

SUPREMA™ Control System





Features

- **Maximum 256 inputs and 512 outputs**
- **Compact: Up to 64 inputs and 80 outputs with one 19" rack**
- **FLEXIBLE**
- **Expanded input capability**
 - ◆ **4-20 mA sensors/transmitters**
 - ◆ **Smoke, heat and flame detectors**
 - ◆ **MAC's and switches**



Features

- **Distributed CAN-Bus design**
- **Internal power supply (150W)**
- **Satellite units for minimal wiring**
- **Optional dual redundant system design**
- **ATEX approved**
- **TUV SIL 3 rating**
- **UL approval pending**



Benefits

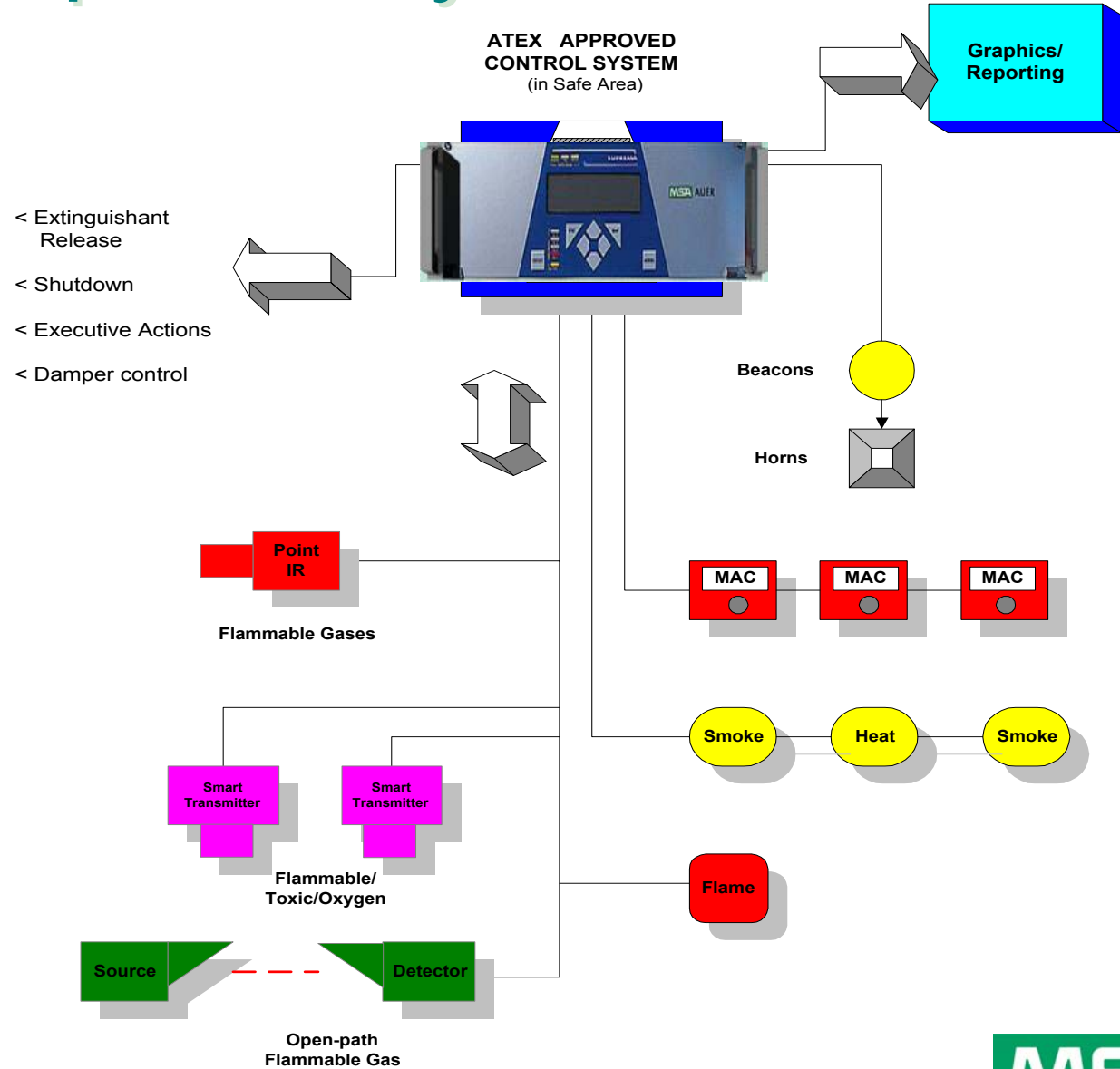
- **Innovative modular design provides superior flexibility**
 - ◆ **Simple to upgrade and add inputs and output modules**
- **Pricing advantages**
- **Easy to intergrate**
 - ◆ **Profibus DP**
 - ◆ **Modbus RTU**



Benefits

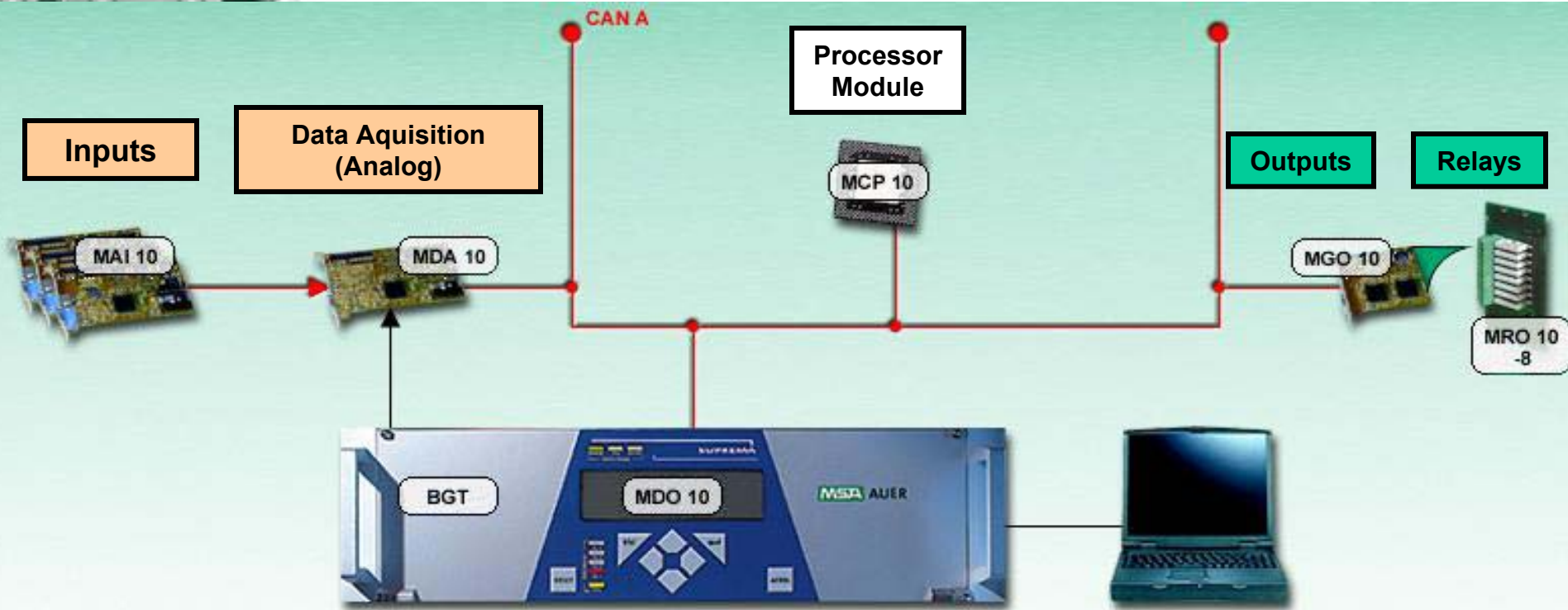
- **Configuration management**
 - ◆ **Set-up of inputs and outputs**
 - ◆ **Alarm grouping**
 - ◆ **Voting logic**
- **Complete turn-key systems**

Suprema System



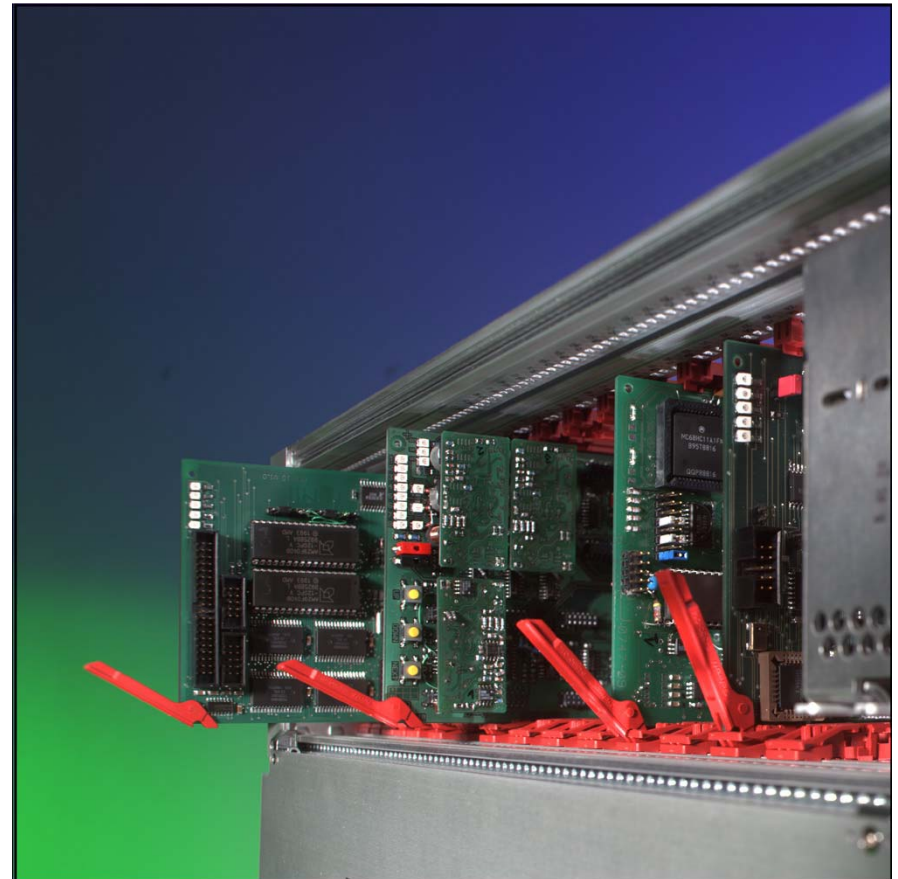
CAN-Bus Architecture

- Communication backbone
- Used in automotive industry
- Exclusive to Suprema components



Modular Design

- **Input cards**
- **Output cards**
 - ◆ 4-20 mA
 - ◆ Relays
- **Configuration**
 - ◆ Back mount
 - ◆ Rail mount
- **Redundancy**
 - ◆ Dual
 - ◆ Triple





Input Requirements

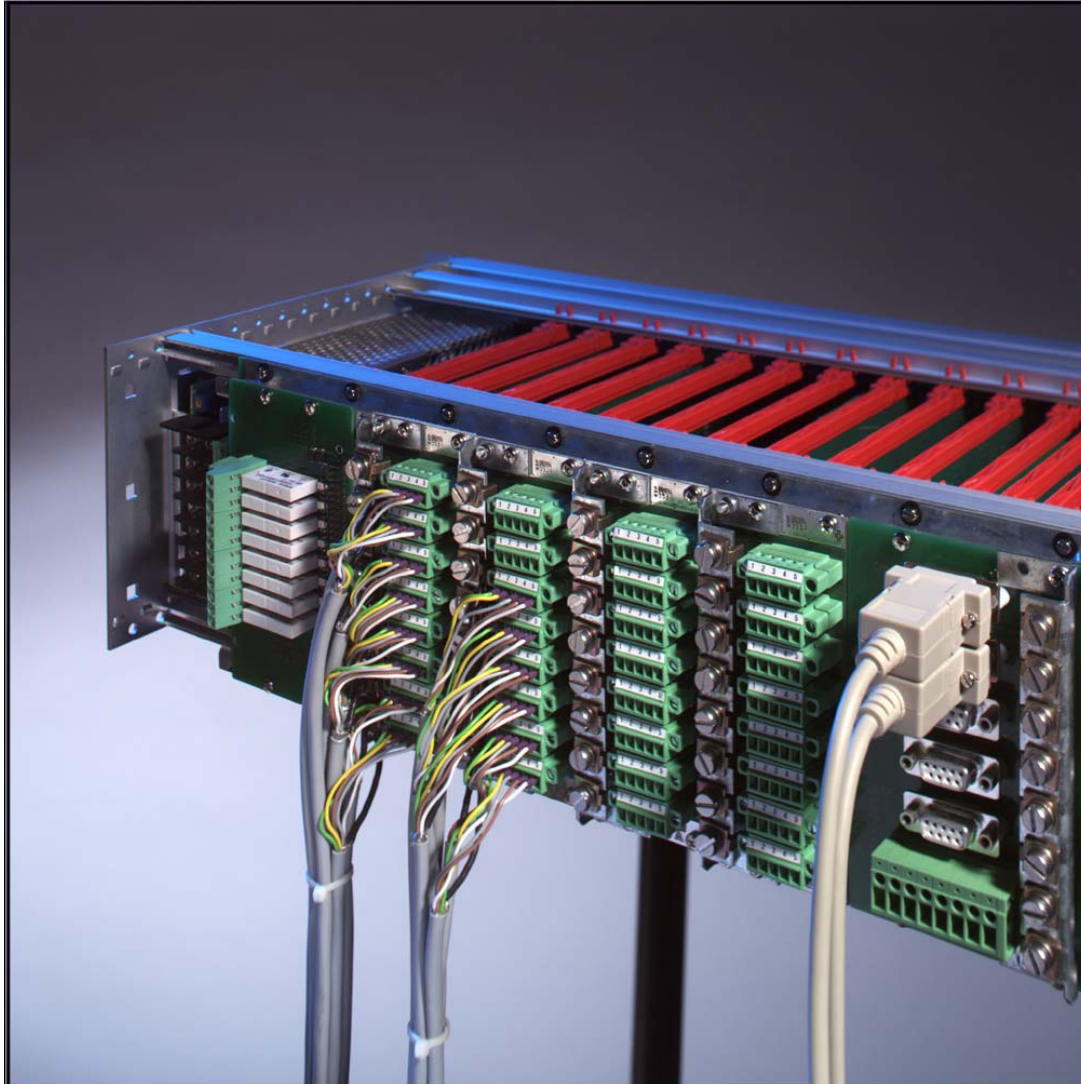
- **MAI (Module, Analog Input)**
 - ◆ Up-to 8 sensors per card
- **MCI (Module, Current Input)**
 - ◆ Daughter board that connects to the MAI
- **MAR (Module, Analog Redundancy)**
 - ◆ Daughter board that connects to the MAI
- **MAT (Module, Analog Terminals)**
 - ◆ Up-to 8 sensors per module



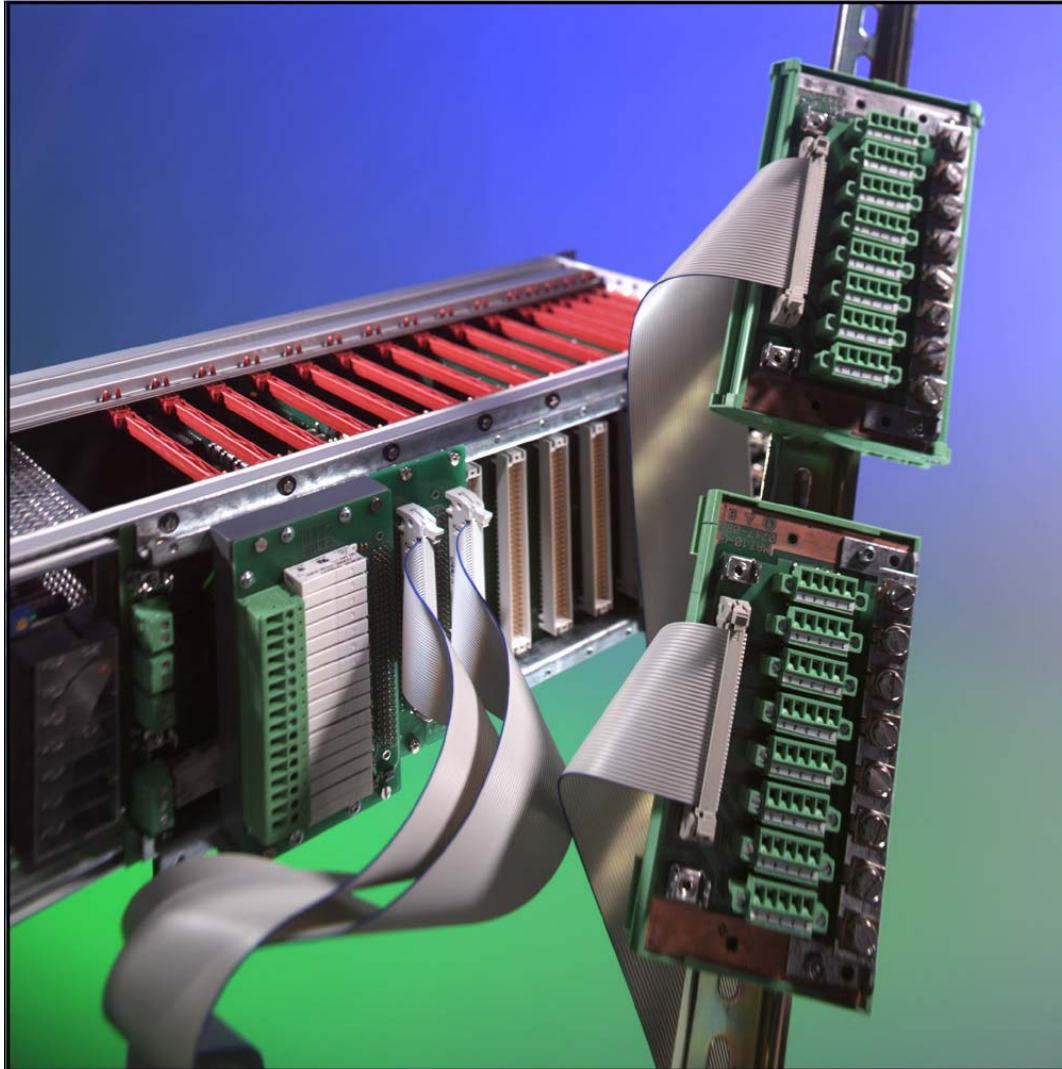
Output Requirements

- **MGO (Module, General Output)**
 - ◆ Up-to 8 relay outputs per card
- **MAO (Module, Analog Output)**
 - ◆ Up-to 8 4-20mA outputs per module
- **MRO (Module Relay Output)**
 - ◆ Up-to 8 relay outputs per module
 - ◆ Up-to 8 4-20mA outputs per module

Back Mount



Rail Mount





Redundancy

■ Double Redundancy

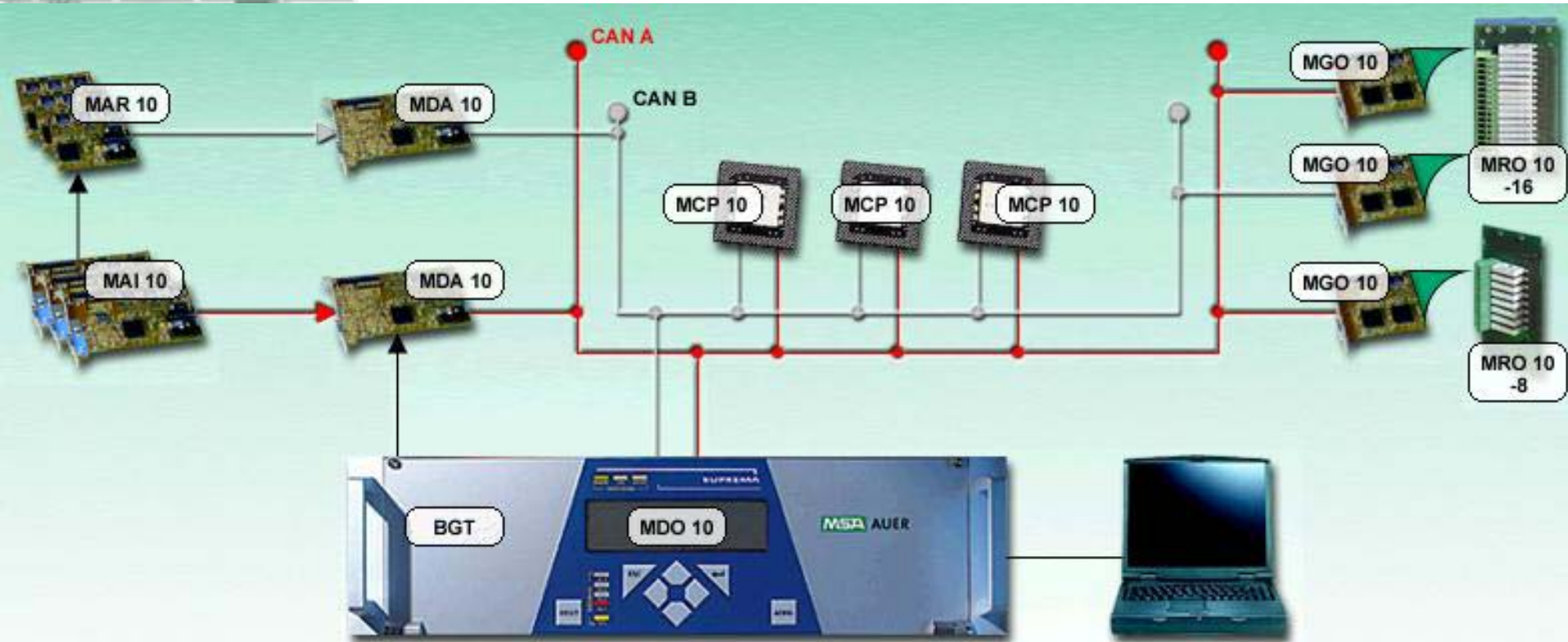
- ◆ Addition of second central processor card and data acquisition card
- ◆ Single Failure Safety - a single failure in the system can cause only a loss of one input or has no functional effect (but an error message)

■ Triple Redundancy

- ◆ Addition of third central processor card
- ◆ The third MCP compares results of the other two and provides a two out of three judgment in case of discrepancies
- ◆ This increases the reliability of the system – not the safety

Redundancy

- Utilizes both CAN A and CAN B
- Triple redundancy shown below



Display Module

- **Local viewing**
 - ◆ List, LED or Graph mode
- **Alarm acknowledgment**
- **System configuration**
- **LED's for 4-levels of Alarm, Voltage, System Fail, Inhibit**





Configuration Tools

- **System Configuration**
 - ◆ Sets up back plane and CAN-Bus configuration
- **Component Configuration**
 - ◆ Display screen and function keys
 - ◆ PC / software through RS-232 interface

Component Configuration

- Establish sensor inputs and relay / 4-20mA outputs
- Set-up through display module or PC (with software)
- Can be done at factory



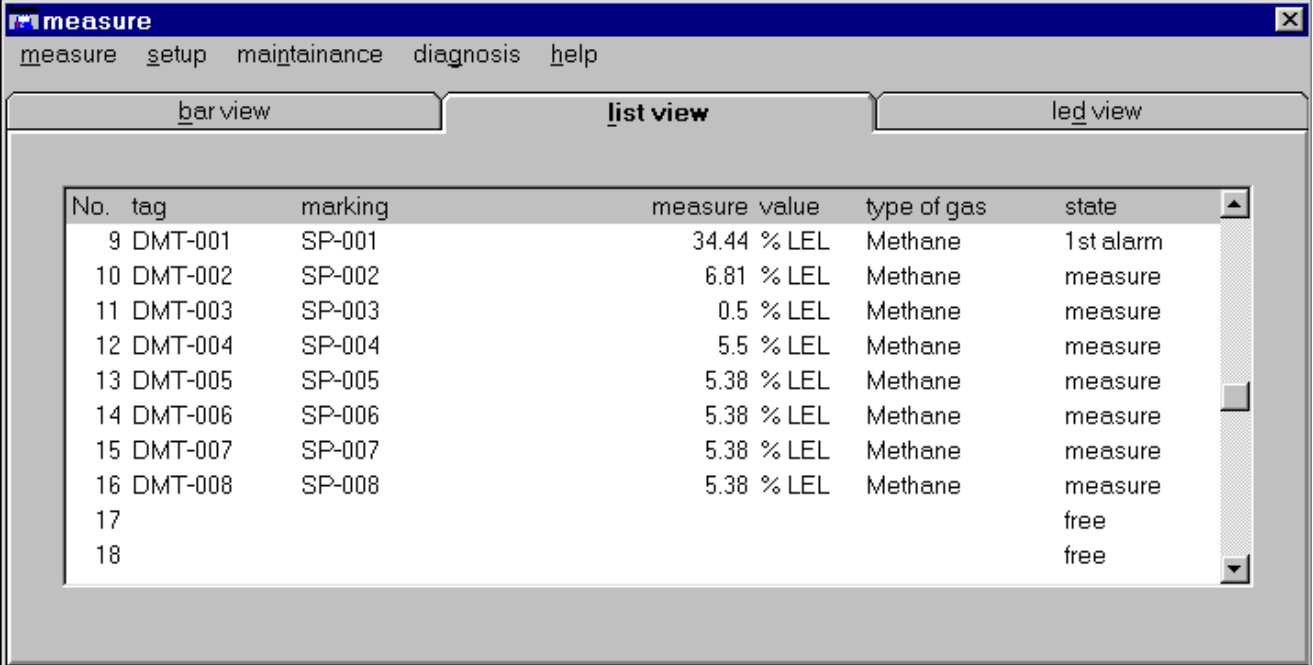


PC Software

- **Provides following functions**
 - ◆ **Measure mode**
 - ◆ **Setup measure points (tagging, sensor data, alarms)**
 - ◆ **Setup relay outputs and voting logic**
 - ◆ **Setup system parameters**
 - ◆ **Setup maintenance requirements**
 - ◆ **View diagnostic/logbook data**

PC Software

- Measure mode through RS-232 / PC interface
 - ◆ List mode

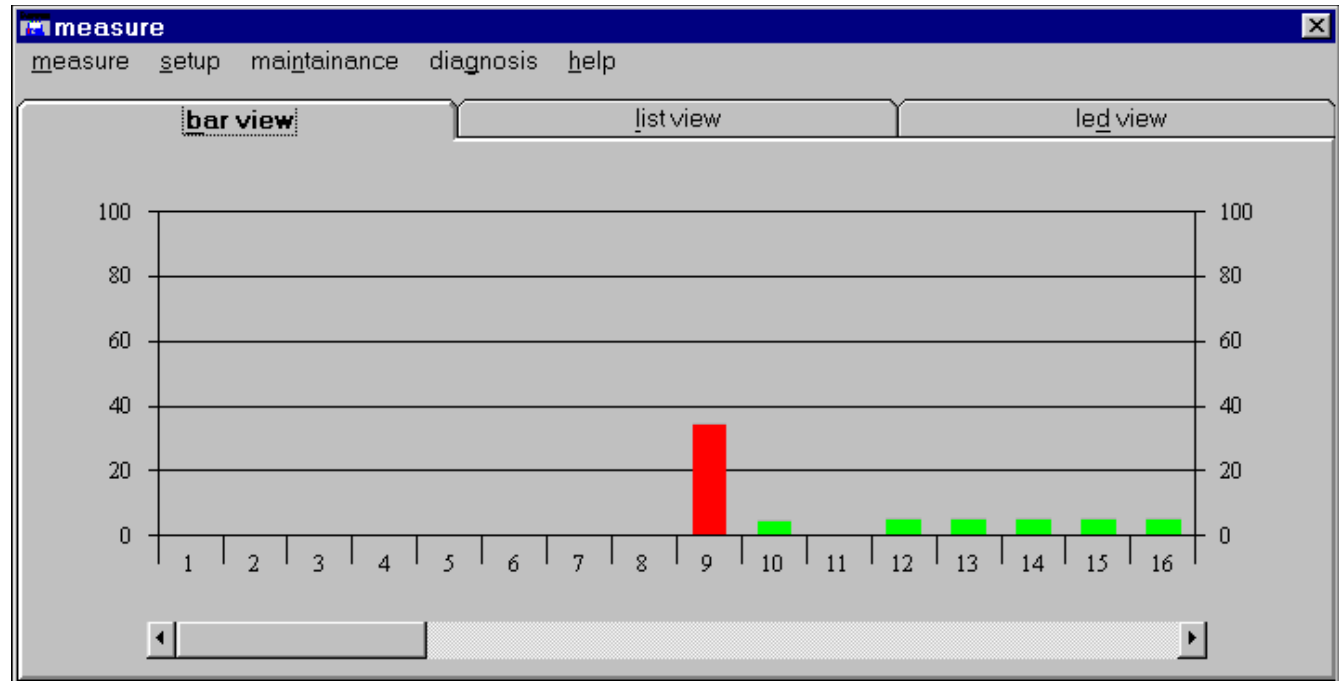


The screenshot shows a Windows-style application window titled 'measure'. The menu bar includes 'measure', 'setup', 'maintainance', 'diagnosis', and 'help'. The interface has three tabs: 'bar view', 'list view' (which is selected), and 'led view'. The 'list view' tab displays a table with the following data:

No.	tag	marking	measure value	type of gas	state
9	DMT-001	SP-001	34.44 % LEL	Methane	1st alarm
10	DMT-002	SP-002	6.81 % LEL	Methane	measure
11	DMT-003	SP-003	0.5 % LEL	Methane	measure
12	DMT-004	SP-004	5.5 % LEL	Methane	measure
13	DMT-005	SP-005	5.38 % LEL	Methane	measure
14	DMT-006	SP-006	5.38 % LEL	Methane	measure
15	DMT-007	SP-007	5.38 % LEL	Methane	measure
16	DMT-008	SP-008	5.38 % LEL	Methane	measure
17					free
18					free

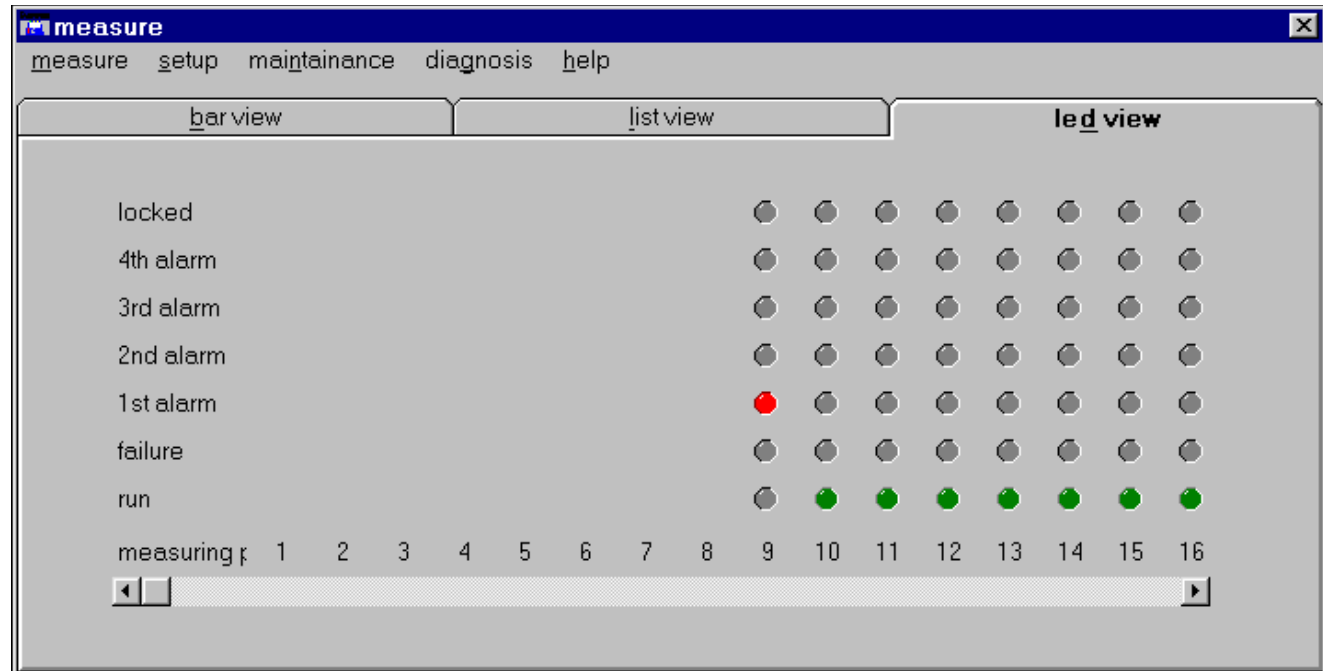
PC Software

- Measure mode through RS-232 / PC interface
 - ◆ Bar mode



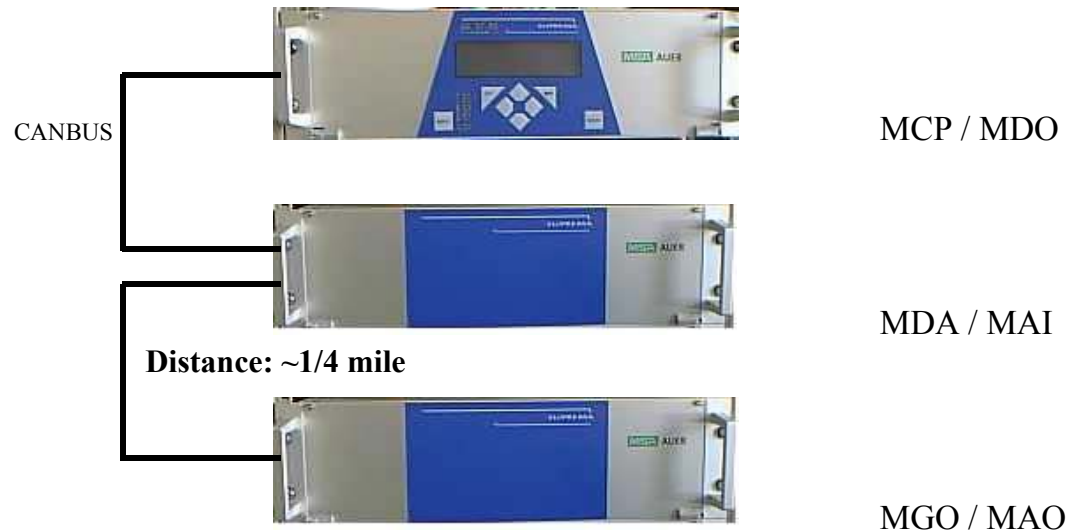
PC Software

- Measure mode through RS-232 / PC interface
 - ◆ LED mode



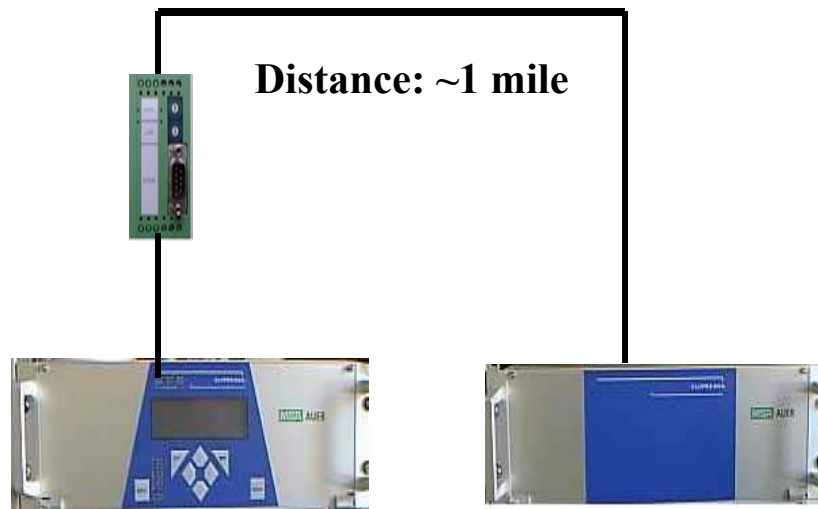
Satellites

- **CAN-Bus allows up-to 8 Suprema racks configured in one system in several locations**
- **Benefit: Significant cost reduction for cabling and installation**



CAN Bridge

- CAN Bridge extends the maximum length of the CAN-Bus
- CAN Bridge filters out unnecessary data transfer and optimizes bit rate





BUS Interfaces

- **Gateways available**
 - ◆ Profibus DP
 - ◆ Modbus RTU
- **Both gateways act as “slave” and the data has to be requested by the PLC**
- **For both busses some configuration/ programming needs to be done at the receiving system (e.g. PLC)**



Graphics Package

- **Data logging - allows database of events to be recorded**
- **Data trending - graph of selected field device to show response over time**
- **SOE - Sequence Of Events, gives real time log of plant status**
- **Customized reports**