Dräger

The ultimate solution for Gas Detection Systems

DRÄGER REGARD

Dräger. Technology for Life®

ST-2107-2003

Technology for Life

For over thirty years Dräger has been leading the challenge to offer Gas Detection Solutions for the protection of human life, industrial assets and the environment. The technological solution offered by Dräger, supported by its global infrastructure of Dräger Service ensures a total company commitment to safety.

Combining the innovative technology used by Dräger and the competencies of the Dräger gas detection system engineers, clients and customers can be 100% confident in the solution offered by Dräger. Dräger is the market leader for all Gas Detection Solutions, including field devices and Human Machine Interfaces.

Customers and clients rely on the advice and solutions offered by Dräger, thus demonstrating their confidence with the technology employed, the ease and flexibility of dealing with an international company and the long term integrity of after sales support.

Dräger works in close collaboration with all of their customers and clients to find the best possible solution, taking care of the initial investment without any reduction in safety. Experts from Dräger are always available to study an application, give advice on existing systems and propose new and cost effective solutions or modifications.

The Life Cycle approach from Dräger ensures that not only the current and instantaneous demand for safety is fulfilled, but the long term cost of ownership, serviceability and where necessary de-commissioning are all part of the initial design plan. This approach by Dräger meets with the latest demands of EN 50402 'Electrical apparatus for the detection and measurement of combustible or toxic gases or vapours or of oxygen - Requirements on the functional safety of fixed gas detection systems'.

ST-523-98

A customised Dräger REGARD system

ST-294-2007

Approvals
ATEX performance approved systems require a supporting Quality Assurance Certificate from a Notified Body

The Dräger REGARD family

REGARD describes Dräger's modular control system for Gas Detection Systems and Solutions.

Universal channel cards, multiplexing modules and HART fieldbus interfaces, supported by Modbus RTU and Profibus DP gateways make up the Dräger REGARD family. All of the Dräger REGARD I/O cards / modules are available with or without ATEX measurement performance certification. The simplistic design and system configuration methods of the Dräger REGARD system ensures that the Dräger REGARD family can be easily designed, configured and set into operation by the end user or by your local Dräger Service representative.

The Dräger REGARD family of control cards and modules is well established. The installed base comprises of over 240,000 I/O points. With this experience the migration to comply with the ATEX Directive 94/9/EC and the latest demands of EN 50402 (based on EN 61508) was seamless for the Dräger REGARD family of products.

The ATEX Directive 94/9/EC asks for performance approval of the entire system when there is a direct function to remove the risk of explosion (ignition).

This requirement is totally satisfied by the Dräger REGARD system; the Dräger REGARD system has ATEX certification II (2) G.

For applications where ATEX certification is not demanded the standard Dräger REGARD control system is offered.

Dräger offers many different types of gas detector for the detection of combustible gases / vapours, toxic gases and for oxygen deficiency / enrichment. The Dräger REGARD system fully supports each type of gas detector whether the gas detector is a three or two wire device, a conventional 4 to 20 mA device, a HART addressable device or a simple mV bridge signal device.

The Dräger REGARD Gas Detection System recognises the need to interface with top tier DCS systems and third party SCADA systems. To support these external links the Dräger REGARD system includes standard industrial gateways, supporting Modbus RTU and / or Profibus DP protocols.

2-669-95

Dräger REGARD rack 19"

ST-292-2007

Dräger Vision32 -
a typical viewing screen

ST-3837-2004

ST-467-2008

Standard or custom solutions

With over thirty years of gas detection experience Dräger are ideally place to offer a standard gas detection solution or engineer a specific solution to a specific application. From conceptual design through to system installation and start-up Dräger Saftey are there to help.

Standard Dräger REGARD gas detection systems utilise components from within the Dräger REGARD range and are normally constructed into a central control cabinet. The alarm logic and system integration is normally basic and straight forward. A rigid design is normally used.

ST-286-2007

A typical Dräger REGARD system

ST-339-2004

Dräger REGARD rack 1/2 19"

Complex, or custom systems take one further step. It is normal to use standard Dräger REGARD components; however the overall system complexity is derived from the use of third party equipment. For custom system we offer flexible solutions to your application. Before we commence our system design to meet with your requirements we undertake a detailed analysis of your current situation.

With our global set-up, therefore our local presence, we can visit your facility and engage in detailed communication with respect to your application. We then work together planning a final solution. Design changes, system modifications and detailed plans for installation and commissioning are all part of our planning element.

Where systems are required to meet a minimum safety target governed by EN 50402, our experienced system engineers will provide detailed calculations to support a specific SIL target.

Gas detector transmitter for toxic gases and oxygen

Gas detector transmitter for flammable gases and vapours

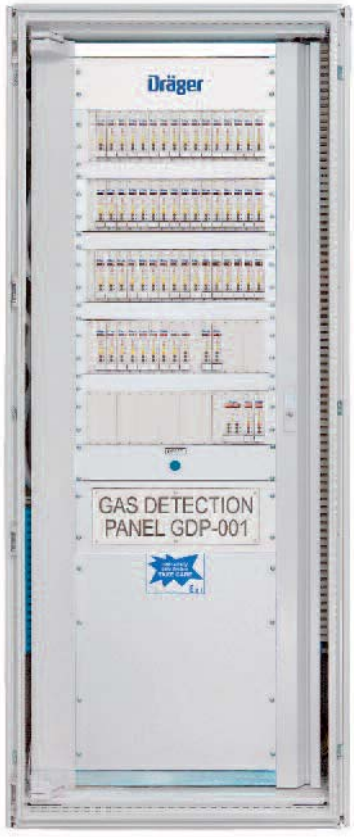
Open path detector for flammable gases and vapours

Dräger REGARD HART Interface

Horn

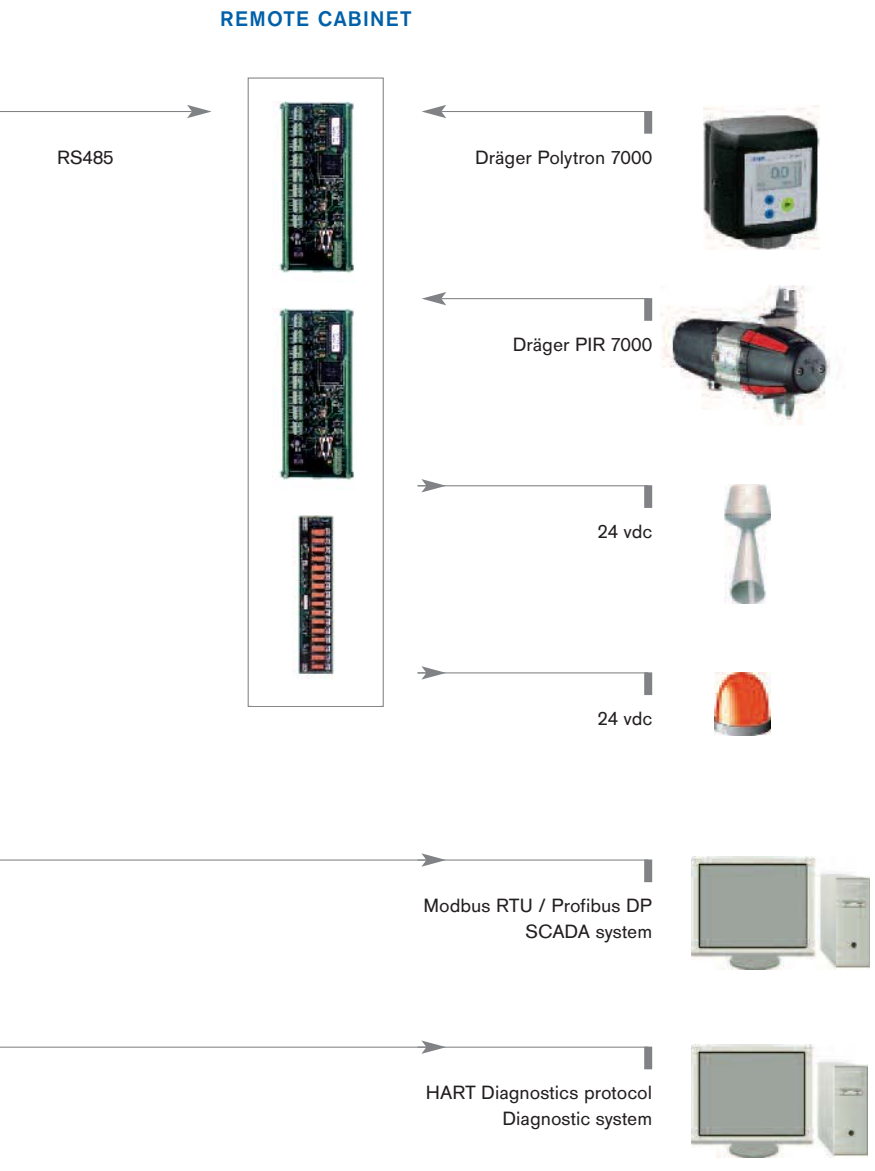
Strobe

CENTRAL SYSTEM



110 / 230 vac

24 vdc UPS



Dräger REGARD Installation

INSTALLATION METHODS

POINT TO POINT WIRING

Using either single input Dräger REGARD cards or mutli-entry Dräger REGARD modules each field device can be installed and wired to the Dräger REGARD central system using conventional point to point wiring.

Multi-entry Dräger REGARD modules are flexible enough to allow remote installation, utilising point to point wiring locally and a single RS485 link to the central control unit.

HART MULTI-DROP

Using a Dräger REGARD HART® card allows Dräger Polytron transmitters to be multi-dropped onto a single field cable. This offers a reduction in the quantity of field cable used. The number of transmitters on a single multi-drop loop is dictated by the individual installation parameters. Specialist advice and design services are offered by Dräger.

SYSTEM INTERFACING

The Dräger REGARD system recognises the need to interface with top tier DCS systems or the Dräger Vision32 SCADA system. The Dräger REGARD system utilises the two main protocols commonly found around the globe. Both Modbus RTU and Profibus DP protocols are used.

Dräger Vision32 – Multiple SCADA solutions from Dräger

Dräger Vision32 is an example of a SCADA system specifically designed to support any Dräger REGARD system. The Vision32 system graphically depicts gas concentration, status changes such as gas alarming, malfunction and maintenance overrides. All information can be displayed as either bar graphs, tables, XY diagrams and/or plant images.

Dräger Vision32 is configured from the Rockwell software package. Using gas detector icons to display the Dräger REGARD gas information, status and historical records ensures that all Dräger Vision32 systems are easily configured and operated.

Each Dräger Vision32 system requires a runtime license. The license required is determined by the size and flexibility of the SCADA system and is totally dependant upon the end users requirements. For a runtime license, Dräger will remain responsible for the total configuration of the Dräger Vision32 system and any subsequent modifications.

SIGNAL INFORMATION TYPES

The following signal information is transmitted via a serial interface (RS232, RS422/RS485) from the Dräger REGARD Modbus gateway card to the PC and displayed by the visualisation software Dräger Vision32.

For each Dräger REGARD channel:
- Current measured value (gas concentration)
- Current status of gas alarms A1, A2 and A3/Fault condition
- Calibration and maintenance override
- Card inhibit mode
- Equipment or system failure

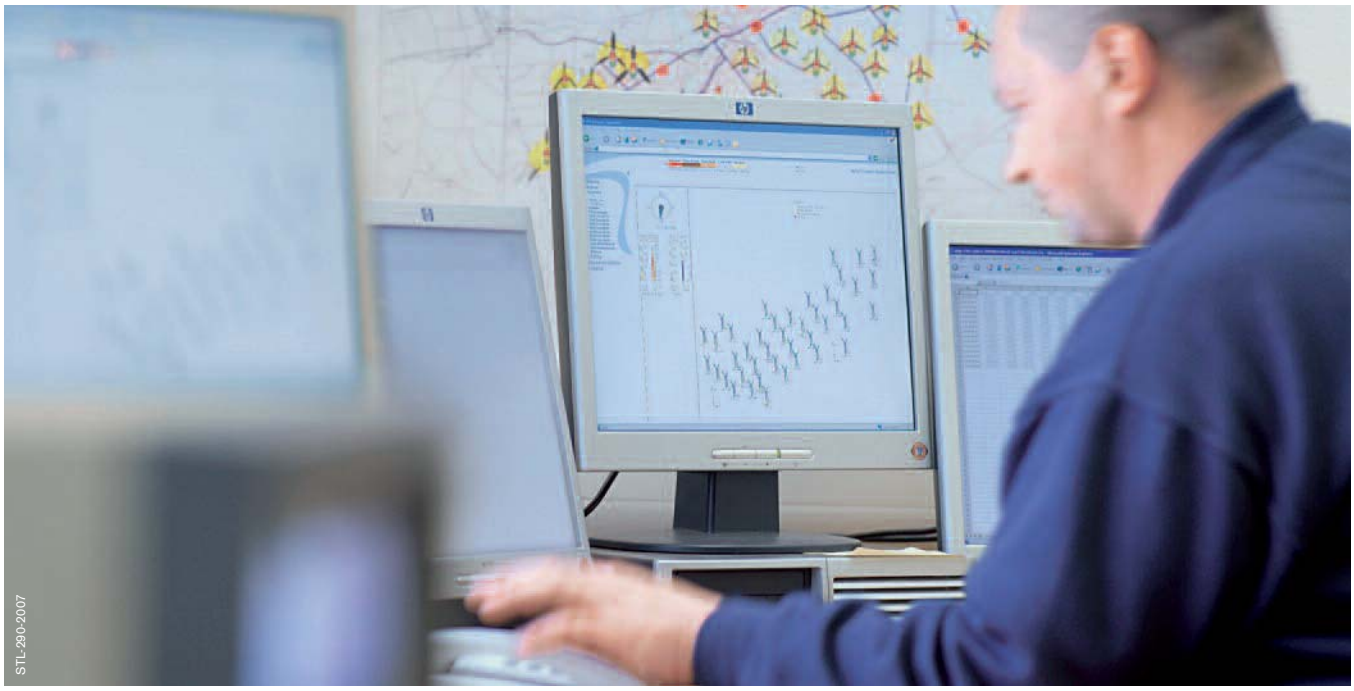
DISPLAY INFORMATION

The following display screens can be configured:
- Bar graphs showing five gas channels simultaneously
- Alarm window showing event history
- Overview of plant images
- Operator functions
- Customised inputs e.g. wind direction

INTEGRATION OF PLANT IMAGES

Plant images can be imported into the Dräger Vision32 software. This allows each individual gas detector to be linked to a plant image, thus supporting the system operator with location information should a gas leak occur. The gas detector icon shows the gas alarm and fault status as well as inhibit and calibration signal.

By selecting any gas detector icon, a bar graph window is called up showing gas value, alarm levels, maintenance and override status and fault condition. Trending can be selected in a further step.


STL-290-2007

ST-325-2004

Modbus RTU gateway
A serial interface card for connection to third party systems, including Dräger Vision32

ST-287-2007

Profibus DP gateway
An interface module for connection to third party systems

TRENDING

Trending is an integral function of the Dräger Vision32 system. The accuracy, performance and limitations are all restricted by the base software.

Normally the Dräger Vision32 system offers a historical trend of up to 90 days.

EVENT LOGGING

Each software base package is delivered with its own default event logging package; a system event log. Event logs can be configured to identify alarm events for gas and fault, maintenance and overrides, channel inhibit and alarm acknowledgement.
All of these events are customer specific and are configured into the final Dräger Vision32 package after detailed discussion with the end user.

MINIMUM HARDWARE REQUIREMENTS

- IBM Pentium II 2.6 GHz computer
- Minimum of 1 GB RAM
- 80 GB hard drive
- CD/DVD-ROM drive, 3.5" disk drive
- SVGA or higher colour monitor
- One serial port
- USB ports
- Network adaptor
- Minimum 17" screen

SOFTWARE REQUIREMENTS

- Operating system – Windows 2000/XP Professional
- Runtime licence Rockwell RS View 6.5
- Runtime, Kepserver, Enterprise, Modbus OPC 3.1

DRÄGER REGARD COMPONENTS

Master card
A system Master card which supervises up to 99 input channels. Offers common, single and voting alarms and a remote system reset input

ST-330-2004

Extra Master card
A silent, no supervision Master card offering additional single, common and voting alarms

ST-330-2004

4 to 20 mA card
A single channel control card with local display, 3 gas alarm levels, optional fault, repeat 4 to 20 mA and a remote reset input

ST-331-2004

4 to 20 mA Optical card
A single channel control card specifically for Infrared gas detections with local display, 2 gas alarm levels, 2 fault levels, repeat 4 to 20 mA and a remote reset input

ST-477-2001

SE Ex card
A single channel control card with local display, 3 gas alarm levels, optional fault, repeat 4 to 20 mA and a remote reset input

ST-328-2004

HART card
A multiplexing alarm card with local display, 3 common gas alarm levels, optional common fault and a remote reset input

ST-326-2004

8 way display card
A control card to interface with the 8 entry 4 to 20 mA modules. The card has a local display, 3 common gas alarm levels, optional common fault and a remote reset input

ST-329-2004

8 entry 4 to 20 mA module
A single DIN rail mounting module for the direct connection of up to eight 4 to 20 mA transmitters

ST-332-2004

19" rack
Standard cardframe for all industrial cabinets

ST-2-669-95

Relay display card
A control card to interface with the relay modules. The card has a local display, flexible relay logic and fault alarm

ST-327-2004

Relay module
A DIN rail mounting module for the direct connection of up to sixteen alarm devices. Sixteen modules can be connected to a single relay display card

ST-336-2004

1/2 19" rack
Half size cardframe for customised solutions

ST-339-2004

Modbus RTU gateway
A single card with Modbus RTU protocol giving gas and alarm data via RS232, RS485 or RS422

ST-325-2004

Profibus DP gateway
A single DIN rail module with Profibus DP protocol giving gas and alarm data

ST-287-2007

Interface card
A single card to interface between the REGARD system and a PC to send, receive and modify the system configuration.

D-12700-2009

ORDER INFORMATION

Standard Dräger REGARD cards	Order No
Master card	42 05 702
4 to 20 mA card	42 05 701
4 to 20 mA Optical card	42 06 085
SE Ex card	42 05 703
HART card	42 05 900
HART 7000 card	42 08 987
8 way display card	42 06 078
8 entry 4 to 20 mA module	42 06 079
Relay display card	42 06 081
Relay module	42 06 432
Modbus card V 1.9	42 05 706
Modbus card V 2.0	42 06 739
Profibus DP gateway	AG 00 485
Interface card	8322990

ATEX Dräger REGARD cards	
Master card	42 06 708
4 to 20 mA card	42 06 706
4 to 20 mA Optical card	42 06 721
SE Ex card	42 06 707
8 way display card	42 06 717
8 entry 4 to 20 mA module	42 06 718
Relay display card	42 06 719
Relay module	42 06 720

Rack systems	
19" rack	42 05 700
1/2 19" rack	42 05 709

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