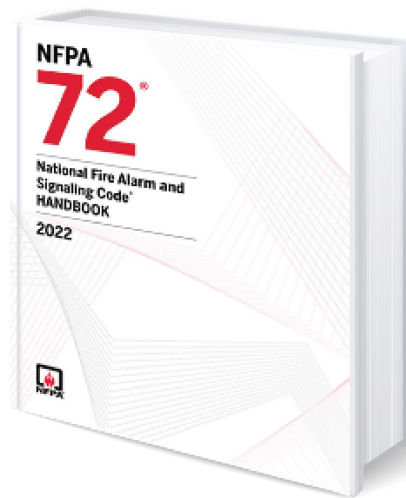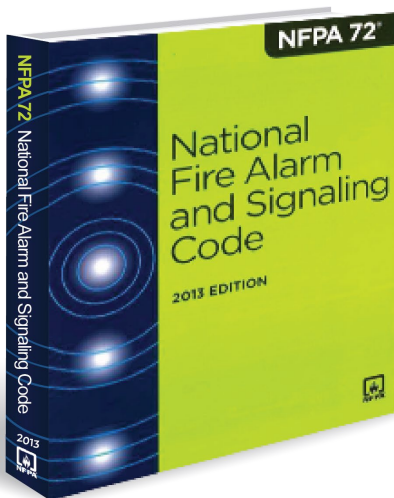# FES
SOLUTION

Intelligent Addressable Fire Alarm System

Product Catalog

- FES-1000R FIRE ALARM CONTROL PANEL
- FES-1000W FIRE ALARM CONTROL PANEL
- FES-12G FIRE SUPPRESSION CONTROL PANEL
- FES-08T TRANSPONDER PANEL
- FES-80H ADDRESSABLE FIXED TEMPERATURE HEAT DETECTOR
- FES-05S ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR
- FES-22T ADDRESSABLE DUAL INPUT / OUTPUT MODULE
- FES-44T ADDRESSABLE QUAL INPUT / OUTPUT MODULE
- FMI-01R ADDRESSABLE LINE ISOLATOR MODULE

KFI

NFPA 72
National Fire Alarm and Signaling Code
2013 EDITION

NFPA 72
National Fire Alarm and Signaling Code HANDBOOK
2022

㈜ 에프이에스 솔루션

SYSTEM DESCRIPTION

The FES fire alarm system is one of the most versatile fire alarm and suppression control units available to the industry. The microprocessor-based control unit fulfills the highest security and functionality requirements for the comprehensive protection of premises. The sufficient number of built-in features covers most of the protection applications thus the expandable modular system extension, can be adapted to advanced requirements very easily and guarantees a high degree of planning and application flexibility.

The FES fire alarm system has a short circuit and open circuit resilient loop, offering the highest operational reliability and cost-saving installation options on account of reduced wiring through combined loops. A built-in ethernet port brings two major capabilities to the fire alarm panel. It enables network connection between two fire alarm panels without any extra modules. In that configuration, one panel must be set as the main panel and the second one as a sub-panel. The other purpose is to connect the fire alarm control panel to a computer and download the panel's program when the logic is programmed on a computer.

* FES Portfolio

1. FES-1000R Fire Alarm Control Panel
2. FES-1000W Fire Alarm Control Panel
3. FES-12G Fire Suppression Control Panel
4. FES-08T Transponder Panel
5. Fire Systems Command Interface
6. FES-80H Addressable Fixed Temperature Heat Detector
7. FES-05S Addressable Photoelectric Smoke Detector
8. FES-22T Addressable Dual Input / Output Module

9. FES-44T Addressable Quad Input / Output Module
10. FMI-01R Addressable Line Isolator Module
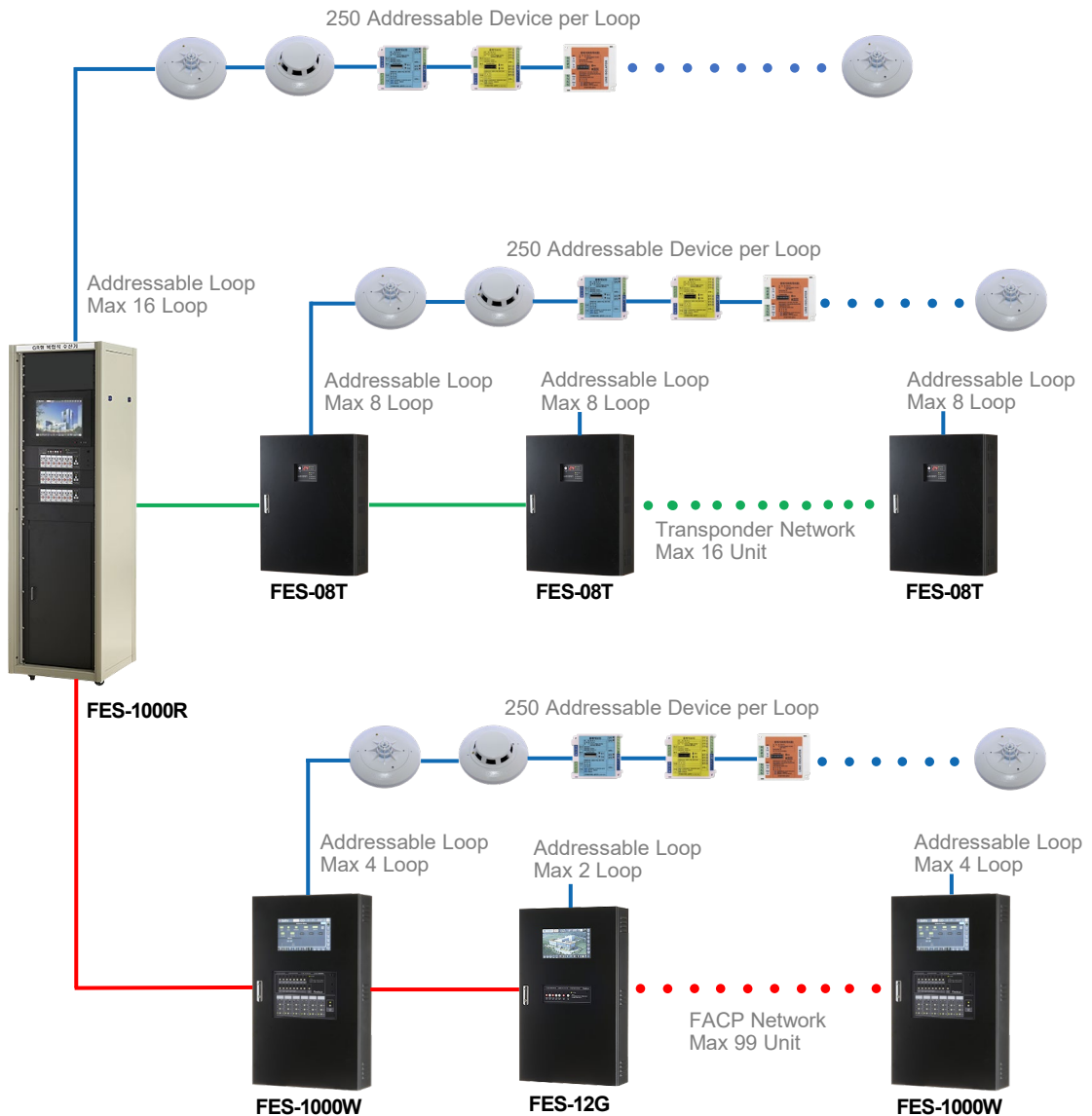
FES-1000R FIRE ALARM CONTROL PANEL

FES-1000R panel is an addressable fire alarm control panel designed for large scale facilities. It is ideally suited for both new and retrofit commercial and industrial fire deletion, notification and suppression applications.

FES-1000R panel is a state-of-the-art addressable fire control system that meets the requirements of Korea fire safety Regulations and NFPA 72 code. It can support 1 to 16 addressable loop with 250 to 4,000 addressable device. The panel has 17 inch touch screen control monitor, function switches and LED indicators on front panel. Up to 16 FES-08T transponder panels can be connected to one FES-1000R panel, allowing the transponder network to be expanded to a maximum 128 addressable loops. The main FES-1000R can be also connected through FACP network up to maximum 99 units of FES series FACP panels with peer-to-peer function.
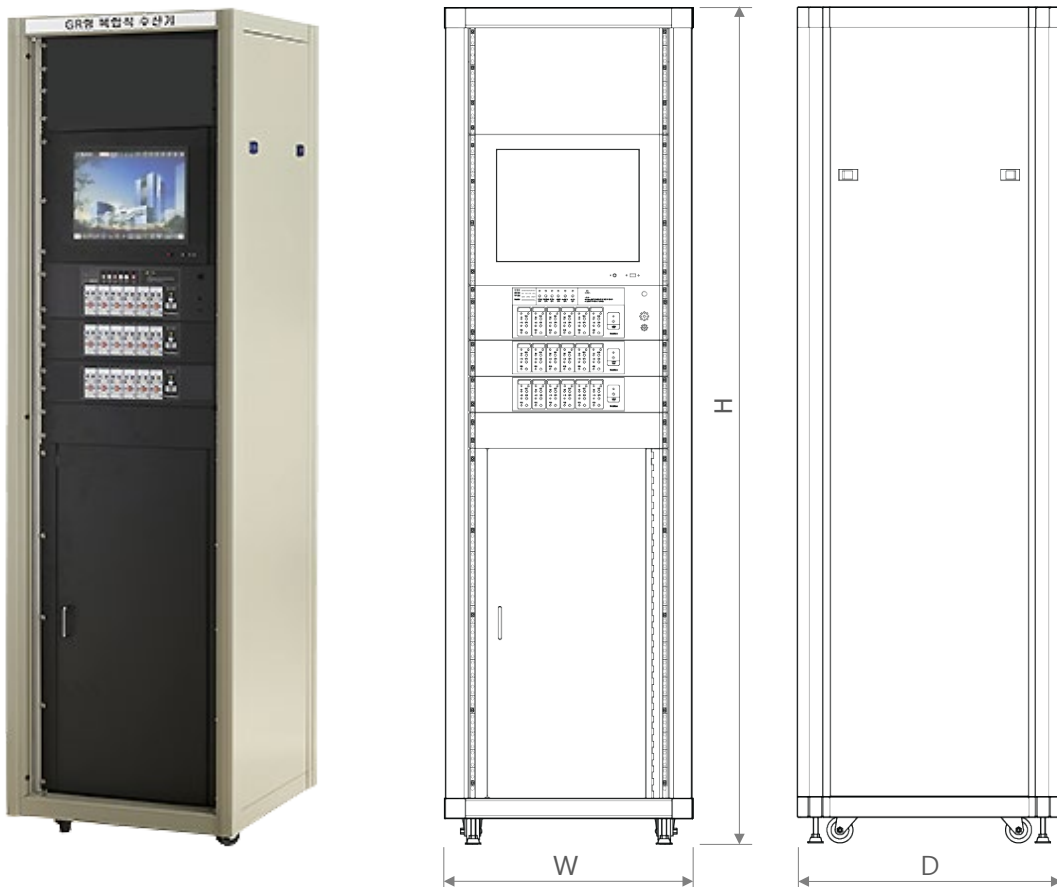
System Network

Protocol	TCP/IP Network, Polling Address Loop
Addressable Loop (Blue)	250 Addressable Device per Loop
Transponder Network (Green)	Max 16 units of FES-08T Transponder Panel
FACP Network (Red)	Max 99 units of FACP(FES-1000R, FES-1000W, FES-12G)

250 Addressable Device per Loop

250 Addressable Device per Loop

Addressable Loop
Max 16 Loop

Addressable Loop
Max 8 Loop

Addressable Loop
Max 8 Loop

Addressable Loop
Max 8 Loop

Transponder Network
Max 16 Unit

FES-08T **FES-08T** **FES-08T**

FES-1000R

250 Addressable Device per Loop

Addressable Loop
Max 4 Loop

Addressable Loop
Max 2 Loop

Addressable Loop
Max 4 Loop

FACP Network
Max 99 Unit

FES-1000W **FES-12G** **FES-1000W**

Key Features

- 19 Inch Rack Self Standing
- 17 Inch LCD Touch Screen Control Display
- Line Isolator in Addressable Loop
- Power Supply Unit Monitoring
- Class X Wiring in Accordance with NFPA 72
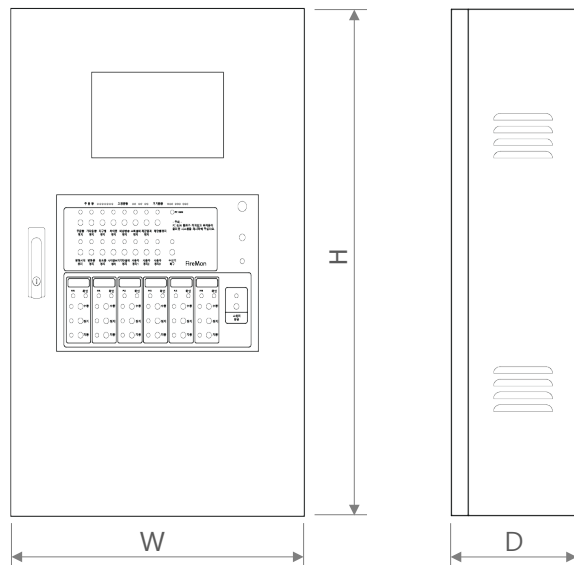- Performance Guarantee by Ministry of Venture Enterprise

Specifications

W	H	D	Color	Weight	Part Number
600mm	2000mm	600mm	Black/ 5Y7/1	120kg	FES-1000R

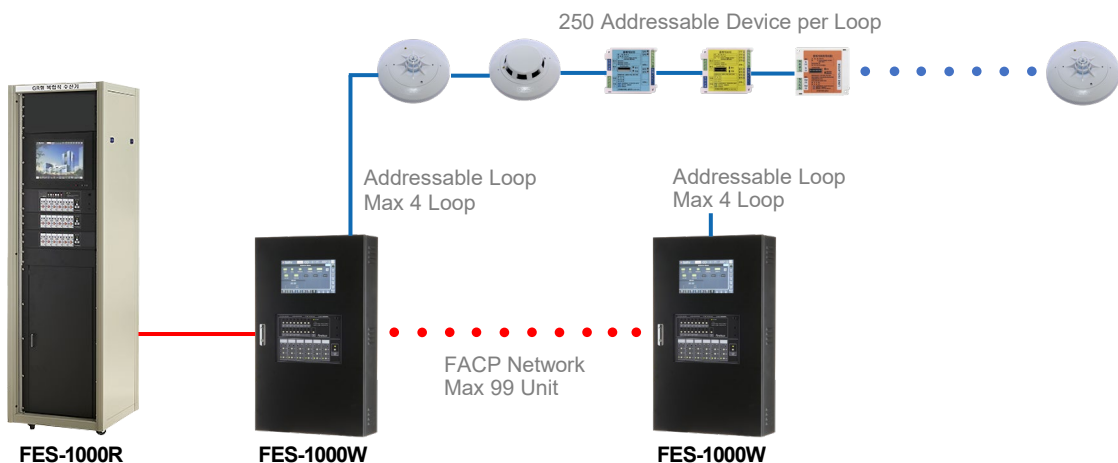|	
Approval	KFI 수23-24 FACP (Fire Alarm Control Panel)
Type	Analog Addressable GR Type
Material	1.6mm Thk. Steel Enclosure
Environment Range	-10℃ to 50℃, 90% non-condensate RH
Primary Power Supply	220V AC Main
Second Power Supply	12V/12 Ah x 2 Lead Seal Battery Backup
Addressable Loop (Blue)	Max 16 Loop, 250 Addressable Device per Loop
Transponder Network (Green)	Max 16 Unit of FES-08 Transponder Panel
FACP Network (Red)	Max 99 Unit of FACP(FES-1000R, FES-1000W, FES-12G)

FES-1000W FIRE ALARM CONTROL PANEL

FES-1000W panel is an addressable fire alarm control panel designed for small to medium scale facilities. It is ideally suited for both new and retrofit commercial and industrial fire deletion, notification and suppression applications.

FES-1000W panel is a state-of-the-art addressable fire control system that meets the requirements of Korea fire safety Regulations and NFPA 72 code. It can support 1 to 4 addressable loop with 250 to 1,000 addressable device. The panel has 17 inch touch screen control monitor, function switches and LED indicators on front panel.

System Network

250 Addressable Device per Loop

Addressable Loop
Max 4 Loop

Addressable Loop
Max 4 Loop

FACP Network
Max 99 Unit

FES-1000R   **FES-1000W**   **FES-1000W**

Key Features

• Wall Mounted
• 17 Inch LCD Touch Screen Control Display
• Line Isolator in Addressable Loop
• Power Supply Unit Monitoring
• Class X Wiring in Accordance with NFPA 72
• Performance Guarantee by Ministry of Venture Enterprise

Specifications

W	H	D	Color	Weight	Part Number
500mm	800mm	160mm	Black/ 5Y7/1	30kg	FES-1000W

Approval	KFI 수23-8 FACP (Fire Alarm Control Panel)
Type	Analog Addressable GR Type
Material	1.6mm Thk. Steel Enclosure
Environment Range	-10℃ to 50℃, 90% non-condensate RH
Primary Power Supply	220V AC Main
Second Power Supply	12V/12 Ah x 2 Lead Seal Battery Backup
Protocol	TCP/IP Network, Polling Address Loop
Addressable Loop (Blue)	Max 4 Loop, 250 Addressable Device per Loop
FACP Network (Red)	Max 99 Unit of FES-1000W Fire Alarm Control Panel

FES-12G FIRE SUPPRESSION CONTROL PANEL

FES-12G panel is an addressable fire suppression control panel approved for use with Clean Agents, CO_2 and Dry Chemical System. It combines the high quality, system reliability, and flexibility required by modern commercial, high-tech and industrial applications.
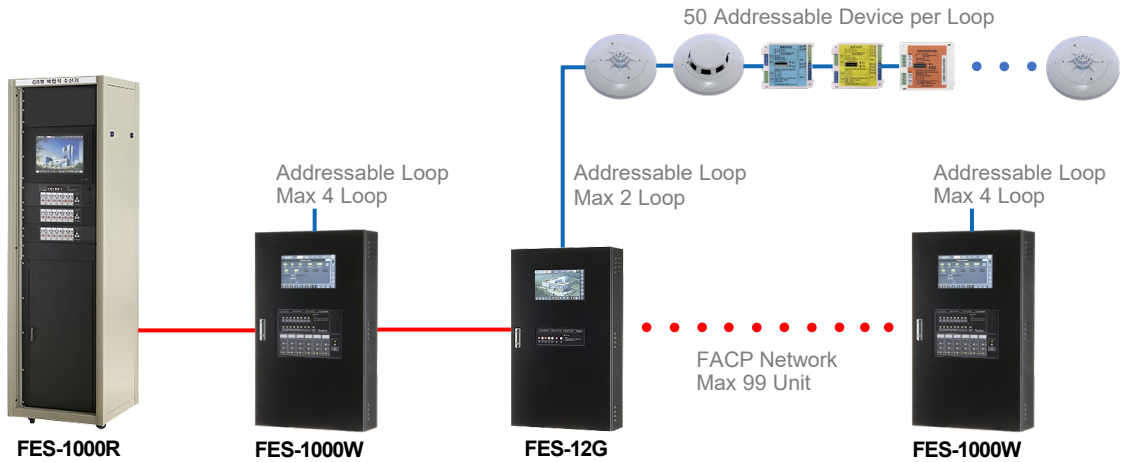
FES-12G panel is the technologically most advanced multi-zone control unit available in the industry today. It offers 12 built-in solenoid activation circuits that operate independently from each other. An unprecedented number of 48 built-in relay output meet any special interface status. Each relay is independently driven and can be pre-programmed to change state for all states of Alarm, Trouble, and Supervisory conditions. Relays are normally de-energized. It can support 1 to 2 addressable loops with 50 to 100 addressable devices/points. The panel has 10.1 inch to touch screen control monitor, functional switch and LED indicators on front panel.
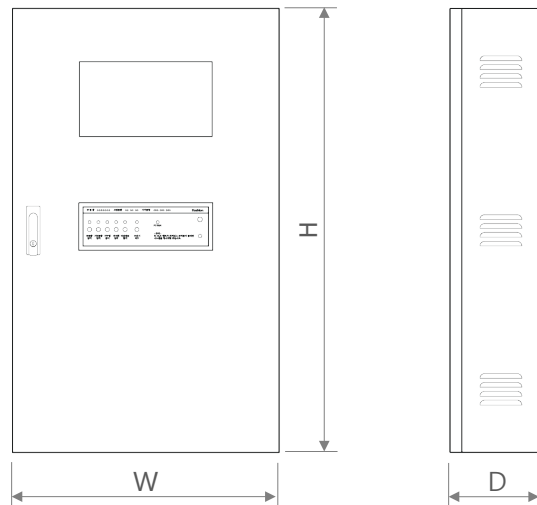
Key Features

• Addressable Multi-Zone Fire Suppression Control Unit
• 6 Zone Solenoid Activation with 24 Built-in Programmable Relay Output
• 12 Zone Solenoid Activation with 24 Built-in Programmable Relay Output
• 10.1 Inch LCD Touch Screen Control Display
• Ethernet Connection to Fire Monitoring Workstation
• Event-Output-Control Programming
• High Level Serviceablity and Diagnostics

System Network

50 Addressable Device per Loop

Addressable Loop
Max 4 Loop

Addressable Loop
Max 2 Loop

Addressable Loop
Max 4 Loop

FACP Network
Max 99 Unit

| FES-1000R | FES-1000W | FES-12G | FES-1000W |

Specifications

W	H	D	Color	Weight	Part Number
450mm	750mm	150mm	Black/ 5Y7/1	23kg	FES-6G
450mm	750mm	150mm	Black/ 5Y7/1	24kg	FES-12G

Approval	KFI 수23-25 FACP (Fire Alarm Control Panel)
Type	Analog Addressable GR Type
Material	1.6mm Thk. Steel Enclosure
Environment Range	-10℃ to 50℃, 90% non-condensate RH
Primary Power Supply	220V AC Main
Second Power Supply	12V/5 Ah x 2 Lead Seal Battery Backup
Protocol	TCP/IP Network, Polling Address Loop
Addressable Loop (Blue)	Max 2 Loop, 50 Addressable Device per Loop
FACP Network (Red)	Max 99 Unit of FACP(FES-1000R, FES-1000W, FES-12G)

FES-08T TRANSPONDER PANEL

The main fire alarm control panel FES-1000R has its own 16 addressable loops, but it can be expanded by connection with transponder panel FES-08T through transponder network.

Each FES-08T can support maximum 8 addressable loop, and up to 16 unit of FES-08T transponder panels can be connected to one of FES-1000R panel, allowing the transponder network to be expanded to maximum 128 addressable loop.

System Network

250 Addressable Device per Loop

Addressable Loop
Max 8 Point

Addressable Loop
Max 8 Loop

Addressable Loop
Max 8 Loop

Transponder Network
Max 16 Unit

FES-1000R   **FES-08T**   **FES-08T**   **FES-08T**
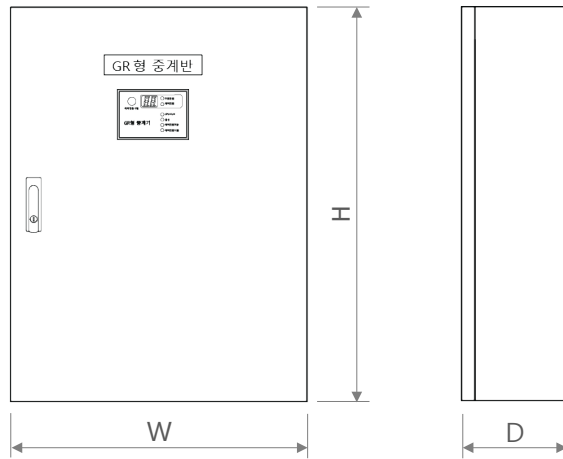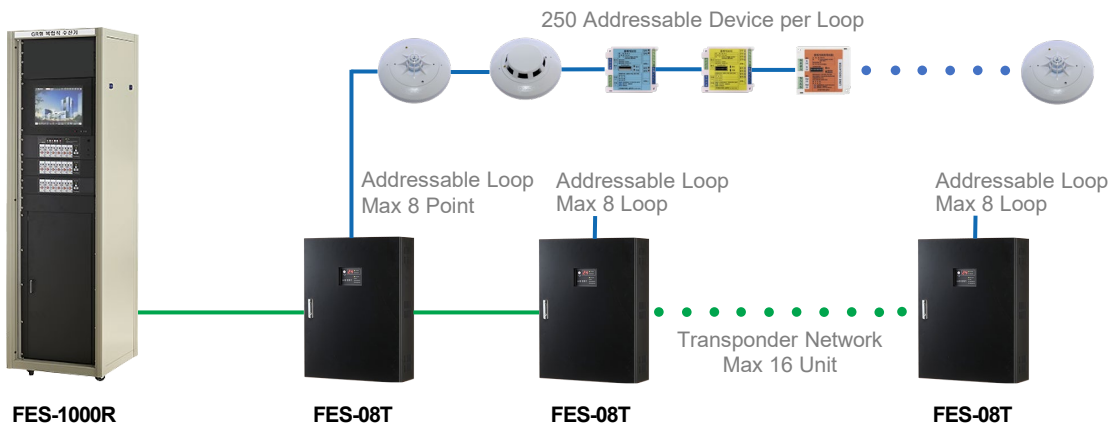
Key Features

• Wall Mounted
• LED Monitor Communication Screen
• Line Isolator in Addressable Loop
• Power Supply Unit Monitoring
• Class x Wiring in accordance with NFPA 72
• Performance Guarantee by Ministry of Venture Enterprise

Specifications

W	H	D	Color	Weight	Part Number
450mm	800mm	160mm	Black/ 5Y7/1	20kg	FES-08T

Approval	KFI 중23-37 FACP (Relay Panel)
Type	Repeater GR Type
Material	1.6mm Thk. Steel Enclosure
Environment Range	-10℃ to 50℃, 90% non-condensate RH
Primary Power Supply	220V AC Main
Second Power Supply	24V/12 Ah x 2 Lead Seal Battery Backup
Protocol	TCP/IP Network, Polling Address Loop
Addressable Loop (Blue)	Max 8 Loop, 250 Points per Loop
Transponder Network Max (Green)	16 Unit of FES-08T Transponder Panel

FIRE WORK STATION

FES Works is the fire work station as an ideal component of a fire command center for real time fire system status and system control options. The intuitive, graphical display allows personnel to rapidly pinpoint, investigate, and respond to alarm event with minimal operator training.

Worldwide applications, FES Works allows end-users to manage their life safety system over a proprietary network or Ethernet. Through its intelligent gateway architecture, it can easily meet the needs of expanding systems. It is also an ideal retrofit solution, supporting seamless integration with competitive panels. Customizable interface provides flexibility to display information as desired.

Key Features

- Customizable Interface Flexibility to Display Information as Desired
- Graphic and Text Display of All Off-normal Events
- Import Building Floor Plan CAD Drawings
- System Administrator-definable User Profiles for Strict Levels of Access
- Backup Capability for Screen, Member, and History Databases

Specifications

Part No	FES Works 22, FES Works 24
Environment Range	0℃ to 49 ℃, 90% non-condensate RH
Power Supply	220V AC
Software	Microsoft Windows 10
Monitor	22", 24" Standard and Touchscreen
Point Capacity	250,000
History Fire Capacity	2.5 Million Records
Network	Ethernet-based

FES Works Monitoring

An FES Works system is the next generation in life safety management for centralized monitoring and control of the FES fire alarm system. Operator cam upload/download databases to FES series fire alarm panels and perform upgrades over the network. FES works interface directly to FES fire alarm system using an FES Gateway. The FES Gateway is intelligent used by an FES Works system that facilitates monitoring and control of FES fire alarm system network.

Local Monitoring

FES Fire Alarm
System Network

FES Works

Compatible FES FACPs

Remote Monitoring

FES Fire Alarm
System Network

Internet

FES Works

Gateway

Compatible FES FACPs
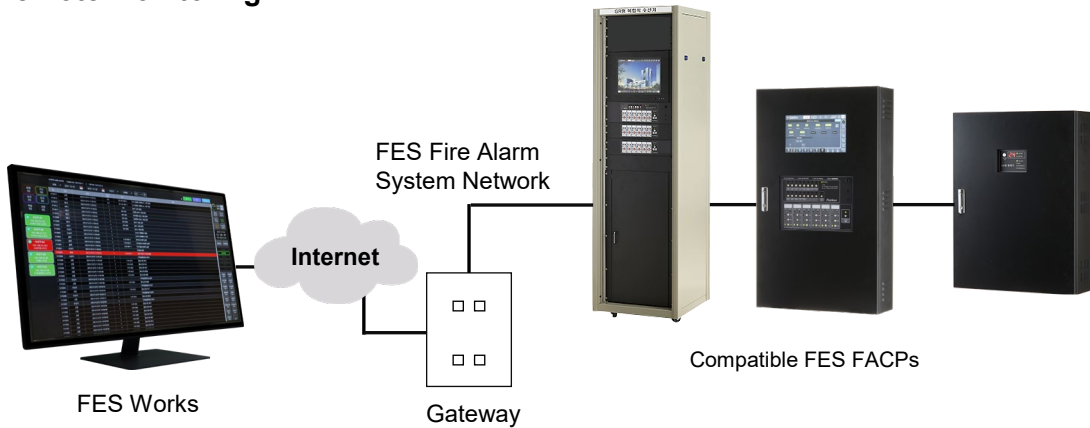
ADDRESSABLE FIXED TEMPERATURE HEAT DETECTOR

The FES-80H Fixed temperature heat detector continuously samples for the ambient temperature of a protected area to provide the earliest warning of a fire condition in areas where traditional smoke detection products are not suitable. The constant temperature variation measurement reduces the possibility of false alarms. The fire alarm control panel constantly fetches temperature data from the detector.

The real-time temperature can be monitored on the panel's display. The fire alarm temperature is set on the fire alarm control panel. The temperature set point can be pre-selected from +40℃ to +80℃ (standard set values). LEDs can be programmed from the fire alarm control panel. A yellow LED indicates a faulty device.
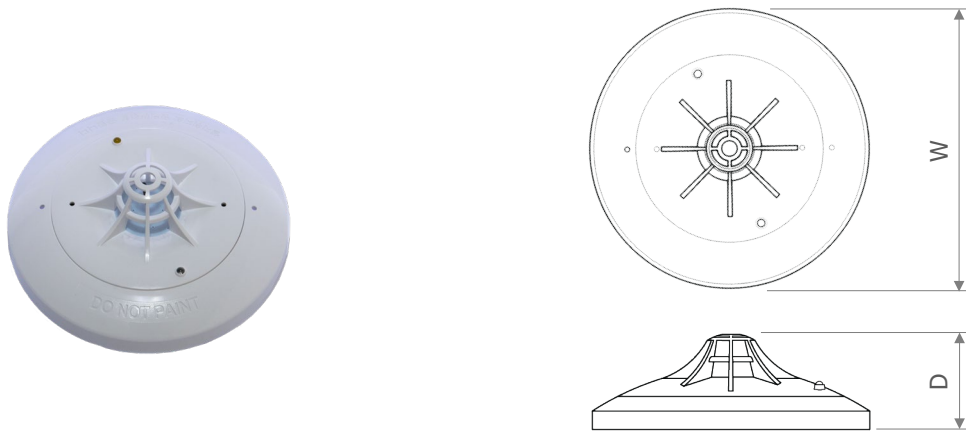
Key Features

• Selectable Temperature Setting
• Addressable Analog Communication, Microprocess Based
• Internal False Alarm Prevention
• Fire Alarm LED in Red and Fault LED in Yellow
• Self-diagnostic Feature
• Class A or B Wiring

Specifications

W	D	Color	Weight	Part Number
Φ110mm	34.7mm	White	84g	FES-80H

Approval	KFI 감23-90
Environment Range	-10℃ to 50℃, 90% non-condensate RH
Input Power Supply	DC24V
Protocol	Polling Address Loop

ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR

The FES-05S Optical Smoke Detector is a point detection device that continuously monitors the air in the protected area to provide the earliest warning of a fire condition. The detector's built-in microprocessor measures and analyzes sensor readings, making comparisons to historical data and filtering signal patterns that are typical of fires to prevent unwanted alarms. The specific chamber design guarantees a very high resistance to the entry of dust, ensuring a higher level of false alarm rejection without compromising sensing performance.

Detector sensitivity can be programmed in the control panel software. Sensitivity is LEDs continuously monitored and reported to the panel. LEDs can be programmed from the fire alarm control panel. A yellow LED indicates a faulty device.

Key Features

• Photoelectric, Light-Scattering
• Addressable Analog Communication, Microprocess Based
• Internal False Alarm Prevention
• Fire Alarm LED In Red and Fault LED in Yellow
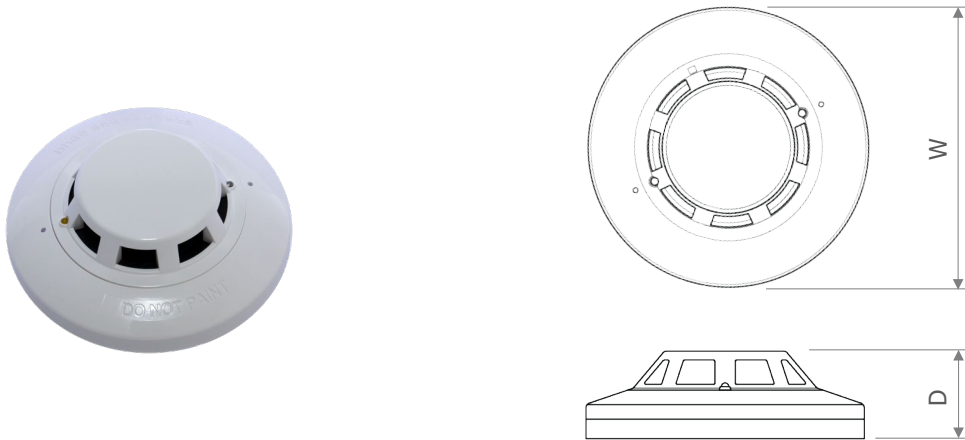• Self-diagnostic Feature
• Class A or B Wiring

Specifications

W	D	Color	Weight	Part Number
Φ110mm	34.7mm	White	84g	FES-05S

Approval	KFI 감23-89
Environment Range	-10℃ to 50℃, 90% non-condensate RH
Input Power Supply	DC24V
Protocol	Polling Address Loop

ADDRESSABLE INPUT/OUTPUT MODULE

The multi-module series are permitting the monitoring and control of auxiliary equipment with a supervised circuit. The loop-powered modules are designed to communicate with the FES fire alarm control system via an addressable loop.

The input circuits are assigned to voltage-free switch-type circuits. It covers a variety of input switches from conventional detectors and manual call points to fire suppression system status switches. The output circuits are designed to energize notification appliances. The circuit provides supervised power-limited output. Alongside the addressable loop, a module needs 24 VDC input power to energize the output circuit. The 24 VDC may be sourced directly from the fire alarm control panel or a regulated local power supply.

Both input and output circuits could connect to a single device or series of devices with a similar function/action. An end-of-line resistor (EOL) provides line monitoring functionality for circuit. Each module can be installed inside a standard gag box or a cabinet. Each module must be given a unique address a DIP switch series on the unit must be set accordingly to the corresponding address.

Dual Input/Output (2/2) Module

Quad Input/Output (4/4) Module

Key Features

• Dual Input/Output (2/2) Module
• Quad Input/Output (4/4) Module
• Class A or B wiring
• Status LED Indicator
• One Address per an Addressable Module
• Compact Size

Specifications

W	H	D	Color	Weight	Part Number
92mm	26mm	80mm	Blue	140g	FES-22T
92mm	26mm	80mm	Yellow	140g	FES-44T

Approval	Dual : KFI 중23-39 FACP, Quad : KFI 중23-38 FACP
Input / Output	Dual : 2/2, Quad : 4/4
Input Power	DC24V
Standby Current	3mA
Protocol	Polling Address Loop
Addressable Loop	250 Addressable Device per Loop

ADDRESSABLE LINE ISOLATOR MODULE

FMI-01R line isolator module is a line powdered addressable device that provides short circuit protection on an addressable loop. When a short circuit is detected, line isolator module isolates the affected segment on the circuit, allowing the remaining devices to continue operation. It is self-restoring, automatically reconnecting to circuit segment when the fault is removed, and includes a LED, which illuminates to indicate the device has been activated. Up to 20 line isolation module can be installed on each addressable loop. Each module must be given a unique address a DIP switch series on the unit must be set accordingly to the corresponding address.
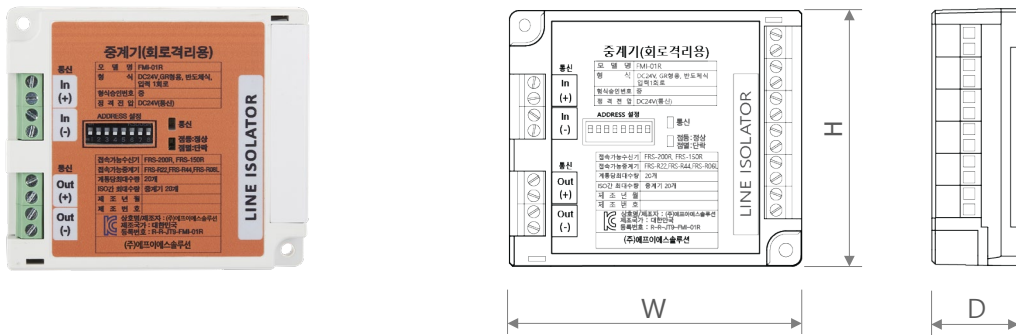
Key Features

• Automatic recovery function
• Class A or B Wiring
• Remote Control and Circuit Isolation from FACP
• Status LED Indicator
• Compact Size

Specifications

W	H	D	Color	Weight	Part Number
92mm	26mm	80mm	Orange	140g	FMI-01R

Approval	KFI 중21-33 FACP
Environment Range	-10℃ to 50℃, 90% non-condensate RH
Input Power	DC24V
Stand by Current	15mA
Protocol	Polling Address Loop
Addressable Loop	20 Addressable Device per Loop