

NO_x SOLUTIONS

SYSTEM INFORMATION

Why NO_x?
Emission goals thought through to the end.

FOR EXISTING SYSTEMS AND SPONTANEOUS DECISIONS



NO_x Secure

- NO_x daily average value
- Emission monitoring

RECORDING

- NO_x daily average value in [mg/Nm³], as precise as an expert measurement

MONITORING

- Data memory for additional monitoring

CATALYTIC CONVERTER

- Monitoring based on ΔT and Δp
- ▶ Increased system safety
- ▶ Unrivalled accuracy
- ▶ Detailed data analysis

FOR FUTURE SYSTEMS AND VISIONARIES



XIOS^{SCR} Ready

- SCR Ready
- NO_x daily average value
- Emission monitoring

RECORDING

- NO_x daily average value in [mg/Nm³], as precise as an expert measurement

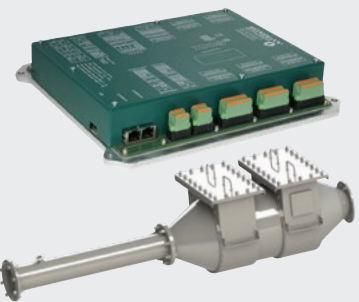
SCR

- Activation of SCR control possible at any time

MONITORING

- Data memory for additional monitoring
- ▶ Perfect system safety
- ▶ Unrivalled accuracy
- ▶ Detailed data analysis
- ▶ Exhaust system/catalytic converter monitoring based on T, p, ΔT and Δp

FOR NEW SYSTEMS AND PLANNERS



XIOS^{SCR}

- SCR control
- NO_x daily average value
- Emission monitoring


SCR

- Top quality control system with a wide range of options for system integration


RECORDING

- NO_x daily average value in [mg/Nm³], as precise as an expert measurement

- ▶ Perfect system safety
- ▶ Unrivalled accuracy
- ▶ Detailed data analysis
- ▶ Exhaust system/catalytic converter monitoring based on T, p, ΔT and Δp



Precise calculation of NO_x emissions tested with testo 350.*



* More information on the back

NO_x SECURE

NO_x daily average value
Memory space for 10 years

Alarm memory
Alarms if limit values are exceeded and in case of malfunctions

Exhaust monitoring
Additional memory for continuous recording and system analysis



Legally required

Exclusively by HEINZMANN

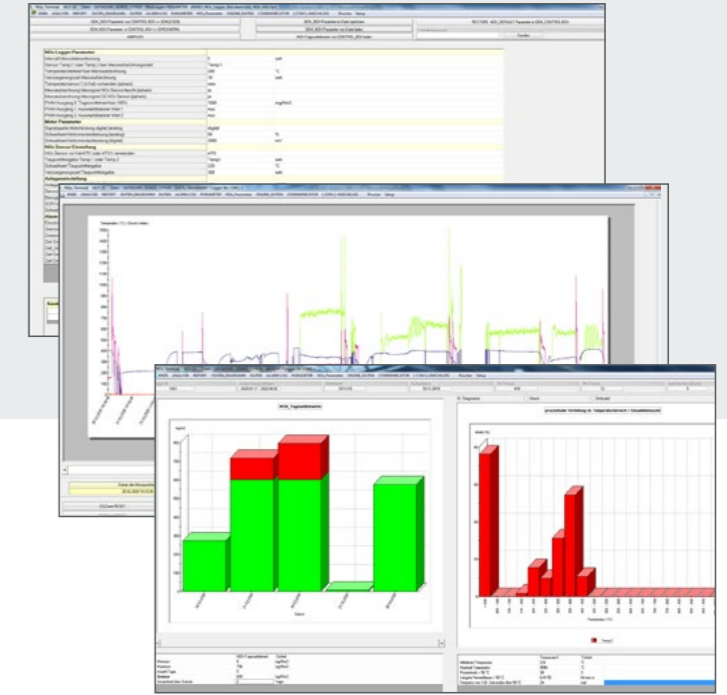
INCLUDED

- ▶ NO_x data logger
- ▶ Display module
- ▶ NO_x sensor
- ▶ Temperature sensor
- ▶ Cable harness

OPTIONAL

- ▶ Δp sensor
- ▶ Additional temperature sensor for ΔT measurement
- ▶ Accessories

3 expansion stages in one unit
Easy to configure using additional sensors



Comprehensive evaluation and operation using the NO_x Terminal PC software

NO_x Data Logger

- Monitoring and recording emission-related data in accordance with German 44. Federal Immission Protection Ordinance
- Continuous recording of NO_x sensor values (NO_x & O₂) for efficient system monitoring
- Alarm message if limit values are exceeded or for system errors
- NO_x daily average value as analogue output (PWM) for data integration into an existing control system
- 2 freely definable analogue (PWM) or digital outputs
- Proven data logger from construction machinery and commercial vehicle sector



Retrofit Kit

In addition to the NO_x data logger, the retrofit kit includes the cable harness, a display module, and one NO_x and one exhaust gas temperature sensor. The system can be optionally expanded with components such as a second temperature sensor or a differential pressure sensor.

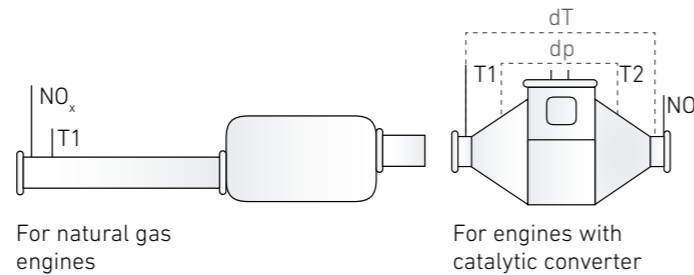
- Standalone unit; degree of protection IP67
- 3 separate memory areas
- Flexible adjustment and control options

Display Module

- Display of last NO_x daily average values
- Display of current measured values
- Display of current alarm messages
- Visual alarm if limit values are exceeded

Cable Harness

- Separate signal and sensor cables, 5 to 30 metres in length
- Temperature sensor included as standard



For natural gas engines

For engines with catalytic converter

Technical Data

NO_x data logger - Retrofit kit

Power supply	9 ... 32 V DC
Data logger operating temperature	-40 ... +85 °C
Interfaces	3x CAN bus, 1x RS-485
Ring memory for measured values	32 MB
Fixed memory for alarms	32 MB
Memory for NO _x daily average value	Separate area for approx. 10 years data availability
Defined inputs	2x Exhaust temperature (thermocouple type K) 1x Catalytic converter differential pressure (0 ... 10 VDC) 1x CAN NO _x sensor (SAE J1939) 1x Speed
Defined outputs	1x NO _x daily average value in [mg/Nm ³] (PWM)
Free outputs	2x analogue (PWM) or digital (low-side), freely assignable
Free inputs	2x analogue (0 ... 10 VDC) or digital (low-side), freely assignable e.g. engine power, minimum power reached
Degree of protection	IP67

Compact Control Cabinet

The control cabinet is fully wired and contains the NO_x data logger, various fuses and a 7" TFT display. The other peripherals consist of a fused 24 VDC/10 A power supply unit, a NO_x and temperature sensor and the corresponding connection cables.

The system can be optionally expanded with components such as a second temperature sensor or a differential pressure sensor.

7" TFT Display

- Touch screen with main view and various sub-menus
- Display of current measured values
- Display of current alarm messages
- Visual alarm if limit values are exceeded
- Last NO_x daily average values retrievable

Control Cabinet

- Power supply 24 VDC/10 A, fuse protected
- Completely wired, all available I/Os placed on terminal strip



Measured value display in 7" TFT display

Technical data

NO_x data logger - Compact control cabinet

Power supply	90 ... 264 VAC
Data logger operating temperature	0 ... +50 °C
Screen resolution	800 x 480
Aspect ratio	5:3
Screen contrast ratio	250:1

For further technical data see NO_x data logger - retrofit kit

XIOS^{SCR} READY

NO_x daily average value
Memory space for 10 years

Alarm memory
Alarms if limit values are exceeded and in case of malfunctions

Exhaust monitoring
Additional memory for continuous recording and system analysis



Legally required

Exclusively by HEINZMANN

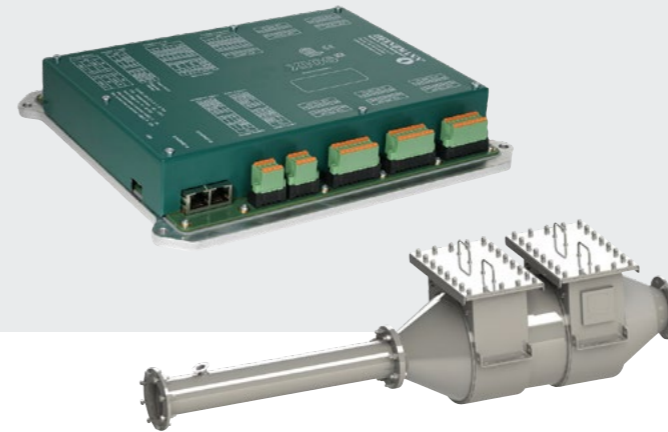
INCLUDED

- ▶ NO_x data logger
- ▶ NO_x sensor
- ▶ Temperature sensor
- ▶ Cable harness

OPTIONAL

- ▶ Temperature & Δp sensors
- ▶ AdBlue injector & pump
- ▶ AdBlue level sensors
- ▶ Remote access via VPN
- ▶ 7" TFT display

XIOS^{SCR}



INCLUDED

- ▶ SCR control
- ▶ NO_x sensor monitoring
- ▶ ΔT monitoring
- ▶ Δp monitoring
- ▶ 4x temperature monitoring

OPTIONAL

- ▶ Remote access via VPN
- ▶ 7" TFT display

3 expansion stages in one unit
Easy to configure using additional sensors

NO_x

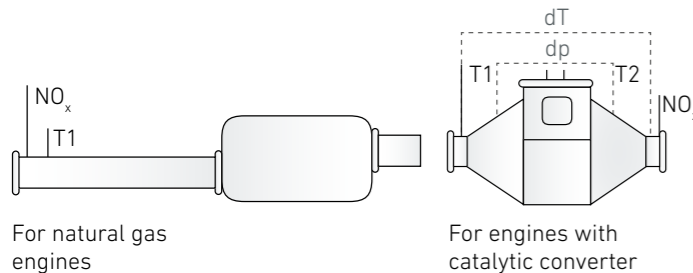
NO_x & ΔT

NO_x & ΔT & Δp



The XIOS^{SCR} Ready control is equipped with a data logger and enables emission-related data to be monitored and recorded in accordance with German 44. Federal Immission Protection Ordinance. In addition to the NO_x daily average values, which are saved in a separate area, the functional capability of an oxidation catalytic converter to comply with formaldehyde limits can be ensured, e.g. by monitoring exhaust temperatures, the differential temperature and the differential pressure.

The activation of the SCR control is possible at any time.



Recording

- NO_x daily average value in separate memory area
- Monitoring and recording of the NO_x daily average value and emission-related data in accordance with German 44. Federal Immission Protection Ordinance
- Continuous recording of NO_x sensor values (NO_x & O₂) for efficient system monitoring
- Detection of normal operation/minimum power
- Alarm message if limit values are exceeded or for system errors
- NO_x daily average value as analogue output for data integration into an existing control system
- Additional recording in up to 8 separate memory areas
- Recording of any additional measured and calculated values
- Recording either to fixed memory or ring memory
- Freely definable analogue or digital outputs

Evaluation

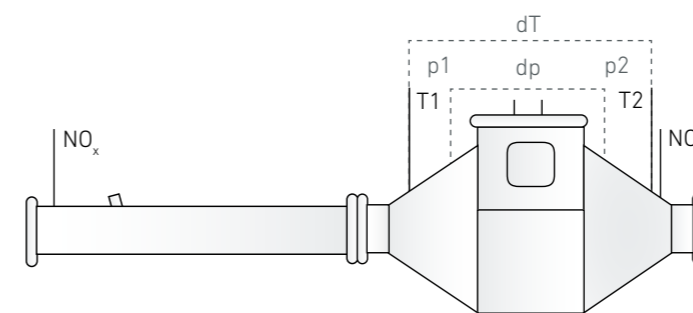
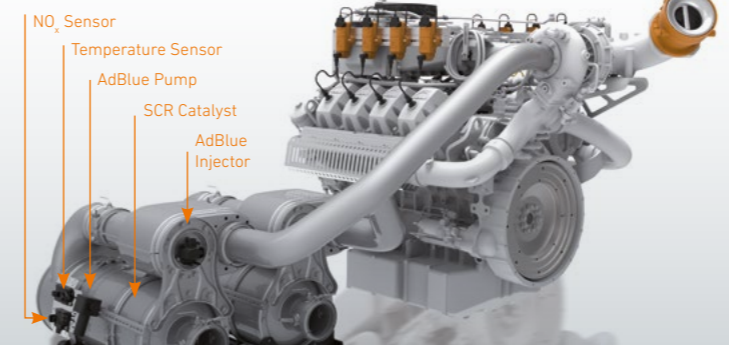
- Data download and analysis using DcDesk or the dongle-free HEINZMANN Configuration Suite service tool
- Data in text format for further processing

7" TFT Display

- Touch screen with main view and various sub-menus
- Display of current measured values
- Display of current alarm messages
- Visual alarm if limit values are exceeded

The XIOS^{SCR} control system provides the same monitoring and recording functions as the XIOS^{SCR} Ready. The software allows the SCR control system to be enabled and provides precise emission reduction with extensive safety functions.

SCR Catalyst System



BENEFIT FROM OUR COOPERATION WITH DCL EUROPE GMBH - THE BEST AND MOST COMPACT CATALYTIC CONVERTER SYSTEMS

ACCESSORIES

- ▶ NO_x sensors
- ▶ Temperature & Δp sensors
- ▶ AdBlue injector & pump
- ▶ AdBlue level sensors

SCR System

- No compressed air required
- Monitoring of the NO_x concentration before and after the SCR catalytic converter
- Rapid response to load steps
- Detection of overdosing/ammonia formation
- Scalable for engine sizes up to 5 MW

NO_x Sensors

- Plausibility check when starting engine and in case of variation in measured values

Exhaust Temperature

- Monitoring of min. and max. values with corresponding system responses
- Catalytic converter temperature check before start of injection

AdBlue Pump

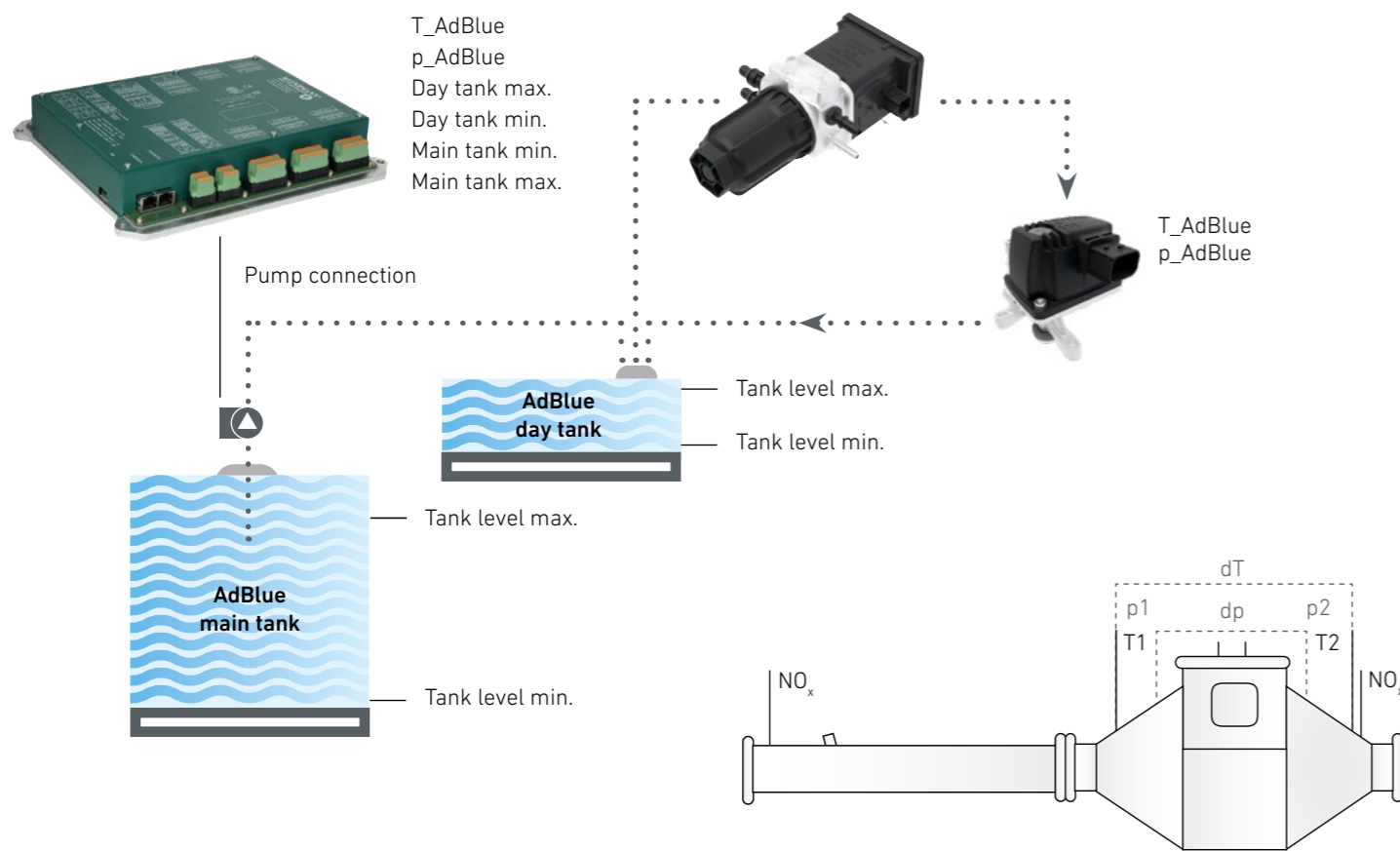
- Monitoring and regulation of the pump pressure
- Extended pump running time after stopping the engine to cool the injector

AdBlue Injector

- Monitoring of the injection quantity and the AdBlue temperature

AdBlue tank

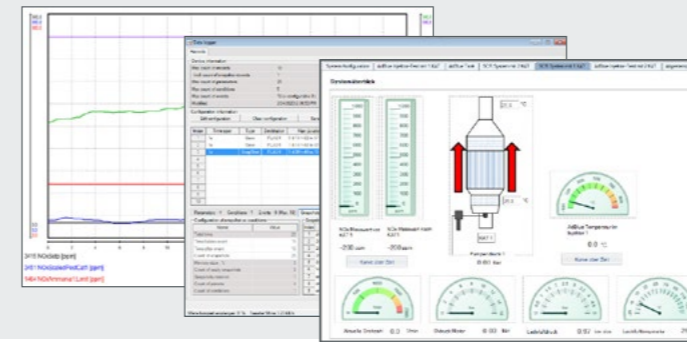
- Level monitoring for main & day tank
- Signal for automatic filling of day tank



XIOS^{SCR} Control Unit

The XIOS^{SCR} control unit supports compliance with future emission regulations thanks to closed loop control of NO_x emissions in the exhaust gas. The control unit regulates the AdBlue pump pressure and actuates the AdBlue injector. The NO_x sensors before and after the SCR catalytic converter, together with the boost pressure/engine power and other engine data, deliver precise information about the NO_x mass to be reduced. Extensive monitoring functions ensure safe continuous operation, prevent harmful AdBlue overdosing and ensure long-term operation of the SCR catalytic converter.

Thanks to its flexible inputs and outputs, XIOS^{SCR} offers numerous options for integration into existing control systems and allows flexible handling of additional sensors, e.g. for monitoring formaldehyde catalytic converters



Evaluation and operation using the HEINZMANN Configuration Suite PC software



Measured value display in 7" TFT display

Example of I/O features

NO_x sensor	1x before SCR Cat, 1x after SCR Cat (optional plus bank B)
Example of I/O features	Boost pressure & temperature AdBlue pressure & temperature AdBlue day tank level sensor AdBlue main tank level sensor Catalytic converter differential pressure Engine power
Analogue outputs	NO _x in mg/Nm ³ NO _x daily average value in mg/Nm ³
Digital inputs	Fixed speed Min./max. level switch AdBlue day tank Min./max. level switch AdBlue main tank
Digital outputs	Common alarm Emergency alarm AdBlue day tank filling
Actuators	AdBlue pump (PWM low-side) (1x per bank) AdBlue injector (PWM high-side) (up to 3x per bank)
Sensor supply	2x 5 VDC 2x 12 VDC
Data logger	256 MB

The excellent I/O flexibility of the XIOS^{SCR} control unit allows almost any adaptation and extension of the inputs and outputs, thus enabling optimum integration into existing engine or system control systems. For further information, please contact us.

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