SOCRATE

FIRE & GAS

BUSINESS UNIT

SOCRATE—COMPANY OVERVIEW

Our focus is on the Italian and Mediterranean Oil and Gas Market offering Process Instrumentation Products, System and turnkey solutions for process analysis, Metering and Fire and Gas Safety Solutions.

Socrate provides to their valued customers the highest quality products & services, using engineering experience gained over many years of designing, implementing and commissioning hundreds of systems for numerous project applications.

SOCRATE – FIRE & GAS BUSINESS UNIT

Socrate's F&G Business Unit offers reliable, effective and cost efficient solutions customized as per your requirements. We provide:

- F&G Product
- F&G Package
- F&G Turn-Key Solutions
- F&G System
- F&G Engineering
- F&G Alarm Notification
- F&G After Sales Services

We provide complete solutions from order award through engineering to system hand-over and after sales services.

| Step		Details
1. ARCHITECTURE DESIGN	➡	Concept design, System sizing, Cost comparison analysis
2. HARDWARE INTEGRATION	➡	PLC, FAP, Annunciator, Mimic panel, Wind monitors, Dataloggers, UPS
3. SOFTWARE INTEGRATION	➡	PLC programming, GUI design, Hardware driver
4. SYSTEM ASSEMBLY & TEST	➡	Cabinet design, Wiring, Hook-Up test, Heat soak test, RFI test
5. COMMISSIONING SERVICES	➡	Consulting, Supervision and engineering, Provision of technicians etc.

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FIRE & GAS BU—EXAMPLES OF APPLICATION

We provide total gas and flame solutions for following applications:

- **Combustible: Catalytic Bead and Infrared Technology**

- **H2S: Metal Oxide Semiconductor, Electro-chemical Cells**

- **Toxic: Electrochemical Cells and Infrared Technology**

- **Flame: UV and IR Enabled Flame Detection**

- **High Pressure Gases: Ultrasonic Technology**

- **Multi-Point and Intelligent Controllers**
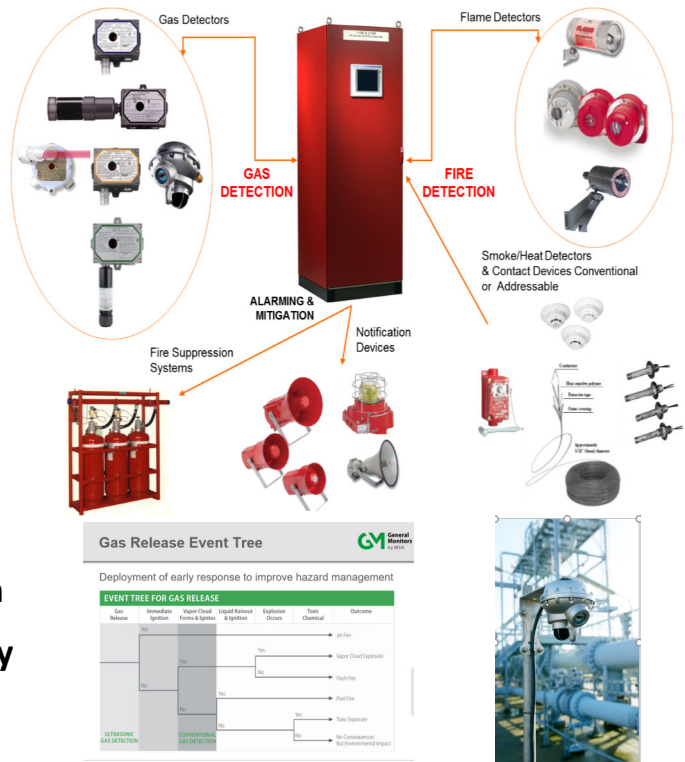
FIRE & GAS BU—EXAMPLES OF APPLICATION

Offshore Platforms

Pipelines & Refineries

Petrochemical

LNG

Compressor Stations
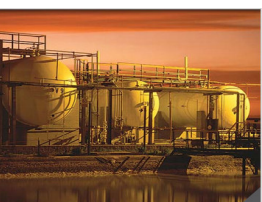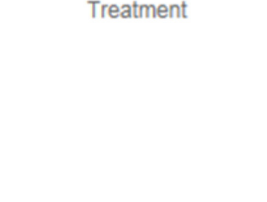
Fuel Loading Racks

Chemical Plants

Water & Sewage Treatment

Pulp & Paper
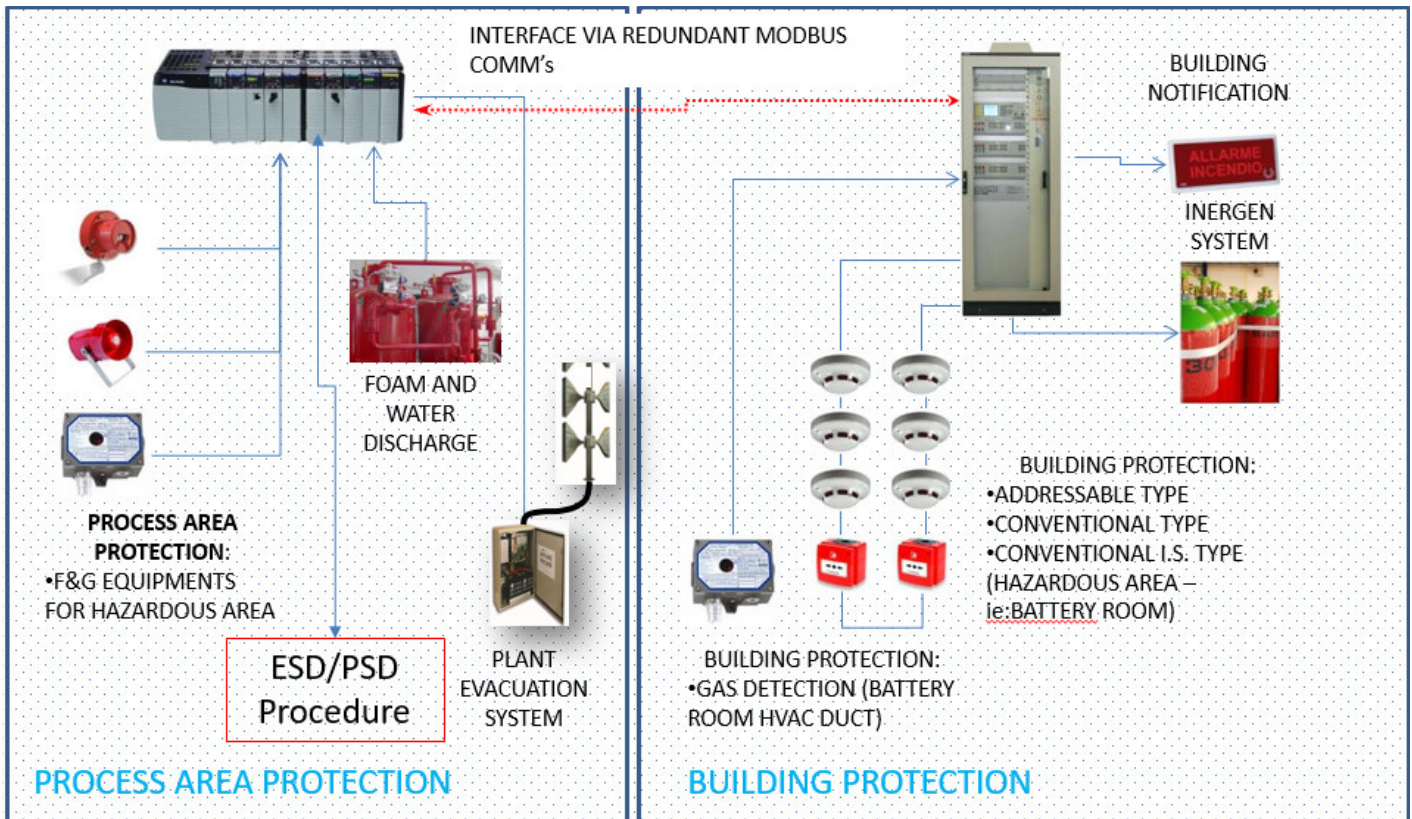
Parking Garages

Spray Paint Booths

Aircraft Hangars

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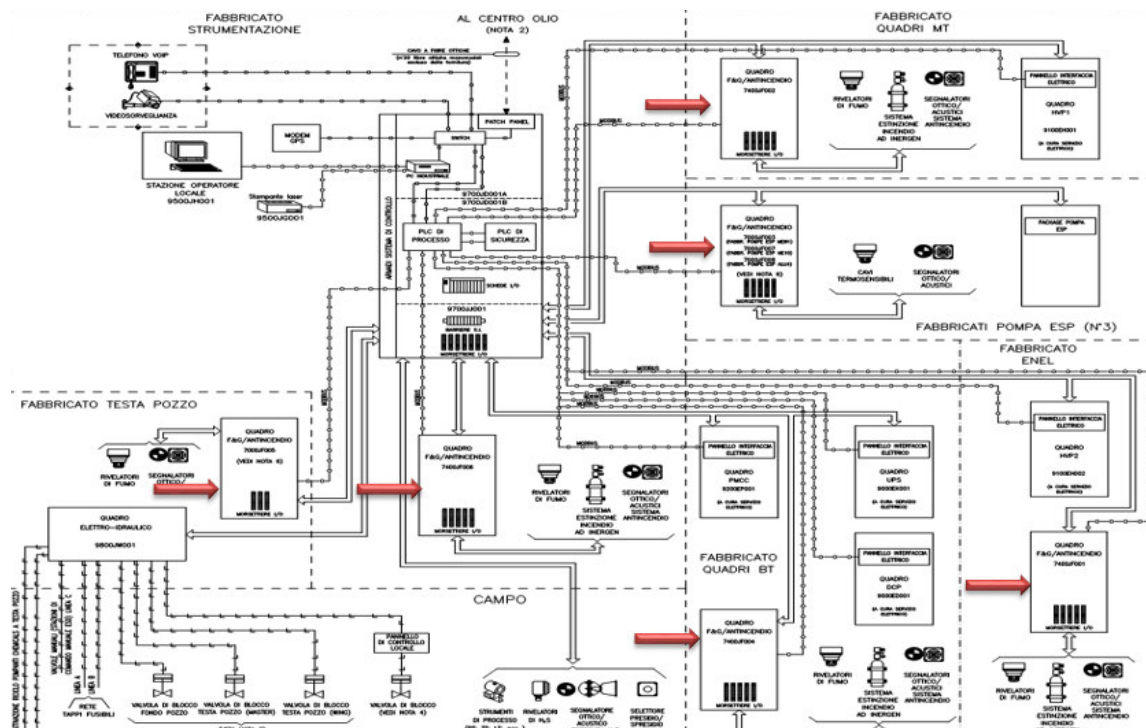# FIRE & GAS BU – INTERFACE VIA REDUNDANT MODBUS COMMUNICATIONS

INTERFACE VIA REDUNDANT MODBUS COMM's

BUILDING NOTIFICATION

ALLARME INCENDIO

INERGEN SYSTEM

FOAM AND WATER DISCHARGE

PROCESS AREA PROTECTION:
•F&G EQUIPMENTS FOR HAZARDOUS AREA

ESD/PSD Procedure

PLANT EVACUATION SYSTEM

BUILDING PROTECTION:
•ADDRESSABLE TYPE
•CONVENTIONAL TYPE
•CONVENTIONAL I.S. TYPE (HAZARDOUS AREA – ie:BATTERY ROOM)

BUILDING PROTECTION:
•GAS DETECTION (BATTERY ROOM HVAC DUCT)

PROCESS AREA PROTECTION
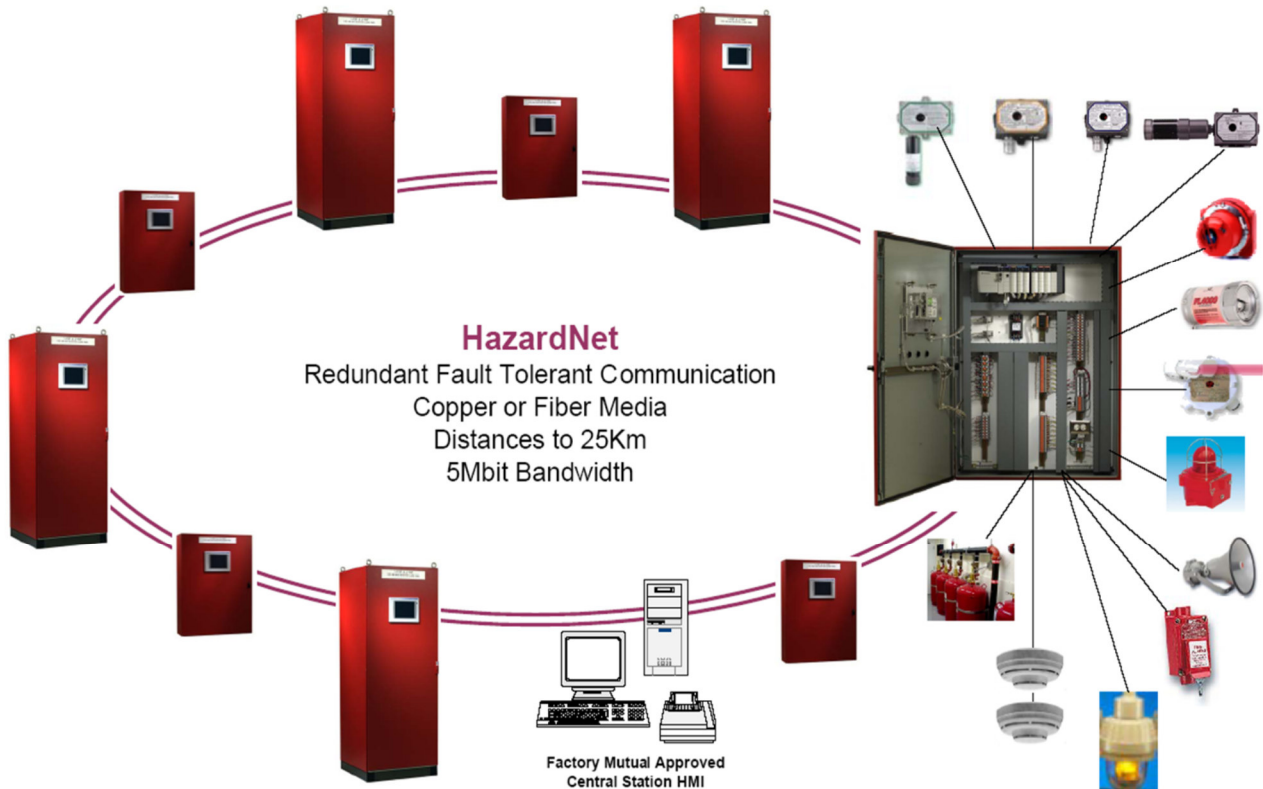
BUILDING PROTECTION

Fire and gas systems are designed to protect the personnel and equipment: in the process area and in the building. Socrate studies, designs, manufactures and delivers systems that communicate with input devices (detectors) and are able to initiate an automatic actions. The interfacing between the process area and building works via redundant modbus communication, hardware interfaces.
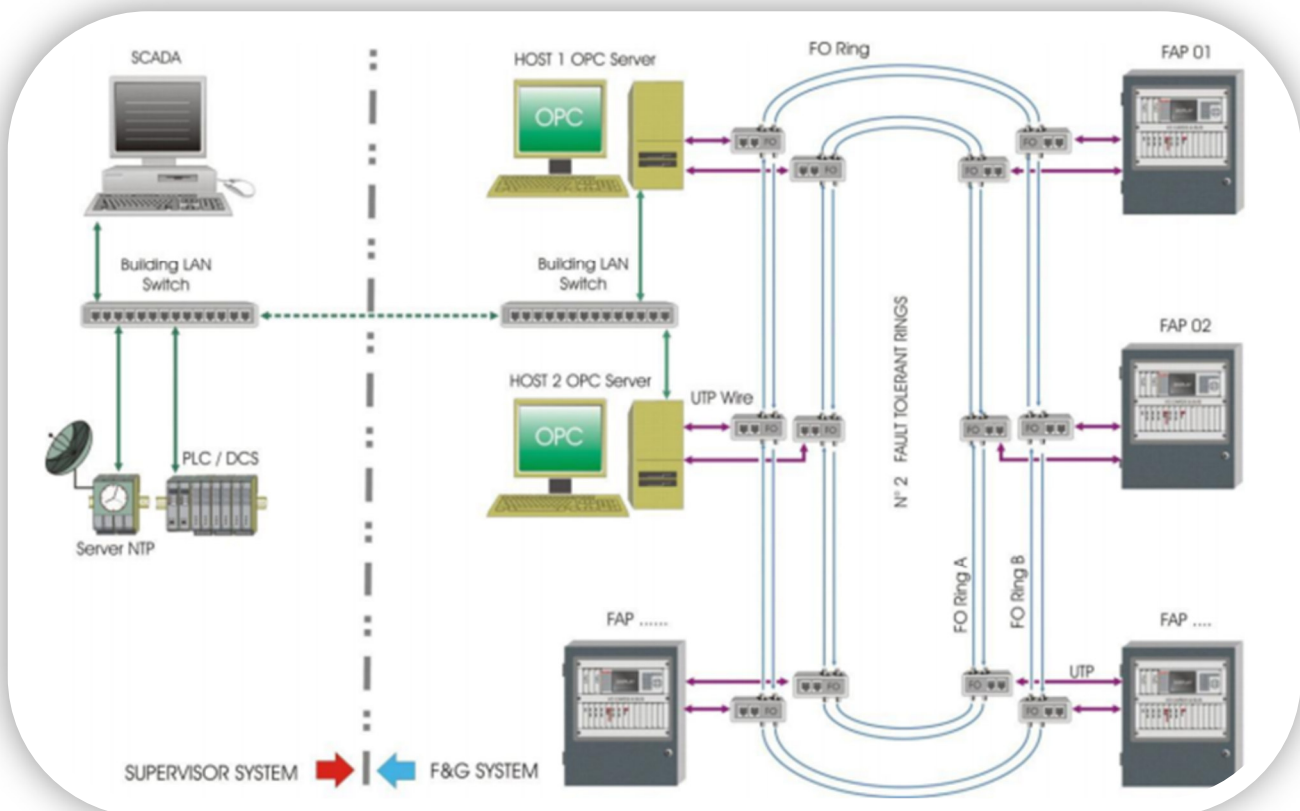
BUILDING/PROCESS FIRE ALARM PANEL NETWORK

HazardNet
Redundant Fault Tolerant Communication
Copper or Fiber Media
Distances to 25Km
5Mbit Bandwidth

Factory Mutual Approved
Central Station HMI

FIRE AND GAS NETWORK (FIBER OR WIRED TYPE) - MODBUS TCP/IP PROTOCOL

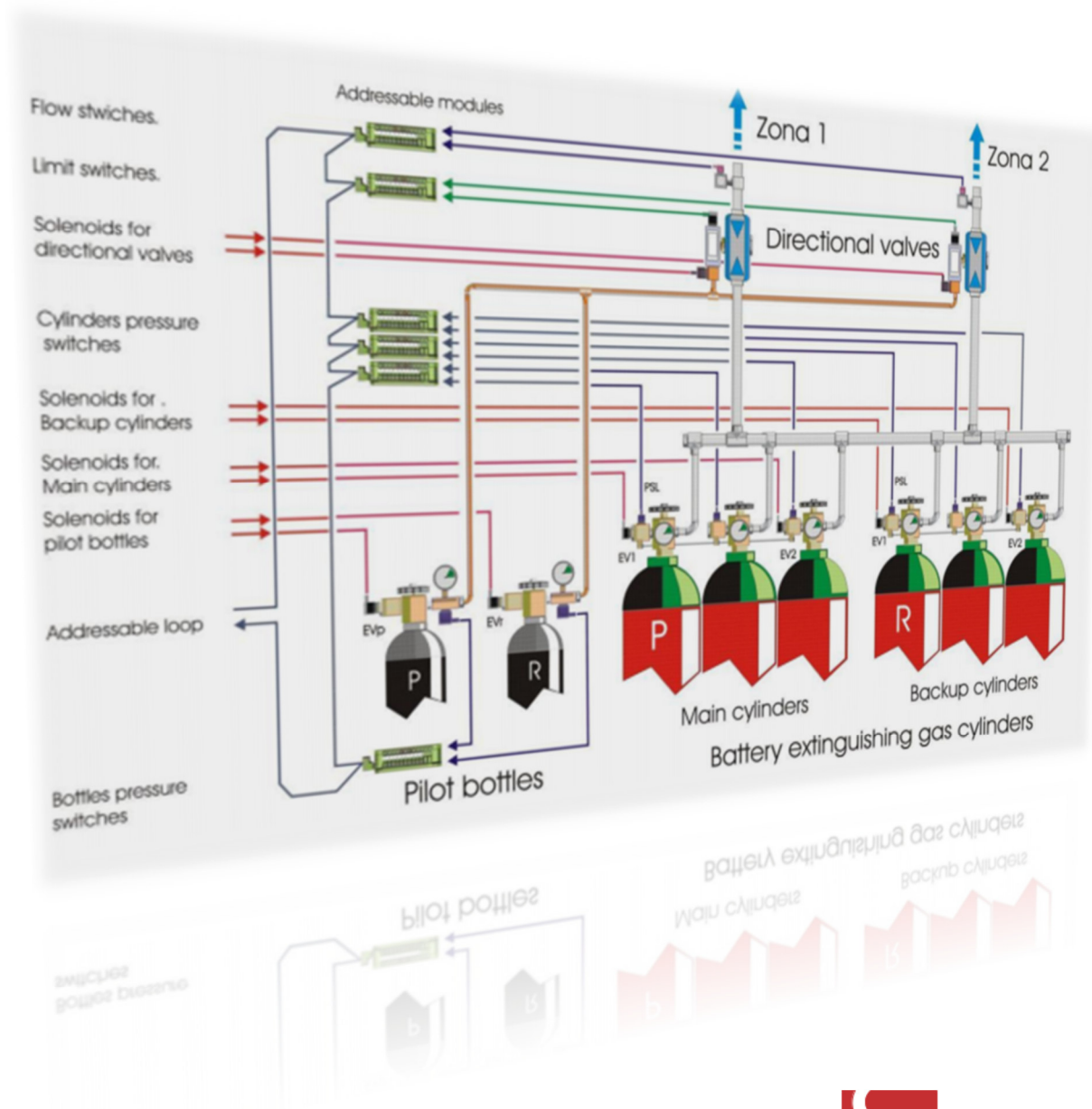FIRE AND GAS NETWORK (FIBER OR WIRED TYPE) - CLOSED RING

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FIRE & GAS BU — CLEAN AGENT SYSTEM

Clean agent fire and gas system is based on use of chemical agents and inert gases in order to extinguish a fire. The agent's application reduces heat, reduces or isolates fuel, and/or oxygen and it inhibits the change reactions between these components. Inert gas reaches all the areas of the facility and leaves no residue.

Socrate's multidisciplinary team designs, manufactures and delivers systems based on client's specific requests and applying products carefully selected using engeenering experiens gained over years.

Clean agent system example

Clean agent system example diagram with labels: Flow stwiches, Limit switches, Solenoids for directional valves, Cylinders pressure switches, Solenoids for Backup cylinders, Solenoids for Main cylinders, Solenoids for pilot bottles, Addressable loop, Bottles pressure switches, Addressable modules, Zona 1, Zona 2, Directional valves, PSL, EV1, EV2, EVp, EVr, P, R, Pilot bottles, Main cylinders, Backup cylinders, Battery extinguishing gas cylinders.

FIRE & GAS BU — EXAMPLES OF OUR WORK

Manufacturing of clean agent system

Manufacturing and Installation

Manufacturing and Testing Phase
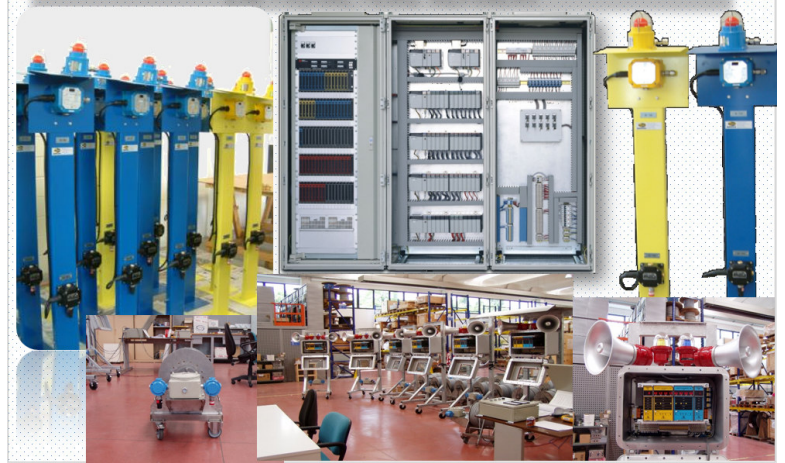
F&G Panels for Stogit Compressor Station

POWER SUPPLY
(EN54-4)

LASER DETECTOR

FIRE PANEL
(EN54-2 e 4)
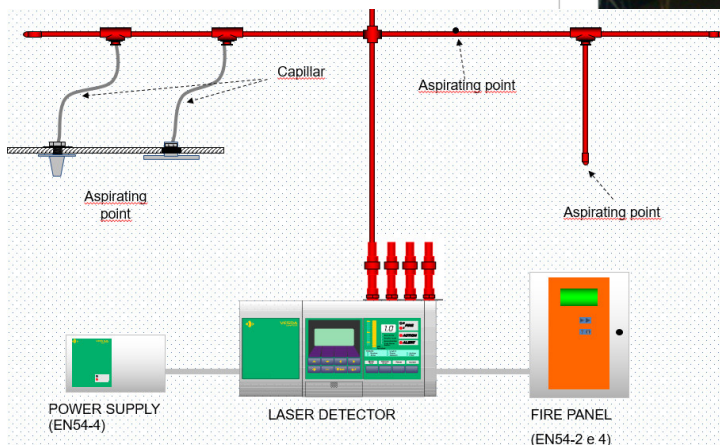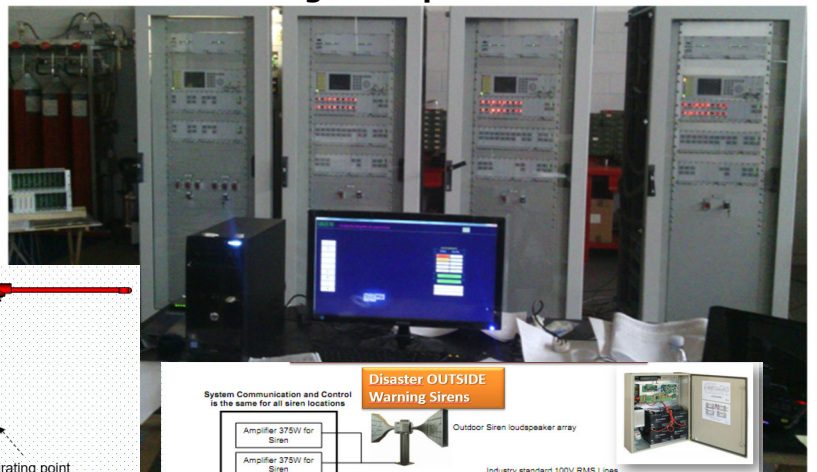
Aspirating Smoke Detection System
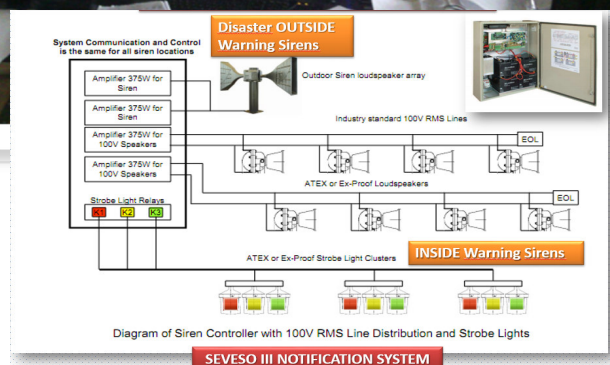
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