



**AUTRONICA**



**DET-TRONICS**



# AUTROSAFE IFG 4 IFG

A new level in integrated fire and gas detection

## HIGH-END SAFETY FOR THE MOST CRITICAL INDUSTRIES

AutoSafe IFG Integrated Fire and Gas (IFG) provides a totally integrated addressable solution for fire and gas detection in the oil and gas industry. From offshore platforms to LNG plants to refineries, AutoSafe IFG delivers the most rigorous F&G safety to date.

We launched AutoSafe IFG in 1999. From day one, it has proven its unique stability and reliability, and is now protecting more than 15 000 installations worldwide, both on and offshore. AutoSafe IFG provides reliable, easily extensible, cost-effective detection of hazardous fire and gas with advanced functionality for a wide range of applications.

We have invested our resources into developing a system which meets the demands of the oil and gas industry throughout the world. Our efforts have delivered: AutoSafe IFG is the only system with full IEC 61508 SIL2 (Safety Integrity Level 2) system approval. The system is also conforming to EN 54, NFPA 72 and bearing many other international standard approvals. AutoSafe IFG meets the highest requirements of NFPA, including class X signaling line circuits and enviable approved temperature ratings of  $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  for many devices.

Smart technology reduces maintenance cost and prolongs the life cycle of the entire system, while at the same time providing unparalleled protection and eliminating false alarms.

**We protect lives and property  
with high-technology certified fire and gas safety solutions delivered with uncompromising  
standards and quality.**



# APPLICATIONS

Because AutoSafe IFG is certified and extensible, the applications to which it is suited are numerous. Modular design allows AutoSafe IFG to be adapted precisely to the conditions at hand; an AutoSafe IFG system provides the best solution for the given situation.

The expert team from our Petrochemical, oil & gas division has wide-ranging experience executing projects in the petrochemical, oil and gas industry; buying an AutoSafe IFG system also means that the customer receives a technically advanced system, designed and supported by experienced and qualified engineers.

Examples of applications protected by AutoSafe IFG:



FPSO



Jack-up rig



FSO



Offshore wind farm



LNG plant



Semi submersible rig



Drill ship



Offshore production platform



Fertilizer plant



Gas compressor station

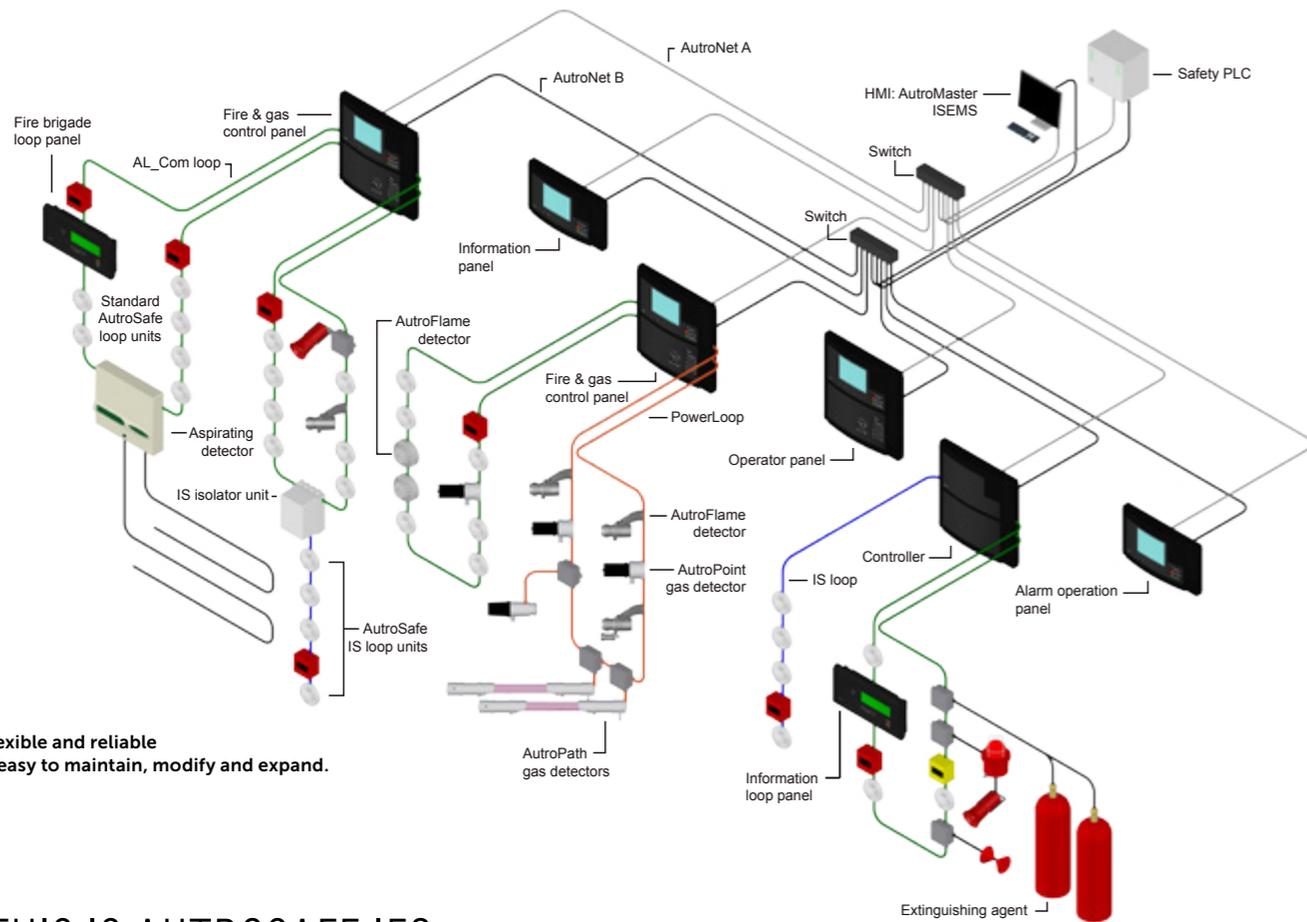


Petrochemical plant



Refinery





**Flexible and reliable**  
 – easy to maintain, modify and expand.

## THIS IS AUTROSAFE IFG

### Large capacity without compromising security

AutoSafe IFG is a network-distributed system, information is routed to panels throughout a network system. Fully functional panels and controllers allow detector loops to be placed around the network, reducing cabling costs by eliminating cable-runs back to the central alarm panel. Addressability ensures that correct information is routed to where it is needed, indicating which detection unit has given the alarm; built-in fault monitoring ensures that if a detection unit fail, it is automatically identified and can be replaced with a minimum of effort.

AutoSafe IFG systems are managed through a single point of operation for the download of configuration data and software upgrades. This ensures a faster and safer method to change or upgrade the system program, using the panel network (AutoNet) or a USB memory stick. The result is minimum downtime, through quick and easy modifications during commissioning and maintenance.

### Clean design and performance

During normal operation, the power indicator will always display a steady green light when the power is ON.



No disrupting or unnecessary information is shown, only indicators relevant to the actual condition are visible.

### Adjustable to any environment

Installed everywhere from the Alaskan tundra to the deserts of Qatar, AutoSafe IFG provides world class flexibility. Because AutoSafe IFG is scalable and modular, units can be replaced and added simply and easily. Our service and configuration tools make these tasks even easier, reducing time and cost.

### Proven loop units

All types and series of AutoSafe IFG detectors, manual call points, I/O units and sounders can operate on the same detection loop. We also offer low-power detection loop panels for information purposes, which eases installation and provides flexibility.

### System capacity

- 64 fire alarm panels for each domain
- 15 000 loop units connected to one system
- 6 detector loops per panel
- 127 loop units connected to one detector loop
- 15 loop units connected to one PowerLoop
- 31 loop units connected to AutoFieldBus
- Event log with up to 10 000 events
- 8 loop panels per loop



Minimum downtime.  
Maximum safety.



### Integrated 3rd party interface

Granting unlimited communication options, AutroSafe IFG is class leading in integration capability.

AutroSafe IFG communicates with equipment using the following protocols:

- AutroCom – for interfacing control and monitoring systems, including AutroMaster as well as multiple DCS & PLC manufacturers
- MODBUS – for interfacing control and monitoring systems, including multiple DCS & PLC manufacturers
- ESPA 4.4.4 – for interfacing devices such as alarm routing via telephone networks and pocket paging systems
- NMEA-0183 – for interfacing devices such as Voyage Data Recorder (VDR)

AutroSafe IFG includes the following communication ports:

- 2 TCP/IP Ethernet ports (AutroNet / AutroCom / Modbus / Web interface [Remote Access] – status, log and con-figuration-data & system-software upgrade)
- 1 RS-232, RS-422 or RS-485 (AutroCom / ESPA4.4.4 / MODBUS / VDR)
- 1 AutroFieldBus interface
- 1 AI\_Com+ port (Interfacing loop drivers and I/O units)
- 2 USB host ports for printer / USB memory stick (con-figuration-data & system-software upgrade)
- 1 Fail-safe relay output



More reliable maintenance.  
Far less time and cost.



## SELF VERIFY SMART TECHNOLOGY

**Improving safety, reducing maintenance costs and prolonging system life cycle.**

The necessity of reducing high maintenance costs and increasing fire security, encouraged us to invest considerable time and effort in developing this unique technology.

### **AutroSafe SelfVerify - the self testing system**

Most fire detection systems depend on costly and often irregular manual inspections, which involve a number of challenges and problems:

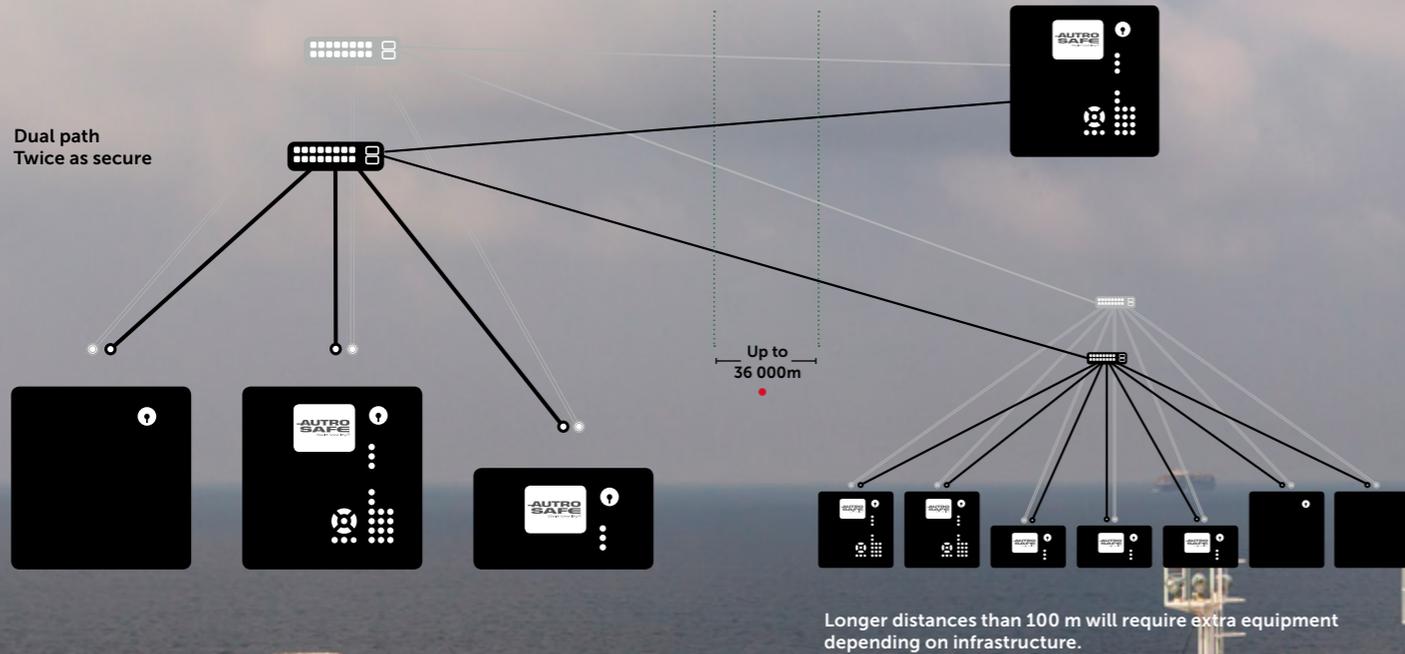
- Detectors may be out of reach
- Service engineers may not have access to particular areas
- Manual testing with gas or smoke is not reliable
- Test gas or smoke is rarely used in calibrated quantities
- Test gas reduces the life-cycle of the detectors
- Even a faulty detector will eventually react if its chamber is filled with enough smoke
- Excessive and irregular intervals between manual tests of detectors, leaving damaged detectors unnoticed for far too long

AutroSafe SelfVerify® solves all issues of manual maintenance, rendering time consuming and costly physical testing virtually unnecessary. With AutroSafe SelfVerify®, the system checks all detectors, interfaces, connections and cables – from detector chamber to alarm output – every single day. Not only does the system test whether a detector is capable of provoking an alarm, it even verifies the sensitivity of every detector with a calibrated signal. The SelfVerify system ensures that each detector always responds to the correct alarm level. In the event of irregularities, the display on the operating panel will accurately pinpoint the source of any problem. This reduces maintenance costs and ensures that compatible loop units are fully operational.

AutroSafe IFG SelfVerify® is developed for worldwide standards and regulations, and the detectors are certified according to European directives (CPD) requiring EN 54 compliance. This testing is in compliance with NFPA chapter 14.

### **DYFI+**

DYFI+ and smart algorithms ensures that AutroSafe IFG detectors are capable of recognizing real fire scenarios, eliminating unwanted alarms and providing the earliest possible warning by compensating for contamination from dust and recognizing unwanted alarm sources.



## AUTRONET

### Reliable communication is paramount to your safety.

To provide maximum dependability, we have developed AutoNet – a dual path transmission network based on a high bandwidth Ethernet network (100Mbps) suitable for safety critical systems. AutoNet secures the transmission of data and information even if a line fault (break, switch port fault etc.) is present. Alarms are transmitted safely to all panels because all network traffic is duplicated along two independent network paths.

The unique combination of AutoNet and AutoSafe IFG results in a flexible and reliable system which is easy to maintain, modify and expand.



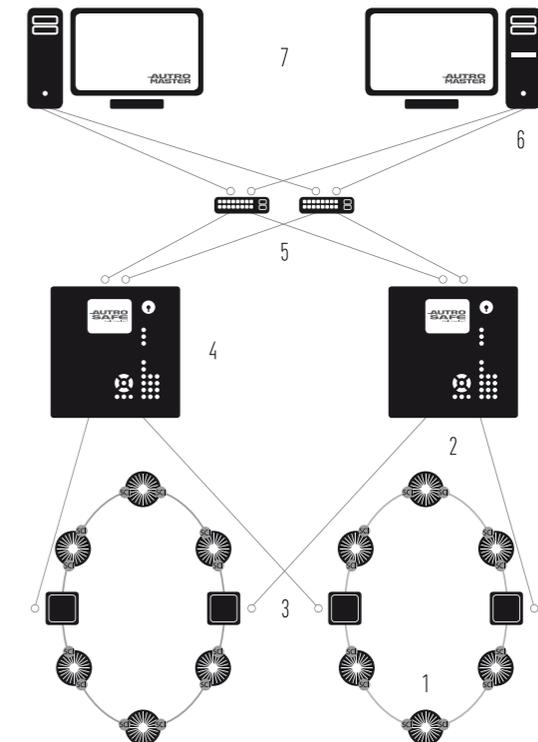
## 7 TIMES DUAL

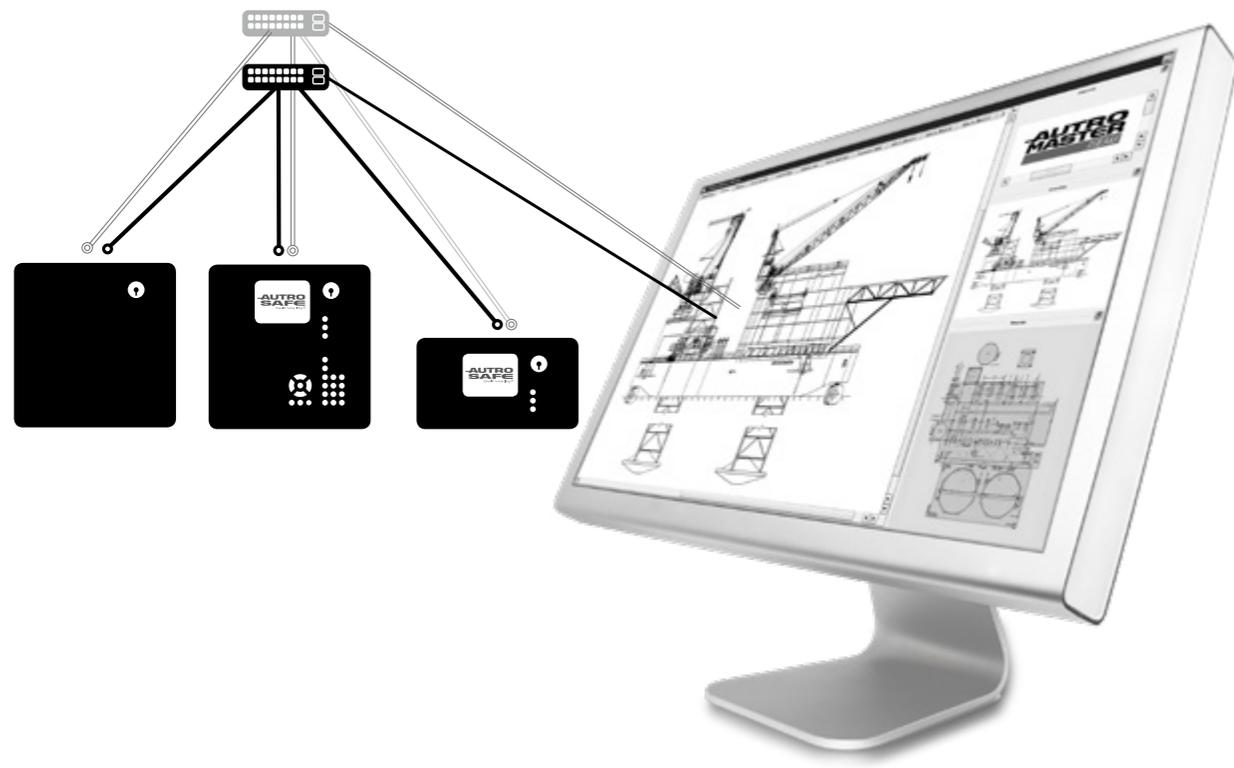
### AutoSafe IFG provides

1. Dual SCI – all loop units have integral dual short-circuit isolators. No need for extra loop units.
2. Dual loop communication – loops are powered both ways – ensuring redundant loop network.

### Additionally you can expand the safety even further with:

3. Dual Safety – two AutoKeepers ensure that no events are lost in case of system node or network failure - dual control.
4. Dual CPU – synchronized option of Dual Safety (all loops)
5. Dual network between system units – AutoNet redundant communication in star or ring topology
6. Dual communication to control and monitoring systems (DCS / PLC)
7. Dual HMI – e.g. AutoMaster





## AUTROMASTER ISEMS

**AutoSafe IFG integrates available technologies into one complete system, opening up the possibility to monitor and control the system from one single operator station: the AutoMaster.**

This remote-monitoring and control system provides tight integration with AutoSafe IFG systems, indicating fire and gas alarms, and customized layout of installations with symbolic representations of field devices. The system also features advanced trending functionality; online, live video from CCTV-equipped flame detectors; manual activation of outputs; maintenance and troubleshooting tools; historical log. The system is connected to AutoSafe IFG via ethernet, and can be networked allowing multiple clients to display duplicates of a central AutoMaster server.

Combining AutoSafe with AutoSim simulator tool and AutoMaster, you can now build a training facility which replicates the real-life installation. From the comfort of dry land, far from any real fire and gas hazards, you can tailor your own safety routines and practice them as a part of the mandatory safety training for all personnel.



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