AEGIS™

Conventional Fire Alarm-Suppression Control Unit

Kidde Fire Systems
A UTC Fire & Security Company

Effective: November 2007
K-84-100

FEATURES

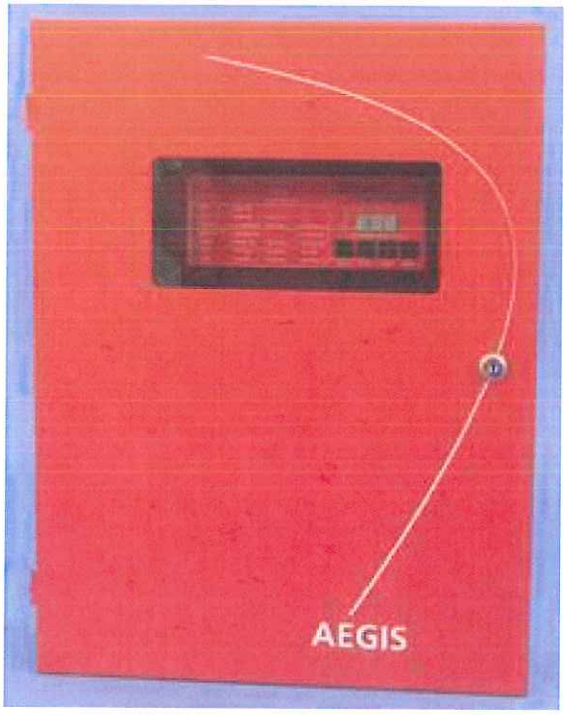
- *Agency Approvals*
  - *cFMus Approved to NFPA 72, ANSI 864, 9th edition and ULC-S527-99*
  - *CSFM Approved*
  - *MEA Approved*
  - *cULus Listed to ANSI 864, 9th edition and ULC-S527-99*
- *Suppression focused Control Unit*
- *Listed for a Wide Range of Suppression Systems*
  - *Kidde FM-200®, FE13™, CO_2, 3M™ Novec 1230™ Fire Protection Fluid, Argonite™, and Halon Clean Agents*
  - *Kidde IND™ Dry Chemical & WHDR™ Wet Chemical Systems*
  - *Sprinkler Supervisory Service*
  - *Deluge, Preaction, Foam, Foam-Water Systems*
- *Combination Clean Agent plus Pre-Action System*
- *Built-in Class-A and Class-B Circuitry*
- *Sophisticated Programmable Notification Appliance Circuits*
- *Independently Programmable Agent Releasing Circuits with Triple-R Protection*
- *Input and Output*
  - *3 Detection Circuits*
  - *2 Supervisory Circuits*
  - *1 Manual Release Circuit*
  - *1 Abort Input Circuit*
  - *3 Notification Appliance Circuits*
  - *2 Release Circuits*
  - *4 Form-C Relays*
- *Programmable Relays*
- *Robust Power Supply*
- *Elegant User-Interface*
- *Simple Configuration*
- *Password Protected*
- *Digital Release Countdown*
- *Battery Voltage and Charging Current Display*
- *Extensive Diagnostics*
- *Backwards Compatible*
- *Improved and Enlarged Cabinet Design*
- *5-Year Warranty*

DESCRIPTION

The Kidde AEGIS is the technologically most advanced Conventional Single Hazard Agent Releasing Unit available to the Fire-Alarm Suppression industry today. It combines the high quality, system reliability, and flexibility required by modern commercial, high-tech and industrial applications in an aesthetically pleasing and physically robust package.

The AEGIS 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*
- *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*
- *Four (4) Form-C Relays*



DETECTION CIRCUITS

The Detection Circuits can support up to 25 Conventional CPD-705x Ionization Smoke, PSD-715x Photoelectric Smoke, or THD-705x Heat Detectors each 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.

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 5 modes of operation. These include the UL 10-second mode, the full-delay mode, the IRI mode, the NYC mode, or the abort can be disabled. Aborts can also be programmed to be applicable for either one 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 MT and NS series appliances 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.

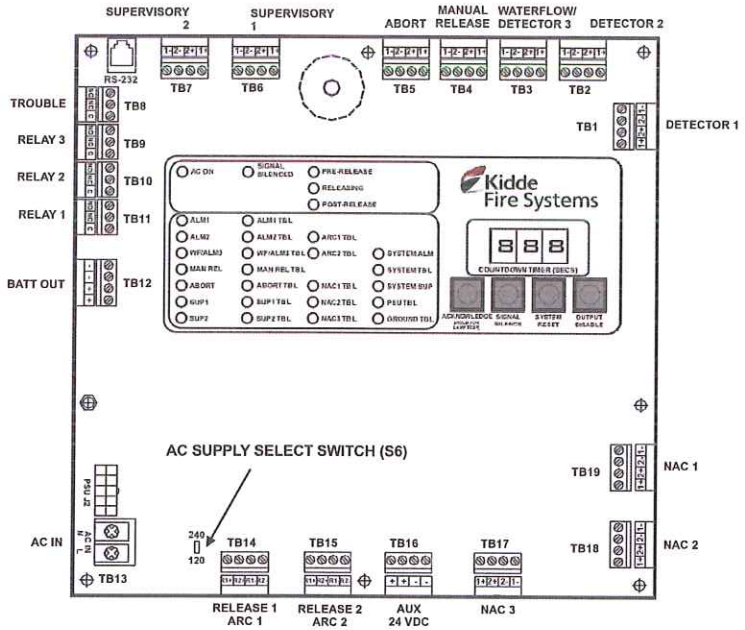


Figure 1. Printed Circuit Board (PCB)

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 RELEASE 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 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 ARC1 and 1 or 2 Control Heads on ARC2
- 1 or 2 Control Heads on ARC1 and 1 Initiator on ARC2 or vice-versa
- 1 or 2 Control Heads on ARC1 and 1 FM Sprinkler Solenoid on ARC2 or vice-versa
- 1 Initiator on ARC1 and 1 Initiator on ARC2
- 1 FM Solenoid on ARC1 and 1 FM Solenoid on ARC2

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 AGENT RELEASING CIRCUITS (ARC)

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, excluding ARCs are inherently power-limited. Agent Release Circuits, except when firing Initiators, can also be made power-limited by a field located inline releasing diode device thereby allowing cost effective installation with all wiring in the same conduit.

ROBUST POWER SUPPLY UNIT (PSU)

The AEGIS 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.

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 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

Accessed via the digital display and user-interface switches, site-specific configuration is simple, yet detailed and can typically be performed in a matter of minutes. 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

Consistent with previous generation Kidde control equipment, the AEGIS is listed to be backwards compatible with the full range of Kidde-Fenwal conventional detectors, alarm devices and suppression accessories. Going forward, this will allow older generation panels to be replaced with relative ease.

IMPROVED AND ENLARGED CABINET DESIGN

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.

Other cabinet options include a flush mounting trim-ring and a dead-front plate required for Canadian applications.

TECHNICAL SPECIFICATIONS

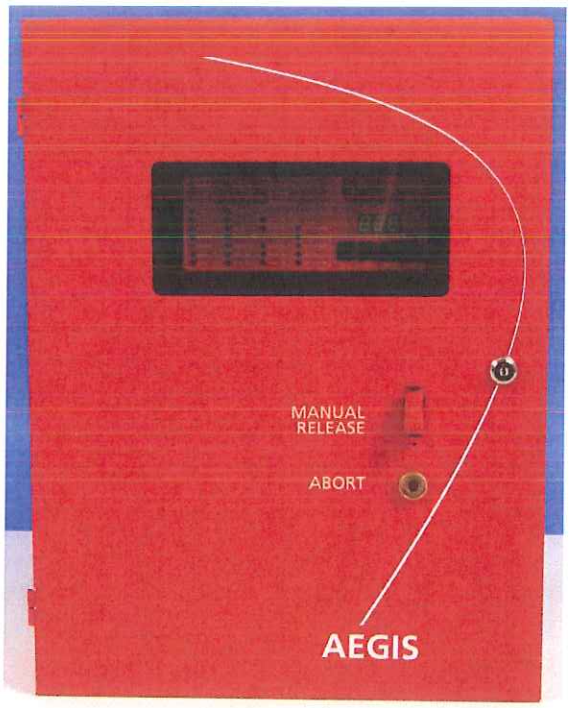
- Hazards Protected
  - One
- Power Supply
  - 120/240 Vac, 50/60 Hz (90 to 264 Vrms, 47 to 63 Hz) AC Main Input
  - 5.4 Amps at 27 Vdc Output
  - Battery capacity up to 68 Ah @ 24 Vdc
  - Auxiliary power output rated at 1 Amp at 18.8 - 27.6 Vdc (resettable)
- Three (3) Detection Circuits
  - Compatible with up to 25 CPD-705x, PSD-715x, and THD-705x detectors and 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
  - DET 1 and DET 2 used for suppression
  - DET3/WF configurable for detection or waterflow
- 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
  - 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
  - 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
  - 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 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
  - Non-power-limited. May be power-limited (except with initiators) and supervised for short circuit using inline releasing resistor-diode device
  - Common NAC/ARC output disconnect switch
- Four (4) Relays
  - 3 independently programmable, normally de-energized Form-C
  - 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 Dead-Front Panel
  - Optional door with Manual Release and Abort switches
  - 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
  - Accessories shipped include mounting hardware, battery leads, IOM manual on CD-ROM, operating instruction sheet, and EOL resistor kit
  - Order inline releasing resistor-diode device (if required) and batteries separately



ORDERING INFORMATION

Description	Part Number
Kidde AEGIS Control Panel	84-732001-001
Kidde AEGIS Control Unit with Switches	84-732001-201
In-Line Releasing Diode (10K) Kit	06-220023-001
Trim Ring	76-600000-007
Dead-Front Panel*	06-220175-001
Battery Enclosure	76-100010-001
Kidde AEGIS Conventional Fire Alarm-Suppression Control Unit IOM Manual	06-236716-001
Kidde AEGIS User's CD	06-236727-001
Installation/Configuration Kit	06-220148-002
Operating Instructions	06-236719-002
Replacement Hardware Installation Kit	06-220149-001
Replacement Enclosure Assembly	06-220172-002
Replacement Enclosure Assembly (with Switches)	06-220174-002
Replacement Switch Kit	06-220176-001
Replacement PCB Assembly	06-220150-001
Replacement Power Supply	06-118394-002
Replacement Bezel Assembly	06-220151-001
Spare Key	06-118013-001
Spare Keylock with Keys	06-129924-001
EOL Backbox (Canadian applications only)	06-129963-002
Battery Harness	06-129925-002
*For Canadian applications, order Control Unit and Dead-Front Panel separately.	

For detailed installation, operation, and configuration information, refer to the Kidde AEGIS Conventional Fire Alarm-Suppression Conventional Unit Installation, Operation, and Maintenance Manual P/N 06-236716-001.

K-84-100 Rev AC

Printed in USA

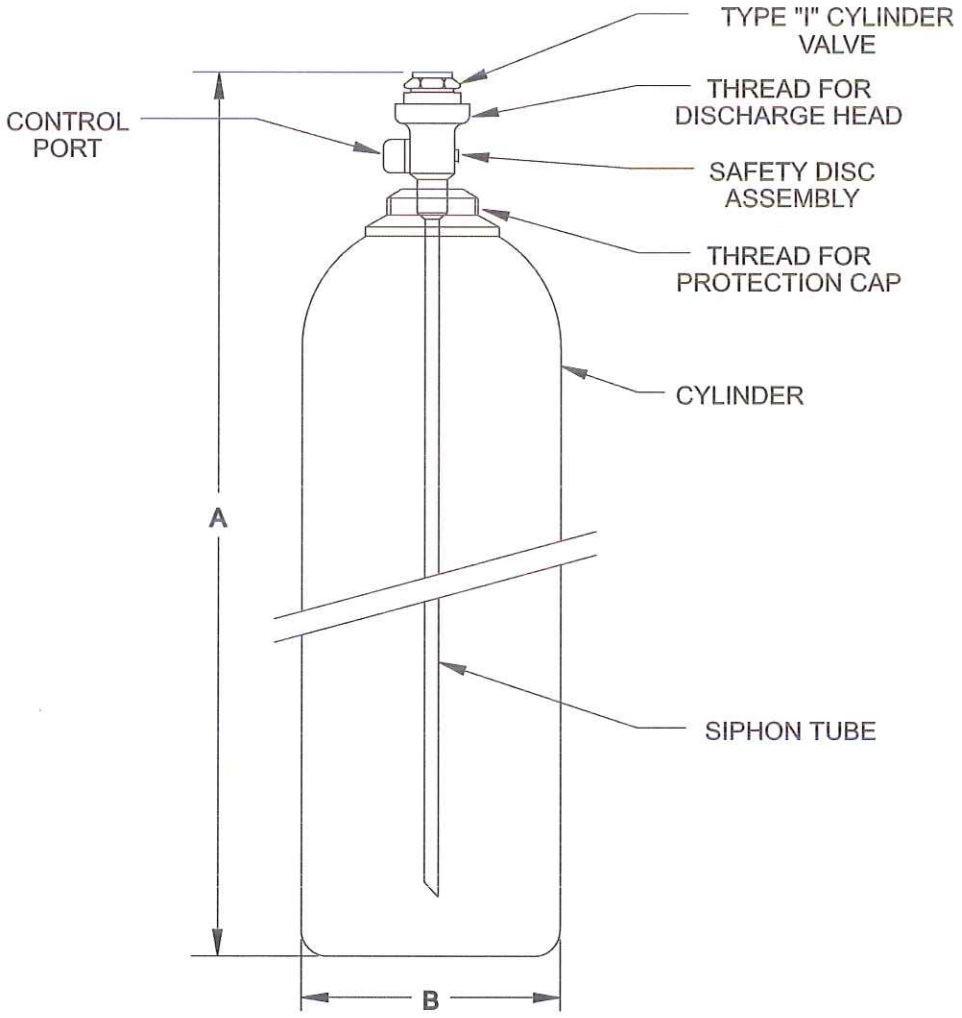
Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

CO_2 Component Description

75 lb. and 100 lb. Carbon Dioxide Cylinders

Kidde Fire Systems
A UTC Fire & Security Company

Effective: May 2010
K-81-1010



Pressure Ratings:
Service Pressure = 2300 psig
Hydrostatic Test Pressure = 3834 psig
Nominal Pressure = 850 psig @70ºF

PART NUMBER	CYLINDER	VALVE TYPE	A	B
870287	75 LB.	5/8 in.	60.0 in.	9.25 in.
870269	100 LB.		62.0 in.	10.50 in.

MATERIALS
CYLINDER: STEEL
VALVE: SEE K-81-1050 FOR 5/8 in.
SIPHON TUBE: ALUMINUM

FOR ADDITIONAL DATA,
SEE K-81-1030 FOR P/N - SEE TABLE

  Printed in USA

Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

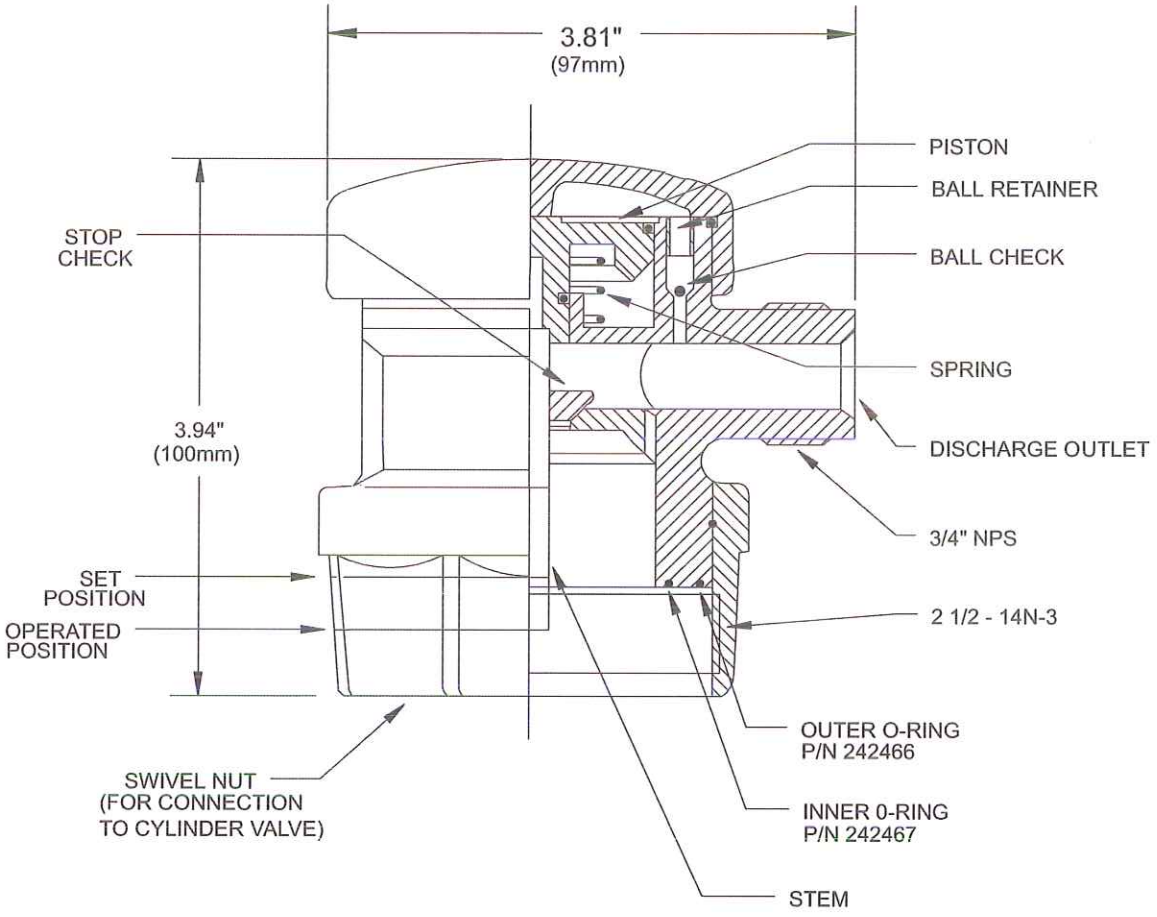
CO_2 Component Description

Discharge Head, Plain Nut

Kidde Fire Systems
A UTC Fire & Security Company

Effective: February 2007
K-81-1060

P/N: 872450



MATERIALS
BODY: BRASS
O-RINGS: RUBBER
SPRING: STAINLESS STEEL
BALL CHECK: MONEL
STOP CHECK: BRASS

  Printed in USA

Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

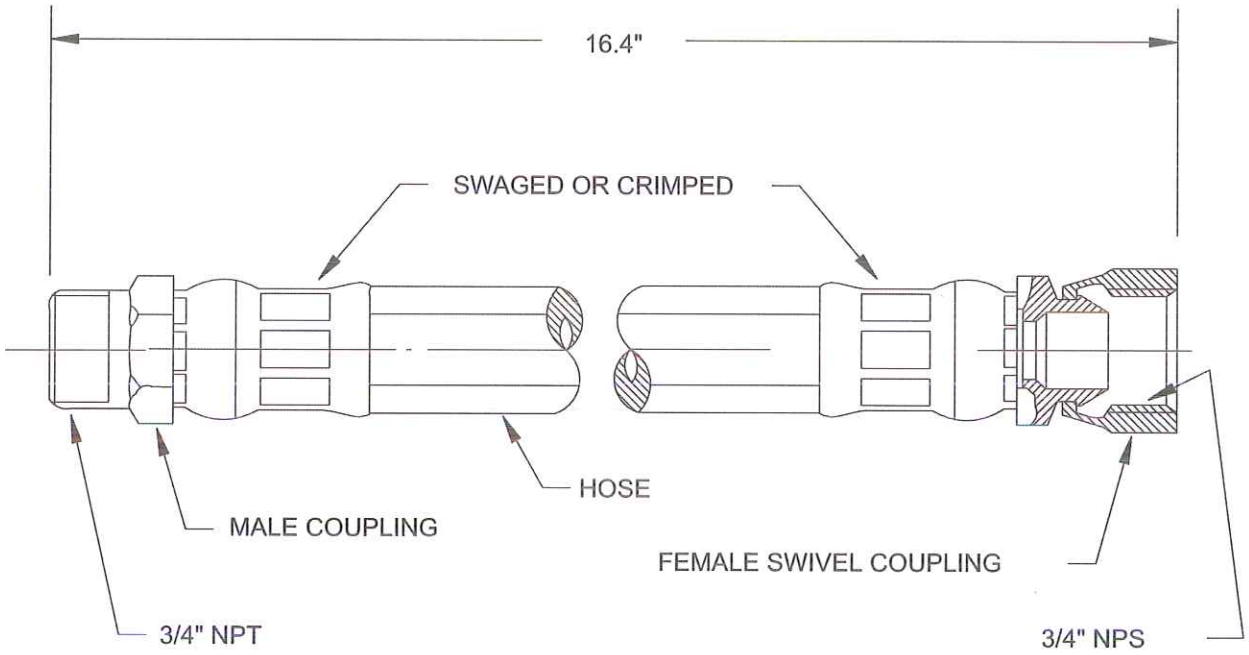
CO_2 Component Description

Flex Hose - 3/4 in.

Kidde Fire Systems
A UTC Fire & Security Company

Effective: February 2007
K-81-1090

P/N: 251821



MINIMUM BURST PRESSURE: 11000 PSI (758 BAR)
HYDROTEST: 4000 PSI (276 BAR)

TEMPERATURE RATING: -40ºF TO +200ºF (-40ºC TO 93ºC)

Printed in USA

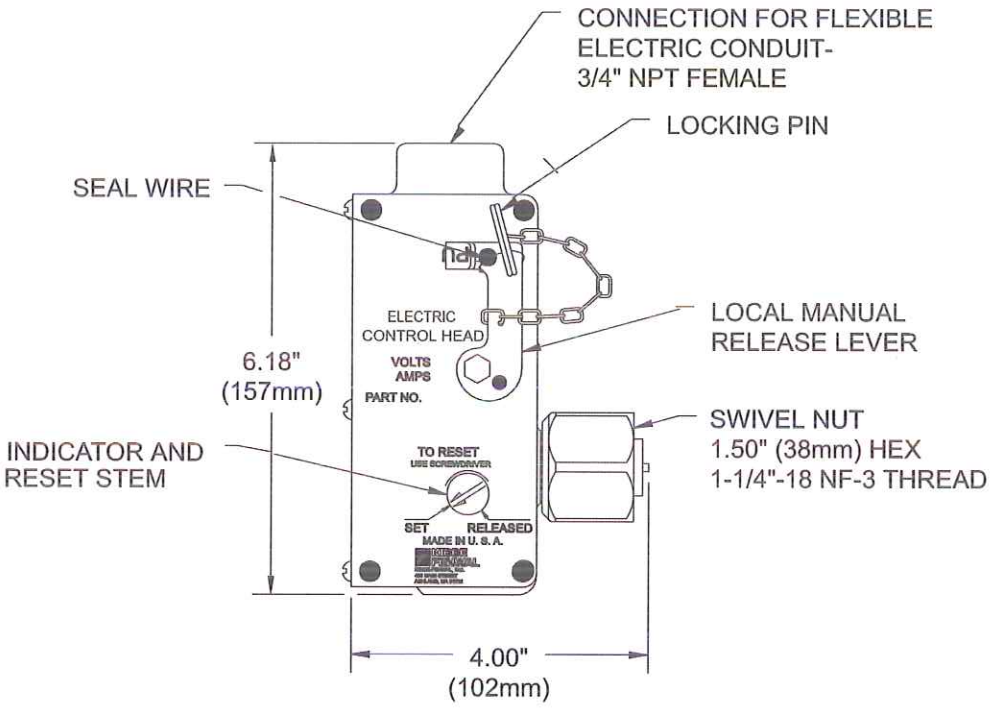
Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

CO_2 Component Description

Kidde Fire Systems
A UTC Fire & Security Company

Electric Control Head

Effective: February 2007
K-81-8010



PART NUMBER	CONTROL HEAD	
	VOLTAGE	AMPS
890181	24 VDC	2.0
890149	125 VDC	0.3
890165	115 VAC	1.0

Printed in USA

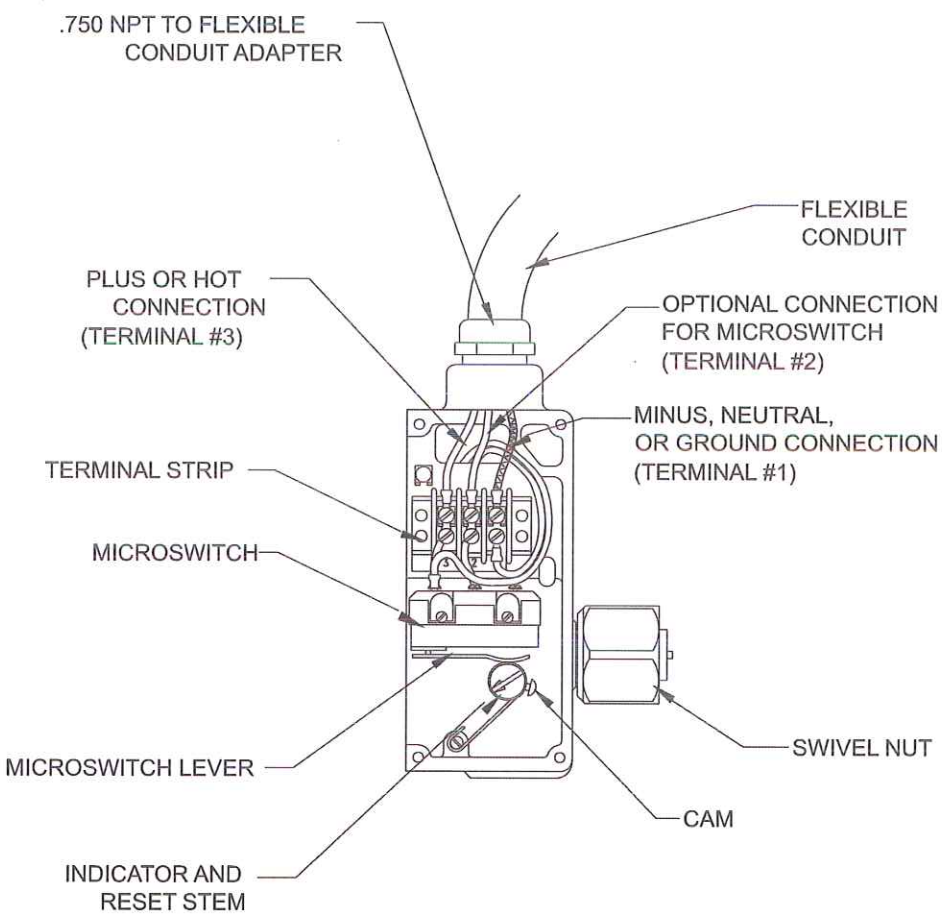
Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

CO_2 Component Description

Kidde Fire Systems
A UTC Fire & Security Company

Electric Control Head, Installation Instruction

Effective: February 2007
K-81-8011



ORDERING INFORMATION

PART NUMBER	CONTROL HEAD	
	VOLTAGE	CURRENT
890181	24 VDC	2.0A
890149	125 VDC	0.3A
890165	115 VAC	1.0A

Printed in USA

Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

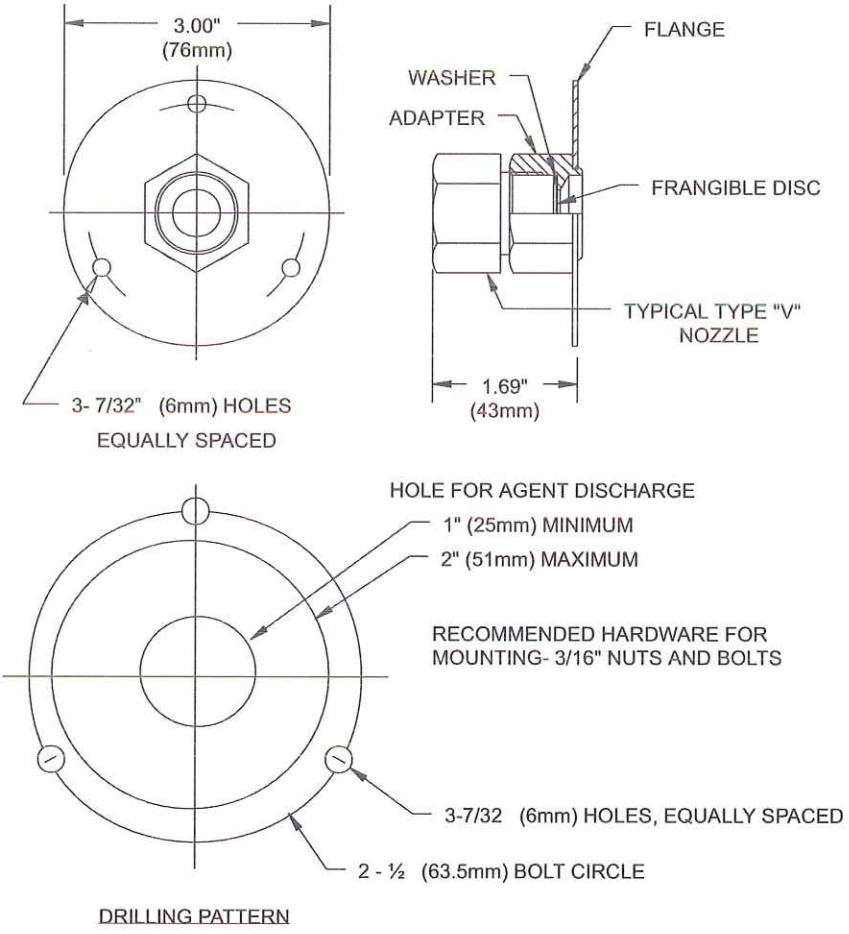
CO_2 Component Description

Flange and Cover Assembly Type "V" Nozzle

Kidde Fire Systems
A UTC Fire & Security Company

Effective: February 2007
K-81-1120

P/N: 844492



DRILLING PATTERN

MATERIALS:
ADAPTER: BRASS
FLANGE: ZINC PLATED STEEL

Printed in USA

Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

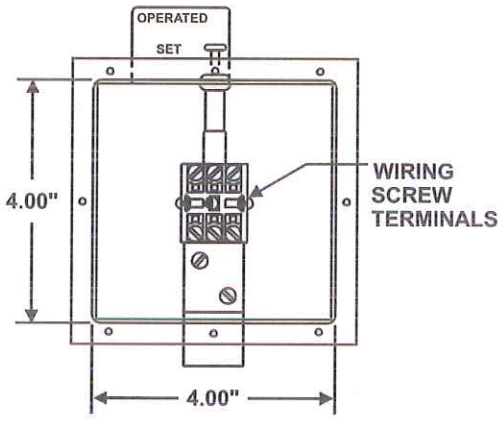
CO_2 Component Description

Pressure Operated Switch

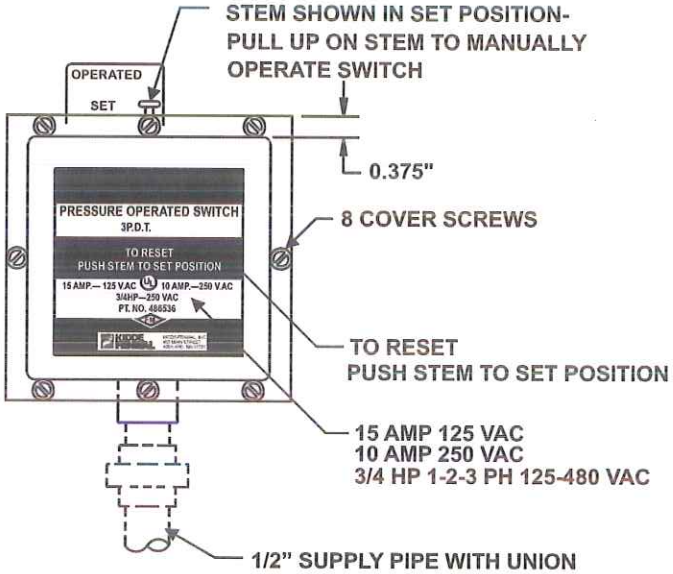
Kidde Fire Systems
A UTC Fire & Security Company

Effective: September 2010
K-81-5180

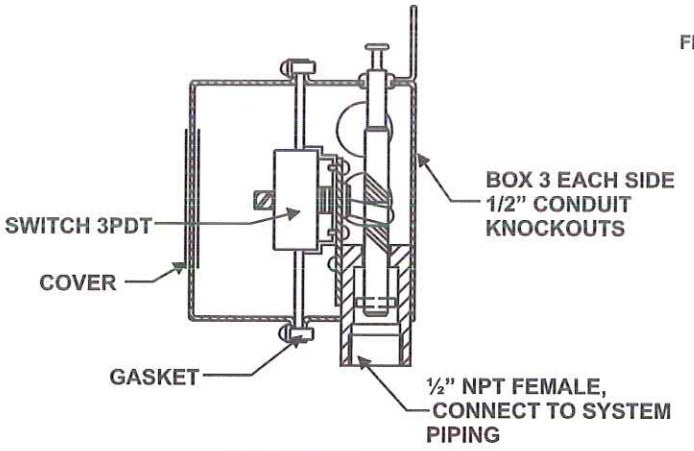
P/N: 81-486536-000



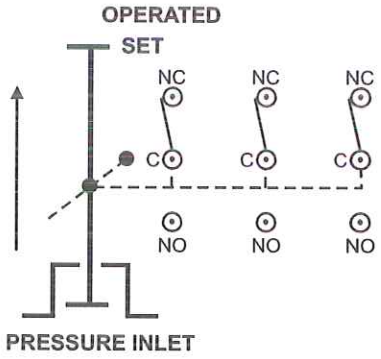
FRONT VIEW
COVER REMOVED



FRONT VIEW



SIDE SECTION



WIRING DIAGRAM

NOTES:

- The switch may be mounted in any position; however, the preferred installation is upright, as shown.
- Any load connection to the switch must not exceed the switch rating, and shall utilize a suitable protection device (i.e., circuit breaker, fuse).
- Contact Ratings (3 PDT):
  - 15 Amp @ 125 Vac
  - 10 amp @ 250 Vac
  - 3/4 HP @ 250 Vac
  - 1, 2 or 3 Phase

Printed in USA

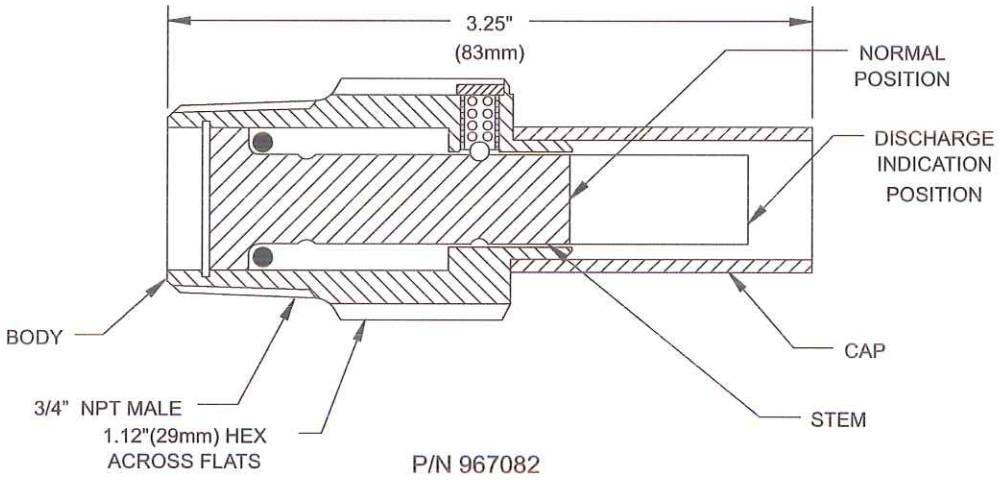
Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

CO_2 Component Description

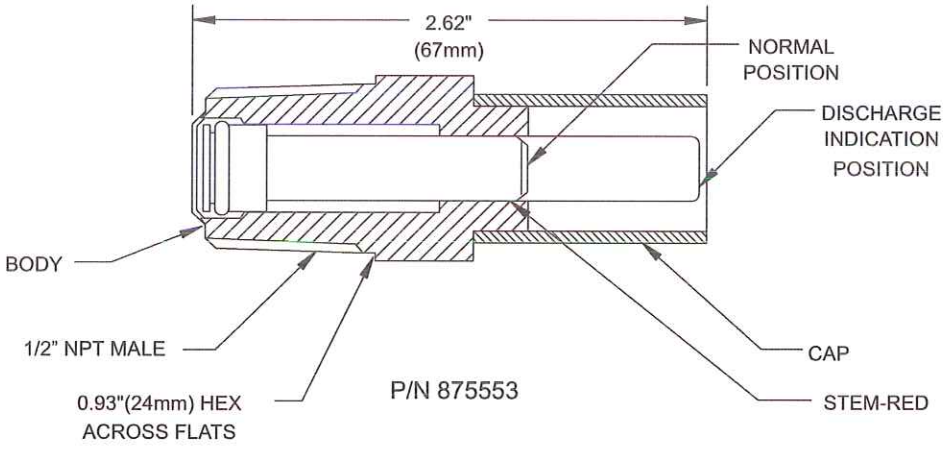
Discharge Indicators

Kidde Fire Systems
A UTC Fire & Security Company

Effective: February 2007
K-81-5160



P/N 967082



P/N 875553

MATERIALS
BODY-967082: BRASS
BODY-875553: ALUMINUM
CAPS: CLEAR CELLULOSE ACETATE

  Printed in USA

Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

Series 27100, 28000

Effective: August 1999

Vertical DETECT-A-FIRE® Units
Installation Instructions

FENWAL®

12.01.D

DESCRIPTION

DETECT-A-FIRE" thermal detectors are UL Listed, UL of Canada available upon request, and FM Approved detection and release devices used with fire detection systems to activate alarms and actuate extinguishing systems. This Rate Compensated device combines the best features of both fixed temperature and rate-of-rise detectors.

ELECTRICAL RATING

Model Number	Contact Operation on Temperature Rise	Electrical Rating* (Resistive Only)
27120	Opens (450°F Max)	5.0 Amps 125 VAC 0.5 Amps 125 VDC
28020		
27121	Closes	5.0 Amps 125 VAC 0.5 Amps 125 VDC 2.0 Amps 24 VDC 1.0 Amps 48 VDC
28021		

*Although incandescent lamps are considered resistive, their inrush current is 10 - 15 times their steady current. Do not exceed ratings.

LOCATION

DETECT-A-FIRE® Units are precision temperature sensors. They must be mounted in an area (normally a ceiling) so that:

1. The detector spacing complies with both system requirements and requirements of the agency having local jurisdiction.
2. The thermal air path to the shell is not obstructed.

Spacing per UL, FM, and UL of Canada is shown in Table 1. Distances given are for between units on smooth ceilings. Distances from partitions or walls are half that shown. To assure that all spacing requirements are met, consult the authority having local jurisdiction.

MOUNTING

Detect-A-Fire units are not position sensitive. Horizontal and vertical detectors refer to the most common mounting configuration for that unit. However, each type can be mounted either horizontally or vertically depending on the application and installation requirements.

Table 1.

°F Setting	°F Tolerance	SPACINGS (in feet)			Color Coding
		UL	ULC	FM	
140	+7/-8	50	50	25	Black
160	+7/-8	25	25	25	Black
190	+7/-8	50	50	25	White
210	+7/-8	25	50	25	White
225	+7/-8	25	50	25	White
275	±10	25	50	25	Blue
325	±10	50	50	25	Red
360	±10	25	50	25	Red
450	±15	25	50	25	Green
500	±15	50	50	25	Orange
600	±20	N/A	50	25	Orange
725	±25	N/A	50	25	Orange

Note: For clean agents and CO2 suppression systems, ceiling spacing 20 ft. (6.1 meters) apart unless otherwise specified.

Not all units are suitable for all hazard location applications. Refer to Table 2 and markings on the detector for hazardous location suitability.

Table 2.

Hazardous Location	Model Numbr	Fitting Required For UL, ULC Listings and FM Approval
Class I*, Groups A, B, C and D; Class II*, Groups E, F and G	27120-22 27121-20 28020-3 28021-5	Mount detector to a suitably-listed fitting in acordance with National Electric Code and/or local authority having jurisdiction.
Class I*, Groups B, C and D; Class II*, Groups E, F and G	27120-0 27121-0 28021-0	

*Division 1 and 2.

INSTALLATION

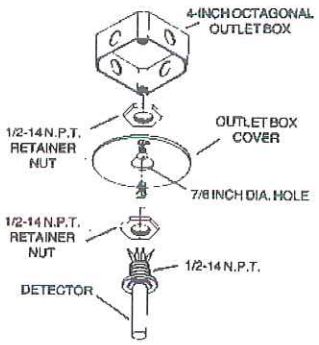


Figure 1

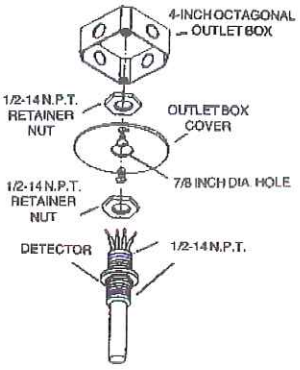


Figure 2

1. Kidde-Fenwal recommends that standard 4-inch octagonal outlet boxes be used to mount detectors.
2. Attach detector to outlet box cover through a 0.875 inch diameter hole and using two 1/2-14 NPT retainer nuts as indicated.
3. Connect system wiring to detector per Figure 3 and applicable electrical codes.
4. **Ordinary Locations:** The DETECT-A-FIRE Units are to be installed in grounded metallic junction boxes only. They are to be secured to the boxes using two lock nuts, one on either side of the mounting plate. DETECT-A-FIRE Units are not to be installed in non-metallic junction boxes.
5. **Hazardous Locations:** For Class I, Division 1 and 2 locations, install the DETECT-A-FIRE Unit in a listed explosion-proof enclosure with a minimum thread engagement of five full turns. No non-conductive material is to be placed on the threaded joint of the DETECT-A-FIRE Unit or in the listed explosion-proof enclosure. For Division 2 locations, assure that a protective ground terminal is provided in the listed explosion-proof enclosure when flexible metal conduit is used.
6. Do not exceed a maximum torque without thread lubricant of 20 foot-pounds (27.1 Newton Meters).

Series 28000 units are similar to Series 27100 units except they have two 1/2-14 NPT threads for mounting.

The unit may be mounted as described above or may be threaded into a 1/2-14 NPT tapped hole in the vessel wall or threaded into a coupling brazed or welded to the vessel wall.

FIELD WIRING REQUIREMENT

Field wiring must be capable of withstanding the maximum anticipated ambient temperature in the application.

FUNCTIONAL TEST

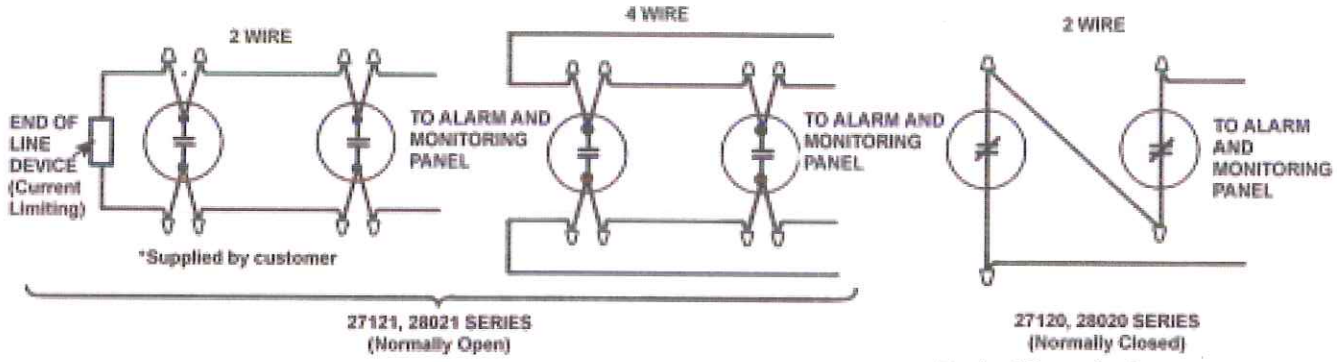
When used with automatic fire extinguishing systems first disconnect the initiator/solenoid leads from the panel and connect a 24 VDC bulb to initiator terminals in the control unit. Heat the D-A-F units with a heat lamp or other convenient source. When the bulb in the control unit changes state, remove heat source and allow D-A-F unit to cool. Reset control unit. Test lamp must change state and stay changed after system is reset. Do not reconnect initiator/solenoid leads until all D-A-F units have cooled below set point as indicated by test lamp. When D-A-F units are used in other types of systems, disconnect them from the system, connect a 24 VDC lamp and power source in series with the D-A-F units and test with heat source as above. Make sure that contacts have reset to normal condition before reconnecting to system circuit.

⚠ WARNING

1. In order to function properly, the sensing shell of the unit must remain free from paint, grease, oil, etc. Should such a build up occur, do not, under any circumstances, attempt to remove it. Replace the unit.
2. Detectors mounted in an area subject to physical abuse or damage, other than above, must be suitably protected without obstructing the thermal air path to the unit.
3. Do not install the unit where the shell would be physically damaged by sand, grain, rocks, etc.
4. Do not overtorque the unit when installing.
5. Any detector that has been abused or damaged must be replaced.
6. Consult the factory for special precautions necessary for outdoor use or moist environments.

ANY OF THE ABOVE COULD CHANGE THE FACTORY TEMPERATURE SETTING, WHICH MAY RESULT IN PROPERTY DAMAGE AND/ OR PERSONAL INJURY OR DEATH.

IT IS POSSIBLE FOR A UNIT TO HAVE BEEN ABUSED OR DAMAGED AND NOT DISPLAY ANY OUTWARD INDICATION OF THE DAMAGE. ALL UNITS SHOULD BE TESTED PERIODICALLY IN ACCORDANCE WITH NATIONAL FIRE PROTECTION ASSOCIATION REQUIREMENTS (72E) OR THE AGENCY HAVING LOCAL JURISDICTION.



Typical Fire Alarm System Method

Typical Security System Method

Figure 3. System Wiring

These instructions do not purport to cover all the details or variations in the equipment described, nor do they provide for every possible contingency to be met in connection with installation, operation and maintenance. All specifications subject to change without notice. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purpose, the matter should be referred to KIDDE-FENWAL, Inc., Ashland, Massachusetts.

FENWAL®
KIDDE-FENWAL, INC.
400 MAIN STREET, ASHLAND, MA 01721
TEL: (508) 881-2000 FAX: (508) 881-8929
www.fenwallfire.com

FENWAL
Protection Systems

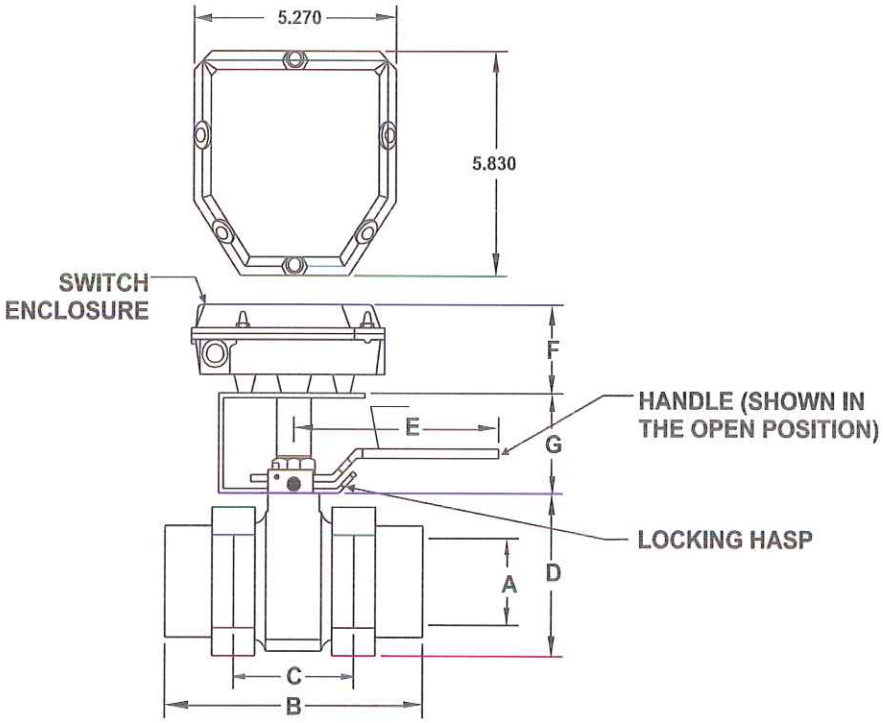
12.01.D 8/99 Printed in U.S.A. CP

CO_2 Component Description

CO_2 Lock Out Valve With Limit Switch

Kidde Fire Systems
A UTC Fire & Security Company

Effective: February 2007
K-81-1250



Assembly Part Number	Size	General Dimensions						
		A	B	C	D	E	F	G
81-934711-000	1/2"	0.660	3.939	1.938	2.250	5.500	2.800	2.500
81-934712-000	3/4"	0.810	4.500	2.188	2.600	5.500	2.800	2.500
81-934713-000	1"	1.000	4.938	2.375	2.990	6.500	2.800	2.500
81-934714-000	1½"	1.440	5.875	2.750	3.870	8.500	2.800	2.750
81-934715-000	2"	1.720	6.875	3.375	4.500	8.500	2.800	2.750
Note: Dimensions are in inches.								

MATERIALS

- Body: Carbon Steel with:
  - Ball and Stem: 316 Stainless
  - Seats and Seals: Teflon

1. Ball Valve:
- Pressure Rating 2,500 PSIG
- Double union end with NPT female pipe connections locking handle and bracket for both open (parallel with valve body) and closed (perpendicular to valve body)

2. Limit Switch:
- Two (2) SPDT Switches
- NEMA 4, 4X Enclosure
- Rating:
  - 15 amps, 1/2 hp, 125 to 250 Vac
  - 0.50 Amps, 125 Vdc
  - 0.25 Amps, 250 Vdc

3. Lock not included.

  Printed in USA

Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

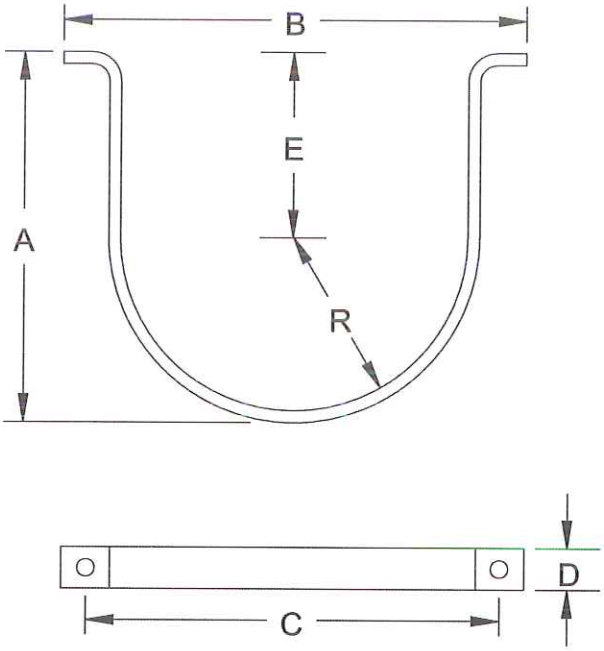
CO_2 Component Description

Handle Clip and Horn Clip

Kidde Fire Systems
A UTC Fire & Security Company

Effective: February 2007
K-81-1230

PART NUMBER	CYLINDER SIZE	A		B		C		D		E		R	
		IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM
270012	10	6.22	158	9.81	249	8.75	222	1.00	25.4	2.62	66.5	3.41	86.6
210013	15 & 20	6.44	164	10.8	274	9.63	245	1.00	25.4	2.36	60.4	3.88	96.6
270014	25, 35, & 50	7.94	202	11.5	292	10.4	264	1.00	25.4	3.5	88.9	4.25	108
62669	75	8.63	143	12.3	312	11.1	282	1.25	31.8	3.75	95.2	4.63	118
270157	100	10.0	254	14.0	356	12.4	315	1.75	44.4	4.5	114	5.31	135



MATERIAL: STEEL

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Manual Pull Stations
Models B10 and B11

Kidde Fire Systems
A UTC Fire & Security Company

Effective: March 2007
K-84-05

FEATURES

- ***Exclusive KIDDE® Design***
- ***Unique Field Labeling for either Fire Alarm or Suppression Applications***
- ***Dual Action Operation***
- ***Single Pole or Double Pole***
- ***Keylock for Reset and Test***
- ***UL Listed and FM Approved***
- ***cUL Listed for Canada***
- ***ADA Compliant***
- ***CSFM Listed***
- ***MEA Approved***
- ***Surface and Weatherproof Backboxes***

DESCRIPTION

The Kidde Models B10 and B11 Manual Pull Stations are high quality, reliable non-coded alarm initiating devices based upon a proven design. They are constructed of heavy die-cast aluminum for long life and reliability. These manual stations have the exclusive Kidde look: red gloss paint with raised white lettering, and black sides with a white trim border.

The B10 station has a standard Single Pole Single Throw switch, while the B11 has a Double Pole Single Throw switch for local annunciation or remote signaling. Switches are gold plated for reliability when used in low current initiating circuits.

These manual stations are designed for quick, efficient response by personnel in an emergency, while the standard double action PUSH/PULL levers prevent accidental operation. The keylock allows the unit to be easily reset and tested, and the stations are keyed to match the Kidde Scorpio™, Gemini™ II, PEGAsys™, and Orion™ control panels.

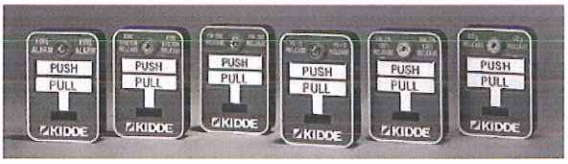
Optional surface backboxes are available, which are painted red and sized to match the manual stations. The SGB-32S is UL Listed for indoor use, and the SGB-32C cast aluminum weatherproof box is UL Listed for outdoor use. The weatherproof box is provided with a gasket kit which allows either the B10 or B11 to be mounted outdoors.

FIRE ALARM OR SUPPRESSION RELEASE LABELING

The Kidde Models B10 and B11 Manual Pull Stations have a unique labeling method which provides the installer the greatest amount of flexibility. Six labels are shipped with each station:

FIRE ALARM	FIRE SYSTEM RELEASE
FM-200® RELEASE	FE-13™ RELEASE
CO_2 RELEASE	HALON 1301 RELEASE

These permanent, heavy-duty Lexan® self-adhesive labels are die-cut with raised lettering. During installation, the installer simply chooses the appropriate label,



removes the protective backing, and places the label into the space on the top of the station. This flexibility allows installations to be customized for each customer, without the expense of having to carry extra inventory.

OPERATION

The dual action B10 and B11 manual stations are operated by simply pushing the PUSH bar inwards, allowing the PULL handle to be grasped in a one-handed motion. The handle is then pulled down as far as it will go. If the optional breakrod is installed, it would break at this point. The handle is now locked in place, and is easily visible from up to 50 feet away. The handle is reset by opening the station with the key, placing the handle in the normal upright position, and re-locking the station.

SPECIFICATIONS

Models:	B10 and B11 Pull Stations
Style:	Double action, non-coded
Switch Type:	B10: Single Pole, Single Throw with gold-plated contacts B11: Double Pole, Single Throw with gold-plated contacts
Contact rating:	1 Amp @ 125 Vac or 30 Vdc
Wiring:	Terminal block connections with clamping plate for in and out wiring. Suitable for up to 12 AWG wiring.
Mounting:	Mounts to a standard single gang box, or the SGB-32S or SGB-32C surface boxes. Two 6/32 screws ship with each unit.
Keylock:	Keyed to match Kidde Scorpio™, Gemini™ II, PEGAsys™, and Orion™ control panels. One key ships with each unit.
Breakrod:	Optional, order separately. Constructed of clear acrylic tubing. Visible from front of unit if broken.
Temperature:	-12°F to 132°F (-25°C to 56°C)
Dimensions:	4.75 in. H x 3.25 in. W x 1 in. D

SGB-32S INTERIOR SURFACE BACKBOX

Dimensions:	4.75 in. H x 3.25 in. W x 2.25 in. D
Construction:	Steel sheet metal.
Conduit:	Two knockouts for 1/2 in. conduit connectors, one on top and bottom.
Mounting:	B10 or B11 mounts to the box with (4) 8/32 screws, which ship with each box.

SGB-32C WEATHERPROOF SURFACE BACKBOX

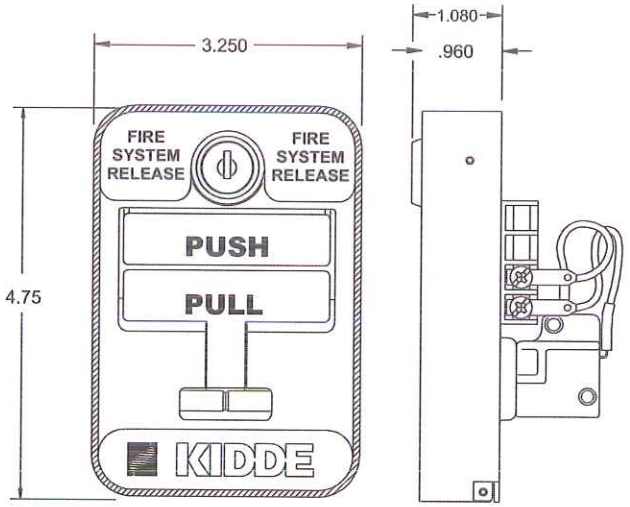
Dimensions:	4.75 in. H x 3.25 in. W x 2.25 in. D
Construction:	Cast aluminum.
Conduit:	One threaded opening for 1/2 in. conduit connector.
Mounting:	B10 or B11 mounts to the box with (4) 8/32 screws and a foam gasket, which ship with each box.

ORDERING INFORMATION

Part Number	Description	Shipping Weight
84-100007-001	B10 Pull Station SPST (includes six labels)	1.2 lb.
84-100007-002	B11 Pull Station DPST (includes six labels)	1.3 lb.
84-100009-001	SGB-32S Indoor Box	.8 lb.
84-100009-002	SGB-32C Outdoor Box	.8 lb.
84-100008-002	Pkg. of (12) Breakrods (must order separately)	>.25 lb.
06-118013-001	Spare Key for B10/B11	>.25 lb.

DIMENSIONS

(shown with Fire System Release Label installed)



K-84-05 Rev AB Printed in USA

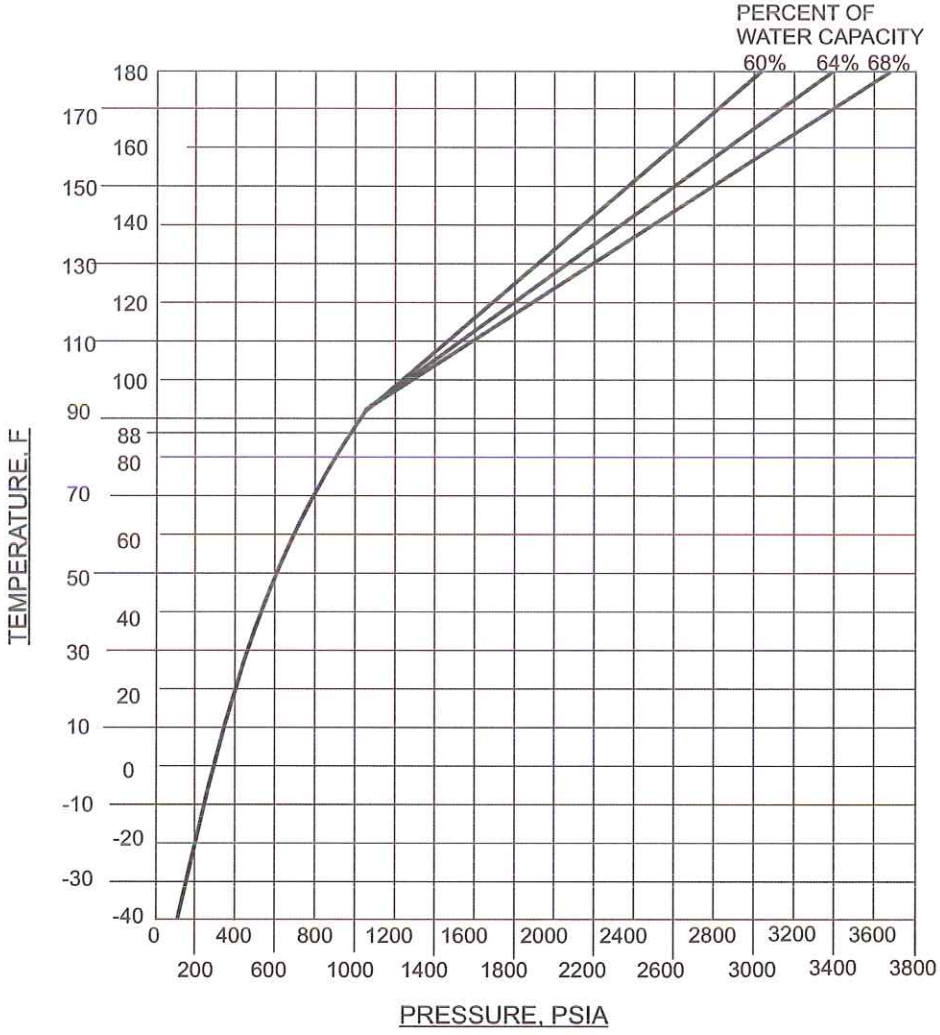
Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

CO_2 Component Description

Pressure vs. Temperature for Carbon Dioxide Cylinders

Kidde Fire Systems
A UTC Fire & Security Company

Effective: February 2007
K-81-1031



Percent of Water Capacity =

$$\frac{\text{Rated CO2 Capacity of Cyl. in Lb.}}{\text{Water Capacity of Cyl. in Lb. at 60°F}} \text{ X } 100$$

Critical Temperature of CO_2 = 88°F

RATED CO_2 CAPACITY OF CYL. IN KG	PERCENT WATER CAPACITY
25	67
35	64
50	60
75,100	68

K-81-1031 Rev AB

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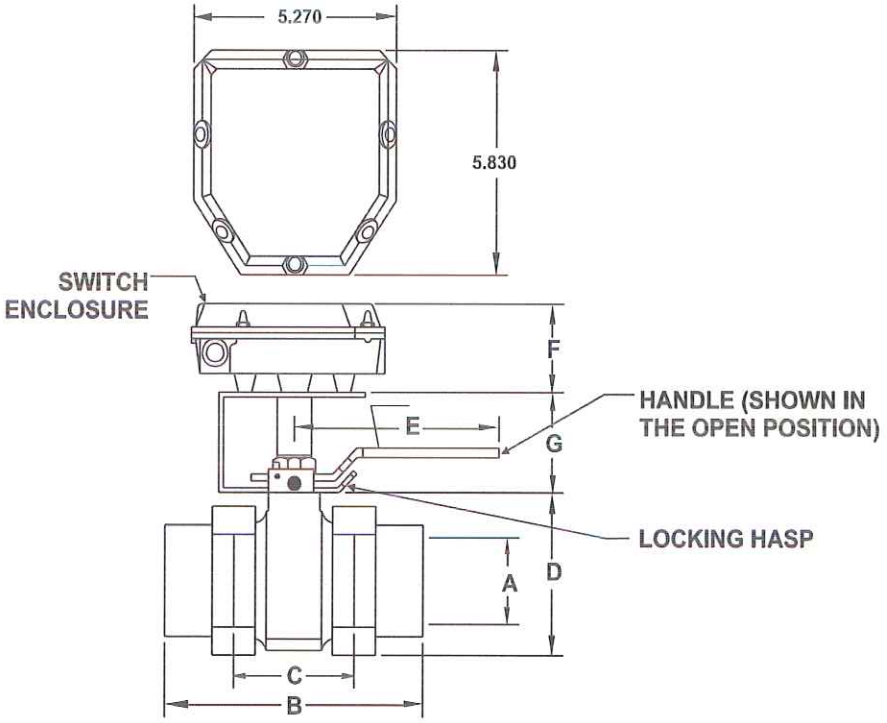
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

CO_2 Component Description

CO_2 Lock Out Valve With Limit Switch

Kidde Fire Systems
A UTC Fire & Security Company

Effective: February 2007
K-81-1250



Assembly Part Number	Size	General Dimensions						
		A	B	C	D	E	F	G
81-934711-000	1/2"	0.660	3.939	1.938	2.250	5.500	2.800	2.500
81-934712-000	3/4"	0.810	4.500	2.188	2.600	5.500	2.800	2.500
81-934713-000	1"	1.000	4.938	2.375	2.990	6.500	2.800	2.500
81-934714-000	1½"	1.440	5.875	2.750	3.870	8.500	2.800	2.750
81-934715-000	2"	1.720	6.875	3.375	4.500	8.500	2.800	2.750
Note: Dimensions are in inches.								

MATERIALS

- Body: Carbon Steel with:
  - Ball and Stem: 316 Stainless
  - Seats and Seals: Teflon

1. Ball Valve:
- Pressure Rating 2,500 PSIG
- Double union end with NPT female pipe connections locking handle and bracket for both open (parallel with valve body) and closed (perpendicular to valve body)

2. Limit Switch:
- Two (2) SPDT Switches
- NEMA 4, 4X Enclosure
- Rating:
  - 15 amps, 1/2 hp, 125 to 250 Vac
  - 0.50 Amps, 125 Vdc
  - 0.25 Amps, 250 Vdc

3. Lock not included.

Printed in USA

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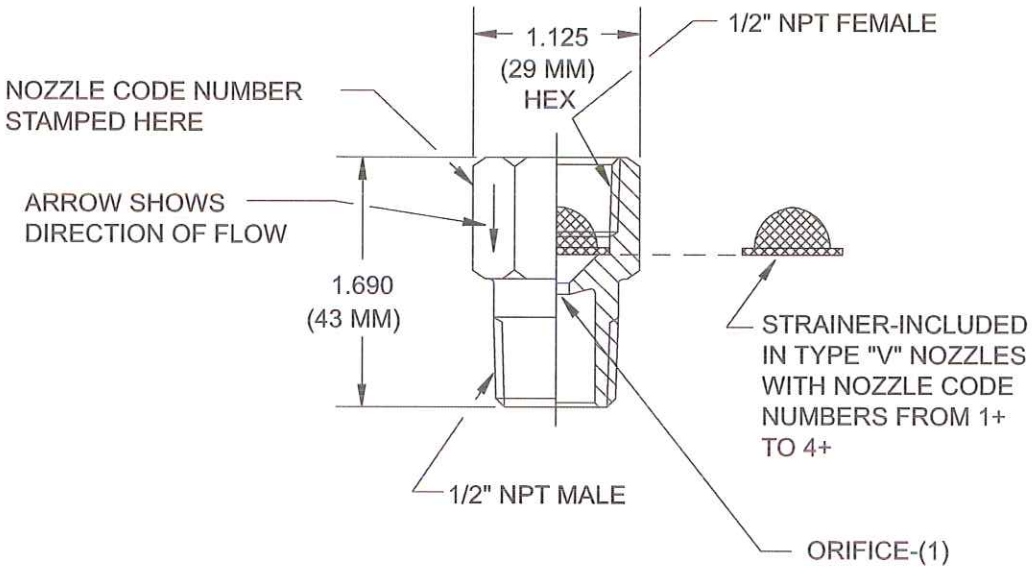
www.kiddefiresystems.com

CO_2 Component Description

Vent Nozzle, Type "V"

Kidde Fire Systems
A UTC Fire & Security Company

Effective: May 2010
K-81-1110



ORDERING INFORMATION

Description	Part Number
Brass Vent Nozzles, Type "V"	930067
	919309
	803327
	929242
	803328
	915876
	803329
	214721 thru 214729
Stainless Steel Vent Nozzle, Type "V"	8109856 thru 81098672

Note: Refer to Data Sheet K-81-1170 for cross-referencing of Part Numbers and Orifice Codes.

MATERIALS:
NOZZLE: BRASS or STAINLESS STEEL 316
STRAINER: MONEL

Printed in USA

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A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

CO_2 Component Description

Carbon Dioxide Nozzle Data

Kidde Fire Systems
A UTC Fire & Security Company

Effective: May 2010
K-81-1170

Design Use	Total Flood or Local Application				Total Flood		Local Application
Nozzle Type	S	S	S	M	V	V	L
Ref Note:	1	2	3	4	5	6	7
Orifice Code	Nozzle Part Numbers						
1 1+	X X	X X	X X	X X	930066 930067	81098656 81098657	X X
2 2+	803381 803365	803897 803881	802960 802974	X X	919309 803327	81098658 81098659	X X
3 3+	803366 803367	803882 803883	802975 802976	X X	929242 803328	81098660 81098661	X 842334
4 4+	803368 803369	803884 803885	802977 802978	842319 842320	915876 803329	81098662 81098663	842335 842336
5 5+	803370 803371	803886 803887	802979 802980	842321 842322	214721 214722	81098664 81098665	842337 842338
6 6+	803372 803373	803890 803891	802981 802982	842323 842324	214723 214724	81098666 81098667	842339 842340
7 7+	803374 803375	803892 803893	802983 802984	842325 X	214725 214726	81098668 81098669	842341 842342
8 8+	803376 803377	803897 803881	802985 802986	842326 X	214727 214728	81098670 81098671	842343 842344
9 9+	803378 803379	803894 803895	802987 802988	842327 X	214729 X	81098672 X	842345 842346
10 11	803380 X	803896 X	802989 X	842328 842329	X X	X X	842347 X
12 13	X X	X X	X X	842330 842331	X X	X X	X X
14 15	X X	X X	X X	842332 842333	X X	X X	X X

Notes:

1. Multijet Nozzle Type "S" -K-81-1130
2. Multijet Nozzle Type "S", Zinc Plated -K-81-1130
3. Multijet Nozzle Type "S", Flanged -K-81-1140
4. Multijet Nozzle Type "M" -K-81-1150
5. Multijet Nozzle Type "V", Brass -K-81-1110
6. Multijet Nozzle Type "V", Stainless Steel -K-81-1110
7. Multijet Nozzle Type "L" -K-81-1160

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