# Whitepaper

# Mass Notification System (MNS) Configuration Guide

## 1. Introduction

Bosch Intrusion Systems, when integrated with a Bosch PRAESENSA Public Address and Voice Alarm System, introduces a UL 2572 compliant Mass Notification System (MNS) with comprehensive emergency mass notifications for life/safety events such as fire, CO, active shooter, tornado, etc.

## 2. System Overview

The integration of a Bosch PRAESENSA system with a Bosch intrusion system requires configuring one Area of the intrusion panel system as an “MNS” area.

Once a panel area is configured as the “MNS” area, you will configure all the MNS related input points, outputs, keypads and specified behaviors relating to that same MNS area.

The MNS area should be limited to only the Mass Notification life/safety related devices along with the associated panel keypad, input points and outputs. When a life/safety alarm occurs in the MNS area, the solution will be configured for the alarm to be indicated on the intrusion MNS keypads, strobe outputs, and an audible and/or visible notification from the PRAESENSA system.

The Bosch MNS integrated solution relies on configurations within the Bosch PRAESENSA and Intrusion Systems:

1. Bosch Intrusion System reacts after receiving information from the Bosch PRAESENSA MNS system. This relies on configuring outputs in the PRAESENSA system to send information and Intrusion system Points to receive information.
2. Bosch PRAESENSA MNS System reacts based on information received from its own inputs and from the Bosch Intrusion System Outputs. This relies on configuring Outputs in the Intrusion System to activate MNS related inputs within the PRAESENSA system.

## 2.1. System components overview

- PRAESENSA Public Address and Voice Alarm System & Components configured & operational
    - Notification Appliance Circuit(s) (ex. Altronix® R1002ULADA)
    - PRAESENSA Autonomous Control Unit (ex. PRA-FP3-US ACU)
- Bosch (RPS) Remote Programming Software (*v6.12 or newer*)
- Bosch MNS supported G Series Intrusion System (*FW v3.12 or newer*)
- Bosch MNS approved Keypad(s) (ex. B926M)
- Intrusion System Physical input modules/devices
    - Bosch Input module(s) (ex. B208 Octo Input)
    - Fire points such as fire pull stations, smoke detectors, etc
    - Gas points such as CO detectors
    - Other emergency MNS points or pull stations (active shooter, severe weather, etc)
    - Bosch Notification Appliance Circuit Supervision Module (ex. D192G)
    - Notification Appliance Circuit Module (ex. Altronix R1002ULADA)
    - Bosch MNS approved Keypad(s) (ex. B926M)
- Integrated Panel Inputs. Configured to 'listen' for PRAESENSA
    - PRAESENSA indicating any of the above types of inputs (fire, gas, or MNS)
    - PRAESENSA indicating MNS system troubles
    - Trouble inputs from strobe drivers (D192G and NAC)
- Intrusion System Physical output modules/devices
    - Bosch Output module(s) (ex. B308 Octo Output)
    - Bosch Notification Appliance Circuit Supervision Module (ex. D192G)
    - Notification Appliance Circuit Module (ex. Altronix R1002ULADA)
    - Strobes (via NAC)
    - Active alarm (fire, gas, MNS) outputs to PRAESENSA
    - Bosch MNS approved Keypad(s) (ex. B926M) again?
- Integrated Panel Outputs. Configured to 'send' to PRAESENSA
    - Fire Drill output to PRAESENSA
    - MNS related trouble output to PRAESENSA

An MNS area should have at least one B926M keypad configured with scope to the MNS area. It will also include at least one PRAESENSA PRA-FP3-US ACU control station. The B926M keypad and the PRA-FP3-US ACU are typically located next to one another in compliance with UL 2572.

Figure 1 shows an example physical interconnection of the system for an MNS area that contains at least one of each point type and output type. Actual configurations will vary in number of these items.

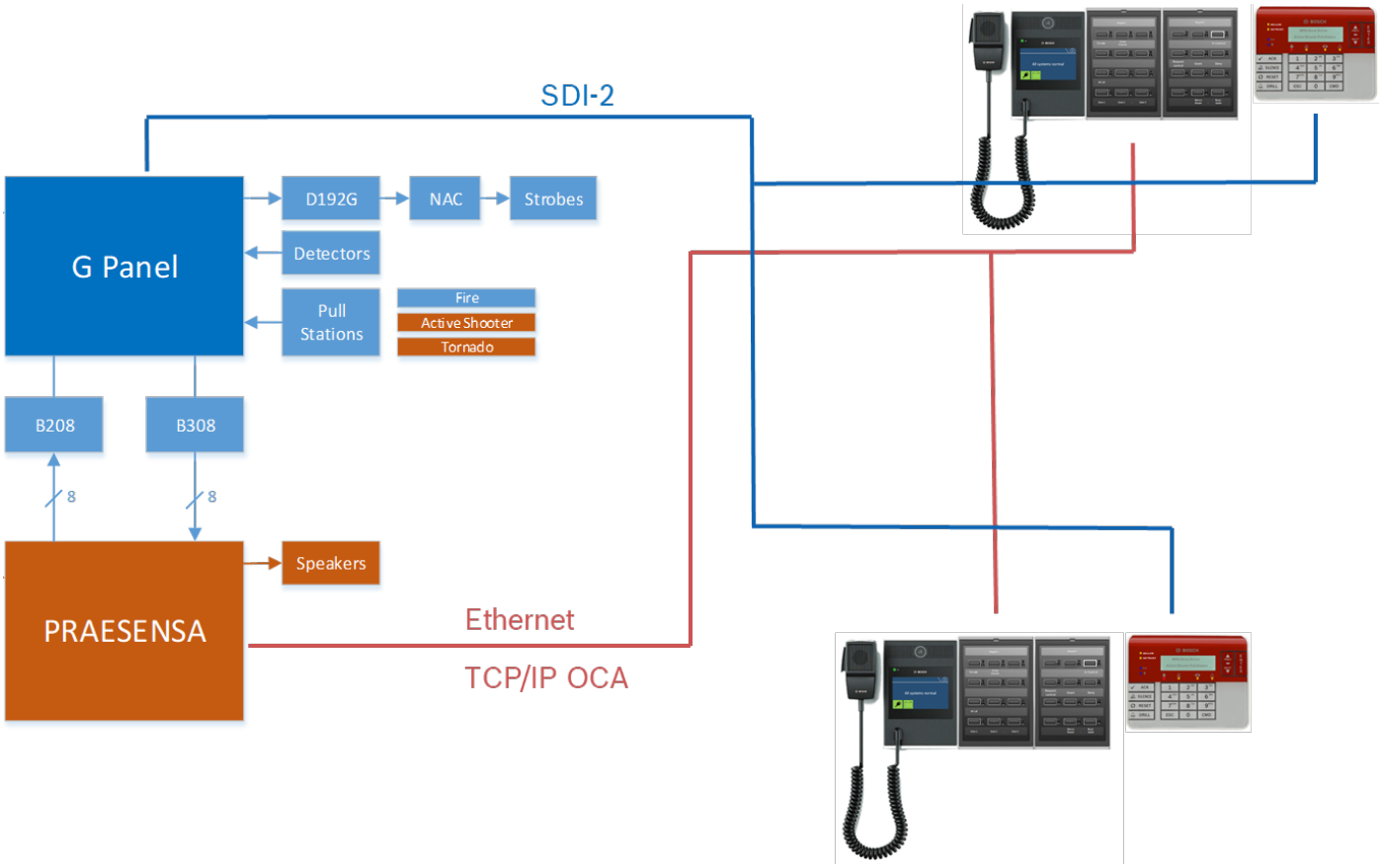



*Figure 1. MNS Integrated System Pictorial Diagram*

Figure 2.Schematic representation of the integrated system.

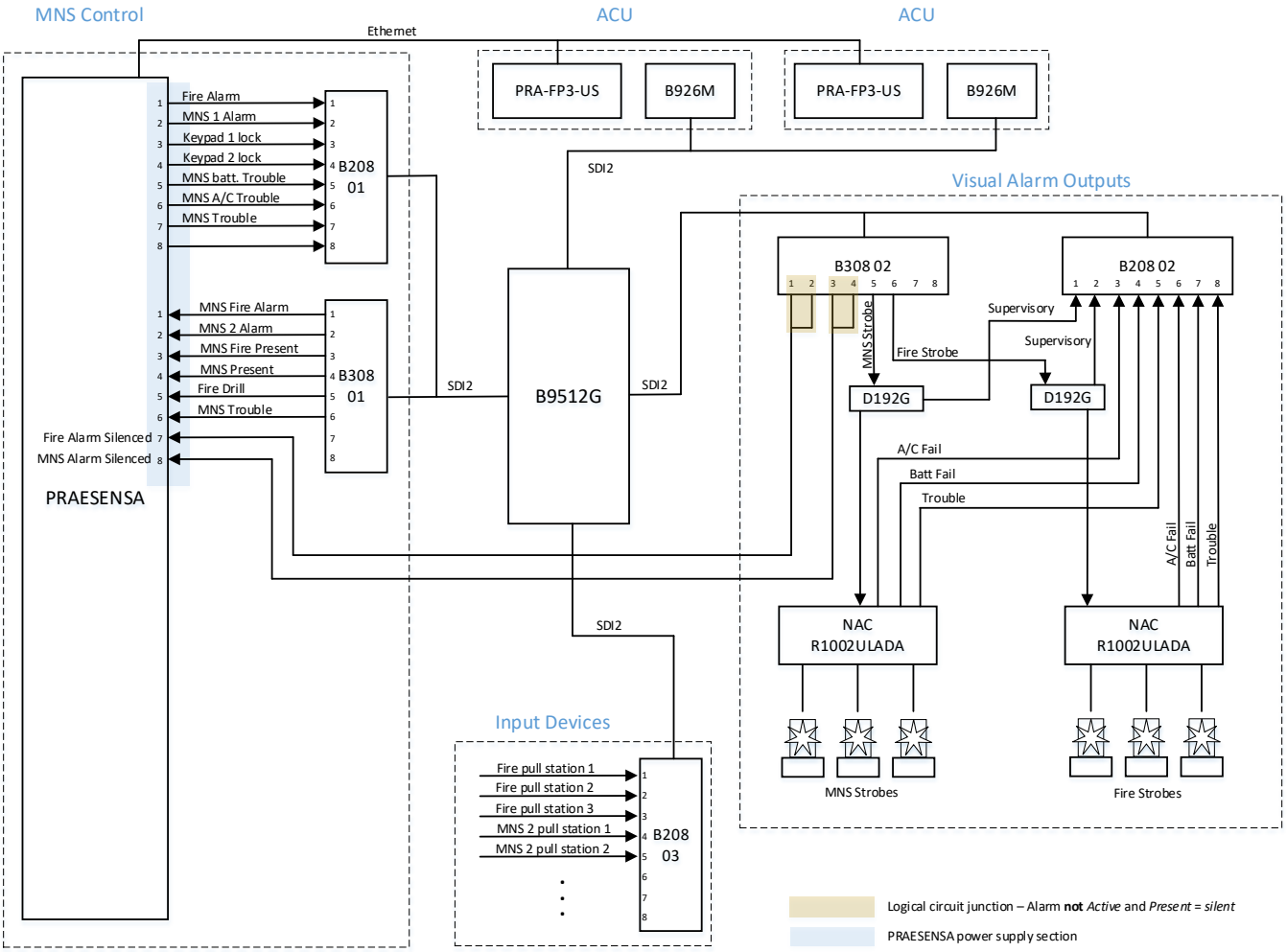



*Figure 2. MNS Integrated System Block Diagram*

The “logical circuit junction” highlighted in Figure 2 represents a combination of wiring that enables PRAESENSA to determine if a particular alarm type is active in the system but silenced. An example wiring of such a junction for Fire is shown below in Figure 3.

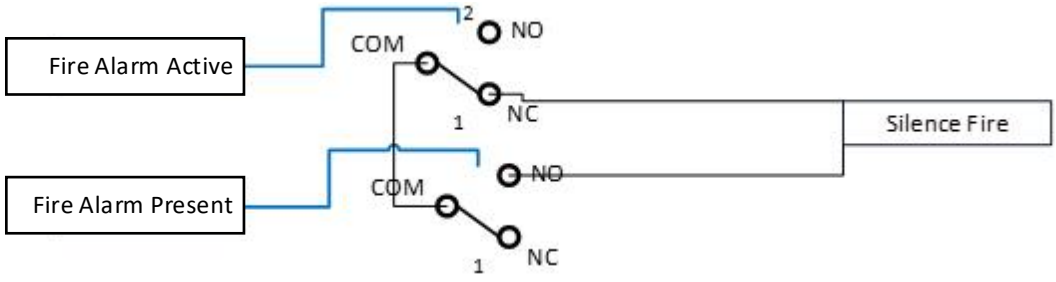



*Figure 3. Logical Circuit Junction for Alarm Silence State*

In Figure 3, the alarm signals from the panel are as follows:

- Alarm Active – the alarm is currently visible or audible via strobe or alarm outputs from the intrusion panel
- Alarm Present – the alarm is currently indicated in the intrusion panel, may either be audible, visible, or silenced, and has not been cleared

# 3. RPS Configuration

## 3.1. Use Case

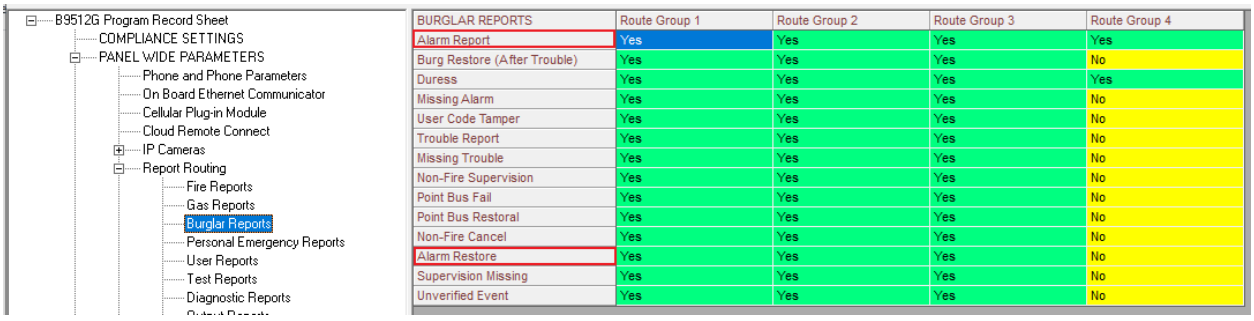
The use case detailed in this document and configurations represent a typical MNS integration, as illustrated in Figure 2. The following sections detail the RPS configuration in each category related to an MNS integration. Most of these settings are included in the MNS-related RPS templates provided by Bosch. At time of publication, two B9512G example templates are available:

- "*MNS Template – Typical.xml*": Provides a Panel template pre-configured to align with the scenario detail in this document.
- "*MNS Template – Large.xml*": Provides a Panel template pre-configured for an expanded MNS integration. The integration follows the same basic structure as an Average integration with additional MNS related monitoring, hardware, Input devices, Output devices, Keypads, ACU stations and Alarms.

## 3.2. PANEL WIDE PARAMETERS

### 3.2.1. PANEL WIDE PARAMETERS > Alarm Reporting

Non-fire and non-gas MNS alarms are reported to the Central Station as burglar alarms. The report groups (Figure 4.) should be set according to desired route group reporting. The default settings shown are typically acceptable but can be changed to meet local requirements.




| BURGLAR REPORTS | Route Group 1 | Route Group 2 | Route Group 3 | Route Group 4 |
|---|---|---|---|---|
| Alarm Report | Yes | Yes | Yes | Yes |
| Burg Restore (After Trouble) | Yes | Yes | Yes | No |
| Duress | Yes | Yes | Yes | Yes |
| Missing Alarm | Yes | Yes | Yes | No |
| User Code Tamper | Yes | Yes | Yes | No |
| Trouble Report | Yes | Yes | Yes | No |
| Missing Trouble | Yes | Yes | Yes | No |
| Non-Fire Supervision | Yes | Yes | Yes | No |
| Point Bus Fail | Yes | Yes | Yes | No |
| Point Bus Restoral | Yes | Yes | Yes | No |
| Non-Fire Cancel | Yes | Yes | Yes | No |
| Alarm Restore | Yes | Yes | Yes | No |
| Supervision Missing | Yes | Yes | Yes | No |
| Unverified Event | Yes | Yes | Yes | No |

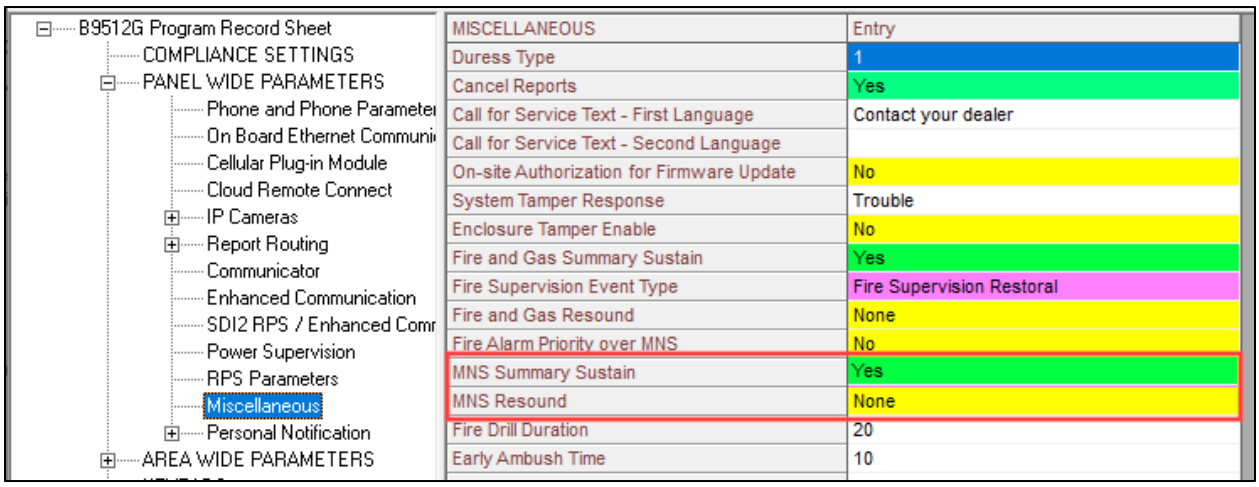
*Figure 4. Communicator route group devices and Enhanced Communication destination should be set as usual.*

### 3.2.2. PANEL WIDE PARAMETERS > Miscellaneous Settings (Figure 5.)

*Miscellaneous > Fire Alarm Priority over MNS* should be set to Yes or No per the AHJ (Authority Having Jurisdiction). The default is No.

*Miscellaneous > MNS Summary Sustain* must be set to Yes (default) to meet UL 2572 requirements.

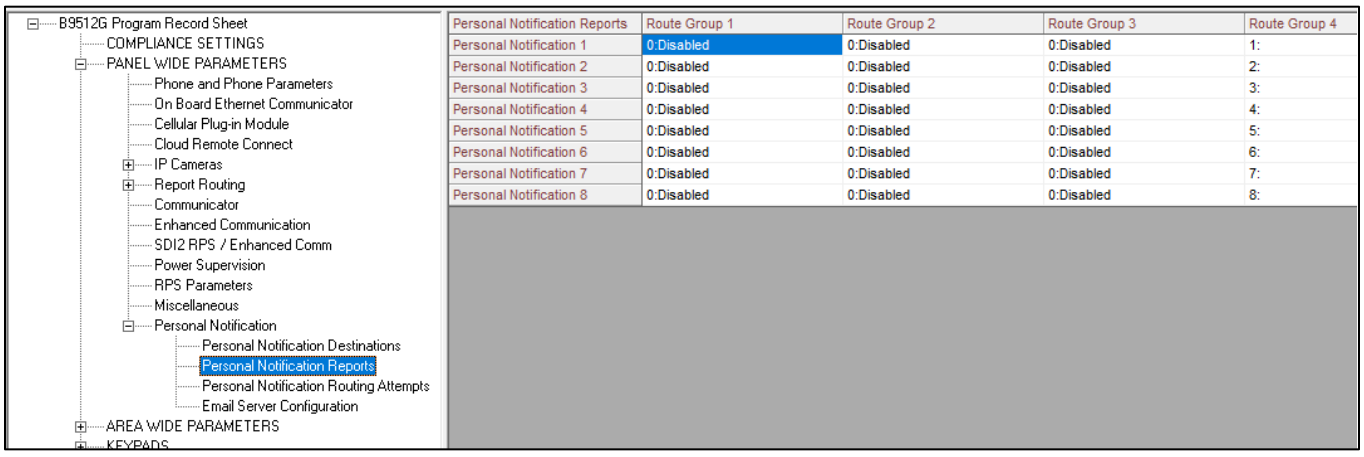
*Miscellaneous > MNS Resound* defaults to "None" but can be set to "Noon" or "Midnight" as desired.




### 3.2.3. PANEL WIDE PARAMETERS > Personal Notification (Figure 6.)

Personal notifications are ***not*** permitted in an MNS integrated system per UL 2572 regulatory requirements, so personal notifications will need to be turned off (all disabled).

Figure 6. RPS Personal Notification Reports for MNS

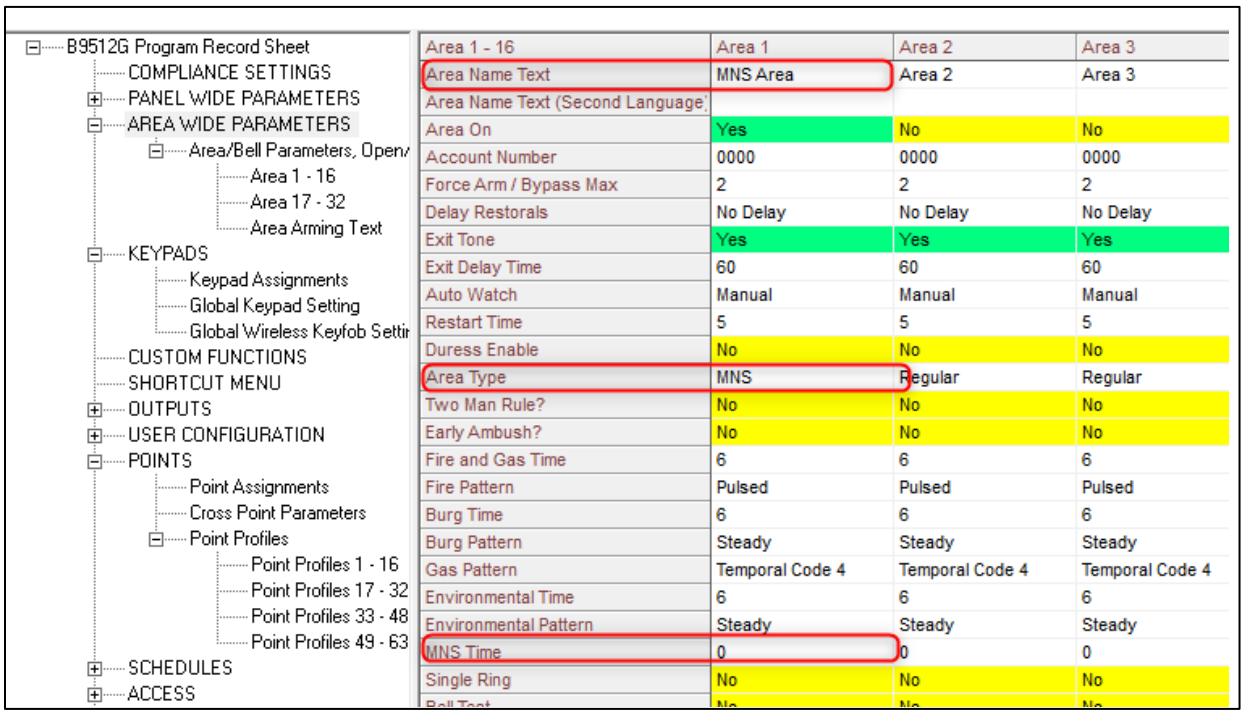


## 3.3. AREA WIDE PARAMETERS

### 3.3.1. AREA WIDE PARAMETERS > Area/Bell Parameters, Open/Close Options (Figure 7.)

*Area Type* needs to be set to MNS in order to operate as the MNS area. This use case example will assume Area 1 with a name of “MNS Area”.

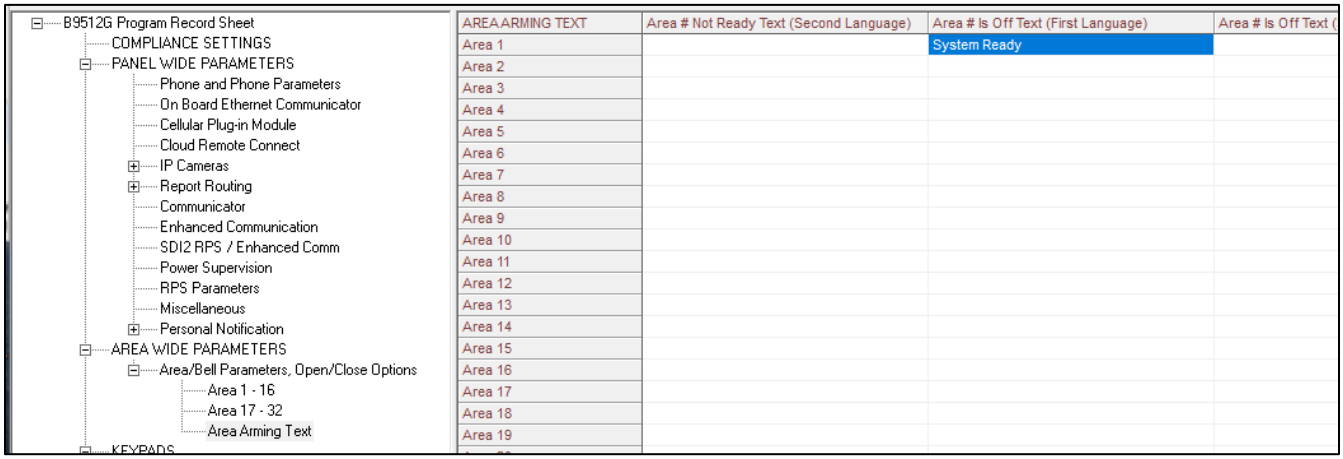
*MNS Time*, the number of minutes that an MNS alarm will remain active once triggered, is to be set as needed for Area 1(the MNS Area). The default is 0, which means a triggered MNS alarm will remain on until it has been silenced or cleared.




| Area 1 - 16 | Area 1 | Area 2 | Area 3 |
|---|---|---|---|
| Area Name Text | MNS Area | Area 2 | Area 3 |
| Area Name Text (Second Language) | | | |
| Area On | Yes | No | No |
| Account Number | 0000 | 0000 | 0000 |
| Force Arm / Bypass Max | 2 | 2 | 2 |
| Delay Restorals | No Delay | No Delay | No Delay |
| Exit Tone | Yes | Yes | Yes |
| Exit Delay Time | 60 | 60 | 60 |
| Auto Watch | Manual | Manual | Manual |
| Restart Time | 5 | 5 | 5 |
| Duress Enable | No | No | No |
| Area Type | MNS | Regular | Regular |
| Two Man Rule? | No | No | No |
| Early Ambush? | No | No | No |
| Fire and Gas Time | 6 | 6 | 6 |
| Fire Pattern | Pulsed | Pulsed | Pulsed |
| Burg Time | 6 | 6 | 6 |
| Burg Pattern | Steady | Steady | Steady |
| Gas Pattern | Temporal Code 4 | Temporal Code 4 | Temporal Code 4 |
| Environmental Time | 6 | 6 | 6 |
| Environmental Pattern | Steady | Steady | Steady |
| MNS Time | 0 | 0 | 0 |
| Single Ring | No | No | No |

*Area Arming Text > Area # Is Off* text for Area 1 can be set to “System Ready” or other similar text to avoid burglary-related language. (Figure 8.)

Figure 8. Area Arming Text for MNS



## 3.4. POINTS

The following assumes the integrated system has been configured with inputs as shown in Figure 2. Table 1 indicates the point number to be configured for the various inputs.

Table 1. Point Assignments for MNS

| **Input (Point)** | **Point Number** |
|---|---|
| PRAESENSA Fire Alarm | 11 |
| PRAESENSA Active Shooter Alarm | 12 |
| PRAESENSA Keypad 1 lock | 13 |
| PRAESENSA Keypad 2 lock | 14 |
| PRAESENSA MNS Battery Trouble from PRAESENSA | 15 |
| PRAESENSA Main A/C Missing | 16 |
| PRAESENSA MNS Trouble | 17 |
| | |
| D192G (MNS) Supervisory input | 21 |
| D192G (Fire) Supervisory input | 22 |
| MNS NAC A/C Fail | 23 |
| MNS NAC Battery Fail | 24 |
| MNS NAC Trouble | 25 |
| Fire NAC A/C Fail | 26 |
| Fire NAC Battery Fail | 27 |
| Fire NAC Trouble | 28 |
| | |
| Fire pull station 1 | 31 |
| Fire pull station 2 | 32 |
| Fire pull station 3 | 33 |
| Weather pull station 1 | 34 |
| Weather pull station 2 | 35 |
| … (others as needed) | … |

Table 2 details the point profiles assumed to be configured in RPS (*POINTS > Point Profiles*)

Table 2. Point Profiles for MNS

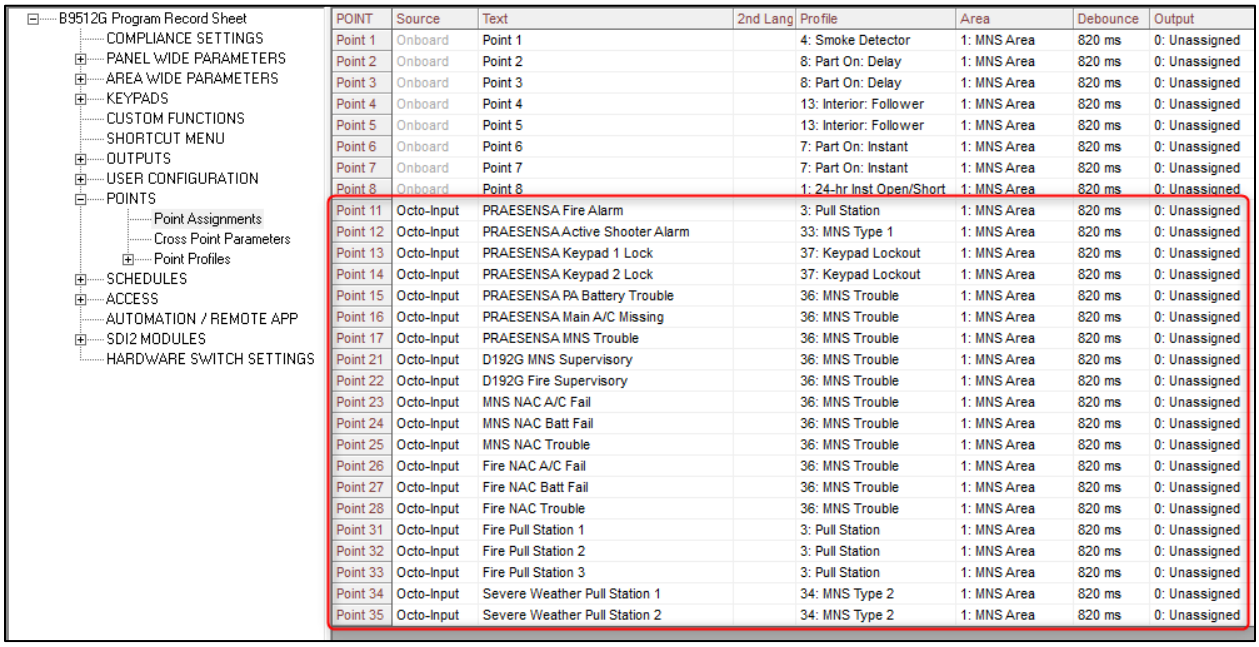
| Profile | Point Type | Point Profile Text | Configuration |
|---|---|---|---|
| 33 | MNS Point 1 | MNS Type 1 | Circuit Style: EOL 1k<br>Point Response: 1 (T/I/T/I)<br>Other parameters default same as Fire Pull Station (profile 3) |
| 34 | MNS Point 2 | MNS Type 2 | Circuit Style: EOL 1k<br>Point Response: 1 (T/I/T/I)<br>Other parameters default same as Fire Pull Station (profile 3) |
| 35 | MNS Point 3 | MNS Type 3 | Circuit Style: EOL 1k<br>Point Response: 1 (T/I/T/I)<br>Other parameters default same as Fire Pull Station (profile 3) |
| 36 | MNS Point 1 | MNS Trouble | Circuit Style: EOL 1k<br>Point Response: 3 (T/T/T/T)<br>Other parameters default same as Fire Pull Station (profile 3) |
| 37 | MNS Point 1 | Keypad Lockout | Circuit Style: EOL 1k<br>Point Response: 7 (T/b/T/b)<br>Other parameters default<br><br>NOTE: in this configuration, the PRAESENSA system will short the point to lockout the keypad |

### 3.4.1. POINTS > Point Assignments

Each point used by the integration is aligned with Table 1 listing of inputs by configuring the following details shown in Figure 9.

MNS Points (Table 1) are associated with individual MNS Point Profiles (Table 2) by programming the Point Assignment details shown in Figure 9.

- Point Number: 11-17, 21-28, 31-35 (per this example setup)
- Source (Octo-Input)
- Text (description of the input as desired)
- Profile (select the profile number that matches the input type)
- Area (set to the designated MNS area, in this case, Area 1)



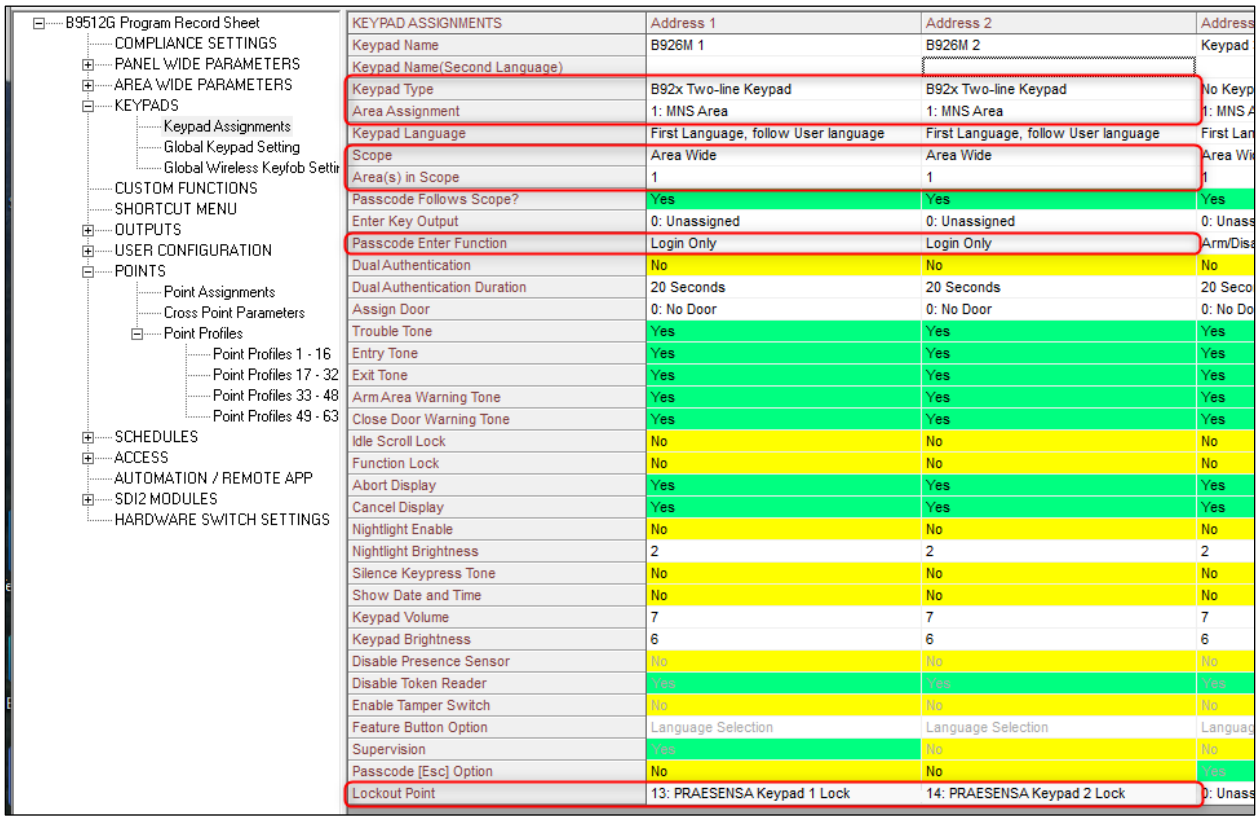

| POINT | Source | Text | 2nd Lang | Profile | Area | Debounce | Output |
|---|---|---|---|---|---|---|---|
| Point 1 | Onboard | Point 1 | | 4: Smoke Detector | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 2 | Onboard | Point 2 | | 8: Part On: Delay | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 3 | Onboard | Point 3 | | 8: Part On: Delay | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 4 | Onboard | Point 4 | | 13: Interior: Follower | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 5 | Onboard | Point 5 | | 13: Interior: Follower | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 6 | Onboard | Point 6 | | 7: Part On: Instant | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 7 | Onboard | Point 7 | | 7: Part On: Instant | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 8 | Onboard | Point 8 | | 1: 24-hr Inst Open/Short | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 11 | Octo-Input | PRAESENSA Fire Alarm | | 3: Pull Station | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 12 | Octo-Input | PRAESENSA Active Shooter Alarm | | 33: MNS Type 1 | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 13 | Octo-Input | PRAESENSA Keypad 1 Lock | | 37: Keypad Lockout | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 14 | Octo-Input | PRAESENSA Keypad 2 Lock | | 37: Keypad Lockout | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 15 | Octo-Input | PRAESENSA PA Battery Trouble | | 36: MNS Trouble | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 16 | Octo-Input | PRAESENSA Main A/C Missing | | 36: MNS Trouble | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 17 | Octo-Input | PRAESENSA MNS Trouble | | 36: MNS Trouble | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 21 | Octo-Input | D192G MNS Supervisory | | 36: MNS Trouble | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 22 | Octo-Input | D192G Fire Supervisory | | 36: MNS Trouble | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 23 | Octo-Input | MNS NAC A/C Fail | | 36: MNS Trouble | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 24 | Octo-Input | MNS NAC Batt Fail | | 36: MNS Trouble | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 25 | Octo-Input | MNS NAC Trouble | | 36: MNS Trouble | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 26 | Octo-Input | Fire NAC A/C Fail | | 36: MNS Trouble | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 27 | Octo-Input | Fire NAC Batt Fail | | 36: MNS Trouble | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 28 | Octo-Input | Fire NAC Trouble | | 36: MNS Trouble | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 31 | Octo-Input | Fire Pull Station 1 | | 3: Pull Station | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 32 | Octo-Input | Fire Pull Station 2 | | 3: Pull Station | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 33 | Octo-Input | Fire Pull Station 3 | | 3: Pull Station | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 34 | Octo-Input | Severe Weather Pull Station 1 | | 34: MNS Type 2 | 1: MNS Area | 820 ms | 0: Unassigned |
| Point 35 | Octo-Input | Severe Weather Pull Station 2 | | 34: MNS Type 2 | 1: MNS Area | 820 ms | 0: Unassigned |

# 3.5. KEYPADS

## 3.5.1. KEYPADS > Keypad Assignments (Figure 10.)

Configure the B926M keypads as a *B92x Two-line Keypad* and assign it *Area Wide* to *Area 1* (the MNS area). *Passcode Enter Function* should ***not*** include arming/disarming functions.

Figure 10. Keypad Assignment for MNS




| KEYPAD ASSIGNMENTS | Address 1 | Address 2 | Address |
|---|---|---|---|
| Keypad Name | B926M 1 | B926M 2 | Keypad |
| Keypad Name(Second Language) | | | |
| Keypad Type | B92x Two-line Keypad | B92x Two-line Keypad | No Keyp |
| Area Assignment | 1: MNS Area | 1: MNS Area | 1: MNS A |
| Keypad Language | First Language, follow User language | First Language, follow User language | First Lan |
| Scope | Area Wide | Area Wide | Area Wi |
| Area(s) in Scope | 1 | 1 | 1 |
| Passcode Follows Scope? | Yes | Yes | Yes |
| Enter Key Output | 0: Unassigned | 0: Unassigned | 0: Unass |
| Passcode Enter Function | Login Only | Login Only | Arm/Disa |
| Dual Authentication | No | No | No |
| Dual Authentication Duration | 20 Seconds | 20 Seconds | 20 Seco |
| Assign Door | 0: No Door | 0: No Door | 0: No Do |
| Trouble Tone | Yes | Yes | Yes |
| Entry Tone | Yes | Yes | Yes |
| Exit Tone | Yes | Yes | Yes |
| Arm Area Warning Tone | Yes | Yes | Yes |
| Close Door Warning Tone | Yes | Yes | Yes |
| Idle Scroll Lock | No | No | No |
| Function Lock | No | No | No |
| Abort Display | Yes | Yes | Yes |
| Cancel Display | Yes | Yes | Yes |
| Nightlight Enable | No | No | No |
| Nightlight Brightness | 2 | 2 | 2 |
| Silence Keypress Tone | No | No | No |
| Show Date and Time | No | No | No |
| Keypad Volume | 7 | 7 | 7 |
| Keypad Brightness | 6 | 6 | 6 |
| Disable Presence Sensor | No | No | No |
| Disable Token Reader | Yes | Yes | Yes |
| Enable Tamper Switch | No | No | No |
| Feature Button Option | Language Selection | Language Selection | Languag |
| Supervision | Yes | No | No |
| Passcode [Esc] Option | No | No | Yes |
| Lockout Point | 13: PRAESENSA Keypad 1 Lock | 14: PRAESENSA Keypad 2 Lock | 0: Unass |

## 3.6. OUTPUTS

The following assumes a system that has been configured as shown in Figure 2 and will primarily use the Output Profiles feature. Table 3 indicates the Intrusion System Output numbers to be configured for the various MNS related outputs.

Table 3. Outputs for MNS

| **Output** | **Output Number** |
|---|---|
| MNS Fire Alarm to PRAESENSA | 11 |
| Severe Weather Alarm to PRAESENSA | 12 |
| MNS Fire Present | 13 |
| MNS Present | 14 |
| Fire Drill to PRAESENSA | 15 |
| MNS Trouble to PRAESENSA | 16 |
| | |
| Fire Alarm Active to PRAESENSA | 21 |
| Fire Alarm Present to PRAESENSA | 22 |
| MNS Alarm Active to PRAESENSA | 23 |
| MNS Alarm Present to PRAESENSA | 24 |
| MNS Strobe | 25 |
| Fire Strobe | 26 |

*** See section 2.1 for explanations of "Alarm Active" and "Alarm Present".*

The RPS Output Profiles (*OUTPUTS > Output Profiles*) should be configured as detailed in Table 4 and shown in Figures 11a and 11b. These Output Profiles will be pre-configured when using the RPS MNS template.

Table 4. Output Profiles Configuration for MNS

| Profile | Name | Trigger | Setting |
|---|---|---|---|
| 14 | MNS 1 Alarm Active | MNS 1 Alarm | Scope: Area Wide<br>Scope Filter: 1<br>Pattern: On Steady<br>Duration: Until Off |
| 15 | MNS 2 Alarm Active | MNS 2 Alarm | Scope: Area Wide<br>Scope Filter: 1<br>Pattern: On Steady<br>Duration: Until Off |
| 16 | MNS 3 Alarm Active | MNS 3 Alarm | Scope: Area Wide<br>Scope Filter: 1<br>Pattern: On Steady<br>Duration: Until Off |
| 17 | Fire Alarm Active | Fire MNS Alarm | Scope: Area Wide<br>Scope Filter: 1<br>Pattern: On Steady<br>Duration: Until Off |
| 18 | Gas Alarm Active | Gas MNS Alarm | Scope: Area Wide<br>Scope Filter: 1<br>Pattern: On Steady<br>Duration: Until Off |
| 19 | MNS Alarm Active | Summary MNS Alarm | Scope: Area Wide<br>Scope Filter: 1<br>Pattern: On Steady<br>Duration: Until Off |
| 20 | Fire Drill Active | Fire Drill | Scope: Area Wide<br>Scope Filter: 1<br>Pattern: On Steady<br>Duration: Follows Trigger |
| 21 | MNS Alarm Present | Summary MNS Alarm | Scope: Area Wide<br>Scope Filter: 1<br>Pattern: On Steady<br>Duration: Until Clear |
| 22 | Fire Alarm Present | Fire MNS Alarm | Scope: Area Wide<br>Scope Filter: 1<br>Pattern: On Steady<br>Duration: Until Clear |
| 23 | Gas Alarm Present | Gas MNS Alarm | Scope: Area Wide<br>Scope Filter: 1<br>Pattern: On Steady<br>Duration: Until Clear |

Figure 11a. Output Profiles (14-16) for MNS.

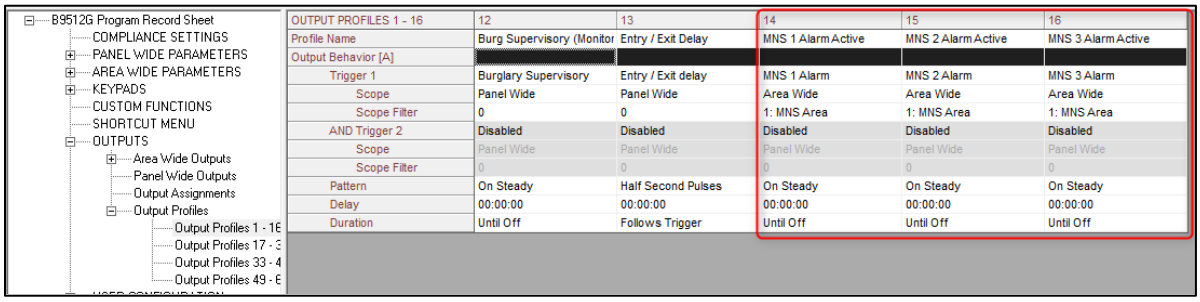
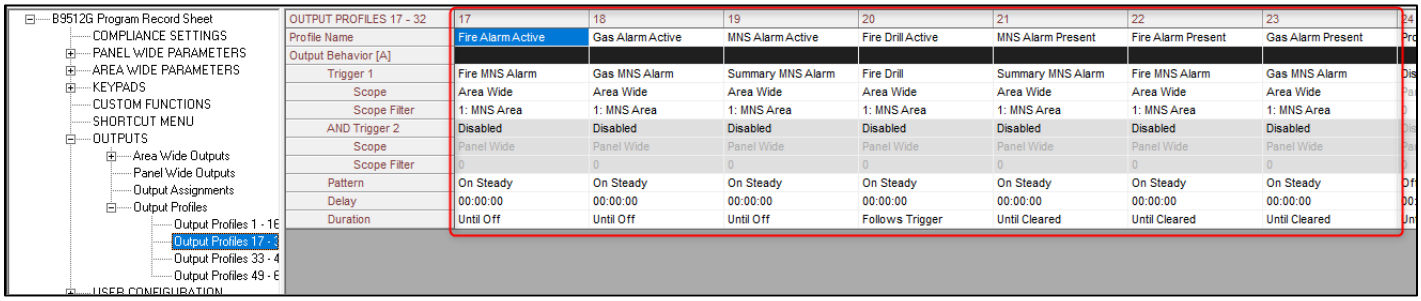


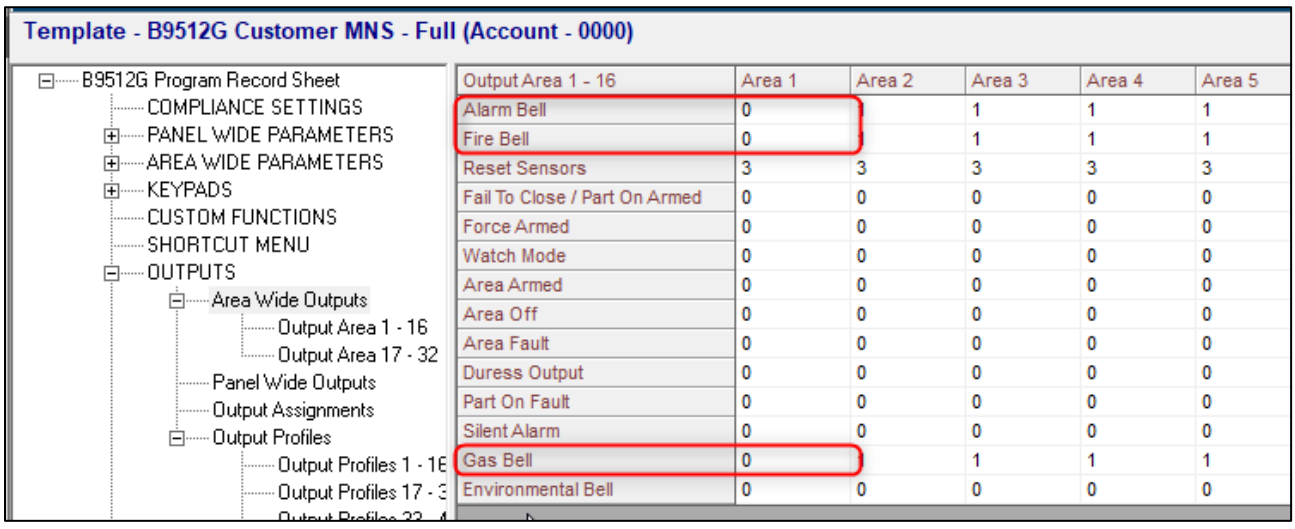

Figure 11b. Output Profiles (17-23) for MNS.




## 3.6.1. OUTPUTS > Area Wide Outputs (Figure 12)

For UL 2572 compliance reasons, the MNS area will not use Area Wide Outputs for Fire and Gas bells. These will be set to 0 here. The Fire and Gas strobe and PRAESENSA output will be configured later using *Output Profiles*.

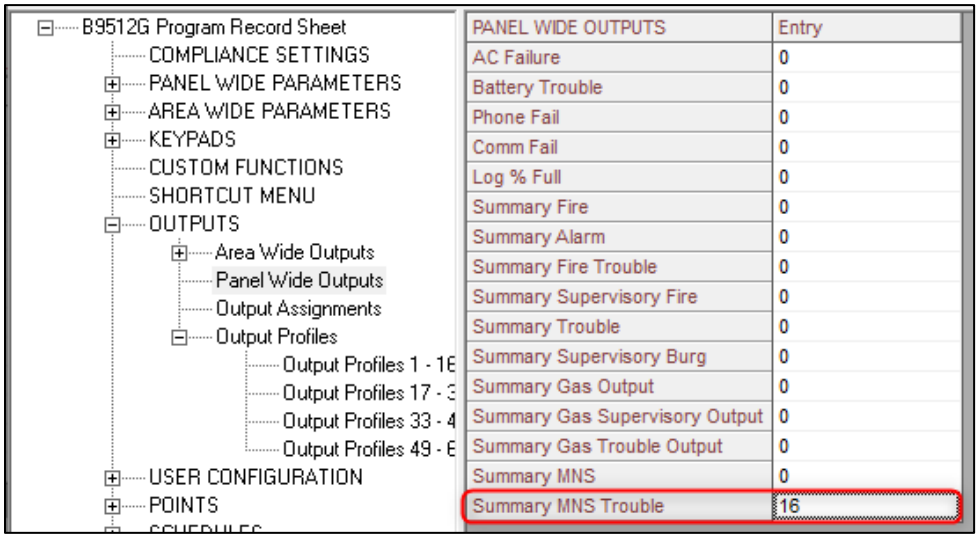
Figure 12. Area Wide Outputs disabled for MNS



### 3.6.2. OUTPUTS > Panel Wide Outputs (Figure 13.)

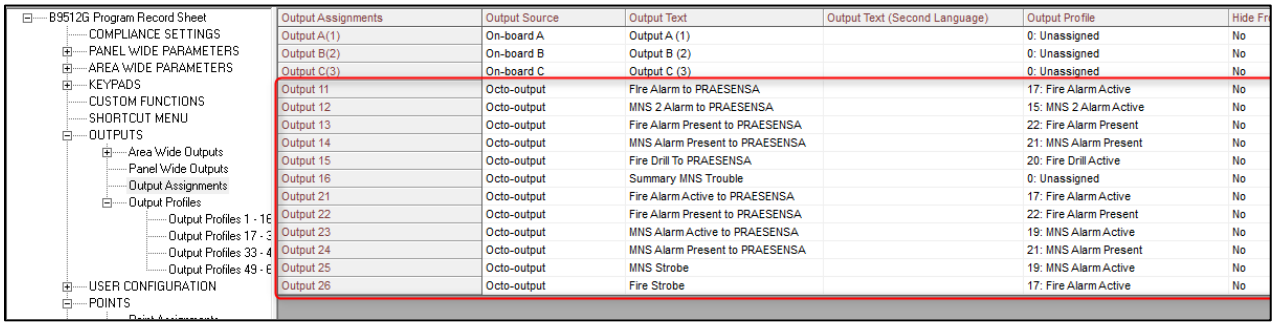
The panel wide output, *Summary MNS Trouble*, will provide the MNS trouble output to the PRAESESNA system. Per Table 3, this Summary MNS Trouble output was defined to be Output number 16.

Figure 13. Panel Wide Outputs for MNS




### 3.6.3. OUTPUTS > Output Assignments (Figure 14.)

The remaining MNS related outputs will be configured using predefined Output Profiles (*OUTPUTS > Output Profiles*). The numbering and purpose of each output correspond to Table 3.



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