



Safety Instrumented Fire & Gas Systems

aeSolutions Provides Full-Service Fire & Gas Engineering and Products

The aeSolutions FM-approved family of Fire & Gas safety systems ensures compliance with the latest NFPA 72 standards to meet all of OSHA's requirements. The FGS1400 MK II is listed for IP21 for Fire Command Center and proprietary Supervising Station functions.

Are you Compliant?

With aeSolutions on your team, you can rest assured that your Fire and Gas System is designed to the latest safety standards utilizing our first-hand industry experience of the process safety lifecycle.

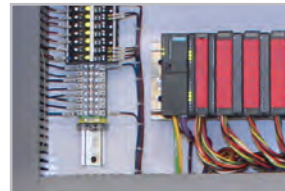
Benefits of aeSolutions Fire & Gas Systems:

- Scalability provides you with customization options
- Off-the-shelf basic system reduces cost and time
- Siemens PCS7 platform integration for increased operator visibility
- FM-Listed for Fire & Gas detection and suppression to satisfy regulations
- Industrial grade hardware for increased reliability in plant applications



FGS1400 MK II

Designed for rugged conditions with high I/O count



FGS1300

FM-approved for lower I/O count applications. Class 1 Div 2 area classification status.



PS1400 20 / 50 / 100 / 150

Power supplies that meet NFPA 72 requirements. The power you need, when you need it.



PS1400-20-DIV2

Battery set FM-listed for Class 1 Div 2 areas. Rugged and reliable.

FGS1400 & FGS1300 Fire & Gas Alarm & Control Systems



FGS1400 MK11 Fire & Gas Alarm & Control System

Life Safety Solutions

The FGS1400 MK II and FGS1300 combine the required functionality into the latest generation of TÜV-certified safety PLC.

A critical component of the FGS1400 MK II and the FGS1300 is an FM-approved secondary power supply system consisting of a charger panel and an associated self-contained battery system. To support system design, aeSolutions has developed an FM-approved battery sizing tool which confirms the battery system design based on the specific requirements of each application.

By using the same hardware / software platform as the Siemens Simatic PCS7 series, the FGS1400 MK II and FGS1300 can be integrated into the entire plant system solution. It offers the advantages of common HMIs, spare parts, training, engineering / configuration tools, maintenance, and procedures to produce a dramatic saving in both installed cost as well as lifecycle costs.

Fire System Monitoring & Control

The FGS1400 MK II and FGS1300 have been FM-approved to be in conformance with the requirements of NFPA 72 for fire alarming and mitigation control. The FGS 1400 MK II has approval for either simplex or redundant processors, a variety of I/O configurations including remote I/O, and a battery back-up/ charger subsystem.

Gas Monitoring and Control

The FGS1400 MK II and FGS1300 have been FM-approved to be in conformance with FM Approval's Combustible Gas Standard 6320, Toxic Gas Detection Standard 6340 and ANSI/ISA 12.13.01 Performance Requirements for Combustible Gas Detectors standard.

Field Device Options

- Heat & smoke detectors
- Temperature rate-of-rise sensors
- Toxic and combustible gas detectors
- Suppression subsystems
- Local alarm horn / beacon
- Environmental protection
- Host communication capability
- IR fire detectors
- Multi-spectrum fire detectors

System Integration Options

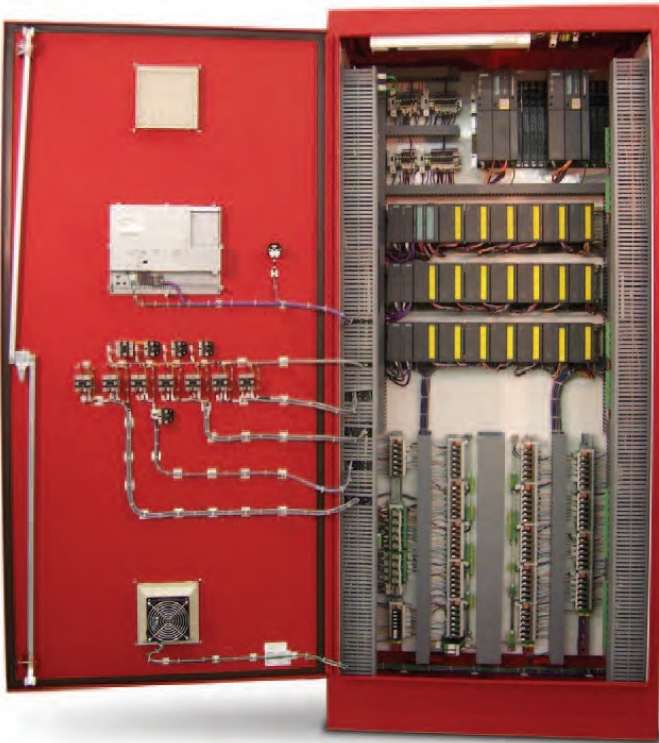
aeSolutions' qualified engineers can apply years of fire & gas system expertise to provide:

- Implementation of all phases of design, fabrication, configuration, and documentation
- System verification and validation including factory acceptance, integration, and client acceptance testing
- Training at both the engineering and technician levels
- Commissioning and startup support



FGS1300 Fire & Gas Alarm & Control System

FGS1400 Fire & Gas Alarm & Control System Features



The FGS1400 MK II was designed to the same levels of safety availability and reliability as the systems that aeSolutions designs for Safety Instrumented Systems. By using the latest generation of a SIL 3 safety-certified PLC as the logic solver, the FGS1400 MK II provides the same demanding levels of performance required by the ISA and IEC safety standards for safety critical applications. While not all fire and gas systems are required to conform to the safety standards, wise users recognize the benefits of such a high-reliability system even for lower-risk applications.

FGS1400 Features

Pre-engineered, pre-configured and pre-packaged system that is suitable for a wide variety of applications and is available as a turnkey solution.

- FM-Approved to be compliant with NFPA 72 for both fire and gas monitoring in the same PLC
- Siemens Simatic S7-400F Series Safety PLC platform
- Simplex I/O and either simplex or redundant processors support: offers a remote I/O option
- TÜV-approved SIL 3 rated Safety PLC
- Interface to a wide variety of sensors and final control elements with fully supervised circuits (IDC, NAC, FSF, SDC)
- Designed to levels of reliability and availability with national safety standards for Safety Instrumented Systems

- Profibus, Industrial Ethernet, hardwired I/O, or Modbus compatible
- Complete battery backup system with charger
- No on-site programming required
- Multiple operator interface options: 10" MP277 Touch Panel; 15" PC677 Operator Interface; PC BOX840 PC with 21" Vartech Monitor
- Powerful engineering workstation incorporating cause and effect alarm configuration and display using Siemens' Cause and Effect Safety Matrix™

FGS1400 System Specifications

| | |
|----------------------------------|--|
| Processor: | Siemens Simatic S7-400F Series with redundant processor option |
| I/O: | Both analog and discrete supervised circuits and remote I/O option |
| Inputs/Outputs: | Application-dependent |
| SIL: | Design based upon SIL 3-rated components for Fire & Gas circuits |
| Power Supply: | PS1400-50-600: 50 Amp 24VDC Output Nominal; 115/230 VAC Input/600 Amp Hour Battery Backup. PS1400-100-1200: 100 Amp 24VDC Output Nominal; 115/230 VAC Input/1200 Amp Hour Battery Backup. PS1400-150-1800: 150 Amp 24VDC Output Nominal; 208/240/480 VAC input/1800 amp hour battery set. Optional Rack assembly to stack charger and battery set. |
| Temperature: | Operating: 0 to 50 Deg C. Storage: -40 to 60 Deg C |
| Humidity: | Operating: 0 to 95% non-condensing |
| Cabinet: | Nema 12 Gauge 12, powder coated; size is application-dependent |
| Area Class.: | General purpose |
| Weight: | Application-dependent |
| Certifications: | FM-Approved for compliance with NFPA 72 for both Fire & Gas; FM Approval's Combustible Gas Standard 6320, Toxic Gas Detection Standard 6340 and ANSI/ISA 12.13.01 Performance Requirements for Combustible Gas Detectors standard. |
| Initiating Device Circuits: | Class A & B for discrete dry contact IDCs; Class B for Analog IDCs. |
| Notification Appliance Circuits: | Class B |



FGS1300 Fire & Gas Alarm & Control System Features

The FGS1300 provides fire and gas monitoring, and suppression control for modules in remote locations that have less than 40 I/O. It is designed to be installed in both general area, or as an option, Class 1 Div 2 groups B-D, temp code T3 zones areas.

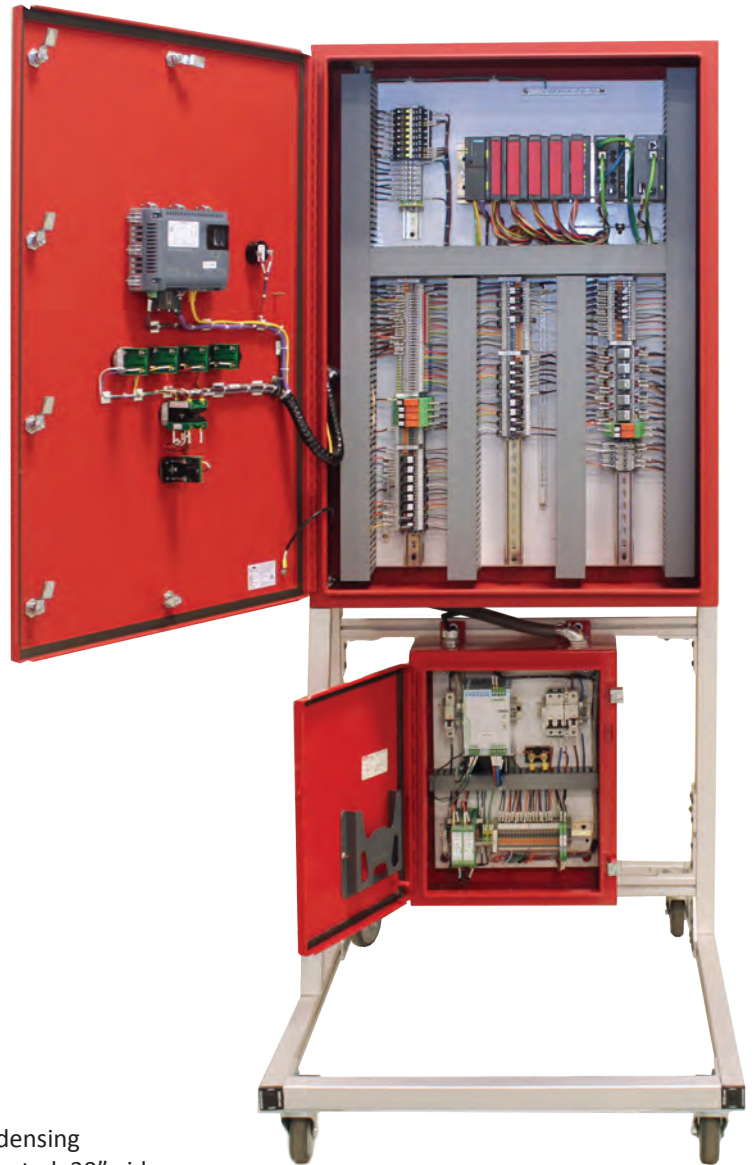
FGS1300 Features

The FGS1300 Fire & Gas System is a pre-engineered, pre-configured and pre-packaged system that is suitable for a variety of applications and is available as a turnkey solution.

- FM-Approved to be compliant with NFPA 72 for both fire and gas monitoring in the same PLC
- Siemens Simatic S7-315 Series PLC platform
- Interface to a wide variety of sensors and final control elements with fully supervised circuits (IDC, NAC, FSF, SDC)
- Profibus, Industrial Ethernet, or hardwired I/O compatible
- Complete battery backup system with charger
- No on-site programming required
- 7" TP700 Comfort Touch Panel programmed with Siemens TIA Portal

FGS1300 System Specifications

| | |
|----------------------------------|---|
| Processor: | Siemens Simatic S7-315 series CPU |
| I/O: | Both analog and discrete supervised circuits |
| Inputs/Outputs: | Application-dependent |
| Power Supply: | PS1400-20-208: 20 Amp 24VDC Output Nominal; 115/230 VAC Input/208 Amp Hour Battery set, Optional Rack assembly to stack charger and battery set |
| Temperature: | Operating: 0 to 50 Deg C. Storage: -20 to 60 Deg C |
| Humidity: | Operating - 0 to 95% non-condensing |
| Cabinet: | Nema 12 Gauge 12, powder coated; 30" wide by 42" tall by 10" Deep |
| Area Class.: | General purpose, Class 1 Div 2 Groups B-D, T4 |
| Weight: | Application-dependent. Typical 250 Lbs |
| Certifications: | FM-Approved for compliance with NFPA 72 for both Fire & Gas; FM-Approved Combustible Gas Standard 6320, Toxic Gas Detection Standard 6340 and ANSI/ISA 12.13.01 Performance Requirements for Combustible Gas Detectors standard |
| Initiating Device Circuits: | Class A & B for discrete dry contact IDCs; Class B for Analog IDCs |
| Notification Appliance Circuits: | Class B |
| Initiating Device Circuits: | Class A & B for discrete dry contact IDCs; Class B for Analog IDCs |
| Notification Appliance Circuits: | Class B |



PS1400 20 / 50 / 100 / 150 Amp Power Supply

The PS1400 series of power supplies is an FM- approved, power supply system that is designed to power fire alarm systems and toxic and combustible gas monitoring systems. Each system consists of a 24-Volt battery set and a charger system that has been FM-approved for compliance with the NFPA 72 requirements for primary and secondary power supplies. The PS1400 series of power supplies are available in 20, 50, 100, and 150 Amp versions.

Battery Charger Panel Features

The battery charger charges the battery set and provides unregulated power for powering the Fire and Gas panel.

- AC feed, battery voltage and charger health monitoring
- Individual status contacts that can be wired to a fire alarm panel for indication and alarming
- Circuit breaker to detect disconnected battery condition

Battery Set Features

The battery set is provided as a secondary power supply as required by NFPA 72.

- Floor mounted, self-contained, not enclosure-dependent
- Plastic guards protect terminals from damage or shorting
- DC-DC Converter(s) provide a tightly regulated 24 VDC nominal output
- Regulated power for components and circuits that require tight voltage regulation and where ground fault detection is not required
- Separate ground fault detection circuit for unregulated power, alarming and reporting to a Fire and Gas alarm panel
- Separate regulated and unregulated 24VDC circuits with a disconnect for over-current protection

Class 1 Div 2 Area Classification

The PS1400-20-DIV2 20 Amp Power Supply is designed and FM-listed for installation and use in hazardous locations.

Environment Specifications

| Specification | Data |
|--|---|
| Ambient Temperature Range: Operating Storage | -20 to 50 Deg C, 0.5 Deg C/min -40 to 50 Deg C, 10 Deg C/min |
| Relative Humidity: Operating | 5 to 95% non-condensing |
| Vibration: | 10-150 Hz, 1 g. max |



Power Requirements

20 Amp Battery Charger System:

120/240 VAC 1-Phase, 60 Hz @ /6/3 Amps

50 Amp Battery Charger System Available Options:

120/208/240 VAC 1-Phase, 60 Hz @ 23/13/11 Amps

400 VAC 1-Phase, 60 Hz @ 6.8 Amps

480 VAC 1-Phase, 60 Hz @ 5.6 Amps

100 Amp Battery Charger System Available Options:

120/208/240 VAC 1-Phase, 60 Hz @ 44/25/22 Amps

400 VAC 1-Phase, 60 Hz @ 13 Amps

480 VAC 1-Phase, 60 Hz @ 11 Amps

150 Amp Battery Charger System Available Options:

480 VAC 1-Phase, 60 Hz @ 16 Amps



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Contact us today for a free demo or more information
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