

PEGAsys™

Intelligent Suppression Control System

FEATURES

- *UL Listed/FM Approved*
- *CSFM Listed (7165-1076:146)*
- *MEA Approved (454-91-E, Vol III-V)*
- *Peer-to-Peer Networking (to 32 nodes)*
- *Remote LCD Display and Display/Control Modules*
- *Password Protected Panel Access*
- *Distributed Intelligence Architecture*
- *Full Digital Communication to SmartOne® Sensors and Monitor/Control Modules*
- *Total and Easy Field Programming Using Windows®-Based Configuration Software*
- *Interface to AlarmLine™ Linear Heat Detection Systems Using Addressable AlarmLine Module (AAM)*
- *FailSoft™ Default Operation*
- *80-Character Alphanumeric Display*
- *1024 Event History Log*
- *Up to 255 Loop Detection/Monitor/Control Devices*

DESCRIPTION

The Kidde® PEGAsys™ is a microprocessor-based networkable fire protection control system designed for use with the exclusive series of Intelligent SmartOne® detectors and loop devices. The system operates within a unique "Distributed Intelligence" architecture which distributes the processing power throughout all system components. This "Smart" architecture, which has a microprocessor, memory and software in each system component, provides major advances in system precision and reliability.

The Kidde PEGAsys utilizes a fully digital BIP (Broadcast Index Polling protocol) for loop device communications. BIP reduces high speed data communication "traffic", thereby reducing the risk of interference. BIP communications feature high immunity to EMI and RFI. As a result, up to 255 Intelligent loop devices can be connected to the single, Style 4 (2-wire) or Style 6 (4 wire) communication circuit. The field wiring can be "T" tapped or branched in Style 4 (2-wire) configuration. BIP protocol is so robust that, in retrofit installations, existing detection loop wiring can be reused.

All of the 255 addressable input/output devices can be in alarm and operated at the same time. With this critical feature, even a major fire event involving a large number of detectors can be reported and logged by the system.

The Kidde PEGAsys Signaling Line Circuit (SLC) provides for unique FailSoft™ operation, a redundant feature which allows field devices to report alarm even in the unlikely event of a failure in the system's loop-controller communications microprocessor. Under an alarm condition, the devices would sense the loss of communications with the loop controller and automatically revert to the FailSoft mode of operation. Redundant circuitry in the panel, independent of microprocessor operation, would then report a zone alarm. Thus alarm reporting capability is maintained without costly requirements for processor



redundancy. Kidde PEGAsys is completely field configurable. The PEGAsys Configuration Software (PCS) is a Windows-based program which allows the installer to Upload/Download system configuration information, interface to system menus and test the system from a laptop PC or equivalent.

The Kidde PCS Software, coupled with the optional output modules for Signaling, Agent Release, Control Relays and Municipal Tie, allows the installer to tailor the system for new or retrofit applications.

All input/output assignments are field programmable using the system's unique Event Output Control (EOC) Logic - a programming "language" that is simple to learn and use. With this remarkable language, any single or combination of input events can be related to one or several outputs.

Real Time Controls (RTC) are available for a variety of time/date sensitive operations: Control Relays, Detection Sensitivities, Time of Day, Day of Week, Weekend, Month and Holiday functions.

A 1024 event history buffer provides a record of events by time and date in nonvolatile memory. This event record is retained, even if AC and battery power are lost. From the system menus, the operator can request a display or printout of the most recent events in order to reconstruct the events that occurred as a result of a fire or an unwanted alarm. One to 1024 of the most recent events may be requested from the history file. The operator does not have to view or print the entire file in order to examine relevant information.

The SmartOne smoke and thermal detectors employ drift compensation. Intelligent SmartOne microprocessor-based detectors continuously analyze and adjust their pre-alarm/alarm thresholds to compensate for contaminants that may build up in the sensing chamber over time. They have the ability to distinguish between a build up of contamination and a real fire condition. Therefore, the sensitivity level of the SmartOne Smoke Detector remains constant over time. Once the detector contamination has reached the level for which it can no longer be compensated, the system alerts that detector service is required. Detectors are cleaned based on actual requirements, not on a fixed schedule.

COMPONENT DESCRIPTION

The Kidde PEGAsys is comprised of several major sub-assemblies: the Receiver/Transmitter Module, Networkable Central Control Module, Control and Display Assembly, and Power Supply and Enclosure. Optional I/O modules can be added to the base system to increase system functionality (see individual data sheets for complete descriptions).

THE RECEIVER/TRANSMITTER MODULE (RX/TX) (P/N 76-100005-001):

Functions as the data interface between the field devices and the Central Control Module. The RX/TX receives status changes from field devices and reports these changes to the central control module for display. The RX/TX is capable of communication with any combination of addressable input and/or addressable output devices up to 225 with Class B, Style 4 or Class A, Style 6 supervision.

Class A, Style 7 supervision is possible with the use of Loop Isolator devices. There are three versions of loop isolators, allowing the installer flexibility in different applications. These are: single-gang mount, 6SB detector-base mount and RX/TX module mount.

Class B, Style 4 initiating circuitry permits T-tapping or branched circuits. The amount of T-tapping should be a function of sound wiring practice. The maximum distance of the Receiver/Transmitter Module's signaling line to field devices can be up to 10,000 feet.

THE CENTRAL CONTROL MODULE (CCM) (P/N 76-100008-501):

The heart of the system and contains the Main Processing Unit, Programmable Memory, Real Time Clock, Watch Dog Timer, RS-232C Ports and Control and Display Assembly. Additionally, the CCM provides network and remote display interfaces. The CCM receives data from the RX/TX, activates outputs based on pre-programmed instructions, and transmits status changes to the display panel.

THE 80-CHARACTER ALPHANUMERIC DISPLAY:

Shows system and field-device status. Control switches are provided for acknowledging and silencing alarms and resetting the system. In addition, the scroll switch allows the operator to examine multiple alarms and troubles in the system. The Drill switch allows the user to activate all notification appliance circuits.

TWO RS-232C CHANNELS:

Available to remotely monitor and display information and provide the programming interface. Keyboard commands from a personal computer using the PCS Program may be used to access and control the system. A multilevel password protection feature protects the system from unauthorized access.

OUTPUT MODULES:

Designed to control auxiliary devices from the Central Control Panel. The output modules plug into the I/O motherboard assembly and mount within the Central Control Panel enclosure. Up to sixteen I/O modules (including the RX/TX module) can be installed in the system; no more than eight of any one output-type Module and only one City Tie Module should be installed.

SIGNAL AUDIBLE OUTPUT MODULE (P/N 76-100003-001):

Provides four (4) Class B, Style Y or two (2) Class-A, Style Z reverse-polarity notification appliance circuits. These circuits are supervised for open and short circuit conditions. Each notification appliance circuit is electrically power limited and capable of supplying 2 Amps @ 24 Vdc.

Each circuit may be programmed to operate in one of the following modes:

1. Continuous
2. 60 Beats Per Minute
3. 120 Beats Per Minute
4. Temporal Pattern

AGENT RELEASE MODULE (P/N 76-100001-001):

Designed for actuating various types of fire suppression systems, including FM-200, FE-13, Halon 1301 and Carbon Dioxide. It is also UL Listed/FM Approved for activating deluge and pre-action systems. The module provides one programmable, supervised releasing circuit for oper-

ating a suppression system and three Class B, Style Y programmable notification appliance circuits. Each notification appliance circuit is capable of providing a fully regulated output of 2 Amps @24 Vdc.

RELAY OUTPUT MODULE (P/N 76-100004-001):

Designed to provide the system with four individually programmable Form "C" relays. Relay contact ratings are 2 Amps @ 30 Vdc or 1 Amp @ 120 Vac. The relay can be used to control building functions such as HVAC and/or power shutdown during fire conditions.

CITY NOTIFICATION MODULE (P/N 76-100002-001):

Designed to provide the system with a means of transmitting alarm and trouble conditions to a municipal fire department receiver or a remote-station receiver. The Kidde PEGAsys City Tie Module supports reverse polarity remote-station transmissions and shunt or local-energy masterbox connections.

POWER SUPPLY MODULE (P/N 76-100009-010):

Designed to provide expandable 24 Vdc power to the Kidde PEGAsys system. The system power supply/charger assembly provides 4 Amps of 24 Vdc power which can be expanded to 8 Amps of 24 Vdc power with the use of an auxiliary power supply unit, P/N 76-100009-002. The Kidde PEGAsys system can support up to eight power supply/charger assemblies with auxiliary power supply units for a maximum of 64 Amps of 24 Vdc power. The power supply communicates status to the CCM over the I/O bus.

AC input power is monitored by a threshold circuit which transfers to standby battery to maintain system operation when input power is lost. The 24, 60 or 90 hour standby power is provided by a set(s) of sealed, lead-acid batteries which can be housed in the main enclosure or an optional battery enclosure. The power supply module's charger circuit maintains these batteries in the fully-charged state. The module supervises system batteries for connection and, upon disconnection, will signal a trouble condition.

The power supply provides two auxiliary 24 Vdc power outputs, each rated for 1.5 A maximum. These auxiliary outputs can be programmed for resettable or non-resettable operation. A power supply trouble relay contact (Form C) is provided to allow remote indication of power supply trouble conditions.

ENCLOSURE

The central control panel enclosure is rated for NEMA 1 and is designed to be surface or optionally semi-flush mounted. The enclosure houses the control-system's components and provides space for two standby batteries up to 33 AH in size. In larger applications where system functionality needs to be expanded, the systems allows expansion of both the I/O module capacity and the power supplies. The expansion enclosures allow both I/O

motherboards and auxiliary supplies to be added. The PEGAsys single-loop panel has the ability to support a maximum of 16 I/O modules, in any combination. However, no more than eight of any one type of module can be used. Only one City Tie Module can be used per system.

DISTRIBUTED INTELLIGENT DEVICES

Kidde PEGAsys is a distributed-intelligence fire protection system whose computing power is spread across the sensors and monitor/control modules. Each field device has the ability to make decisions and store information. Status, internal supervision, alarm verification and alarm tests are made within the device. Field devices transmit various analog data, such as percent smoke obscuration level, voltage level of the devices, internal power supply and voltage level of the communication channel in full digital format. Nine types of distributed-intelligence field devices are available - Photoelectric, Ionization and Thermal Detectors, Addressable Contact Inputs and Outputs, Addressable Signal Output and Addressable Alarm-Line modules (see individual data sheets for complete description).

PROGRAMMING LANGUAGE

The Kidde PEGAsys Fire Protection System incorporates a programming language that is unique and easy to use. The programming languages, Event Output Control (EOC) and Real Time Control (RTC), are very versatile and can easily accommodate any fire alarm/suppression application. Programs can be generated and modified using the Windows based PCS program and then uploaded to the Kidde PEGAsys Control Panel. Programming is password protected.

The EOC Programming is a simple language which relates addressable initiating devices to addressable output devices or output modules. Standard logic operators make the language versatile and easy to use. In addition, timers are available to delay output operation up to 60 seconds. Cross-zoning and grouping of inputs can be programmed into the system.

The RTC program language permits control of events via the system's Real-Time Clock. Events may be programmed to occur on an hourly, daily, weekly or monthly basis. Alarm and pre-alarm threshold levels of all or specific devices may be increased or decreased in sensitivity within the UL limits under RTC control. In addition, addressable relay devices may be controlled via this program.

The optional Alarm Verification feature can be used when detectors are in environments with transient smoke conditions. A 10- to 60-second delay may be programmed into the system that permits additional verification before initiating the alarm sequence.

TESTING AND SERVICE

Testing and service features are accessed via the display's easy-to-follow menu tree which leads the operator from the general to the specific item requested.

The Main Menu of the Kidde PEGAsys consists of four categories:

1:ISOLATE 2:LIST 3:SET 4:TEST

To access a category, the operator simply selects 1, 2, 3, or 4 and presses RETURN, using the system's integral keypad. Each category is then further defined, leading the operator through the menu from the general to specific functions. The password protection feature limits access to authorized personnel only.

The ISOLATE category permits the operator to isolate field devices and output modules. Isolating any device immediately causes the system to display a trouble condition, initiates an audible trouble signal, enters an event in the history buffer with the time, date and device isolated. This feature is typically used to temporarily remove auxiliary devices from active participation in system operations during a system test.

The LIST category permits the operator to list various system parameters. All lists are real time system conditions that announce on the display assembly, and can be printed with the time and date. Typical lists are:

- Detector Smoke Level
- Active Alarms
- Active Trouble Conditions
- Event Output Control (EOC) Program
- Line Voltage (checks field wiring integrity)
- Real Time Control (RTC) Programming

The SET category permits the operator to modify various system parameters. A few examples are:

- SET Time and Date
- ENABLE/DISABLE RTC Program
- SET Alarm Threshold Level
- SET Pre-alarm Threshold Level
- ENABLE/DISABLE RS-232 Ports
- SET Alarm Verification

The TEST category allows the operator to test various system components. The test options are:

- Alarm Test of Detectors
- Battery Test
- Walk Test
- Alarm Simulation Test

These unique functions allow the operator to test several aspects of system operation. The alarm test feature will, upon command, cause a detector to be tested and

results will be displayed at the Central Control Panel. This test feature actually simulates the presence of smoke in the detector's sensing chamber and verifies that a response is received from the device.

The battery-test function places the batteries of the specified power supply under an actual load and displays the voltage measurements taken during the loading to verify battery capacity.

The walk-test function allows one service person to select desired detection devices to be tested, then activate each of the specified detectors and receive a pulse from notification appliance circuits as verification of proper operation.

The alarm simulation test allows the operator to simulate the activation of an input and verify that the programmed output has occurred. This function is specifically designed for use during system commissioning, allowing a single person to perform the test.

ORDERING INFORMATION

Part Number	Description
76-100000-501	Control Unit Assembly
76-100001-001	Release Module
76-100002-001	City Tie Module
76-100003-001	Signal Audible Module
76-100004-001	Relay Module
76-100036-500	Network Interface Card Kit

TECHNICAL INFORMATION (BASE SYSTEM)

Input Voltage:	120/220; 50/60 Hz
Input Current:	2 Amps (Max.)
Output Rating:	24 Vdc; 4 Amps; Expandable to a maximum of 64 Amps
Maximum I/O Modules:	16 (Maximum eight of any type) except there is only one City Tie Module per system
Maximum Intelligent Devices:	255

SPECIFICATIONS

Refer to *Kidde Protect-SPEC Design System CD-ROM*, Version 2.0.

This literature is provided for informational purposes only. KIDDE-FENWAL, INC. assumes no responsibility for the product's suitability for a particular application. The product must be properly applied to work correctly. If you need more information on this product, or if you have a particular problem or question, contact KIDDE-FENWAL, INC., Ashland, MA 01721. Telephone: (508) 881-2000.



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