

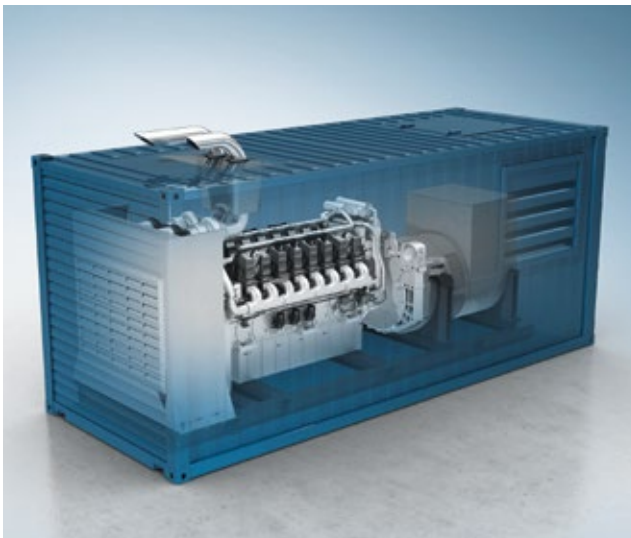
Bosch Engineering

Engine management systems for stationary natural gas engines



BOSCH

Invented for life



The following benefits are among those resulting from the use of Bosch components:

- ▶ **Reliable system operation** due to many years of series application in the automotive industry
- ▶ Development, approval, and manufacture in line with **Bosch quality standards**
- ▶ Extensive **diagnostic possibilities**
- ▶ Unlimited **availability** of components
- ▶ Worldwide component supply
- ▶ All functions are combined into **a single control unit** (ignition, knock control, throttle control, air/gas ratio control)
- ▶ Individual **expansion options** for functions and controls
- ▶ Measurably **high efficiency** through inductive ignition

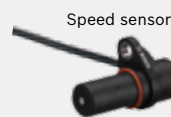
Bosch components from the automotive industry for stationary natural gas engines

Developments in the automotive industry are opening up a wide range of application opportunities that extend beyond the realm of vehicles. For example, the mixture formation and combustion process for block-type cogeneration plants can be optimized so as to achieve a noticeable increase in efficiency.

Using components from the automotive industry enables components with a proven track record to be integrated into existing high-tech systems. Consequently, there are no further obstacles to the effective application of cogeneration plants or gensets in every output category.

Components

Sensors



Speed sensor



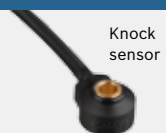
Temperature sensor



Phase sensor



Pressure sensor



Knock sensor

Oxygen sensor

Control unit



Engine control unit



Ignition



Spark plug



Ignition coil

Engine speed or throttle control, air/gas ratio control, ignition and knock control

Measurably high efficiency through inductive ignition

The timing of ignition can be set extremely accurately through the use of an inductive ignition system. In combination with a long spark discharge time, this ignition system makes for optimum combustion and, therefore, a higher level of efficiency.

Effective engine protection through knock control

Effective engine protection requires the reliable identification of knock events and immediate adjustment of the timing of ignition for the individual cylinders. The combination of the latest-generation knock sensors and evaluation electronics from Bosch finds the right balance between optimum efficiency and reliable engine protection.

Efficiency thanks to adjustable speed control

Extremely efficient control of the engine speed is needed to keep the stationary gas engine at its optimum operation point. The tried-and-tested speed control system from the automotive industry is used here to ensure the combustion engine runs at a stable speed.

Eco-friendly thanks to optimum air/fuel control

Existing and future emission limits are placing tough demands on lambda control. This is where the latest generation of Bosch lambda probes really comes into its own – the LSU 4.9 broadband sensor for highly accurate and fast control even in lean operation. Further control functions are available for operation with biogas or special gases.



Best fit for a broad range of application

↑ industrial CHP
↓ micro CHP

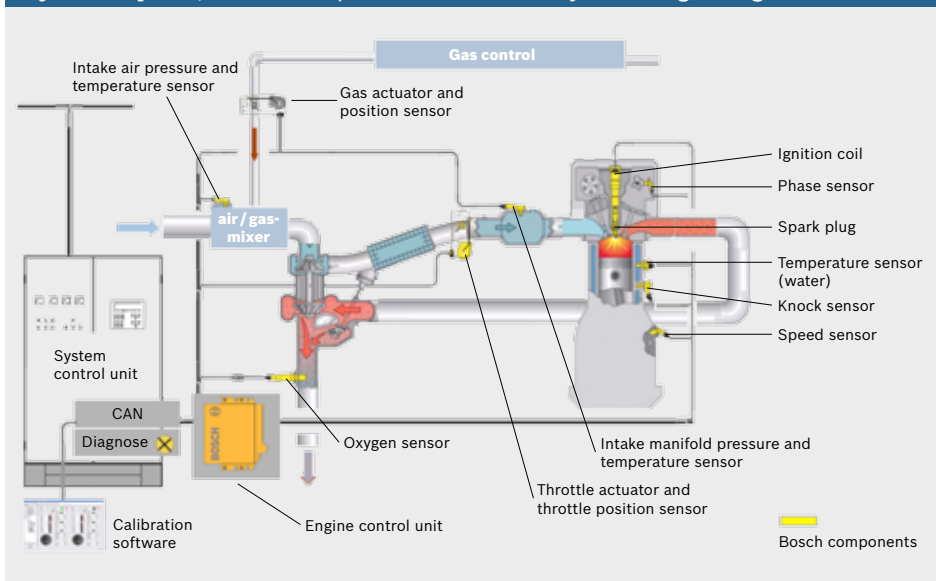


Bosch EGC4
50 kW ... large engines



Bosch ME17.9.6
3 ... 50 kW

System layout | Bosch components in stationary natural gas engines



Bosch Engineering GmbH
Robert-Bosch-Allee 1
74232 Abstatt
Germany

Contact: Christoph Lehmann
Phone: +49 (0)7062/911-6119
E-mail: Christoph.Lehmann@de.bosch.com

Bosch Engineering North America
38000 Hills Tech Drive
Farmington Hills, MI 48331-3417
United States
Phone: +1 248 876 6997

Bosch Engineering K.K.
Queen's Tower C 18F,
2-chome 3-5, Minatomirai,
Nishi-ku, Yokohama-shi
Kanagawa, 220-6218
Japan
Phone: +81 45-650-5610

www.bosch-engineering.com

Printed in Germany
292000PORP-C/CCA-201404-En