S81HS

SIL3 ADDRESSABLE FIRE AND GAS DETECTION

Safety Bus on Copper wire
Safety Bus on Fiber Optic
24V Power Supply
Atex/Hazardous Area

SIL2/SIL3 S81-HS Fire and Gas control Panel

Max 250m copper

Up to 40km Fibre Optic

ABORT ARRESTO

MANUAL EXT ESTINZIONE
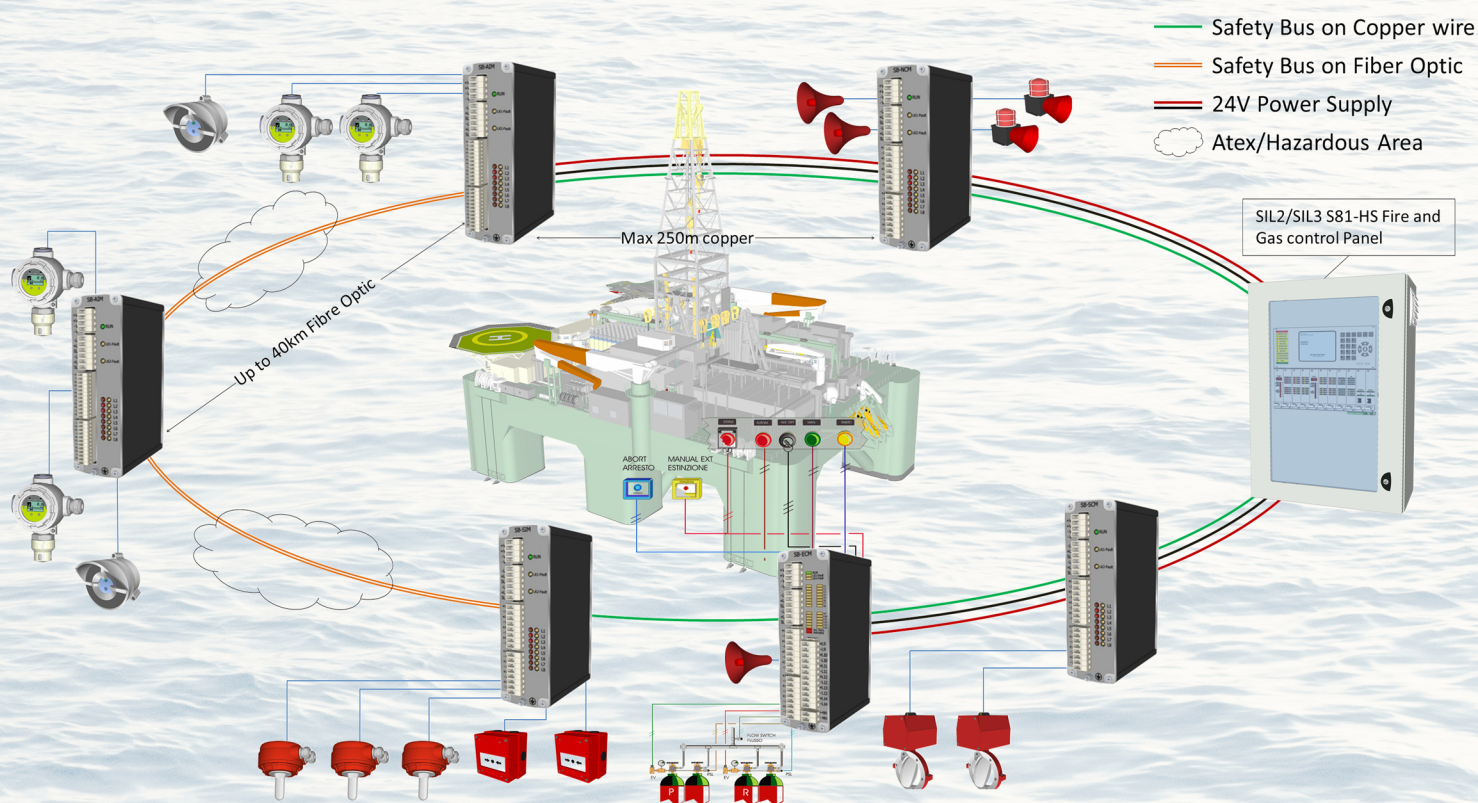
SIL3

SCAME SISTEMI

SIL3 ADDRESSABLE FIRE AND GAS SYSTEM

Description of the system

The Safety Bus system allows the fire detection and the firefighting control in a unique bus assuring a high safety level. The system is composed by one or two control cards, that are integrated in the panel S81-HS, and up to 64 addressable remote modules installed in the field. The communication between the control cards and the addressable modules is based on CAN protocol (Controller Area Network) with ring architecture to guarantee the best functionality in fault condition and high communication speed. The following modules are available:

Advantages and Benefits

- ❖ **Addressable system with remote I/O** – saves installation costs in cables and conduits. Isolated I/Os, power supply and communication bus allow for installation of local independent power supplies without the need to home run power cables.
- ❖ **Safety Integrity Level** – designed to meet the most severe industry standard Integrity Level SIL3, ensures the highest reliability in execution of critical Fire and Gas safety functions.
- ❖ **Safety Functions** – Fire and Gas detection, automatic fire extinguishing/release, actuation of Notification Appliances, integration with other safety systems (such as ESD, DCCS, emergency EVAC) and HVAC systems.
- ❖ **Fault tolerant** – the safety addressable bus uses a closed ring tolerant to a fault in the loop (Short/Open Circuit)
- ❖ **I/O density** – with 8 I/O per remote module, up to 64 modules per control card and up to 130 control card per panel, matches the size of virtually any installation site.
- ❖ **Modular Design and scalability** – can be configured to match what's needed now and then easily expanded later.
- ❖ **No constrain on device brands or type** – compatible with standard 4-20mA input, high current range for conventional input and output, any type of Flame/Gas detector, conventional detector or actuating device can be connected. Avoids lock-in with one single vendor for field devices.
- ❖ **Easy configuration** – configuration of modules and field devices is as easy and flexible as with any other I/O within the same S81-HS panel. Menu driven pull-down programming speeds configuration and commissioning work.

System Architecture

The system is composed by one or two control cards F7011 installed in a S81-HS panel and a number of I/O addressable modules connected in a closed fault tolerant looped ring.

Control cards carry out complete monitoring of devices to detect possible fault conditions of modules or ring. The I/O modules communicates with the control cards on a safety bus giving all information on channels I/O status and diagnostics. Messages from/to the modules are properly prioritized to guarantee immediate signalling of alarm conditions. Both control cards and modules are equipped with two independent communication links, link 1 connected to the succeeding module, link 2 connected to the preceding module. Both links are galvanic isolated to the power supply voltage.
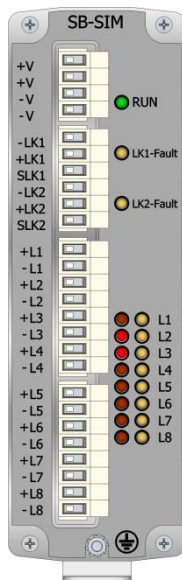
![SCAME SISTEMI logo]
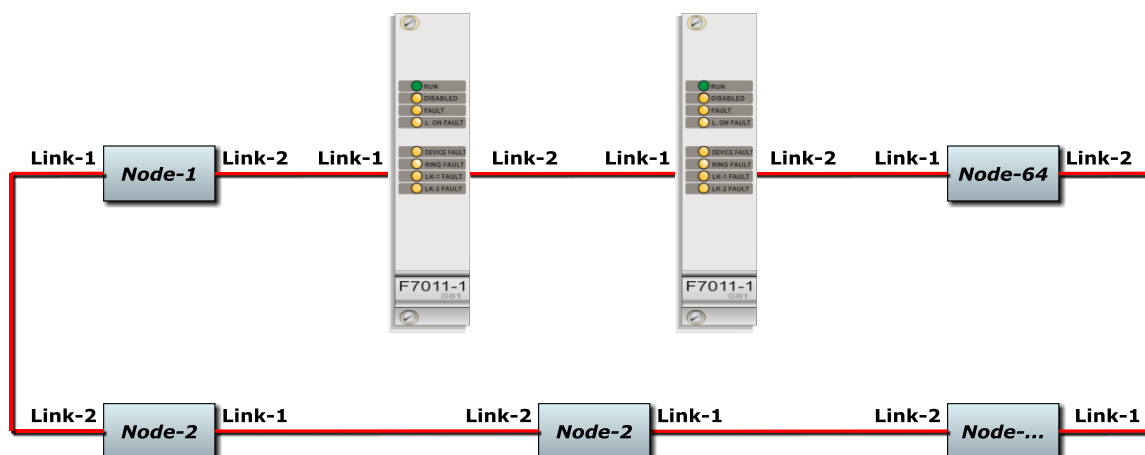
SAFETY BUS CONTROL CARD F7011
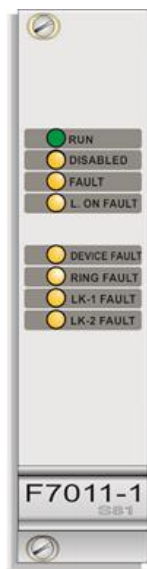
Control cards are integrated in the panel S81-HS. Controls the SIL3 SAFETY COMMUNICATION PROTOCOL, detects possible fault conditions of modules or in the ring. Can be installed in redundant configuration
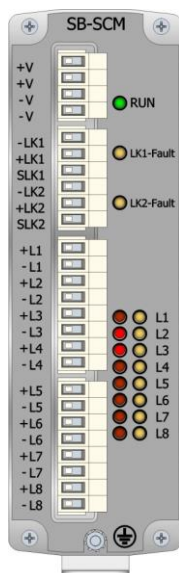
MODULE SB-SIM

Controls 8 supervised inputs for conventional devices with safety related feature. Two individually programmable thresholds for each channel to connect any device type: FIRE and GAS.
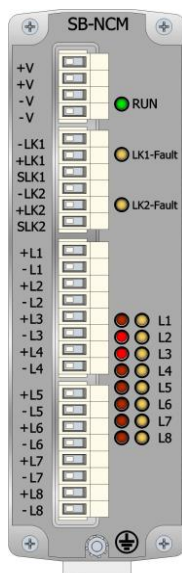
MODULE SB-AIM

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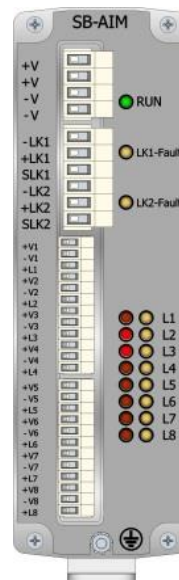
Controls 8 analog inputs 4-20mA, with safety related feature. Alarm on three individually programmable thresholds. Combustible, toxic and oxygen GAS detection. Temperature and flame FIRE detection

MODULE SB-SCM

Controls 8 outputs with 500mA each to drive RELEASING SOLENOIDS or other safety related ACTUATORS. All channels are individually supervised to detect short/open ciruits.

MODULE SB-NCM

Controls 8 outputs with 250mA to drive NOTIFICATION APPLIANCES. Channels are supervised with polarity reversal monitoring to detect short/open ciruits.

MODULE SB-ECM
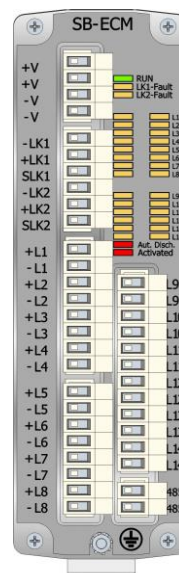
Manages automatic fire EXTINGUISHING RELEASE system. Controls 8 supervised safety related inputs and 6 supervised safety related outputs. Works as part of the system or as a stand alone release release panel.

## Typical applications

The panel S81-HS is used for:

- Automatic fire extinguishing systems

- Addressable analogical detection systems with several protocols

- Integrated systems (fire extinguishing, CCTV, alarm, etc...)

- Network systems among panels or with DCS and SCADA through protocol Modbus, Ethernet and OPC Server.

- Gas detection systems, ATEX.

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

S81-HS/L & S81-HS/M

- Compact Wall Mount
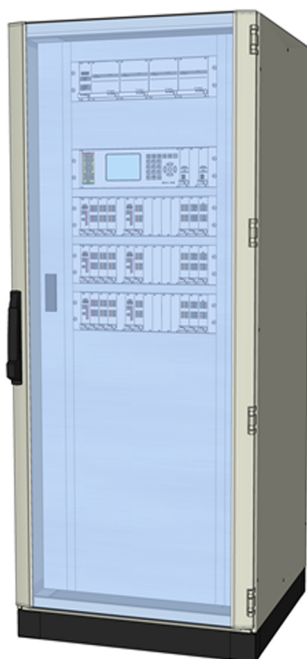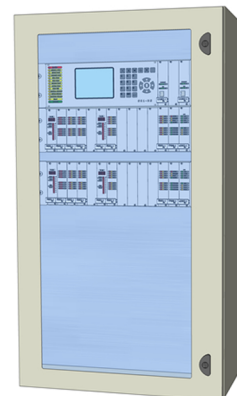 500x250x700h mm
- One compact rack
- Up to 8 cards
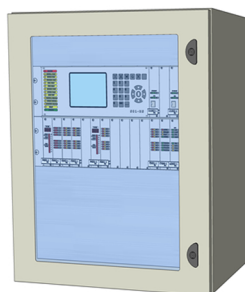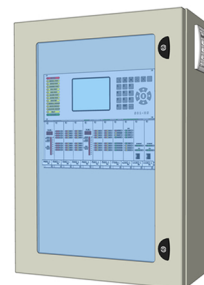
S81-HS/1R

- Wall Mount
  600x400x700h mm
- One rack
- Up to 13 cards

S81-HS/2R

- Wall Mount
  1100x400x700h mm
- Up to Two Racks
- Up to 26 cards

S81-HS/1-10R

- Floor standing single door
  800x800x2100h mm or
- Floor standing double door
  1600x800x2100h mm
- Integrated marshalling cabinet
- Up to Ten Racks
- Up to 130 cards