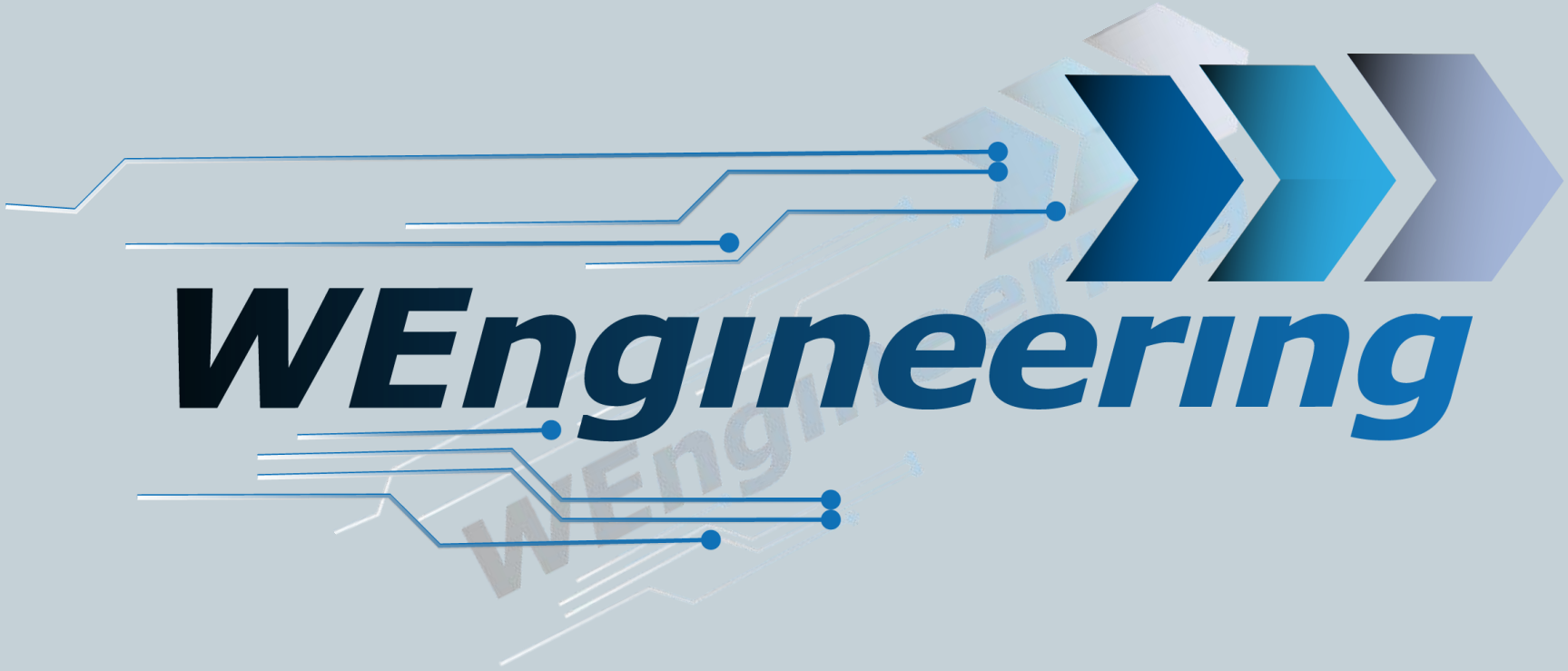

WEngineering

Content

Produktbeschreibung

The WIC control unit (Water Injection Control) has been designed for intelligent control of a water injection. The control unit takes all necessary data directly become superfluous which external sensors from the vehicle CAN bus. All data is visualized according to the touch screen display. The parameterization of the injection values are conveniently via USB interface and the associated software. The control unit 4 individually configurable injection profiles (OFF, ECO, Sport, Performance, Auto) is available. These can be linked freely with each of the driving profiles. Thus is automatically loaded with the choice of driving profile in your car the appropriate injection profile.

The control unit has in addition to the output for the pump, two outputs for switching valves. These can be configured independently in each injection profile. This results in a profile-dependent activation of additional injectors is possible. The control unit takes account of power values of all the necessary values such as temperature (intake air temperature, oil temperature, exhaust temperature, etc.) In this way an intelligent injection behavior is generated.

Funktionsübersicht

- Profile-dependent activation of the pump
- Profile-dependent switching of two valves
- Valve 1 controlled by PWM
- Switching the profiles manually or automatically
- See many useful data
- See the maximum values
- Time measurement (0-100, 100-200, 200-300)
- View many values in the diagram
- Error memory read and delete
- Triggering a series or an externally-installed exhaust flap
- Shiftlight configurable for each course
- Chart recording function for 25 seconds
- 2 color designs (white, orange)
- Automatic switch to the night design
- Automatic screen dimming

Übersicht den angezeigten Signale

- Speed [Km/h][mph]
- Torque [Nm]
- Power [PS][HP]
- Boost pressure [Bar][PSI]
- rpm [U/Min]
- Engine oil temperature [°C][°F]
- Outside temperature [°C][°F]
- Acceleration in the direction of travel [m/s²]

Übersicht den angezeigten Signale

- Injection quantity [%]
- Accelerator position [%]
- Exhaust gas temperature [°C][°F]
- Water temperature [°C][°F]
- Injection time [s]
- Air mass [g/s]
- Charge air temperature [°C] [°F]
- Gearbox temperature [°C] [°F] (Automatic or DKG gearbox)

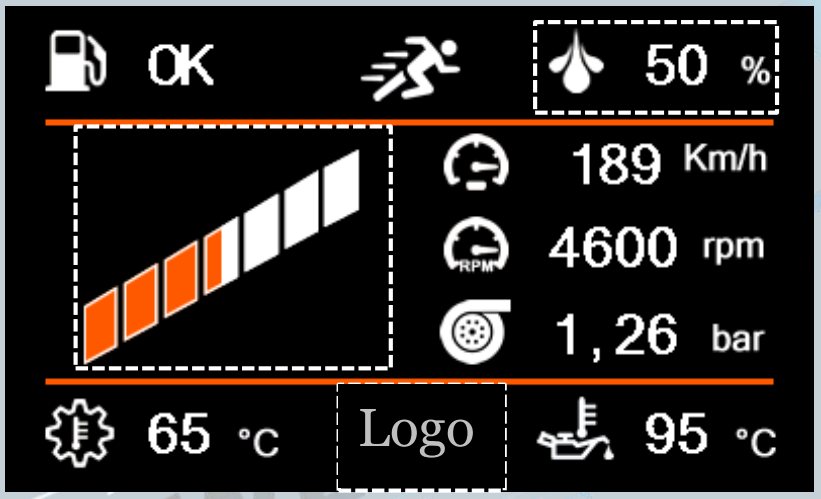
Übersicht den angezeigten Signale

- Ignition angle [°] (Nur Benziner)
- Lambda
- Rail pressure / gas pressure [Bar]
-Back pressure before DPF (Diesel Only)
-DPF differential pressure (only diesel)

Operating concept Display

1. Screen Dash -> Boost

4. Quick button and display the boost pressure. The Maximalausschlag learning automatically while driving



2. injection quantity

1. Logo

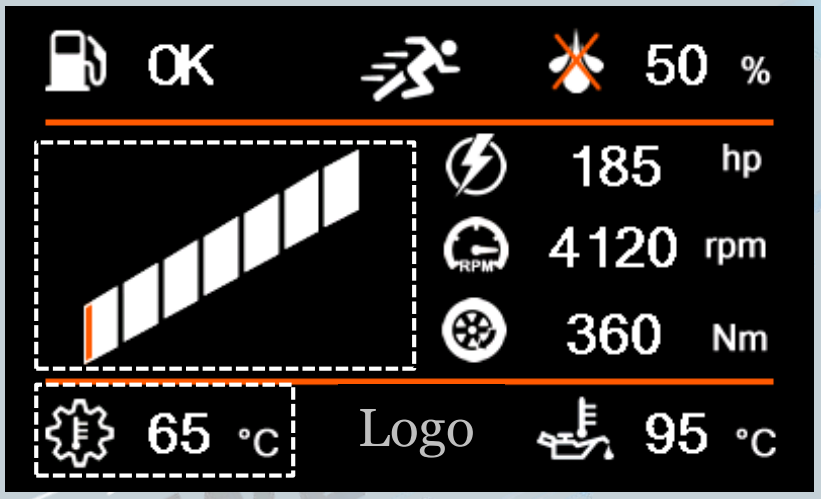
By pressing on determined symbols leads in intended screens or triggers a function.

1. Next Screen
2. 2. Screen Injection
3. 3. Screen shift light
4. 4. Quick button for controlling the series or the externally installed exhaust flap

Operating concept Display

1. Screen Dash -> Torque

Torque. Of the deflection learning automatically while driving



For vehicles with no gearbox temperature sensor in this area, the cooling water temperature is displayed

Operating concept Display

1. Screen Injection (Einspritzung)

1. Displays the current injection profile. Choosing a different profile can be done by tapping the icon. The F-models, the corresponding injection profile is automatically loaded with the driving profile.

- Off

- ECO

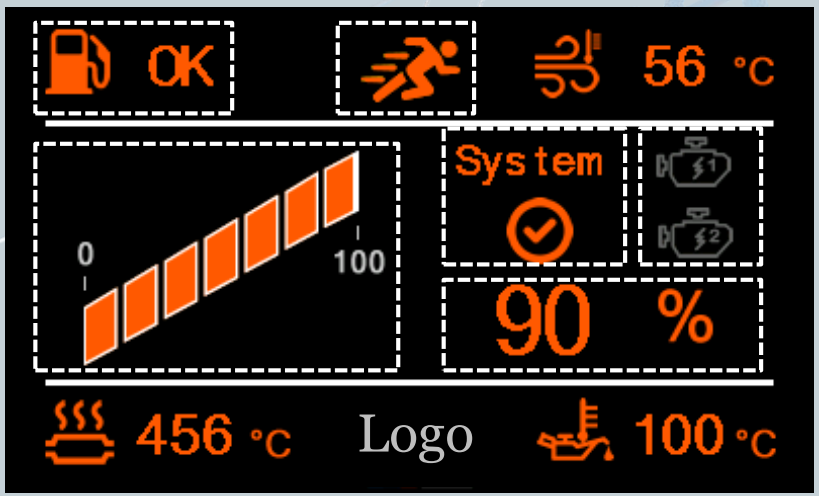
- Sport

- Performance


- Auto

5. State Tank

2. Injection quantity



3. System Status


- Ready


- Not ready not fulfilled preconditions. to investigate details by pressing the icon.

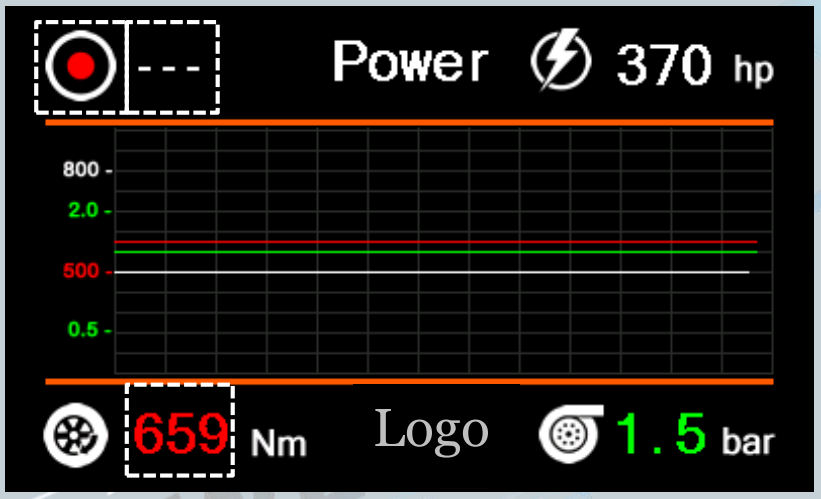
4. Status of the valves in the current injection profile


Available


Notavailable

Operating concept Display

1. Screen Graph 2. Status



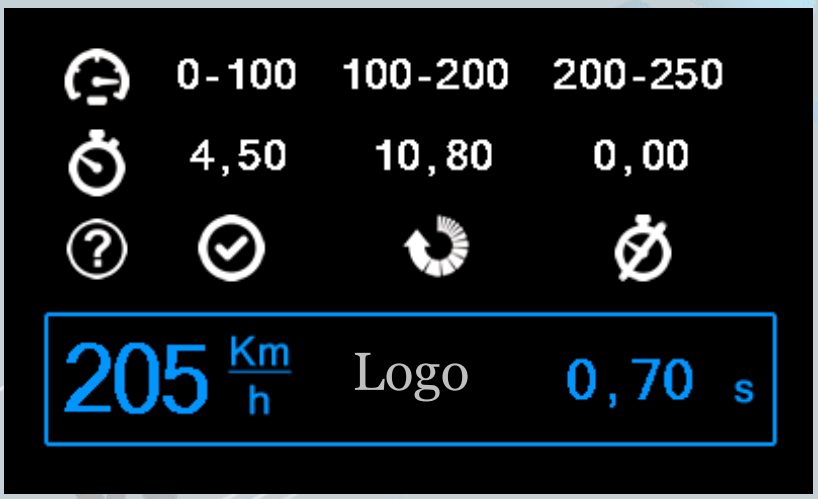
The colors of the lines on the graph are assigned according to the numbers. Thus it is seen as the assignment of the signals. In normal operation, the actual values are displayed continuously. To trigger recording function, must be pressed on the "Record" icon.

The values are updated freezes and the status "Wait" is displayed. In order to wait for a gas pedal position of at least 90%. Once this condition is met, the status of "Wait" will change to "Rec" and start recording. This stops automatically after 25 seconds. After that, the recording can be viewed in peace. The digital values of the maximum achieved value is displayed. The recording can be stopped at any time by pressing the icon.

Bedienkonzept Display

1. Screen Measure

1. Speed
2. Time
3. Status



- Timeout

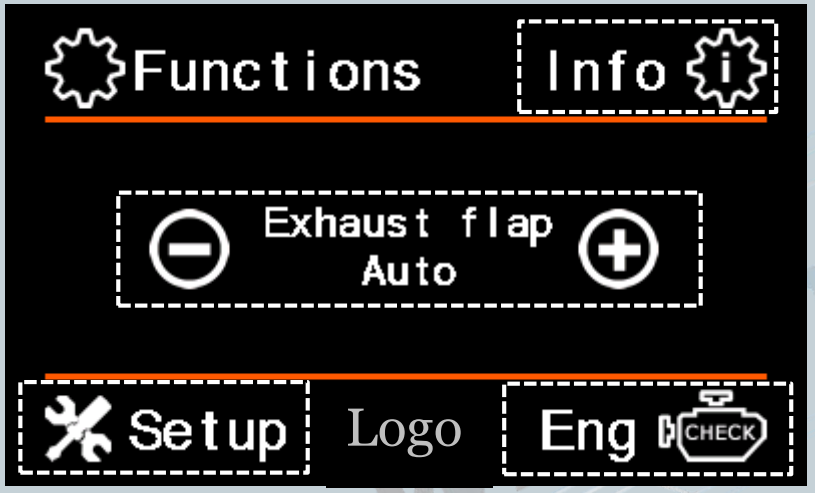
-Current measurement

-Successful measurement

In the menu Functions -> Setup -> Adjust the speed can be corrected logo

Operating concept Display

1. Screen Functions



Info: Click here for ScreenInfo. In this area all version information may be like the serial number read off

Control de exhaust flap with "+" or "-". If the status is "car" takes over the engine control unit controlling

Closely check: Reading and deleting fault memorylogo

Setup: Access the settings menu which is described on the next page.

With a press of the logo system leads to the setting of the water injection WIC

Operating concept Display

1. Screen Functions -> Engine Check

Number of errors in engine control unit

Error Code

Fehlerstatus

1. 
2.

1. Fault currently not present, but was saved
2. Error was registered in this driving cycle and is peresent.

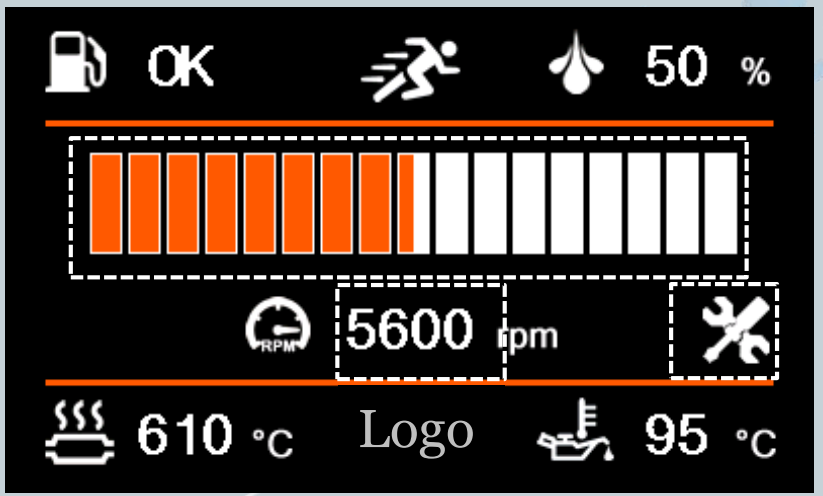
Read fault memory

Clear fault memory

Operating concept Display

1. Screen shift light

This area flashes when the maximum set speed is exceeded

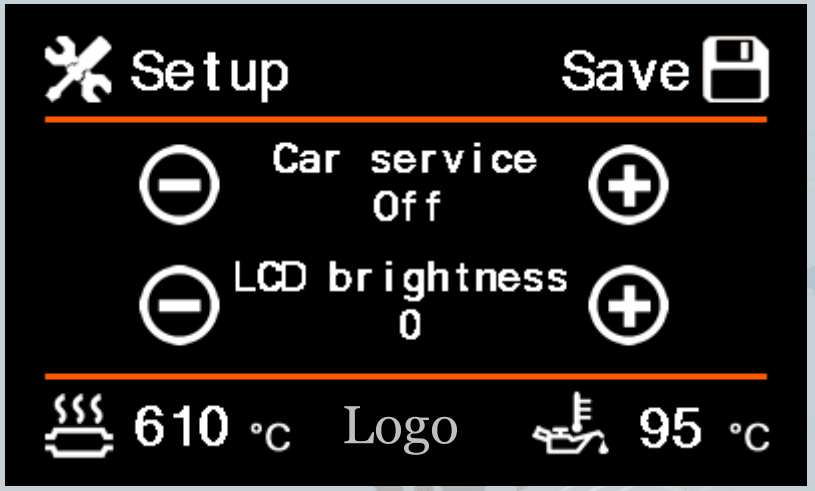


Shift light settings

Maximum speed for the current gear

Operating concept Display

1. Screen Functions -> Setup

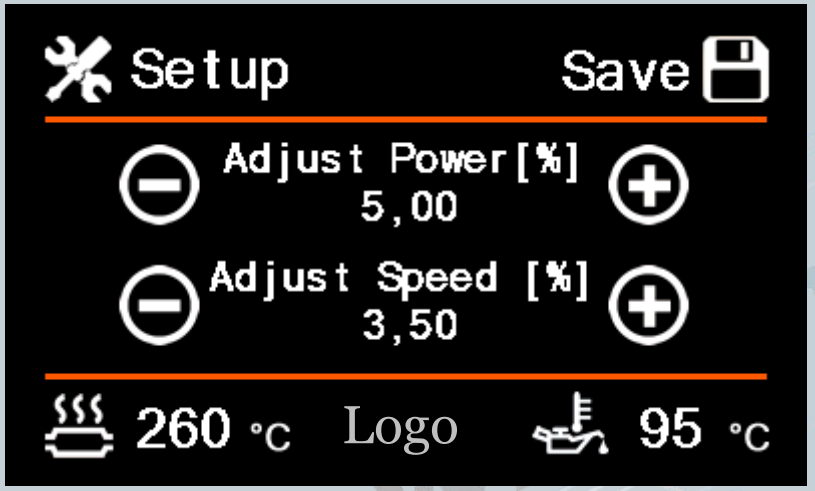


The Save button settings display offset and Car Service are stored. If the car service to "On" as the interface for the workshop is released.
Otherwise, no communication with the vehicle is possible via an external tester!
done with Car Service "Off" the normal display mode.

Accept night design or not.

Operating concept Display

1. Screen Setup -> Adjust



In this setup menu it is possible to correct the displayed power and speed.

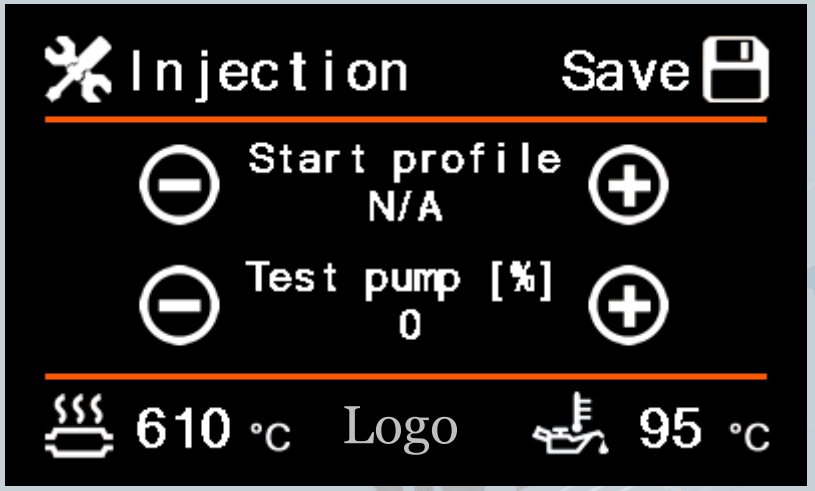
Adjust the displayed performance is usually necessary for a map optimization. the power correction on the display can be set only for the injection profile "OFF". For further injection profile is the WIC configuration software.

Furthermore, the vehicle speed can be adjusted to the GPS speed. A correction is made in percentage terms and in 0.5% increments. A change is effective immediately for this driving cycle.

Example: Displayed speed = 100km / h, V GPS = 102km / h. Thus, a correction of 2% is necessary.

Operating concept Display

1. Screen Setup -> Injection



The Save button saves the setting regarding the "start profile"

The vehicles of the Exx series is set here which injection profile (OFF, ECO, Sport. Performance, Auto) is loaded each time. In the Fxx models the assignment of the injection profile is configured on the driving profiles here. They first select the appropriate driving profile and following with "+" or "-" the desired injection profile.

With each push on "+", the injection amount is increased by 10%. The outputs of the valves are controlled depending on the profile settings for the test. It is recommended to first select the appropriate injection profile and then execute the test function. **The test function will automatically take back the control of 4s if no further action is taken.**

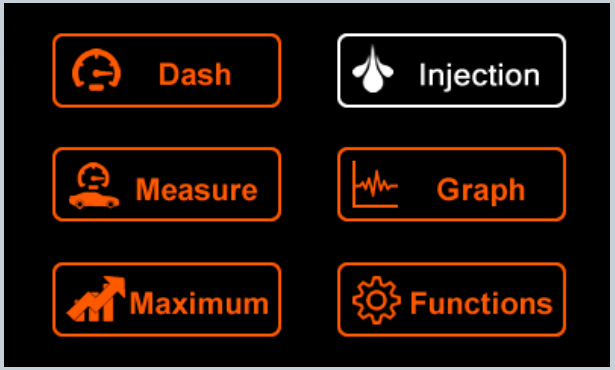
Operating concept Display

1. Operation of the display via the multifunction steering wheel buttons (Only F models)

1. Use the paddles on the MFL can switch quickly between the individual screens. For this purpose, press the rocker slightly up or down.

Up = front, down = back

2. To speed can reach a desired menu, rocker operated all the way up or down. Here, the main menu pops up. Repeat this operation until the selection is at the desired position. In the sub-menu is accessed by an easy operation of the rocker or wait 5 seconds.



Operating concept Display

2. Operation of the display via the multifunction steering wheel buttons (Only F models)

By a long press of 2 seconds of the paddles in the corresponding menu function can be triggered.

2 sec up = read error memory
2 sec up = reset maximum values
2 sec up = In the graph, a recording trigger

2 sec down= delete fault memory

If an exhaust valve was installed at the factory, this can be controlled by "Res" button

Operating concept Display

3. Control of injection profiles by MFL (Only F models)

This feature is only available for vehicles without exhaust flap.

2 sec RES press = switch between injection profile "Off" and "Performance"
Examples: Profile current = Off -> Performance
Profile current = Performance -> Off
Profile current = NOT Off -> Off

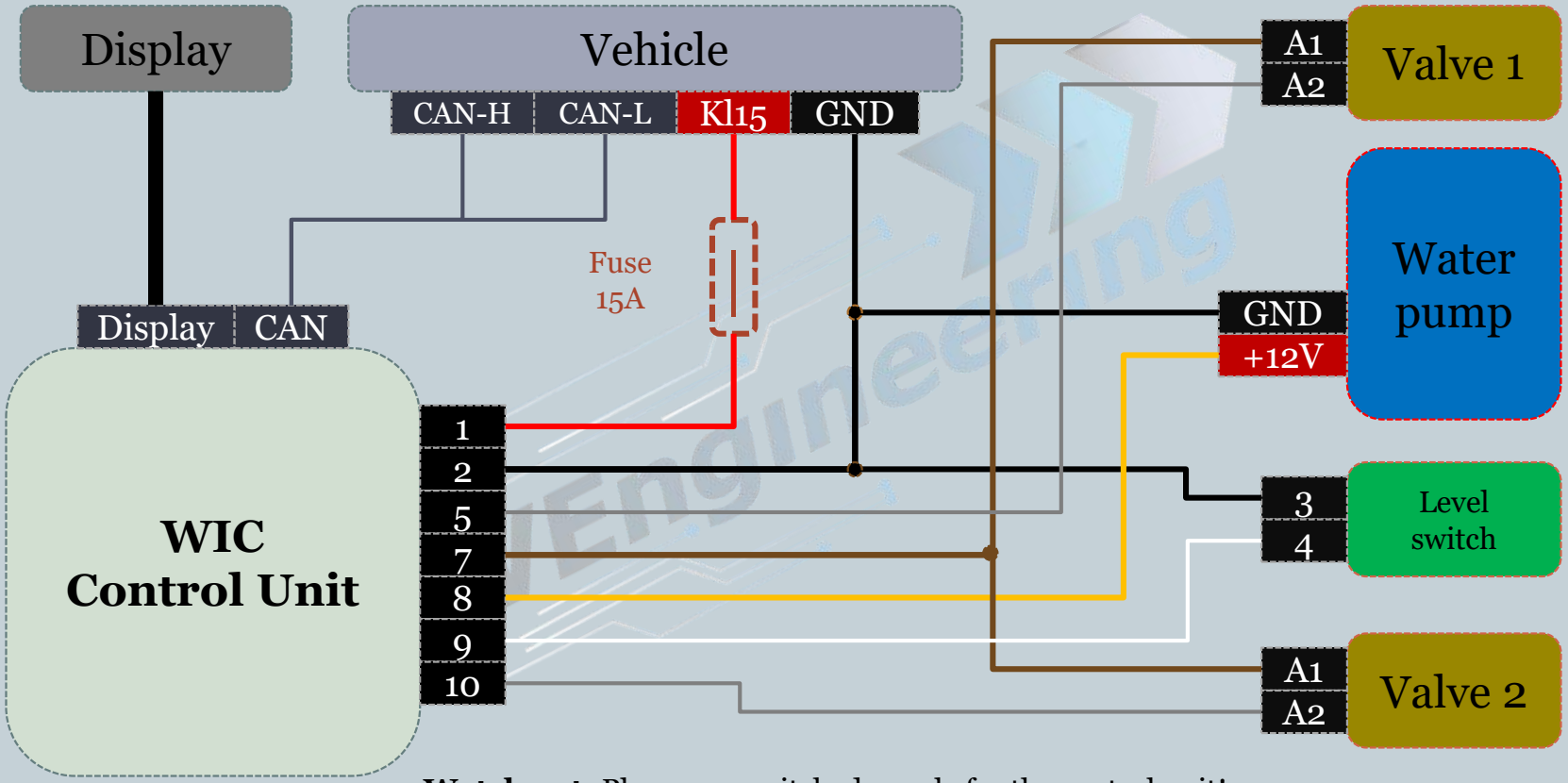
A short press of the RES key continuation by the next injection profile.

Controller wiring diagram

Technical details:

- Output for a water pump (max. 12A)
- Outputs for 2 valves (max. 1A)
- Input for a float switch
- Connector for the touch screen display
- USB interface for parameterization and coding of the control unit
- Vehicle communication CAN high and CAN low
- Optionally, a boost pressure sensor (5mm connector)

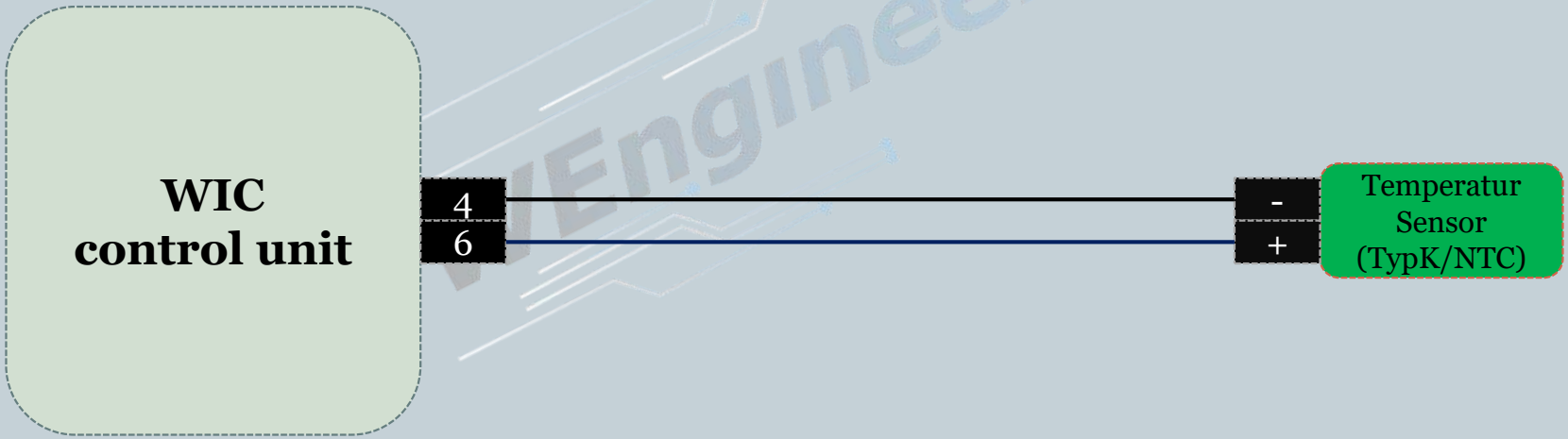
Controller wiring diagram



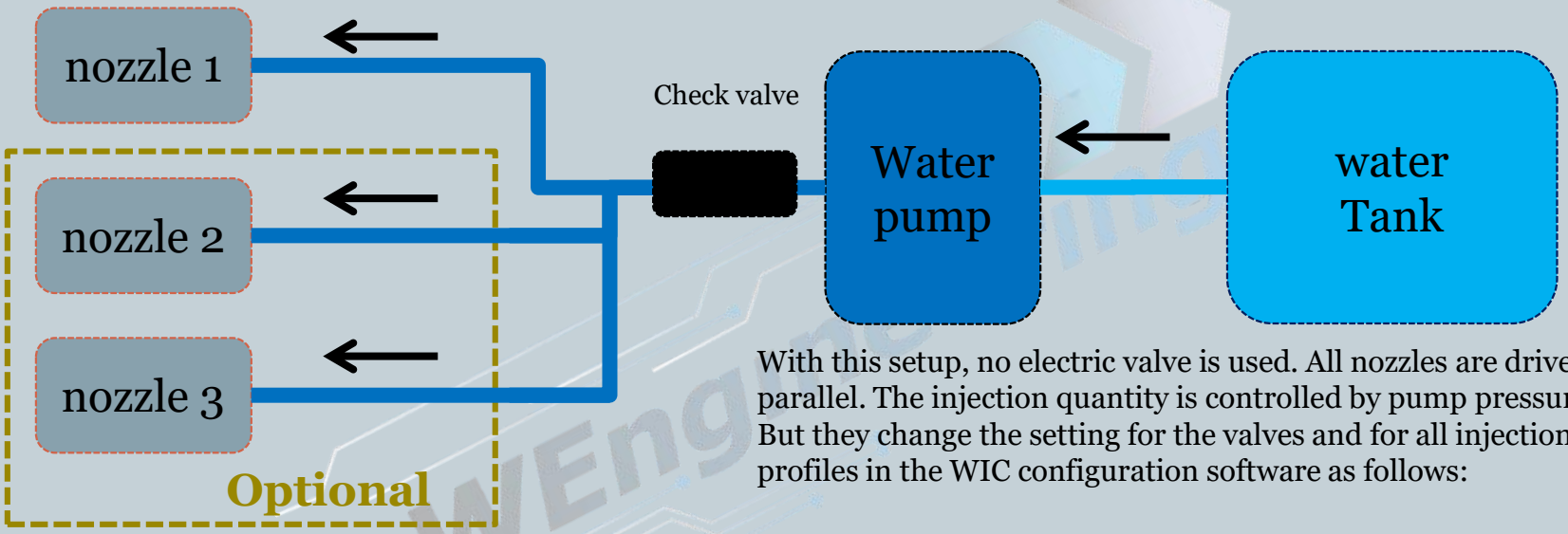
Watch out: Please use switched supply for the control unit!

Controller wiring diagram

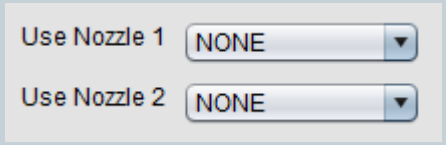
Connecting an external temperature sensor (engine oil or exhaust gas temperature sensor)



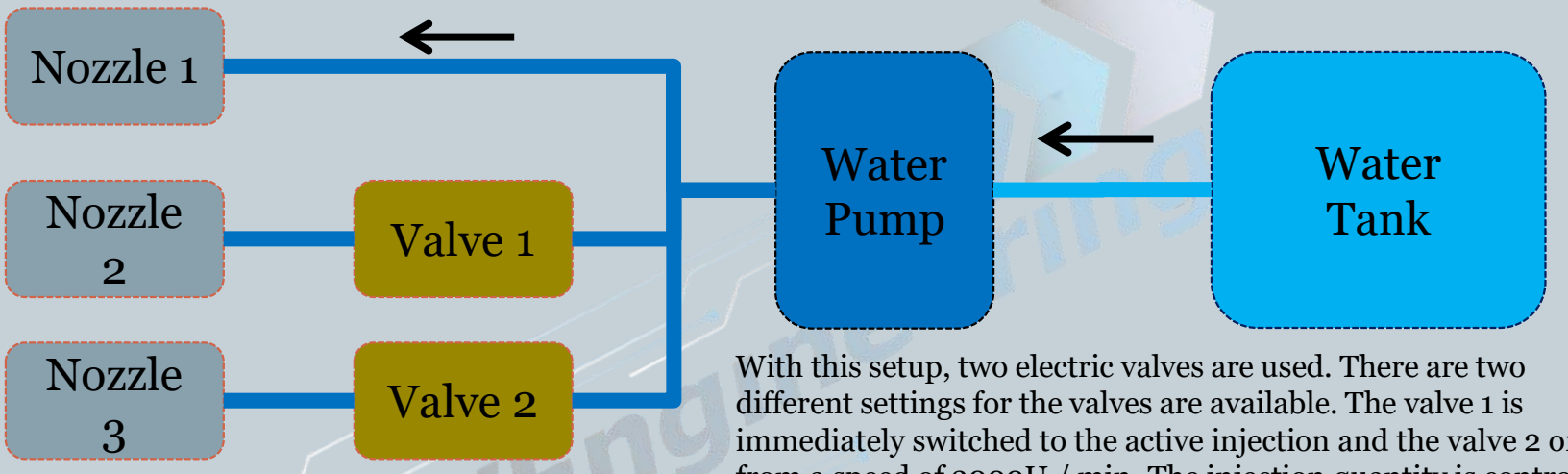
Injection Example 1 Setup



With this setup, no electric valve is used. All nozzles are driven in parallel. The injection quantity is controlled by pump pressure. But they change the setting for the valves and for all injection profiles in the WIC configuration software as follows:



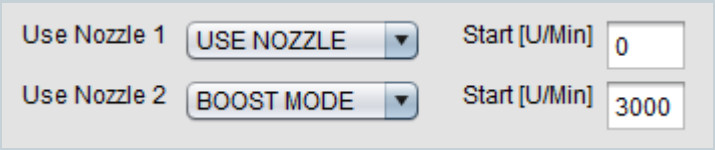
Injection Example Setup 2



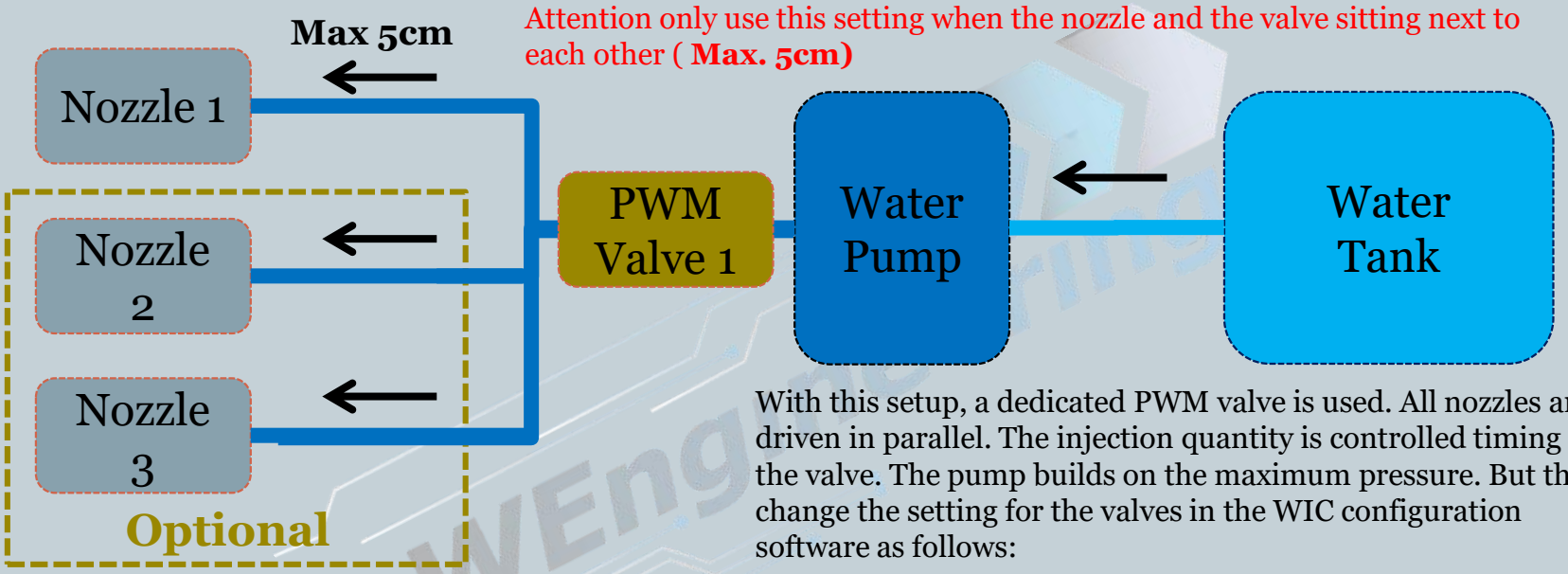
With this setup, two electric valves are used. There are two different settings for the valves are available. The valve 1 is immediately switched to the active injection and the valve 2 only from a speed of 3000U / min. The injection quantity is controlled by pump pressure. But they change the setting for the valves in the WIC configuration software as follows:

pressure line

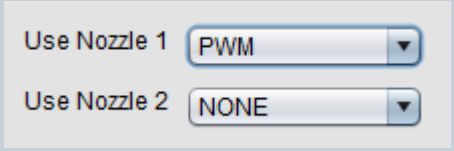
Suction line



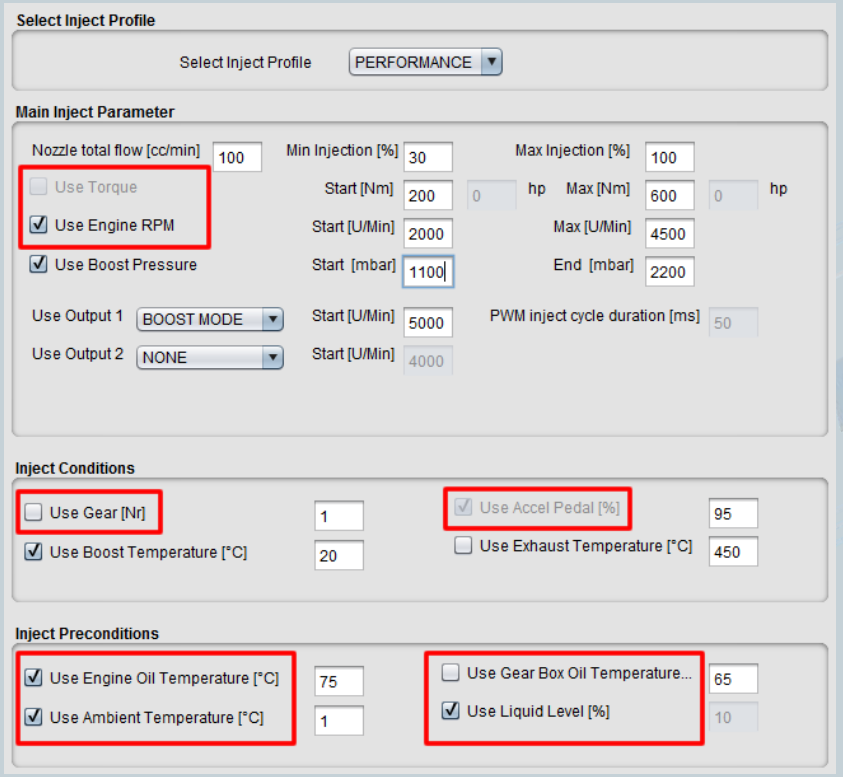
Injection Example Setup 3



With this setup, a dedicated PWM valve is used. All nozzles are driven in parallel. The injection quantity is controlled timing of the valve. The pump builds on the maximum pressure. But they change the setting for the valves in the WIC configuration software as follows:

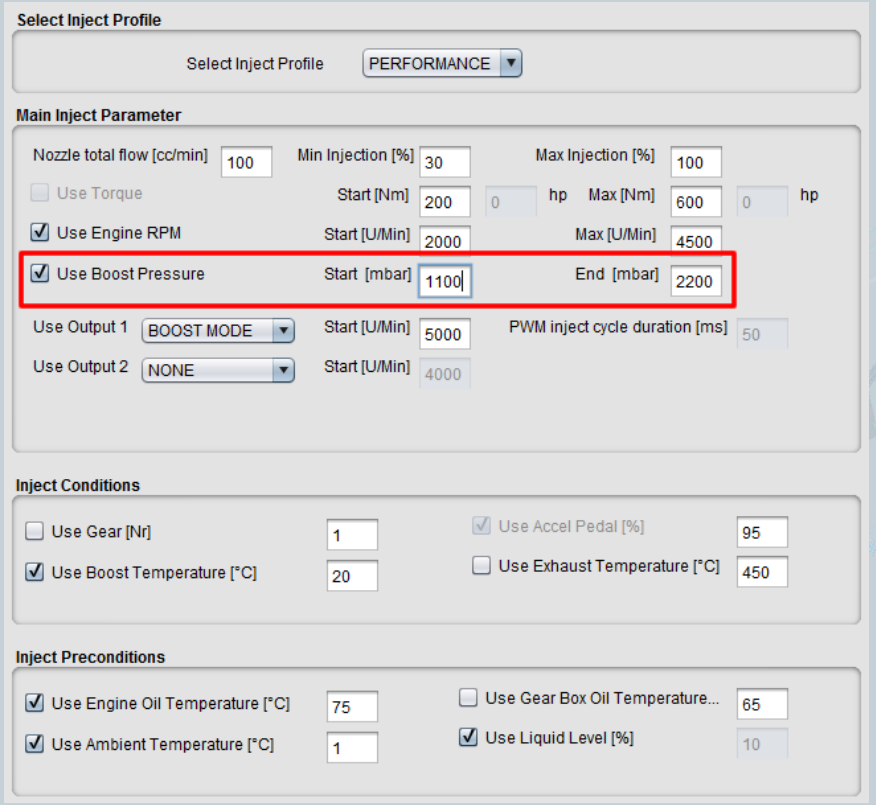


Loging via OBD



The WIC control unit uses 2 types of signals. On the one hand signals which are present on the CAN bus, while also requiring no diagnostic request to the engine control unit. And signals which supply to the engine control unit in accordance with the values only by diagnostic request. Once an external OBD device tries simultaneously with the WIC on the engine control unit to communicate via diagnostics request, a conflict arises. To avoid this they use for the injection only signals which are present on the CAN bus and do not need a diagnosis request. These signals were marked in red in the image. Please do not forget to put the log "Car Service" to "on" before.

Loging via OBD



If you would still like to control the injection via the boost pressure during a log ride, we offer the option of equipping the control unit with an external boost pressure sensor for an additional charge. The connection between the control unit and the charge pipe for the pressure transducer is made using the supplied silicone hose. This option is only advantageous for gasoline engines.

delivery

- Touch screen data display with a plastic housing for mounting on the windshield or in the demister
- WIC (Water Injection Control) control unit
- Wiring harness for the communications port to the vehicle and the display
- Cable harness for connection to (power, water pump, valves 2, float switches)