AUTRONICA
United Technologies

AUTROSAFE

An interactive fire detection system for larger vessels

MARITIME

AUTROSAFE

AutroSafe interactive fire detection system is designed for the toughest requirements and expands the possibilities of a fire detection system even further. From hotels to cruise ships to drilling platforms, AutroSafe delivers the most rigorous fire safety yet.

We launched AutroSafe, our high-end fire detection system, in 1999. From day one, AutroSafe has proven its unique stability and reliability in more than 15 000 installations worldwide, both on- and offshore.

AutroSafe provides advanced functionality for a wide range of applications. The system is designed to meet all requirements in the high-end segment of the onshore, maritime and offshore markets, and is certified according to Marine Equipment Directive (MED), European directives (CPD) requiring EN 54 compliance, and Factory Mutual (FM) approval according to NFPA 72.

Reliable communication is paramount to your safety. That's why we're adding AutroNet to the AutroSafe system, an innovative network solution safeguarding communication between panels. AutroNet ensures a redundant and high-speed network, expanding the reach of the AutroSafe system even further.

AutroSafe delivers the most rigorous fire safety yet.

History proves you can rely on AutroSafe. All existing functionality has stood up to the toughest tests worldwide for more than 10 years. With AutroSafe, we take fire safety to a higher level.

AUTRONICA
United Technologies

Minimum downtime.
Maximum safety.

SINGLE POINT OF ACCESS

Large capacity without compromising security.

The AutroSafe interactive fire detection system is managed through a single point of operation for the download of configuration data or program upgrades. This ensures a faster and safer method to change or upgrade the system program, using the panel network (AutroNet) or a USB memory stick. The result is minimum downtime, through quick and easy modifications during commissioning.

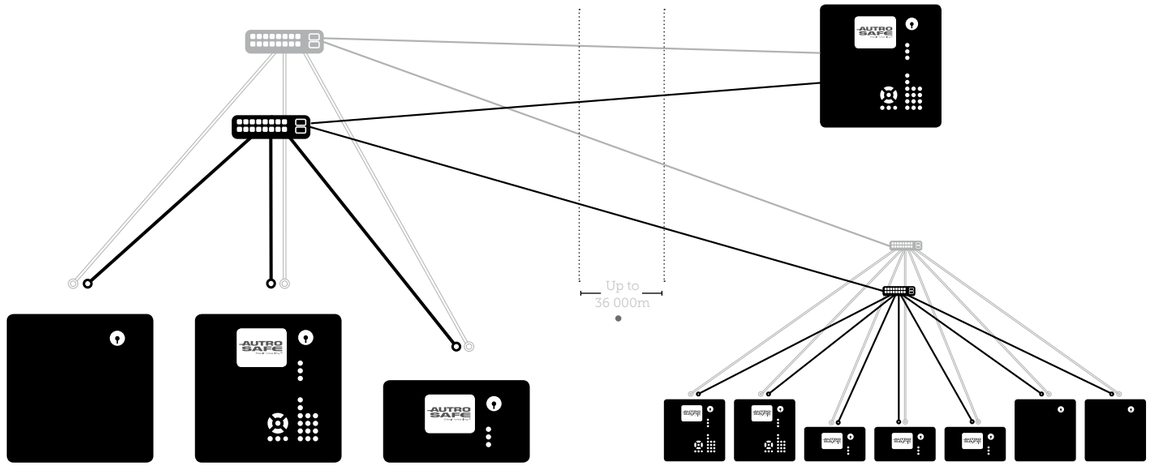
Capacity:

- 64 fire alarm panels
- 15 000 loop units connected to one system
- 6 detector loops per panel
- 127 loop units connected to one detector loop
- 5 loop units connected to one PowerLoop
- 31 loop units connected to AutroFieldBus
- Event log with up to 10 000 events

Clean design and performance balancing intuitive user interface with high technology
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.

Improved flexibility
You can change MultiSensor operation class, adjust a single detector or a group of detectors or operate class switch for a period of time.

Proven loop units
All types and series of AutroSafe detectors, manual call points, I/O units and sounders can operate on the same detection loop.



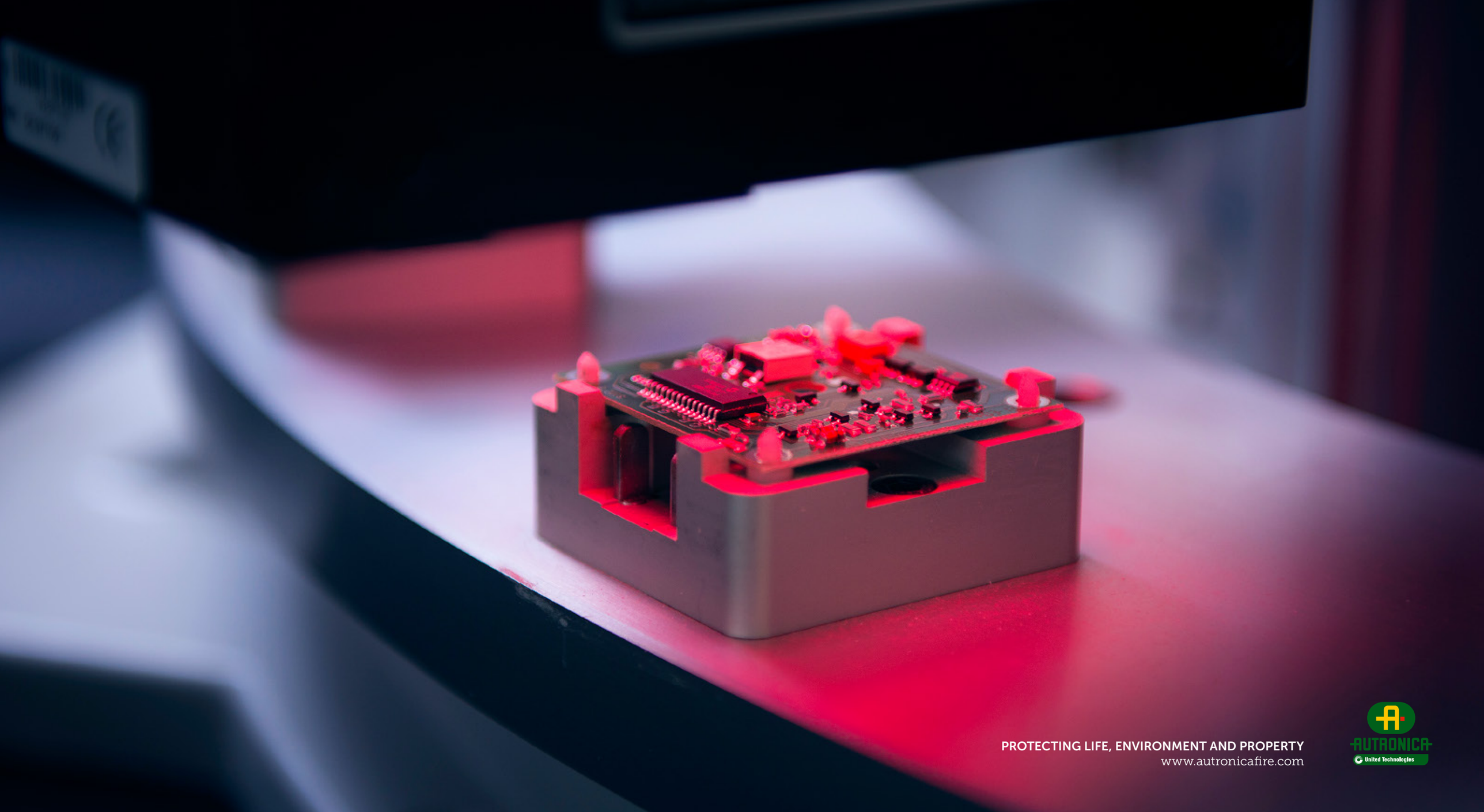
Longer distances than 100 m will require extra equipment depending on infrastructure.

Integrated 3rd party interface granting unlimited communication options
AutroSafe communicates with equipment using the following protocols:

- ESPA 4.4.4 – allowing connectivity with devices such as AutroTel alarm routing via telephone networks and pocket paging systems
- NMEA-0183 – allowing connectivity with devices such as the maritime
- MODBUS – allowing connectivity with Programmable Logic Controllers (PLC)
- AutroCom – allowing interface to control and monitoring systems (AutroMaster)
- Voyage Data Recorder (VDR)

AutroSafe includes the following communication ports:

- 2 Ethernet ports for AutroNet, AutroCom and configuration data/system software upgrade
- 1 AL_Com+ port (interfacing loop drivers and I/O units)
- 1 RS-232, RS-422 or RS-485 (AutroCom/ESPA4.4.4/MODBUS/VDR)
- 1 AutroFieldBus interface
- 2 USB host ports for printer/USB memory stick (configuration data and system software upgrade)
- FailSafe relay output



PROTECTING LIFE, ENVIRONMENT AND PROPERTY
www.autronicafire.com

AUTRONICA
United Technologies

FROM SAFE TO DUAL SAFETY

Introducing AutroKeepers that provide dual reporting of events

The new dual safety technology from Autronica Fire and Security, enables redundant control of the detection loop. If, by any reason, the primary loop control fails, the secondary loop control will take over, and detection is thus maintained.

At the basic level, the sensor units are connected in two-wired loops. Consequently, in case of a single broken or shorted loop, connection with all units is maintained. Additionally, two patented AutroKeeper* units per loop make redundant control of the loop possible. This is particularly important since, should the primary loop controlling panel fail, the secondary backup panel will take control of the loop.

**AutroKeepers are smart relay units that are connected to the loop, controlling a panel's access to it. They may operate in automatic, semi automatic or manual modes. The AutroKeeper makes it possible to communicate with loop units, using a secondary panel in addition to the primary one. This ensures that an alarm event is not lost in case of system node or network failure. Redundancy is achieved without introducing two set of detection loops, and thus avoiding twice the amount of cabling and detectors.*

6 TIMES DUAL

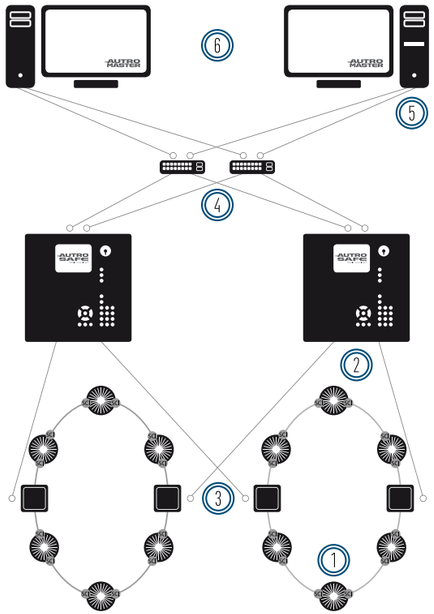
We give you

1. Dual SCI – all loop units have 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 AutroKeepers ensure that no events are lost in case of system node or network failure - dual control.
4. Dual network between system units – AutroNet redundant communication in star or ring topology
5. Dual top system communication – AutroCom to process control systems
6. Dual top system – AutroMasters

On top of this, AutroSafe SelfVerify® tests each detector and manual call point every day. DYFI+ and smart algorithms compensates for contamination from dust and reduces false alarms.



Should one panel fail due to a fire incident, the other will maintain control.

More reliable maintenance.
Far less time and cost.

AUTRONICA
United Technologies

SELF VERIFY

When launched in 1999, AutroSafe SelfVerify® was the premium technology enabling fire detection system to test itself. It still is.

The necessity of reducing high maintenance costs and increasing fire security, encouraged Autronica to invest considerable time and effort in developing this unique technology. Over the last decade it has proven its worth in over 15 000 applications in onshore, offshore and maritime installations.

The self-testing system

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

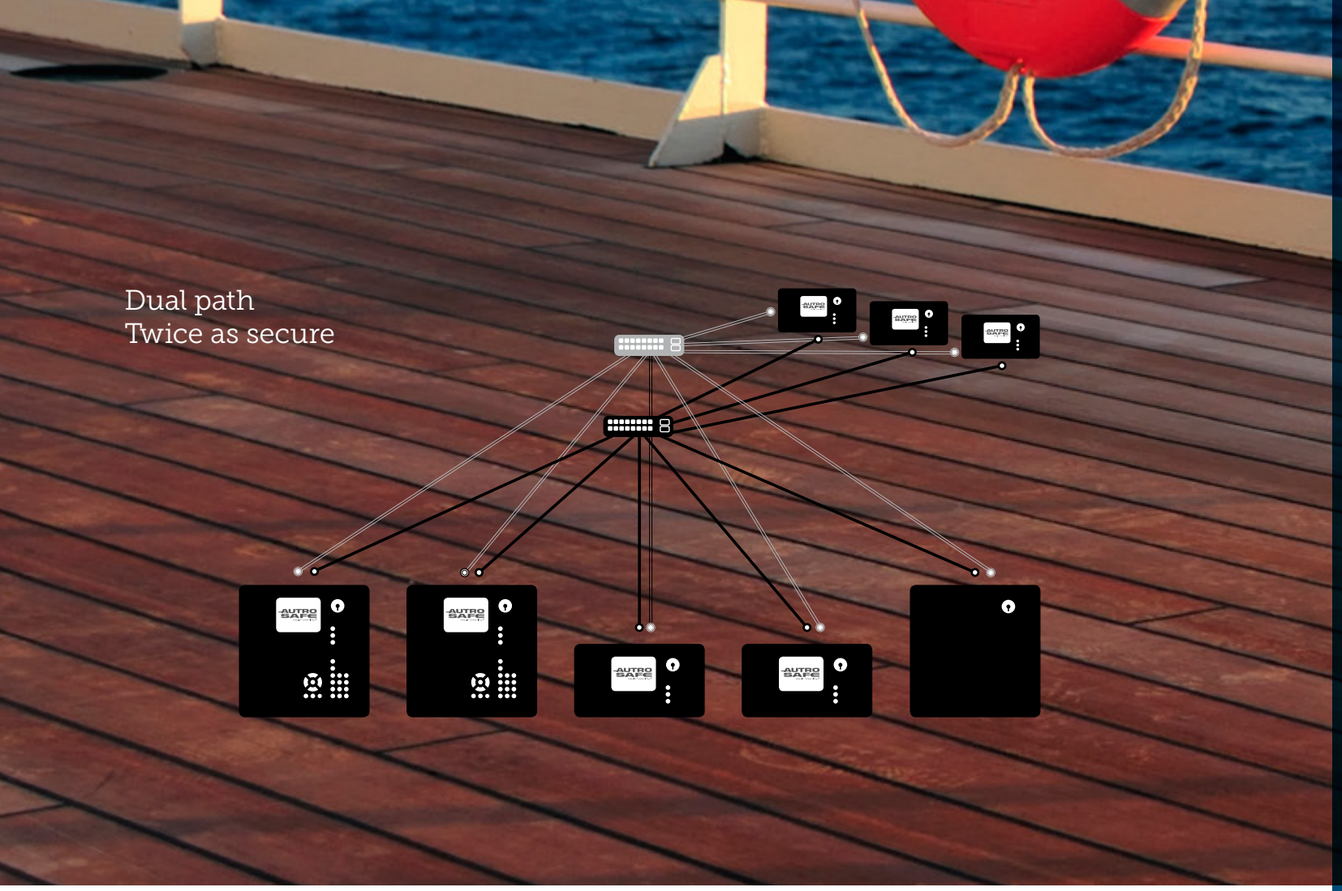
- Detectors may be out of reach
- Service engineers may not have access to particular areas
- Manual testing with gas or smoke is not reliable
- Test gas or smoke is rarely used in calibrated quantities
- Even a faulty detector will eventually react if its chamber is filled with enough smoke
- Excessive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

AutroSafe SelfVerify® solves all issues of manual maintenance, making time consuming and costly physical testing no longer necessary. 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.

AutroSafe SelfVerify® is developed for worldwide standards and regulations, and the detectors are certified according to European directives (CPD) requiring
EN 54 compliance.

AutroSafe SelfVerify® ensures that you have the safest and most reliable fire safety system available – a system ensuring optimal detection.



AUTRONET

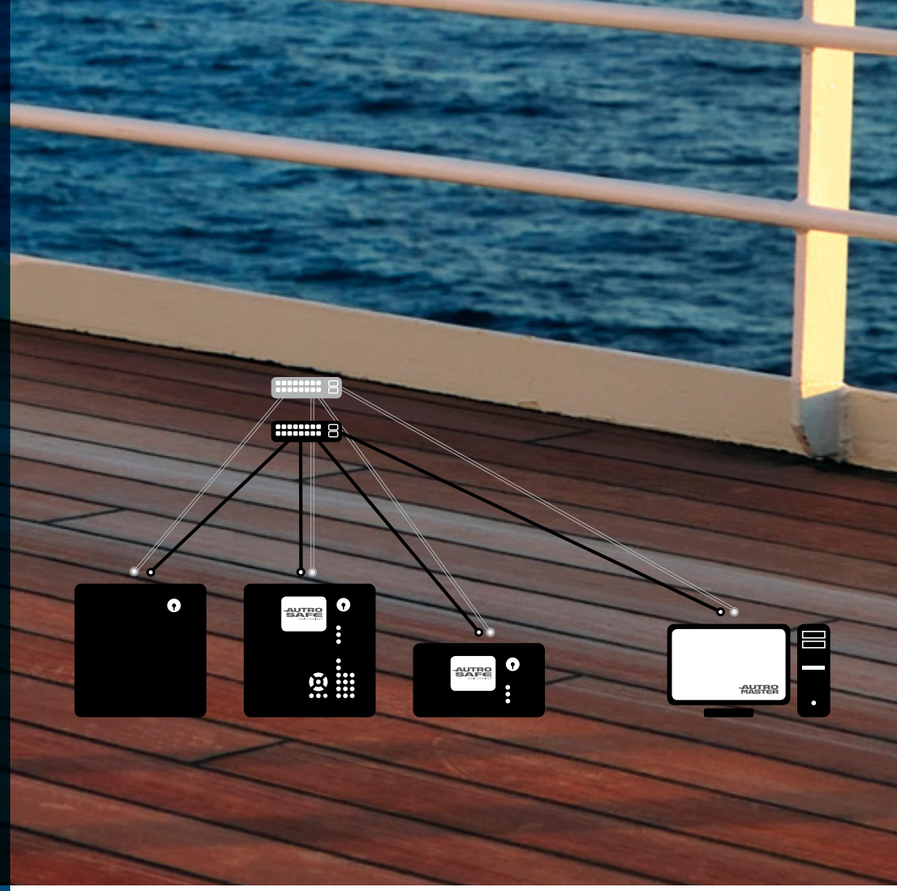
To provide maximum dependability, Autronica has developed AutroNet – a dual path transmission network based on a high bandwidth Ethernet network (100Mbps) suitable for safety critical systems. It's a new standard in reliable data and information transmission

AutroNet 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 AutroNet and AutroSafe results in a flexible and reliable system which is easy to maintain, modify and expand.

AUTRONICA
United Technologies

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



AUTROMASTER ISEMS

An Integrated Safety and Emergency Management System combining the strengths of a powerful fire detection system with control and monitoring functions dedicated to make sure you are in control in case of a fire incident.

This remote monitoring and control system provides tight integration with AutroSafe systems, indicating fire alarms, and displays customized layout of installations with symbolic representations of field devices. It provides several possibilities to integrate with 3rd party equipment and is easy to use, provides a full overview and saves valuable time.

OPC Server
With the AutroSafe OPC server, we accommodate communication between fire detection systems and controlling emergency systems. This way we have increased the interoperability between our system and 3rd party supervisory systems.

Autronica is a leading innovator, manufacturer and supplier of fire, safety and maritime measuring equipment worldwide.

Our products ensure safety in applications on land, sea and in the petrochemical, oil and gas sectors.

Owned by United Technologies Corporation (UTC), Autronica employ more than 450 people handling the complete value chain, from idea, development and manufacturing to the marketing, sales and servicing of our products.

We are an international company with worldwide offices and our HQ is located in Trondheim, Norway's technology hotspot.

AUTRONICA
United Technologies

Thinking new thoughts is part of our job.

This is how we create the products that make you feel safe.

More than fifty years ago, we invented the very first fire alarm as you know it today. Since then we have turned it upside down several times – and still we continue to make new revolutions. Our goal has always been that people should be able to think less about what matters most; safety.

We know that our products are amongst the best in the world, but we also know that the best products can always get better. We continue to develop and we are able to say with conviction, that we protect life, environment and property.

Everyone needs to sleep safely at night.
Especially those who haven't seen shore for days.

We protect lives every day – and the best part of it is that no one notices. Our equipment is installed on thousands of vessels all over the world, ensuring that tens of thousands of crew and passengers are safe.

The products we make are among the best in the world, yet still we keep working to create something that is even better. This makes us not only a preferred supplier of fire safety systems, but a participant that continuously raising the standards for safety at sea.

Autronica Fire and Security AS
DIVISION MARITIME
Haakon VIIs gate 4, NO-7041 Trondheim, Norway
Phone: +47 90 90 55 00 | Fax: +47 73 58 25 01 | E-mail: sales.maritime@autronicafire.no | www.autronicafire.com

116-P-ASAFE/MAR/AGB, rev. C, 2014-04-23