

AEGIS™ 2.0

Conventional Fire Alarm-Suppression Control Unit



Effective: January 2017

K-84-200

FEATURES

- **Suppression Focused Control Unit**
- **Triple R Redundancy Provides Maximum Protection Against Inadvertent Release**
- **Agency Approvals**
 - *FM Approved to ANSI 864, 9th edition and NFPA 72 (2002)*
 - *UL Listed to ANSI 864, 9th edition*
 - *California State Fire Marshal*
 - *City of New York Fire Department*
- **Listed for a Wide Range of Suppression Systems:**
 - *Kidde ECS HFC-227ea and FK-5-1-12*
 - *Kidde ADS HFC-227ea and FK-5-1-12*
 - *Kidde HP CO2*
 - *Kidde IG Argonite & Nitrogen*
 - *Kidde FE-13*
 - *Fenwal Spheres*
 - *Fenwal BDCs*
 - *Kidde IND™ Dry Chemical & WHDR™ Wet Chemical Systems*
 - *Sprinkler Supervisory Service*
 - *Deluge, Pre-Action, Foam, Foam-Water Systems*
- **Combination Clean Agent plus Pre-Action System**
- **Option with Door Mounted Abort and Manual Release Switches Available**
- **Built-in Class-A and Class-B Circuitry**
- **Listed for use with Kidde, Fenwal and Chemetron agent release devices including Control Heads and Initiators**
- **Sophisticated Programmable NACs**
- **Independently Programmable Agent Releasing Circuits**
- **Compact Cabinet Design Supports Large Number of Input and Output Circuits**
 - *3 Detection Circuits*
 - *2 Supervisory Circuits*
 - *Option to Use SUP 1 as 4th Detection Circuit*
 - *1 Manual Release Circuit*
 - *1 Abort Input Circuit (with 6 Abort Modes)*
 - *3 Notification Appliance Circuits*
 - *2 Release Circuits*
 - *3 Programmable and 1 Trouble Form-C Relays*
 - *1 Auxiliary Power Output, 1 Amp*
- **5.4 Amp Power Supply Unit**
- **120/240 V, 50/60 Hz AC Input**
- **Easy-to-Use User Interface and Display**
- **Flexible Configuration Options**
- **Password Protected**
- **Digital Release Countdown**
- **Battery Voltage and Charging Current Display**
- **Charging Capacity of 68 AH**
- **Extensive Diagnostics**
- **Backwards Compatible**

DESCRIPTION

The Kidde AEGIS™ 2.0 is a Conventional Single Hazard Agent Releasing Unit which provides configuration flexibility in a compact footprint to protect life and assets in commercial, high-tech and industrial applications. The AEGIS 2.0 control unit has a NEMA1 enclosure and an option for door mounted Manual Release and Abort switches to avoid the additional expense of wall mounting these items.

The AEGIS 2.0 is well equipped to handle all special hazard extinguishing systems due to the high degree of programming flexibility provided and the following full complement of input and output circuits:

- **Three (3) Class A or Class B Detection Circuits**
- **Two (2) Class A or Class B Supervisory Circuits**
- **Option to Use SUP 1 as Fourth Detection Circuit**
- **One (1) Class A or Class B Manual Release Circuit**
- **One (1) Class A or Class B Abort Input Circuit**
- **Three (3) Class A or Class B Notification Appliance Circuits**
- **Two (2) Class B Agent Release Circuits**
- **Three (3) Programmable and 1 Trouble Form-C Relays**



DETECTION CIRCUITS

The Detection Circuits support Conventional 700 Series, CPD-705x Ionization Smoke, PSD-715x Photoelectric Smoke and THD-705x Heat Detectors as well as Normally Open contact closure type devices. Two circuits are dedicated to the main suppression function and can be programmed to activate the release circuits by either single-shot or cross-zone input. The user configuration allows automatic release via detection to be delayed from 0 to 60 seconds in 10-second intervals and also allows a choice of which of the two Agent Release Circuits to activate.

The third Detection Circuit is programmable for either Waterflow or as an independent Detection circuit. When programmed for Waterflow, Notification Appliance Circuits can be programmed as Non-Silenceable as required by certain jurisdictions. Additionally, the Supervisory 1 circuit can be configured to be the fourth detection circuit.

SUPERVISORY CIRCUITS

The Supervisory Circuits accept Normally Open contact closure type devices such as pressure switches on the agent cylinders or on the water or air pipe network. The system configuration enables the supervisory input to be a participant in the suppression function. For example, low air supervisory can be included with detection for release of pre-action systems as required by certain jurisdictions.

MANUAL RELEASE AND ABORT CIRCUITS

Both the Manual Release and Abort Circuits accept Normally Open contact closure type devices. Activation of the Agent Release Circuits can either be instantaneous or delayed up to 30 seconds (maximum) upon receipt of Manual Release input. Agent release can be temporarily delayed by activating the Abort Circuit. The Abort input can be programmed for 6 modes of operation. These include the UL 10-second mode, the full-delay mode, the IRI mode, two NYC modes, or the abort can be disabled. Aborts can also be programmed to be applicable for either one (ARC 1) or both Agent Release Circuits thereby allowing use with Deluge/Pre-Action systems.

NOTIFICATION APPLIANCE CIRCUITS (NAC)

The three Notification Appliance Circuits are rated 1.5 Amps each and accept polarized 24 VDC Notification Appliances. Each circuit is driven independently and is user configurable for First Alarm, Pre-Release, and Releasing as well as for 60 BPM, 120 BPM, Temporal, or Continuous pattern.

The control unit supports appliances that provide the option to use silenceable horns and non-silenceable strobes on the same NAC. Multiple NAC circuits (connected to audible devices only) programmed with the same master code pattern are synchronized, regardless of any differing starting times that preceded their concurrent operation. The NACs configuration includes a user-selectable intelligent synchronization feature which allows a silenceable horn to be shut off while the strobe continues to flash in synchronized fashion.

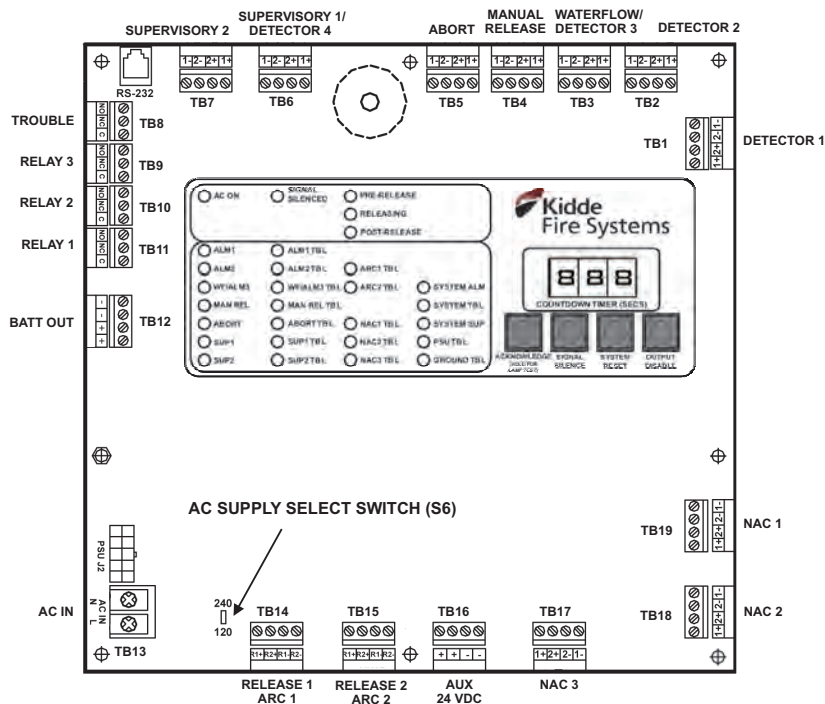


Figure 1. Printed Circuit Board (PCB)

BUILT-IN CLASS A AND B CIRCUITRY

For the input and NAC circuits, the choice of Class A or Class B supervision is made at site on the board itself by selecting the terminals used for wiring. Neither conversion boards nor additional hardware nor jumper selection is required for this purpose.

AGENT RELEASING CIRCUITS (ARC)

The two circuits can be programmed for activation by different inputs, with independent time delays and abort modes to fire combinations of two of the following releasing devices:

- 1 or 2 Kidde Continuous and Momentary Solenoid Control Heads
- 1 Kidde Actuator or Fenwal Initiator
- 1 Factory Mutual Group A, B, D, E, F, G, I, J, or K Solenoid

In other words, operating in tandem, the two circuits can release:

- 1 or 2 Control Heads on ARC 1 and 1 or 2 Control Heads on ARC 2
- 1 or 2 Control Heads on ARC 1 and 1 Actuator/Initiator on ARC 2 or vice-versa
- 1 or 2 Control Heads on ARC 1 and 1 FM Sprinkler Solenoid on ARC 2 or vice-versa
- 1 Actuator/Initiator on ARC 1 and 1 Actuator/Initiator on ARC 2
- 1 FM Solenoid on ARC 1 and 1 FM Solenoid on ARC 2

This configurability is useful for those jurisdictions where the gaseous suppression agent is required to be supplemented with a pre-action system.

TRIPLE-R PROTECTION FOR ARCS

The two ARCs feature a triple failure redundancy safeguard system to protect them from inadvertent activation by the main microprocessor. The Triple-R system requires that in order to activate an ARC, the main microprocessor issues two release commands of opposing polarity via separate channels and that these commands be combined with a third signal from the panel watchdog timer to confirm the microprocessor operation. The Triple-R system ensures that electrical transients or disturbances such as power surges that could interfere with the operation of the main microprocessor will not inadvertently activate the connected suppression system. The result is a more robust and reliable suppression-focused panel.

PROGRAMMABLE RELAYS

Of the 4 relays, three are user-programmable for a variety of alarm related conditions and the fourth is a dedicated trouble relay. All relay contacts are rated 3.0 Amps at 30 VDC/120 VAC (resistive).

POWER-LIMITED CIRCUITRY

All circuits are inherently power-limited. ARCs can be configured for power-limited or non-power-limited operation. One in-line releasing device is required for each solenoid on a power limited ARC. In-line releasing devices are not included with the panel; the appropriate number of in-line releasing devices should be ordered using part number 06-220023-001.

ROBUST POWER SUPPLY UNIT (PSU)

The AEGIS 2.0 features a universal 120/240 V, 50/60 Hz AC Power Supply Unit with a robust 5.4 Amps of 24 VDC power. Input voltage selection is via a slider switch with no jumper cutting required. The on-board battery charger is able to charge 24 VDC (2 x 12) batteries of capacity up to 68 AH thereby allowing from 24 hours of supervision plus 5 minutes of alarm to 90 hours of supervision plus 10 minutes of alarm required by some jurisdictions.

AUXILIARY POWER SUPPLY

Up to 1 Amp of auxiliary power at 24 VDC is available to power external 4-wire devices such as Flame Detectors, AlarmLine modules, Duct Detectors, etc. The auxiliary power output is resettable.

ELEGANT USER INTERFACE

The user interface consists of an array of LED Indicators, Control Switches, a Digital Display, and Buzzer. Over and above the System, Power Supply status, Input circuit Fire and Trouble and Output circuit Trouble LEDs, the AEGIS 2.0 annunciates its suppression state-of-alarm via three additional Pre-Release, Releasing and Post Release LEDs. Four switches are provided, one each for Acknowledge, Signal Silence, System Reset and Output Disable. The 3-digit display provides a countdown of impending agent release. On command from the user interface switches, it also indicates the battery open circuit voltage and charging current.

SIMPLE SITE-SPECIFIC CONFIGURATION

Setting the site-specific configuration is easily done using the digital display and user interface buttons. To prevent unauthorized use, the configuration menu is protected by a user-changeable password. Factory technical support can provide assistance with lost or forgotten passwords.

Apart from the input voltage selection performed on both the PSU and main board via a slider switch, no other on-board settings or jumper cuttings are required.

EXTENSIVE DIAGNOSTICS

Also initiated via the digital display and user interface switches, the troubleshooting function displays diagnostic codes that assist in determining causes of trouble. A complete list of diagnostic codes and their meaning ships factory installed on the inside of the enclosure door for easy reference.

BACKWARDS COMPATIBILITY

The AEGIS 2.0 is backwards compatible and listed for use with a full range of conventional detectors and alarm devices as well as suppression accessories from Kidde, Fenwal and Chemetron. Going forward, this will allow legacy panels to be replaced with relative ease.

EASY TO INSTALL CABINET

The cabinet design allows for easy installation by fitting between the studs of a standard 16 inch studded wall. It is large enough to house two 12 VDC, 12 AH Batteries and provides up to 2 inches (51 mm) of wiring and finger space between the circuit board and the cabinet wall.

An optional door design features a Manual Release and Abort switch for applications with space constraints. Both switches incorporate guards that prevent their inadvertent activation.

TECHNICAL SPECIFICATIONS

- **Hazards Protected**
 - One
- **Power Supply**
 - 120/240 V, 50/60 Hz (90 to 264 Vrms, 47 to 63 Hz) AC Main Input
 - 5.4 Amps at 27 VDC Output
 - Battery capacity up to 68 AH @ 24 VDC
 - Auxiliary power output rated at 1 Amp at 18.8 - 27.6 VDC (resettable)
- **Three (3) or Four (4) Detection Circuits**
 - Compatible with 700 Series, CPD-705x, PSD-715x, and THD-705x detectors as well as Normally Open contact closure type devices. Refer to documents K-70-100 and F-70-63 for details on compatibility and the maximum number of devices supported.
 - Configurable as Class A/Style D or Class B/Style B
 - Supervised for ground faults and open circuits
 - Power limited
 - DET 1 and DET 2 used for suppression
 - DET3/WF configurable for detection or waterflow
 - Option to use SUP 1 circuit as DET 4 circuit
- **One (1) Manual Release Circuit**
 - Compatible with normally open contact-closure type devices
 - Configurable as Class A/Style D or Class B/Style B
 - Supervised for ground faults and open circuits
 - Power limited

TECHNICAL SPECIFICATIONS (*cont'd*)

- **One (1) Abort Circuit**
 - Compatible with normally open contact-closure type devices
 - Configurable as Class A/Style D or Class B/Style B
 - Supervised for ground faults and open circuits
 - Six (6) Abort Modes available
 - Power-limited
- **Two (2) Supervisory Circuits**
 - Compatible with normally open contact-closure type devices
 - Configurable as Class A/Style D or Class B/Style B
 - Option to use SUP 1 as 4th detection circuit
 - Supervised for ground faults and open circuits
 - Power-limited
- **Three (3) Notification Appliance Circuits (NACs)**
 - Compatible with polarized 24 VDC Audio-Visual devices
 - Rated at 1.5 Amps each
 - Up to 35 synchronized appliances
 - Configurable as Class A/Style Z or Class B/Style Y
 - Supervised for ground faults, shorts, and open circuits
 - Power-limited
 - Common NAC/ARC output disconnect switch
- **Two (2) Agent Release Circuits**
 - Each compatible with 1 or 2 control heads, or 1 actuator/initiator, or 1 FM sprinkler solenoid
 - Circuits electrically capable of simultaneously releasing any combination of two of the above devices
 - Factory configured as Class B/Style Y
 - Supervised for ground faults and open circuits
 - Default setting: Power-Limited. Each solenoid on a power-limited ARC requires the use of an in-line releasing device, P/N 06-220023-001 (order separately, not included with panel).
 - Common NAC/ARC output disconnect switch
- **Four (4) Relays**
 - 3 independently programmable, normally de-energized Form-C Relays
 - 1 dedicated normally energized Form-C Trouble Relay
 - Relay contacts rated 3 Amps at 30 VDC/120 VAC (resistive)

TECHNICAL SPECIFICATIONS (cont'd)

- **Enclosure**
 - NEMA 1 rated 18 gauge sheet steel with door
 - Red color
 - Suitable for wall and surface mounting
 - Optional Trim Ring
 - Optional door with Manual Release and Abort switches
 - Optional Dead Front Plate
 - Dimensions:
 - *with Standard Door:*
14-1/4 in. W x 5 in. D x 19 in. H
(362 mm x 127 mm x 483 mm)
 - *with Switch Door:*
14-1/4 in. W x 6 in. D x 19 in. H
(362 mm x 152 mm x 483 mm)
- **Environmental Criteria**
 - Indoor/Dry use only
 - Operating temperature range: 32°F to 120°F
(0°C to 49°C)
 - Humidity: 93 ± 2% RH at 90 ± 3°F (32 ± 2°C)
- **Packaging/Shipping**
 - Enclosure, PCB, and PSU packaged in individual cartons. Field assembly is required.
 - Accessories shipped include mounting hardware, battery leads, IOM manual on CD-ROM, operating instruction sheet, and EOL resistor kit.
 - Order in-line releasing device (required for power-limited ARCs) and batteries separately.



ORDERING INFORMATION

Description	Part Number
Kidde AEGIS 2.0 Control Unit	84-732001-901
Kidde AEGIS 2.0 Control Unit with Switches	84-732001-902
In-Line Releasing Device	06-220023-001
Dead Front Plate	06-220175-001
EOL Resistors (10 pk)	06-220184-001
Trim Ring	76-600000-007
Large Capacity Battery Enclosure	76-100010-001
Installation/Configuration Kit	06-220148-902
Replacement Hardware Installation Kit	06-220149-001
Replacement Enclosure Assembly	06-220172-902
Replacement Enclosure Assembly (with Switches)	06-220174-902
Replacement Door Switches Kit	06-220176-001
Replacement PCB Assembly	06-220150-901
Replacement Power Supply	06-118394-002
Replacement Bezel Assembly	06-220151-001
Spare Key	06-118013-001
Spare Keylock with Keys	06-129924-001

EXPORT INFORMATION (USA): Jurisdiction: EAR, US ECCN: EAR99
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For detailed installation, operation, and configuration information, refer to the Kidde AEGIS 2.0 Conventional Fire Alarm-Suppression Control Unit Installation, Operation, and Maintenance Manual P/N 06-237463-001.

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