Welcome to the AFAA 2024 Webinar Series

Fire Alarm Buzz

Fire Alarm System Interface with Releasing Panels

Presented by Tom Parrish
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AFAA TRAINING CENTER

1

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Tom Parrish has more than 30 years' experience in fire protection and emergency response and is the Retired Fire Marshal for Putnam Township Michigan. He serves on several NFPA technical committees including NFPA 72 Signaling Systems for the Protection of Life and Property and Emergency Communications Systems. He is currently serving as President of AFAA and is a senior instructor for NFPA. His professional credentials include Level IV NICET Certified Fire Alarm Technician, Level III NICET Inspections and Testing, Certified Fire Protection Specialist and Master Electrician. He is board certified as a Physical Security Professional by ASIS and holds a bachelor's in Industrial Technology from Kean University.

2

Disclaimer

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The authority on fire, electrical, and building safety

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3

Program Outline

- What are the code requirements for Releasing Systems?
- Why does compatibility matter?
- What are the additional supervision requirements for releasing system components?

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4

Referenced Codes

- NFPA 72, The National Fire Alarm and Signaling Code, 2019 edition
- NFPA 13, The Standard for the Installation of Sprinkler Systems, 2019 edition
- NFPA 70, The National Electrical Code 2020 edition

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5

Pre-Action Sprinkler Systems

Four Main Types

- Single Interlock Electrical Releasing
- Single Interlock Pneumatic Releasing
- Double Interlock Electric/Pneumatic
- Double interlock Pneumatic/Pneumatic

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6

Pre-Action Sprinkler Systems

Electric Releasing Trim (deluge and single interlock preaction)

Pneumatic Releasing Trim (deluge and single interlock preaction)

Electric / Pneumatic Releasing Trim (double interlock preaction)

Pneumatic / Pneumatic Releasing Trim (double interlock preaction)

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7

Pre-Action Sprinkler Systems

The valve is the same the trim is the difference

Why do we use Pre-action Systems?

- Need sprinkler protection without water already being in the pipes ?
- Better than just a simple Dry System ?
- Low temperature or high value areas.

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8

Fire Alarm Systems for Releasing Service

- Alarm panel must be Listed for Releasing Service
- Solenoid must be “Compatible” with the FACU
- Wiring must be supervised to the solenoid
- Must be a manual disconnect switch
- Detection system must be properly designed and installed

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9

Alarm panel must be listed for Releasing Service

- Alarm panel must be Listed for Releasing Service

Service Use
NFPA 12 – Carbon Dioxide systems
NFPA 12A – Halon 1301 fire systems
NFPA 13 - Automatic Sprinkler
NFPA 15 - Water Spray Fixed System
NFPA 16 - Foam Water Sprinkler and Foam Water Spray
NFPA 17 - Dry Chemical
NFPA 17A - Wet Chemical
NFPA 72 - National Fire Alarm Code
- Local
- Remote Station (protected premise unit)
- Central Station (protected premise unit)

NFPA 750 - Water Mist
NFPA 2001 - Clean Agent Fire Extinguishing System

10

Alarm panel must be listed for Releasing Service

- Alarm panel must be Listed for Releasing Service

1.1.1 Hardware Features
- The 5808 has one signaling line circuit (SLC) that supports 99 SK detectors and 99 SK modules or 127 SD protocol devices.
- 6.0A of output power is available through 4 sets of terminals for notification appliance circuits or auxiliary applications. Each circuit is power limited per UL 864 and can source up to 3.0A (total output power for all 4 circuits must not exceed 6.0A).
- Built-in dual phone line, digital alarm communicator/transmitter (DACT).
- Reports events to central station by point or by zone.
- UL Listed for pre-action and deluge releasing systems.
- Two general purpose Form C programmable relays.
- One Form C Trouble Relay.
- Basic system operation can be performed using a key or a user code.

11

Solenoid must be “Compatible”

Automatic Water Control Valves (FM-Approved) For Preaction and Deluge Sprinkler Releasing Applications

(Section not recognized by UL)

S2000 (TC-2F/TC-4F)
S200 (TC-2F/TC-4F) Canada Only
MRP-2001(E)

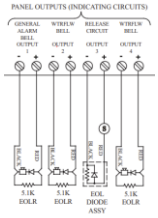
Refer to the FM approval guide for automatic water control valves which are compatible with solenoids listed.

Manufacturer	Model	Voltage	Watts	Amps	NPS	Orfice	PSI
Solenoid Group A							

Manufacturer	Model	Voltage	Watts	Amps	NPS	Orfice	PSI
Skinner	LV2LBK2S	24 VDC	11	458 mA	1/2"	5/8"	
Solenoid Group B - These valves are interchangeable							
ASCO	T8210A107	24 VDC	16.8	700 mA	1/2"	5/8"	

12

Wiring must be supervised to the solenoid



13

Solenoid with built in tamper / removal switch

Newer models may have integrated switches

But are they the ones on the compatibility list ?

14

Must be a manual disconnect switch

When Activated what signals should we see at the releasing panel?

- Trouble?
- Supervisory?
- Both ?

15

Detection System must be Properly Designed and Installed

What do we typically see as Alarm initiation devices for Pre-Action Systems ?

- Spot type heat detectors
- Spot type smoke detectors
- Line-type heat detectors
- Aspirating smoke detection
- Flame Detectors
- Alarm Pressure Switch

16

Detection System must be Properly Designed and Installed

What do we typically see as Supervisory devices for Pre-Action Systems ?

- Riser Tamper switches
- Low Air temp
- Low Air pressure
- High Air Pressure
- Solenoid Actuator supervisory
- Service isolation valve
- Air Pressure Sw. (Double Interlock)

17

Questions

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18