



Modular Gas Detection System
MGS 200



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Product Overview

MG200, is a modular and flexible control system for Gas and Fire Detection and control which offers optimum compliance, safety and productivity for sites. It makes F&G system design, installation, configuration and operation simple.

MGS200 is an intelligent F&G controller that accepts inputs from flammable and toxic gas detectors, Flame detectors, Fire Detectors, Switches, Manual call points and send output to devices like valves in Fire Extinguishing Systems, HVAC system, Horn & Beacons, Fire brigade , F&G consoles and DCS/ESD systems.



Why a Local Safety F&G System?

Advantages such as Reliable after-sales services, possibility of unique Customization and Availability, make the use of First Local F&G System cost-effective, productive and reliable. We would be available every time which is needed to give service and assist our customers. While this is not possible to give such a service for other foreign brands.



Simple To Use

MGS200 offers flexibility whilst still providing simple operation. All the day to day functions are accessible via push buttons on the front panel per module.

A Digital Display on all modules provides an instantaneous representation of the gas concentration on every detector.

Alarm, pre-Alarm and Fault LEDs light when a hazard or fault is detected. This means the whole rack status can be checked at a glance.



AFTER SALE SERVICES

- Maintenance and after-sales service are the responsibility of our efficient after-sale services team. This includes all competences that are required to service F&G Detectors or to perform repairs after a failure. We offer services as below:
- Spare Stock: Our warehouse is located near Tehran including necessary spares for gas detectors and F&G system modules.
- Technical Support: Our After Sale Services is proud to provide a comprehensive technical support service. This service is provided via our main offices in Tehran ensuring support is available when it is needed most. Access to the design, manufacturing and site services team is easily possible and client can be assured of a prompt and appropriate response to assist it with technical enquiry.
- On and Offsite Repairs: Our After Sale Services is able to provide ongoing engineering support through our team of Services Technicians. With many years of experience, our team can provide remote support, on-site / off-shore and return-to-base repairs on all FGDS systems/Detectors ensuring the right solution for client.
- Training (if any): Our training Centers are located in Tehran for offered training courses (if any).

Features And Benefits

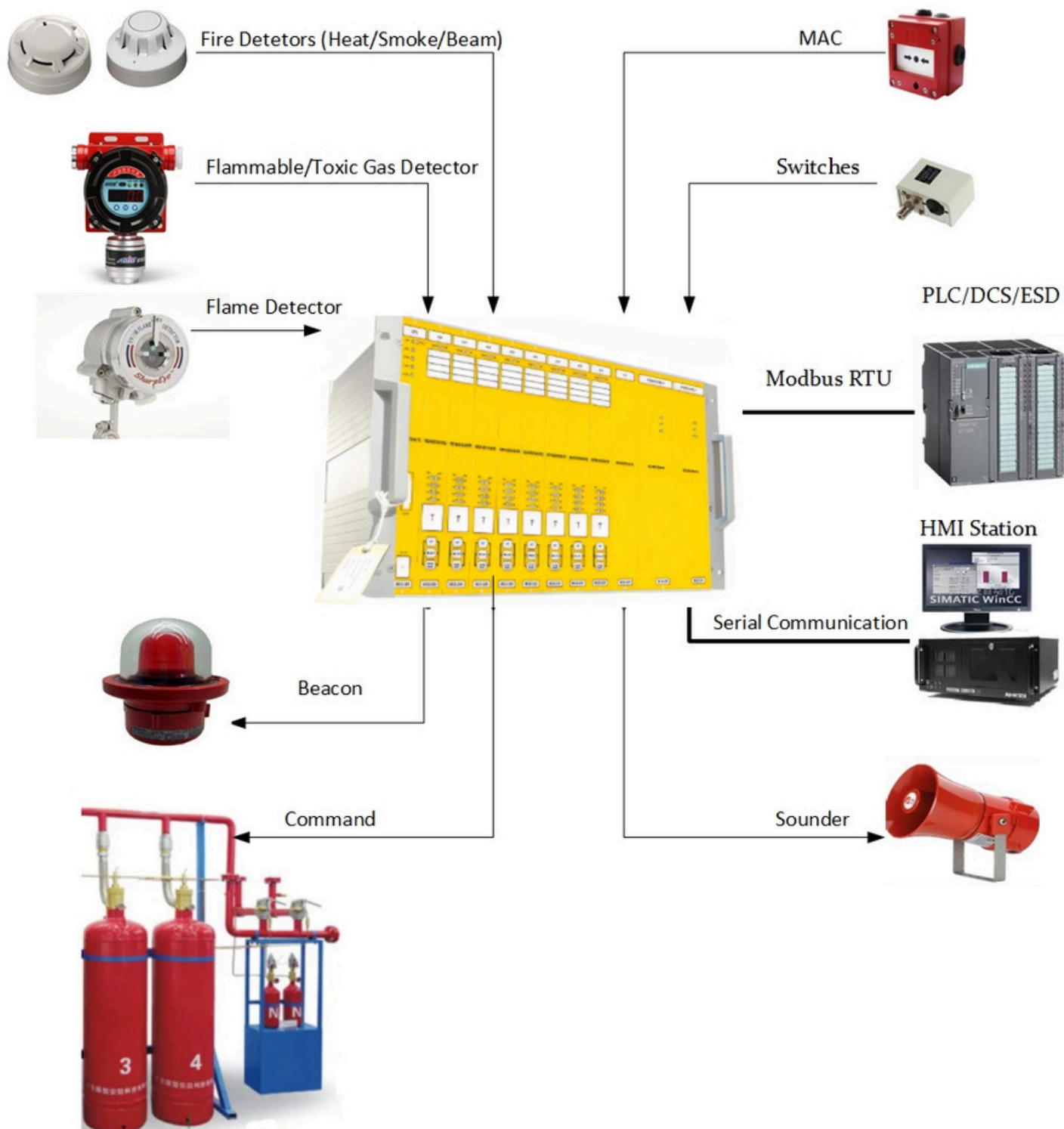
- standard Serial Modbus interfaces to HMIs and other system and PLCs ensures 24/7 system status visibility for constant safety
- Flexible/Modular and Expandable system architecture to meet site specific needs such as Redundancy or distributed I/O's for unlimited input and output channels
- Easily accessible system status that can be seen at a glance using Local Displays
- Easy Maintenance using individual channel inhibition
- Possibility of The one man calibration using front panel of modules which reduces the service overhead by half.

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- FOUR-CHANNEL GAS AND FLAME DETECTOR MODULES
- FOUR ZONE PER CONVENTIONAL MODULE
- CONVENTIONAL FIRE-SMOKE DETECTORS, HEAT DETECTORS AND MANUAL CALL POINT UP TO 10 TO 20 DEVICES PER ZONE
- FRONT MODULE KEYPAD FOR CONFIGURATION AND CALIBRATION
- HIGH VISIBLE DIGITAL DISPLAY PER MODULE
- DUPLICATE SIGNAL(4-20 mA) TO OTHER SYSTEMS PER CHANNEL
- THREE MODBUS COMMUNICATION TO DCS/ESD
- INDIVIDUALS PRE-ALARM AND ALARM LEDS
- SENSOR FAULT CHECKING
- SIL CERTIFICATE IN PROGRESS
- REDUNDANT POWER SUPPLY
- EASY TO MAINTAIN AND REPLACE THE MODULE
- FUNCTIONAL SAFETY SYSTEM ACCORDING TO IEC61508, IEC6151, IEC61511



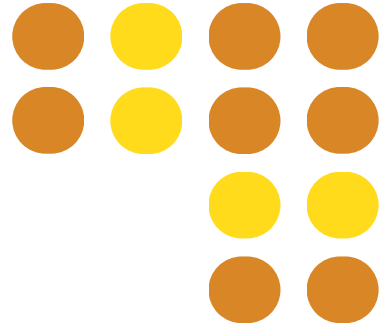




- Aluminum Alloy -426*277*259 mm
- All input and output terminals are available on the back plane with screw terminals which accept wire sizes with cross section up to 1.5 mm²
- 12 position for cards

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CPU Card

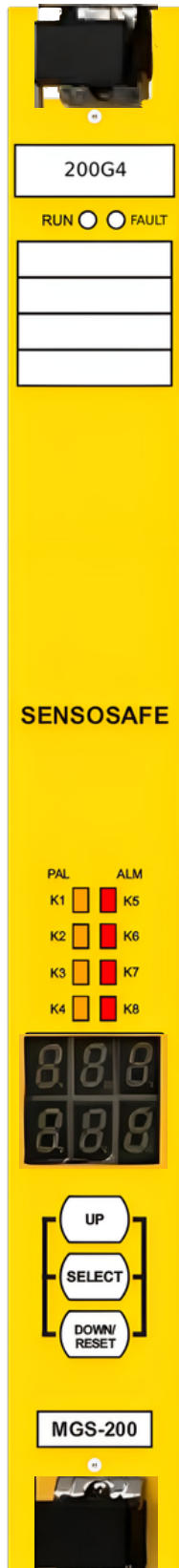


CPU/Gateway card is responsible for communications of each MGS200 protection system with outside world. There are four connection ports available for each gateway card. Three of them are Modbus RTU protocol to interface with local display, remote PLC/DCS systems and HMI panels.

CPU/Gateway Card Status LEDs:
ERROR LED which if on, indicates any hardware errors on any of the other cards installed on MGS200 system

Configuration Port (RS-232):
This port, is used for connection to MGS200/Config software which is used for entering setting digitally beside the manual method

Gas card



Gas Card

- 200G4 is used for monitoring quasi-static signal inputs separately and/or in combination with fire card.
- Sensors which can be used for this type of monitoring should be from any sensor with current output (4 to 20 mA) for process parameters such as Gas rate, Flame, etc.
- Nine programmable SPDT relays are provided on 200G4.
- In each system, up to eight 200G4 cards may be installed into a single rack (slots 2-9). So, each system can accept up to 32 analog inputs.
- Each card features a high visibility digital LED display.
- All the terminal connections on 200G4 cards are screw terminals which accept wire sizes with cross section up to 1.5 mm².

The Gas card has 8 LEDs (4 for low level alarm and 4 for high level warning) along with one LED (RUN) to announce the connection of the card with the CPU and one LED (FAULT) to announce the communication problem in the input signals.

Each card is equipped with a high-quality segmented display with two rows to show read values. At the bottom of the display, there are three push buttons for card configuration.

Fire card

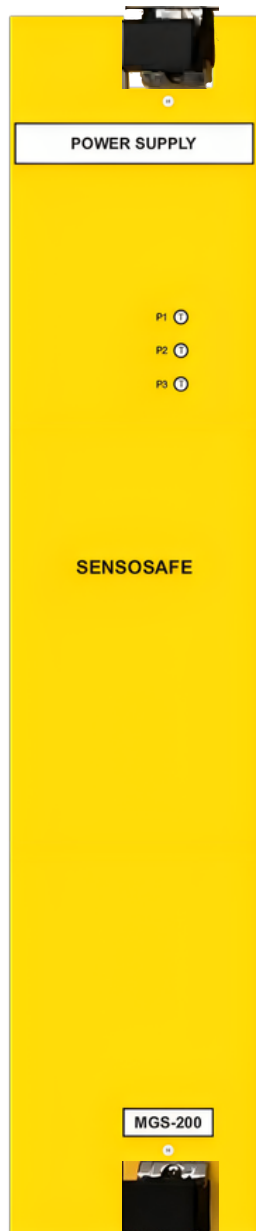
Fire Card

- 200F4 (Conventional Card) is used for monitoring digital inputs separately and/or in combination with gas card.
- Sensors which can be used for this type of monitoring should be from one of the following categories:
 - Digital Contacts
 - Conventional Detectors
- Five programmable SPDT relays are provided on 200F4.
- In each system, up to eight 200F4 cards may be installed into a single rack (slots 2-9). So, each system can accept up to 32 zone.
- All the terminal connections on 200F4 cards are screw terminals which accept wire sizes with cross section up to 1.5 mm².



The Fire card has 4 Zone LEDs along with one LED (RUN) to announce the connection of the card with the CPU and one LED (FAULT) to announce the communication problem in the input signals.

Power Supply



MGS200/15 is the rack power supply card. One or two MGS200/15 cards may be installed in a MGS200 Rack. If two are present, the second one will operate as a redundant power supply card. MGS200/15 is operated with appropriate connection panel mounted at the rear of the rack. MGS200/15 allow the connection of AC and/or DC mains power to the rack.



Technical Specification

MGS 200 F&G System	
Enclosure	
Enclosure Type	Rack Based, 19 inches×6U
Enclosure Material	Aluminum
Enclosure Size	426×277×259mm
Weight (full module)	14.5Kg
General Specification	
Type of Available Cards	Analog Cards, Fire Cards, CPU Card, Redundant Power supply Cards
Quantity of Available Networked Racks (Via Modbus Link)	32 Racks
Quantity of Input/Output Cards	8 Cards per Rack (Totally 32 Input Channels and 72 Output Relays per Rack)
Quantity of Channels per Card	4 x Input Channels per Card 9 x Relay output Channels per Card
Acceptable Input Signals	4-20mA Analog Signals, Digital Signals, Conventional Fire Zones
Connectable Devices	- Gas Detector/ Flame Detectors - Fire Conventional Zones (each Zone includes up to 20 x Conventional Fire Devices such as smoke & heat detectors or Manual call points) -Switches & Contacts, Exd Manual call points -Horn, Beacon, Extinguishing Devices,HVAC,Console -3th party Control systems such as DCS/ESD via Modbus Links
Communication Interfaces	3 x Modbus RTU – RS485 ports for communication with 3th part Systems such as DCS/ESD 1 x Modbus RTU- RS232 port for configuration
User Interface	
Digital Display per Card	Front plate 7-Segment Display per card 2 Lines
Key Pad per Card	3 x Keys per Card for Configuration and user Commands
Panel Indications	Digital Display on the Cards: Measured Value & Channel Number Measurement Unit: %LEL/ ppm/ % vol/ Fire
Configuration Port	RS232 port on the CPU Card



LEDs	Gas Card: 4 x Yellow pre-alarm and 4 x RED alarm LEDs Fault LED / Run LED Fire Card: 4 x RED Fire LEDs Fault LED / Run LED CPU Card: 4 x Communication (Modbus) LEDs Fault LED / Run LED Power Card: Input Power OK / 5 V / 24 V LEDs
Technical Characteristic	
Power	V DC: 120V TO 350V V AC: 90V TO 250V - 50 TO 60 HZ
Input channels	Resolution: 12 bits Power: 24VDC Gas Card: 3 wire, 4-20mA signals Fire Card: Conventional Zones each includes up to 20 x Devices, Switches, Contacts
Output Relays	1A @ 24VDC Configurable for: Latching/ non Latching/ Normally Energized/ Normally De-Energized
CPU channels and Ports	-1 x RS232 port for configuration -3 x RS485 ports (Modbus) for connection to 3th party Systems -Remote Reset input -Common Fault Output Relay
Configuration Options per Card (Using Front Panel Keypad & Display or Using Configuration Software)	Reset, Inhibit, Delay, Unit of measured Value, Alarms and pre-Alarm threshold, N-E or N-DE, Latch or non-Latch, Hysteresis, Logic, .Modbus Address, Etc
Redundancy	Redundant power Cards per rack Double full redundant Racks
Configurable Delay Time for outputs	1 ~ 60 s
Software	
Software	Configuration Software , Windows based
Environmental Characteristic	
Operation Temperature	-40 ~ +85°C
Humidity	0% ~ 95%

