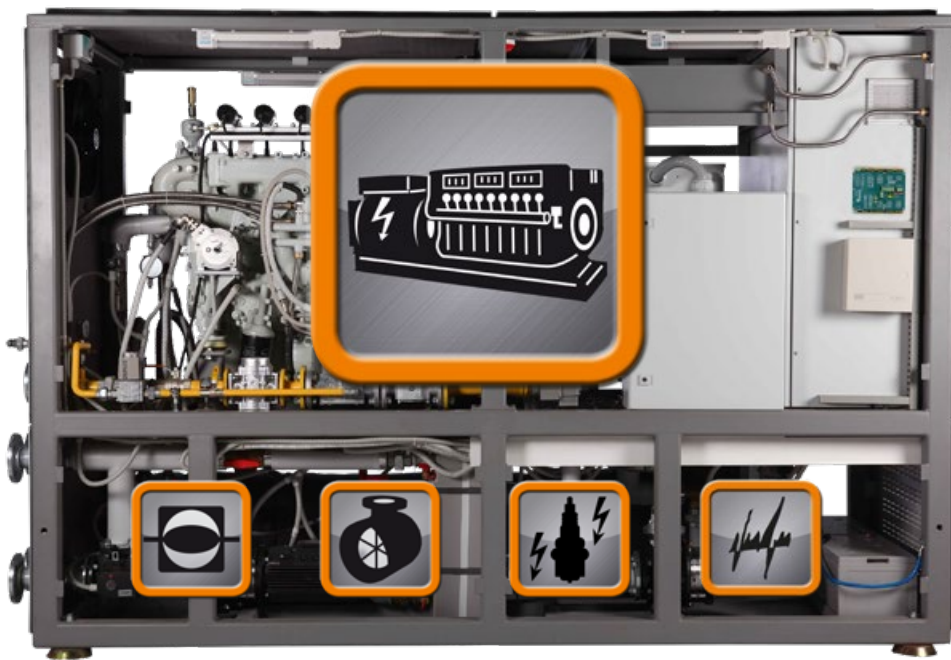


## XIOS<sup>CHP</sup>

### SYSTEM INFORMATION
























#### Benefits

Proven and reliable control system from the engine management experts

Complete engine, generator and CHP control solution from one source

Service access via touch-screen or dongle-free service tool "HEINZMANN Configuration Suite"

### System Overview

	 BASIC	 MEDIUM	 EXTENDED
Heat Management			
Generator Control			
Speed Control			
AFR Control			
Ignition Control			
Knock Control			

# XIOS<sup>CHP</sup> BASIC

1x XIOS<sup>CHP</sup> Controller  
7"-15" Touch-screen



## Including

- ✓ CHP Control
- ✓ Generator Control
- ✓ Speed Control

## Optional

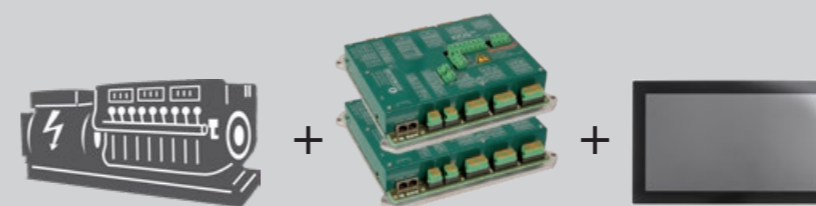
- ✓ AFR Control
- ✓ Ignition Control
- ✓ Knock Control



**Fulfils essential demands on CHP controls**

# XIOS<sup>CHP</sup> MEDIUM

1x XIOS<sup>CHP</sup> Controller  
1x XIOS<sup>I/O</sup> Unit  
7"-15" Touch-screen



## Including

- ✓ CHP Control
- ✓ Generator Control
- ✓ Speed Control
- ✓ AFR Control
- ✓ Ignition control
- ✓ 1 additional XIOS<sup>I/O</sup> unit

## Optional

- ✓ Knock Control
- ✓ SCR Control



**Meets all imaginable requirements on a modern CHP plant**

### CHP System Control

- Gas train control
- Engine start/stop sequence control
- Oil level control
- Remote access via VPN

### Speed Control

- Integrated speed control
- Fast reaction on speed and load changes
- Combination with all HEINZMANN actuators possible

### Generator Management

- Applications: Island/grid/peak shaving/base load
- Automatic synchronisation and load control
- Voltage/cosPhi control via bias signal to AVR
- Dynamic load adjustment at frequency fluctuations
- Power management

### CHP Monitoring

- Engine & CHP temperatures & pressures
- Battery voltage monitoring
- Event data logger with real time clock
- Various sample rates possible; high-resolution data logging for pre and post event monitoring; low-resolution data logging for general overview

### Heat Management

- 2x cooling and circuit control with independent configurable PID control circuits
- CHP selectively heat or load driven

### Touch-Screen Control Panel

- Easy handling
- Icon based intuitive interface
- 7" to 15" display, either capacitive or resistive
- Permanent navigation bar including date, time and major icons
- Password protected access levels
- Customised system overview/main screen possible
- Industrial and robust design

### CHP System Control

- Gas train control
- Engine start/stop sequence control
- Oil level control
- Pre-heat function (Control of heating rod, pumps and mixer valve)
- Remote access via VPN

### Engine Control

XIOS<sup>CHP</sup> combines all control strategies of the different control solutions in one device. This allows an optimal engine reaction on changes in current operating conditions.

### Speed control

- Fast reaction on speed and load changes
- Combination with all HEINZMANN actuators possible

### AFR control

- Power, lambda or NO<sub>x</sub> feedback
- Specific control solutions for different gas qualities

### Ignition control

- Speed and load dependent ignition timing
- Autospark function to reduce spark plug wear

### Generator Management

- Applications: Island/grid/peak shaving/base load
- Automatic synchronisation and load control
- Voltage/cosPhi control via bias signal to AVR
- Dynamic load adjustment at frequency fluctuations
- Power management

### CHP Monitoring

- Engine & CHP temperatures & pressures
- Battery voltage monitoring
- Event data logger with real time clock
- Various sample rates possible; high-resolution data logging for pre and post event monitoring; low-resolution data logging for general overview

### Heat Management

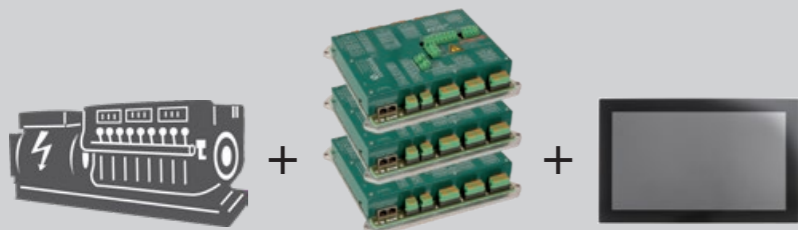
- 4x cooling and circuit control with independent configurable PID control circuits
- CHP selectively heat or load driven

### Touch-Screen Control Panel

- Easy handling
- Icon based intuitive interface
- 7" to 15" display, either capacitive or resistive
- Permanent navigation bar including date, time and major icons
- Password protected access levels
- Customised system overview/main screen possible
- Industrial and robust design

# XIOS<sup>CHP</sup> EXTENDED

1x XIOS<sup>CHP</sup> Controller  
2x XIOS<sup>I/O</sup> Units  
7"-15" Touch-screen



## Including

- ✓ CHP Control
- ✓ Generator Control
- ✓ Speed Control
- ✓ AFR Control
- ✓ Ignition Control
- ✓ Knock Control
- ✓ 2 additional XIOS<sup>I/O</sup> units

## Optional

- ✓ SCR Control



*Provides extensive functionalities and numerous I/Os for complex systems*

## CHP System Control

- Gas train control
- Engine start/stop sequence control
- Oil level control
- Pre-heat function (Control of heating rod, pumps and mixer valve)
- Remote access via VPN

## Engine Control

XIOS<sup>CHP</sup> combines all control strategies of the different control solutions in one device. This allows an optimal engine reaction on changes in current operating conditions.

## Speed Control

- Fast reaction on speed and load changes
- Combination with all HEINZMANN actuators possible

## AFR Control

- Power, lambda or NO<sub>x</sub> feedback
- Specific control solutions for different gas qualities

## Ignition Control

- Speed and load dependent ignition timing
- Autospark function to reduce spark plug wear

## Knock Control

- Monitoring of knocking combustion
- Ignition angle correction and load reduction

## Generator Management

- Applications: Island/grid/peak shaving/base load
- Automatic synchronisation and load control
- Voltage/cosPhi control via bias signal to AVR
- Dynamic load adjustment at frequency fluctuations
- Power management

## CHP Monitoring

- Engine & CHP temperatures & pressures
- Battery voltage monitoring
- Event data logger with real time clock
- Various sample rates possible; high-resolution data logging for pre and post event monitoring; low-resolution data logging for general overview

## Heat Management

- 4x cooling and circuit control with independent configurable PID control circuits
- CHP selectively heat or load driven

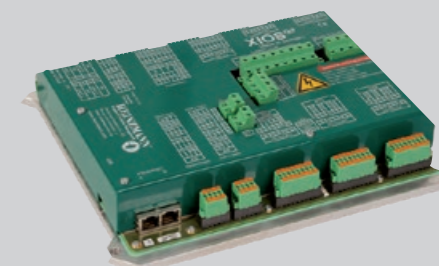
## Touch-Screen Control Panel

- Easy handling
- Icon based intuitive interface
- 7" to 15" display, either capacitive or resistive
- Icon based intuitive usability
- Permanent navigation bar including date, time and major icons
- Password protected access levels
- Customised system overview/main screen possible
- Industrial and robust design

# XIOS<sup>CHP</sup>

## I/O Range

*Additional discount with the use of Gas2Power system components*



## XIOS<sup>CHP</sup> BASIC

### Exemplary I/O range

General	4x DI & 2x DO for CHP release/stop, warnings and shutdown
Generator Control	Measurement inputs for voltage & current L1, L2, L3, N 2x AO/DO for AVR & breaker control
Gas Train	3x DI & 2x DO for pressure switches, double-solenoid valve, valve proving system
Speed Control	1x 4Q actuator drive, 2x inductive pickup
Engine Monitoring & CHP Control	6x DI & 6x DO, 3x AI, 7x Temp. in for control of two cooling/heating circuits pressure and temperature monitoring of air, manifold, oil, coolant, control of electric starter, ventilation, ...

## XIOS<sup>CHP</sup> MEDIUM & EXTENDED

For advanced control requirements, the XIOS<sup>CHP</sup> BASIC version is expanded to the system options MEDIUM and EXTENDED with one or two additional XIOS<sup>I/O</sup> units for further control functionalities and numerous I/Os.

The scope of additional inputs and outputs is widely user-definable, as the main module of XIOS<sup>I/O</sup> can be enhanced with various I/O boards.

### XIOS<sup>CHP</sup> MEDIUM

expanded by  
1x XIOS<sup>I/O</sup> unit

### XIOS<sup>CHP</sup> EXTENDED

expanded by  
2x XIOS<sup>I/O</sup> units

#### I/O Range

XIOS <sup>I/O</sup> main module	up to 19x DI/AI (discrete/0 ... 5 V / 0 ... 10 V) 6x DI 4x DO (max. 4 A) 4x sensor supply (5 VDC & 12 VDC)
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#### Including Extension Boards

Up to 11 extension boards of the types:

Extension board MA1	2x thermocouple (Type J/K/E/R/S/B/N/T/L)
Extension board MA2	4x DO/AO (discrete / 0 ... 5 V / 0 ... 20 mA / PWM)
Extension board MA3	4x DI/AI (DI discrete or frequency / 0 ... 5 V / 0 ... 36 V / 0 ... 20 mA / Pt100 / Pt200 / Pt1000)
Extension board MA7	6x DI (discrete, up to 32 V)
Extension board MA8	2x DO half-bridge current read-back (PWM freq. up to 1.5 kHz)

## Touch-Screen Control Panel



	<b>Resistive Display</b> Foil touch	<b>Capacitive Display</b> Glass touch
<b>7"</b>		
Resolution	800 x 480	
Aspect ratio	5:3	
Contrast ratio	250:1	
Operating temperature	0 ... +65 °C	
<b>10,4"</b>		
Resolution	800 x 600	800 x 600
Aspect ratio	4:3	4:3
Contrast ratio	400:1	400:1
Operating temperature	0 ... +65 °C	0 ... +50 °C
<b>15"</b>		
Resolution	1024 x 768	1024 x 768
Aspect ratio	4:3	4:3
Contrast ratio	1500:1	1500:1
Operating temperature	0 ... +60 °C	0 ... +50 °C

- Coming soon**
- User defined PLC functions
  - Cloud based data access
  - VDE-AR-N 4110 certification in Q2/2019

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