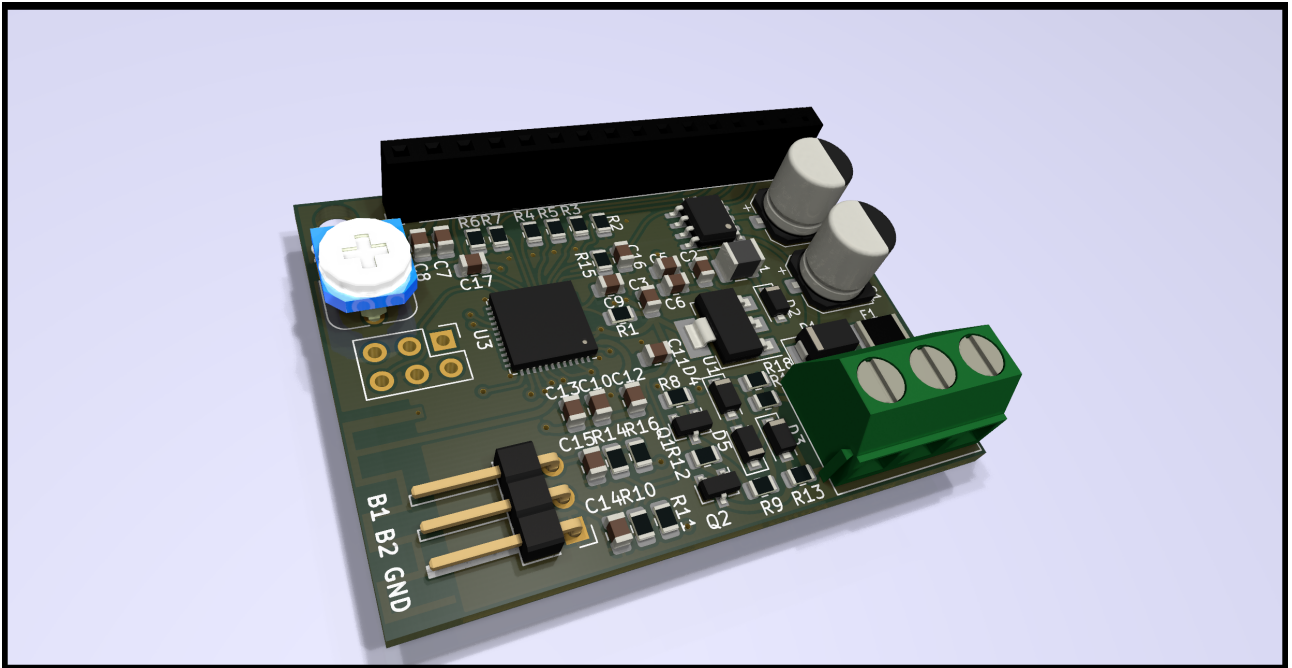


Td5Gauge



The on-board computer is designed to help you diagnose problems with the Td5 engine. An additional advantage is the possibility of continuous monitoring engine parameters while driving.

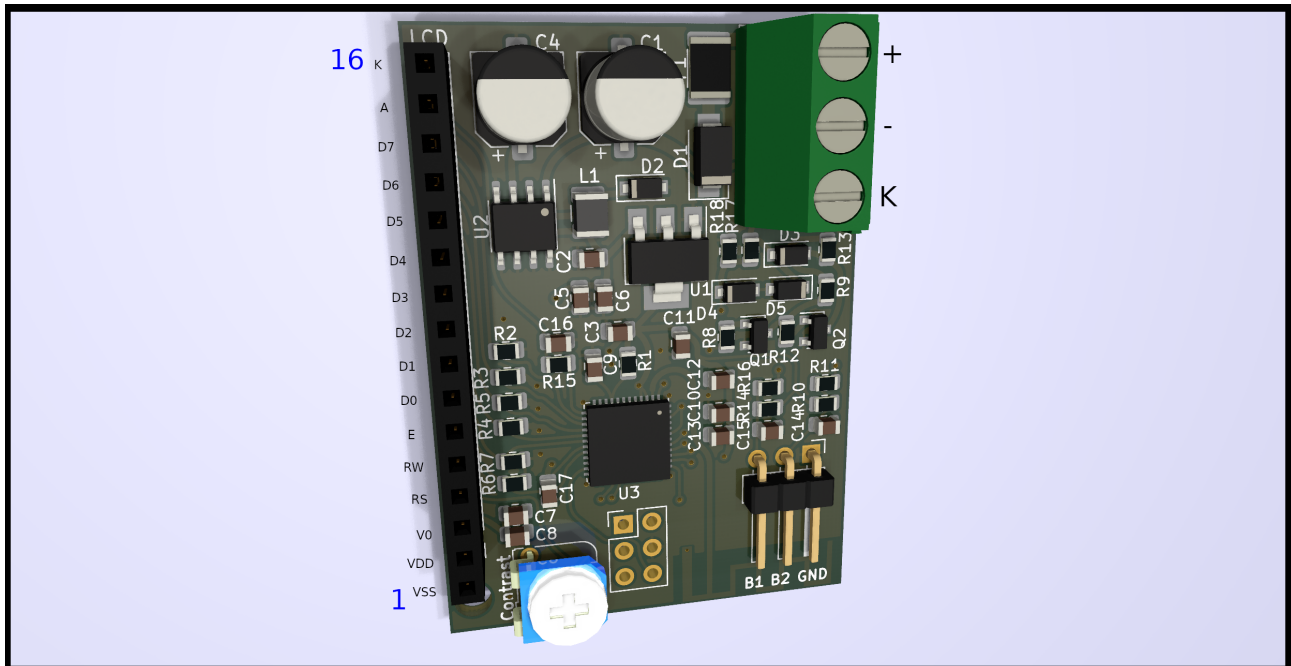
Whole communication with the sensors in the engine takes place through the OBD2 diagnostic port and ECU.

Implemented parameters read from ECU:

- Momentary fuel consumption.
- Fuel consumption from engine start.
- Drivers wish.
- Idle fuel injection.
- Total fuel injected.
- Current speed – Value can be increased up to 30%.
- Fuel temperature.
- Intake manifold temperature.
- Coolant temperature.
- Engine RPM.
- ECU voltage.
- MAF Sensor data.
- MAP pressure + RAW data.
- AAP pressure. + RAW data.
- Turbo boost.
- Wastegate PWM modulation.
- Injectors balance.
- Throttle potentiometer voltage.

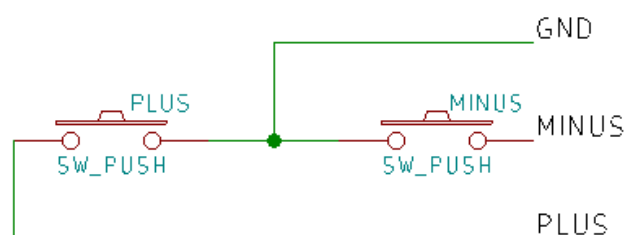
Additional features:

- Auto off on connection lost with ECU (i.e. when ignition is off).
- Regulated backlight stored in internal memory.
- Automatic reconnection on connection lost with ECU.
- Coolant temperature alarm configurable by user from 60 to 140 Celsius degrees with 1 degree step.
- Speed multiplier to adjust speed in module while using larger tires.
- Last viewed parameter return after restart.
- WiFi connection with your smartphone to monitor current parameter.
- WiFi firmware update capability.



INSTALLATION

1. To connect module to car wiring you have to connect wires like on attached picture. „-” is „-” on car (Ground), „+” is +12V feed from car harness and „K” is K-Line. It is on pin number 7 in OBD2 port (pink wire).
2. Buttons should be connected this way (PLUS is B1 and MINUS is B2): (you can use only one button if you want). Please use momentary buttons normally open:



3. LCD Contrast can be tuned with CONTRAST potentiometer. LCD can not be unplugged while module is powered up.
4. In case of new LCD you need to connect new LCD with pinout like on picture above. You can use any LCD compatible with HD44780 controller and VDD = 5V. LCD must be 3.3V tolerant on data pins.
5. You cannot connect LCD in reverse pin order.
6. To perform diagnostics with the help of a workshop diagnostic equipment, disconnect the module from the car's installation.

USER MANUAL

1. You can switch parameters by buttons. Last used parameter will be visible after module restart.
2. Speed multiplier can be changed by pressing PLUS/MINUS button for more than 3 sec. While button is hold value will change with 1% step. Release of button will automatically store programmed value in internal memory. It will be confirmed by „OK!“ message on LCD. Speed multiplier can be set on SPEED parameter screen.
3. Coolant temperature alarm can be changed by pressing PLUS/MINUS button for more than 3 sec. While button is hold value will change with 1 degree step. Release of button will automatically store programmed value in internal memory. It will be confirmed by „OK!“ message on LCD. Coolant temperature alarm can be set on COOLANT TEMPERATURE parameter screen. Higher temperature than programmed will trigger screen flashing to inform driver about problem.
4. Auto OFF function allows to put module in sleep mode while there is no voltage provided to ECU (i.e. while key in not in ignition position). Auto OFF can be turned on by pressing PLUS/MINUS button for more than 3 sec on VOLTAGE screen. While button is hold value will change between ON/OFF state. Release of button will automatically store programmed state in internal memory. It will be confirmed by „OK!“ message on LCD.
5. To reset Auto OFF function in case of any problems with ECU connection (i.e. after battery remove) press any button and hold it while connecting module to power. After few seconds screen will turn on. After that button can be released.
6. Backlight can be changed by pressing PLUS or MINUS button for more than 3 sec. While button is hold value will change with 1% step. Release of button will automatically store programmed value in internal memory. It will be confirmed by „OK!“ message on LCD. Backlight can be set on rest of parameter screens.
7. To connect to module WiFi find on your device Td5Gauge network and connect to it.
8. To see current value open your favourite web browser and go to <http://td5gauge.local/> address. If your browser does not support mDNS protocol then you have to check what IP address has your device obtained from Td5Gauge network and connect to main gateway from your DHCP device settings (i.e. connect to 192.168.4.1). For more info check your device/OS manual.
9. In case of communication problems between ECU and module (On LCD: „Checking connection...“) press and hold one of buttons while starting module.
10. To perform diagnostics with the help of a workshop diagnostic equipment, disconnect the module from the car's installation.

UPDATING FIRMWARE

1. To update firmware connect your car to stable power source. Turn ignition key to position 2 and wait until module will communicate with your vehicle (data from ecu will be visible on LCD).
2. Connect to Td5Gauge WiFi network like described in USER MANUAL section.
3. Download new firmware from: <https://binowl.com/td5gauge-firmware/>
4. Open <http://td5gauge.local/update> page.
5. Click „Choose file” button and choose downloaded firmware BIN file.
6. Click „Update firmware” button and wait.
7. If everything is OK there will be „Update Success! Rebooting...” message. After that module will reboot with new firmware.
8. In case of problems DO NOT unplug module or turn off ignition key from position 2. Allow module to restart and try again.
9. **IMPORTANT: DO NOT ALLOW THE ECU VOLTAGE TO DROP BELOW 12.5 VOLTS WHILE UPDATING.**

PARAMETERS

Name: Td5Gauge module

Operating voltage: 12 - 16V

K-Line voltage: 12 - 15V

DC current: 70mA

Standby current: 10mA

WiFi TX power (max): 10dBmW

Operating temperature: ~0 - ~50 Celsius degrees.