



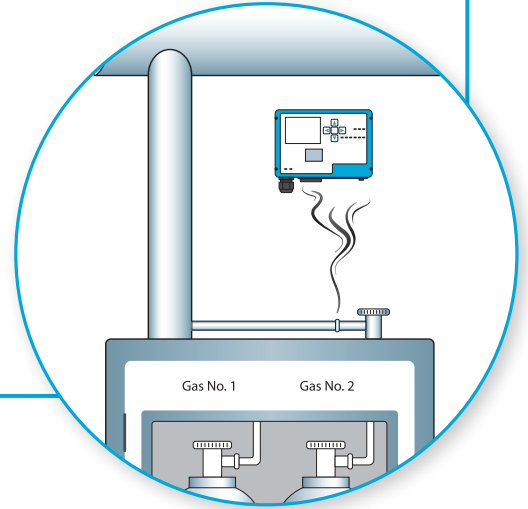
Fixed gas detection systems

smart  
**GasDetection**  
Technologies



# D-ReX<sup>®</sup> PoU

## Safety at the Point of Use



 **MADE IN GERMANY**

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# Diffusion Mode Gas Detection at the Point of Use (PoU)

The D-ReX PoU is the new standard when it comes to monitoring toxic, combustable and corrosive gases as well as the oxygen concentration at the Point of Use. It offers a variety of modern features that set it apart from other gas detection instruments for the semiconductor industry. These include easy-to-understand information on its high-resolution color display and a variety of different communication options, including Bluetooth and a Power-over-Ethernet (PoE)-enabled network interface.



## USPs:

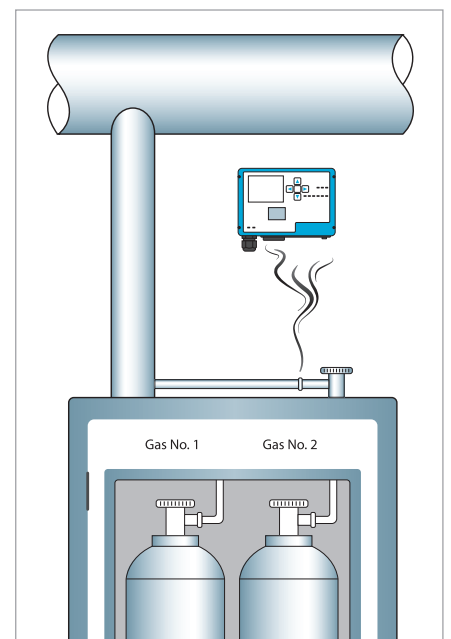
- » High-resolution, full-color 2.4" TFT display
- » Plain text information
- » Bluetooth®

## Options:

- » 5x internal relays (form C, programmable)
- » 16x external relays (GMA200-RT/D)
- » LonWorks®

## Features:

- » Sensors for approximately 60 gases
- » Hot-swappable smart sensor cartridge
- » Tool-free maintenance
- » Power-over-Ethernet (PoE) communication
- » Can be addresses via web portal
- » Password-protected menu
- » Interface:
  - Analog: 4–20 mA output
  - Digital: RS-485 (Modbus/RTU)
  - 10/100 Mbit Ethernet (Modbus/TCP)
- » Bright status and alarm LEDs
- » Data logger to review sensor and alarm history
- » CE marked and UL certified



### Easy to use and maintain

The D-ReX is a very user-friendly, easy-to-maintain gas detector.

### High-resolution, full-color display

The 2.4", 320 x 240 pixel full-color TFT display sets new standards for gas detectors. It provides clear and precise information about the current measured values, the short-term and long-term exposure, as well as any malfunctions that may have occurred. Information can be displayed in a variety of languages and scripts, including English, German and Simplified Chinese.

### Clear Information

No longer will you have to decipher cryptic error codes – information on any issue is instead displayed in plain text. Status LEDs provide an additional instant overview of vital components of the system.

### Intuitive device management

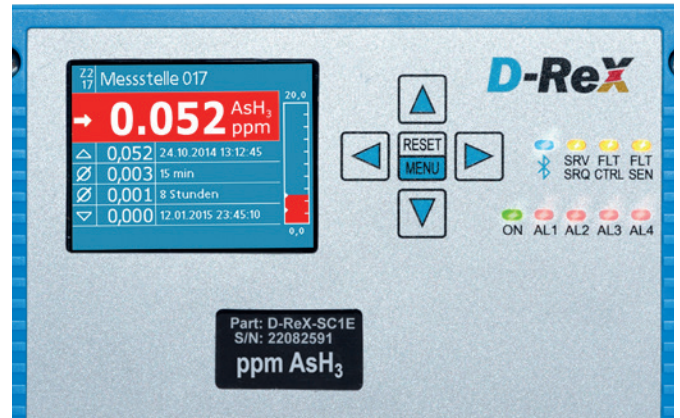
Settings on the D-ReX can easily be managed using the configuration program or the GfG app (Android). They can be connected to the device either via RJ45 an interface or Bluetooth. This will give you access to all settings and configuration options. After entering the password, changes can also be made using the control keys in the D-ReX's service menu.

### Advanced connectivity

The D-ReX comes with a wide variety of communication interfaces: Choose between analog, industry standard 4-20 mA, digital RS-485 interface (Modbus/RTU), Ethernet (Modbus/TCP) and LonWorks (optional) for signal transmission. The Bluetooth option enables wireless connectivity. In addition to the five internal, programmable changeover contact relays (optional), 16 additional relays can be addressed by connecting the D-ReX to a GMA200-RT/D relay module.

### Periodic sensor self-tests

The plug-and-play smart sensor cartridges are pre-configured and pre-calibrated for easy installation or replacement. Automatic sensor self-tests increase safety while reducing maintenance costs even further.



User interface with display, control keys and status LEDs

### The new Standard for Versatility: D-ReX

All the advantages mentioned perfectly qualify the D-ReX for numerous applications in virtually all industries. Some of its unique features make it particularly suitable for use in the semiconductor industry, photovoltaic industry and industrial manufacturing as well as in laboratories. If you are looking for the gas detector that best suits your needs, the D-ReX will be your first choice for many applications.

### Possible areas of application:

- » Distribution boxes
- » Process tools
- » Vacuum pumps
- » Scrubbers
- » Gas cabinets
- » Ambient breathing zones
- » Storage areas
- » Cleanroom environments
- » Sub fab systems
- and many more.



# Versatility means having options

No two facilities are the same and even within a facility, the requirements for a gas detector can vary from department to department or from one gas being monitored to another. It is therefore an immense help to have a gas detector that can be configured and adapted accordingly.



### LonWorks®

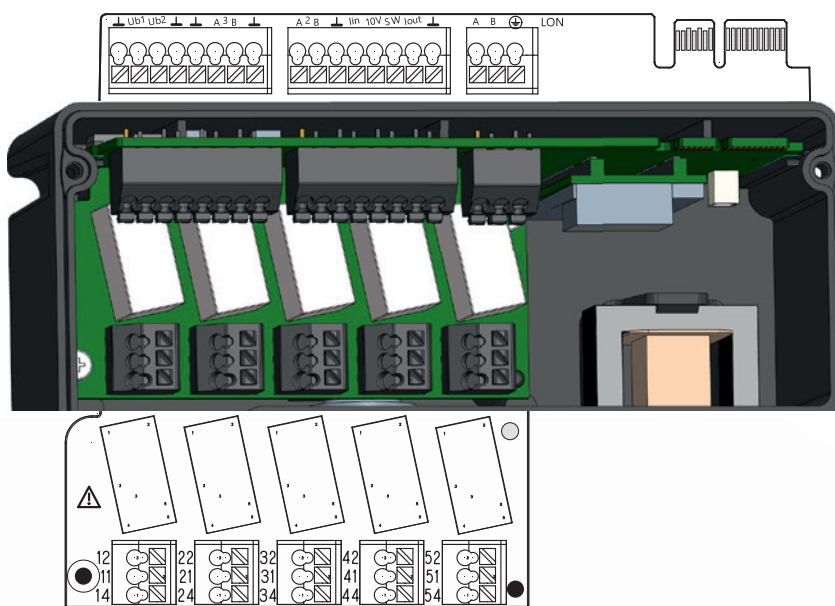
LonWorks is an open and interoperable system for building automation and is characterized by its flexible topology and cross trade functions.

If your previous gas detection system was integrated into your infrastructure via LonWorks or you want your new system to be integrated using the LonTalk® protocol, the D-ReX can be incorporated seamlessly, as all D-ReX versions are available with an optional LonWorks module. Keep the advantages of LonWorks, while benefitting from a state-of-the-art gas detection solution at the same time.

### Internal Relays

Depending on the application, it may be beneficial for the gas detector to have its own relays. All versions of the D-ReX are optionally available with 5 internal, freely programmable form C relays. The terminal allocation can be seen here:

Alternatively, you can also connect an external GMA200-RT/D relay module to add a further 16 relays to the D-ReX.



### D-ReX versions and options

D-ReX Version	Internal Sensor (Diffusion)	External Sensor (Diffusion)	Pump module (eXtraction Module)	Py-ReX	Internal Relays	LonWorks
Point of Use (PoU)	✓				5 (option)	(option)
Point of Installation (PoI)		✓			5 (option)	(option)
Point of Sampling (PoS)	✓		✓	✓*	5 (option)	(option)

\* Required for certain gases

# Smart Cartridge Technology for low total cost of ownership

Smart devices are everywhere by now, but GfG goes a step further to offer you Smart Design. One of the most efficient ways to optimize both the cost of ownership and your environmental footprint is to minimize waste. That's why the D-ReX was designed to ensure that only components that are actually subject to wear need to be replaced. Only the sensor is replaced when it is used up - you can continue to use the smart sensor cartridge.

## USPs:

- » Only the sensor is replaced - less waste, lower costs
- » Identical sensor cartridges for all applications (Smart Cartridge)
- » Hot-swappable within seconds (no tools needed)
- » Modbus communication between sensor and D-ReX

## Available Accessory:

- » Calibration cap for PoU
- » DIN rail

GfG gas sensors are designed to be highly specific to the gas they are intended to detect. While the cross sensitivities of GfG sensors are in accordance with the typical values of sensors for the respective gases in industrial applications, GfG sensors offer the highest level of stability, performance and relative response documentation of any available sensors. For detailed information on this, please refer to the sensors' individual data sheets.

## Smart Sensors

### Measuring Principle:

- » EC = electrochemical
- » CC = catalytic combustion (LEL)
- » IR = infrared



### List of Detectable Gases using an EC Sensor

Formula	Gas	Nominal Range	Formula	Gas	Nominal Range
AsH <sub>3</sub>	Arsine	0–1 ppm	HBr	Hydrogen bromide	0–30 ppm
AsH <sub>3</sub>	Arsine / no H <sub>2</sub> (no cross-sensitivity to H <sub>2</sub> )	0–1 ppm	HCl	Hydrogen chloride	0–30 ppm
B <sub>2</sub> H <sub>6</sub>	Diborane	0–1 ppm	HCN	Hydrogen cyanide	0–30 ppm
Br <sub>2</sub>	Bromine	0–5 ppm	HF	Hydrogen fluoride	0–10 ppm
Cl <sub>2</sub>	Chlorine	0–10 ppm	HMDS	Hexamethyl disilazane	0–0.5 Vol.-%
ClF <sub>3</sub>	Chlorine trifluoride	0–1 ppm	N <sub>2</sub> H <sub>4</sub>	Hydrazine	0–1 ppm
ClO <sub>2</sub>	Chlorine dioxide	0–2 ppm	NH <sub>3</sub>	Ammonia	0–100 ppm
CO	Carbon monoxide	0–500 ppm	NH <sub>3</sub>	Ammonia	0–1000 ppm
COCl <sub>2</sub>	Phosgene	0–2 ppm	NH <sub>3</sub>	Ammonia	0–5000 ppm
DCS	Dichlorosilane	0–30 ppm	NO	Nitrogen monoxide	0–100 ppm
ETO	Ethylene oxide	0–20 ppm	NO <sub>2</sub>	Nitrogen dioxide	0–30 ppm
F <sub>2</sub>	Fluorine	0–5 ppm	O <sub>2</sub>	Oxygen (5-year sensor, lead-free)	0–25 Vol.-%
GeH <sub>4</sub>	Germanium hydrogen	0–5 ppm	O <sub>3</sub>	Ozone	0–5 ppm
H <sub>2</sub>	Hydrogen	0–2000 ppm	PH <sub>3</sub>	Phosphine	0–1 ppm
H <sub>2</sub>	Hydrogen	0–1 Vol.-%	SiH <sub>4</sub>	Silane	0–50 ppm
H <sub>2</sub>	Hydrogen	0–4 Vol.-%	SO <sub>2</sub>	Sulfur dioxide	0–10 ppm
H <sub>2</sub> S	Hydrogen sulfide	0–100 ppm	TEOS	Tetraethyl orthosilicate	0–100 ppm
H <sub>2</sub> SE	Hydrogen selenide	0–5 ppm	TMB	Trimethyl borate	0–500 ppm

### List of Detectable Gases using an IR Sensor

Formula	Gas	Nominal Range
C <sub>3</sub> H <sub>8</sub>	Propane	0–2 Vol.-%
CH <sub>4</sub>	Methane	0–5 Vol.-%
CO <sub>2</sub>	Carbon dioxide	0–5 Vol.-%
CO <sub>2</sub>	Carbon dioxide	0–1 Vol.-%
N <sub>2</sub> O	Nitrous oxide	0–1000 ppm
N <sub>2</sub> O	Nitrous oxide	0–1 Vol.-%

### List of Detectable Gases using a CC Sensor

Formula	Gas	Nominal Range
C <sub>2</sub> H <sub>2</sub>	Acetylene	0–100 % UEG
C <sub>2</sub> H <sub>4</sub>	Ethylene	0–100 % UEG
C <sub>2</sub> H <sub>6</sub>	Ethane	0–100 % UEG
C <sub>3</sub> H <sub>8</sub>	Propane	0–100 % UEG
C <sub>4</sub> H <sub>10</sub>	Butane	0–100 % UEG
C <sub>5</sub> H <sub>12</sub>	Pentane	0–100 % UEG
C <sub>6</sub> H <sub>14</sub>	Hexane	0–100 % UEG
CH <sub>4</sub>	Methane	0–100 % UEG
H <sub>2</sub>	Hydrogen	0–100 % UEG

Other gases on request.

# Technical Specification: D-ReX (PoU)

<b>Gases:</b>	See gas list
<b>Measuring Principle:</b>	Sensor dependent; available options: EC = electrochemical CC = catalytic combustion IR = infrared
<b>Sampling Method:</b>	Diffusion
<b>Display and Interface:</b>	Display: 2.4" full color TFT (320 x 240 pixel) Interface: 5 push buttons
<b>Selectable languages:</b>	German, English (more languages coming soon)
<b>Communication:</b>	» Analog: 4–20 mA output » Digital: RS-485 (Modbus/RTU) » 10/100 Mbit Ethernet (Modbus/TCP) » Bluetooth » LonWorks (option)  Relays: 5x internal (programmable) form C relays (option) Max. 2 A / 30 V DC Min. 10 mA / 5 V can optionally be upgraded with an external relay module with up to 16 relays each
<b>Response Time:</b>	Varies by sensor (see sensor data sheet)
<b>Expected Average Life of the Sensor:</b>	Varies by sensor (see sensor data sheet)
<b>Operating Temperature:</b>	-10 to +40 °C 14 to 104 °F
<b>Operating Humidity:</b>	5 to 90 % RH
<b>Operating Pressure:</b>	70 to 130 kPa
<b>Power Supply:</b>	12 to 30 V DC SELV/PELV PoE = 48 V DC
<b>Housing:</b>	Plastic
<b>Protection Class:</b>	Base unit IP30 (optionally IP64) / Sensor cartridge IP43
<b>Mounting:</b>	(DIN) rail IEC/EN
<b>Weight:</b>	650 g up to 850 g
<b>Dimensions:</b>	145 x 105 x 78 mm
<b>(W x H x D)</b>	5.7 x 4.1 x 3.0 in
<b>Labelling:</b>	CE and UL certification

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