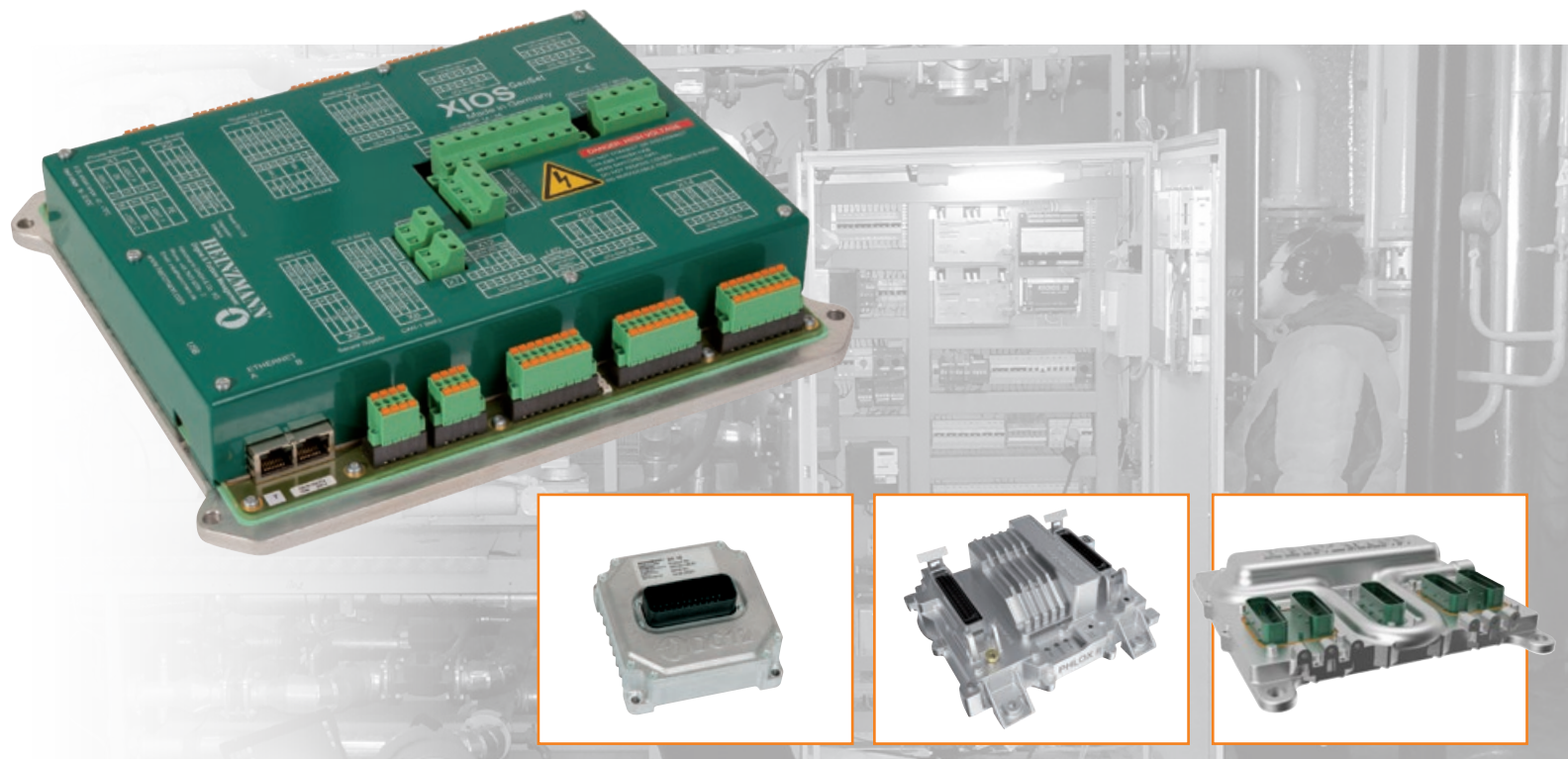




DIGITAL CONTROL SYSTEMS



For Diesel, Gas & Dual-Fuel Engines, Generators & Turbines

- ▶ All engine & turbine types and power ranges
- ▶ Electronic fuel injection controls
- ▶ Controls for conventional injection
- ▶ Marine, locomotive, vehicle and stationary applications
- ▶ Wide range of system components
- ▶ All components from one supplier

Engine & Turbine Management

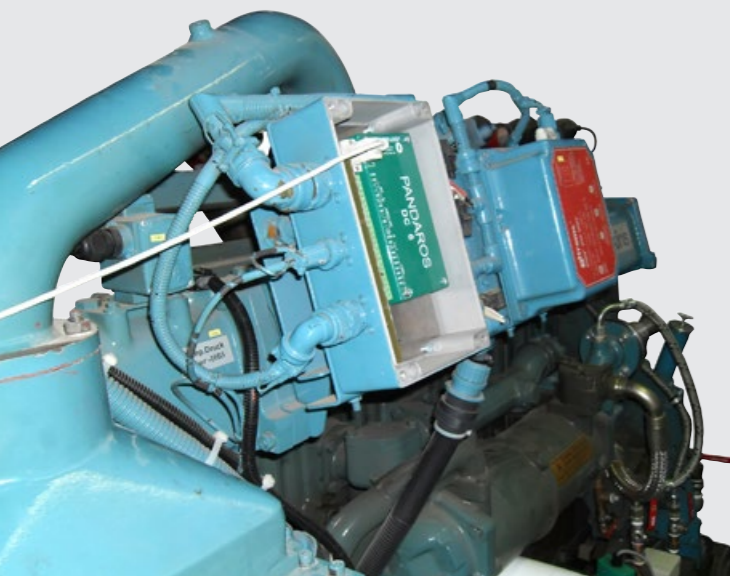
DIGITAL CONTROL SYSTEMS

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, power management and industrial vehicles.

HEINZMANN develops, produces and distributes all system components like controls, actuators, injectors and sensors. With the HEINZMANN DcDesk configuration & visualisation 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 pick-ups. 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 inputs and outputs.

The conventional solutions are available with rotary, linear or electro-hydraulic 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 degrees of protection for direct mounting or switch cabinet installation. They guarantee economical and individual solutions for OEMs, packagers and retrofit customers.

- ✓ **All engine types: diesel, gas, dual-fuel engines and gensets**
- ✓ **All turbine types: gas, water and steam**
- ✓ **Governing, control & monitoring: speed, load, ignition, knock, emission and electric power generation**
- ✓ **Application range: power generation, locomotive, marine, industrial vehicles**

Any size, type or make of machine

MODULAR UNIVERSAL CONTROLS

XIOS

With XIOS, HEINZMANN presents an entirely new generation of controller and monitoring unit.

Unlike conventional controllers, the application-specific configurable modular XIOS package offers a previously unmatched breadth of functions and features. XIOS is based on advanced control technology: to relieve the CPU, a logic chip (FPGA) developed by HEINZMANN takes control of all I/O functionality, leaving more computing power for PLC functions or processor intensive regulation tasks. Specific adaption to application is achieved by a variety of plug on modules tailored for different tasks.

The result is a scalable, very flexible and cost effective control unit, which features various and numerous I/Os. Additional factors are custom configuration and multifunction. XIOS controls and monitors manifold different types of engines, such as diesel, gas and dual-fuel engines plus generators and turbines.

- ✓ **Multifunctional and modular universal engine controller and expanded I/O system**



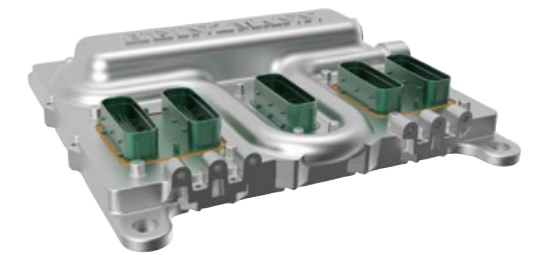
XIOS UC 1

ELECTRONIC FUEL INJECTION CONTROLS

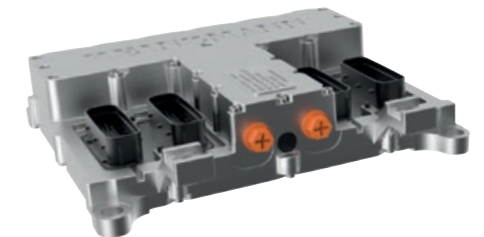
DARDANOS MVC series

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, 6, 8 and up to 24 cylinders**



DARDANOS MVC 01-24



DARDANOS MVC 03-8



DARDANOS MVC 04-6

Common rail components

HEINZMANN delivers the full package for complete common rail injection systems like HDP-K4 plus injectors, high-pressure pumps, rails and high-pressure pipes.

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

DIGITAL CONTROLS

HEINZMANN digital control units for conventional injection are universally applicable for diesel engines, gas engines and other prime movers. In addition to their basic purpose of speed control, these governors are capable of performing a multitude of other tasks and functions. Combined with HEINZMANN's powerful and proven actuators they offer reliable systems for engine control and management.

PRIAMOS DC 1-03 / DC 1-04

Digital control for medium and large-sized engines and turbines in a IP55 enclosure that can drive HEINZMANN's most powerful actuators rated up to 300 Nm torque. Configurable with program software DcDesk. It has assignable I/Os with dedicated cable harness. External communication via various CAN protocols. With the PRIAMOS variant DC 1-04 a maximum of even 3 actuators can be controlled.

- ✓ Speed control unit for medium and large engines and turbines

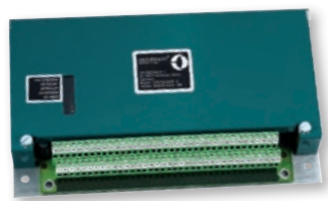


DC 1-03

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



DC 2-02

PANDAROS DC 6

HEINZMANN's small but powerful digital control for high-speed engines, which drives HEINZMANN actuators rated up to 30 Nm torque.

- ✓ High-speed engine controls for small engines



DC 6

PANDAROS DC 6.200

The DC 6.200 is HEINZMANN's low current version of digital PANDAROS controls. With assisting actuator systems of hydraulic type for instance torques up to 20 Nm are possible. DC 6.200 hardware is well adapted for small actuator currents therefore it comprises an appropriate software version.

- ✓ Low current high-speed engine control for small engines



DC 6.200

DC 8

Heart of the digital control DC 8 is a very rapid and highly powerful microprocessor.

DC 8 provides speed governor functions as well as positioner abilities. Besides that DC 8 can be applied as peripheral module in control systems to extend I/O abilities of main controller and drive another actuator.

- ✓ Speed control with positioner abilities



DC 8

ORION series

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

ORION DC 7

HEINZMANN's DC 7 is a digital speed control for industrial vehicle application. Robust and enduring, resistant to any substance in engine environment. Besides speed control it provides various additional functions.

- ✓ Speed control for on and off-road vehicle diesel engines



DC 7

ORION DC 9

DC 9 is a highly efficient and flexible but still cost-effective speed control unit with first-rate control performance on small and medium-sized combustion engines.

- ✓ Speed control for small and medium-sized engines



DC 9

ORION DC 10

The ORION DC 10 control unit with protection degree IP66 is meant for direct engine mounting. Small in size, extremely enduring with tailor-made functionality but economically advantageous, it is ideal for speed control of small combustion engines.

- ✓ Speed control for direct mounting at small combustion engines



DC 10

ORION DC 12

DC 12 is HEINZMANN's latest member of the ORION family and can be used for small and medium-sized high-speed engines.

This highly efficient speed governor is based on a 16-bit microprocessor. Small in size it is intended for direct engine mounting.

- ✓ Speed control for direct mounting at small and medium-sized engines, 4Q-operation



DC 12

Viking35

The Viking35 ECU of the HEINZMANN subsidiary REGULATEURS EUROPA, along with its Viking Vision user interface, provides the core platform for combined engine management. With its large and expandable range of conventional I/Os and communication ports, Viking35 is more than just a governor; it can be programmed to do all engine management functions and control associated plant, in one integrated and cost effective package. The Viking35 ECU is complemented by a range of hydraulic actuators, specifically the 2231 servo actuator, which provides a ballhead mode for manual speed setting in the event of power supply failure.

- ✓ Speed control and engine management system for propulsion, traction and genset application



Viking35

INTEGRATED GOVERNORS

The range of integrated governors combines the functionality of HEINZMANN actuators and speed governors in a compact unit, thereby ensuring flexibility in mounting positions and interchangeability with other proprietary units.

DG 2080.11

Combination of direct acting StG 2080 actuator and DC 11 digital governor, delivering precise, fast control at low consumption.

- ✓ Direct mounted actuator with integrated speed controller



DG 2080.11

ORION DG 3005.10 / DG 3010.10

Combination of actuator StG 3005 / 3010 with speed controller DC 10 for direct mounting on small engines and applicable in many fields of use e.g. operating butterfly valves, pump rods, etc.

- ✓ Speed control unit for small engines integrated in actuator



DG 3005.10

ORION DG 3010.10 / DK50

DG 3010.10/DK 50 from the ORION series is intended for use on small and medium-sized gas engines.

- ✓ Throttle valve with integrated positioner



DG 3010.10

StG EC 40 / StG EC 250

Combining the capacities and features of brushless actuators with the faculties of a high-grade digital speed controller, these governors are designed for applications that require both large regulating powers and outstanding control performance.

A large number of inputs and outputs offer a great variety of control options and allows to involve a lot of relevant signals in the control functions.

- ➔ 40 / 250 Nm
- ➔ Power supply 24 VDC / 48 VDC
- ➔ Degree of protection IP66

- ✓ Enhanced torque positioner



StG EC 40



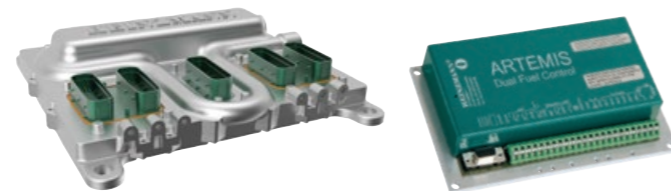
StG EC 250

DUAL-FUEL CONTROLS

ARTEMIS series

ARTEMIS Dual-Fuel Control Systems are based on HEINZMANN's proven gas engine components and ensure a perfect gas-air mixture quality and high conversion ratios. The gas valve controlled variant as well as the gas mixer based systems are suitable for stationary applications as well as heavy-duty vehicles.

- ✓ Two variants of dual-fuel controls customisable for any engine type and application



Range of dual-fuel ECUs

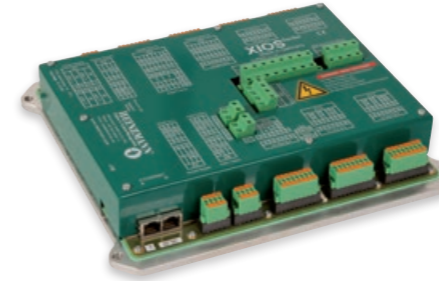
GENERATOR CONTROLS

XIOS^{GenSet}

The novel XIOS^{GenSet} controller is an all-rounder for any generator system application: it combines all relevant benefits of a combustion engine speed governor with a generator control.

Only one central controller is needed for control and monitoring of the entire genset system.

- ✓ All in one engine & generator control

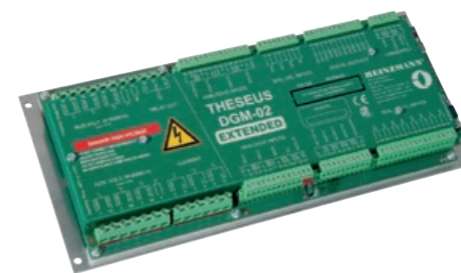


XIOS^{GenSet}

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.

- ✓ Range of generator controls



THESEUS DGM-02

GAS ENGINE CONTROLS

KRONOS air-fuel ratio control systems

The KRONOS product systems comprise different solutions for air-fuel ratio control as well as speed load control. You are sure to find a solution to meet your requirements, independent of engine size, specific application, operational demands and emission requirements.

KRONOS 20 electronically controlled system

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.

- ✓ AFR control unit



KRONOS 20

KRONOS 30 full authority system

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.

- ✓ Stand-alone lambda control system



ELEKTRA

KRONOS 40 injection based system

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 kW to 1 MW and up to 20 cylinders.

- Direct gas injection with solenoid valve



EFI control unit

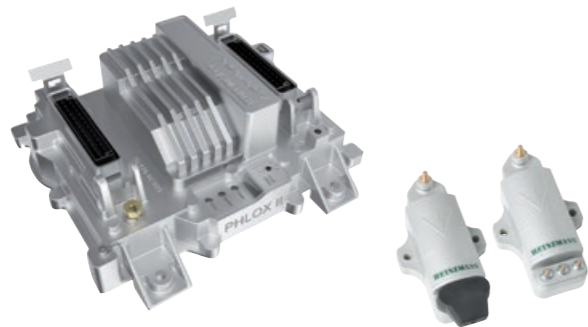
MEGASOL gas admission valve

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 8, 12, 16 or 24 cylinders
- Advanced spark ignition with FlexSpark Technology



PHLOX II control unit with ignition coils

ARIADNE knock control

Used as part of a gas engine management system, ARIADNE 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



ARIADNE

COMMUNICATION TOOLS

DcDesk 6.0 configuration software

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.



DcDesk

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.



PANOPTES HMI

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.



HP 03-03

ACTUATORS

HEINZMANN provides a wide range of actuators including direct working actuators, actuators with gears and actuators with integrated positioning electronics and brushless motors.

HEINZMANN'S large range of actuator models covers practically any application and sector. This means that customers find a product tailored to their exact requirements.

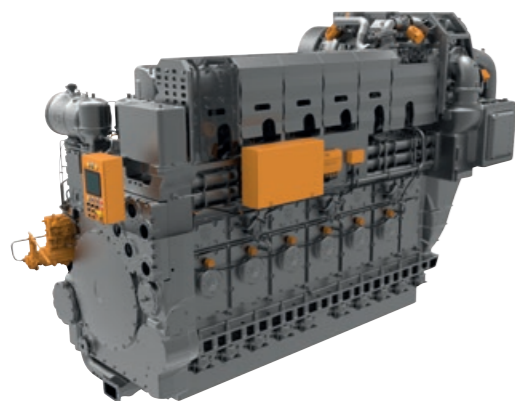
For more information please refer to www.heinzmann.com or actuator leaflet.

Actuator type	Max. rotation/ stroke	Max. torque/ force	Torque/force in steady state position	PRIAMOS DC 1-03	PRIAMOS DC 1-04	HELENOS DC 2	PANDAROS DC 6	ORION DC 7	DC 8	ORION DC 9	ORION DC 10	ORION DC 11	ORION DC 12	XIOS
StG 3005	53°	0.30 Nm (spring)	0.18 Nm				4Q	2Q		4Q	2Q		4Q	
StG 3010	50°	0.60 Nm (spring)	0.36 Nm				4Q	2Q		4Q	2Q		4Q	
StG 1	68°	0.9 Nm	0.3 Nm											
StG 2	68°	1.4 Nm	0.45 Nm											
StG 1.5	72°	1.5 Nm	0.75 Nm											4Q
StG 3	72°	3 Nm	1.5 Nm											4Q
StG 2010	36°	2 Nm (spring)	1 Nm			4Q	4Q		4Q	4Q				
StG 2010	68°	1.4 Nm (spring)	0.7 Nm			4Q	4Q		4Q	4Q				
StG 2040	36°	7.4 Nm (spring)	3.7 Nm			4Q	4Q		4Q	4Q		4Q	4Q	
StG 2040	68°	5.6 Nm	3.4 Nm			4Q	4Q		4Q	4Q		4Q	4Q	
StG 2080	36°	11 Nm (spring)	5.5 Nm			4Q	4Q		4Q	4Q		4Q	4Q	
StG 2080	68°	8.4 Nm (spring)	4.2 Nm			4Q	4Q		4Q	4Q		4Q	4Q	
StG 2120	68°	13 Nm	4.3 Nm			4Q								4Q
StG 6-01	36°	4 Nm	1.4 Nm	4Q	4Q	4Q	4Q		4Q	4Q				4Q
StG 6-02V	36°	6 Nm	2 Nm	4Q	4Q	4Q	4Q		4Q	4Q				4Q
StG 10	36°	10 Nm	3.3 Nm	4Q	4Q	4Q	4Q		4Q	4Q				4Q
StG 16	42°	15 Nm	5 Nm	4Q	4Q	4Q	4Q		4Q	4Q				4Q
StG 30	42°	31.5 Nm	10.7 Nm	4Q	4Q	4Q	4Q							4Q
StG 30.90	90°	31.5 Nm	10.7 Nm			4Q								4Q
StG 40	42°	44 Nm	14.5 Nm	4Q	4Q	4Q								4Q
StG 40.90	90°	44 Nm	14.5 Nm			4Q								4Q
StG 64	42°	64 Nm	21 Nm	4Q	4Q				4Q					4Q
StG 90	42°	90 Nm	30 Nm	4Q	4Q				4Q					4Q
StG 180	42°	180 Nm	60 Nm		4Q				4Q					
LA 25	19.5 mm	25 N	20 N					2Q		2Q	2Q			
LA 30	15.5 mm	30 N	24 N					2Q		2Q	2Q			
LA 35	12.5 mm	35 N	28 N					2Q		2Q	2Q			

APPLICATIONS

Diesel engine management

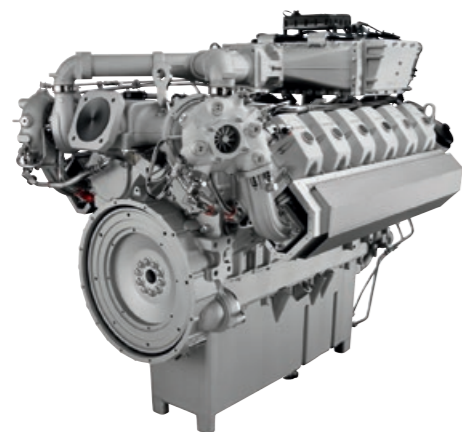
For more than 100 years, HEINZMANN has been driving forward the technological developments in diesel engine management. Ever since, our expertise and innovativeness have served to optimise engine performance and reduce operational costs as well as the impact on the environment. Well-known manufacturers work together with HEINZMANN to develop sophisticated control systems for medium-sized and large diesel engines. Dealing with all engine types and technologies, we are specialists in control technology for both mechanical and electronic injection, and offer complete common rail systems.



Gas engine management

HEINZMANN offers a complete product range for gas engine management, both as modular components and as fully integrated engine management systems. Known for their reliability and durability, these control systems are highly flexible and suitable for any size, type or make of gas engine.

With standard products as well as with application-tailored solutions, HEINZMANN seeks to provide the perfect system for every customer's requirements.



Dual-fuel management

Conversion from diesel to dual-fuel combustion happens for two main reasons: The reduction of fuel costs and the reduction of emissions. HEINZMANN dual-fuel systems rely on proven components and offer solutions for the specific requirements of stationary gensets, compressor applications, vehicles and engines. Through precise control of diesel and gas metering they ensure optimal performance in both diesel and dual-fuel mode.



Turbine control

The HEINZMANN Group includes two experienced specialists in turbine control.

HEINZMANN UK develops, produces and implements control systems worldwide for all types of turbines, in particular gas turbines. In addition to the proven HEINZMANN controllers, these include hard components such as actuators, pumps and valves.

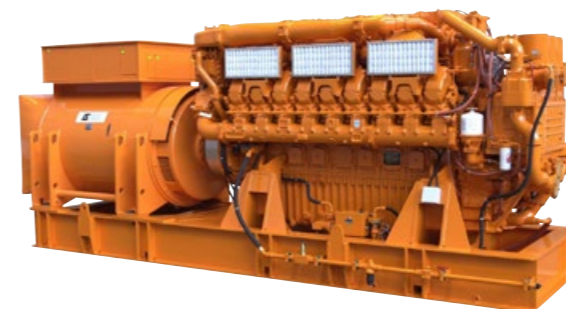
HEINZMANN Australia focuses on the control of steam turbines and generator control. One of their top products is Si-TEC (Smart Integrated Turbine & Engine Control), a digital controller with fully integrated automatic synchroniser and kW/kVAR generator control with over 4000 installed systems worldwide.

The consistent technological approach is based on the comprehensive range of HEINZMANN actuation and governing components, brought together in systems for governing and fuel control, supplemented by monitoring and protection functions. Full turnkey solutions for safe area through to full hazardous area systems are supplied, installed and commissioned.



Digital genset management

Genset management systems by HEINZMANN and group member REGULATEURS EUROPA are based around the THESEUS and Viking35 digital controllers. Encased into industry standard panels, systems may incorporate PLCs, HMIs and enhancements such as Modbus and integrated speed control.



Marine applications

HEINZMANN offers a comprehensive range of engine control system for all kind of ships. For decades, the group member companies HEINZMANN Automation and REGULATEURS EUROPA have supplied the civilian and military shipping industry. They offer standard solutions as well as customer-specific development projects. The quality and reliability of HEINZMANN systems is valued by customers, and their suitability for use in ships is certified as a matter of course by well-respected classification societies.



Traction control systems

With HEINZMANN and REGULATEURS EUROPA, the corporate group includes two long-standing specialists for control of propulsion engines in rail traction applications. Available for either mechanical or electronic fuel injection, these traction control systems operate in diesel-electric and diesel-hydraulic locomotives worldwide. The flexible configuration and high governing quality make HEINZMANN systems a sought-after retrofit solution for diesel-electric locomotives.



Control systems for industrial vehicles

HEINZMANN systems meet the challenges set by the demanding conditions of use encountered by conveyor, construction and heavy-load vehicles. The product range includes common rail systems, solutions for dual-fuel conversion and emission control systems from CPK Automotive. This is how, as an absolute specialist in diesel engine management, HEINZMANN has come to shape the engine technology of the future.



HEINZMANN Group

Quality & Precision
since 1897

The Group started in 1897 with
Heinzmann GmbH & Co. KG,
and now includes
HEINZMANN UK,
HEINZMANN China,
HEINZMANN Korea,
HEINZMANN India,
HEINZMANN Australia,
HEINZMANN AUTOMATION,
REGULATEURS EUROPA,
and CPK Automotive as
member companies.

The HEINZMANN Group
operates numerous global
subsidiaries, including eight
production sites and an
international distributor
network.

Our product portfolio
comprises engine
management system
solutions, as well as exhaust
gas aftertreatment solutions,
for industrial combustion
engines and turbines. It also
encompasses automation
systems, primarily for the
shipping industry.



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