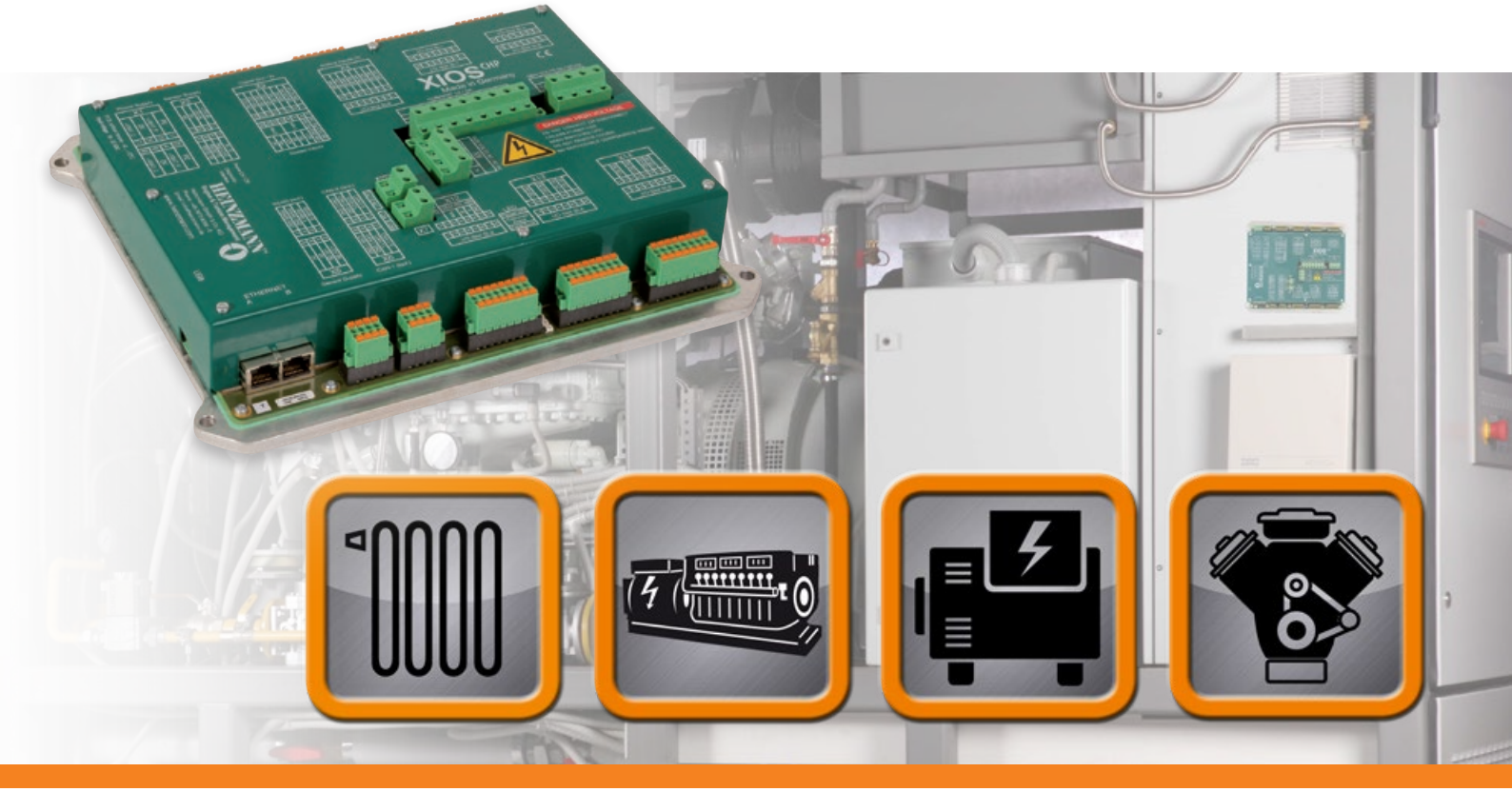
HEINZMANN®

XIOS CHP



Combined Heat and Power Control

- CHP system controls
- Engine management
- Generator management
- Heat management
- Human machine interface

Engine & Generator Management

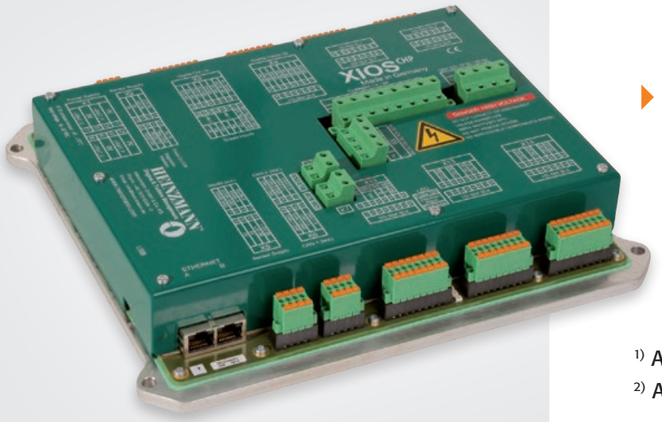
XIOS^{CHP}

Gas2Power

As a long established system supplier of engine management solutions for combustion engines in the industrial field, HEINZMANN has a range of reliable controllers which are widely successful in different applications from power generation to marine propulsion. The newly developed and extensively tested XIOS^{CHP} control unit for gas engines combines all the benefits of the HEINZMANN control systems.

Engine, generator, CHP and heat management as well as various monitoring functions are integrated in one central control unit, XIOS^{CHP}. This provides reliable usage for heat and electricity power whether in mains-parallel or island operation.

With many configurable I/Os, various kinds of communication protocols and user-friendly HMI touch-screens, XIOS^{CHP} provides the customer full control of the CHP system with minimum effort.



XIOS^{CHP} Features

- ***Integrated generator control and power management***
- ***Mains & generator protection***
- ***Various mains-parallel & island operation modes possible***
- ***Grid code compliance pending (VDE 4110)***
- ***Integrated heat management***
- ***Gas train control***
- ***Various engine monitoring functions***
- ***Integrated speed and load control for fast system response***
- ***Integrated air-fuel ratio control [1)]***
- ***Control of PHLOX II & III [1)] or support for third party ignition control unit***
- ***Control of ARIADNE Knock Control System [2)] or supprt for third party system***
- ***Engine start/stop, manual/ automatic control, local/remote control***
- ***4 universal applicable PID governors***
- ***Data logging (incl. real time clock) for error history and status overview***
- ***Service access via touch-screen, DcDesk or dongle-free service tool "HEINZMANN Configuration Suite"***

[1)] Available with systems XIOS^{CHP} MEDIUM and EXTENDED; optional for XIOS^{CHP} BASIC
[2)] Available with system XIOS^{CHP} EXTENDED; optional for XIOS^{CHP} BASIC and MEDIUM

Main Features

- ***CHP system controls***
- ***Generator management***
- ***Integrated speed control***
- ***Integrated air-fuel ratio control [1)] (closed-loop power, lambda sensor, NO_x sensor)***
- ***Full compatibility with HEINZMANN PHLOX Ignition Control [1)] or third party system***
- ***Full compatibility with HEINZMANN ARIADNE Knock Control [2)] or third party system***
- ***Engine monitoring with data logging***

CHP System Control Functions

- CHP selectively heat or load-driven
- Gas train control
- Battery voltage monitoring
- Pump control, pre-heat functions & room ventilation
- Oil level control
- Monitoring & control of various pressures & temperatures
- Gas train backfire monitoring
- Engine start/stop sequence, manual/automatic control, local/remote control
- Engine operating hours/start counter
- Event data logger, either high resolution data logging for pre and post event monitoring or low resolution data logging for general overview with real time clock
- System password protection

Generator Management Functions

- Applications: Island/grid/peak shaving/base load
- True RMS measurement/calculation
- Automatic synchronisation and load control
- Load sharing between CHP units (active power [kW] and reactive power [kVAR])
- Power management
- Voltage/cosPhi control via bias signal to AVR
- Dynamic load adjustment at frequency fluctuations
- Peak shaving incl. grid support function
- Configurable load ramp up and ramp down
- Various options for power factor control or reactive power control
- Mains protection optional (voltage, frequency & reactive power)

Engine Management Functions

- Integrated speed control
- Integrated air-fuel ratio control [1] with closed loop power, lambda sensor, NO_x sensor
- Control of PHLOX II & III [1] or support of third party ignition control unit
- Control of ARIADNE Knock Control System [2] or support of third party knock control unit
- Oil temperature & pressure monitoring
- Manifold/boost air temperature/pressure monitoring
- Crank case pressure monitoring
- Overspeed protection

Heat Management Functions

- 4 independent configurable PID governors for heat circuits
- Pre-heating by control of a heating rod
- Coolant circuits temperature/pressure monitoring
- Monitoring of coolant temperature difference
- Engine and intercooler coolant temperature control

[1] Available with systems XIOS^{CHP} MEDIUM and EXTENDED; optional for XIOS^{CHP} BASIC
[2] Available with system XIOS^{CHP} EXTENDED; optional for XIOS^{CHP} BASIC and MEDIUM

XIOS^{CHP} Versions

To meet individual customer requirements, three versions of XIOS^{CHP} are available: BASIC, MEDIUM and EXTENDED.

All XIOS^{CHP} versions include generator control, speed control, heat management and CHP system control. Different user-friendly HMI touch-screens ensure an easy system handling, provide all relevant operating conditions and allow the adjustment of parameters via multilevel passwords.

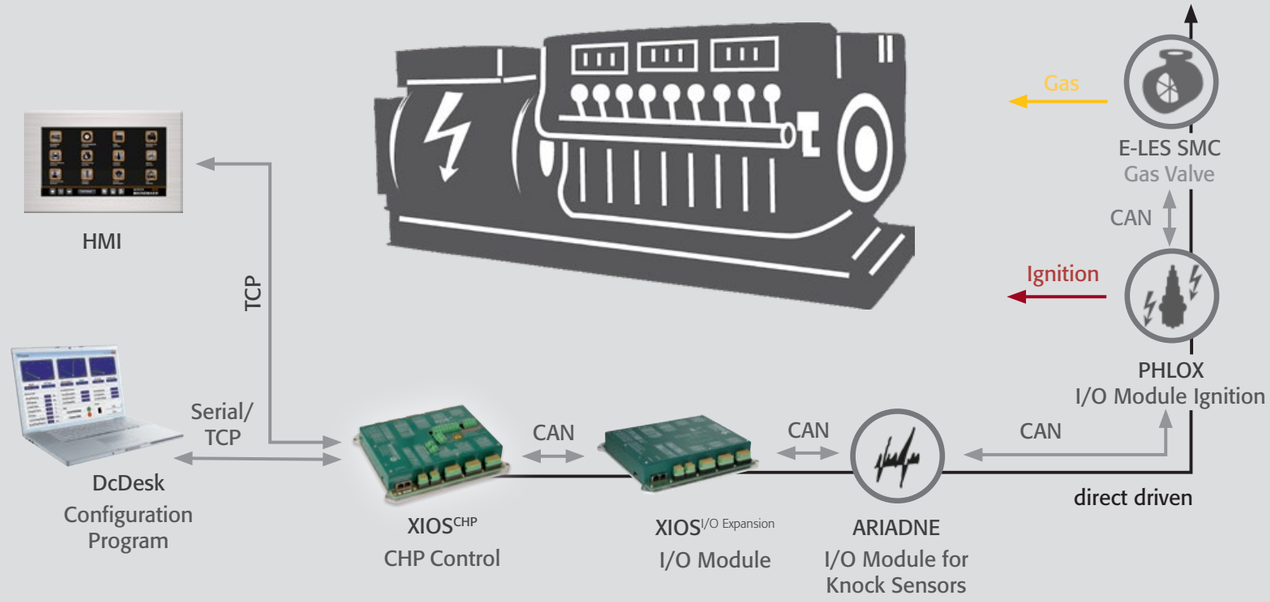
The BASIC version covers standard CHP unit functionalities with the control of up to 2 cooling/heating circuits. Generator control and speed control functions are included.

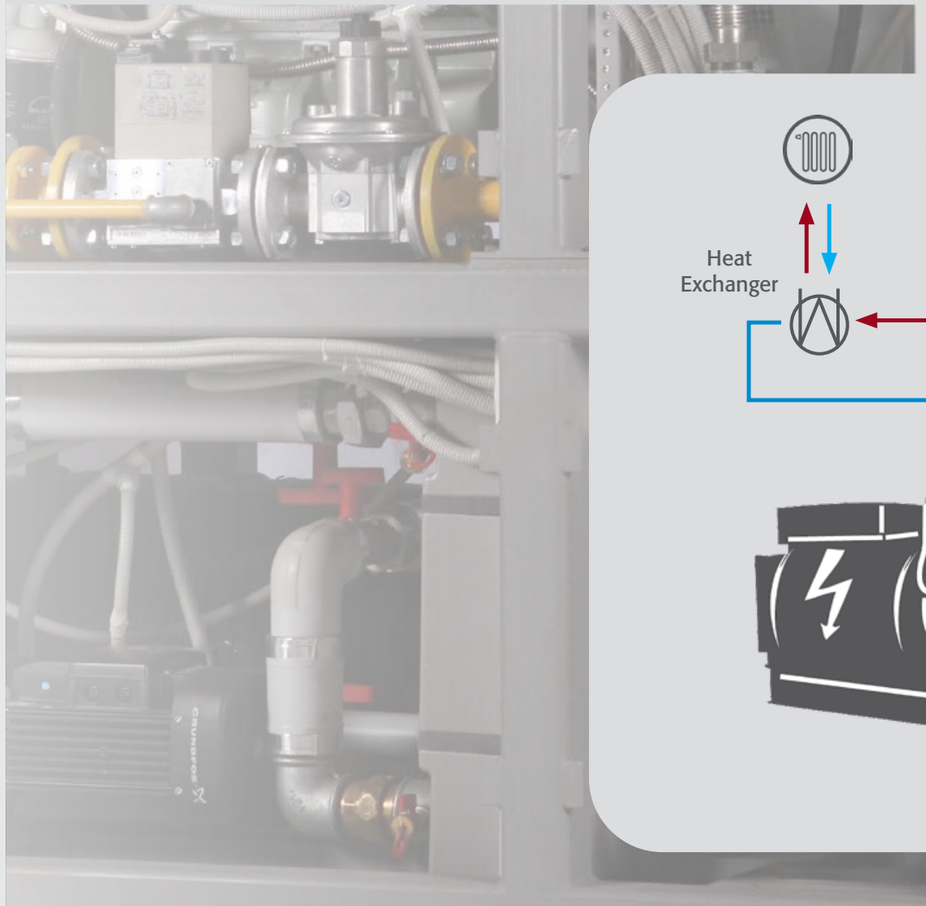
An additional XIOS$^{I/O}$ unit, an air-fuel ratio control and ignition control functions define the major characteristics of the XIOS^{CHP} MEDIUM version to cover the most common requirements of typical CHP systems. With up to 4 cooling/heating circuits and various I/Os for diverse control and monitoring functions, the MEDIUM version provides a wide range of options for a reliable, safe and automatic control of your CHP.

XIOS^{CHP} EXTENDED version with its main XIOS^{CHP} unit and two additional XIOS$^{I/O}$ units is the highest expansion stage of this structure and grants full control of complex systems where an extensive I/O requirement is the main focus. Functions such as single cylinder temperature measurement can easily be handled with this high-end solution, which also provides an integrated knock control function.

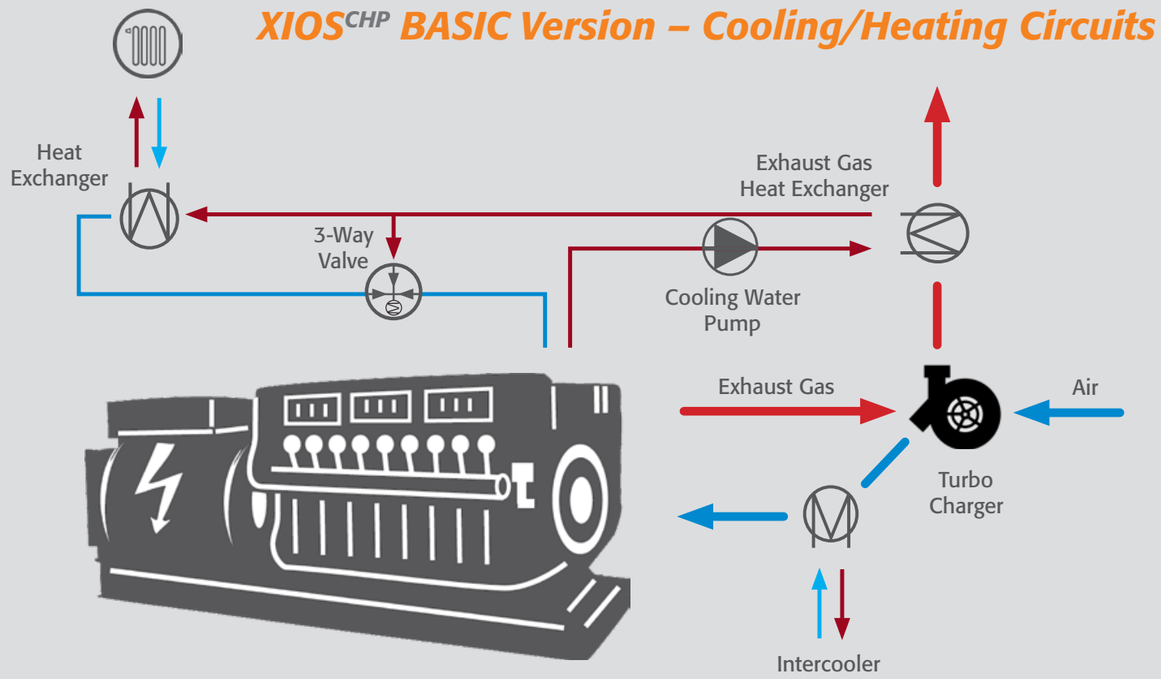
Engine control functionalities, including SCR control, can be optionally ordered separately.

XIOS^{CHP} – Engine Control Solutions





XIOS^{CHP} BASIC Version – Cooling/Heating Circuits



XIOS^{CHP} Grid Code Compliance

In the near future, connecting a CHP plant to the grid will require further specifications to be met. Network providers will expect a higher support of the CHPs to keep the grid stable and secure the power supply under all circumstances.

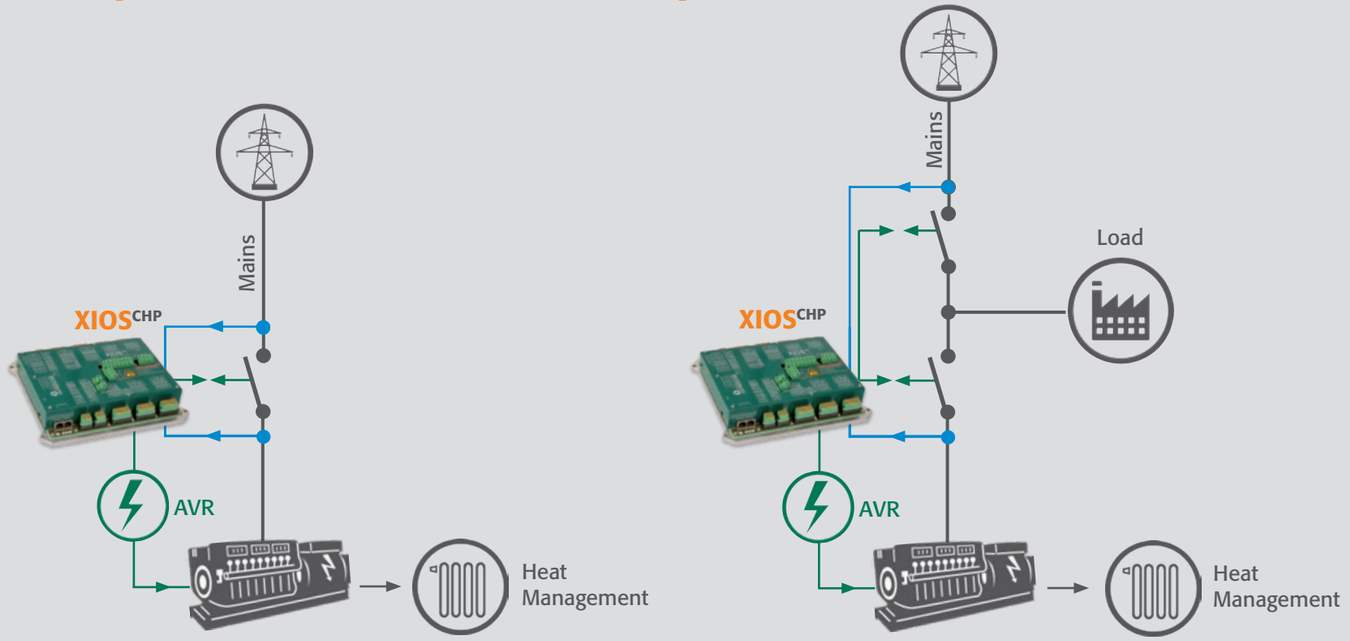
The German grid code rule "Technical requirement for the connection and operation of customer installations to the medium voltage network" (VDE-AR-N 4110) specifies the technical requirements for planning, connection, operation and modification of customer installations that are connected at the grid connection point to the medium voltage grid of a network operator.

It is foreseeable that this regulation will be shortly adopted in further EU countries.

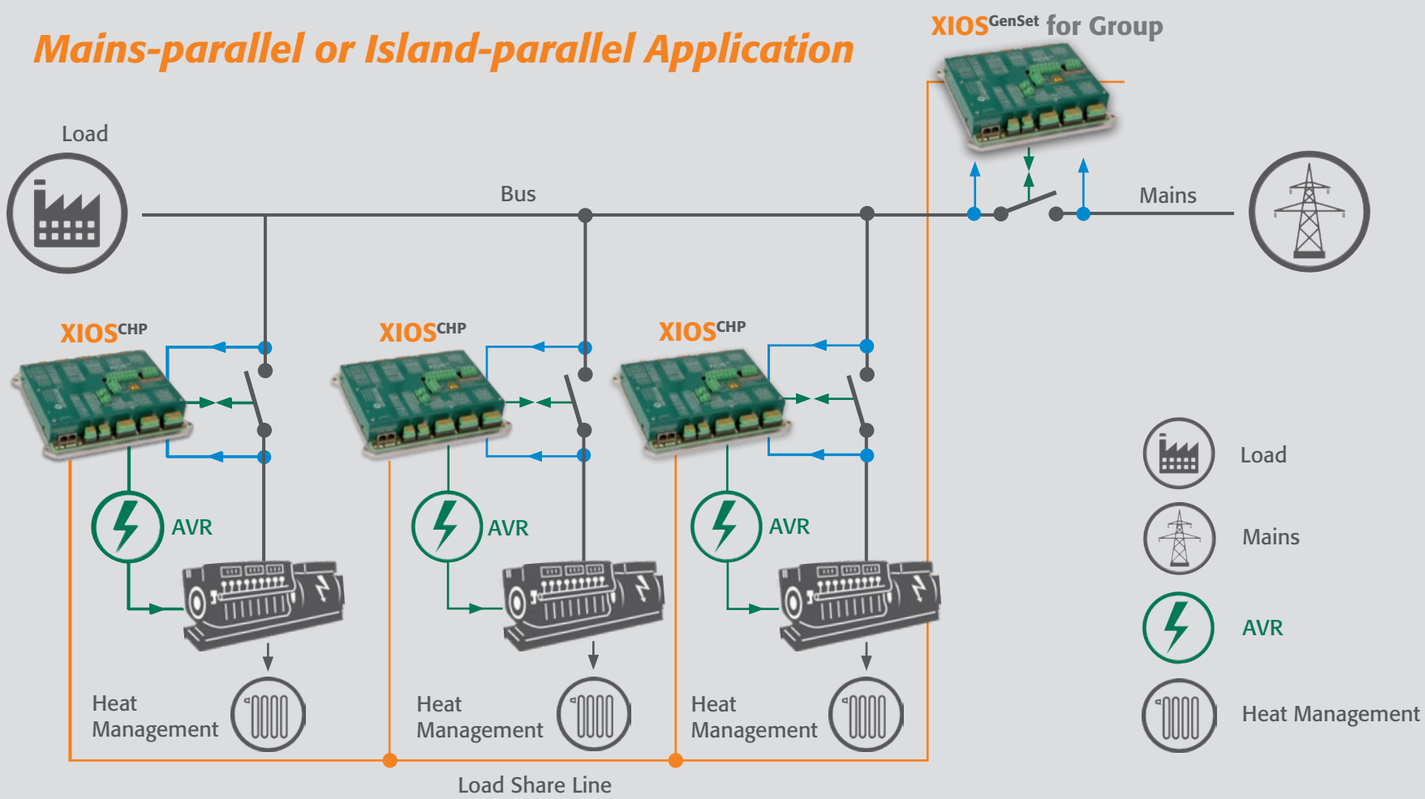
As your reliable partner, with XIOS^{CHP}, HEINZMANN will provide you an ideal solution for future grid code demands. XIOS^{CHP} will be certified according VDE-AR-N 4110 and will be able to meet VDE-AR-N 4105.

Coming soon for German market VDE-AR-N 4110 & VDE-AR-N 4105 compliance

Mains-parallel with & without Back-up Version



Mains-parallel or Island-parallel Application



XIOS^{CHP} System Solution

The HEINZMANN XIOS^{CHP} solution provides an easy-to-use CHP control which is complemented by a user-friendly HMI, allowing an intuitive and comfortable operation. For advanced system access, HEINZMANN's service and parametrisation tools, DcDesk and HEINZMANN Configuration Suite, can be used.

DcDesk Service Program Package

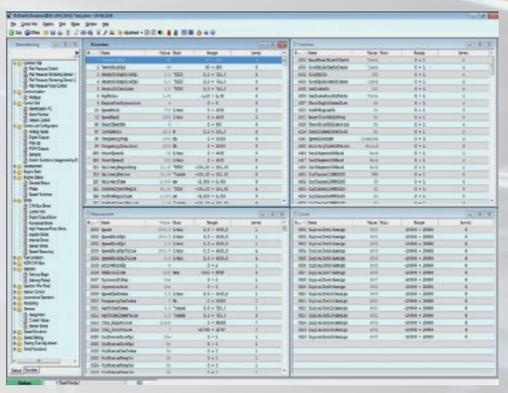
HEINZMANN DcDesk can be used to adjust and view operational data. It offers a number of numerical and graphical features required for testing, configuration, commissioning and servicing. Extensive functionality for recording of operational data enables logging of specific service conditions for their further analysis, processing and reporting.

HEINZMANN's Configuration Suite is a new dongle-free service tool based on a graphical user interface. It offers access to digital HEINZMANN control units and allows an easy depiction and use of complex contexts.

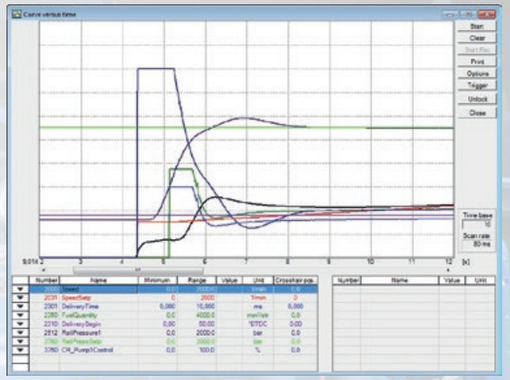
HEINZMANN HMI

- 7" to 15" display, either capacitive or resistive
- Icon based intuitive interface
- Customised system overview/ main screen possible
- Permanent navigation bar including date, time and major icons
- Multilevel password protection
- Industrial and robust design

DcDesk

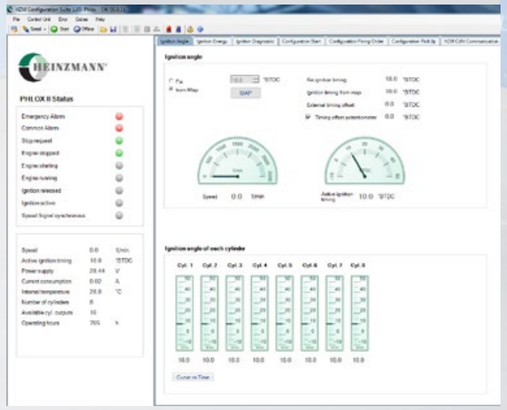


Parameterisation of digital HEINZMANN systems.



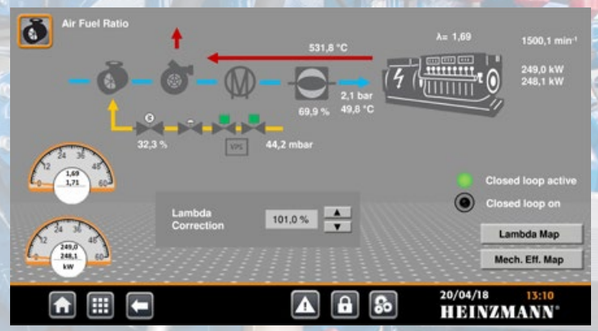
Representation of measured values vs. time. Up to 20 measurements may be displayed simultaneously.

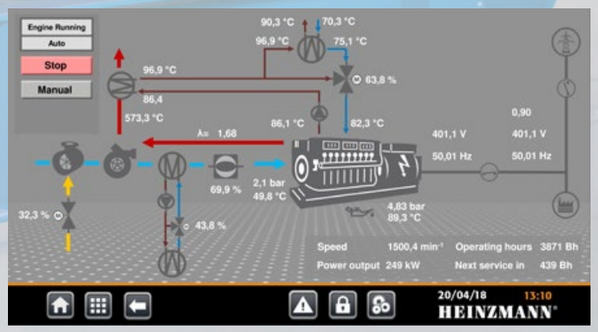
Configuration Suite



New dongle-free service tool with the ability for creation of customer and system specific user interfaces.

HMI





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.

● *Subsidiaries* ● *Distributors and dealers*

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