Release Control
Fire Alarm Systems

Automatic Extinguishing, Deluge and Preaction
Sprinkler System Release Control for
4020/4100/4120 Fire Alarm Control Panels

FEATURES
- Release control using 4020/4100/4120 Series
  Fire Alarm Control Panels to provide:
  - Automatic extinguishing release
  - Deluge and preaction sprinkler system release
- Control panel compatibility:
  - 4020 Series control panel with 25.5 V Limiter
    Module (4020-0129)
  - 4100/4120 Series control panel with regulated
    power supply or 25.5 V Limiter Module
    (4100/4120-0129)
- Compatible with FM Approved 24 VDC automatic
  water control valves
- Required system components:
  - Coil supervision module (2081-9046) one per
    solenoid control NAC
  - Service Disconnect Switch (2080-9029) one
    per solenoid control NAC
- Recommended accessory (where appropriate):
  - Abort Switch (2080-9030)

INTRODUCTION
Automatic Extinguishing Release Systems.
These systems automatically activate solenoid control
valves for the release of a fire extinguishing agent
(such as dry chemical, water spray, foam, CO2, or
Halon) in response to fire detection device input.

FM Extinguishing System Release Panels must
have a minimum of 24 hours of standby power.
Initiating devices must be FM Approved for the
application and may be wired either Class A or B.
Solenoid control valves must be electrically compatible
with the control panel circuits and power supplies, and
are wired Class B to provide coil supervision.

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

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).

* This application is FM approved only. Contact Simplex for additional information.

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 detector (or fire detectors).
RELEASE CONTROL SYSTEM REQUIREMENTS

Simplex 4020 Series Fire Alarm Control Panel Requirements:
- Suppression Release Option (4020-6007).
- 25.5 VDC Limiter Module (4020-0129) connected to the power supply “B” tap, rated 4 A maximum, with “B” tap dedicated for solenoid control notification appliance circuits (NACs).
- Power supply loading and wiring distances must be per control panel Field Wiring Diagram 841-940.

Simplex 4100/4120 Series Fire Alarm Control Panel Requirements:
- Suppression Release Option (4100/4120-6007).
- Regulated power supply (4100/4120-0105 or 4100/4120-0115). Refer to page 3 for details.
- Or 25.5 VDC Limiter Module (4100/4120-0129) connected to the power supply “B” tap, rated 4 A maximum, with “B” tap dedicated for solenoid control NACs.
- Power supply loading and wiring distances must be per control panel Field Wiring Diagram 841-941.

FM Approved Automatic Extinguishing Release:
- Battery standby must be a minimum of 24 hours with 5 minutes of alarm.
- Solenoid valves must be electrically compatible.

FM Approved Deluge and Preaction Sprinkler Operation:
- Battery standby must be a minimum of 90 hours with 10 minutes of alarm.
- Initiating device circuits (IDCs) must be Class A, wired to Listed/Approved devices.
- Compatible Automatic Water Control Valves must be used. Refer to the diagram on page 4 for details.

General Requirements:
- Solenoid Valves are connected to compatible 2-wire, Class B notification circuits with only one solenoid valve per circuit to ensure supervision.
- Coil Supervision Module (2081-9046) is required for each solenoid control circuit, must be wired electrically before the solenoid valve, and must be located in the solenoid valve wiring junction box. Refer to diagram on page 4.
- Initiation Logic. Cross zoning, counting circuits, or other alarm initiation logic is to be implemented as required in the fire alarm control panel hardware and software.
- Battery Standby must be selected for a minimum alarm operating voltage of 22.8 VDC to ensure proper valve operation. (Contact Simplex for specific battery requirements per panel application.)

- Service Disconnect Switches (2080-9029) are required to ensure that notification circuits dedicated for release operation can be properly disabled prior to service. Mounting requires a single gang box, 2 1/2” minimum depth. (Refer to NFPA 72, the National Fire Alarm Code, Section 3-10.4, 1996 edition or Section 3-8.4.3.4, 1999 edition.)
- Abort Switches (2080-9030) are available when abort operation is required. When used, wire on separate IDC, Class A or B, the same as required for other non-addressable initiating devices. Mounting requires a single gang box, 2 1/2” minimum depth.
- Manual Release Stations used for initiation of the release solenoids require that the appropriate time delay be implemented at the fire alarm control panel (typically 15 or 30 seconds). Contact Simplex for specific requirements and custom station wording.

ADDITIONAL INFORMATION
For additional information, refer to Factory Mutual Research Corporation (FMRC) “FMRC Approval Guide” and FM Approval Standard “Deluge Systems and Preaction Systems.”

COIL SUPERVISION MODULE 2081-9046
Solenoid control NACs provide supervision of the solenoid coil and wiring by connecting Coil Supervision Module 2081-9046 into the solenoid circuit. This module is located at the valve wiring electrical junction box and includes the coil resistance as part of the supervision loop. Refer to the diagram on page 4 for details.

**COIL SUPERVISION MODULE 2081-9046 SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>Epoxy encapsulated</td>
</tr>
<tr>
<td>Dimensions</td>
<td>1 3/8&quot; W x 2 7/16&quot; L x 1 1/16&quot; H (34 mm x 62 mm x 27 mm)</td>
</tr>
<tr>
<td>Wiring</td>
<td>18 AWG wire leads, color coded</td>
</tr>
<tr>
<td>Current Rating</td>
<td>2 A Maximum</td>
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</table>
## PRODUCT SELECTION CHART

### Release Control System Modules

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>2081-9046</td>
<td>Coil Supervision Module</td>
<td>One of each required per solenoid control circuit</td>
</tr>
<tr>
<td>2080-9029</td>
<td>Service Disconnect Switch</td>
<td></td>
</tr>
<tr>
<td>2080-9030</td>
<td>Abort Switch</td>
<td>As required</td>
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</tbody>
</table>

### 4020 Fire Alarm Control Panel Required Options

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4020-6007</td>
<td>Suppression Release Option</td>
</tr>
<tr>
<td>4020-0129</td>
<td>Voltage Limiter Module, 25.5 VDC, 4 A maximum</td>
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</tbody>
</table>

### 4100/4120 Fire Alarm Control Panel Required Options

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Selection Status</th>
<th>Reference</th>
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</thead>
<tbody>
<tr>
<td>4100-6007</td>
<td>Suppression Release Option</td>
<td>Required</td>
<td>Select per system type, 4100 or 4120*</td>
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<tr>
<td>4120-6007</td>
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### 4100/4120 Fire Alarm Control Panel Power Supply Options

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Selection Status</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>4100-0105</td>
<td>120 VAC input</td>
<td></td>
<td></td>
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<tr>
<td>4120-0105</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4100-0115</td>
<td>240 VAC input</td>
<td>Select one per Release Panel application</td>
<td>Select per system type, 4100 or 4120*</td>
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<tr>
<td>4120-0115</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4100-0129</td>
<td>Voltage Limiter Module, 25.5 VDC, connects to “B” power supply tap to provide a dedicated 4 A solenoid NAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4120-0129</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Selecting the 4120 prefix for a model number identifies that the fire alarm control panel is for use on a 4120 Network.
INSTALLATION REFERENCE DIAGRAM

Electrically compatible solenoid valve or compatible FM Approved Deluge and Preaction Automatic Water Control Valve, one per NAC.

Compatible FM Approved Deluge and Preaction Automatic Water Control Valve reference list:

1. ASCO Cat. No. 8210A107, 24 VDC coil, 700 mA.
2. ASCO Cat. No. R8210A107, 24 VDC coil, 700 mA.
3. ASCO Cat. No. T8210A107, 24 VDC coil, 700 mA.
4. Skinner Cat. No. 73218BN4UNLVOC111C2, 24 VDC coil, 460 mA.
5. Skinner Cat. No. LV2LBX25, 24 VDC coil, 460 mA.
6. Contact Simplex for additional valve compatibility.

Valve wiring junction box:
- Connections:
  - Red: + Out -
  - Black: + In -
- Colors:
  - Yellow (Yel):
  - Black (Bk):

2080-9030 Abort Switch (as required)

Wire initiating device circuits as Class A or Class B as required, wiring is shown Class A for reference only (refer to specific device wiring information for details)

Suppression release power supply options are supplied with this control panel label:

CAUTION: This Control Unit has been arranged for releasing service. Disable all releasing device circuits prior to servicing.

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