NOVEC 1230 FIRE SUPPRESSION DETECTION & ALARM DETAIL

SCALE: 1/8" = 1'

NOVEC 1230 CYLINDER & PIPING DIAGRAM

SCALE: N.T.S

NOVEC 1230 SEQUENCE OF OPERATION

I. ACTIVATION OF THE FIRST SMOKE DETECTOR WILL CAUSE THE FOLLOWING TO OCCUR:

1. ALARMED DETECTOR'S RED STATUS LED WILL LIGHT
2. ALARMED DETECTOR'S ZONE WILL BE INDICATED ON THE SUPPRESSION CONTROL PANEL
3. AN ALARM SIGNAL WILL BE TRANSMITTED TO THE BUILDING FIRE ALARM SYSTEM
4. HORN/STROBE INSIDE THE PROTECTED SPACE WILL OPERATE (SLOW PULSE)
5. NOVEC 1230 SYSTEM WILL BE PLACED IN A PRE ALARM CONDITION

II. ACTIVATION OF THE SECOND SMOKE DETECTOR WILL CAUSE THE FOLLOWING TO OCCUR:

1. ALARMED DETECTOR'S RED STATUS LED WILL LIGHT
2. ALARMED DETECTOR'S ZONE WILL BE INDICATED ON THE SUPPRESSION CONTROL PANEL
3. HORN/STROBE INSIDE THE PROTECTED SPACE WILL OPERATE (FAST PULSE)
4. 30 SECOND PRE-DISCHARGE TIME DELAY WILL BEGIN

* UPON EXPIRATION OF THE TIME DELAY THE FOLLOWING WILL OCCUR:

A. NOVEC 1230 SYSTEM WILL DISCHARGE INTO THE ROOM
B. DISCHARGE STROBE LOCATED OUTSIDE OF THE PROTECTED SPACE WILL OPERATE
C. SELECTED EQUIPMENT WILL BE SHUTDOWN

III. ACTIVATION OF THE MANUAL RELEASE STATION WILL IMMEDIATELY DISCHARGE THE NOVEC 1230 SYSTEM BYPASSING THE 30 SECOND DELAY. AN ALARM SIGNAL WILL BE TRANSMITTED TO THE BUILDING FIRE ALARM SYSTEM.

NOTE

1. AN ABORT BUTTON CAN BE PUSHED AND HELD TO PREVENT THE NOVEC 1230 SYSTEM FROM DISCHARGING WHEN IT IS IN THE COUNTDOWN SEQUENCE. WHEN HELD THE TIMER WILL COUNTDOWN TO 10 SECONDS UNTIL RELEASE AND HOLD. WHILE THE ABORT IS HELD THE PANEL CAN BE RESET TO START THE SEQUENCE OVER. IF THE ABORT BUTTON IS RELEASED BEFORE THE PANEL IS RESET THE TIME DELAY THEN CONTINUES AT 10 SECONDS. ACTIVATION OF THE MANUAL RELEASE WILL OVERRIDE AN ABORT. LED'S ON THE CONTROL PANEL WILL INDICATE THE STATUS OF ANY ABORT

2. THE KEY DISABLE SWITCH CAN BE OPERATED TO DISABLE THE NOVEC 1230 DISCHARGE CIRCUIT FOR MAINTENANCE. OPERATION OF THE SWITCH WILL CAUSE A TROUBLE CONDITION TO OCCUR ON THE CONTROL PANEL AND A TROUBLE SIGNAL WILL BE SENT TO THE BUILDING FIRE ALARM SYSTEM.

SYMBOL LEGEND

ITEM NO.	SYMBOL	QTY. TOTAL	DESCRIPTION
1		2	STANDARD BASE (701U) – OCTAGON BOX
2		2	SMOKE DETECTOR (711U) – MOUNTS ON 701U
3	FSCP	1	KIDDE RELEASING PANEL (AEGIS)
4		1	AGENT RELEASE HORN/STROBE (HSR-A) – 4" SQUARE OR SINGLE GANG
5		1	AGENT RELEASE STROBE (STR-A) – 4" SQUARE OR SINGLE GANG
6		1	MAIN/RESERVE SWITCH (84-802398-000)
7	DS	1	DISCONNECT SWITCH (76-600000-200) – 4" SQUARE OR SURFACE BACK BOX
8	CA	1	MANUAL RELEASE STATION (84-330001-001) – SINGLE GANG
9	A	1	ABORT STATION (06236881-001) – DOUBLE GANG OR SURFACE BACK BOX
10		2	70 LB CYLINDER FILLED WITH 55 LBS NOVEC 1230 (45-100070-001)
11		2	CYLINDER STRAP (WK-283934-000)
12		2	ELECTRIC CONTROL HEAD (85-486500-010)
13		2	IN LINE RELEASING DEVICE (06-220023-001)
14		5	EOL RESISTOR – 5.1K OHM
15		1	SIGN – "NOVEC 1230 EXTINGUISHING SYSTEM... DO NOT ENTER..."
16		1	SIGN – "OPERATION OF MANUAL STATION..."
17		1	SIGN – "THIS AREA IS PROTECTED BY NOVEC 1230 EXTINGUISHING SYSTEM..."
18		1	SIGN – "NOVEC 1230 EXTINGUISHING SYSTEM... IMMEDIATELY EXIT..."
19		1	SIGN – "NOVEC 1230 EXTINGUISHING ABORT STATION – PUSH AND HOLD"

PROGRAMMING NOTES

1. REFER TO AEGIS OPERATION & MAINTENANCE MANUAL FOR DETAILED INSTRUCTIONS ON PROGRAMMING AND CONFIGURATION
2. RELEASING CIRCUIT #1 SHALL OPERATE UPON THE CROSS ZONED OPERATION OF DETECTORS TIED TO ZONE 1 AND 2. THIS IS THE DEFAULT SETTING OUT OF THE BOX. VERIFY DISCHARGE COUNTDOWN IS SET TO 30 SECONDS IN THE CONFIGURATION.
3. MANUAL RELEASE SHALL HAVE NO TIME DELAY
4. RELAY #1, #2 & #3 ARE PROGRAMMABLE. RELAY #1 SHALL BE CONFIGURED FOR ALARM AND RELAY #2 FOR SUPERVISORY. RELAY #4 (TB9) IS NON USER PROGRAMMABLE AND USED TO TRANSMIT A TROUBLE CONDITION. TIE THESE THREE OUTPUTS TO BUILDING FIRE ALARM PANEL.

Electrical Supervision
1. A short circuit from any field-wiring terminal (except AC-Power-Input Terminals and Form-C Relay Terminals) to earth ground will create a "Ground-Fault" trouble condition.
2. An open circuit in the wiring for the inputs (Supervisory circuits, Abort, Manual Release, Detector circuits), the outputs (NACs and release circuits), and the battery-charging circuit will create an "Open" trouble condition.
3. A short circuit between conductors in the wiring for the outputs (NACs and release circuits), and the battery-charging circuit will create a "Short" trouble condition.
Exception:Release circuits wired as non-power-limited.
4. Impedance values for open-circuit and short-circuit conditions are:
open circuit:infinite ohms
short circuit:zero (0) ohms

Legend:
Supervised (S)
Power Limited (P)

General Notes:
1. Wire sizes for all terminal blocks is 12 - 18 AWG.
2. Earth-ground-offset voltage is 6.6 VDC (nom.) relative to system common (e.g., TB16 -).
3. Route non-power-limited wiring at least 1/4 inch away from all power-limited wiring.
4. Do not attach power-limited and non-power-limited wiring to the same terminal block.
5. End-of-Line Resistor, 5.1 k +/- 5%, 0.5 W is P/N 06-129025-002

Detector Circuits (typical for all circuits)
Class B, Style B wiring shown in solid lines. Additional wiring for Class A, Style D shown in dashed lines (EOL device at terminal block).
Use the following detector devices only
.
Device TypeModel Nos.
Ionization Smoke Detector
CPD-7051, CPD-7051D (duct)
Photoelectric Smoke DetectorPSD-7155, PSD-7155D (duct),
PSD-7155P (4000 fpm air velocity),
PSD-7156 (with thermal sensor)
Advanced Ionization Smoke DetectorCPD-7054, CPD-7054D (duct)
Advanced Photoelectric Smoke DetectorPSD-7157, PSD-7157D (duct)
2 wire Duct DetectorDH-60 (2W)
Electronic Heat DetectorTHD-7052, THD-7053
Detect-a-Fire Heat Detectors27x21-xx, 28021-5

Release Circuits (typical for all circuits)
Voltage:24 VDC (nom.)
Current:2.4 A (max.)
Use the following releasing devices only:
Device Type Model Nos.
Initiator
83-131025-001
Control Heads890181, 895630, 899175, 897494, 48650001,
81-100000-001, 06-118329-001 (FM only)
06-118384-001 (UL only), 87-120099-001,
90-487100-001, 38-509837-001
38-509834-001
Pre-Action / Deluge FM Groups A, B, D, E, G, I, J and K Valves
For power-limited, use in-line releasing device P/N 06-220023-001 (refer to single solenoid circuit for wiring).
Control head P/N 9X-487100-001, when used with the control unit, must include solenoid P/N 83-100034-001 and microswitch P/N 87-120039-001

Notification-Appliance Circuits (typical for all circuits)
Regulated 24 DC
Wiring:Class A, Style Z or Class B, Style Y
NAC Current:1.5 A (max.)
Voltage Drop:2.0 V (max.)
Class B, Style Y wiring shown in solid lines. Additional wiring for Class A, Style Z shown in dashed lines (EOL device at terminal block).
Suitable for Synchronized and Non-Synchronized Notification Appliances.
Use polarized notification appliances only.
Maximum single notification-appliance current:1.5 A
See Installation, Operation, & Maintenance Manual, P/N 06-236716-001, for wiring impedance limitations.

Kidde AEGIS Control Unit Installation Wiring Diagram

Part No. 06-236730-001 Rev AA

MAIN/RESERVE SWITCH WIRING DETAIL

SCALE: N.T.S

PIPING BRACING INSTALLATION DETAIL

SCALE: N.T.S.

DEVICE ELEVATION DETAIL

NOT TO SCALE

NOVEC 1230 PIPING NOTES

1. ALL DIMENSIONS ARE TO BE FIELD CHECKED. IF PIPING SHOWN INTERFERES WITH ANY OBJECT, DESIGN APPROVAL FOR CHANGES SHALL BE SECURED PRIOR TO INSTALLATION

2. MATERIALS:
A. PIPING - ACCEPTABLE PER NFPA 2001 (2012 EDITION) PARA. 4-2.1.1
- SCHEDULE 40 BLACK OR GALVANIZED STEEL PIPE CONFORMING TO ASTM-53
- SEAMLESS OR ERW GRADE A OR B ASTM A-106 GRADE A, B, OR C
- DUAL STENCILED A120/A53 CONFORMING TO ASTM A-53 FURNACED WELD CLASS F
- SCHEDULE 40 MAY BE USED:
ON THREADED CONNECTIONS 1/4" - 3" NPS
ON GROOVED CONNECTIONS 1/4" - 3" NPS
ON WELDED OR ROLLED GROOVE CONNECTIONS (1/4" - 6" NPS)
NON ACCEPTABLE: SEE NFPA 2001 (2012 EDITION) PARA 4-2.1.2
- ASTM A-120 BUTT WELDED OR STEEL PIPE AND ORDINARY CAST IRON PIPE SHALL NOT BE USED

B. FITTINGS - SEE NFPA 2001 (2012 EDITION) PARA 4-2.3.1
- MALLEABLE IRON 300 LB. CLASS FITTINGS SHALL BE USED UP TO AND INCLUDING 3" IPS & 1,000 LB. DUCTILE IRON OR FORGED STEEL FITTINGS SHALL BE USED ON 4" OR LARGER SIZES.
VICTAULIC GROOVED FITTINGS ARE ACCEPTABLE
- ALL REDUCING FITTINGS MUST BE CONCENTRIC REDUCERS
- NON ACCEPTABLE: 150 LB. CLASS AND ORDINARY CAST IRON FITTINGS SHALL NOT BE USED

C. HANGARS
- HANGARS SHALL BE UL LISTED, AND RIGIDLY SUPPORTED, CLEVIS HANGARS NOT ALLOWED
- HANGARS SHOULD BE INSTALLED BETWEEN FITTINGS WHEN FITTINGS MORE THAN 2' APART
- HANGAR SHOULD BE INSTALLED A MAXIMUM OF 1' FROM NOZZLE(S)
- THE MAX SPACING BETWEEN HANGARS SHALL NOT EXCEED THOSE LISTED IN THE TABLE BELOW:

PIPE SIZE IN NPT	MAX SPACING BETWEEN HANGARS
1/4"	4 FT
1/2"	6 FT
3/4"	8 FT
1"	12 FT
1 1/4"	12 FT
1 1/2" OR LARGER	15 FT

3. PIPE IS TO BE REAMED, BLOWN CLEAR, AND SWABBED WITH APPROPRIATE SOLVENT TO REMOVE MILL VARNISH AND CUTTING OIL BEFORE ASSEMBLY

4. TEFLON PIPE TAPE IS THE ONLY ACCEPTABLE PIPE SEALANT AND MUST BE APPLIED TO MALE THREADS ONLY. PIPE JOINT COMPOUND SHALL NOT BE USED

5. PIPING SHALL BE PRESSURE TESTED IN ACCORDANCE WITH NFPA 2001 (2012 EDITION) PARA 7-7.2.2.12
"PIPING SHALL BE PNEUMATICALLY TESTED IN A CLOSED CIRCUIT FOR A PERIOD OF 10 MINUTES. THE PRESSURE DROP SHALL NOT EXCEED 20% OF THE TEST PRESSURE"

IMPORTANT NOTE
EASTERN FIRE PROTECTION IS NOT RESPONSIBLE FOR THE LOSS OF FM 200 FIRE EXTINGUISHING AGENT DUE TO LEAKS IN THE PROTECTED AREA. PRIOR TO ACCEPTANCE, ALL HOLES AND CRACKS SHOULD BE SEALED. ANY FLOOR DRAINS SHOULD BE CHECKED FOR TIGHTNESS. EMPTY CONDUITS MUST BE SEALED AND ALL DUCTS & DAMPERS SHOULD BE FIRE/SMOKE RATED.

N

SCALE: 1' 2' 4' 8' 16'

GENERAL NOTES	DATE	REVISIONS

REQUIRED APPROVALS
OWNER
STATE FIRE MARSHAL
LOCAL FIRE DEPARTMENT

DRAWN BY CRM
CHECKED BY BWB
CONTRACTOR LICENSE #

APOTHECARY BY DESIGN
SERVER ROOM
141 PREBLE ST
PORTLAND, ME 04101

CONTRACT WITH: OWNER

EASTERN FIRE SERVICES, INC.
AUBURN/LEWISTON INDUSTRIAL AIRPARK, AUBURN, MAINE 04210

FIRE SUPPRESSION
PLANS & DETAILS
DWG. NO. CA-1
JOB NUMBER
SCALE AS SHOWN
DATE 11/18/16

Reviewed for Code Compliance
Inspections Division
Date: 05/27/17