# trijekt engine control for industrial "hydrogen ready" gas engines

*The new **trijekt gas** fully integrated engine control system for gas engines is now also available for engine manufacturers and plant suppliers for hydrogen engines.*

**Wenden, 12. May 2022 -** trijekt, the German manufacturer of engine control units (ECU) for gasoline and gas engines, introduces new functions of its engine control unit especially for gas-powered industrial engines. The fully integrated control unit is a consistent "hydrogen-ready" development and covers all control functions for engines up to eight cylinders. In addition to the wide range of options and functions for individual adaptation to engines and applications, as well as the integrated connection options for all relevant sensors, the **trijekt gas** engine control system is also capable of controlling engines in bi-gas mode. Operators can run suitable engines on a variety of gas fuels, including hydrogen, at will, with the engine control system always ensuring the optimum parameters and settings.

The ECU can also be connected with CHP control systems via five special function inputs, eight additional digital function inputs and via the CAN bus.

The engine control unit is suitable for use with new engines as well as for retrofitting gas engines already in use. The advantages of the retrofit include the integrated control instead of various individual controls, the optimal operation and the potential extension of the running time.

**Universal control unit for gas and hydrogen engines also in mixed operation**

The **trijekt gas** engine control system regulates the gas supply of engines in a lambda-controlled manner, both with gas mixers and with injection valves, as is common in hydrogen engines in particular. The unit controls the gas supply sequentially, i.e. individually matched to the individual cylinder. In addition to the resulting optimum injection and ignition times at the respective cylinder, this function is particularly important when operating hydrogen engines in order to avoid the typical premature ignition (knocking). If a knock tendency is detected by the sensors on one or more cylinders, the control system reacts selectively and reduces the corresponding ignition angle. Another important function for industrial operation is the detection of combustion misfires, which are determined via the speed sensor on the crankshaft. The

control unit automatically intervenes in the event of misfires, for example changing the energy of the ignition coil on the respective cylinder and reporting an alarm if the ignition faults persist.

The parameters of the motor control can be individually adapted to the engine type. All target and actual values can be transmitted via the modern and universal CAN bus from and to the controller with commercially available programming devices. The system includes a variety of adjustable parameters and control modes, including for torque, load, power or speed control, as required for the generator drive in combined heat and power (CHP) plants, for example. The programming options of the parameters allow almost any industry-typical regulation and control of the engines.

"Gas engines are an established technology in industrial applications or in combined heat and power plants that, in addition to being easy to use, also make a sustainable contribution to global climate targets. As with all internal combustion engines, performance, efficiency and sustainability are mainly achieved through the most intelligent control possible. This is exactly where we have started with our engine controller and offer engine manufacturers and engine operators a solution that has not previously existed in this functional scope in the industrial environment," says Head of Development Dipl.-Ing. Tobias Rulle. "Since our roots are partly in motorsports, we are used to working creatively and with a very high quality standard in order to always achieve the best with our controls. Of course, the trijekt DNA also flows into the development of the new engine control for gas engines."

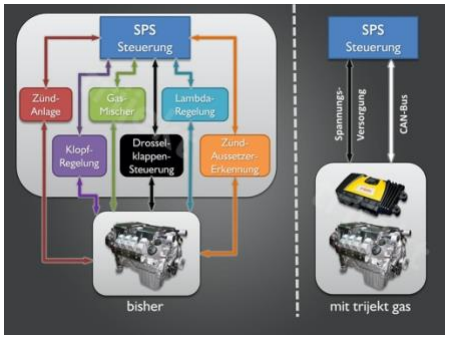
**Individual range of functions in series**

For series production trijekt offers an individually adapted range of functions of the **trijekt gas** engine control. Depending on the area of application, the design of the engine or the type of gas fuel, customers can define the range of functions individually. The advantage is that the price-performance ratio can be adapted to the respective customer requirements and the customer receives and pays for exactly the range of functions that they need.

**Photo material for download**


New engine control **trijekt gas** for gas engines up to 8 cylinders

Link to photo: trijekt-gas-ECU-Bild01.png (2560×1920)




Central engine control with **trijekt gas**

Link to photo: trijekt-gas-comparison.jpg (2560×1920)

**About trijekt**
trijekt GmbH develops and produces fully electronic ignition and injection control systems as well as fully integrated engine control units (ECU) for gasoline and gas engines. The company, which in its early days developed control systems for motor sports, has been based in Wenden-Hünsborn since 1992. Since 2002 trijekt completes its product portfolio also in the field of engine controls for industrial motors. The trijekt application development is consequently done on the in-house test bench to guarantee optimal solutions for every application. trijekt is a competent partner for engine management with quality from Germany, certified by TÜV Hessen according to DIN EN ISO 9001:2015.
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