SI-90

MULTIFUNCTIONAL INTELLIGENT SYSTEM FIRE/GAS/EXTINGUISHING

SAFETY/SECURITY
FIRE FIGHTING
INTEGRATED SYSTEMS

SIGNALING
UL LISTED

TÜVRheinland CERTIFIED

SHIELD
TRUSTED WORLDWIDE

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TRUSTED WORLDWIDE

Standards and certifications

In order to be used in fire fighting systems, the panel SI-90 has been certified in an harmonised European laboratory, which is necessary to fulfil the norms for the product construction conformity CPD e CPR, and in UL laboratories, necessary for the US standard UL864.

The panel SI-90 has the following certifications are under process

NFPA 72 (UL 864)	Emergency Alarm System control units, Control Units, Releasing Device
Fire detection EN 54-2, EN 54-4+A1:2002	Certificate of conformity and use of IMQ mark
Intruder alarm CEI 79-2:1998 CEI 79-2; AB:2000	Certificate of conformity and use of IMQ mark
Functional safety SIL2	SIL certification
Fabrication process control and surveillance FPC	Production process (FCP)
GOST R	Product conformity
Marine Equipment Directive MED 96/98/EC	Harmonized standards for marine and off-shore

Why SIL 2 ?

- Redundant CPU, I/O cards, Power Supply and Display available on the panel to ensure the continuous operation incase of one or more failures.
- Hot–swap: CPU, I/O cards, Power Supply and Display can be replaced without switching off the panel, thus maintaining system security and safety functionalitie.
- Extreme reduction of false alarms below acceptable levels out of 100 signals there is a posibility for only one fault.
- High level of Reliability , Availability and Maintainability (RAM) for the software and hardware of the system.
- High tolerance and stability over electromagnetic noise.

Features

The SI-90 system has been designed to meet the heaviest functional reliability and availability requirements, particularly of the companies that operate in the field of energy production and transformation, where it shows excellent resistance to electromagnetic disturbances and a continuous operability in difficult environmental conditions. Its capacity is demonstrated by the compliance with the requirements of fault tolerance set by the International Standards IEC 61508, and thanks to this compliance, it is also on process of obtaining the level SIL3 (Safety Integrity Level 3) certification by a third party agency.

In order to achieve this results, the panel has been manufactured with some particular features:

- Hot backup redundant CPU's
- Hot swap of all cards, including CPU's, with automatic reconfiguration
- Redundant and looped communication bus between cards and CPU's
- Periodical automatic testing of card inputs and outputs
- Self-diagnostics and signalling of card and CPU fault
- Automatic safety disabling of malfunctioning cards
- CEI EN 50130-4 immunity requirements (EMC) widely exceeded (IMQ report)
- The cards of interface with devices can be redundant

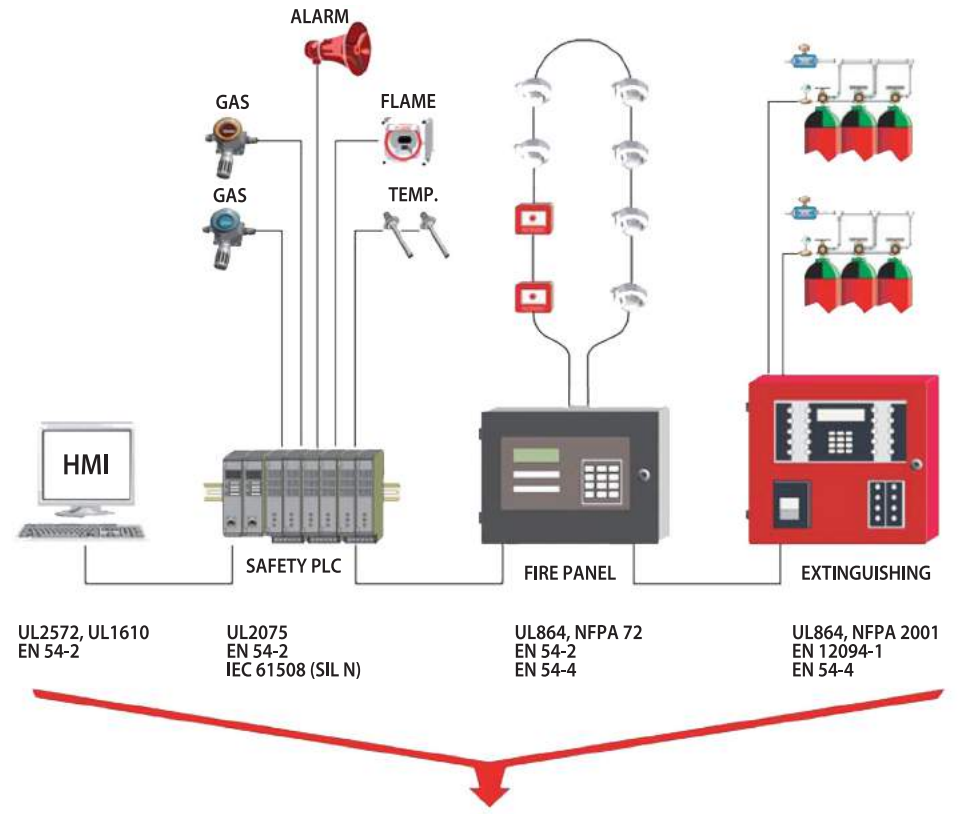
In Fire & Gas applications, the panel SI-90 fulfils all functions that generally are carried out by several systems.

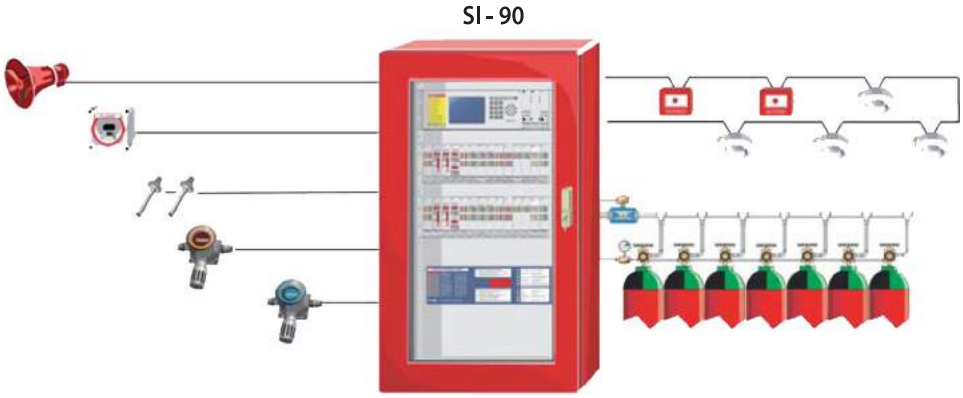
On the right, there is an example where it can be seen that the panel SI-90 carries out by itself all functions that several devices would fulfil:

- a Safety PLC for the F&G detection
- a detection panel for buildings
- a panel for fire fighting
- a HMI interface

It must be noted that generally solutions with PLCs and HMI are declared as in compliance to the indications of norms EN 54-2 but are not certified CPD and so, they cannot have the CE mark.

The panel SI-90 can control also addressable detection systems of different brands and protocols.





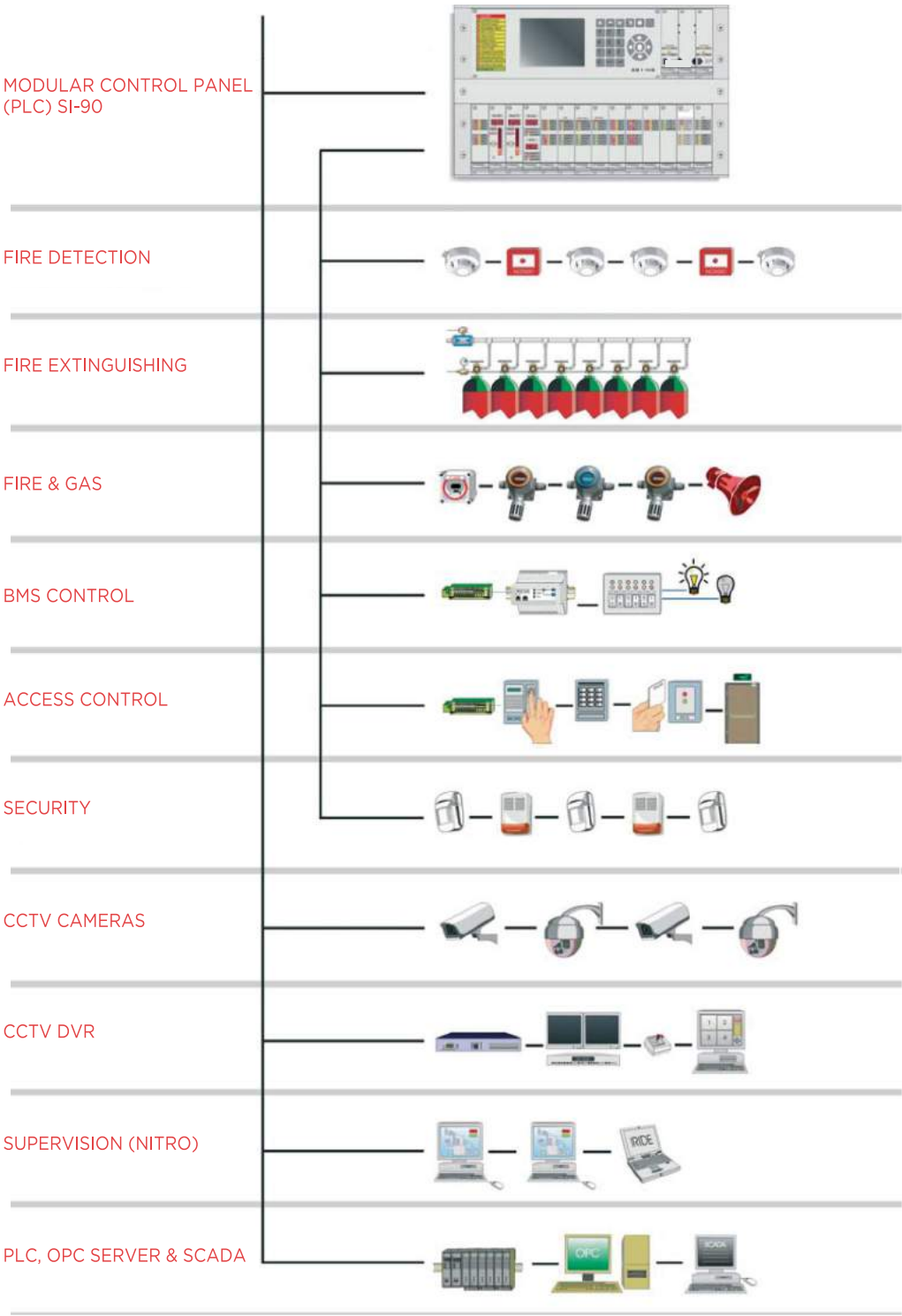
UL864, UL2075, EN54-2, EN54-4, IEC61508

Typical applications

The panel SI-90 is used for:

- Addressable analogical and conventional detection systems
- Automatic fire extinguishing systems
- Gas detection systems, ATEX.
- Integrated systems (fire extinguishing, CCTV, alarm, etc…)
- Network systems among panels or with DCS and SCADA through protocol Modbus, Ethernet and OPC Server.

All functions and features describedabove can coexist in the same system or be configured according to the customer's needs.



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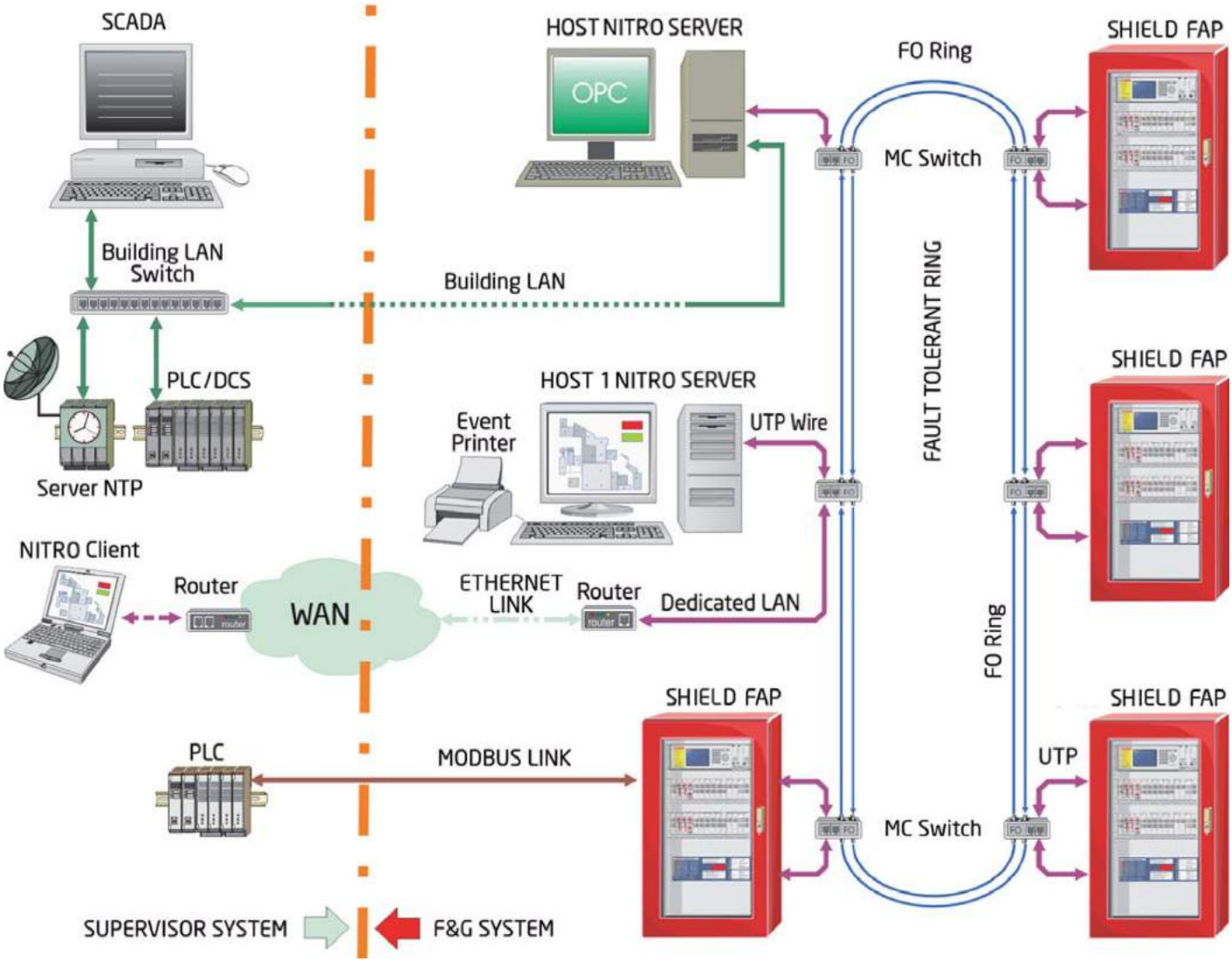
Communication systems

The panel SI-90 has been designed to communicate with other devices of the same type and with supervision systems and SCADA through standard or own protocols, such as Ethernet TCP/IP, Modbus and OPC Server.



Supervision Program

The panel SI-90 can be connected to a supervision program with graphic maps called NITRO which, allows an easy management of the system from a remote position. The program NITRO is installed on one or more PCs, which are connected to the panel via LAN network or serial cable.

SI-90

Brief description of SI-90 panel

Hot swap of cards, with consequent no need for panel shutoff

What is it?

The panel SI-90 is a programmable PLC suitable for safety and security installations with an high technological and economic content.

What is useful for?

With the SI-90 panel, fire & gas detection, intruder alarms and process control systems can be built in energy plants, in petrochemical industries, naval, military and public installations.

How is it composed?

Externally, the panel SI-90 is similar to a safety PLC; it is composed by electronic cards mechanically compatible, which are inserted in 19" racks. The panel SI-90 can have from 1 to 10 racks,each rack has 13 card slots. Further to the versions customizable for clients, the UL version has a case with 6 racks, while for the European market, other 3 versions are available:

SI-90/1R	Base Rack + 1 card rack, wall-mounting cabinet L=600 H=700 P=400 mm
SI-90/2R	Base Rack + 2 card rack, wall-mounting cabinet L=600 H=1100 P=400 mm
SI-90/1-10R	Base Rack and up to 10 card racks, self-standing cabinet L=800 H=2100 P=800 mm

About 20 different cards can be used, each dedicated to different functions such as firefighting, gas detection, intruder alarm, technologic control and communication with other systems and/or panels.

The SI-90 panel has a dedicated rack for the operator's interface and it is constituted by a big alphanumeric display, by a keyboard and led indications to show the system status. Each panel SI-90 has its own modular feeder and battery charger, which allows the panel to work even without an external power supply.