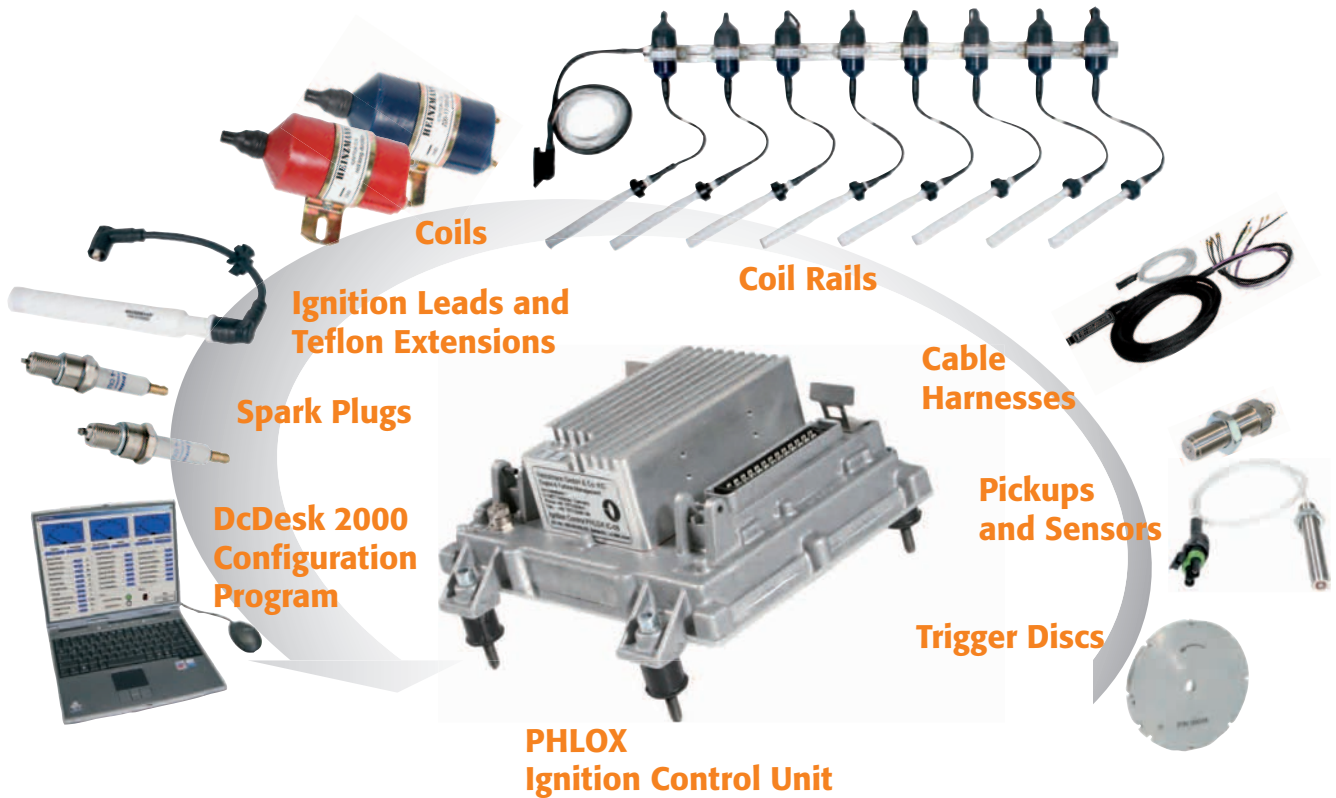


PHLOX

Ignition Control Systems



- ✓ Complete ignition system
- ✓ Precise ignition timing
- ✓ Increased spark plug durability
- ✓ Easy integration via CAN
- ✓ On-board diagnostics
- ✓ Up to 16 cylinders
- ✓ Master-Slave operation possible for up to 24 cylinders



PHLOX

Ignition control systems

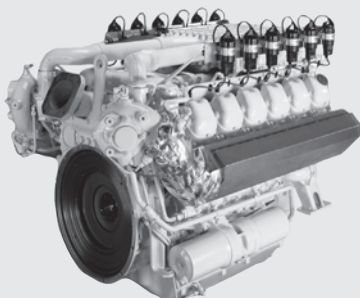
As it triggers the combustion process of the air-fuel mixture, the ignition system has major influences on performances and emissions of gas fuelled engines. Thus it plays an important role in modern gas engine management systems.

Based on HEINZMANN's many years of experience in the field of gas engine control and monitoring systems, HEINZMANN offers complete solutions tailored for all types of gas engines. All needed components, such as ignition control units, coils, cable harnesses, trigger discs, sensors and spark plugs, are available in an integrated solution. The HEINZMANN ignition kits meet all customer requirements. The customers can choose from a variety of system components.

The core of the system is a flexible high-energy capacitive spark ignition control unit designed for up to 16-cylinder engines. It provides precise ignition timing and high ignition capabilities. Its variable energy levels and on-board diagnostics help increase the spark plugs durability by reducing wear.

At the top of the family range and for bigger engines with up to 24 cylinders, HEINZMANN offers the IC24 ignition system, based on 2 PHLOX IC12 in Master-Slave operation.

PHLOX ignition systems guarantee best performance as part of the HEINZMANN gas engine management solution PANTHEON.



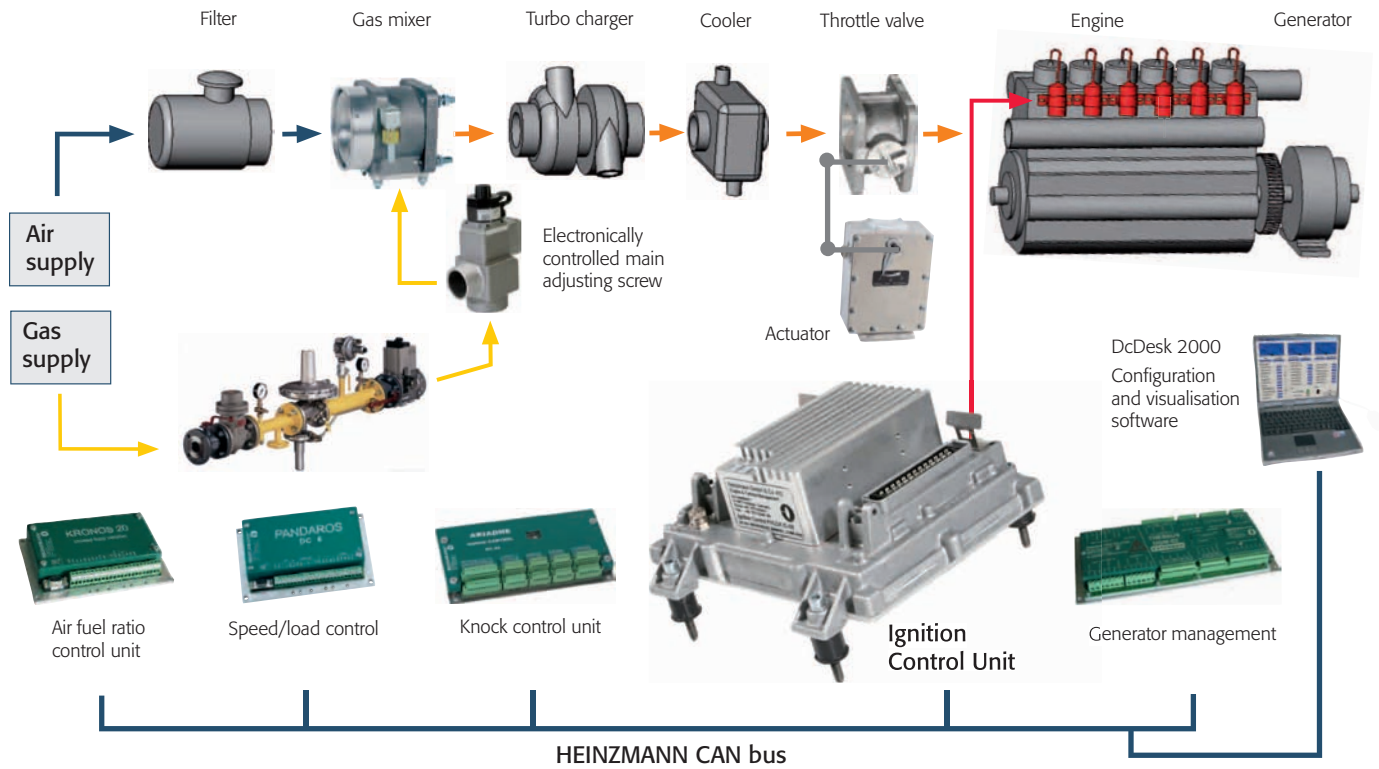
PHLOX Benefits

- ✓ **Complete system from one source**
- ✓ **Configurable solution**
- ✓ **Precise ignition timing**
- ✓ **High ignition capabilities**
- ✓ **Hall or inductive pickups to cover all engine configurations**
- ✓ **Variable energy level to reduce spark plug wear**
- ✓ **On-board diagnostics for safe operation**
- ✓ **I/Os and CAN bus available for simple integration**
- ✓ **Customised cable trees**
- ✓ **Variety of coils suitable for all applications and fuels**

PHLOX SYSTEM INTEGRATION

PHLOX control units come with a range of I/Os for an easy integration into engine management systems. An analogue input for spark angle offset can be connected to knock control systems such as HEINZMANN ARIADNE.

A CAN bus connection is provided for extended monitoring and control features, allowing for example cylinder individual spark angle control. All common CAN protocols are supported (DeviceNet, CANopen, SAE J1939). PHLOX can be perfectly combined with the different KRONOS systems for gas engine control.



PHLOX SYSTEM COMPONENTS

PHLOX control units IC series

PHLOX control units are highly flexible high-energy capacity spark ignition control devices. They are available in 3 versions up to 8, 12 or 16 cylinders.

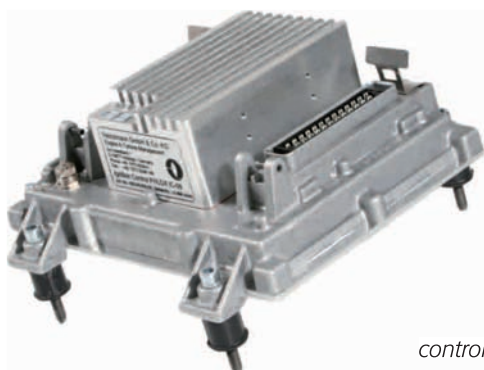
For accurate timing control, the units can process up to 2 Hall or inductive pickups. They support all usual engine pickup configurations like single pickup on camshaft trigger disk or double pickup on crankshaft (position) and camshaft (reference). 3 LEDs are provided to visualise the actual status of the ignition unit and to allow quick diagnostics. A separate plug is available to connect HEINZMANN DcDESK 2000 software or a hand programmer to perform detailed configuration, monitoring or diagnostics.

To reduce spark plug wear, PHLOX control units offer 32 levels of ignition energy in a range of 25 to 280 mJ. Depending on application, the energy

level can be fixed or adjusted as a function of speed, load or on-board spark diagnostics. Optionally and depending on pickup configuration, the detected misfiring level can automatically adapt the energy level to the engine needs and help extend usable spark plug life while assuring best engine performance. Its flexibility and I/O possibilities allow easy integration into every gas engine management system and guarantee economical and individual solutions for OEMs, packagers and retrofit customers.

Technical information control units

Number of cylinders	Up to 8 (IC-08) Up to 12 (IC-12) Up to 16 (IC-16)
Power supply	24 V (12 - 32 V) DC
Ambient temperature	-40 - +95 °C
Engine speed	30 - 3000 rpm
Spark duration	300 - 600 µs
Energy level	25 - 280 mJ (32 levels)
Pickups	2 (Hall or inductive)
Analog input	1 (0 - 5 V/4 - 20 mA)
Digital input/output	2 (low/high side)
Communication/protocol	Can2.0B SAE J1939, CANopen, DeviceNet
Configuration tool	HEINZMANN DcDesk 2000, Hand programmer



PHLOX
control unit IC 08

PHLOX pickups

HEINZMANN offers inductive sensors and Hall effect sensors with different lengths and threads.



Cable harnesses

HEINZMANN can provide standard ready-to-use input and output cable harnesses. On demand, these can be tailor-made to fulfil all engine and customer needs.



PHLOX coils

HEINZMANN coils are available in two versions with either standard or extended spark durations. Thus, they can be used in all applications and with all gas types. They are compatible with other widely-used similar products.



PHLOX ignition leads

High-quality Teflon made spark plug boots are high-temperature resistant and ensure high-voltage resistance and best insulation against spark flashover. They are particularly suitable for lean burn applications.



PHLOX wiring rails

With HEINZMANN completely wired ignition rails, coils are directly mounted on the rail. Cables are protected inside the rail profile. This ensures a long lifetime and reliable operation. HEINZMANN wiring rails are delivered with all required mounting material for fast and easy installation.



PHLOX trigger discs

Trigger discs are available in different designs for any application.



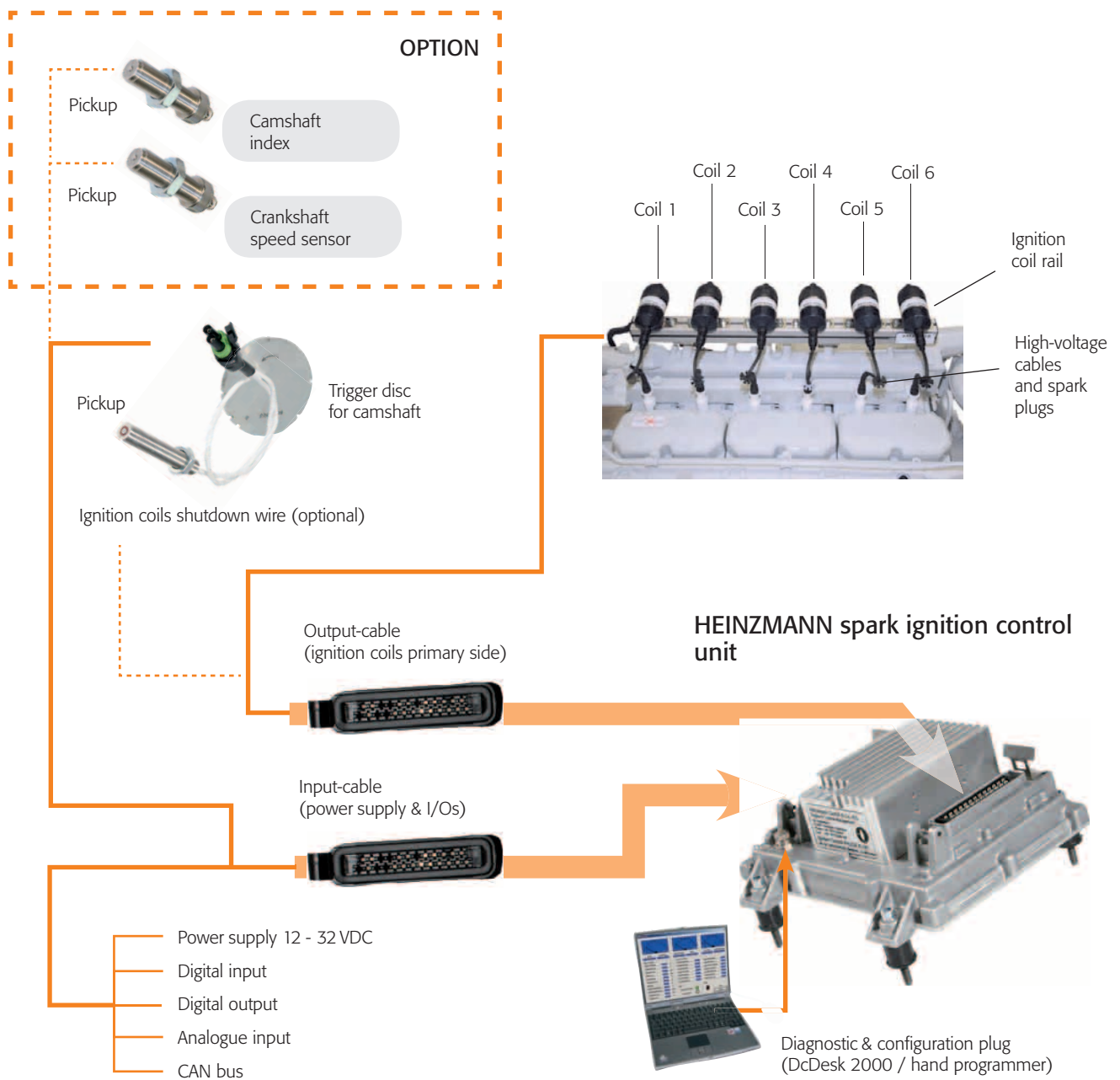
PHLOX spark plugs

The special industrial spark plugs for stationary gas engines have iridium reinforced electrodes to provide long life and reliable operation.



DcDesk 2000 configuration and visualisation tools

Thanks to its design as a Windows®* program, the HEINZMANN DcDesk 2000 software offers a lot of graphical features, printouts and records of data for documentation purposes. Using DcDesk 2000, the parameters of any connected device may be adjusted while the system is running and the response can be observed directly. It is also possible to prepare a data set whilst not connected with the device and to download it later on.



HEINZMANN PHLOX: configuration for 6-cylinder engine

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ELECTRONIC FUEL INJECTION



DIGITAL AND ANALOGUE CONTROL SYSTEMS



HYBRID TECHNOLOGY



GENERATOR MANAGEMENT



ELECTRIC AND HYDRAULIC ACTUATORS



SAFETY SYSTEMS



ENGINE EMISSION MANAGEMENT



TURBINE MANAGEMENT



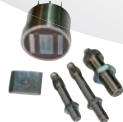
GAS ENGINE MANAGEMENT



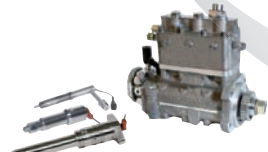
DUAL FUEL CONTROLS



SENSORS AND SOLENOIDS



COMMON RAIL



CONFIGURATION TOOLS

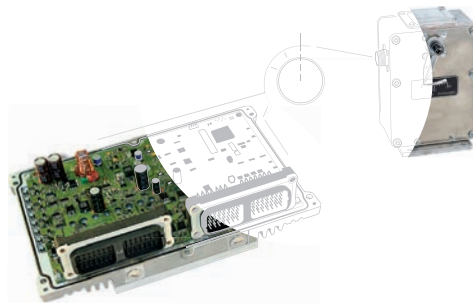


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Energy requires Control



Quality & Precision since 1897



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