Release Control Fire Alarm Systems

*UL, ULC, CSFM Listed; FM Approved; MEA (NYC) Acceptance**

4004R Suppression Releasing Panel for Automatic Extinguishing, Deluge and Preaction Sprinkler Control

Features

Fire alarm control panel designed specifically for suppression release operation with:

- Four initiating device circuits (IDCs)
- Two notification appliance circuits (NACs)
- Two releasing appliance circuits (RACs)
- Two special purpose monitor inputs (SPMs) that accept manual release request and manual abort request for Agent Release systems, and waterflow and supervisory for Preaction or Deluge systems
- Three auxiliary relays with selectable functions
- Easily selected activity timing options

Suppression release operation includes:

- Automatic extinguishing release
- Deluge and preaction sprinkler system release
- Dual or single hazard area protection
- IDCs are selectable for cross-zoning or for activation from a single detection input
- Short circuit RAC supervision

Audible Escalation of Events:

- Temporal or 20 bpm March Time pattern for first cross-zone alarm
- 120 bpm March Time pattern to indicate release timer active
- On steady to indicate release timer expired and actuator is activated

Operator interface provides:

- Status LEDs per circuit for Alarm, Trouble, and Supervisory (where appropriate)
- Acknowledge, Alarm Silence, and System Reset
- Operating mode selection and timer selections when in programming mode

Compatible with Listed/Approved 24 VDC or 2, 12 VDC series connected actuators

Related system components:

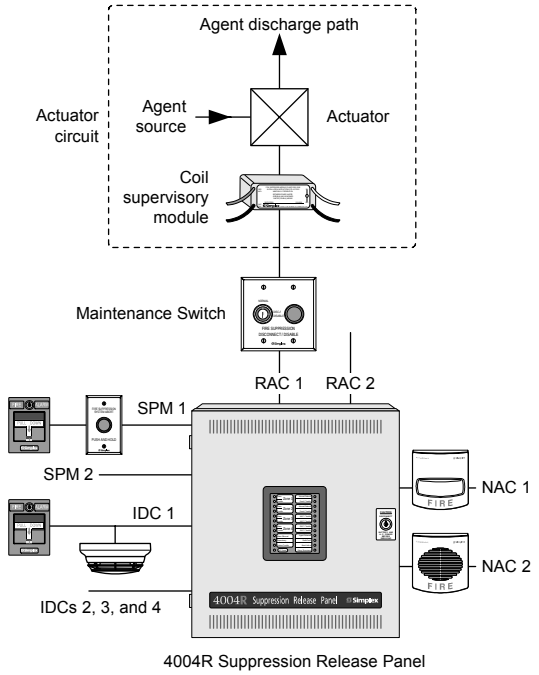
- Coil supervision module 2081-9046, one per RAC
- Maintenance Switch, one per RAC
- Abort Switch

Listed to:

- UL Standard 864
- ULC Standard S527-99

Introduction

Dedicated for Suppression Release. 4004R Suppression Release Panels provide conventional fire alarm control circuits and are equipped with the features required for a wide variety of single or dual hazard suppression release applications. Capabilities include automatic extinguishing agent release and deluge and preaction sprinkler control.



4004R Suppression Release Panel
One-Line System Reference Drawing

Introduction *(Continued)*

Flexible I/O Capabilities. Four IDCs allow for either four separately monitored zones or two, cross-zoned connections. Two SPMs allow dedicated manual inputs for release or abort, or waterflow and supervisory, depending on system type. Two releasing appliance circuits (RACs) supervise to the actuator coils and activate the actuators when required. The two NACs and the three panel auxiliary relays provide status condition information.

Easy Program Selections. The operator panel has a program mode that allows selection of panel operation type and detailed operating selections using an easily selected sequential programming operation.

History Log. The last 50 events are stored in non-volatile memory. This information is accessed by connecting a technician's computer to the service port which is also used to set the date and time.

Panel Feature Description

Operator Panel. The operator panel has alarm and trouble status indicating LEDs for each input and output, visible through the locking cabinet door (refer to diagram on page 4). Unlocking the door provides access to the Acknowledge, Alarm Silence, and System Reset pushbutton switches.

* See product selection on page 2 for additional details. This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7165-0026:314 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. Additional listings may be applicable; contact your local Simplex® product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Safety Products Westminster

Panel Feature Description *(Continued)*

(**NOTE:** Refer to specifications on page 6 for more information.)

Four Class B IDCs provide coverage for either two cross-zoned areas or four separately zoned areas. IDCs are capable of supporting up to 30 Simplex current-limited smoke detectors or electronic heat detectors (see list on page 2) as well as manual stations and other compatible contact closure initiating devices. IDCs are capable of Class A operation with an optional adapter module and can be programmed as Style C (short or open initiates a trouble) for use with current limited devices only. Single hazard agent release applications monitor pressure switches with IDC 3 and tamper switches with IDC 4.

Two Class B Special Purpose Monitoring Circuits (SPMs) are dedicated for manual release or abort, or waterflow and supervisory, depending on system type. Inputs are normally open switches. An abort switch stops release while activated and upon deactivation, the release operation occurs after a selectable time delay. Manual release inputs override abort switches and activate the release after selectable delays of from 0 to 30 seconds in 5 second increments. For Dual Hazard applications, current limited abort operation is required. SPMs are programmable as Style C and capable of Class A operation with the optional adapter module.

Two Class B NACs are provided for reverse polarity notification appliance operation, each rated 2 A. Class A operation is available with the optional adapter module. NAC operation is selectable per application.

Two Class B Releasing Appliance Circuits (RACs). Rated 2 A each, these circuits are dedicated to operating release control actuators. RAC cutout timing is selectable as no cutout, 45 seconds, or 1, 3, 4, 5, 6, or 7 minutes.

Auxiliary Power Output. Two sets of output terminals are provided, one for continuous operation and the other for resettable operation, rated for 750 mA combined. Resettable terminals are provided for 4-wire smoke detector power.

Standard Auxiliary Relay Outputs. Three relay outputs are available, selectable as normally open or normally closed, rated 2 A @ 30 VDC, 0.35 p.f. inductive:

Aux Relay 1 (Trouble) is energized when Normal and is de-energized with a common Trouble condition.

Aux Relays 2 and 3 respond differently depending on the system type and whether single or dual hazard. Typical functions are:

For Single Hazard Operation, Aux Relay 2 is the common Alarm relay. Aux Relay 3 can be selected to indicate pre-discharge (release time delay started), common supervisory, waterflow, or pressure switch relay, depending on the system type.

For Dual Hazard Operation, Aux Relay 2 is for Hazard Area 1 common Alarm; Aux Relay 3 is for Hazard Area 2 common Alarm.

Power Supply and Battery Charger. During alarm, the power supply provides 3 A at 25.5 VDC, filtered and regulated. The temperature compensated battery charger provides 27.5 VDC for charging batteries suitable for up to 90 hour standby and 10 minutes of alarm. External battery chargers and cabinets can be used for more battery backup.

Product Selection

Release Control Panels

Model	Color	Listings	Description
4004-9301	Beige	UL, ULC, CSFM, & FM	Basic Releasing Panel; operates with AC input of: 120/220/230/240 VAC, 50/60 Hz (auto-select); includes: four IDCs, two NACs, two SPMs, two RACs, 3 auxiliary relays, and 3 A power supply with battery charger, cabinet and door
4004-9302	Red	UL, ULC, CSFM, FM, & MEA (NYC)	
4004-9301CAF	Beige	ULC only	Basic Releasing Panel, same as above, but French for Canada; ULC listed only

Expansion Modules

Model	Description	Reference	
4004-9860	Auxiliary Relay Module; four dual contact relays selectable as N.O. or N.C.; rated 7 A @ 120 VAC resistive, 5 A @ 30 VDC, 0.35 p.f. inductive; unsupervised contacts	Two maximum	Select as required
4004-9864	Two Circuit Class A Adapter Module for IDCs, SPMs, or NACs	Four maximum	

Panel Accessories (See data sheet S4081-0001 for external battery cabinets with chargers and for larger battery sizes)

Model	Description			Reference
4001-9811	Remote Battery Meter Module, 0-50 VDC voltmeter and 5-0-5 A ammeter with beige four-gang cover plate			Mounting requires a four-gang box, 1-3/4" (45 mm) minimum depth
2081-9272	6.2 Ah battery, 12 V	2081-9288	12.7 Ah battery, 12 V	Select one battery model per system standby requirements; two batteries are required
2081-9274	10 Ah battery, 12 V			

Release Control Systems Accessories (refer to additional information listed on page 3)

Model	Description
2081-9046	Coil Supervision Module, **one required per RAC**; refer to pages 6 and 7 for detail
2081-9048	Abort Supervision Module; encapsulated 560Ω, 1/2 W resistor; for Dual Hazard SPM; allows non-current limited Abort and Manual Release stations to be on same circuit; refer to pages 6 and 7 for detail
4081 Series	End-of-Line Resistor Harnesses; refer to data sheet S4081-0003
2099 Series	Manual Stations for Releasing Applications; refer to data sheet S2099-0010
4905-Series	Strobe synchronization modules; 4905-9914 for Class B, 4905-9922 for Class A; see data sheet S4905-0003 for details

Reference Information, Compatible Simplex Detectors and other System Components

Model	Type		Data Sheet
4098-9601	Standard detector	Photoelectric smoke detectors for 2-wire and 4-wire bases	S4098-0015
4098-9605	Reduced sensitivity detector		
4098-9602	Combination smoke and heat detector		S4098-0017
4098 Series	Ionization Smoke Detectors; 2-wire and 4-wire models		S4098-0018
4098-9612	135° F (57°C)	Fixed heat detector	S4098-0014
4098-9614	200° F (93°C)		
4098-9613	135° F (57°C)	Fixed with rate-of-rise heat detector	
4098-9615	200° F (93°C)		
2099-9149	Standard	Manual Release Station with selectable release labels; double action push, N.O. contact	S2099-0010
2099-9152	Style C, with 560 Ω internal resistor		
2080-Series	Maintenance Switches, flush or surface mount; indicator lamps require 24 VDC wiring		S2081-0010
	Abort Switches, surface or flush mount; available standard or with 1.2 kΩ, 1 W resistor		

Expansion Modules and Accessories

Auxiliary Relay Module 4004-9860 provides four additional relays. Dual hazard applications will require two modules for auxiliary relay operation. Each relay module has a manual disconnect switch that controls relays 2 through 4. (Trouble Relay 1 is not controlled.) Relay outputs are required to be connected to a 15 A maximum circuit breaker. (Relay specifications are detailed on page 6.)

Auxiliary Relay Module Operation is per the following:

Relay 1 activates on any common **trouble** associated with its hazard or any system trouble

Relay 2 activates on any common **alarm** associated with its hazard

Relay 3 activates for pressure switch, waterflow switch, or release timer as required per application type (hazard specific), or activates with the second zone for cross-zoned systems (hazard specific)

Relay 4 activates when the hazard specific RAC activates

Dual Circuit Class A Adapter Module 4004-9864. This module converts two Class B circuits to Class A operation. It consumes no additional current and is compatible with IDCs, SPMs, and NACs. Up to four modules may be mounted within the 4004 R cabinet.

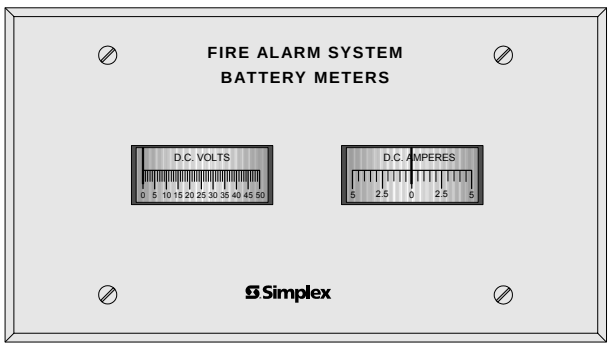
Abort Switches. For manual abort requests, these abort switches are available with or without a built-in 1.2 kΩ, 1 W resistor and are mounted on single-gang stainless steel plates. Abort switches are connected to the SPM inputs per system requirements.

Activity abort occurs while the switch is pushed and continues after releasing the switch for the selected Abort Release Time Delay. (See illustration to the left.)

Maintenance Switch. Proper service of release appliance circuits requires the ability to securely disconnect the release circuit during installation and maintenance. Simplex maintenance switches are controlled by keyswitch and initiate a supervisory condition when in disconnect/disable position. Models with lamp are on a double-gang plate and are powered from separate 24 VDC wiring. Mounting is on stainless steel plates and models are available as either surface or flush mount.

For additional Maintenance and Abort Switch information refer to data sheet S2080-0010.

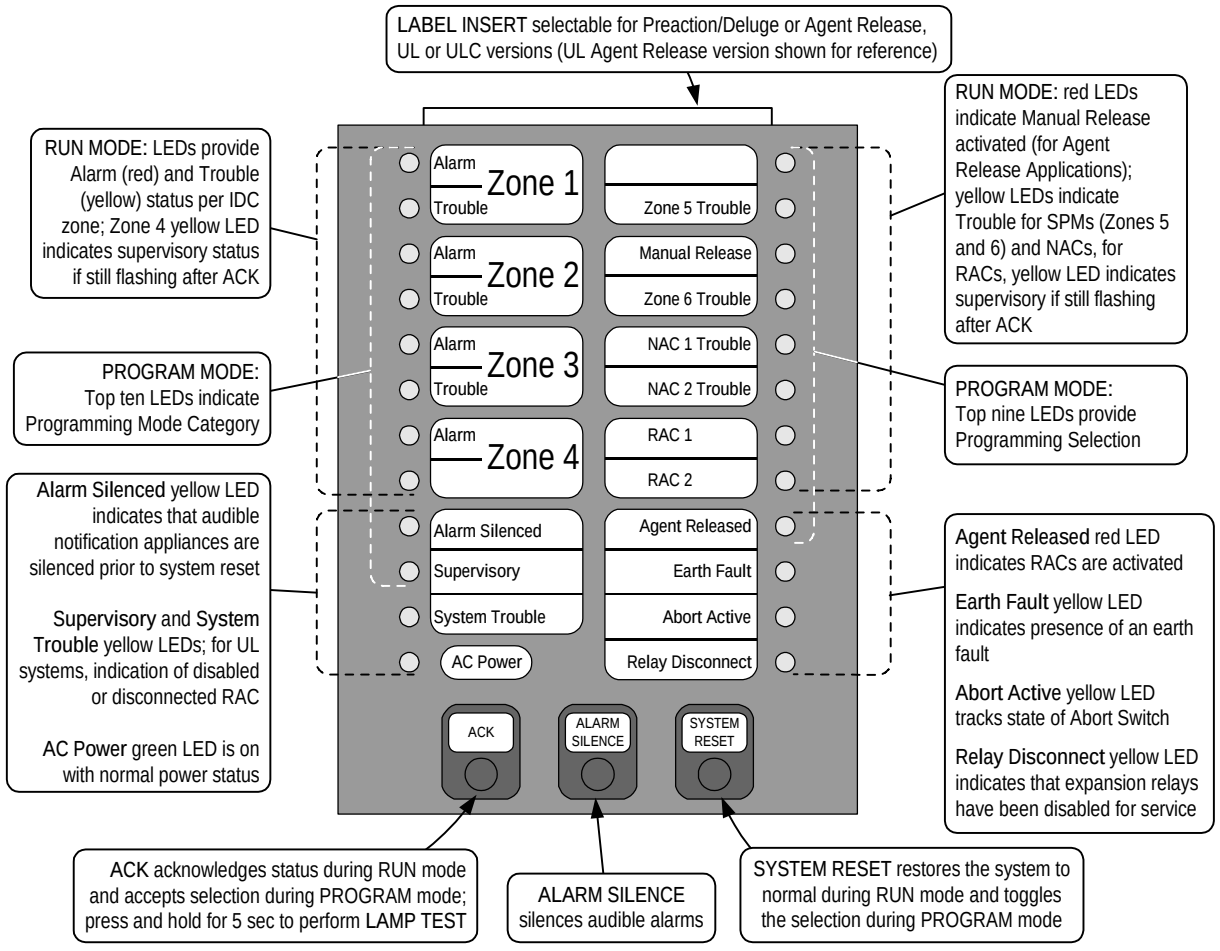
Remote Battery Meter Module 4001-9811 provides a display of battery voltage and battery charge and discharge current. This module mounts within 3 ft (1 m) of the 4004R cabinet using a four-gang electrical box with 1-3/4" (45 mm) minimum depth. (See illustration below.)



Programming Modes and Selection Choices

Sequence	Programming Mode Description	Choices			
1	Application Mode (9 choices)	Agent Release	Single Hazard	Cross-Zoned Either Zone	Combined Release (RACs activate together)
			Dual Hazard	Cross-Zoned Either Zone	Independent Release (RACs are separate)
		Preaction/Deluge	Single Hazard	Cross-Zoned Either Zone	Combined Release (RACs activate together)
			Dual Hazard	Cross-Zoned Either Zone	Independent Release (RACs are separate)
		Agent Release	Single Hazard	Cross-Zoned, NYC Abort (not UL listed)	
2	IDC and SPM Circuit Style	Class B/Class A or Style C			
3	Automatic Release Time Delay	0, 10, 20, 30, 40, 50, or 60 seconds			
4	RAC Cutout Timer	No cutout, 45 seconds, or 1, 3, 4, 5, 6, or 7 minutes			
5	Manual Release Time Delay	0, 5, 10, 15, 20, 25, or 30 seconds			
6	Abort Release Time Delay	UL Standard 864 listed	Immediate or 10 seconds remaining		
		Not UL Standard 864 listed	IRI abort (cross-zoned systems only), NYC abort, or original release delay		
7	NAC Coding (where selectable)	Temporal pattern or 20 beats per minute (first cross-zone alarm)			
8	NAC Operation — Standard Operation	No inhibit or one minute inhibit selected as: both on until silence, NAC 1 on until reset and NAC 2 on until silence, or both on until reset;			
	NAC Operation — Pre-Discharge Operation	**NOTE:** For Halon 1301, Halon 1211, or clean agent release, a pre-discharge NAC must be configured to warn of impending discharge, the release timer selects the duration of the pre-discharged signal			
9	Supervisory Latching	Latching or non-latching			
10	Supervisory Notification	LED and tone-alert only, or with: NAC 2 also on; Aux Relay 3 also on; or both NAC 2 and Aux Relay 3 also on			

Operator Panel Function Reference



Release Control System Reference

Automatic Extinguishing Release Systems. These systems automatically activate actuators for the release of a fire extinguishing agent (such as dry chemical, water spray, foam, CO_2, or Halon) in response to fire detection device input.

UL and FM Extinguishing Release System Panels must 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. Actuators must be electrically compatible with the control panel circuits and power supplies, and are wired Class B to provide coil supervision (refer to additional information in Requirements section below).

Deluge and Preaction Sprinkler Systems automatically activate water control valves in response to fire detection device input.

Deluge Sprinkler Systems employ open sprinkler heads and provide water flow when the fire detection system activates a common automatic water control valve. 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.

UL requirements for Fire Alarm Systems Listed for Automatic Release or Deluge and Preaction Sprinkler Systems are the same as described above for Automatic Extinguishing Release Systems.

FM Approved requirements for Fire Alarm Systems for Automatic Release of Deluge and Preaction Sprinkler Systems require operation of specific compatible FM Approved Automatic Water Control Valves, a minimum secondary power capacity of 90 hours, and all circuits for the automatic release initiating devices must be capable of operation during a single open circuit fault condition (Class A).

Release Control System Requirements

1. Actuators are connected as two-wire, Class B notification/releasing circuits **with only one 24 VDC actuator per circuit** to ensure supervision. Where applicable, two, 12 VDC actuators in series, or one 12 VDC actuator and a manufacturer supplied series resistor may be used.
2. Coil Supervision Module, model 2081-9046, must be wired electrically before the actuator and located in the actuator wiring junction box. (Refer to System Connection Reference on page 7.)
3. For UL Listed Automatic Extinguishing Release valves and actuators, refer to list on page 7.

Requirements *(Continued)*

4. For FM Approved Automatic Extinguishing Release, secondary standby must be a minimum of 24 hours with 5 minutes of alarm. Actuators must be electrically compatible.
5. For FM Approved Deluge and Preaction Sprinkler operation: IDCs must be Class A, wired to Listed/Approved devices; secondary standby capacity must be a minimum of 90 hours with 10 minutes of alarm; and the specified compatible Automatic Water Control Valves/Actuator must be used. (Refer to list on page 8.)
6. Power supply loading and wiring distances must be per Installation, Programming, and Operating Instructions 579-354.
7. Battery standby must be selected for proper actuator operation and may require a minimum voltage of 23 VDC depending on the actuator. Detailed battery calculation reference information is contained in Installation Instructions 579-354.
8. Maintenance Switches, one per RAC, are required per NFPA 72®, the *National Fire Alarm Code®* (2002 Edition, Chapter 6) 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, Simplex Maintenance Switches are required to ensure that operation initiates a supervisory condition.

Additional System Device Information

1. Simplex Abort Switches are available when abort operation is required. When used, wire on Special Purpose Monitoring Circuits (SPMs) as Class A or Class B; Simplex model Abort Switches are required.
2. Manual Release Stations are used for direct activation of the release actuators with the appropriate time delay implemented by the fire alarm control panel.
3. Reference for additional information is listed on pages 2 and 3.

Additional Information

This data sheet is a summary of the extensive operating features and options available with the 4004R Release Control Panel. Complete details are covered in the *4004R Installation, Programming, and Operating Instructions* manual (publication 579-354) shipped with each 4004R. Compatible system devices are listed on page 3.

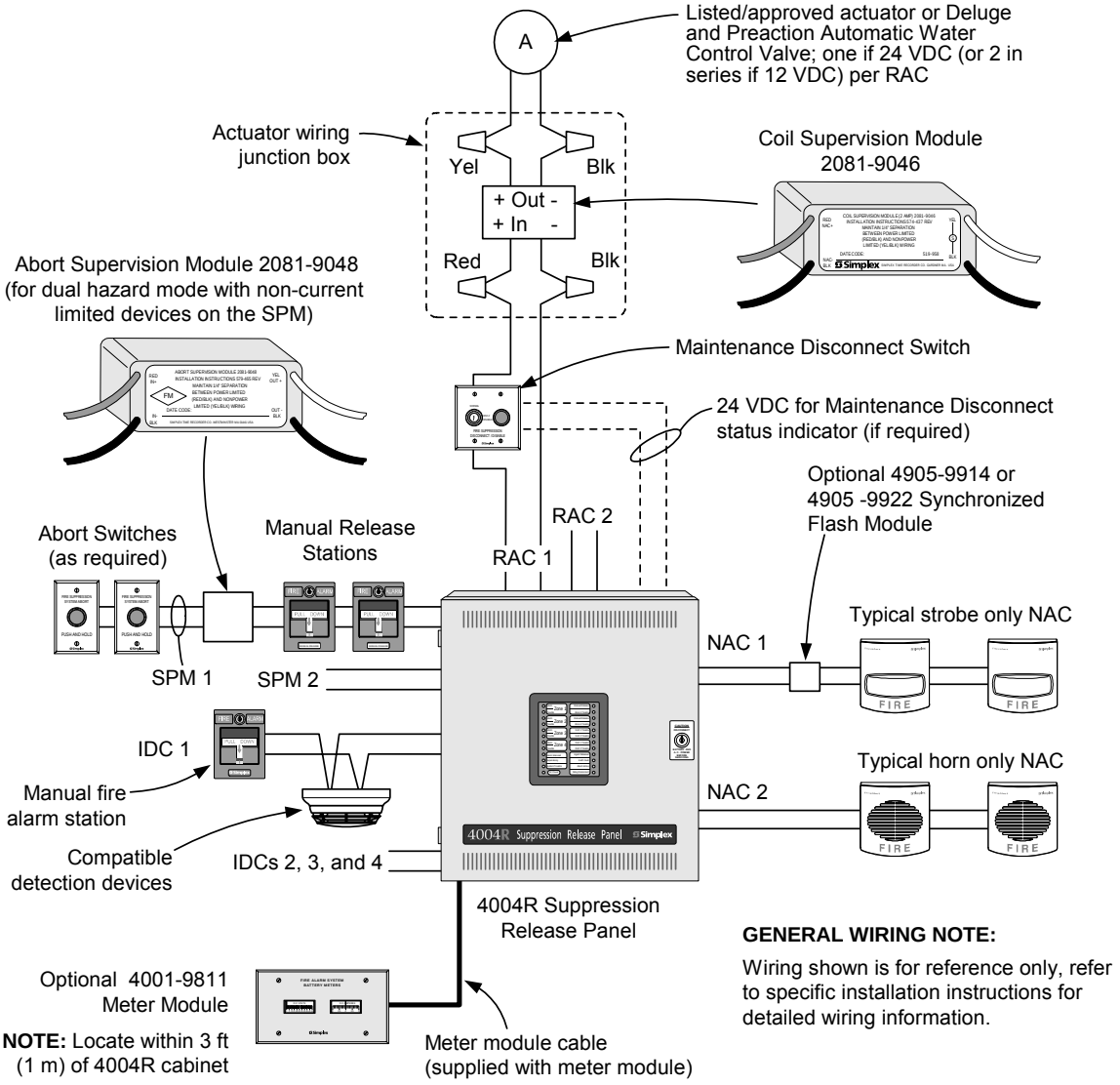
For general information, refer to Factory Mutual Research Corporation (FMRC) "FMRC Approval Guide," FM Approval standard "Deluge Systems and Preaction Systems."

PLEASE NOTE: *Proper operation of release 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.*

Specifications (Refer to diagram on page 7 and Instructions 579-354 for additional information)

Power Ratings		
AC Input	Voltage Ratings	120 VAC, 60 Hz; 220/230/240 VAC, 50/60 Hz, auto-select
	Current Ratings	2 A maximum @ 120 VAC input; 1 A maximum @ 240 VAC input
Power Supply Output		3 A maximum available for external loads
Battery Charger		Temperature compensated, capable of recharging batteries required for 90 hour standby and 10 minute alarm (contingent on auxiliary power load)
Standby Current		100 mA; with IDCs fully loaded, tone-alert silenced, trouble LED on, charger off
Alarm Current		264 mA + external loads; (2 zones in alarm & 2 internal relays, NACs and RACs on)
Standard Circuit Ratings (**NOTE:** Total DC current = 3 A maximum; see NAC ratings for details)		
Initiating Device Circuits (IDCs)	Supervisory	3 mA maximum; 3.3 kΩ end-of-line resistor per circuit
	Alarm Current	75 mA maximum
	Output Voltage	28 VDC maximum
	Capacity	Each IDC supports up to 30 detectors (smoke or electronic heat) and manual stations as required; wiring distance is limited to 50 Ω maximum
Special Purpose Monitoring Circuits (SPMs)	Application	For Manual Release, Abort Switches, or Supervisory functions only; not for detectors; wiring distance is limited to 50 Ω maximum
	For Dual Hazard Applications	Dual Hazard Application Abort Switches require a current limiting resistor of 1.2 kΩ, 1 W, or an external Abort Supervision Module per SPM
	Supervisory	6 mA; 3.3 kΩ end-of-line resistor per circuit
	Activated	75 mA maximum
	Output Voltage	28 VDC maximum
Notification Appliance Circuits (NACs)	Alarm Current	Special Application appliance rating = 2 A maximum on a NAC **NOTE:** Special Application appliance rating = full 3 A power supply rating
		Regulated 24 DC appliance power = 1.5 A maximum on a circuit **NOTE:** Regulated 24 DC **strobe** load = 1.35 A maximum total for power supply
	Output Voltage	Alarm = 26 VDC max.; supervisory = 29 VDC maximum; 10 kΩ end-of-line resistor
	Synchronized Strobe Operation	Requires NAC dedicated to strobe control with non-coded output; use an external Synch Module (4905-9914, Class A, or 4905-9922, Class B, see data sheet S4905-0003 for details); up to 33 strobes can be synchronized per 4004R
Notification Appliance Reference	Special Application Appliances	Simplex 4901, 4903, and 4904 Series horns, strobes, and 4-wire horn/strobes; (contact your Simplex product representative for compatible appliances)
	Regulated 24 DC Appliances	Power for other appliances listed to UL Standard 1971 or UL Standard 464; use associated external synchronization modules where required
Release Appliance Circuits (RACs)	Output Current	2 A maximum per circuit
	Output Voltage	Activated = 26 VDC maximum; non-alarm = 29 VDC maximum; 10 kΩ end-of-line resistor
Auxiliary Power Output; for Special Application loads only		Two outputs are available, continuous operation or resettable operation; combined output is 750 mA maximum; output voltage = 19.25 to 27 VDC
Auxiliary Relay Outputs (Trouble, Aux Relay 2, Aux Relay 3)		Contacts rated 2 A @ 30 VDC, 0.35 p.f., inductive, selectable as N.O. or N.C. by jumper
Wiring Connections for Above Circuits and AC Input		Terminals rated for 18 AWG to 12 AWG (0.82 mm^2 to 3.31 mm^2)
Auxiliary Module Ratings		
Class A Adapter Module 4004-9684		Two circuits per module, rated same as circuits; not applicable to RACs (no additional current required)
Auxiliary Relay Module 4004-9860	Relay Type	Four relays with two outputs per relay; individually selectable as N.O. or N.C.
	AC Ratings	7 A @ 120 VAC, resistive
	DC Ratings	5 A @ 30 VDC, 0.35 power factor, inductive
	Module Current	12 mA standby; 70 mA with all four relays energized; @ 24 VDC
	Wiring	Terminals rated for 18 AWG to 12 AWG (0.82 mm^2 to 3.31 mm^2)
2081-9046 Coil Supervision Module and 2081-9048 Abort Supervision Module (see page 7 for additional details)		
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^2) wire leads, color coded
Coil Supervision Module Current Rating		2 A maximum; internally fused at 3 A, non-replaceable
Abort Supervision Module Resistance		560 Ω, 1/2 W
Environmental Ratings		
Operating Temperature Range		32° to 120°F (0° to 49° C)
Operating Humidity Range		up to 93% RH, non-condensing @ 100.4° F (38° C) maximum

4004R System Connection Reference



Compatible UL Listed Valves and Actuators

MFG.	Model Number	MFG.	Model Number
ANSUL	*AUTOMAN II-C Assembly (solenoid 17728; coil 25924)	ASCO	8210A107 (097617-005D coil) 1/2" NPS, 5/8" orifice, 24 VDC
	AUTOMAN II-C Explosion-Proof Releasing Device (solenoid 31492; coil 31438)		8210G207 (238310 coil) 1/2" NPS, 1/2" orifice
	*AUTOMAN II-C Assembly (solenoid 68739; coil 25924)		8211A107 (097617-005D coil) 24VDC
	Solenoid Electric Actuator (solenoid 73111; coil 73097)		HV2628571 (23810 coil) N.C. 1/2" NPS, 1/2" orifice
	*CV90 HF Electric Actuator 73327 (may use 73606 in-line resistor)		HV2648581 (23810 coil) N.O. 1/2" NPS, 1/2" orifice
			R8210A107 (097617-005D coil) 1/2" NPS, 5/8" orifice
	LP CO2 w/ASCO solenoid 422934		T8210A107 (097617-005D coil) 1/2" NPS, 5/8" orifice
	LP CO2 double action 24 VDC solenoid 430948	Pyro-Chem	ECH Electrical Control Head (551201)
	LP CO2 3-way selector valve solenoid 433419		Explosion-Proof Electric Actuator (570147)
	Electric Actuator 24 VDC solenoid 570537		Removable Electric Actuator (570209) 0.2 A
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		
Star Sprinkler	Model D deluge valve, with solenoid 5550		

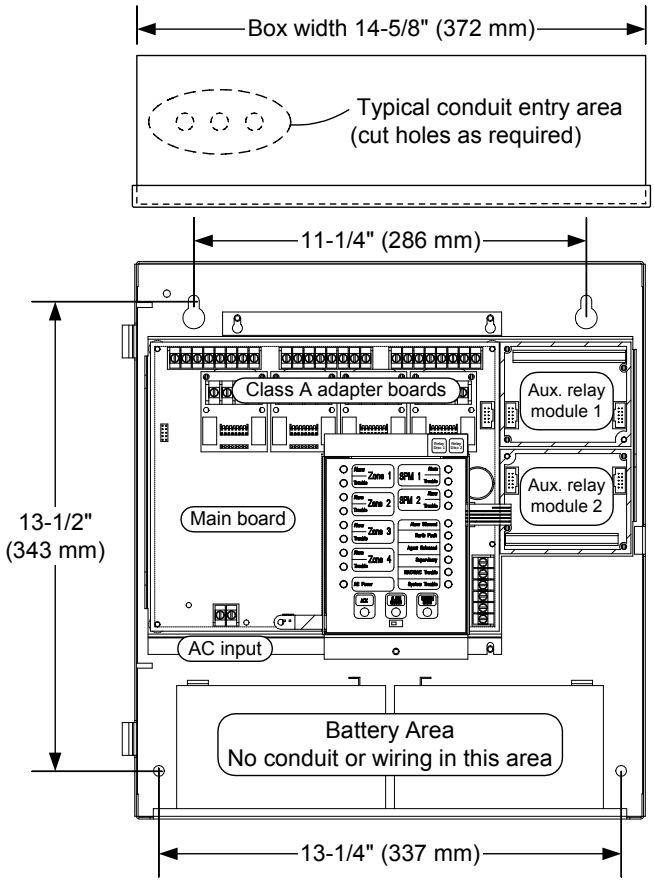
* 12 VDC coils, either wire two in series for 24 VDC activation, or, if available from manufacturer, use series resistor

FM Approved Water Control Valves

Group	Manufacturer	Model Number	Details
A	Skinner	LV2LBX25*	24 VDC, 11 W, 458 mA, 1/2 inch NPS, 1/2 inch orifice
B	ASCO	T8210A107	24 VDC, 16.8 W, 700 mA, 1/2 inch NPS, 5/8 inch orifice
		R8210A107	
		8210A107	
C	Star Sprinkler	5550	24 VDC, part of Model D deluge valve
D	ASCO	8210G207	24 VDC, 10.6 W, 440 mA, 1/2 inch NPS, 1/2 inch orifice
E	Skinner	73218BN4UNLVNOC111C2*	24 VDC, 10 W, 420 mA, 1/2 inch NPS, 5/8 inch orifice
		73212BN4TN00N0C111C2	24 VDC, 10 W, 420 mA, 1/2 inch NPS, 5/8 inch orifice; 5-300 psi
F	Skinner	73212BN4TNLVNOC322C2	24 VDC, 22 W, 1/2 inch NPS, 920 mA, 250 psi (1725 kPa), 1/2 inch orifice
G	Skinner	71395SN2ENJ1NOH111C2	24 VDC, 10 W, 420 mA, 1/4 inch NPS, 1/16 inch orifice, 250 psi (1725 kPa) rated working pressure
I	Vitaulic	Series 753-E solenoid valve	24 VDC, 8.7 W, 1⁄2 inch NPS, 364 mA, 300 psi (2069 kPa), 1⁄2 inch orifice
J	Viking	11591 and 11592	Normally closed (NC) — Explosion proof solenoid valves, 24 VDC, 10 W, 1⁄2 inch NPS, 300 psi (2069 kPa), 4.1 Cv
		11595 and 11596	Normally open (NO)
K	Viking	11601 and 11602	NC solenoid valve, 24 VDC, 9 W, 1⁄2 inch NPS, 250 psi (1725 kPa), 6.2 Cv

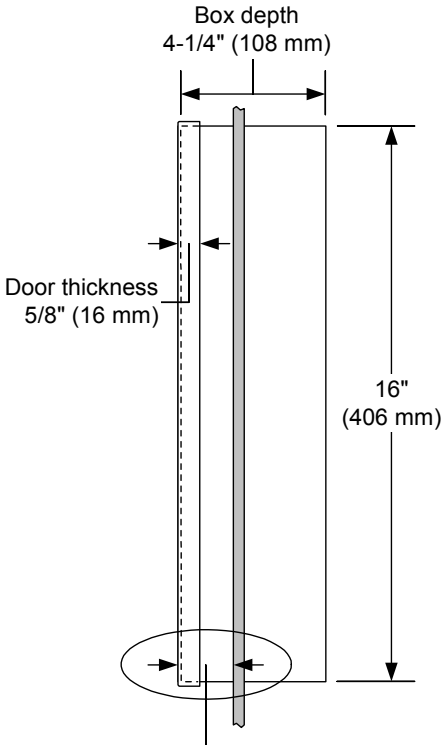
* For new applications, LV2LBX25 has been replaced by model number 73218BN4UNLVNOC111C2.

Mounting Reference Information



(Front view module placement reference showing mounting hole dimensions, optional Class A adapter modules, and optional relay modules)

(Top and side views are shown with door installed)



NOTE: For semi-flush mounting, cabinet must extend 1-1/2" (38 mm) minimum from wall surface

NOTE: A system ground must be provided for Earth Detection and transient protection devices. This connection shall be made to an approved, dedicated Earth connection per NFPA 70, Article 250, and NFPA 780.