

# 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/SSTROBE 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/SSTROBE 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. LEDS 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	ESC/P	1		KIDDE RELEASING PANEL (AEGIS)
4	⊠	1		AGENT RELEASE HORN/SSTROBE (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"

### 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                       |

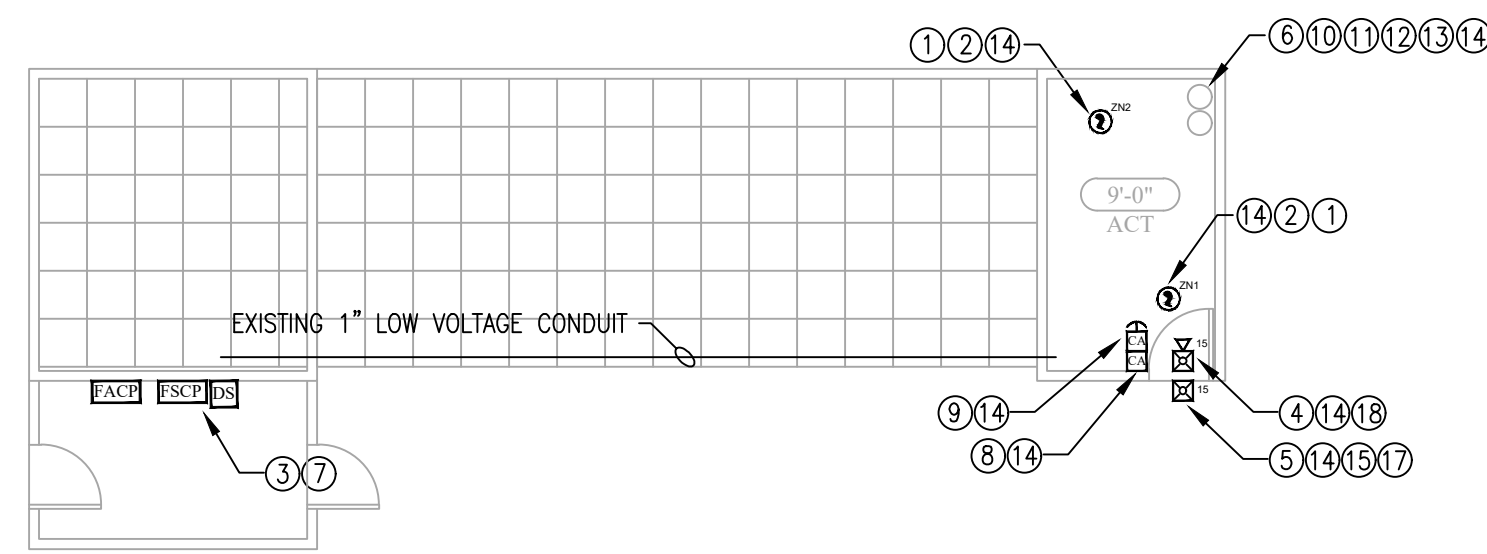
3. PIPE IS TO BE REAMED, BLOWN CLEAR, AND SWABBED WITH APPROPRIATE SOLVENT TO REMOVE MILL VARNISH AND CUTTING OIL BEFORE ASSEMBLY

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

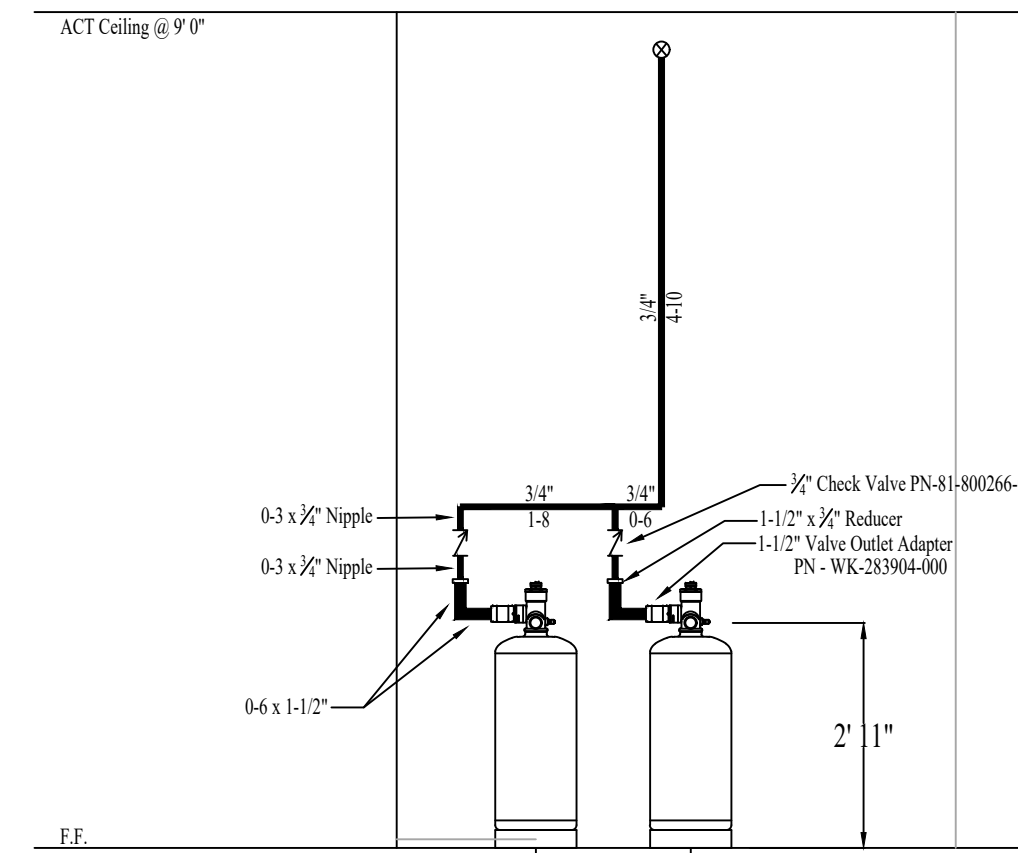
5. PIPING SHALL BE PRESSURE TESTED IN ACCORDANCE WITH NFPA 2001 (2012 EDITION) PARA 7-7.2.2.12 "PIPING SHALL BE PNEUMATICALLY TESTED IN A CLOSED CIRCUIT FOR A PERIOD OF 10 MINUTES. THE PRESSURE DROP SHALL NOT EXCEED 20% OF THE TEST PRESSURE"

### 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.



NOVEC 1230 FIRE SUPPRESSION DETECTION & ALARM DETAIL  
SCALE: 1/8" = 1'



NOVEC 1230 CYLINDER & PIPING DIAGRAM  
SCALE: N.T.S

## 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.
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., TB16-1).
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 PN 06-129025-002

Relay-Contact Rating  
3.0 A @ 30 VDC (resistive)  
3.0 A @ 120 VAC (resistive)

### Battery Circuit

Sealed, lead-acid batteries only. Maximum 88 AH.  
Replace every 3 years or as recommended by battery manufacturer.  
Charging-Circuit Voltage 27.0 V (nom.)  
Charging-Circuit Current 6.0 A (max.)

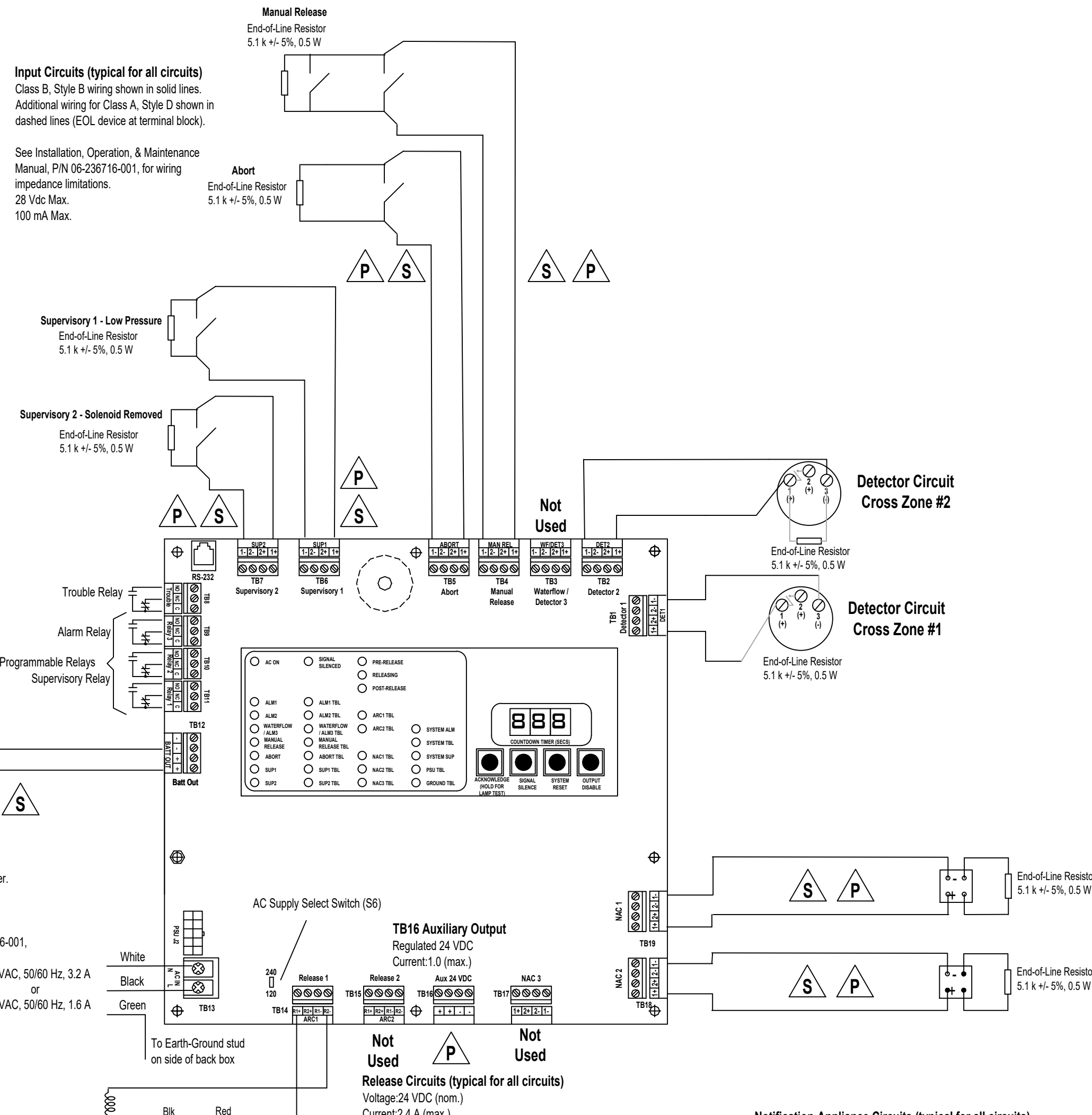
See Installation, Operation, & Maintenance Manual, PIN 06-236716-001, for suitable battery types and standby operating times.

### 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 Type/Model Nos.

- Ionization Smoke Detector CPD-7051, CPD-7051D (duct)
- Photoelectric Smoke Detector PSD-7155, PSD-7155D (duct), PSD-7155P (4000 fpm air velocity), PSD-7156 (with thermal sensor)
- Advanced Ionization Smoke Detector CPD-7054, CPD-7054D (duct)
- Advanced Photoelectric Smoke Detector PSD-7157, PSD-7157D (duct)
- 2 wire Duct Detector DHA-60 (2WI)
- Electronic Heat Detector THD-7052, THD-7053
- Detect-a-Fire Heat Detectors 27x21-xx, 28021-5

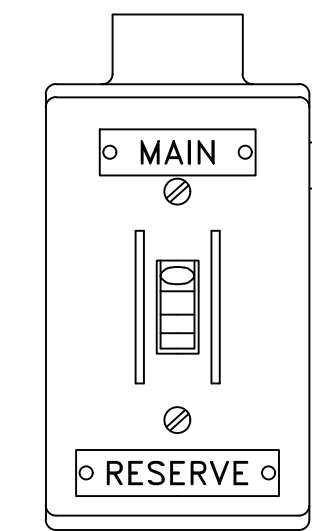


### Notification-Appliance Circuits (typical for all circuits)

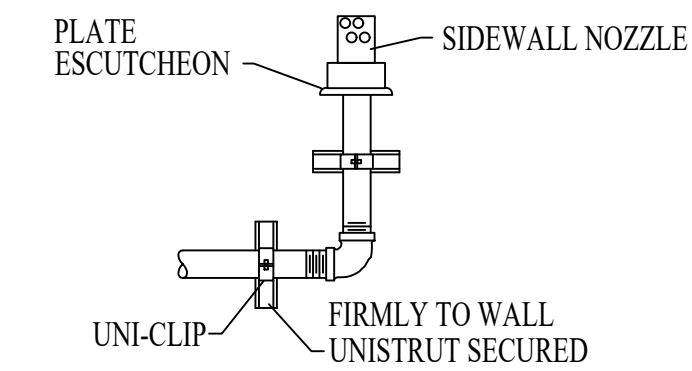
Regulated 24 VDC  
Wiring Class A, Style Z or Class B, Style Y  
NAC Current: 1.5 A (max.)  
Voltage Drop: 2.0 V (max.)  
Class B, Style Y wiring shown in solid lines. Additional wiring for Class A, Style Z shown in dashed lines (EOL device at terminal block).  
Suitable for Synchronized and Non-Synchronized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

## Kilde AEGIS Control Unit Installation Wiring Diagram

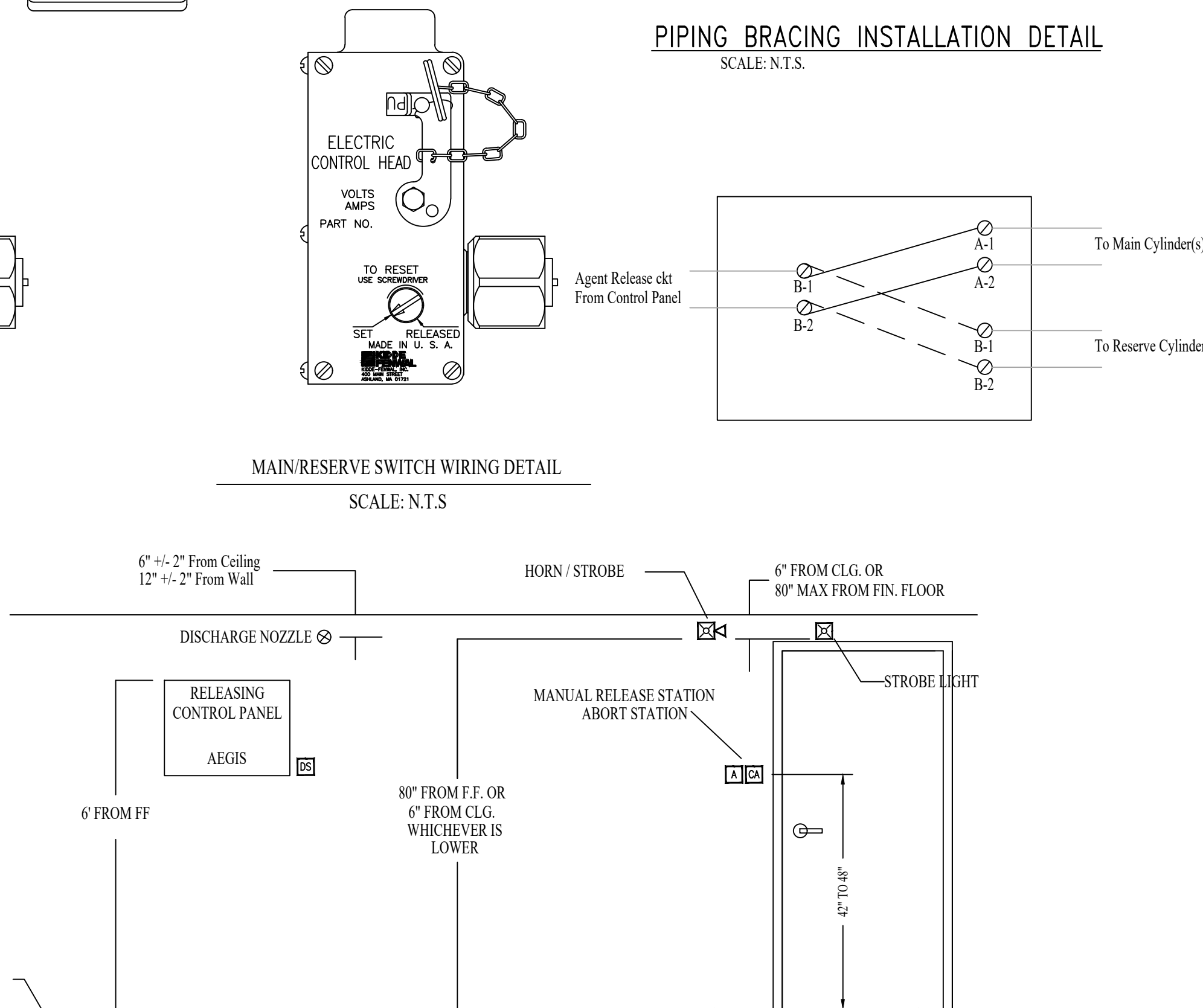
Part No. 06-236730-001 Rev AA



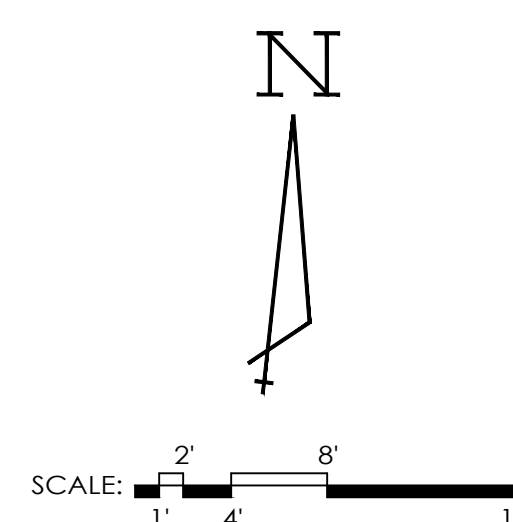
MAIN/RESERVE SWITCH WIRING DETAIL  
SCALE: N.T.S



PIPING BRACING INSTALLATION DETAIL  
SCALE: N.T.S.



DEVICE ELEVATION DETAIL  
NOT TO SCALE



GENERAL NOTES	DATE	REVISIONS	REQUIRED APPROVALS	APOTHECARY BY DESIGN SERVER ROOM	FIRE SUPPRESSION
			OWNER	141 PREBLE ST PORTLAND, ME 04101	PLANS & DETAILS
			STATE FIRE MARSHAL		DWG. NO.
			LOCAL FIRE DEPARTMENT		CA-1
			DRAWN BY CRM	CONTRACT WITH: OWNER	JOB NUMBER
			CHECKED BY BWB	<b>EASTERN FIRE SERVICES, INC.</b> AUBURN/LEWISTON INDUSTRIAL AIRPARK, AUBURN, MAINE 04210	SCALE AS SHOWN
			CONTRACTOR LICENSE #		DATE 11/18/16