E3 Series®

Broadband System

Intelligent, Networked, Multi-Channel Fire Alarm Control and Emergency Voice Evacuation System

Description

The Gamewell-FCI, E3 Series® Broadband System includes the NetSOLO® Broadband System. Like the Net-SOLO Broadband System, the E3 Series Broadband is of modular design and allows a wide range of configurations from two basic sub-assemblies. These sub-assemblies form an integrated, distributed fire alarm system that includes audio evacuation and fire command capability. The network communication transmits all fire alarm, audio evacuation, voice paging, and fire fighter communications. This System can be used as a component of the following E3 Series Systems:

• E3 Series Broadband Voice Evacuation System
• E3 Series Combined Fire and Mass Notification System

The E3 Series Broadband is a revolutionary advance in fire detection and emergency voice evacuation system design. E3 Series Broadband employs proven technology and expands it to accomplish emergency multi-channel voice evacuation, two-way fire fighter communications, and building control applications, all over a single pair of wires or fiber-optic cable.

It is a true peer-to-peer, token ring passing, networked system capable of supporting up to 64 individual nodes. In addition, the Addressable Node Expander (ANX) board expands the network to 122 nodes. All system status, control-by-event sequences, audio voice paging, and fire fighter telephone signals are sent between nodes over a single pair of wires or fiber-optic cable.

Each E3 Series Broadband node can be spaced along the network a maximum distance of 3,000 feet (914.4 m) over an unshielded, twisted-pair of wires or fiber-optic cable with up to 8dB loss. Built-in isolation at each node permits Style 4, 6, and 7 network configurations.

The E3 Series Broadband is simple to configure for any project requirement. A complete E3 Series Broadband application can be assembled from the following types of nodes; the ILI-E3/ILI95-E3 Series, ANX, the INCC Command Center, and the INX Transponder.

The E3 Series Broadband System is capable of the most sophisticated sequences of operations.

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E3 Series Broadband

Features

• IBC Seismic Certified.
• Listed under UL® Standard 864, 9th Edition.
• Listed under UL Standard UL2572 for Mass Notification.
• UL Listed for smoke control (dedicated and non-dedicated) when properly configured.
• FM/UL Listed for Pre-action/Deluge use.
• All communication signals and control-by-event sequences over a single pair of twisted, unshielded wires or fiber-optic cable.
• Distributed architecture, including Style 7 wiring configurations, allow system components to continue normal operation with no loss of function during single line fault conditions.
• Integrates INX transponders and INCC command centers to create a complete audio evacuation system with up to 122 nodes.
• Redundant command centers with microphone and fire fighter's handset are easily configured by adding INCCs.
• Uses state-of-the-art digital signal processor (DSP) technology for efficient audio compression and filtering.
• Provides up to 150 watts of audio power from 3 AM-50 Series amplifiers with an additional 50 watts of standby power in each Intelligent Network Transponder (INX).

SIGNALING

UL LISTED S1869	FM APPROVED	MEA Approved FDNY #: 6175 3025415 COA # 231-06-E	7165-1703:125	City of Chicago Approved Class 1 Class 2 High Rise	City of Denver Approved

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Description (Continued)

The Field Configuration Program (FCP) is based on Boolean logic statements providing AND, OR, NOT, and XOR logic operators. These operators can be combined to produce additional Boolean operators such as NAND, NOR, XNOR. The E3 Series Broadband is software-programmable for multi-channel digital audio applications. It is ideal for use with a wide range of complex system applications including high-rise or campus installations. An array of cabinets allows for neat, compact, installations.

A comprehensive set of timing functions can be attached to any input/output logic statement for the staggered reset of fan control relays, time-delayed alarm activation, automatic. The E3 is a microprocessor-based fire alarm control panel that uses an ILI-E3/ILI95-E3 Series, Intelligent Loop Module or the ANX with two signaling line circuits and two notification appliance circuits. When the E3 Series transmits to remote locations, the optional RPT-E3 provides the ILI-E3/ILI95-E3 Series or the ANX with signal boosting and transient protection, as well as connectivity for both wire and fiber-optic cables. Options also include an integral Digital Alarm Communicator Transmitter (DACT) supporting most popular reporting formats.

INCC (Intelligent Network Command Center)

The Intelligent Network Command Center (INCC) serves as the point of interface between an operator and the system's audio evacuation, fire fighter intercom, and building network. The INCC occupies a single address on the E3 Series Broadband network. A typical INCC assembly consists of the following:

- Intelligent Network Interface-Voice Gateway (INI-VGC-FO or INI-VGC-UTP) module (fiber-optic or unshielded twisted-pair).
- INI-VGC-UTP (unshielded twisted-pair only).
- One or more Addressable Switch Modules (ASM-16).
- Optional Network Graphic Annunciator (NGA).
- Remote 48 LED driver module (ANU-48).

Other component options include a paging microphone and a fire fighter's handset connecting to the INI-VGC-FO or INI-VGC-UTP. Each INI-VGC can support up to 16 ASM-16 modules.

Each ASM-16 has 16 push-button switches for a maximum capacity of 256 switches per INI-VGC command center. Each switch has three associated LEDs, colored green, yellow, and red. These switches and their LEDs are fully programmable to serve any system function desired. They can control audio speaker circuits, notification appliance circuits, addressable relay outputs, fire fighter phone control circuits, or any other special application that might be required.

Multiple INCCs can be configured into the E3 Series Broadband network to serve as a completely independent command center to operate for the local area or to operate as remote command centers mimicking, in part or in whole, the function of a main command center.

INX (Intelligent Network Transponder)

The Intelligent Network Transponder (INX) acts as a network audio transponder for the E3 Series Broadband Network. The INX transponder serves as the point of distribution for the system's audio and fire fighter telephone circuits and occupies a single node on the E3 Series Broadband network.

A typical INX assembly consists of the following components:

- ILI-MB-E3/ILI95-MB-E3
- ANX
- INI-VGX Module
- ILI-S-E3/ILI95-S-E3
- PM-9/PM-9G power supply
- Up to four AM-50 Series amplifiers

The INX transponder occupies a single address on the network and provides termination points for the network connection using either a pair of unshielded twisted-pair wire or fiber-optic cable.

The INX transponder receives its power from a PM-9/PM-9G, 9 ampere, filtered, switching power supply providing 24 VDC nominal operating voltage. The PM-9/PM-9G has an integral standby battery charger capable of recharging up to 55 A/H batteries. The E3BB-BB-BC/INX cabinet can house up to 18 A/H sized batteries.

INI-VGX (Intelligent Network Interface-Voice Gateway)

The INI-VGX uses advanced Digital Signal Processing (DSP) technology for audio compression and filtering allowing the E3 Series Broadband to produce the clearest audio possible while conserving network bandwidth for instantaneous response. Background noise is automatically filtered during voice paging and fire fighter communications increasing audibility and eliminating the need for push-to-talk devices.

The INI-VGX can accommodate up to 16 different messages with a total combined duration of three minutes. Each message can be field installed via a laptop computer and can be in the form of a voice message or an evacuation tone.

The INI-VGX also provides a fire fighter phone riser and an addressable signaling line circuit connecting to multiple phone jacks or warden stations through as many as 16 AOM-TELF modules. In addition, the INI-VGX SLC can support up to 32 speaker circuits using the AOM-2SF for single channel applications.

AM-50 Series Amplifiers

The INX or INX CAB-B cabinet can contain up to four AM-50 Series amplifiers that produce 50 watts of power @ either 25 V_{RMS} or 70.7 V_{RMS} audio output. Each amplifier includes two separate speaker circuits that can be wired Style Y (Class B) or Style Z (Class A). In addition, each amplifier can produce its own tone or message independently of other system amplifiers. Thus, an INX transponder can produce three audio channels simultaneously. Each INX transponder can support up to four AM-50 Series amplifiers operating as main amplifiers with one AM-50 Series amplifier used as a fail-safe backup amplifier.

E3 Series with 2 notification appliance circuits, each rated 2.0 amps. @ 24 VDC (Class 2 Power-Limited).

Two analog addressable signaling line circuits (Class 2 Power-Limited) Style 7 (Class "A")

INCC-C Command Center with optional Microphone and Firefighter's Handset ASM-16 Addressable Switch Modules with 16 programmable, addressable switches, each with 3 programmable indicating LEDs: (red, green yellow)

Optional Digital Alarm Communicator Transmitter (DACT-E3) for local or network-wide event reporting

Twisted-pair or fiber-optic cable between nodes 3,000 ft. (900m) distance with wire up to 8 dB loss with fiber-optic

(Class 2 Power-Limited)

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INX Transponder with 6 independently programmable speaker circuits, each rated 50 watts (Class 2 Power-Limited)

Three simultaneous Audio channels up to 16 programmable voice messages

INX

One signaling line circuit with 16-AOM-TELF and 32 AOM-2SF addressable devices (AOM-TELFs shown) Style 4 (Class "B") standard (Class 2 Power-Limited)

Firefighter phone riser (Class 2 Power-Limited)

Gamewell-FCI

Figure 1 INCC Command Center and INX

Local Annunciators, LCD-E3 (max. 6) and
LCD-7100, (max. 5) Global display for all
network events if set to Region "0"

One SLC
(16 AOM-TELFs & 32 AOM-2SFs)

NAC

NAC

INX

One phone riser

Initiating / Control
Devices

E3 Series

Gamewell-FCI

Gamewell-FCI

6 Speaker appliance ckts.
150 watts max. @ w/ 50 watts
standby

3,000 ft. (7,620 cm) (max.) between nodes using wire
8 dB loss (max.) between nodes using fiber-optic cable

One SLC
(16 AOM-TELFs & 32 AOM-2SFs)

NAC

NAC

INX

One phone riser

Initiating / Control Devices

E3 Series

Gamewell-FCI

Gamewell-FCI

6 Speaker appliance ckts.
150 watts max. @ w/ 50 watts
standby

Connect if wired
Class A, Style 6 or 7 only

Optional Integral DACT

Initiating / Control
Devices

Local annunciators,
LCD-7100, (max. 5)
Global display for all network
Events add LCD-E3 (max. 6)

One SLC
(16 AOM-TELFs & 32 AOM-2SFs)

INX

One phone riser

E3 Series

Gamewell-FCI

Gamewell-FCI

6 Speaker appliance ckts.
150 watts max. @ w/ 50 watts
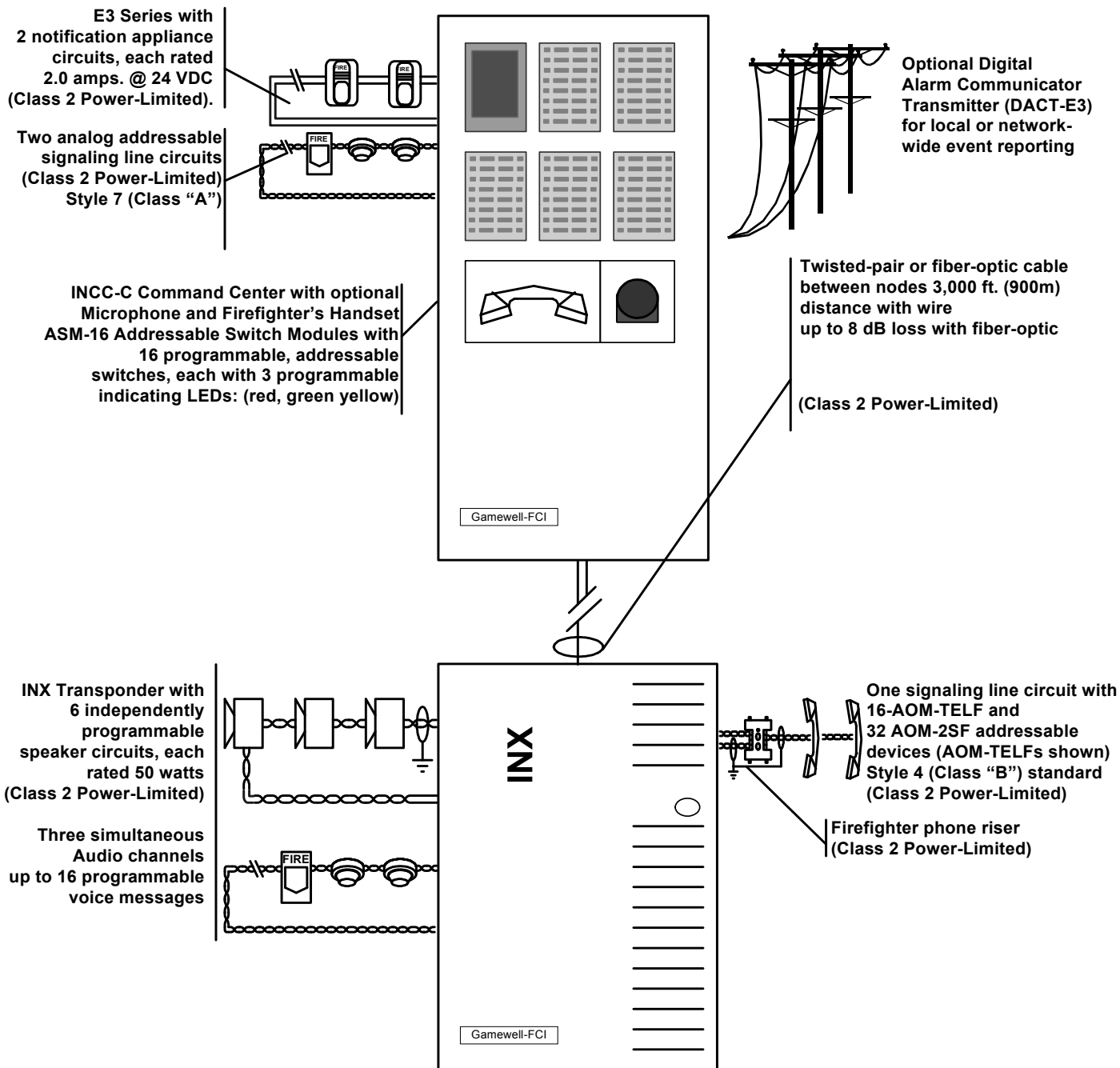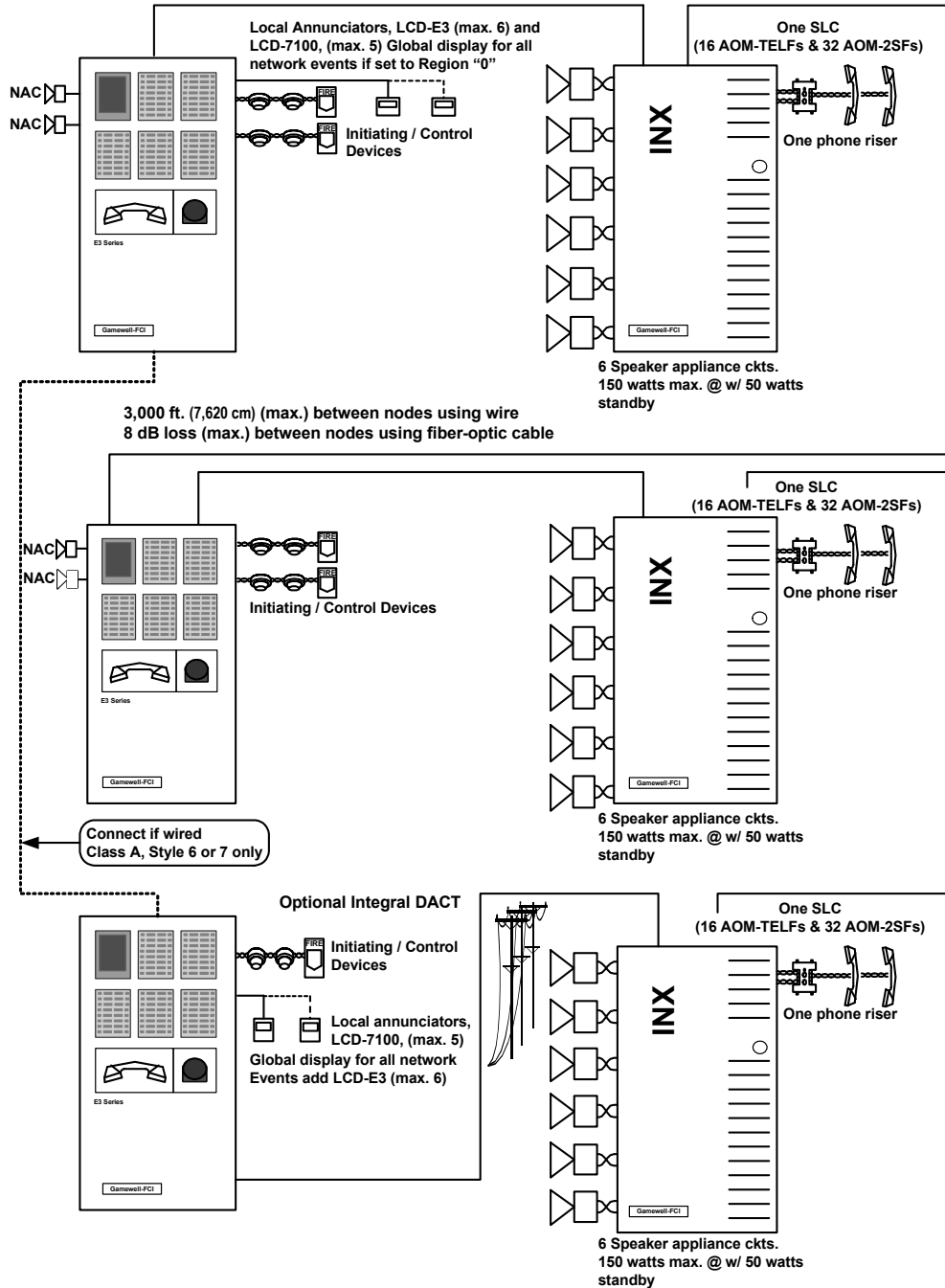standby

Figure 2 E3 Series Broadband System

Specifications

Detailed product specifications may be found in the following documents:

9020-0542	INCC Intelligent Network Command Center Data Sheet
9020-0637	E3 Series Control Panel Data Sheet
9020-0541	INX Intelligent Network Transponder Data Sheet
9021-60758	E3 Series Combined Fire and Mass Notification Data Sheet

Ordering Information

E3 Control

Part Number	Description
ILI95-MB-E3	Intelligent Loop Interface-Main Board
ILI-MB-E3	Intelligent Loop Interface-Main Board
ILI-S-E3	Intelligent Loop Interface-Expansion
ILI95-S-E3	Intelligent Loop Interface-Expansion
ANX-SR	Addressable Node Expander-Single Ring
ANX-MR-FO	Addressable Node Expander-Multi-Ring Twisted-Pair
ANX-MR-UTP	Addressable Node Expander-Multi-Ring Fiber-Optic
LCD-E3	LCD Keypad Display
PM-9/PM-9G	Power Supply
RPT-E3	Network Repeater
DACT-E3	Digital Alarm Communicator Transmitter
LCD-7100 (Optional)	Remote Serial LCD Display

INCC Intelligent Network Command Center

Part Number	Description
INI-VGC	Command Center Gateway
INI-VGC-UTP	Command Center Gateway for unshielded twisted-pair wire only
ASM-16	Programmable Switch Module (occupies single slot of inner door)
NGA	Network Graphic Annunciator
ANU-48	Remote LED Driver
INCC-IDT	Inner door w/one double slot for INCC-TEL fire fighter handset and 4 single slots
INCC-ID	Inner door w/6 single slots
INCC-CABR	INCC backbox (black) with red outer door,
Dimensions:	19" W x 19" H x 4" D (48 W x 48 H x 10 cm)

Ordering Information (Continued)

Part Number	Description
Optional Accessories	
ANU-48	Remote LED Driver
INCC-TEL	Fire Fighter Telephone Handset (requires INCC-IDT Inner Door)
INCC-MIC	Paging Microphone Module (occupies one single slot of Inner Door)
INCC-BP	Command Center Blank Face Plate (occupies one single slot of Inner Door)

INX Intelligent Network Transponder

INI-VGX	Transponder Voice Gateway
INX-VGX-UTP	Voice Gateway for unshielded, twisted-pair wire only
PM-9/PM-9G	INX 9 ampere Power Supply
AM-50 Series Amplifiers;	
AM 50-25	INX 50 Watt amplifier 25 V_{RMS} output
AM-50-70	INX 50 Watt amplifier 70.7 V_{RMS} output
Cabinets:	
INX-CAB	INX Backbox with Black Door
Dimensions;	19" W x 19" H x 4" D (48 x 48 x 10 cm)
INX-CABR	INX Backbox with Red Door
Dimensions;	19" W x 19" H x 4" D (48 x 48 x 10 cm)
INX CAB-B	Enclosure louvered door and INX-CAB-B mounting plate
Dimensions:	19 3/8" W x 19 3/8" H x 4.5" D (49 W x 39 H x 11 D cm)

For additional information on the cabinets, refer to the E3 Series Cabinets Data Sheet (Part Number: 9020-0649).

Seismic Battery Bracket Kits

For information on the types of Seismic Battery Bracket Kits available and the Seismic Battery Bracket Kit Part Numbers, refer to the following documents:
- Seismic Battery Bracket Installation Guide, P/N: 53839
- E3 Series Cabinets Data Sheet P/N: 9020-0649