

Features

AUTOPULSE® Z-20 releasing control system provides**:

- Coverage for single area and capability for expansion to 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
- Additional actuator circuit control NACs are available using AUTOPULSE EXT NAC Extenders with Suppression Release Peripherals

AUTOPULSE EXT NAC extenders provide:

- Up to eight NACs for notification requirements and input to suppression release peripherals, controlled via IDNet

Suppression Release Peripheral (SRP) with dual input control logic:

- Dual input control logic requires an IDNet command and an activated NAC to initiate 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:

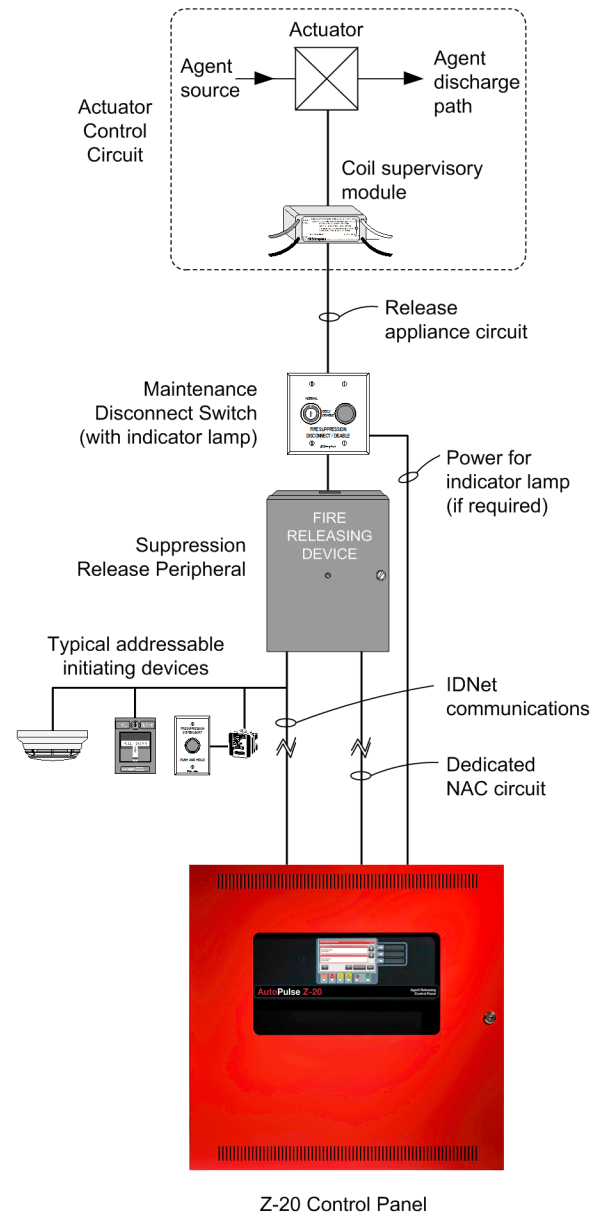
- An on-board DC-DC regulator compensates for voltage drops to the peripheral and ensures proper control circuit voltage over a wide operating range
- Provides a single RAC for control of actuators for up to 2 A using a 3 A NAC input (1 A using a 2 A NAC input)

Related system components:

- Z-20 control panel with Releasing Appliqué
- Dedicated NAC output from Z-20 (or compatible NAC Extender)
- Coil supervision module, one per RAC
- Maintenance Switch, one per RAC
- Abort Switch

AUTOPULSE Z-20 Listings reference:

- UL 864 - Control Units, System (UOJZ); Control Unit Accessories, System, Fire Alarm (UOXX); ; Control Units, Releasing Device Service (SYZV)
- UL 2017 - Emergency Alarm System Control Units (CO detection), (FSZI)
- ULC-S559 - Central Station Fire Alarm System Units (DAYRC)
- ULC-S527 - Control Units, System, Fire Alarm (UOJZC); Control Unit Accessories, System, Fire Alarm (UOXXC); Control Units, Releasing Device Service (SYZVC)



AUTOPULSE Z-20 releasing control system block diagram

Introduction

The AUTOPULSE Z-20 releasing control system with suppression release peripherals 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. The necessary releasing system logic is implemented within the AUTOPULSE Z-20 control panel as required for the local application.

* Additional listings may be applicable; contact your local AUTOPULSE product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Safety Products Westminster.

** Release Control operation described in this document is also available with Z-20 Control Panels with software revision 3.03 or higher. Refer to data sheet for model Z-20 control panel details including IDNet communications information.

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, CO₂, or clean agent) in response to fire detection device inputs as determined by programming of the host fire alarm control panel.

Automatic extinguishing release system panels 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 panel circuits and power supplies, and are wired Class B to provide coil supervision.

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.

Precision 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 panel.

Releasing system requirements

1. **Releasing actuators** are controlled from a Suppression Release Peripheral (4090-9006 or 4090-9005). 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 430687** must be wired electrically before the actuator and located in the actuator wiring junction box. (Refer to diagram on page 8.) 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 panel.
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 list on page 5.

Releasing system requirements (continued)

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 actuator list on page 10.)
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, 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 4090-9001 or similar addressable adapter module. The 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 panel.
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. **Suppression Release Peripheral.** 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 579-385.

AUTOPULSE Z-20 features

4.3" (109 mm) color touchscreen display:

- Provides detailed system status and point information
- Supports dual language selection, including unicode character languages
- A custom background display appears when operation is normal

Eight point zone/relay module:

- Each point is selectable as an IDC input or relay output, Class A IDCs require 2 points (one out and one return); one module is standard, up to 3 additional modules can be field installed
- Each point on the IDC/relay module can be configured as a control relay rated 2 A @ 30 VDC (resistive) as either normally open or normally closed
- Can be powered directly from the power supply or through the optional 25 VDC regulator module
- Wide range of IDC end-of-line resistor values for retrofit convenience

AUTOPULSE Z-20 Features (Continued)

Electrically isolated IDNet+ addressable initiating device SLC:

Provides built-in short circuit isolation for monitoring and control of TrueAlarm analog sensors and IDNet communications monitoring and control devices; for use with either shielded or unshielded, twisted or untwisted single pair wiring; outputs are Class A or Class B Standard panel SLC provides up to 100 addressable points; optional additional loop expansion modules provide an additional isolated loop with short circuit isolation for the IDNet+ channel; each loop expansion module also provides an additional 75 addressable points

Power supply features:

Four Notification Appliance Circuits (NACs) selectable as Class A or Class B with 6 A total available current NAC end-of-line resistor value can be selected from a wide range of resistance values for retrofit convenience Additional notification power capacity is available using the AUTOPULSE EXT NAC Extender Battery backup charging of up to 33 Ah; up to 18 Ah for cabinet mounted batteries and up to 33 Ah batteries for mounting in close-nipped remote battery cabinet

General mechanical:

Red cabinet; rated NEMA 1 and IP30

Software feature summary:

- Current and previous panel configuration maintained in on-board memory
- An internal Ethernet service port is available for service computer connections to perform configuration updates, downloads and uploads; report downloads, and system software
- Internal USB interface allows a memory stick to store job revisions, update revised jobs and panel software, and save detailed system reports from the panel

Optional modules and connections include:

- Point or Event DACT assembly for IP Communicators
- Up to two additional IDNet+ addressable device output loop connections with short circuit fault protection and with 75 additional point capacity each
- Front mounted 48 LED annunciator with custom label inserts; LEDs are programmable for up to 24 IDC zones of alarm and trouble annunciation or other custom annunciation requirements
- Remote LCD annunciator support via RUI communications port for use with UTP wiring
- Alarm relays and auxiliary relays
- AUTOPULSE EXT NAC Extenders to extend NAC capability for power and distance

IDNet+ Addressable Device Control

The Z-20 provides an IDNet+ addressable initiating device Signaling Line Circuit (SLC) that supervises wiring connections and the individual device communications status on the SLC. With 2 wire IDNet+ SLCs, initiation, monitoring, and control devices such as manual fire alarm stations, TrueAlarm sensors, control relays, and sprinkler waterflow switches can communicate their identity and status and receive fire alarm system control. Additional addressable interface modules include circuit isolators, conventional IDC zone adapters, and interface to other system circuits such as fans, dampers, and elevator controls.

IDNet+ Addressable Device Operation

Each addressable device on the IDNet+ communication channel is continuously interrogated for status condition such as: normal, off-normal, alarm, supervisory, or trouble. Both Class B and Class A operation is available. Sophisticated poll and response communication techniques ensure supervision integrity and allow for "T-tapping" of the circuits for Class B operation. Devices with LEDs pulse the LED to indicate receipt of a communications poll and can be turned on steady from the panel. With addressable devices, the location and status of the connected device is monitored, logged, and displayed on the operator interface LCD with each device having its own 40 character custom label for precise identification.

TrueAlarm Addressable Sensor Operation

Addressable initiating device communications include operation of TrueAlarm smoke and temperature sensors. Smoke sensors transmit an output value based on their smoke chamber condition and the CPU maintains a current value, peak value, and an average value for each sensor. Status is determined by comparing the current sensor value to its average value. Tracking this average value as a continuously shifting reference point filters out environmental factors that cause shifts in sensitivity.

Programmable sensitivity of each sensor can be selected at the control panel for different levels of smoke obscuration (shown directly in percent) or for specific heat detection levels. To evaluate whether the sensitivity should be revised, the peak value is stored in memory and can be easily read (or downloaded as a report) and compared to the alarm threshold directly in percent.

TrueAlarm heat sensors can be selected for fixed temperature detection, with or without rate-of-rise detection. Utility temperature sensing is also available, typically to provide freeze warnings or alert to HVAC system problems. Readings can be selected as either Fahrenheit or Celsius.

TrueSense early fire detection. Multi-sensor 4098-9754 provides photoelectric and heat sensor data using a single IDNet+ address. The panel evaluates smoke and heat activity to provide TrueSense early detection. For more details on this operation, refer to data sheet.

Diagnostics and Default Device Type

Sensor Status. TrueAlarm operation allows the control panel to automatically indicate when a sensor is almost dirty, dirty, and excessively dirty. The NFPA 72 requirement for a test of the sensitivity range of the sensors is fulfilled by the ability of TrueAlarm operation to maintain the sensitivity level of each sensor.

Modular TrueAlarm sensors use the same base and different sensor types (smoke or heat sensor) and can be easily interchanged to meet specific location requirements.

IDNet+ Device Wiring Reference

IDNet+ Addressable Channel Capacity. The Z-20 provides an isolated output IDNet+ signaling line circuit (SLC) that supports up to 250 addressable monitor and control points intermixed on the same pair of wires. (250 total requires two 4007-9803 IDNet+ Loop Expansion Modules.)

IDNet+ SLC Wiring Specifications

Maximum Distance from Control Panel per Device Load	0 to 125 126-250	4000 ft (1219 m); 50 ohms 2500 feet (762 m); 35 ohms
Total Wire Length Allowed With "T" Taps for Class B Wiring		Up to 12,500 ft (3.8 km); 0.60 μ F
Maximum Capacitance Between IDNet+ Channels		1 μ F
Loading per device		0.8 mA supv., 1 mA alarm; 2 mA per activated device LED
Wire Type and Connections		Shielded or unshielded, twisted or untwisted wire*
Connections		Terminal blocks for 18 to 12 AWG

Compatibility includes: IDNet communicating devices and TrueAlarm sensors *including* QuickConnect and QuickConnect2 sensors; see data sheet for additional reference

* Some applications may require shielded wiring. Review your system with your local AUTOPULSE product supplier.

Power Supply and Zone/Relay Modules

Power Supply Output Details:

RUI Communications controls up to 6 remote devices at up to 2500 ft (762 m) for single run, or 10,000 ft (3048 m) total if wiring is Class B and T-tapped; selectable as Class B or Class A

Compatible RUI remote equipment includes: 4606-9202AR Color Touchscreen Annunciator (up to 6 total)

IDNet+ SLC Output provides electrically isolated Class B or Class A communication; standard capacity is up to 100 addressable points with expansion for up to 250 points using up to two 4007-9803 IDNet+ Loop Expansion

6 A Output Rating. This includes current for: special application notification appliances; IDNet devices; module currents; and auxiliary output current (battery charging, CPU, and power supply current does not subtract from the 6 A); when NACs are controlling Regulated 24 DC Appliances, total NAC current available is 3 A

Four on-board Class B/Class A NACs, rated 3 A each for Special Application appliances; selectable for SmartSync horn and strobe control, or strobe synchronization; rated 2 A each for Regulated 24 DC appliances

NAC end-of-line (EOL) resistor values are selectable as: 10 k Ω , 3.9 k Ω , 4.7 k Ω , 5.1 k Ω , 5.6 k Ω , or 15 k Ω

Battery Charger is dual rate, temperature compensated, and charges up to 18 Ah sealed lead-acid batteries mounted in the battery compartment, and charges up to 33 Ah batteries mounted in an external cabinet

Battery and Charger Monitoring includes battery charger status and low or depleted battery conditions; status information provided to the master controller includes analog values for: battery voltage, charger voltage and current, actual system voltage and current, and NAC current.

Power Supply and Modules (Continued)

- **Low Battery Voltage Cutout** is selectable when required (required for ULC listing applications)
- **2 A Auxiliary Output (AUX/SNAC)** can be selected either as resettable auxiliary power of 2 A @ 24 VDC, or selected to be a simple NAC (SNAC) for sounder base power, 4-wire detector power, or door holder power

Zone/Relay Module Details:

- **Select as IDC or Relay;** configure up to 8, Class B IDCs, or up to 4, Class A IDCs; or up to 8, Relay outputs rated 2 A resistive @ 30 VDC (N.O. or N.C.); or combinations of IDCs and Relays; each zone is separately configurable as an IDC or Relay output
- **IDC Support.** Each IDC supports up to 30, two-wire devices
- **IDC EOL resistor values are selectable as:** 3.3 k Ω , 2 k Ω , 2.2 k Ω , 3.4 k Ω , 3.9 k Ω , 4.7 k Ω , 5.1 k Ω , 5.6 k Ω , 6.34/6.8 k Ω , and 3.6 k Ω + 1.1 k Ω ; see instructions for more details

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.

AUTOPULSE Z-20 panel selection

Model*	Color	Description	Supv.	Alarm
4007-9101AR	Red	AUTOPULSE Z-20 with 4 conventional 3 A NACs and a 6 A output power supply/battery charger; includes IDNet+ communications for 100 addressable points and 1, 4007-9801 Zone/Relay module; Note: Add optional module and other currents separately for battery calculations; base panel current does not subtract from the 6 A power available for optional modules and external loads	145 mA	190 mA

Field installed optional modules and accessories

Model	Description	Supv.	Alarm	
4007-9801	Eight Point Zone/Relay Module , each point is selectable as an IDC input or Relay output, Class A IDCs require 2 points (one out and one return); one module is included as standard, select up to 3 additional; current shown is for 8 Class B IDCs with 4 in alarm, <i>detector current is added separately</i>	83 mA max	351 mA max	
4007-9802	25 VDC Regulator Module ; 2 A maximum output; use to power Zone/Relay modules connected to initiating devices requiring nominal 25 VDC voltage	with 1 module with 2 modules with 3 modules	190 mA 290 mA 390 mA	445 mA 801 mA 1156 mA
4007-9803	IDNet+ Loop Expansion Module ; provides an additional isolated loop with short circuit isolation to the existing IDNet+ channel, also provides an additional 75 addressable points to the IDNet+ channel capacity, maximum of two	NA	NA	
4007-9805	Panel Mounted 48 LED Status Annunciator Module ; provides 24 Yellow LEDs, 20 Red LEDs, and 4 Red/Green LEDs that are programmable for up to 24 IDC zones of alarm and trouble annunciation, or as required for custom annunciation requirements	no LEDs on with LEDs on	10 mA 1.75 mA per LED, 105 mA max	10 mA
4007-9806	SDACT Module for Point or Event Reporting; order 2080-9047 connection cables as required (see cable details under accessories)	30 mA	40 mA	
4007-9809	Relay Module ; relays for Alarm, Supervisory, and Trouble; rated 2 A resistive @ 32 VDC	15 mA	37 mA	

Batteries and accessories

Model	Capacity	Battery Mounting Details	
2081-9272	6.2 Ah	12 V Batteries for cabinet mounting; select one battery model per system standby requirements; order quantity of two; to be wired in series for 24 VDC	
2081-9274	10 Ah		
2081-9288	12.7 Ah		
2081-9275	18 Ah		
2081-9287	25 Ah	For remote mount in Battery Box 4009-9801	Batteries for remote mounting; see battery cabinet details below
2081-9276	33 Ah	For remote mount in Battery Box 4009-9802	

Battery Accessories

Model	Color	Capacity	Dimensions	Description
4009-9801	Beige	For up to 25 Ah batteries	16 ¼" W x 13 ½" H x 5 ¾" D (413 mm x 343 mm x 146 mm)	External battery cabinet without charger, with locking solid door and battery harness; for close-nippled mounting to fire alarm control panel cabinet
4009-9802	Beige	For up to 33 Ah batteries	25 ¾" W x 20 ¾" H x 4 ⅛" D (654 mm x 527 mm x 105 mm)	

Accessories

Model	Description
2080-9047	DACT cable, 14 ft (4.3 m) long, RJ45 plug one end, spade lugs on the other; order one per phone line connection required
2975-9812	Red semi-flush box trim; 1 7/16" (37 mm) wide, four corners and trim pieces for top, bottom, and sides
2081-9031	Series resistor for WSO, IDCs (N.O. water flow and tamper on same circuit, wires after water flow and before tamper) 470 Ω, 1 W, encapsulated, two 18 AWG leads (0.82 mm ²), 2 ½" L x 1 ¾" W x 1" H (64 mm x 35 mm x 25 mm). This is for non-addressable initiating zones.
4081-9002	3.3 kΩ, 1 W end-of-line resistor harness for non-addressable NAC circuits
4081-9018	10 kΩ, 1 W end-of-line resistor harness for Class B non-addressable initiating zones
431537	Single gang EOL mounting plate (For ULC requirements)

AUTOPULSE Z-20 releasing control system modules

Model	Description		Reference
430687	Coil Supervision Module		Required , one per RAC, mounts in the releasing actuator wiring junction box; see specifications section for details
433936	Flush mount	Maintenance Switches	One per RAC; flush or surface mount; indicator lamp models require separate 24 VDC wiring
433937	Surface mount		
433940	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
433941	Surface mount		

Suppression Release Peripheral and Accessories

Model	Description	Reference
4090-9005	Basic Suppression Release Peripheral on mounting plate	Requires mounting box 2975-9227, ordered separately
4090-9006	Suppression Release Peripheral mounted in NEMA 1 red box; required for ULC listing	Includes LED indicator on front of door
2975-9227	NEMA 1 red mounting box; required for 4090-9005	These items are included with model 4090-9006
4090-9812	Red LED IDNet communications indicator option kit; mounts on door of 2975-9227 box	

Refer to control panel programming manual 579-1167AR for further information on suppression release panel programming.

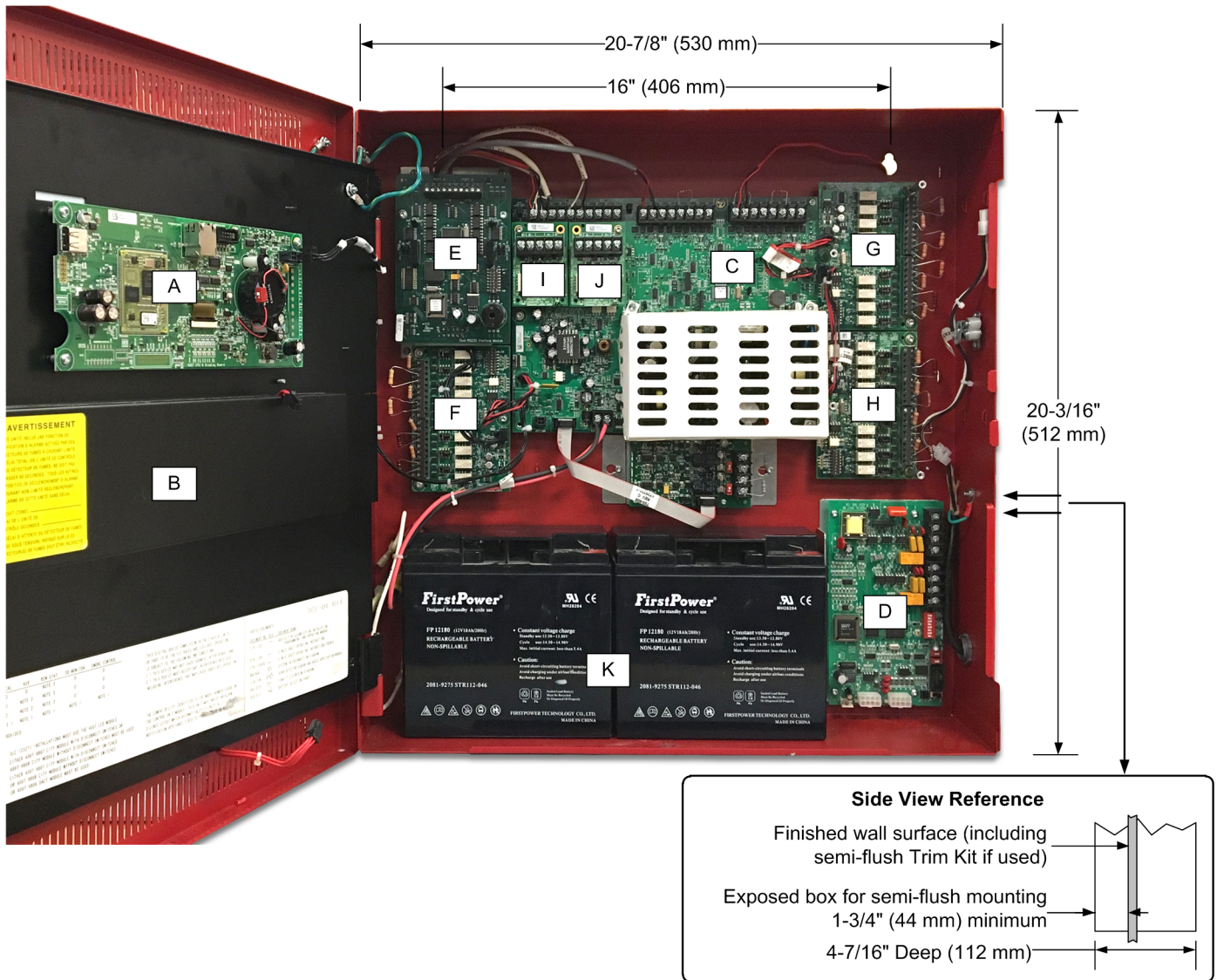
Z-20 panel specifications

Input Power	120 VAC Input	2 A maximum @ 102 to 132 VAC, 50/60 Hz	
	240 VAC Input	1 A maximum @ 204 to 264 VAC, 50/60 Hz	
Z-20 Power Supply Output Ratings	Power Supply Output Rating	Including module currents and auxiliary power outputs; 6 A total	Output switches to battery backup during mains AC failure or brownout conditions
	NAC Ratings	3 A each for Special Application Appliances	
		2 A each for Regulated 24 DC Appliances	
Auxiliary Power Tap	2 A maximum, 24 VDC nominal (19.5 to 31.1 VDC)		
Special Application Non-Addressable Appliances		horns, strobes, and combination horn/strobes and speaker/strobes (contact your product representative for compatible appliances)	
Regulated 24 DC Non-Addressable Appliances		Power for other UL listed appliances; use associated external synchronization modules where required	
Battery Charger Ratings (sealed lead-acid batteries)	Battery capacity range	UL and ULC listed for battery charging of 6.2 Ah up to 33 Ah (batteries larger than 18 Ah require a remote battery cabinet)	
	Charger characteristics and performance	Temperature compensated, dual rate, recharges depleted batteries within 48 hours per UL Standard 864; to 70% capacity in 12 hours per ULC Standard S527	
Custom Background Display Details		Supported file types: JPG, BMP, GIF, and PNG Recommended image type is JPG, recommended image size is 480 x 240, and the file size limit is 100 kb	
Environmental	Operating Temperature	32° to 120°F (0° to 49° C)	
	Operating Humidity	Up to 93% RH, non-condensing @ 90° F (32° C) maximum	

Additional Technical Reference

Description	Document	Description	Document
Installation Manual	579-1102AR	Single Page Operator Instructions	579-1109AR
Programmer's Manual	579-1167AR	Zone/Relay Module Installation Manual	579-1103
Detailed Operator's Manual	579-1165AR	LCD Annunciator Installation Manual	579-172AR

Z-20 mounting and module location reference



Module Locations:

- A. CPU and User Interface assembly.
- B. Location for optional 4007-9805 LED Module.
- C. Power Supply Assembly.
- D. 4007-9806 SDACT location.
- E. Location for 4007-9801 Zone/Relay Module, or (as shown) 4007-9802 25 V Regulator Module
- F. Primary location for 4007-9801 Zone/Relay Module
- G. Location for additional 4007-9801 Zone/Relay Module.
- H. Identical to Block G above.
- I. 4007-9803 IDNet+ Loop Expansion Modules, maximum of two (two are shown).
- J. Identical to block I above.
- K. Battery location for up to 18 Ah batteries. Note: No conduit entry or wiring in this area, 14-7/8" (378 mm) wide.

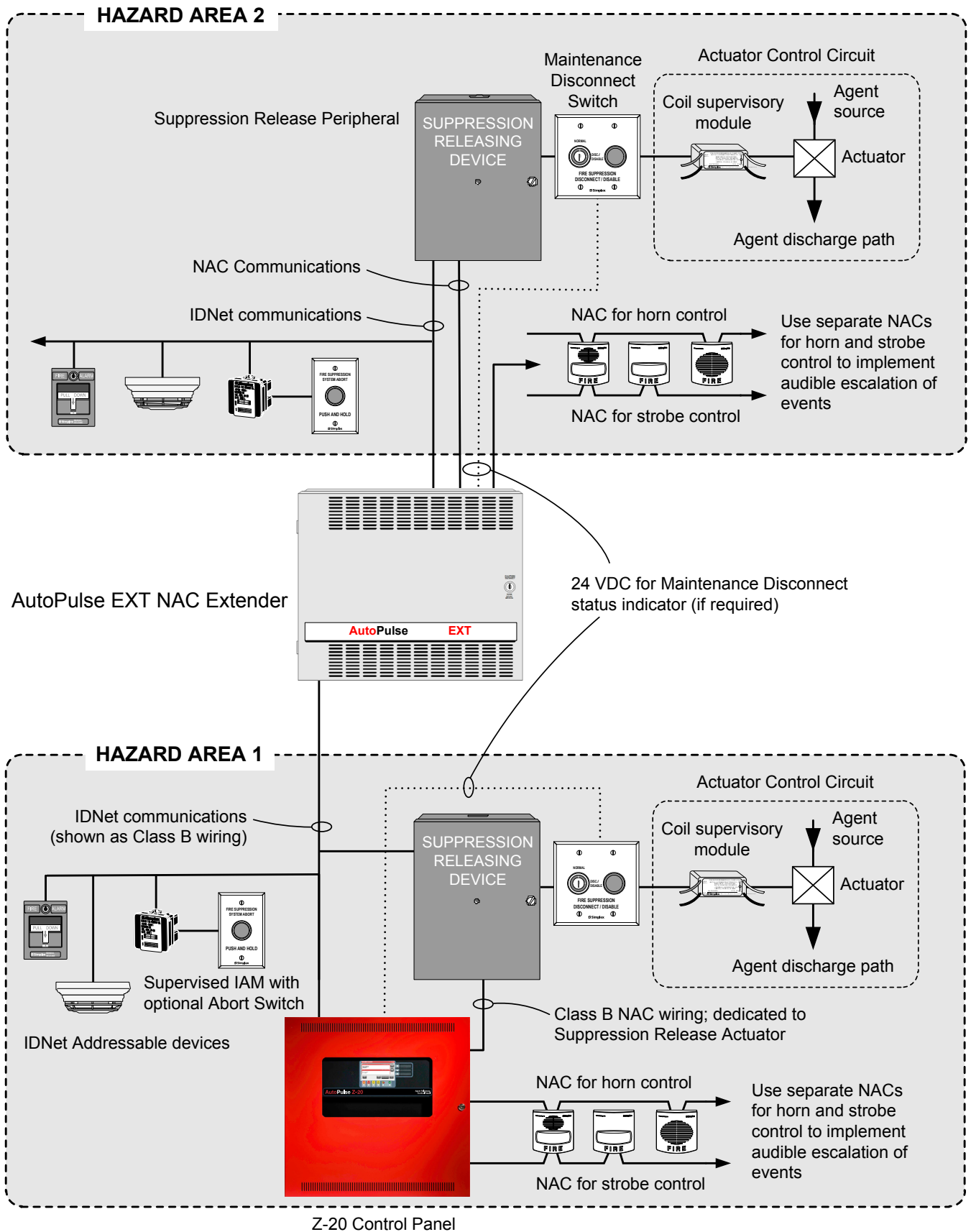
Note: A system ground must be provided for Earth Detection and transient protection devices. This connection shall be made to an approved, dedicated Earth connection per NFPA 70, Article 250, and NFPA 780.

Additional compatible equipment and reference

Subject	Data Sheet	Subject	Data Sheet
AUTOPULSE EXT NAC Extender	T-2016169	AUTOPULSE 4090-9119 Relay IAM (Individual Addressable Module) with Unsupervised Input	T-2016181
AUTOPULSE Z-20 Detection System Accessories and LCD Annunciator	T-2016170	AUTOPULSE 4090-9120 Six Point Module with Four T-Sense Inputs and Two Relay Outputs	T-2016182
AUTOPULSE Fire Suppression System Abort Switches and Releasing Appliance Circuit (RAC) Maintenance Switches	T-2016172	AUTOPULSE TrueAlarm Analog Sensors – Photoelectric and Heat; Standard Bases and Accessories	T-2016183
AUTOPULSE System Batteries, Sealed Lead-Acid; with Applications Reference for Battery Cabinets, and Battery Cabinets with Charger	T-2016173	AUTOPULSE Addressable Duct Sensor Housings with TrueAlarm Photoelectric Sensor; Available with Multiple Relay Control	T-2016184
AUTOPULSE Circuit Protection; Model 2081-9044 Overvoltage Protector	T-2016174	AUTOPULSE Dual Address Bases for Multi-Sensor 4098-9754, Standard and Sounder	T-2016185
AUTOPULSE IDNet and MAPNET II Communicating Devices, Individual Addressable Modules (IAMs)	T-2016175	AUTOPULSE E-Series Analog Heat Sensor 4098-9733E and Bases for Extended Exposure to High Humidity	T-2016186
AUTOPULSE IDNet Communicating Devices Model 4090-9002 Relay IAM	T-2016176	AUTOPULSE 2081 Series E.O.L. Resistors	T-2016187
AUTOPULSE IDNet or MAPNET II Communicating Devices; 4090-9101 and 4090-9106, Zone Adapter Modules	T-2016177	AUTOPULSE IDNet and MAPNET II Communicating Devices Model 4090-9008 Dual Contact Relay IAM	T-2016188
AUTOPULSE 4090-9116 Addressable IDNet Communications Isolator	T-2016178	AUTOPULSE IDNet Communicating Devices Model 4090-9010, 8 A Relay IAM	T-2016189
AUTOPULSE 4090-9117 Addressable Power Isolator with IDNet Communications Control	T-2016179	AUTOPULSE IDNet or MAPNET II Communicating Devices; Addressable Manual Stations for Releasing Applications	T-2016190
AUTOPULSE 4090-9118 Relay IAM (Individual Addressable Module) with T-Sense Input	T-2016180	AUTOPULSE IDNet Addressable Devices, Model 4090-9007 Signal IAM (Individual Addressable Module)	T-2016191

Contact your local AUTOPULSE product supplier for additional information on compatible IDNet addressable devices and TrueAlert notification appliances.

AUTOPULSE Z-20 releasing system one-line connection reference

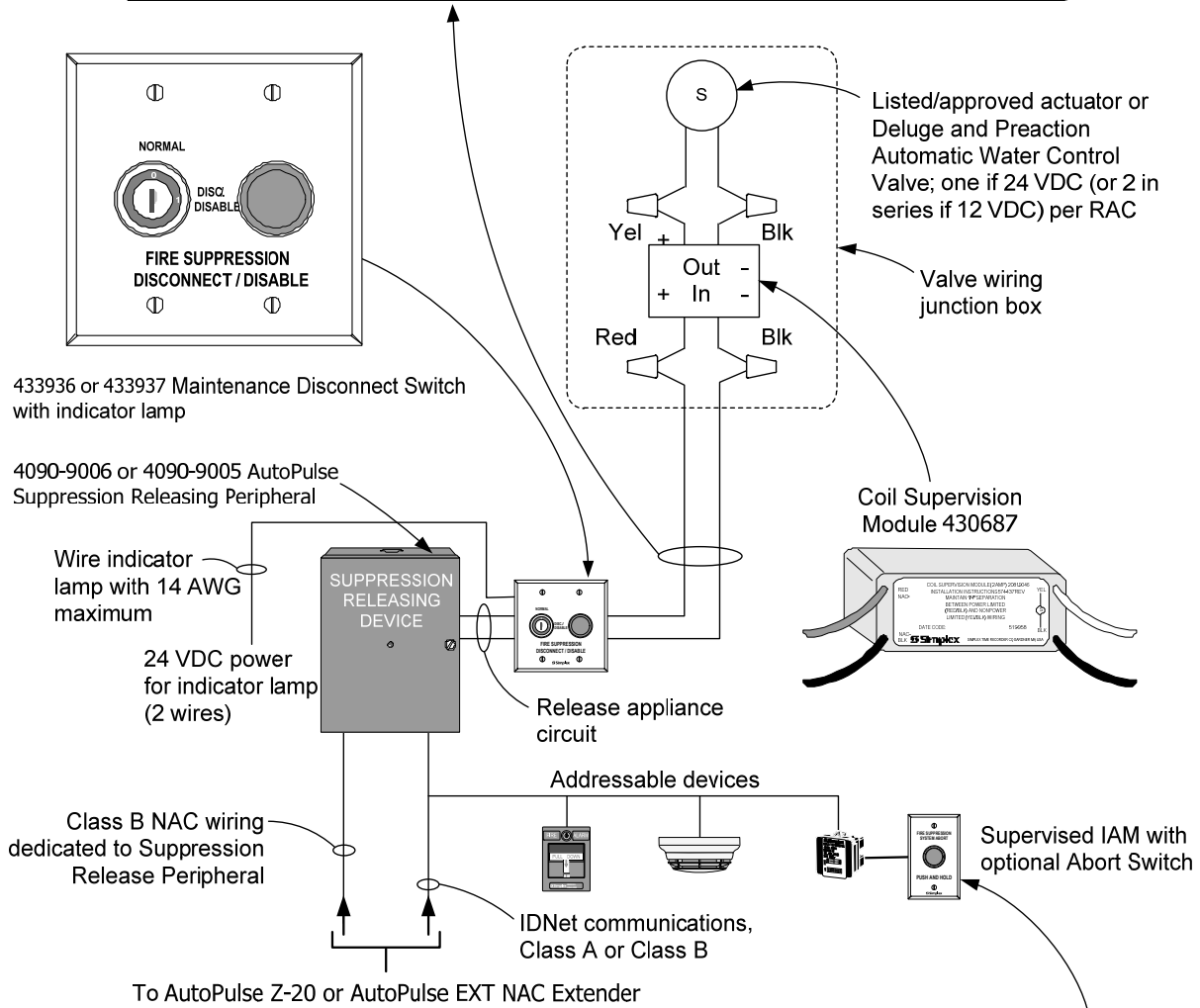


Suppression release peripheral wiring reference

Maximum Release Appliance Circuit (RAC) Wiring Distances from Suppression Release Peripheral to the Valve Solenoid (based on a total drop of 0.6 V)

RAC Output Current (refer to solenoid rating)	Distance								Total Line Resistance
	18 AWG		16 AWG		14 AWG		12 AWG		
0.50 A	74 ft	23 m	118 ft	36 m	188 ft	57 m	300 ft	91 m	1.06 Ω
0.75 A	50 ft	15 m	79 ft	24 m	126 ft	38 m	200 ft	61 m	0.71 Ω
1.00 A	37 ft	11 m	59 ft	18 m	94 ft	29 m	150 ft	46 m	0.53 Ω
1.25 A	30 ft	9 m	47 ft	14 m	75 ft	23 m	120 ft	36.6 m	1.06 Ω
1.5 A	25 ft	7.6 m	39 ft	12 m	63 ft	19 m	100 ft	30.5 m	0.71 Ω
1.75 A	21 ft	6.4 m	34 ft	10 m	54 ft	16 m	85 ft	26 m	0.53 Ω
2.00 A	19 ft	5.8 m	30 ft	9 m	47 ft	14 m	75 ft	23 m	0.53 Ω

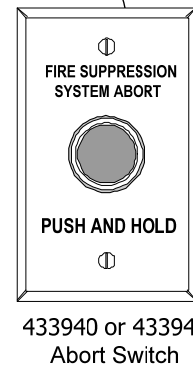
Metric wire equivalents: 18 AWG = 0.82 mm²; 16 AWG = 1.31 mm²; 14 AWG = 2.08 mm²; 12 AWG = 3.31 mm²



Maximum Notification Appliance Circuit (NAC) Wiring Distances to a Suppression Release Peripheral (0.5 A to 1.75 A drop is based on a total drop of 3.4V; 2 A drop is based upon a total drop of 1.2 V)

RAC Output Current (refer to solenoid rating)	Distance								Total Line Resistance
	18 AWG		16 AWG		14 AWG		12 AWG		
0.50 A	250 ft	76 m	399 ft	122 m	635 ft	194 m	1010 ft	308 m	3.58 Ω
0.75 A	167 ft	51 m	266 ft	81 m	423 ft	129 m	673 ft	205 m	2.39 Ω
1.00 A	125 ft	38 m	199 ft	61 m	317 ft	97 m	505 ft	154 m	1.79 Ω
1.25 A	100 ft	30 m	159 ft	48 m	254 ft	77 m	404 ft	123 m	1.43 Ω
1.5 A	84 ft	26 m	133 ft	41 m	212 ft	65 m	337 ft	103 m	1.19 Ω
1.75 A	72 ft	22 m	114 ft	35 m	181 ft	55 m	289 ft	88 m	1.02 Ω
2.00 A	25 ft	7.6 m	39 ft	12 m	63 ft	19 m	100 ft	30 m	0.36 Ω

Metric wire equivalents: 18 AWG = 0.82 mm²; 16 AWG = 1.31 mm²; 14 AWG = 2.08 mm²; 12 AWG = 3.31 mm²



Suppression release peripheral specifications

Suppression Release Peripheral 4090-9006 and 4090-9005

Communications	IDNet, one address				
RAC Output Rating	with Z-20	2 A maximum	At nominal 24 VDC, regulated; refer to NAC Power Requirements for more detail		
	with AUTOPULSE EXT NAC Extender	1 A maximum			
NAC Power Requirements	Voltage	16 to 32 VDC (nominal 24 VDC)			
NOTE: Z-20 NACs are rated at 3 A; AUTOPULSE EXT NAC Extender NACs are rated at 2 A, Extender expansion NACs are rated 1.5 A	Supervisory Current	No additional current required, circuit appears as standard end-of-line (EOL) NAC loading			
	Alarm Current Reference (RAC current = actuator current)	RAC Current	NAC Current	RAC Current	NAC Current
		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 A	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 ² to 3.31 mm ²)				
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 2081-9044 Overvoltage Protectors				
Dimensions	See installation reference on page 12				
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)				

Coil Supervision Module 430687

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
Current Rating	2 A Maximum; internally fused at 3 A, non-replaceable

Compatible UL Listed Valves and Actuators

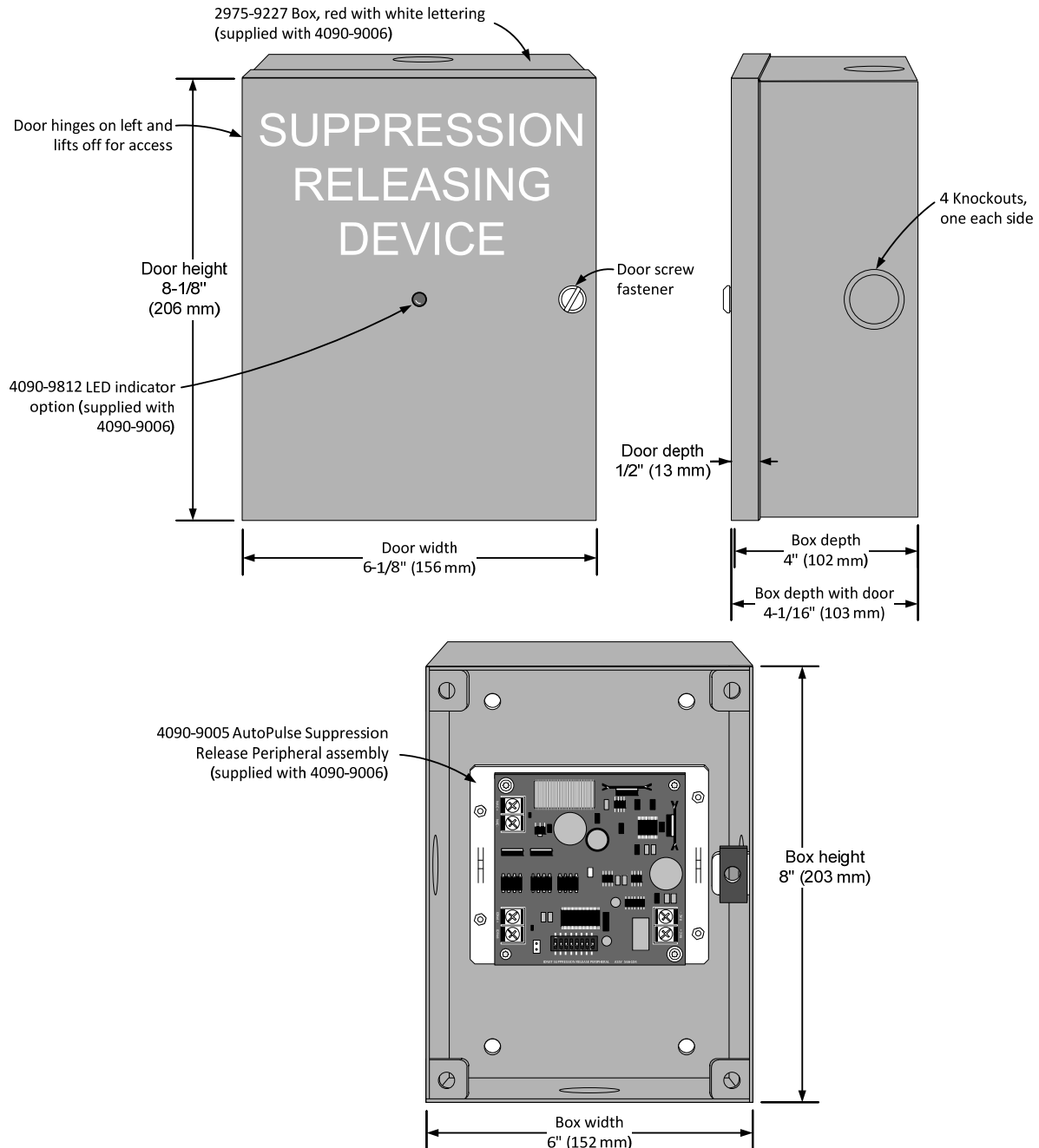
Manufacturer	Model Number	Electrical Ratings
ANSUL	AUTOMAN II-C Assembly (solenoid 17728; coil 25924)	24 VDC, 750 mA
	AUTOMAN II-C Explosion-Proof Releasing Device (solenoid 31492; coil 31438)	24 VDC, 750 mA
	AUTOMAN II-C Assembly (solenoid 68739; coil 25924)	24VDC, 750 mA
	Solenoid Electric Actuator (solenoid 73111; coil 73097)	24 VDC, 1 A
	CV90 HF Electric Actuator 73327	*24 VDC, 570 mA
	LP CO2 w/ASCO solenoid 422934	24 VDC, 442 mA
	LP CO2 double action 24 VDC solenoid 430948	24 VDC, 438 mA
	LP CO2 3-way selector valve solenoid 433419	24 VDC, 438 mA
	Electric Actuator 24 VDC solenoid 570537	24 VDC, 250 mA
LPG	Solenoid Electric Actuator (uses solenoid: Flow Control 609500/671S) Solenoid Coupling Assembly 21006401 (uses solenoid: Flow Control 609500/671S) Solenoid Coupling Assembly 21006402 (uses solenoid: Flow Control 609500/671S) LPG128/145/190/230-50/55 FM-200 valves (uses solenoid: Flow Control 609500/671S) LPG128-90UL iFLOW and FM-200 valve (uses solenoid: Flow Control 609500/671S)	24 VDC, 542 mA
Skinner	71395SN2ENJ1NOH111C2 (Skinner coil H111C2)	24 VDC, 420 mA
	73212BN4TN00NOC111C2 (Skinner coil C111C2)	24 VDC, 420 mA
	73212BN4TNLVNOC322C2 (Skinner coil C322C2)	24 VDC, 830 mA
	73218BN4UNLVNOH111C2 (Skinner coil H111C2)	24 VDC, 410 mA
	73218BN4UNLVNOC111C2 (Skinner coil C111C2)	24 VDC, 410 mA
ASCO	8210A107 (097617-005D coil)	24 VDC, 750 mA
	8210G207 (238310 coil)	24 VDC, 440 mA
	8211A107 (097617-005D coil)	24 VDC, 750 mA
	8262H182 (238910 coil)	24 VDC, 483 mA
	HV2628571 (23810 coil)	24 VDC, 442 mA
	HV2648581 (23810 coil)	24 VDC, 442 mA
	EF8210G001MBMO (238714 coil)	24 VDC, 450 mA
	R8210A107 (097617-005D coil)	24 VDC, 700 mA
T8210A107 (097617-005D coil)	24 VDC, 700 mA	
Pyro-Chem	ECH Electrical Control Head (551201)	24 VDC, 1700 mA
	Explosion-Proof Electric Actuator (570147)	24 VDC, 396 mA
	Removable Electric Actuator (570209)	24 VDC, 200 mA
Hygood	304.205.010 – Electrical Actuator Suppression Diode	24 VDC, 250 mA
	304.209.001 – Electrical Actuator Bridge Rectifier	24 VDC, 250 mA
Minimax	Model MX1230 without diode	24 VDC, 500 mA
Versa	CGS-4292-NB3-S20000	24 VDC, 438 mA
Burkert	5282 2/2-Way Solenoid Valve	24 VDC, 333 mA

* For 24 VDC, 450 mA activation, requires a 73886 (21.5 ohm, 23 watt) in-line resistor shipping assembly ordered separately. For additional information refer to the manufacturer's technical documentation.

Compatible FM approved water control valves

Z-20 Control Panels are assigned to FM Release Control Panel Group 3. Group 3 FM Approved Release Control Panels 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



TYCO, AUTOPULSE, and the product names listed in this material are marks and/or registered marks. Unauthorized use is strictly prohibited. NFPA 72 and National Fire Alarm and Signaling Code are registered trademarks of the National Fire Protection Association (NFPA).

AutoPulse

T-2016171-2 5/2017

© 2017 Tyco Fire Protection Products. All rights reserved. All specifications and other information shown were current as of document revision date and are subject to change without notice.