

### Overview

The SIGCOM MNS-100EXP is a highly modular, state-of-the-art, emergency communications system providing highly configurable and reliable command and mass communication capabilities for any emergency situation, including fire and weather emergencies, terrorist events, biological, chemical and nuclear emergencies, and other threats. The MNS-100EXP meets the stringent requirements of NFPA 72, UL864 9<sup>th</sup> edition, and UFC 4-021-01.

The MNS-100EXP accommodates virtually any host alarm system, integrating as quickly and easily as a single primary connection to an NAC output from the FACP. Many of the pre-set configurations will provide a complete mass notification capability right out of the box. Additional activation is by a single supervised input from a dry contact closure, or by 8 dry contact closures.

Numerous audio inputs are provided for maximum control flexibility and system access. A supervised remote microphone input is provided for central placement for emergency personnel. A high priority supervised audio input is provided that overrides lower priority activations. The system also provides a 25 V<sub>RMS</sub> speaker-level input to allow audio power booster operation (see below). An additional non-supervised audio input is provided; this lowest-priority input can be used for paging or background music as application needs dictate.

A highly efficient, Class D, 100 Watt digital audio power amplifier drives four selectable power-limited speaker circuits in the standard configuration. All speaker circuits are continuously supervised, even while activated. Each speaker can be configured for Class A or B wiring without loss of speaker circuits. Amplifier output voltage is 25 V<sub>RMS</sub> standard. An optional transformer can be configured for 70 V<sub>RMS</sub> output for longer speaker runs with low signal loss. An audio power boost option is also available for additional output power in multiples of 100 Watts.

The MNS-100EXP provides simple field programming of a variety of its features. These can be as simple as its response to contact closure inputs, or to the setting of internal SIP-switch banks. Of particular note is the capability of selecting a time-out feature,



### Features

- Reverse polarity supervised FACP-NAC primary input
- Supervised dry contact closure primary activation input
- 8 prioritized contact closure activation inputs
- On-board DMR with up to 9 messages/6-1/2 minute capacity
- Local recording of messages
- Field-programmable 10 minute timeout of message annunciation
- Remote microphone input
- Aux audio inputs for paging, background music, and remote system control
- 100 Watt, highly efficient Class D digital audio amplifier
- 4 selectable speaker circuits (Class A or B wiring)
- RS-232 or RS-485 communication with external systems

### Options

- Remote microphone
- Common alarm and trouble relays
- 70 V<sub>RMS</sub> transformer
- High-level speaker audio input
- Audio power booster function
- 8 speaker loop zone expansion card
- Relay expansion card with 2 NAC and 6 Form-C relays
- Add up to 15 LOCs (Local Operating Consoles)
- 8 supervised contact closure activation input card

which halts message playback after a set interval of 10 minutes.

The power supply, battery back-up, charger are provided internally to the MNS-100EXP. LED indicators are provided for POWER (green), ACTIVE (red), and SYSTEM FAULT (yellow). External communications to the MNS-100EXP is provided through an RS-232/485 serial port, which will accept signals from other devices in a system such as a DTX Radio Master Box or properly configured FACP. The MNS-100EXP is housed in a 14-<sup>3</sup>/<sub>16</sub>"W x 31-<sup>5</sup>/<sub>8</sub>"H x 4"D surface or semi-flush mounted painted steel enclosure.

A variety of input, output, and control options are available for the MNS-100EXP to accommodate any small- to large-scale mass notification system requirements; each of these options are briefly described below.

## Options

### Supervised Contact Closure Inputs

Eight supervised contact closure inputs can be added by installing the MNS-8-INPUT Card. This allows message and/or speaker zone selection through external dry contact inputs. *(For more information, please refer to the MNS-8-INPUT data sheet.)*

### Local Operating Consoles

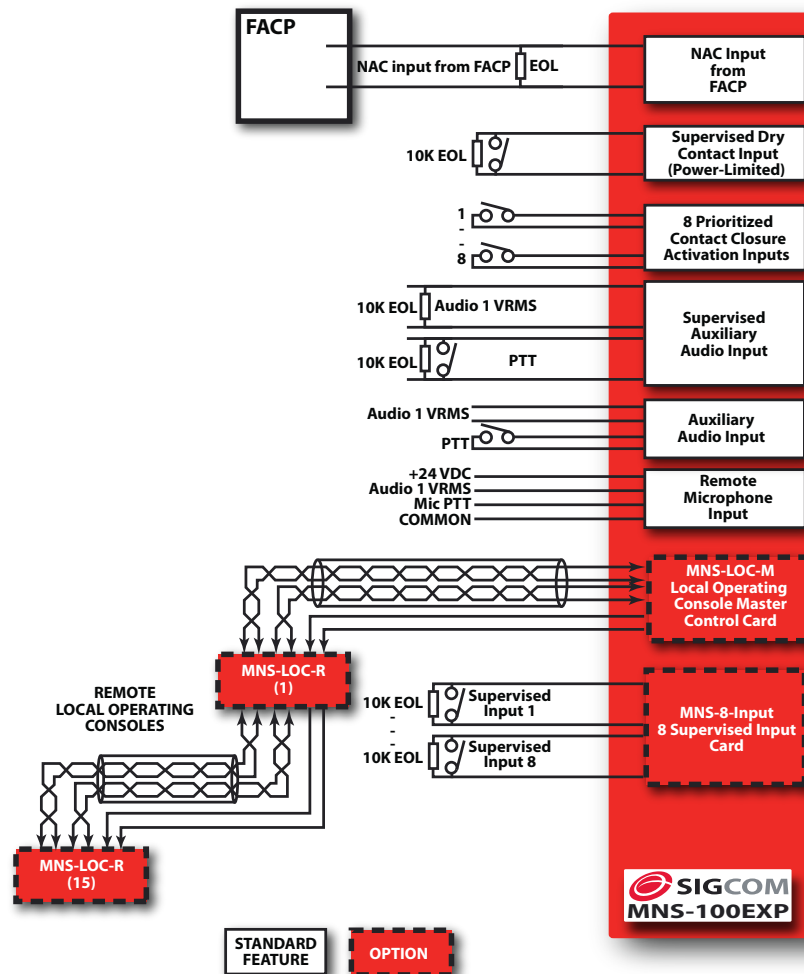
Up to 15 Local Operating Consoles (MNS-LOC-R) distributed throughout a facility may be connected to a single MNS-100EXP. To accomplish this, an MNS-LOC-M Local Operating Console Master Control Card must be installed in the MNS-100EXP. Then, the LOC are connected through a 6-conductor daisy-chained cable to each other and the Master Control Card. Each remote LOC is provided with a unique digital address at installation. The Master Control Card "polls" each remote to check for connection and status. All control signals transmitted to and audio transmitted from the LOCs are fully supervised, clean, digital data. The remote microphones on each LOC operate in a "first-in" priority, so the LOC using the system isn't interrupted until the key is released. One top priority LOC can be assigned, such as a dedicated commander's position, which can take over from all LOCs except the microphone at the main MNS-100EXP, which is the highest priority live voice.

The remote Local Operating Consoles (MNS-LOC-R) themselves provide switch control and indicator

LEDs for 8 messages that are played by the MNS-100EXP. Activating a switch on any LOC-R signals the -EXP, which then sends a command back to all LOC-Rs to light the associated message LED, and plays the message. In addition, an optional HVAC SHUTDOWN switch can provide signaling back to the MNS-100EXP to control an external HVAC system. This provides a single control connection to the HVAC system. *(For more information, please refer to the MNS-LOC-M/MNS-LOC-R data sheet.)*

### 70 V<sub>RMS</sub> Speaker Output

Audio output power loss due to long speaker runs can be compensated for by installing the MNS-70V-XFMR 70 Volt Transformer. The transformer is contained in a small external cabinet connected to the MNS-100EXP. All speaker circuits maintain active supervision and provide full output power. *(For more information, please refer to the MNS-70V-XFMR data sheet.)*



# SIGCOM MNS-100EXP Mass Notification System

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## Expanded Speaker Outputs

Eight additional speaker outputs/zones can be added to the existing four in the MNS-100EXP with the installation of the MNS-8-ZONE 8 Zone Expander Card. Each of the continuously supervised outputs can be wired Class A or B, without loss of outputs. (For more information, please refer to the MNS-8-ZONE data sheet.)

## Audio Power Boost

Larger facilities often require audio power greater than the 100 Watts output power the MNS-100EXP can provide. For these applications, an MNS-100APB Audio Power Booster panel can be added to act as a supervised remote 100 Watt power amplifier with its own 4 speaker outputs. As many MNS-100APB cabinets may be connected to the MNS-100EXP as needed to provide full facility coverage. In this configuration, the supervised audio input accepts a 25  $V_{RMS}$  typical speaker-level input, and broadcasts it to

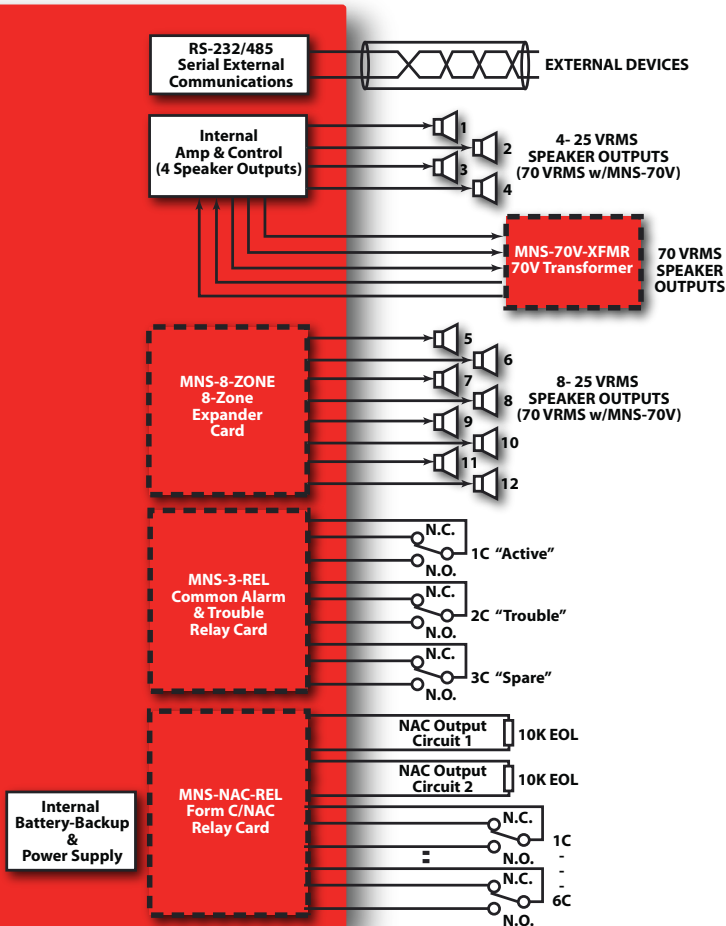
its speaker outputs. (For more information, please refer to the MNS-100APB data sheet.)

## Common Alarm and Trouble Relays

The MNS-3-REL 3-Relay Card provides three Form-C relay contact outputs to signal external devices in the system. The three outputs are typically used as Active and Trouble indicators, with the third used for other applications. (For more information, please refer to the MNS-3-REL data sheet.)

## Additional Relay Outputs

Two supervised reverse polarity NAC outputs and six general-purpose Form-C relay outputs can be added to the MNS-100EXP with the installation of the MNS-NAC-REL Card. Each NAC output can be wired as Class A or B without loss of outputs. The NAC outputs can be configured as non-polarity reversing, switched power sources to provide power or control of unsupervised external components if needed. (For more information, please refer to the MNS-NAC-REL data sheet.)



# Specifications

Standard Configuration; no options installed. For specifications on options, please refer to their individual data sheets. Specifications are subject to change without notice due to product improvements.

## Interface

<b>Inputs</b>	
<b>Primary activation, supervised</b>	1; reverse polarity NAC; 9-30 V <sub>DC</sub> , 10 mA; steady, non-coded, or 1; supervised dry contact closure rated for 24 V <sub>DC</sub> , 10 mA
<b>Secondary activation</b>	8; dry contact closure rated for 24 V <sub>DC</sub> , 10 mA
<b>Auxiliary audio</b>	600 to 3600 Hz freq. response 1; supervised, with override priority (control station), 1 V <sub>RMS</sub> audio input 1; unsupervised, lowest priority (paging and background music), 1 V <sub>RMS</sub> audio input <b>Audio Power Boost Mode</b> — 25 V <sub>RMS</sub> speaker-level; transformer isolated input
<b>Remote microphone</b>	1; 1 V <sub>RMS</sub> audio input; power-limited 24 V <sub>DC</sub> , 100 Ohms max line resistance
<b>External control/comm.</b>	RS-232/RS-485, selectable
<b>Outputs</b>	
<b>Audio</b>	100 W; 25 V <sub>RMS</sub>
<b>Speaker circuits</b>	1; power-limited to 60 W 3; power-limited to 25 W each; total power not exceeding 100 W 10KOhm EOLR continuously monitored

## Indicators

<b>LED</b>	power (green) active (red) system fault (yellow) audio level; yellow 4-segment
<b>LED bar graph</b>	
<b>Power Supply</b>	
<b>Primary Power</b>	120 V <sub>AC</sub> , 60 Hz; 5 A nominal
<b>Internal Power Supply</b>	24 V <sub>DC</sub> regulated
<b>External Power Supply</b>	24 V <sub>DC</sub> regulated; listed for Fire Alarm Use
<b>Internal Battery Backup</b>	
<b>Capacity</b>	10 A-Hr <sup>††</sup>
<b>Standby Mode</b>	24 hours <sup>††</sup>
<b>Alarm Mode</b>	15 minutes <sup>††</sup>
<b>Recharge Time</b>	48 hours <sup>††</sup>
<b>External Battery Backup</b>	
<b>Capacity</b>	18 A-Hr <sup>††</sup> /25 A-Hr
<b>Standby Mode</b>	48 hours <sup>††</sup> /72 hours
<b>Alarm Mode</b>	1 hour <sup>††</sup> /h hour
<b>Recharge Time</b>	48 hours max. <sup>††</sup> /72 hours max.
<b>Installation</b>	surface or semi-flush mount; between 16" O.C. studs;
<b>Enclosure</b>	31-5/8" h x 14-3/16" w x 4" d; painted steel
<b>Temperature Range</b>	32°F to 120°F (0°C to 49°C)
<b>Humidity</b>	90% maximum, non-condensing;
<b>Approvals/Listings</b>	ETL Listed <sup>††</sup>

## Ordering Information

Description	Model
100 Watt Panel, 4 Speaker Circuits, Back-up Battery and Power Supply	MNS-100EXP
Master Control Card for LOC	MNS-LOC-M
Local Operating Console	MNS-LOC-R
8 Supervised Input Card	MNS-8-INPUT
70 Volt Transformer	MNS-70V-XFMR
8 Zone Expander Card	MNS-8-ZONE
Common Alarm and Trouble 3-Relay Card	MNS-3-REL
2-NAC/6-Form-C Output Relay Card	MNS-NAC-REL
Audio Power Booster Panel	MNS-100-APB

††ETL listed for UL 864 9th Edition (Control Units and Accessories for Fire Alarm Systems) and UL 1711 4th Edition (Amplifiers for Fire Protective Systems); Complies with UL 2572 (Control and Communication Units for Mass Notification Systems)



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