

## Features

### Releasing control using the Autocall 4010ES Fire Alarm Control Unit to provide:

- Coverage for multiple areas of Automatic Extinguishing Release and/or Deluge and Preaction Sprinkler System Release including audible escalation of events
- Control of compatible Listed/Approved 24 VDC automatic control actuators, one per circuit; or two 12 VDC actuators in series per circuit
- Releasing appliance circuits (RACs) by connecting Notification appliance circuits (NACs) to Suppression Release Peripherals for actuator supervision and control
- Four, 3 Amp Notification Appliance Circuits (NACs) in the control unit for use with Suppression Release Peripherals (SRP) and required notification appliances
- Additional actuator circuit control and additional NACs are available using 4009 IDNet Addressable NAC Extenders and Suppression Release Peripherals

### Audible Escalation of Events:

- Temporal or 20 bpm March Time pattern for first cross-zone alarm
- 120 bpm March Time pattern indicates releasing timer active
- On steady indicates releasing timer expired and actuator is activated
- **Note:** Requires NACs dedicated to conventional horn control (not SmartSync operation) with strobes controlled on separate NACs

### 4009 IDNet NAC Extenders provide:

- Up to eight NACs for notification requirements and for NAC input to Suppression Release Peripherals
- Control is via IDNet addressable communications

### A4090-9005/A4090-9006 Suppression Release Peripheral (SRP) with Dual Input Control Logic:

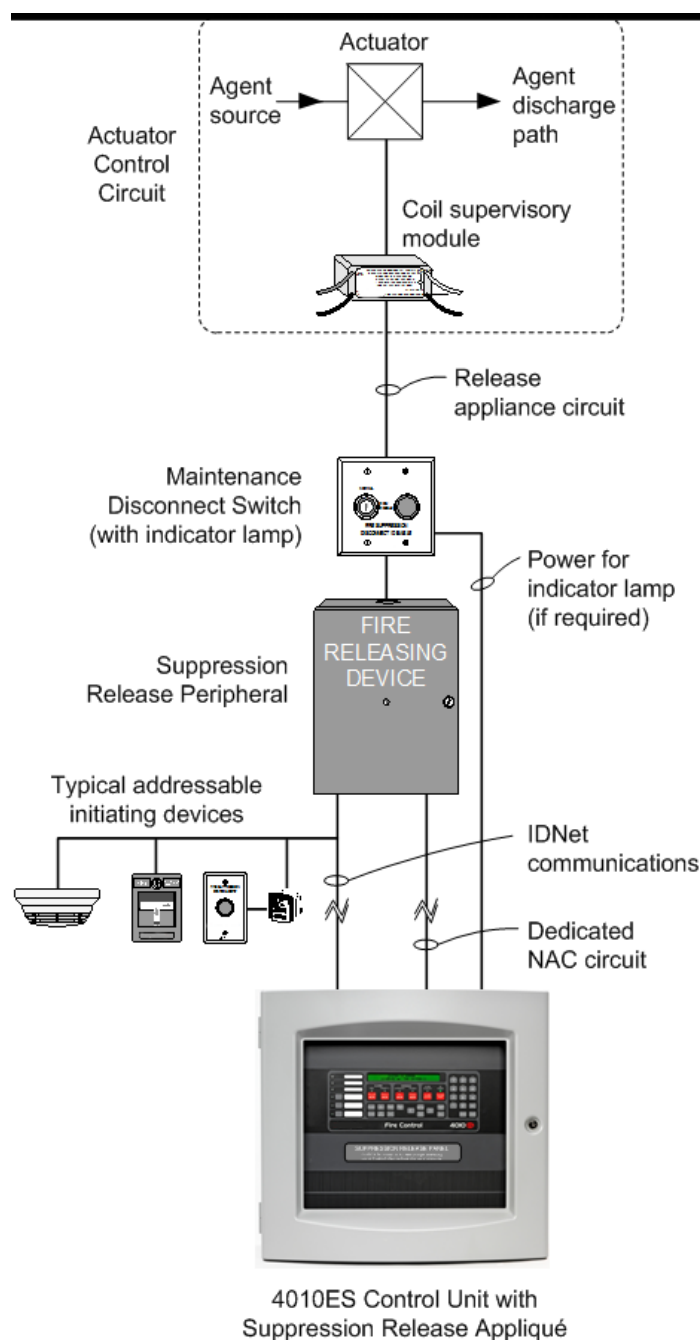
- Dual input control logic requires that both IDNet communications commands and an activated NAC are present to initiate the desired release
- Releasing Appliance Circuit (RAC) output provides wiring supervision to the actuator including monitoring of coil continuity and short circuit supervision to the coil supervision module

### Suppression Release Peripheral control features:

- An on-board DC-DC regulator compensates for voltage drops to the peripheral and ensures proper control circuit voltage over a wide operating range
- Provides a single RAC for control of actuators for up to 2 A using a 3 A NAC input (1 A using a 2 A NAC input)

### Related system components:

- 4010ES Series control unit with Releasing Appliqué
- Dedicated NAC output from 4010ES (or compatible NAC Extender)
- Coil supervision module, one per RAC
- Maintenance Switch, one per RAC
- Abort Switch connected via an addressable interface module



## Introduction

When combined with Suppression Release Peripherals, the 4010ES series Fire Alarm Control Unit provides actuator supervision and control for use in automatic extinguishing, and deluge or preaction releasing systems. Hazard area initiating and notification devices are controlled using either conventional or addressable circuits per standard 4010ES capabilities. The necessary releasing system logic is implemented within the 4010ES control unit as required for the local application.

## 4010ES Automatic Extinguishing Deluge and Preaction Sprinkler System Releasing Control

### Automatic Extinguishing Release Systems

These systems automatically activate electrically controlled actuators for the release of a fire extinguishing agent (such as dry chemical, water spray, foam, CO<sub>2</sub>, or clean agent) in response to fire detection device inputs as determined by programming of the host fire alarm control unit.

**Automatic Extinguishing Release Systems** are required to have a minimum of 24 hours of standby power. Initiating devices must be Listed/Approved for the application, and may be wired either Class A or B. Control actuators must be electrically compatible with the control unit circuits and power supplies, and are wired Class B to provide coil supervision.

### 4010ES Agency listings

- UL 864 - Control Units, System (UQJZ); Control Unit Accessories, System, Fire Alarm (UOXX); Control Units, Releasing Device Service (SYZV); Smoke Control System Equipment (UUKL)
- UL 1076 - Proprietary Alarm Units (APOU)
- UL 1730 - Smoke Detector Monitors and Accessories (UULH)
- UL 2017 - Emergency Alarm System Control Units, CO detection (FSZI); Process Equipment Management (QVAX)
- ULC-S527 - Control Units, System, Fire Alarm (UQJZC); Control Unit Accessories, System, Fire Alarm (UOXXC); Control Units, Releasing Device Service (SYZVC); Smoke Control System Equipment (UUKLC)
- ULC-S559 - Central Station Fire Alarm System Units (DAYRC)
- CSA 6.19 - Gas Alarms and Accessories (CZHFC)
- ULC/ORD-C1076 - Proprietary Burglar Alarm System Units (APOUC)
- ULC/ORD-C100 - Smoke Control System Equipment, UUKLC

### Deluge or Preaction Sprinkler Systems

These systems automatically activate water control actuators in response to fire detection device inputs.

**Deluge Sprinkler Systems** employ open sprinkler heads and provide water flow when the fire detection system activates a common automatic water control actuator. They are used to deliver water simultaneously through all of the system sprinkler heads. This type of system is applicable where the immediate application of large quantities of water over large areas is the proper fire response.

**Preaction Sprinkler Systems** are similar to deluge systems except that normally closed sprinkler heads are used and supervisory air pressure is maintained in the pipe. Operation requires both an activated sprinkler head and an activated fire alarm initiating device with specific programming determined at the host fire alarm control unit.

### Releasing System Requirements

1. **Releasing actuators** are controlled from a Suppression Release Peripheral (A4090-9005 or A4090-9006). Connections are 2-wire, Class B releasing circuits **with only one 24 VDC actuator per circuit**. Where applicable, two, 12 VDC actuators in series, or one 12 VDC actuator with manufacturer supplied resistor may be used.
2. **Coil Supervision Module A2081-9046** must be wired electrically before the actuator and located in the actuator wiring junction box. (Refer to Figure 2.) The connected RAC provides continuity supervision of the actuator coil and wiring and provides short circuit supervision to the coil supervision module.
3. **Cross-zoning or other alarm initiation logic** per system requirements, is to be implemented by programming at the fire alarm control unit.
4. **UL Listed Automatic Extinguishing Releasing operation** requires that: battery standby must be a minimum of 24 hours with 5 minutes of alarm and that listed actuators are used, refer to the list in Figure .
5. **FM Approved Automatic Extinguishing Release** requires secondary standby to be a minimum of 24 hours with 5 minutes of alarm. Actuators must be electrically compatible.
6. **FM Approved Deluge and Preaction Sprinkler operation** requires that: initiating device circuits be Class A and wired to Listed/Approved devices; standby power capacity must be a minimum of 90 hours with 10 minutes of alarm; and that compatible Automatic Water Control Valves must be used. (Refer to Table 6.)
7. **Maintenance Switches**, one per RAC, are required per NFPA 72, the *National Fire Alarm and Signaling Code* to allow the system to be tested or serviced without actuating the fire suppression systems. *Their use may not be allowed in some jurisdictions, always confirm local requirements.* When used, Autocall Maintenance Switches are required to ensure that operation initiates a supervisory condition.
8. **Abort Switches** are available when abort operation is required. When used, connect to an addressable Supervised IAM model A4090-9001 or similar addressable adapter module. The Autocall abort switch and the IAM mount in a single gang box, 2-1/2" minimum depth.
9. **Addressable Manual Releasing Stations** are used to initiate activation of the releasing actuators with the appropriate time delay implemented by the fire alarm control unit.
10. **Notification Requirements.** Each hazard area typically requires general audible and visible fire alarm notification and additional dedicated NACs for area releasing status notification.
11. **The IDNet Suppression Release Peripheral (SRP)** required for release control requires two inputs; IDNet and a dedicated NAC input. For additional SRP reference refer to installation instructions 579-385AC .

## 4010ES Automatic Extinguishing Deluge and Preaction Sprinkler System Releasing Control

### Product Selection

**Table 1: 4010ES Releasing Control System Modules**

Model	Description		Reference
A2081-9046	Coil Supervision Module		<b>Required</b> , one per RAC, mounts in the releasing actuator wiring junction box; see specifications section for details
A2080-Series*	Maintenance Switches		One per RAC; flush or surface mount; indicator lamp models require separate 24 VDC wiring
A2080-9056*	Flush mount	Abort Switch	As required, connects via an IDNet addressable interface module; mounted on a single gang stainless steel plate; installation requires a single gang box, 2-1/2" (64 mm) minimum depth
A2080-9057*	Surface mount		
* Refer to data sheet <b>AC2080-0010</b> for Abort and Maintenance switch details.			

**Table 2: Releasing Appliqués, Required for 4010ES Suppression Releasing Applications**

Model	Description	
4010-9830	English	Suppression Releasing Appliqué; field applied
4010-9830CAF	French	

**Table 3: Suppression Release Peripheral and Accessories**

Model	Description	Reference
A4090-9005	Basic Suppression Release Peripheral on mounting plate	<b>Requires</b> mounting box A2975-9227, ordered separately
A4090-9006	Suppression Release Peripheral mounted in NEMA 1 red box; <b>required</b> for ULC listing	Includes LED indicator on front of door
A2975-9227	NEMA 1 red mounting box; <b>required</b> for A4090-9005	These items are included with model A4090-9006
4090-9812	Red LED IDNet communications indicator option kit; mounts on door of A2975-9227 box	

### Additional Product Data Sheet Reference

**Table 4: Additional Releasing Systems Reference**

Subject	Data Sheet
Releasing System Abort and Maintenance Switches	AC2080-0010
Addressable Manual Stations for Releasing Applications	AC4099-0006
Addressable Manual Stations for Standard Applications	AC4099-0005
4010ES Basic Control Units	AC4010-0006
Supervised IAM	AC4090-0001
4010ES Basic Control Units with ESS for Addressable Notification	AC4010-0012
Addressable Zone Adapter Modules	AC4090-0003
TrueAlarm Sensors and Bases	AC4098-0019
TrueAlert Electronic Horns	AC4901-0010
TrueAlert Non-Addressable Strobes (V/O)	AC4906-0001
Contact your local Autocall product supplier for additional information on compatible IDNet addressable devices and TrueAlert notification appliances.	

### Additional Releasing Systems Reference

For additional information, refer to Factory Mutual Research Corporation (FMRC) "FMRC Approval Guide," FM Approval standard "Automatic Releases for Preaction and Deluge Sprinkler Systems." Please note that proper operation of releasing control systems requires that the system design, installation, and maintenance be performed correctly and in accordance with all applicable local and national codes, and equipment manufacturer's instructions. No liability for total system operation is assumed or implied.

## 4010ES Conventional NAC Panel Releasing System One-Line Connection Reference

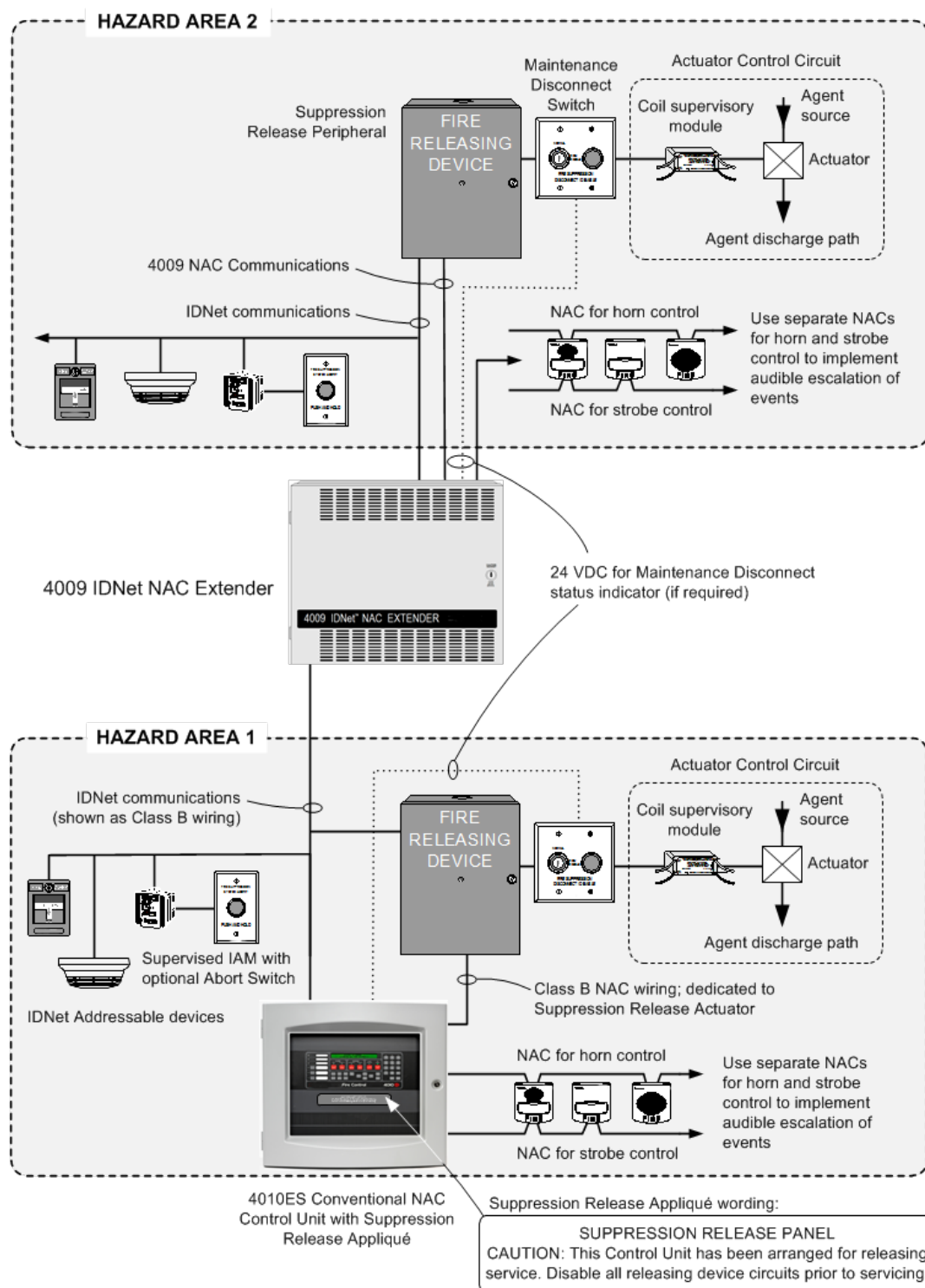


Figure 1: One-Line Connection Reference

The A4090-9005/A4090-9006 Suppression Release Peripheral is shown.

# 4010ES Fully Addressable Panel Releasing System One-Line Connection Reference

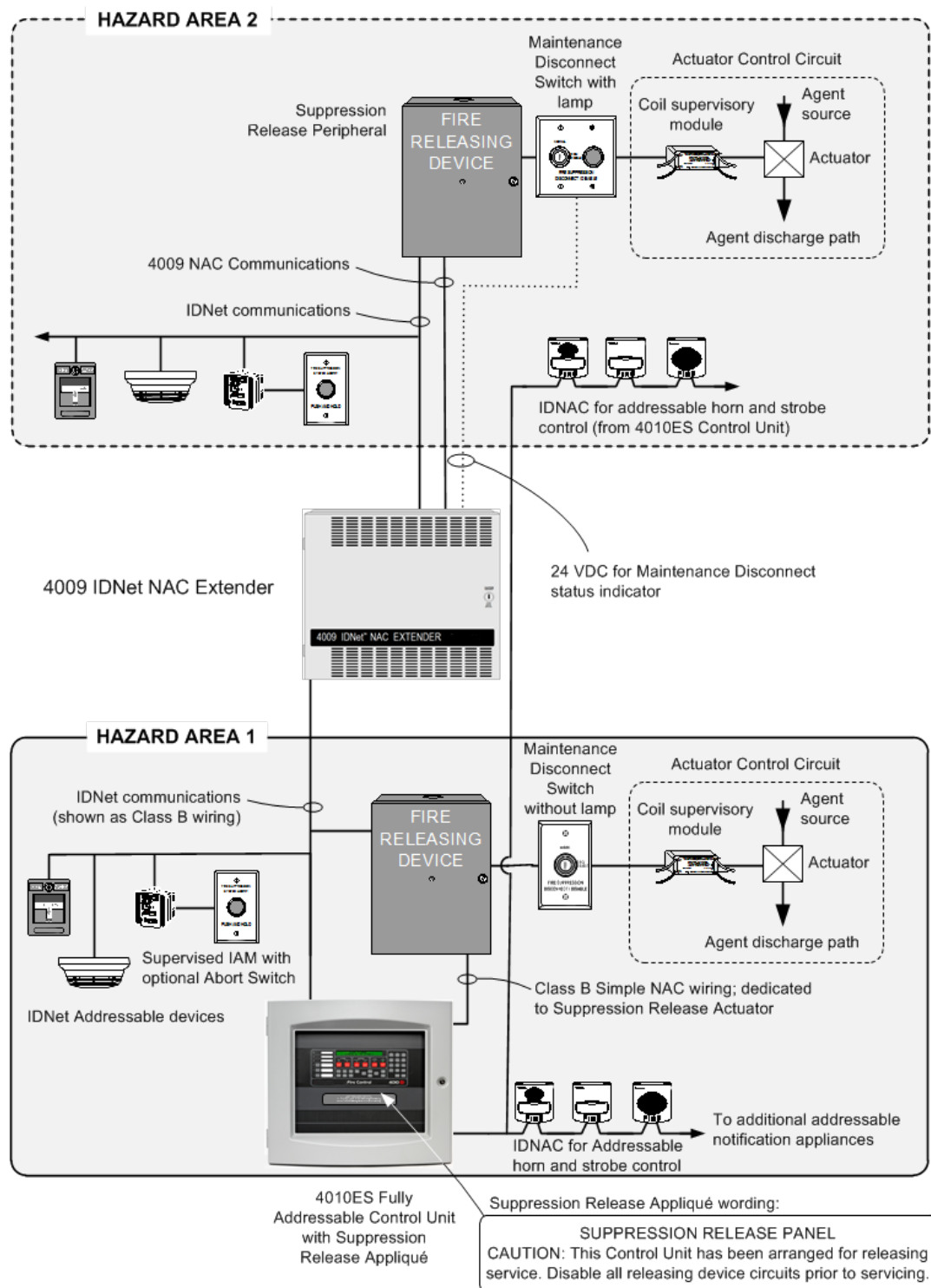


Figure 2: One-Line Connection Reference

The A4090-9005/A4090-9006 Suppression Release Peripheral is shown.

## 4010ES Automatic Extinguishing Deluge and Preaction Sprinkler System Releasing Control

### Specifications

**Table 5: Suppression Release Peripheral A4090-9005 and A4090-9006**

Communications		IDNet, one address			
RAC Output Rating	with 4010ES	2 A maximum	At nominal 24 VDC, regulated; refer to NAC Power Requirements for more detail		
	with 4009 IDNet NAC Extender	1 A maximum			
NAC Power Requirements	Voltage	16 to 32 VDC (nominal 24 VDC)			
	Supervisory Current	No additional current required, circuit appears as standard end-of-line (EOL) NAC loading			
<b>NOTE:</b> 4010ES NACs are rated at 3 A; 4009 IDNet NAC Extender NACs are rated at 2 A, Extender expansion NACs are rated 1.5 A	Alarm Current Reference  (RAC current = actuator current)	<b>RAC Current</b>	<b>NAC Current</b>	<b>RAC Current</b>	<b>NAC Current</b>
		0.5 A	0.845 A	1.25 A	2.14 A
		0.75 A	1.28 A	1.5 A	2.56 A
		0.87 A	1.5 A	1.75	3 A
		1 A	1.71 A	2 A	
Wire Connections		Screw terminals for input and output wiring, 18 to 12 AWG wire (0.82 mm <sup>2</sup> to 3.31 mm <sup>2</sup> )			
IDNet Wiring Distance Reference		Up to 2500 ft (762 m) from the IDNet source module			
		Up to 10,000 ft (3048 m) total Class B wiring distance including T-Taps			
		Compatible with Autocall A2081-9044 Overvoltage Protectors			
Dimensions		See Figure			
Operating Temperature		32° to 120° F (0° to 49° C) indoor operation only			
Operating Humidity Range		10 to 90% RH at 90° F (32° C)			
<b>Coil Supervision Module A2081-9046</b>					
Construction		Epoxy encapsulated			
Dimensions		1-3/8" W x 2-7/16" L x 1-1/16" H (34 mm x 62 mm x 27 mm)			
Wiring		18 AWG (0.82 mm <sup>2</sup> ) wire leads, color coded			
Current Rating		2 A Maximum; internally fused at 3 A, non-replaceable			

## 4010ES Automatic Extinguishing Deluge and Preaction Sprinkler System Releasing Control

### Compatible UL Listed Valves and Actuators

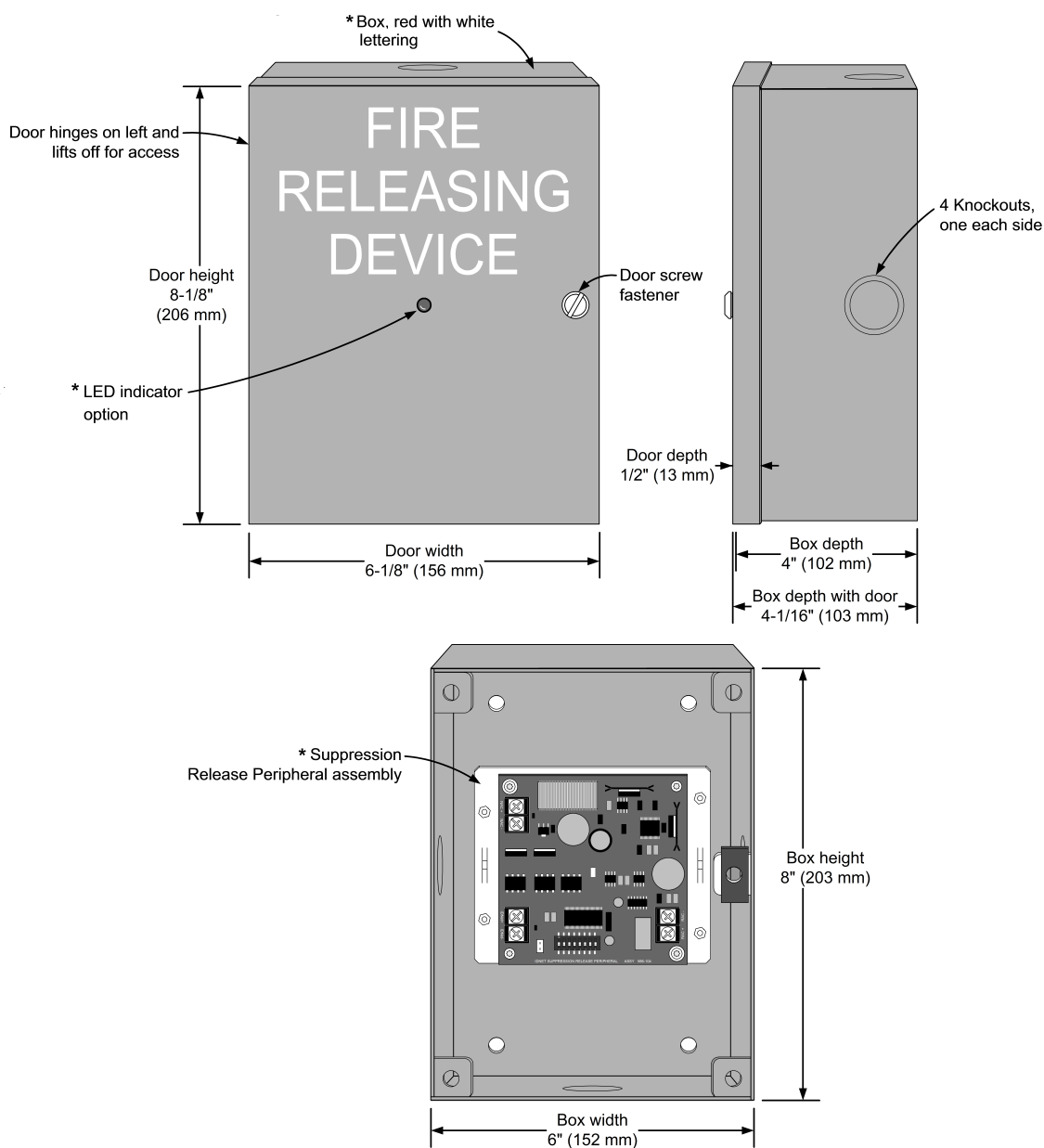
**Table 6: UL Listed Valves and Actuators**

MFG.	Model Number	Coil Details	MFG.	Model Number
ANSUL	*AUTOMAN II-C Assembly; solenoid 17728; coil 25924	12 VDC, 458 mA	ASCO	8210A107 (097617-005D coil) 1/2" NPS, 5/8" orifice, 24 VDC
	AUTOMAN II-C Explosion-Proof Releasing Device; solenoid 31492; coil 31438	24 VDC, 467 mA		8210G207 (238310 coil) 1/2" NPS, 1/2" orifice
	*AUTOMAN II-C Assembly; solenoid 68739; coil 25924,	12 VDC, 458 mA		8211A107 (097617-005D coil) 24VDC
	Solenoid Electric Actuator; solenoid 73111; coil 73097	24 VDC, 1 A		HV2628571 (23810 coil) N.C. 1/2" NPS, 1/2" orifice
	*CV90 HF Electric Actuator 73327; may use 73606 in-line resistor for 12 VDC	9 VDC max, 450 mA		HV2648581 (23810 coil) N.O. 1/2" NPS, 1/2" orifice
	LP CO2 w/ASCO solenoid 422934,	24 VDC, 442 mA		R8210A107 (097617-005D coil) 1/2" NPS, 5/8" orifice
	LP CO2 double action solenoid 430948	24 VDC, 438 mA		T8210A107 (097617-005D coil) 1/2" NPS, 5/8" orifice
	LP CO2 3-way selector valve solenoid 433419	24 VDC, 438 mA	Pyro-Chem	ECH Electrical Control Head (551201)
	Electric Actuator 24 VDC solenoid 570537	24 VDC, 250 mA		Explosion-Proof Electric Actuator (570147)
				Removable Electric Actuator (570209); 24 VDC, 200 mA
LPG	Solenoid 26114002 for Solenoid Coupling Assemblies: 21006401 & 21006402; & LPG128/145/190/230-50/55 FM-200 valves; and LPG128-90UL iFLOW & FM-200 valves	24 VDC, 542 mA	Burkert	5282, 2/2-Way Solenoid Valve; 24 VDC, 458 mA
Skinner	71395SN2ENJ1NOH111C2 (Skinner coil H111C2) 1/4", NPS, 1/16"			
	73212BN4TN00NOC111C2 (Skinner coil C111C2) 1/2", 5-300 psi			
	73212BN4TNLVNOC322C2 (Skinner coil C322C2) 1/2", NPS, 0.92 A, 250 psi			
	73218BN4UNLVNOH111C2 (Skinner coil H111C2)			
	73218BN4UNLVNOC111C2 (Skinner coil C111C2) 1/2", NPS, 5/8 in. orifice			
* 12 VDC coils, either wire two in series for 24 VDC activation, or, if available from manufacturer, use series resistor				

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4010ES control units are assigned to FM Release Control Panel Group 3. Group 3 FM Approved Release Control units are compatible with all FM Approved Solenoid Valves rated at 22 Watts or less. For verification of agency listings and power requirements refer to the solenoid valve manufacturer's technical documentation.

## Suppression Release Peripheral Installation Reference Diagram



**Figure 3: Installation reference diagram**

\*A2975-9227 box, 4090-9812 LED indicator, and A4090-9005 Suppression release peripheral assembly shown. 4090-9812 and A4090-9005 are supplied with A4090-9006.