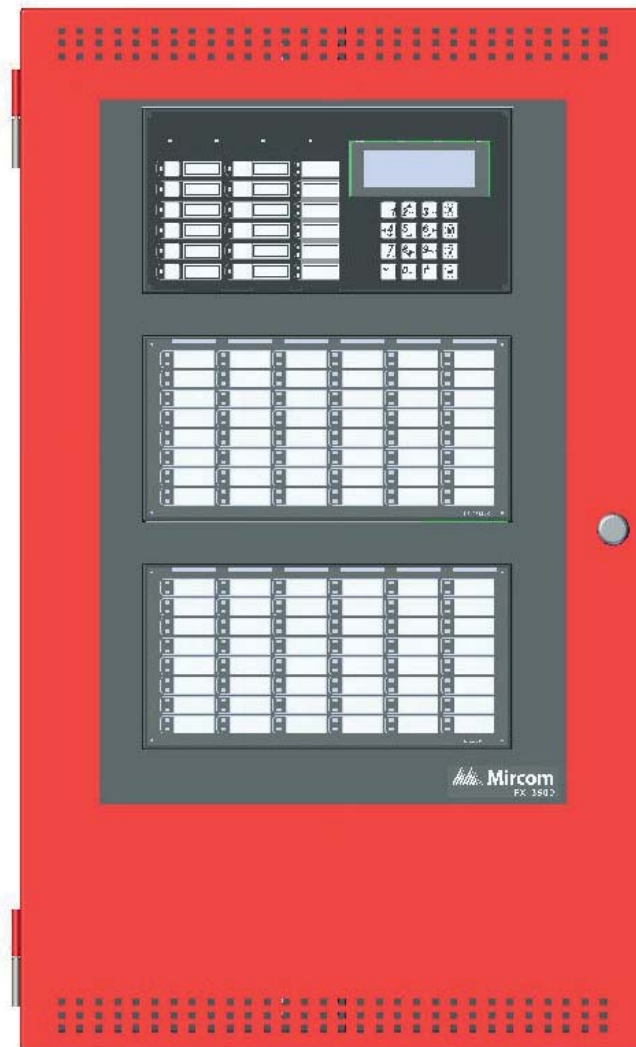


FX-3500RCU

Fire Alarm Control Panel



FM APPLICATIONS MUST HAVE CLASS A INITIATING CIRCUITS ONLY AND 90 HOUR BATTERY STANDBY OPERATION

Table of Contents

| | | |
|------------|---|-----------|
| 1.0 | Operating the Panel | 4 |
| 1.1 | Hazard Zones | 4 |
| 1.2 | Counting Zone Type | 4 |
| 1.3 | Abort Type | 4 |
| 1.4 | Configurable Timers | 5 |
| 1.5 | Hazard Zone States | 5 |
| 1.5.1 | Hazard Idle | 5 |
| 1.5.2 | Hazard Alarm (pre-discharge) | 6 |
| 1.5.3 | Hazard Release | 6 |
| 1.6 | General Operation | 6 |
| 2.0 | Releasing Circuit Wiring | 7 |
| 2.1 | Releasing Circuit Wiring - Class B/Style Y Wiring | 7 |
| 3.0 | Typical Releasing Applications | 8 |
| 3.1 | Pre-Action/Agent Release, Single Activation Application | 8 |
| 3.2 | Pre-Action/Agent Release, Double Activation Application | 9 |
| 3.3 | Pre-Action/Agent Release, Triple Activation Application | 10 |
| 3.4 | Pre-Action/Agent Release, 2 Input Type Activation Application | 11 |
| 3.5 | Deluge, Single Activation Application | 12 |
| 3.6 | Deluge, Double Activation Application | 13 |
| 3.7 | Deluge, Triple Activation Application | 14 |
| 3.8 | Deluge, 2 Input Type Activation Application | 15 |
| 4.0 | Compatible Solenoids | 16 |

1.0 Operating the Panel



Attention: ONLY UL/ULC LISTED MANUAL ABORT AND MANUAL RELEASE SWITCHES, SUCH AS THE MIRCOM SS-2004, ARE PERMITTED FOR USE.

The TS1 terminal on the power supply board (MD-1011) is dedicated to supply power for releasing devices. For wiring information see LT-1083RCU FX-3500RCU Installation Manual.

1.1 Hazard Zones

Hazard zones are configurable by correlating input devices, releasing circuits, (pre)release signals, and manual release and abort switches.



Notes: Abort switches are only configurable in Preaction/Agent release applications.

Soak Delay timer is only configurable for Deluge applications.

As PER NFPA 72: System releasing circuits will not initiate an alarm signal due to movement of waste water, surges, or variable pressure.

1.2 Counting Zone Type

Releasing applications must be configured with one of the following Counting Zone types:

- | | |
|----------------------|---|
| Single | Activation of any one input device correlated to the hazard zone will initiate the release process. |
| Double | Activation of any two input devices correlated to the hazard zone will confirm the alarm and initiate the release process. |
| Triple | Activation of any three input devices correlated to the hazard zone will initiate the release process. |
| 2 Input Types | Activation of any two different input device types (ion, photo, heat etc.) correlated to the hazard zone will initiate the release process. |

1.3 Abort Type

Releasing applications must be configured with one of the following Delay Timer types:

- | | |
|------------|--|
| ULI | After the Abort switch is pressed, the release timer will reset and then restart. If the switch is held for any time up to 50 seconds, then the releasing device will actuate 60 seconds after the switch is pressed. However, if the switch is held for longer than 50 seconds, then the releasing device will actuate 10 seconds after the switch is released. |
| IRI | Same as ULI with the following condition: For the Abort switch to function, you must press and hold the Abort switch before the second zone goes into alarm. |
| NYC | Pressing the Abort switch causes the control panel to add 90 seconds to the Release Delay Timer (RDT). Pressing and holding the Abort switch stops the Release Delay Timer (RDT) from counting down. Releasing the Abort switch resumes the count down of the RDT. |

- AHJ** The timer does not start while you press and hold the Abort switch. Press the Abort switch and the timer resumes counting down. Press the Abort switch again to restore the timer to its full value. Release the Abort switch and the timer resumes counting down.

1.4 Configurable Timers

Releasing applications may be configured with the following timers:

Release Delay Timer (RDT)

The amount of time from when the Hazard Zone is activated via correlated input devices until release.
The maximum value for the RDT is 60 seconds.

Soak Delay Timer (SDT)

The amount of time that the releasing circuit will be active. Upon the expiration of Soak Timer, the releasing circuits will be shut off. Only configurable in Deluge applications.
The maximum value for the SDT is 600 seconds.

Configuring the SDT to 0 seconds causes the releasing circuits to shut off ONLY when the system is reset.

Manual Release Delay Timer (MRDT)

The amount of time from when the Manual Release Switch is pressed until release.
The maximum value for the MRDT is 60 seconds.



Attention: Manual Release cannot be aborted once it has been initiated. Use ULC-S528 listed Manual Release such as MS-704(U) and MS-714(U).

1.5 Hazard Zone States

The escalating Hazard Zone states are as follows:

- Hazard Idle
- Hazard Alarm
- Hazard Release.

The states are defined based on the status of Hazard Area input devices, and correlated Abort and Manual Release Switches.

1.5.1 Hazard Idle

The Hazard Zone is Idle when:

- Release Delay Timer (RDT) is not started.
- There are insufficient alarm conditions to activate the Hazard Zone. For more information see Chapter 1.2 Counting Zone Type.
- Manual Release Switch is not active.

During this state:

- The corresponding NAC circuit(s) is off.
- Releasing circuit(s) is off.

1.5.2 Hazard Alarm (pre-discharge)

The panel enters the Hazard Alarm state when:

- It detects the Hazard area confirming alarm input device. For more information on confirming alarms see Chapter 1.2 Counting Zone Type.

OR

- For a Single Counting Zone hazard area, a single alarm input device will put the Hazard Zone into the Hazard Alarm state.

OR

- Manual Release switch is activated.

The releasing process continues as follows:

- Release Delay Timer (RDT) or Manual Release Delay Timer (MRDT) is started.
- Corresponding NAC(s) turns on at Alert rate.

1.5.3 Hazard Release

The panel enters the Hazard Release state when:

- The Release Delay Timer (RDT) or Manual Release Delay Timer (MRDT) expires.

The releasing process continues as follows:

- The correlated releasing circuit is activated.
- Corresponding NAC(s) switch to Evac rate.

1.6 General Operation

- If the Hazard Zone is Idle, activation of a Manual Release Switch starts the Manual Release Delay Timer (MRDT). The expiration of the MRDT activates the releasing circuits.
- If the Hazard Zone is active and the configured time for the Manual Release Delay Timer (MRDT) is less than the time remaining on the Release Delay Timer (RDT), once the MRDT expires the MRDT activates and release occurs. If the RDT is less than the MRDT, once the RDT expires the RDT activates and release occurs.
- If the Hazard Zone is activated by the Manual Release Switch, it cannot be aborted.
- If the Hazard Zone is activated by any other method, any configured abort switches will operate as described in 1.3 Abort Type.
- System Reset will reset all circuits, including releasing circuits.



Attention: When using a system that requires the activation of two automatic detection devices, detector installation spacing must be reduced to 0.7 times the linear spacing in accordance with National Fire Alarm Code, NFPA 72.



Caution: To ensure a Manual Release Switch overrides an Abort Switch, in the FX-3500RCU configuration software set the Man Rel Priority flag for the Hazard Zone zone to Yes.

2.0 Releasing Circuit Wiring

INPUT CIRCUIT WIRING: FM APPLICATIONS MUST HAVE CLASS A INITIATING CIRCUITS ONLY AND 90 HOUR BATTERY STANDBY OPERATION

Only addressable M500S and MIX-M500SAP supervised output modules can be used as a releasing circuit.

If the releasing circuit is wired as Class B, supervision of the solenoid coil is performed by the MP-3500R/W Solenoid EOL.

Wiring for the releasing circuit is shown in Figure 1.

Solenoid EOL module (MP-3500R/W) is used to supervise the solenoid coil. If the solenoid is already fitted with the directional diode then only the 47K EOL resistor is used. The supervisory current passes through the solenoid coil thus confirming the integrity of the solenoid coil for open coil. The wiring is supervised for the open and short conditions.

2.1 Releasing Circuit Wiring - Class B/Style Y Wiring

WARNING!
DISCONNECT POWER TO ALL RELEASING DEVICES BEFORE SERVICING THE PANEL

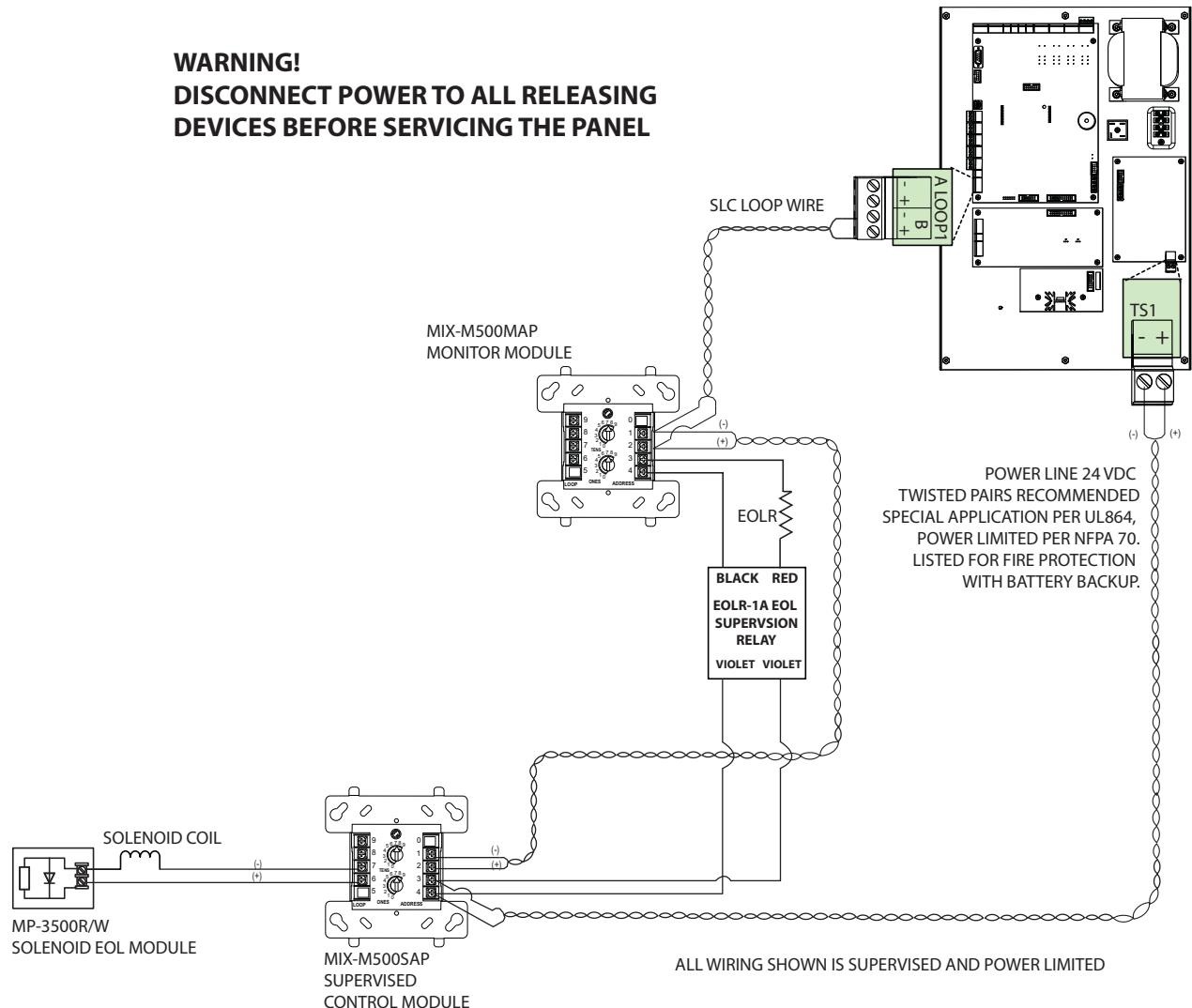











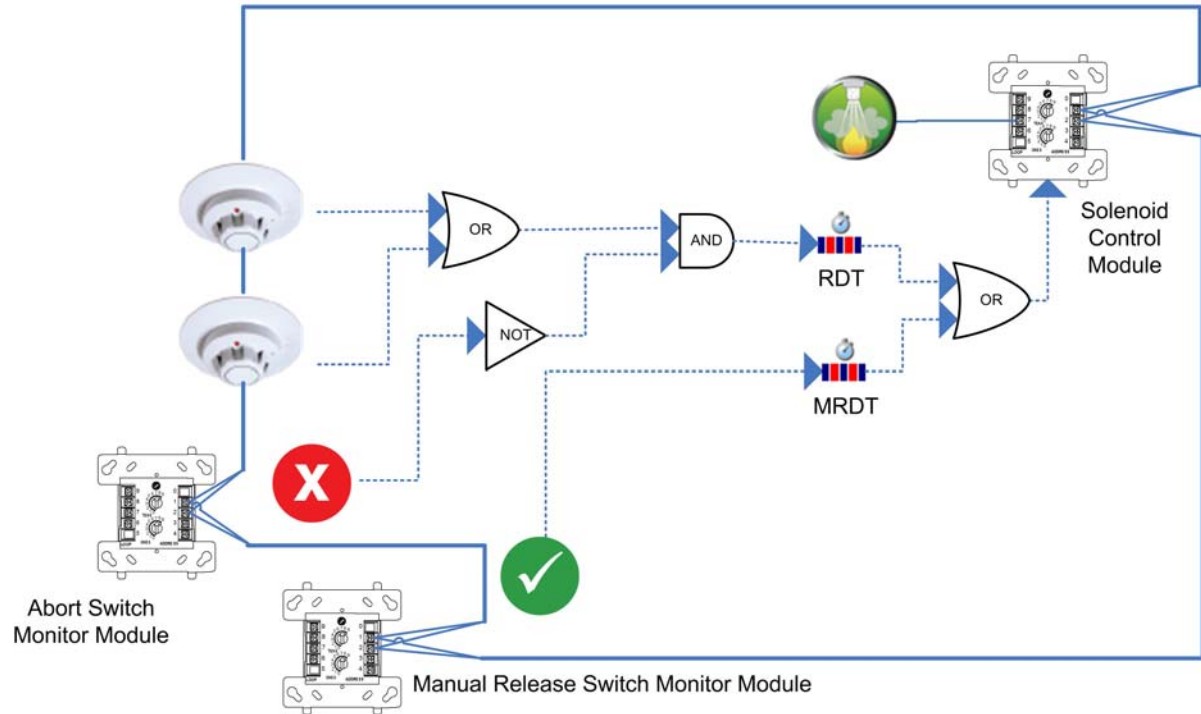


Figure 1 Releasing Circuit Wiring - Class B or Style Y Wiring

3.0 Typical Releasing Applications

3.1 Pre-Action/Agent Release, Single Activation Application

| Devices | |
|---|--|
|  | SLC Loop |
|  | Any Detector in Hazard Zone |
|  | Releasing Agent |
|  | Addressable Module |
|  | Abort Switch |
|  | Manual Release Switch |
| Logic | |
|  | AND Gate Both inputs are required. |
|  | Logic Path |
|  | OR Gate If either input is activated release occurs. |
|  | NOT Gate Input is required to be not activated. |
|  | Delay Timer Use FX-3500RCU Configurator to set type. |














Release commences if the following events occur:

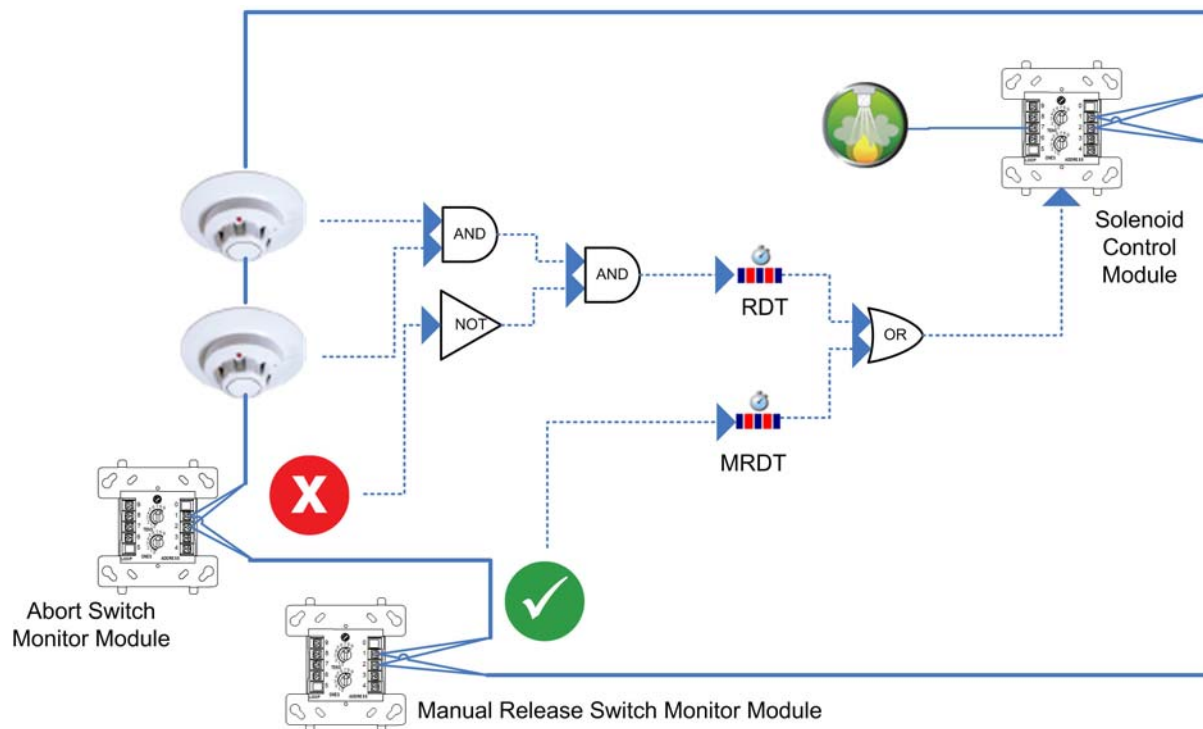
- a single detector correlated to the Hazard Zone enters alarm
 - the abort switch is not pressed
 - the delay timer expires

OR

- the Manual Release Switch is pressed
 - the delay timer expires

3.2 Pre-Action/Agent Release, Double Activation Application












| Devices | |
|---|--|
|  | SLC Loop |
|  | Any Detector in Hazard Zone |
|  | Releasing Agent |
|  | Addressable Module |
|  | Abort Switch |
|  | Manual Release Switch |
| Logic | |
|  | Logic Path |
|  | AND Gate Both inputs are required. |
|  | NOT Gate Input is required to be not activated. |
|  | OR Gate If either input is activated release occurs. |
|  | Delay Timer Use FX-3500RCU Configurator to set type. |

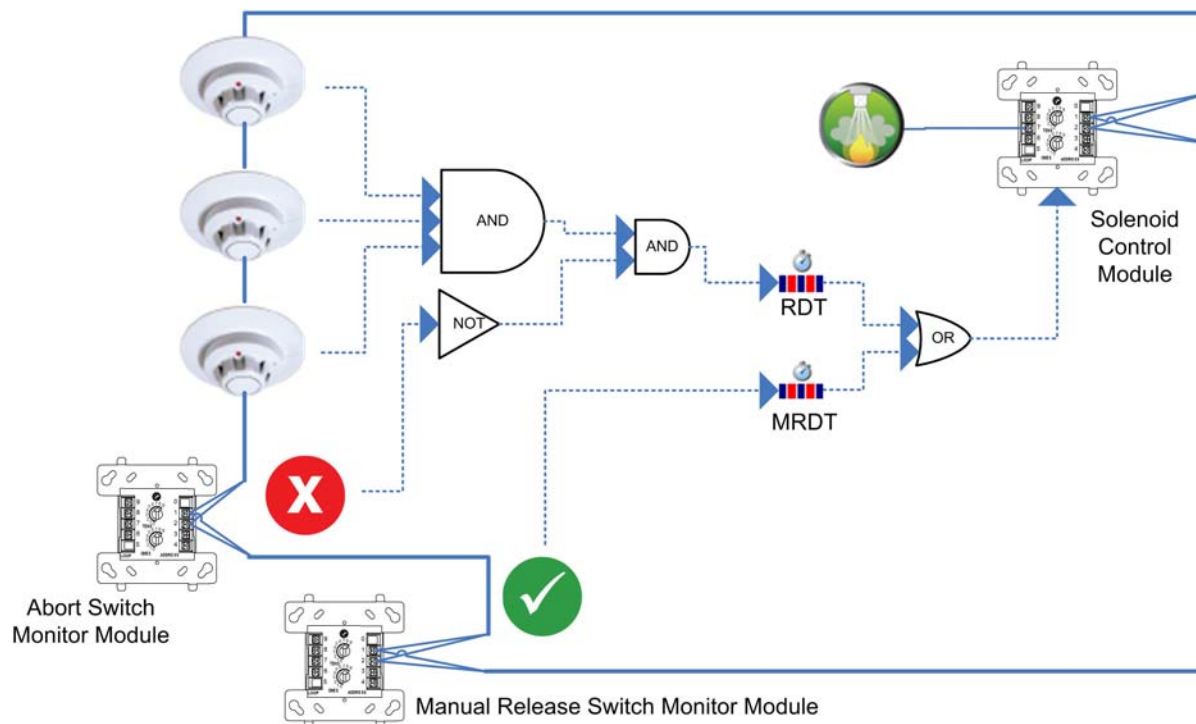


Release commences if the following events occur:

- two detectors correlated to the Hazard Zone enter alarm
 - the abort switch is not pressed
 - the delay timer expires
- OR
- the Manual Release Switch is pressed
 - the delay timer expires.

3.3 Pre-Action/Agent Release, Triple Activation Application













| Devices | |
|---|--|
|  | SLC Loop |
|  | Any Detector in Hazard Zone |
|  | Releasing Agent |
|  | Addressable Module |
|  | Abort Switch |
|  | Manual Release Switch |
| Logic | |
|  | Logic Path |
|  | AND Gate Both inputs are required. |
|  | NOT Gate Input is required to be not activated. |
|  | OR Gate If either input is activated release occurs. |
|  | Delay Timer Use FX-3500RCU Configurator to set type. |

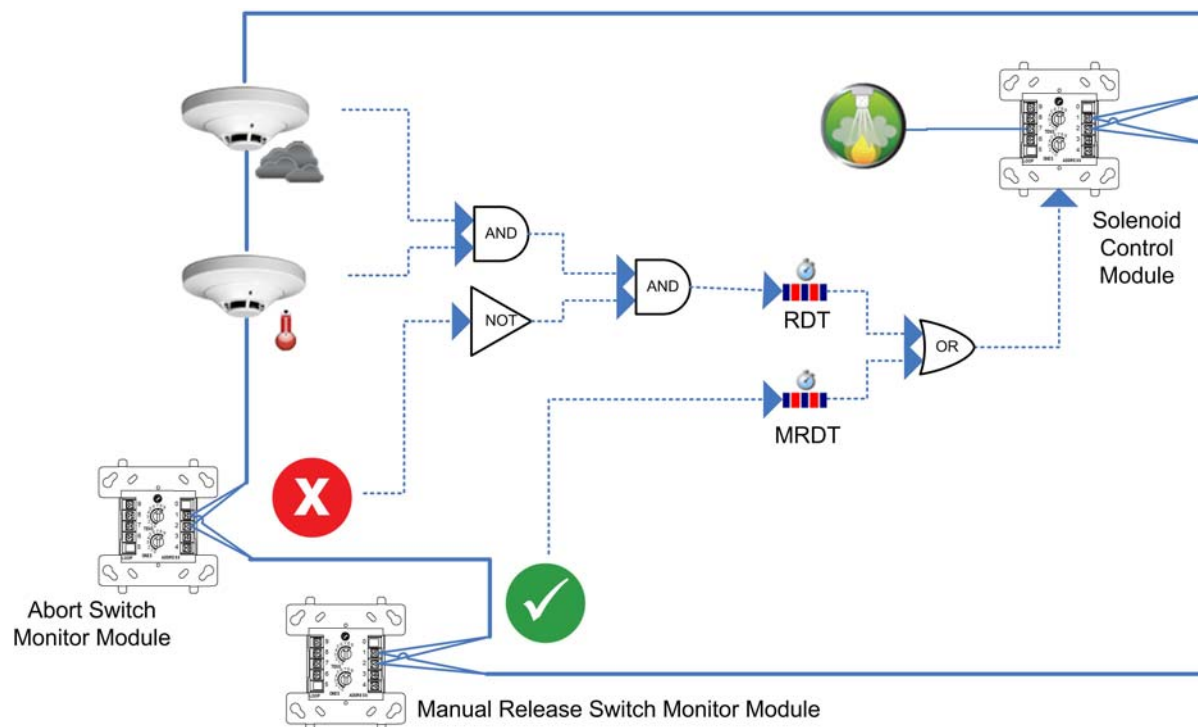


Release commences if the following events occur:

- three detectors correlated to the Hazard Zone enter alarm
 - the abort switch is not pressed
 - the delay timer expires
- OR**
- the Manual Release Switch is pressed
 - the delay timer expires.

3.4 Pre-Action/Agent Release, 2 Input Type Activation Application









| Devices | |
|---|--|
|  | SLC Loop |
|  | Smoke Detector |
|  | Heat Detector |
|  | Releasing Agent |
|  | Addressable Module |
|  | Abort Switch |
|  | Manual Release Switch |
| Logic | |
|  | Logic Path |
|  | AND Gate Both inputs are required. |
|  | NOT Gate Input is required to be not activated. |
|  | OR Gate If either input is activated release occurs. |
|  | Delay Timer Use FX-3500RCU Configurator to set type. |

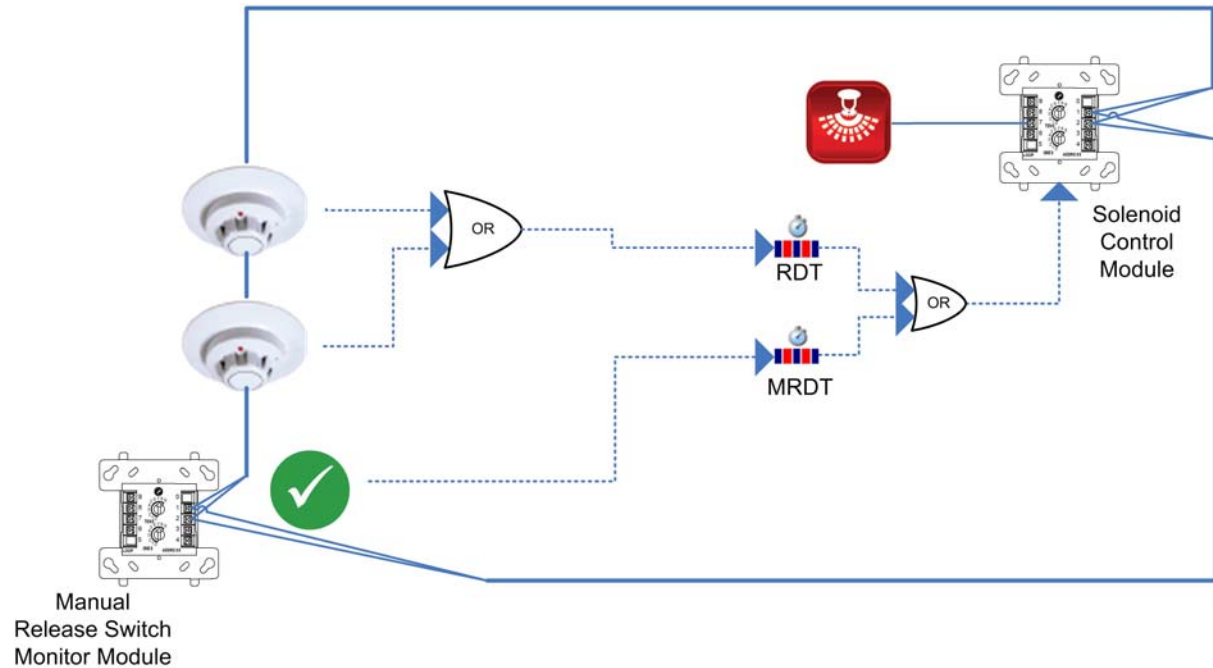


Release commences if the following events occur:

- two detectors of different types correlated to the Hazard Zone enter alarm
 - the abort switch is not pressed
 - the delay timer expires
- OR**
- the Manual Release Switch is pressed
 - the delay timer expires.

3.5 Deluge, Single Activation Application










| Devices | |
|--|--|
|  | SLC Loop |
|  | Any Detector in Hazard Zone |
|  | Deluge System |
|  | Addressable Module |
|  | Manual Release Switch |
| Logic | |
|  | Logic Path |
|  | OR Gate If either input is activated release occurs. |
|  | Delay Timer Use FX-3500RCU Configurator to set type. |

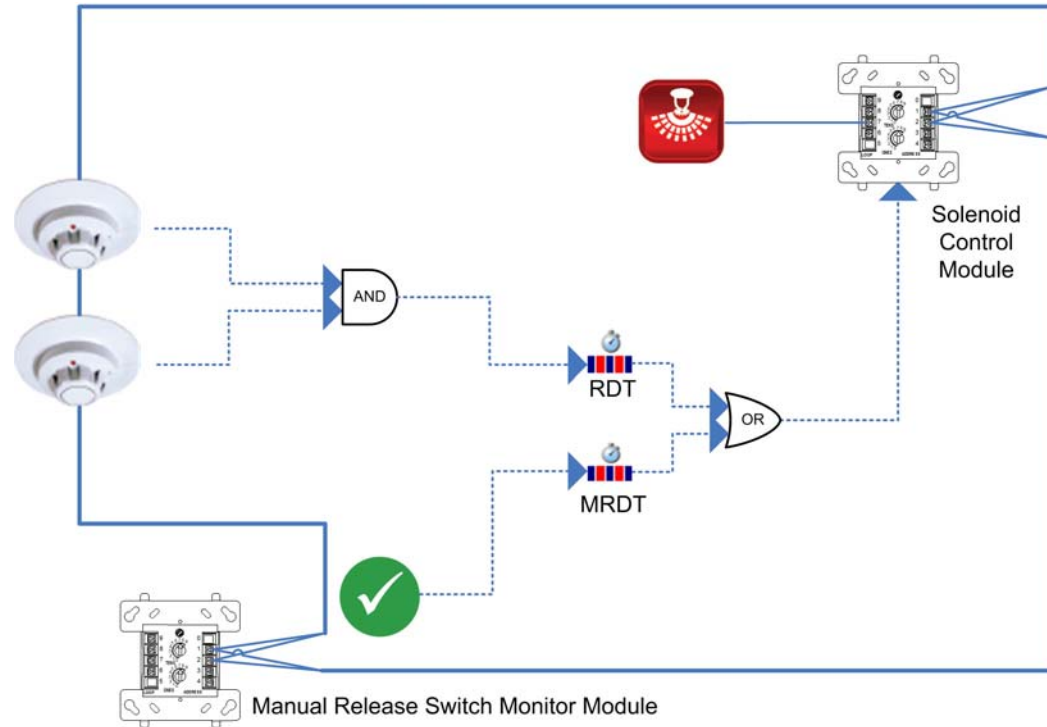


Deluge commences if the following events occur:

- a single detector correlated to the Hazard Zone enters alarm
 - the delay timer expires
- OR
- the Manual Release Switch is pressed
 - the delay timer expires.

3.6 Deluge, Double Activation Application











| Devices | |
|---|--|
|  | SLC Loop |
|  | Any Detector in Hazard Zone |
|  | Deluge System |
|  | Addressable Module |
|  | Manual Release Switch |
| Logic | |
|  | Logic Path |
|  | AND Gate Both inputs are required. |
|  | OR Gate If either input is activated release occurs. |
|  | Delay Timer Use FX-3500RCU Configurator to set type. |

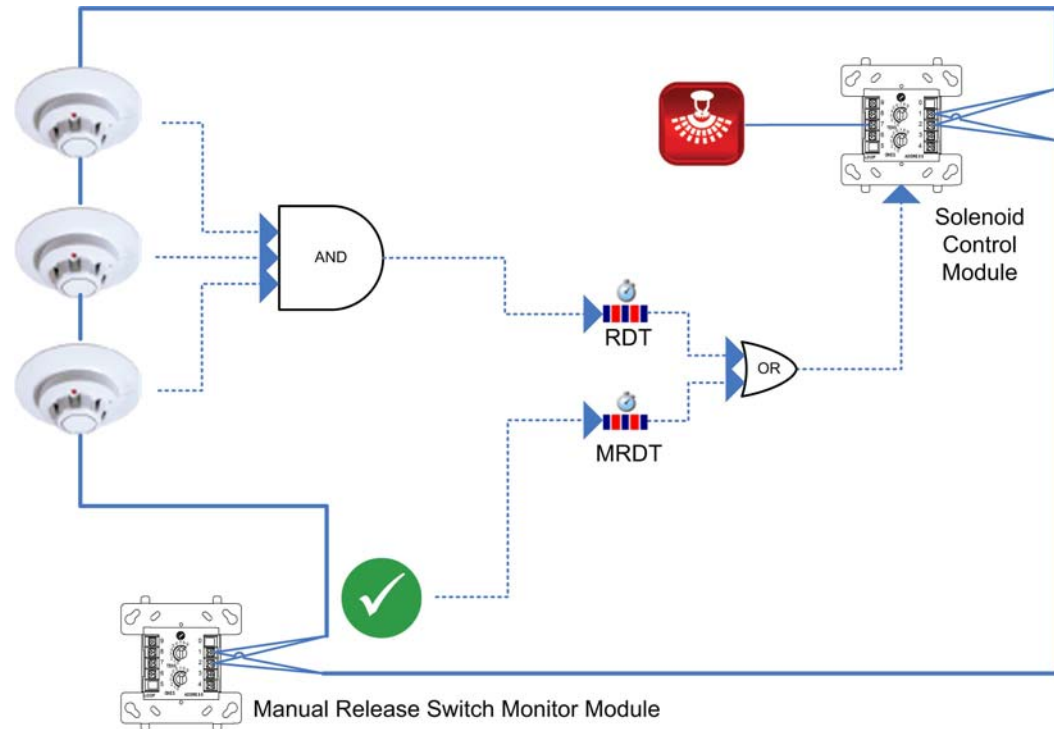


Deluge commences if the following events occur:

- two detectors correlated to the Hazard Zone enter alarm
 - the delay timer expires
- OR
- the Manual Release Switch is pressed
 - the delay timer expires.

3.7 Deluge, Triple Activation Application





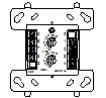






| Devices | |
|---|--|
|  | SLC Loop |
|  | Any Detector in Hazard Zone |
|  | Deluge System |
|  | Addressable Module |
|  | Manual Release Switch |
| Logic | |
|  | Logic Path |
|  | AND Gate Both inputs are required. |
|  | NOT Gate Input is required to be not activated. |
|  | OR Gate If either input is activated release occurs. |
|  | Delay Timer Use FX-3500RCU Configurator to set type. |

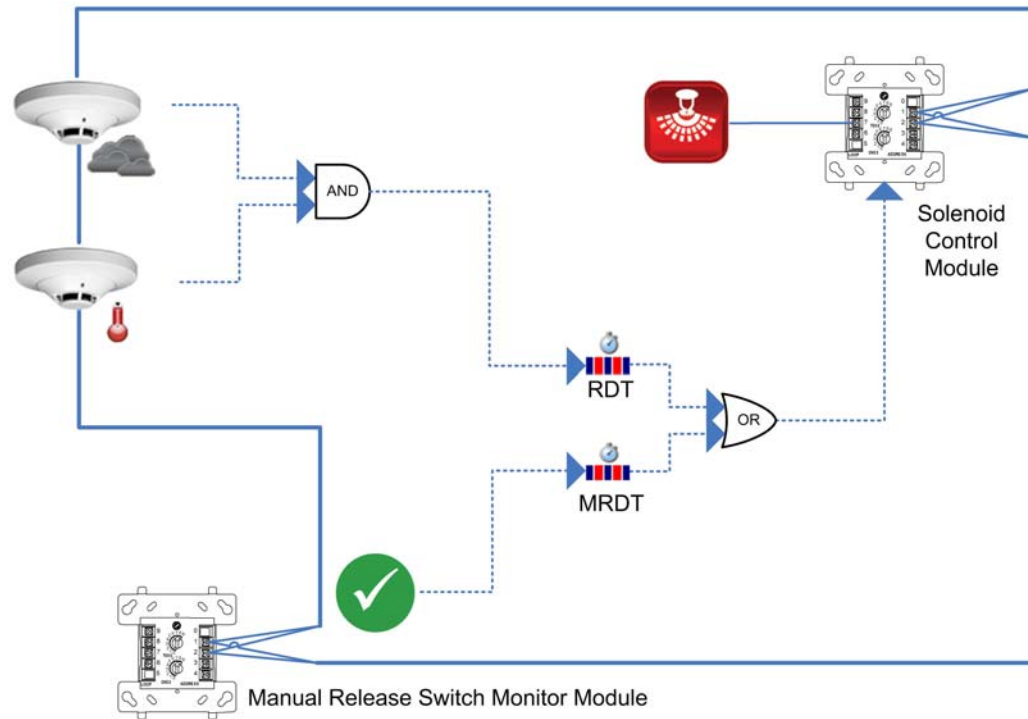


Deluge commences if the following events occur:

- three detectors correlated to the Hazard Zone enter alarm
 - the delay timer expires
- OR**
- the Manual Release Switch is pressed
 - the delay timer expires.

3.8 Deluge, 2 Input Type Activation Application

| Devices | |
|---|--|
|  | SLC Loop |
|  | Smoke Detector |
|  | Heat Detector |
|  | Deluge System |
|  | Addressable Module |
|  | Manual Release Switch |
| Logic | |
|  | Logic Path |
|  | AND Gate Both inputs are required. |
|  | NOT Gate Input is required to be not activated. |
|  | OR Gate If either input is activated release occurs. |
|  | Delay Timer Use FX-3500RCU Configurator to set type. |



Deluge commences if the following events occur:

- two detectors of different types correlated to the Hazard Zone enter alarm
 - the delay timer expires
- OR
- the Manual Release Switch is pressed
 - the delay timer expires.

4.0 Compatible Solenoids

The following table lists the compatible solenoids.

Table 1 FX-3500RCU Compatible Solenoids

| Manufacturer and Series | Part Number | Extended Description |
|--------------------------------|----------------------|-----------------------------|
| Parker | 73212BN4TNLVNOC322C2 | Valve Solenoid |
| Siemens | 500-697913BG | Valve Solenoid |
| ASCO (FM Approved) | 8210G207 | Valve Solenoid |
| | T8210A107 | Valve Solenoid |
| BSCO | 510006 | Actuator |
| TSP | 17842 | Actuator |
| Kidde-Fenwal | 486500-01 | Actuator |
| TLX Technologies | PA0036 | Actuator |



CANADA - Main Office
25 Interchange Way
Vaughan, ON L4K 5W3
Tel: (905) 660-4655
(888) 660-4655
Fax: (905) 660-4113

U.S.A
4575 Witmer Industrial Estates
Niagara Falls, NY 14305
Tel: (905) 660-4655
(888) 660-4655
Fax: (905) 660-4113

© Mircom 2018
Printed in Canada
Subject to change without prior notice

www.mircom.com