Digital Control Systems
All Components from one Supplier

- Turbine Controls
- Dual Fuel Controls
- Gas Engine Controls
- Knock Controls
- Ignition Controls
- Generator Controls
- EFI Controls
- Speed Controls
- Communication Tools

✔ Electronic fuel and conventional injection
✔ Wide range of system components
✔ All engine & turbine types and power ranges
✔ Multiple applications

HEINZMANN®
Energy requires Control

Engine & Turbine Management
DIGITAL CONTROL SYSTEMS

Comprehensive range
HEINZMANN’s digital control systems are acknowledged for their high flexibility, which meets all customer needs and requirements. They are known for their long life cycle and proven reliability and can be used for any size, type or make of machine. All digital control units in the HEINZMANN range offer excellent governing performance.

Our strength is customised solutions tailored to your particular application, which we offer besides our standard system solutions. This includes solutions for electronic fuel injection as well as for conventional injection. They are used for marine, locomotives, gensets, industrial vehicles and for hybrid drives in construction vehicles.

HEINZMANN develops, produces and distributes all system components like controls, actuators, injectors and sensors. With the HEINZMANN DcDesk 2000 programming software the user can configure and adjust the entire range of our digital controls. This grants optimal adaption to multiple applications. Thus our customers benefit from a wide range of complete solutions from one supplier.

Benefits
✓ Proven reliability
✓ High flexibility
✓ Long life cycle
✓ High performance
✓ One configuration software for all systems
✓ All components from one supplier

SYSTEM SOLUTIONS

Alongside the control unit as the core of every control solution HEINZMANN delivers all system components consisting of actuators or injectors and a wide range of sensors and pickups. Thus HEINZMANN control systems cover engines of any power range, combining a control unit with an adequate actuator or injector. The controls differ in controllable engine power range and number and type of in- and outputs.

The conventional solutions are available with rotary or linear actuators, providing a position feedback for accurate actuator control. All systems perform external communication via CAN protocol. Most of the control units are available in different protection grades for direct mounting or switch cabinet installation. They guarantee economical and individual solutions for OEMs, packagers and retrofit customers.

HEINZMANN control systems
► Governing/control: speed, load, gas emission, ignition, knock
► Engine types: diesel engines, gas engines, dual fuel engines, hybrid engines
► Turbine types: gas turbines, water turbines, steam turbines
► Applications: power generation, locomotive, marine, industrial vehicles

Any size, type or make of machine


**ELECTRONIC FUEL INJECTION CONTROLS**

**DARDANOS MVC series**
The DARDANOS units are designed as universal speed controllers for engines with electronically controlled injection systems. These control units drive solenoid activated diesel and gas injection systems. Injection timing and duration can be mapped according to engine designer’s requirements.

- Range of EFI controls, for 4, 6, 8 and up to 20 cylinders

**Common rail components**
HEINZMANN delivers the full package for complete common rail injection systems like injectors, high-pressure pumps, rails and high-pressure pipes.

*For further information please refer to the leaflet ODYSSEUS Common Rail Solutions.*

**CONVENTIONAL INJECTION CONTROLS**

**PRIAMOS DC 1-03**
HEINZMANN’s digital control for medium and large-sized engines and turbines in an IP 55 enclosure that can drive HEINZMANN’s most powerful actuators rated up to 180 Nm torque.

- Speed control unit for medium and large engines and turbines

**HELENOS DC 2-02**
HEINZMANN’s digital control for medium-speed engines and turbines. The HELENOS unit forms the core control of application-dedicated systems for marine, locomotive and turbine applications. External communication via variable CAN protocols and Modbus.

- Speed control series for medium speed engines and turbines

**PANDAROS DC 6**
HEINZMANN’s small but powerful digital control for high-speed engines, which drives HEINZMANN actuators rated up to 40 Nm torque.

- High-speed engine controls for small engines
THESEUS DGM 02
HEINZMANN’s digital generator control, management and protection system. Suitable for stand-alone and mains parallel operation with real kW and reactive kVAR load management functions for soft loading, load sharing and import/export control. External communication via CAN protocols or Modbus.

ORION DG 3005.10
Digital control unit integrated in actuator
ORION DG 3005.10 consists of the digital control unit DC10 integrated into the actuator StG 3005.

ORION series
ORION is a generation of HEINZMANN control systems for small and medium-sized engines with an optimal price-performance ratio and high efficiency.

ORION DC 9
Digital control unit
ORION DC 9 cost-effective speed control units for small and medium-sized combustion engines.

ORION DC 10
Digital control unit
The economically advantageous ORION DC 10 control unit, with protection grade IP 66, is tailored for direct engine mounting without panel and can be used for small combustion engines.

Dual Fuel Controls
ARTEMIS series DC 1-04
HEINZMANN’s digital controls for dual fuel engines which drive two actuators for diesel and gas fuel metering. Enclosure meets typical gas environment requirements.
PHLOX control units IC series

PHLOX control units are highly flexible high-energy capacity spark ignition control devices. Its flexibility and I/O possibilities allow easy integration into any gas engine management system.

- Ignition control versions
  - for 3, 8, 12 or 16 cylinders

KRONOS 40 gas injection control unit

KRONOS 40 is a speed/load control system for gas engines with gas injection valves controlled by solenoid valves. The system can handle cylinder outputs from 100 to 600 kW and up to 20 cylinders.

KRONOS 20 air fuel ratio control

KRONOS 20 is an electronically controlled AFR trim control system that allows speed/load dependent lambda values to be set within a certain range, thereby improving the engine behaviour under all operating conditions. In Closed Loop Lambda is maintained by the engine output signal. Variations in ambient conditions (such as gas quality and pressure) are fully compensated.

- Gas engine controls

KRONOS 30 M full authority lambda control

The KRONOS 30 M is a full authority air fuel ratio control system including speed/load control. The modular concept is very flexible and can be extended to accommodate applications with larger variations in gas-, engine- and ambient parameters. At the core of the system there is ELEKTRA, a high-precise gas metering unit as part of an air fuel ratio control system. It is available in different configurations. With its integrated controller it can be extended to a stand-alone lambda control system for any gas quality.

- Ignition control versions
  - for 3, 8, 12 or 16 cylinders

ARIADE knock control

Used as part of a gas engine management system, ARIADE can act on ignition AFR and load governing, implementing a real-time knock control. It offers advantages in terms of engine protection, performance and cost.

- Knock control unit

ELEKTRA gas metering unit

ARIADE knock control unit

KRONOS 40 control unit

PHLOX control unit

KRONOS 20 AFR control unit

KRONOS 20 control unit

ARIADE knock control unit

KRONOS 30 M full authority lambda control

KRONOS 40 gas injection control unit
ACTUATORS

HEINZMANN provides a wide range of actuators including direct working actuators, actuators with gears and actuators with integrated positioning electronics and brushless motors. We have a large range of actuator models covering practically any application and sector. This means that customers find a product tailored to their exact requirements.

<table>
<thead>
<tr>
<th>Actuator</th>
<th>SIG 3005</th>
<th>SIG 2005</th>
<th>SIG 2010</th>
<th>SIG 2040</th>
<th>SIG 2040 DP</th>
<th>SIG 2080</th>
<th>SIG 2120</th>
<th>SIG 6</th>
<th>SIG 10</th>
<th>SIG 16</th>
<th>SIG 30</th>
<th>SIG 40</th>
<th>SIG 64</th>
<th>SIG 90</th>
<th>SIG 180</th>
<th>LA 25</th>
<th>LA 30</th>
<th>LA 35</th>
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<tbody>
<tr>
<td>Angle/Stroke</td>
<td>53°</td>
<td>36°</td>
<td>36°</td>
<td>36°</td>
<td>36°</td>
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<td>68°</td>
<td>36°</td>
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<td>42°</td>
<td>42°</td>
<td>28</td>
<td>44</td>
<td>64</td>
<td>90</td>
</tr>
<tr>
<td>Max. torque (Nm) / force</td>
<td>0.55</td>
<td>0.8</td>
<td>2 (1.4)</td>
<td>6.5</td>
<td>6.5</td>
<td>11 (8)</td>
<td>13</td>
<td>6</td>
<td>10</td>
<td>15</td>
<td>28</td>
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<td>64</td>
<td>90</td>
<td>180</td>
<td>25 N</td>
<td>30 N</td>
<td>35 N</td>
</tr>
<tr>
<td>Steady state torque (Nm) / force</td>
<td>0.35</td>
<td>0.26</td>
<td>0.67 (0.45)</td>
<td>2.2</td>
<td>2.2</td>
<td>3.7 (2.6)</td>
<td>4.3</td>
<td>2</td>
<td>3.3</td>
<td>5</td>
<td>9.3</td>
<td>14.7</td>
<td>21</td>
<td>30</td>
<td>60</td>
<td>20 N</td>
<td>24 N</td>
<td>28 N</td>
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</table>

PRIAMOS DC1
HELENOS DC2
PANDAROS DC6
DC 11
ORION DC9
ORION DC10

2Q = unidirectional/spring return; 4Q = bidirectional
For further information please refer to leaflet or manual ACTUATORS.

COMMUNICATION TOOLS

DcDesk 2000

HEINZMANN’s Windows® based software to be used with our digital controls. It supports system configuration and parameter settings and allows programming control functions. Additionally it provides various display and recording functions as for example error logs to assist monitoring and system diagnosis.

PANOPTES HMI

PANOPTES stands for HEINZMANN’s human machine interface (HMI) device. This display and operating device is suitable for integration in cabinet doors and control panels.

Hand-held programmer

HEINZMANN’s cost-effective alternative for digital control accessibility for conventional control units. All control parameters can be adjusted, all measurements can be displayed in an easy way. It is also helpful for a fast diagnosis of errors.
**APPLICATIONS OF HEINZMANN DIGITAL CONTROL SYSTEMS**

**Generator management**
HEINZMANN's digital power management control THESEUS is tailored for the control of generator sets in simple and advanced applications. THESEUS offers a seamless, integrated control solution and includes protection and monitoring functionality. Connectivity to HEINZMANN digital control units DARDANOS, PRIAMOS, HELENOS and PANDAROS or foreign control systems and the option to communicate with supervisory systems adds to its versatility.

**Locomotives**
HEINZMANN's PEGASOS locomotive control systems meet the specific requirements of the railroad market for both diesel-hydraulic and diesel-electric drives. The included speed and load control has galvanically isolated inputs/outputs and power supply to protect the internal control electronics from the adverse locomotive electrical environment. Available with conventional fuel injection as well as with electronic fuel injection (EFI) systems the mainly used control units are HELENOS and DARDANOS.

**Marine**
POSEIDON digital control systems for marine operation are available for both engines with conventional and electronic fuel injection systems, including redundant EFI solutions. They are based on PRIAMOS, HELENOS or DARDANOS controls. POSEIDON is used for main engines, auxiliary engines, diesel-electric systems and master-slave applications. It obviously meets the requirements of the major marine classification societies.

**Dual fuel engines**
HEINZMANN's ARTEMIS control system provides the speed/load dependant diesel/gas conversion ratio function and drives both the diesel and gas metering device in accordance with the mapped fuel requirements. ARTEMIS is available with gas mixer based gas fuel systems as well as with gas admission valves for large low speed engines. For vehicle applications we provide also port injection solutions for best dual fuel conversion.

**Turbines**
OLYMPUS is HEINZMANN's dedicated turbine control system based on HELENOS, which covers both simple and complex turbine installations. Standard liquid and gas metering valves are integrated with our actuators for their reliable sealing and cleaning features. Both turbine manufacturers and turbine users take advantage of HEINZMANN's versatile control systems.

**Industrial vehicles**
HEINZMANN speed governors are designed to satisfy special requirements in machines or special purpose vehicles. HEINZMANN control units like HELENOS PRIAMOS and PANDAROS are well proven in building machines, cranes, agricultural machines, special purpose vehicles and in mining vehicles. The entire control solution is called ARES.

For further information please refer to the respective product leaflet.
Selection of HEINZMANN products

Trusted for over 100 years

Quality & Precision since 1897

www.heinzmann.com