

## Dedicated flame monitoring systems

Each burner is equipped with its own flame monitoring devices, independent detectors are required to supervise the pilot and the main flame.

In most installations two different detection techniques are used, a flame ionization rod to monitor the pilot flame and UV or IR scanner to monitor the main flame.



UV+IR SCANNER INSTALLATION ON INCINERATOR BURNER

## Pilots and ignition systems



BMS LOCAL PANEL

The electric ignition system consists of an ignition rod provided with the burner and a high voltage ignition transformer.

When all interlocks are cleared and permissives are in place, the ignitor lights the pilot burner which then in turn lights the main burner.

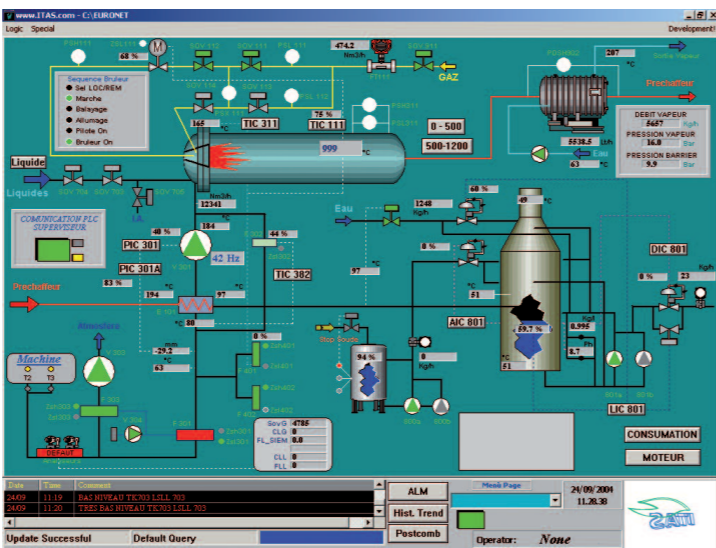
An electronic ignition system controlled by BMS, eliminates the need for the operator to provide an ignition source for the burners, which is considered to be the most dangerous part of the start-up procedure.

Typically each burner is provided with its own continuous pilot, to ensure that there is always a continuous source of ignition for the main burner.

## Control systems

Monitoring and control systems with HMI (Human Machine Interface) function for control of plants, complete with the following options:

- Process data history
- Real-time process and production data distribution in LAN and on all DDE protocol applications (e.g. Microsoft Office™)
- Remote access system with availability of all local functions and controls
- Scheduled service option and emergency remote assistance
- System may be integrated into local company networks



SUPERVISOR SYSTEM

E/P/B/BMS/0112/0

# ITAS BMS Burner Management Systems



## Safety controls and Burner Management Systems (BMS)



CONTROLLER SIMATIC S7 FAIL SAFE

The main function of the BMS is to ensure the safe start-up, operation and shutdown of fired heater. Once the logic is configured and the system properly commissioned, the BMS will provide a safe and consistent operating sequence.

The human interface will guide the operator so that the heater will be safely operated and if needed, be quickly and safely restarted. ITAS can provide Burner Management and Combustion Control Systems for all fired equipment. We can supply complete packages for new installations or complete retrofitting of existing plants.

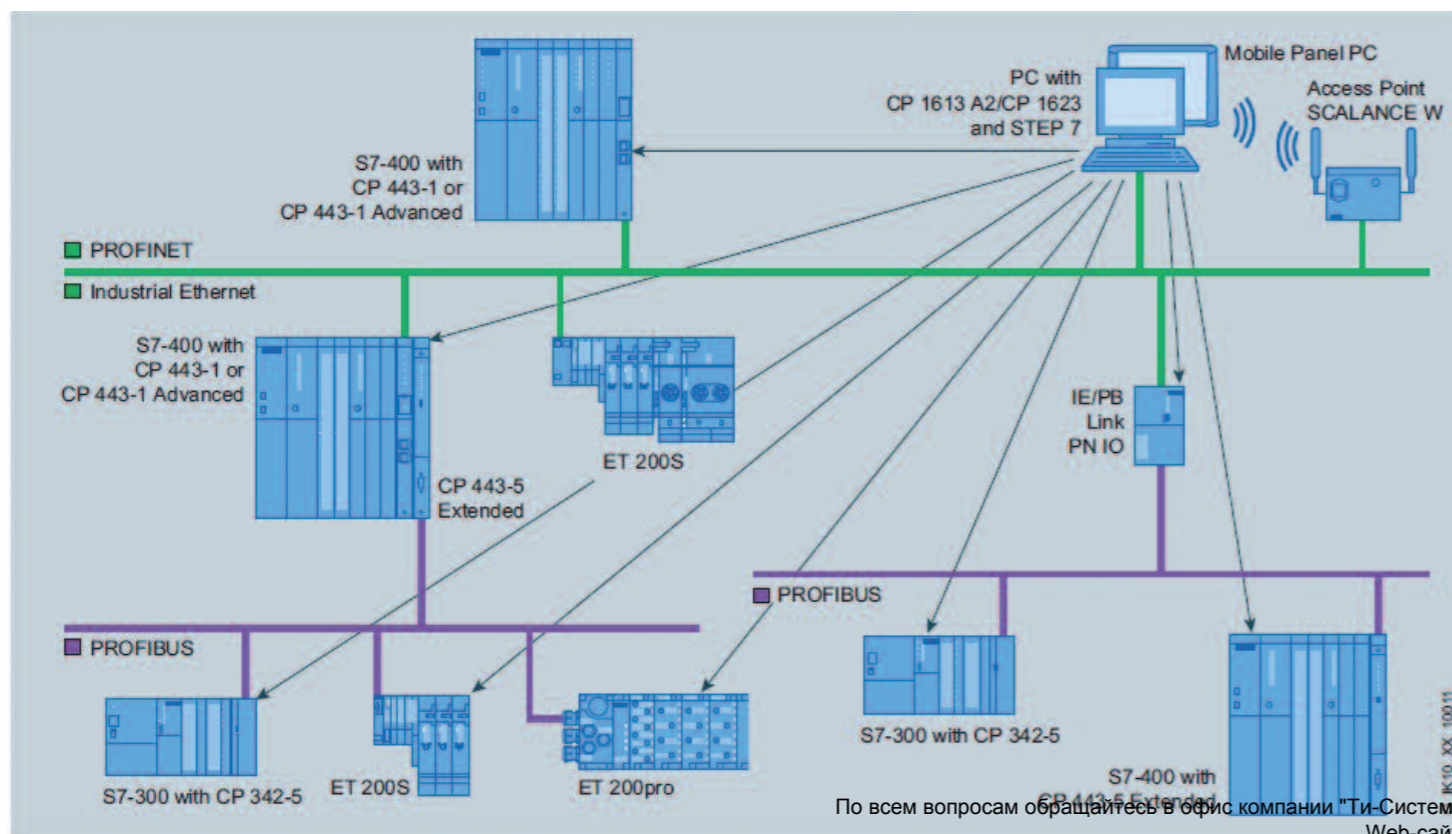
The following is a list of requirements that are included in our BMS according to most common codes:

- 1 Mandatory Purging
- 2 Permissive Interlocks
- 3 Double Block and Bleed Systems
- 4 Pilot and Ignition Systems
- 5 Dedicated Flame Monitoring Systems
- 6 Dedicated Logic Solver



ELECTRIC PANEL WITH TOUCH SCREEN AND PUSH BUTTONS

BMS TYPICAL ARCHITECTURE



## ITAS profile

ITAS S.p.a. is an engineering company designing and supplying, amongst many other products, burners and accessories for combustion system as well as entire turn-key combustion plants.

## Dedicated logic solver

Traditionally most BMS have been implemented using a discrete series of relays and switches as the logic solver. When well designed these panels may prove to be very reliable and low expensive. With the advent of the microprocessors, compact flame safeguard controllers have been introduced. These units provide the required logic to safely start and stop the burner.

In recent years, Programmable Logic Controllers (PLCs) and Distributed Control Systems (DCSs) become largely used as part of a family of microprocessor-based burner management systems (BMSs). They are extensively applied because of their high reliability and fault-diagnostic capabilities. PLCs may be used for the monitoring, sequencing, and control of all operations of burner managing or complete processes.

## Key features

- In house design and manufacture
- Supply most types of PLC – Siemens, Allen Bradley, Honeywell, Triconex, etc.
- Comply with all current standards and guidelines:
  - IEC 61508 (up to SIL3) and IEC 61511
  - EN 954-1 (up to CAT4)
  - IEC 61131
  - NPFA 79 2002 and NFPA 85
  - UL 1998, UL 508, UL 991

## Standard supply

- Local Control Panel
- Programmed PLC
- HMI Interface
- Fuel Gas Skids with valve trains
- FAT

## I/O FAIL SAFE MODULES



## FUEL GAS SKID WITH VALVE TRAIN

