G4100 NOX/O2 Analyzing System

Cost-Effective Emission Control

For Green Image & Fuel Efficiency

Perfecting Sensible Technology

The G4100 NO_X/O_2 Analyzing System is a practical and direct in-situ gas analyzer that is used to monitor NO_X and O_2 concentrations. The G4100 NO_X/O_2 Analyzing System uses a new zirconia sensor technology, which provides a cost-effective solution to fulfill tightening emission regulations as well as to support the most effective operation for both diesel engines and boilers.

GREEN INSTRUMENTS

Strengthen Your Green Credentials

G_{4100} NO_X/O_2 Analyzer Board

Monitoring NO_X Emissions

Two factors drive the current development towards emission monitoring: Tightening environmental regulations from both regional and international authorities and the concern for showing environmental responsibility.

More stringent regulations have especially increased the need for NO_X reduction. Various after-treatment technologies including selective catalytic reduction (SCR) and exhaust re-circulation (EGR) are used for NO_X reduction. These systems require simple, reliable, and cost effective NOx monitoring solutions.

G_{4100} NO_X/O_2 Analyzing System

The G_{4100} NO_X/O_2 Analyzing System is a practical and direct in-situ gas analyzer for monitoring of NO_X and O_2 concentrations in emission gas. This system provides a cost-effective solution to help fulfilling tightening emission regulations as well as supporting the most effective operation for all types of combustions processes.

Continuously monitoring of NO_X emissions can be used to

Key Features

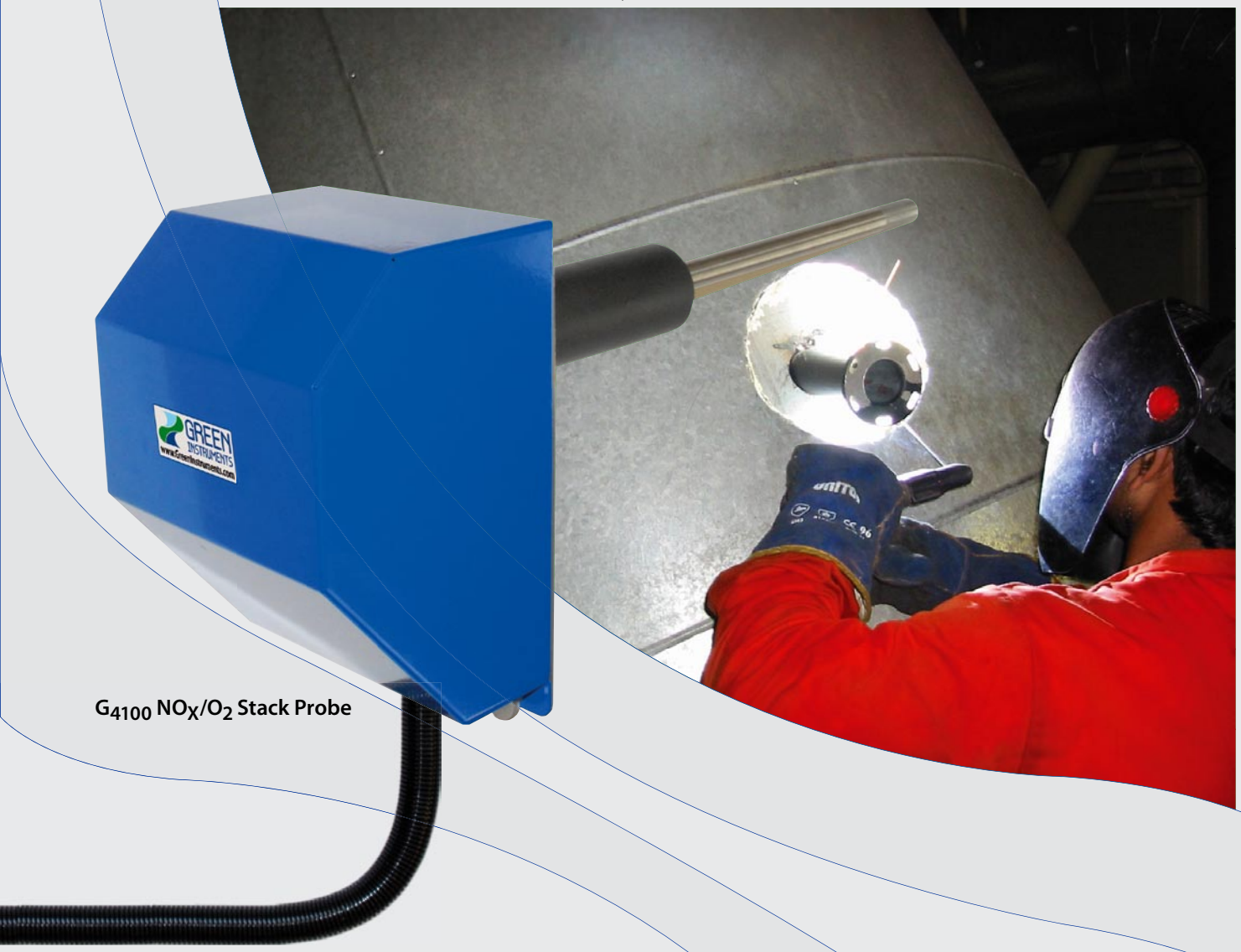
Lloyd's Register TYPE APPROVAL

- **Strengthens your green image**
- **Complies with tightening emission regulations**
- **Checks engine performance**
- **Provides data for SCR/combustion optimization**

- **In-situ and direct monitoring**
- **Highly reliable true wet measurement of NOx and O_2 in flue gas**
- **No sample lines, sample system, or converters**
- **Plug'n'play — easy installation and integration**
- **Easy operation with LCD touch screen**
- **Automatic back flushing and purging of the probe**
- **Analog outputs and data transmission via Ethernet**
- **Low total cost of ownership**

- **Worldwide customer support via service partners**

Plug'N'Play = Low Cost of Ownership



G_{4100} NO_X/O_2 Stack Probe

control various after-treatment technologies by using the real time NOx data that is generated by the G_{4100} NO_X/O_2 Analyzing System.

The G_{4100} NO_X/O_2 Analyzing System is also designed to meet the challenging requirements for monitoring the inlets and outlets of selective catalytic reduction systems (SCR) on all types of combustion sources.

The G_{4100} provides real time measurements of NO_X in ppm and O_2 in % and it is designed to withstand a rugged environment. It can be used both for marine and land based applications.

Easy Zirconia Technology

The G_{4100} uses a zirconium oxide (ZrO2) sensor with multiple diffusion cells specifically for NO_X measurement. This sensor is small and robust and can be installed directly on the stack without special protection. This technology allows real-time measurement of NO_X/O_2 on wet basis at high temperatures. It avoids sampling systems, coolers and converters with all their disadvantages.

The simple plug'n'play design makes it easy and cost-effective to install, operate, and maintain the analyzing system. The G_{4100} NO_X/O_2 Analyzing System consists of an ejector probe that is connected to the analyzer board.

Easy Reporting with G_{49xx}

As an optional extension to the G_{4100}, Green Instruments offers you the G49xx Visualization & Reporting Family which is a modular system that provides tailor made solutions. The requirements for emissions reporting and data system integration are different from application to application.

The following main modules are available:

- **G_{4900} Recording & Visualization System:** Data logging and recording capacity for the G_{4100}.
- **G_{4901} Reporting System:** relevant for approval by flag state and/or class.

Data from the G_{1000} Smoke Density Monitor can easily be integrated into the G_{49xx} Family.

Specifications - G4100

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Analyzer

Measurement range	NO_X: 0 to 1500 ppm (F.S.) - O_2: 0 to 21% (F.S.)
Repeatability	Better than 1.0% of F.S. for both NO_X and O_2
Accuracy	Better than 2.0% of F.S. for both NO_X and O_2
Response time	90% of F.S. in less than 30 sec.
Power supply	100...230 V AC, 50...60 Hz or 24 V DC. Consumption max. 40 VA
Ambient temperature	0°C to 55°C
Interface	Touch screen 71 × 39 mm with trend graph display
Analog output signal	2 x 4...20 mA range selectable (for NO_X and O_2). Load output (max.): 20 mA/ 600 Ω / 24 VDC
System interface	Analog 4...20 mA (optional: Ethernet)
Relays	4 relays , volt free, 5A 24 VDC/VAC
Analyzer casing	Aluminum casing IP67

Analyzer board with connections

Dimensions / Weight	H×W×D: 600×500×150 (wall mounted) / approx. 10 kg (without umbilical cord)
Test gas inlet	Max. 2 bar - 1/8" BSP connection
Span NO_X Gas	Known concentration of NO_X in N_2 in the range of 50...1500 ppm with 0.0% O_2
Air supply reduction regulator	Incl. 25µm filter - max. 8 bar - 1/8" BSP connection
Zero NO_X Gas – Air supply	Instrument air with 0 ppm NO_X and 20.9% O_2. Quality according to ISO 8573-1.4.4.4. Consumption up to 5 l/min

Ejector Probe

Sensor technology	Heated zirconia type sensor
Sample temperature	0°C to 500°C
Probe length/socket	Insert length: app. 250-300 mm - for duct diameters 290-2800 mm
Calibration air flow	App. 2 l/min
Ejector air flow at 1 bar	App. 2 l/min ≈ Vacuum 80 mm H_2O - adjustable if more suction is needed
Dimensions / Weight	H×W×D: 285×180×600 mm / approx. 5 kg (without umbilical cord)
Umbilical cord	3.0 m length in 28 mm nylon conduit

Optional Equipment

G_{4900} Recording & Visualization System
G_{4901} Reporting System
G_{4902} Extended Visualization & Reporting System
Test gas bottle case with span NO_X gas bottle and regulator
Ambient air sensor module
GPS module

Specifications subject to changes without notice

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