



**More than the sum  
of their components**

**GAS DETECTION  
SYSTEMS**

ST 16546-2006



## Superior performance with a pedigree

Dräger is a successful global player in the field of stationary gas measuring technology. For more than 70 years we have been developing gas measuring technology products, repeatedly setting new standards for measuring accuracy, durability and customer-specific adaptation options.

Our measuring technology monitors your production locations, warehouses and workplaces and warns you against imminent gas hazards and flames. In addition to a uniquely wide range of sensors, measuring instruments and technical components we offer expert planning, maintenance, service and training. Dräger sensors measure more than 400 flammable or toxic gases and vapours as well as oxygen in measuring ranges from vol.-% through %-LEL to ppb. We can cover every required measuring technology with our own products: Infrared absorption, electrochemical reaction and catalytic bead to detect hazardous gas emissions. However, our portfolio also includes various technologies for flame detection, such as UV/IR and visual monitoring.

Third party products such as horns, warning lights and fans are compatible with our components and integrated by us into the system. Our gas measuring systems are of modular design, making your safety design future-proof and your investment pay off for years to come. New products are designed with compatibility in mind, meaning systems can normally be extended, modified or modernised at any time using existing components.



## Detailed planning, customised implementation

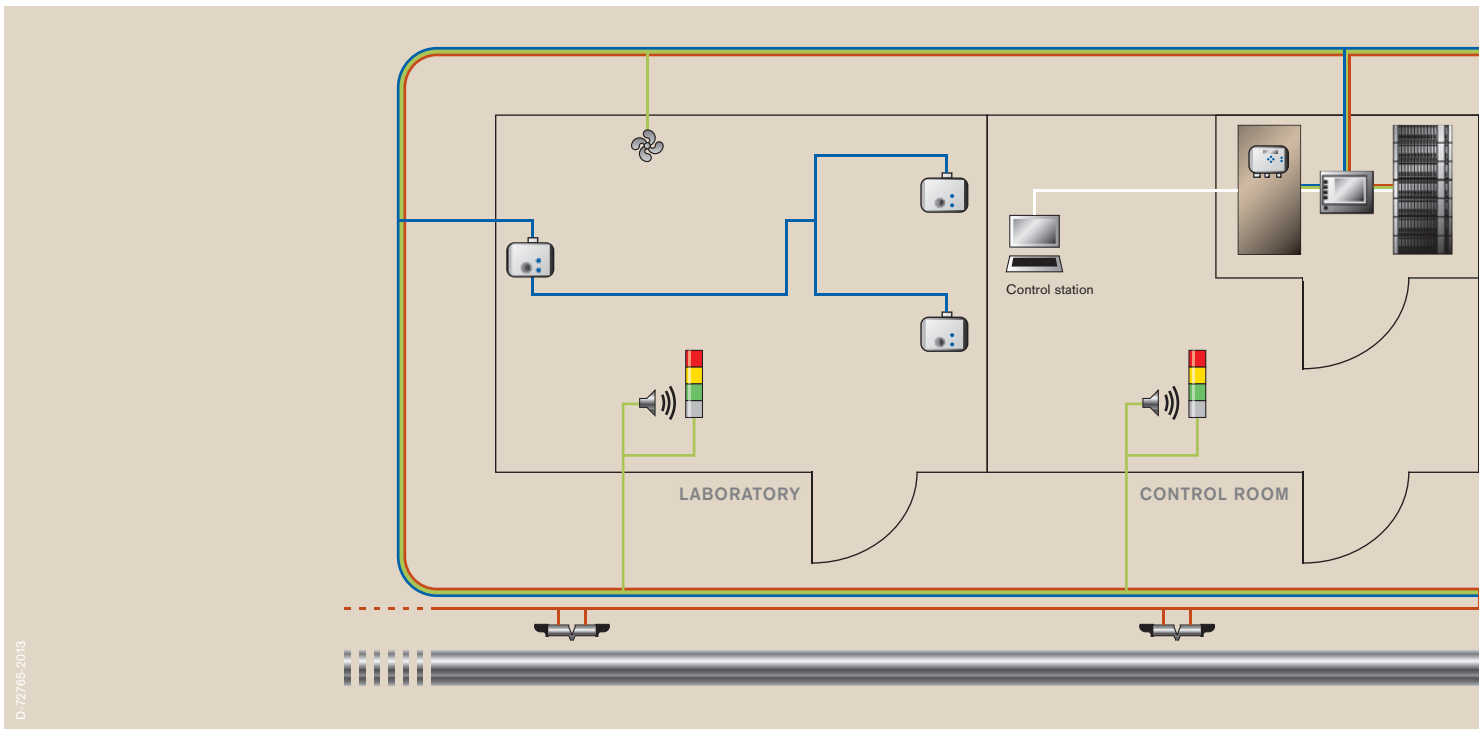
The integration of gas measuring and warning systems into existing infrastructures requires complex planning and flexible products. Chemical/physical data, technical potential, legal requirements and of course, your operational processes need to be aligned.

Dräger provides all the conditions for the successful setup of gas warning systems with recognised good products, competent consultation based on experience, professional planning and implementation and a reliable after-sales service. From the initial contact up to the final project acceptance, a gas warning system will be created in accordance with your requirements: functional, modular and scalable. All important components are developed and produced directly by Dräger. Sensors in particular are continually optimised and adapted to new requirements. Complemented by highly innovative electronics and software, these sensors can measure the smallest concentrations, even under adverse environmental conditions.

Patented self-check functions increase system availability and minimise the maintenance effort of the user. All system components from the transmitter to the controller feature standard interfaces like analogue 4 - 20 mA interfaces, HART® or various digital interfaces. These allow an optimum system configuration for every application for example, cabling costs, system availability and data throughput. Of course, Dräger meets global approval requirements and contributes significantly to the creation of and compliance with new standards.



## Just one of our customer-specific solutions



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### OUR PRODUCT PORTFOLIO

Dräger offers you a comprehensive portfolio of stationary gas measuring technology products tuned to each other. Dependent on the measuring task, electrochemical, optical infrared or catalytic sensors are available. This sensor technology covers a spectrum of more than 400 detectable gases and vapours.

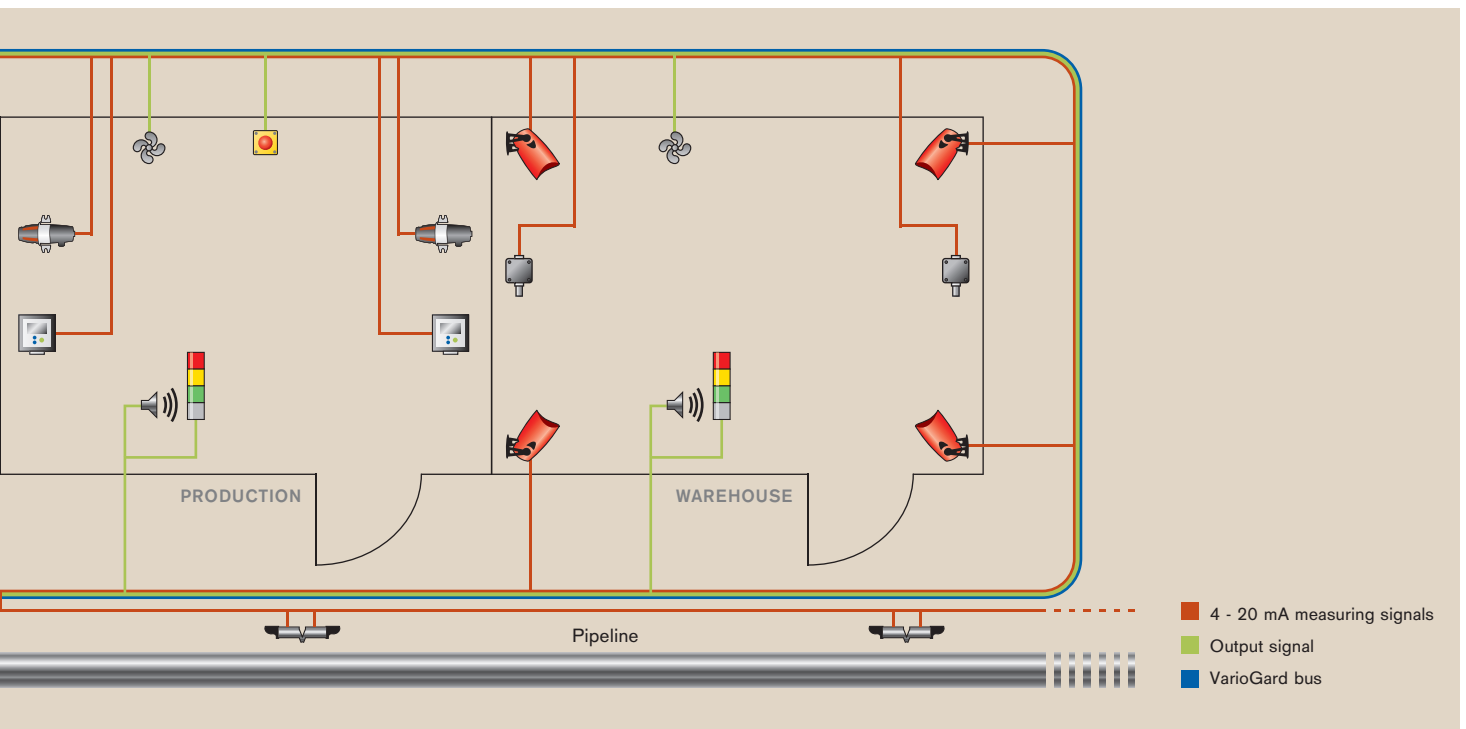
Our detectors range from simple measuring probes via open path systems for line monitoring, to digital transmitters with the most varied ignition protection

types and many special functions. Flame detectors with various monitoring methods and analysis criteria in different designs optimally complement your safety system.

With this approach to a safety system and the correct combination of components, you can also meet the functional safety requirements in accordance with SIL 2.

# Systematic design.

## Flexible integration. Seamless monitoring.



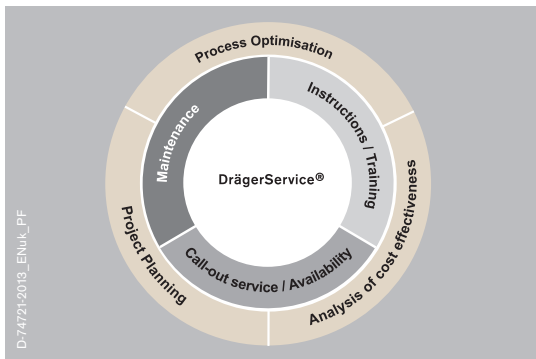
### PERFECT INTEGRABILITY

Due to its modular design, stationary gas measuring technology from Dräger can be very flexibly integrated into an existing infrastructure. The devices can be easily combined with each other and extended into a seamless safety network in accordance with your requirements. On site, Dräger engineers take detailed care of all relevant interfaces and data and the precision setup of your gas warning system.

### UNDERSTANDING YOUR CHALLENGES

Whether complete industrial systems, production sites, pipelines, material warehouses or highly specialised laboratories, Dräger also has suitable stationary gas measuring technology for your application. Our engineers determine the economically appropriate number and optimum position of sensors based on the prevailing conditions. In combination with suitable analysis units and alarm facilities, the systems quickly warn against potential hazards from gases or flames.

## Always at your side



Do your requirements change over time?  
 Are you restructuring your production processes or expanding your plant?  
 Do you want to use the latest state of the art technology?  
 We are always at your service.

Dräger is represented by its own branches on all continents. Our competent local contacts are familiar with your national authority and production technology standards. For the design of gas warning systems, Dräger sales technicians collect relevant information during meetings with the customer on site. On this basis, a team of engineers and technicians with different specialisations prepare a proposal for the optimum solution. The projects are completed on time by a team of specialists from the areas planning, assembly and commissioning. The service portfolio of Dräger includes production inspections, factory

acceptance tests, installation, commissioning and maintenance. We offer training by our specialists at our corporate headquarters in Lübeck, our local system centres and directly at your premises.

Our customer relations are geared towards partnership and longterm co-operation and we continuously update you about new know-how or innovative applications.

## Our products for a successful system

| Toxic Measurement       | Display | Intrinsic Safety | Flameproof | Increased Safety | SIL   | 4-20 mA | Bus | HART® |
|-------------------------|---------|------------------|------------|------------------|-------|---------|-----|-------|
| <b>A</b> Polytron 7000  | ■       | ■                |            |                  | SIL 2 | ■       | □   | □     |
| <b>B</b> Polytron 3000  | □       | ■                |            |                  | SIL 1 | ■       |     |       |
| <b>C</b> Polytron 7500  | ■       |                  |            |                  |       | ■       |     | □     |
| <b>D</b> Polytron 8000  | ■       |                  | ■          | □                | SIL 2 | ■       |     | ■     |
| <b>E</b> Polytron 5000  | ■       |                  | ■          | □                | SIL 2 | ■       |     |       |
| <b>F</b> Polytron 8720  | ■       |                  | ■          | □                | SIL 2 | ■       |     | ■     |
| <b>G</b> Polytron 5720  | ■       |                  | ■          | □                | SIL 2 | ■       |     |       |
| <b>H</b> PIR 7200       |         |                  | ■          | ■                | SIL 2 | ■       |     | □     |
| <b>I</b> VarioGard 3000 |         |                  |            |                  |       |         | ■   |       |

■ Standard □ Option





| Ex Measurement    | Display | Intrinsic Safety | Flameproof | Increased Safety | SIL       | 4-20 mA | Bus | HART® |
|-------------------|---------|------------------|------------|------------------|-----------|---------|-----|-------|
| A Polytron 8700   | ■       |                  | ■          | □                | SIL 2     | ■       |     | ■     |
| B Polytron 8310   | ■       |                  | ■          | □                | SIL 2     | ■       |     | ■     |
| C Polytron 8200   | ■       |                  | ■          | □                | SIL 2     | ■       |     | ■     |
| D PIR 7000        |         |                  | ■          | ■                | SIL 2     | ■       |     | □     |
| E Polytron 5700   | ■       |                  | ■          | □                | SIL 2     | ■       |     |       |
| Polytron 5310     | ■       |                  | ■          | □                | SIL 2     | ■       |     |       |
| Polytron 5200     | ■       |                  | ■          | □                | SIL 2     | ■       |     |       |
| F Polytron Pulsar |         |                  | ■          |                  | SIL 2     | ■       |     | ■     |
| G PEX 3000        |         |                  | ■          | ■                | SIL 2     | ■       |     |       |
| H Polytron SE Ex  |         |                  |            |                  | SIL 1 (2) |         |     |       |
| I PIR 3000        |         |                  | ■          |                  | SIL 2     | ■       |     |       |
| J VarioGard 3200  |         |                  |            |                  |           |         | ■   |       |

■ Standard □ Option



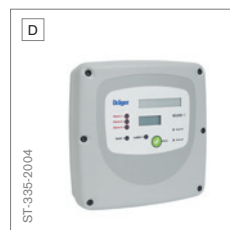
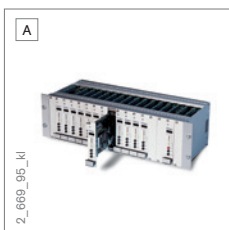
# Our know-how for your ideal solution!

| Flame Detection | UV | IR | Visual | Flameproof | SIL   | 4-20 mA | Standalone | HART® |
|-----------------|----|----|--------|------------|-------|---------|------------|-------|
| Flame 1300      |    | ■  |        |            |       | ■       |            |       |
| Flame 1700      | ■  |    |        |            |       | ■       |            |       |
| A Flame 2300    | ■  | ■  |        |            |       | ■       |            |       |
| B Flame 3000    |    |    | ■      | ■          |       | ■       | ■          |       |
| C Flame 5000    |    |    | ■      | ■          | SIL 2 | ■       | ■          | ■     |

■ Standard □ Option



| Control Units            | Channels | mA | mV | Dig. com. | SIL       | Surface Mount | DIN Rail Mount | Rack |
|--------------------------|----------|----|----|-----------|-----------|---------------|----------------|------|
| A REGARD                 | 99       | ■  | ■  | ■         | SIL 2     |               |                | ■    |
| REGARD 3900              | 16       | ■  |    | ■         | SIL 1 (2) | ■             |                |      |
| B REGARD 2400/2410       | 4        | ■  | □  |           |           | ■             | ■              |      |
| C REGARD-1               | 1        | ■  | ■  |           |           | ■             |                |      |
| D QuadGard               | 4        | ■  | ■  |           |           | ■             |                |      |
| E VarioGard Central Unit | 100      |    |    | ■         |           | ■             | ■              |      |



## A successful system in a few simple steps



### WE LISTEN – BASICS FOR A CONSULTATION MEETING

- List of substances to be monitored and expected concentrations
- List of potentially present interferents
- Information on existing ventilation systems
- Any available preconceptions, hazard analysis etc.
- Existing explosion protection document incl. division of Ex zones
- Authority requirements
- Environmental and deployment conditions for the system
- Details of the available energy supply
- Technical documentation of interfaces to existing systems
- Potential requirement for functional safety in accord. with EN/IEC 61508 (SIL)

### WE DELIVER – RESULTS OF A CONSULTATION MEETING

- Selection of the suitable sensor principles
- Specification of measures in case of an alarm
- Definition of alarm thresholds
- Preliminary specification of sensor locations
- Specification of the components with explosion protection
- Specification of installation location and type of analysis unit
- Integration of existing system components
- Forwarding of signals
- Proposals for a maintenance concept incl. response times
- Provision of calibration gases
- Time schedule for project implementation

#### CORPORATE HEADQUARTERS

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