

MXL-IQ

Advanced Life Safety Control Unit

ARCHITECT AND ENGINEER SPECIFICATIONS

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> • Capacity for up to 240 intelligent analog detectors • <i>FirePrint™</i> application-specific fire detection • Expandable up to a standalone system of 998 input and output points • Intelligent / analog detection circuits, Style 6 (Class A) or Style 4 (Class B) • Detector-sensitivity readout / printout, per 'Chapter 7 NFPA 72' • Style D (Class A) or Style B (Class B) conventional initiating circuits • Style Z (Class A) or Style Y (Class B) notification-appliance circuits • Security-device monitoring • Degrade-mode operation • Distributed processing • Sprinkler supervision • Supervised remote printer • Multiple command stations • Compare system software • Central architecture • 32-character-device custom messages • 80-character, backlit alphanumeric display • Multi-language display • Color-graphics option • <i>FireFinder™</i> graphics |  <p>The image shows a black, rectangular control unit with a small, backlit alphanumeric display at the top. Below the display are several indicator lights and buttons. The Siemens logo is visible at the bottom of the unit.</p> | <ul style="list-style-type: none"> • Operates as an 'interactive peer' with other MXL-IQ, MXL or MXLV fire-alarm control panels in a <i>LifeLINK</i> Network • Intelligent interface to building-management systems • Intelligent link to air-sampling detection systems • 16-gauge steel enclosure • <i>Alarm</i> verification by device or zone • Pre-Alarm operation • Logic-controlled output functions • Time-based, controlled-output functions • Supervised serial annunciator driver / input interface • Interactive [monochrome & color] CRT • <i>Sinorix™</i>-agent release • Pre-action releasing and deluge (NFPA 13) • NFPA 2001 Approved • Complies with NFPA 72 NEC 760 power-limited circuits (UL 864 Compliant) • FM Approved for intrinsically-safe applications • UL 864 9th Edition Listed & UL Listed; CSFM, NYMEA & City Of Chicago Approved |
|---|---|---|

- City tie / lease line
- Coded outputs
- User 'Help' screens
- Holiday Schedule

System Overview

MXL-IQ is a microprocessor-based and advanced Life Safety system. The MXL-IQ system's use of unique multiprocessor 'Network' design, along with its ability to utilize intelligent analog and conventional detection devices, make it the most flexible and reliable system in the life-safety industry. The MXL-IQ is the system-of-choice for building projects that include: schools; nursing homes; small-office building; strip malls; midsize hotels; apartment buildings, and dormitories.

MXL-IQ is designed for standalone or networked-special hazard applications, such as *Sinorix™* Engineered Fire Suppression. MXL-IQ provides the earliest detection possible, via its 'intelligent link' to air-sampling detection systems. The MXL-IQ system complies with the requirements of NFPA 72, and is also UL 864 9th Edition and UL 1076 Security Listed. Further, the MXL-IQ system is also UL listed for agent release, per NFPA 2001.

The basic MXL-IQ control unit consists of the following sub-assemblies:

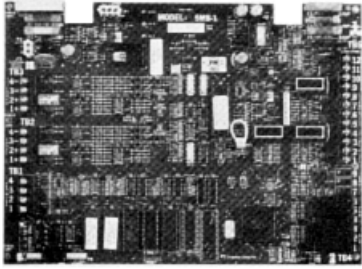
- Model SMB-2 Main Control Board
- Model MPS-6 Power Supply
- Model MKB-4 Annunciator and Keyboard
- Model MSE-3L Enclosure

Optional modules which can be installed with the MXL-IQ System include:

- Model MPS-12 Power Supply
 - Model MOM-2 or Model MOM-4 Expansion Card Cage
 - Model CRM-4 Controllable Relay Module
 - Model CZM-4 Conventional Zone Module
 - Model CSM-4 Controllable Signal Module
 - Model PIM-1 Peripheral Interface Module
 - Model NIM-1R *LifeLINK* Network Interface Module
 - Model MOD-16 Output Driver
 - Model MOI-7 Network Interface
 - Model MID-16 Input Module
 - Model MXLG Color Graphic
 - Model MXL-GT Color Terminal
 - [plus a full range of analog / intelligent detectors and devices]
- (See: **Compatible Devices** table on Page 6 of this document.)

MXL-IQ Components

Main Control Board (SMB-2)



SMB-2

The function control for the MXL-IQ control unit is contained on the Main Control Board (Model SMB-2). The on-board, 16-bit microprocessor, along with non-volatile EPROM and Flash memory, allow the system to be custom configured to meet a wide range of customer requirements.

Model SMB-2 controls operating sequences and monitors input-device identity, detector sensitivity, network communication, and operator commands entered through the Annunciator / Keyboard (Model MKB-4). Model SMB-2 also provides two (2) Analog Loop Driver (ALD) circuits. Each ALD loop can be configured as Style 4 (Class B) or Style 6 (Class A), and can monitor up to 60 Siemens – Fire Safety intelligent input devices, as well as 60 programmable device output relays.

Model SMB-2 is equipped with two (2) programmable and codable Style Y (Class B) or Style Z (Class A) notification appliance circuits (NACs). Each circuit can activate up to 1.5 Amps of listed audible or visual notification appliances. Auxiliary relays are provided for external monitoring of Common System *Alarm* and Common System *Trouble* commands.

Model SMB-2 includes a built-in battery charger and transfer circuit. The charger is microprocessor controlled, and incorporates a brown-out circuit that switches the system to optional standby batteries during reduction or complete loss of primary AC source power. Upon command, Model SMB-2 is capable of displaying the 'real-time' battery voltage, AC voltage, charge current, and other power data – all via the Model MKB-4 alphanumeric display. Model SMB-2 also includes a 1 Amp, 24 VDC output.

Model SMB-2 is fully off-line field programmable, via notebook computer. Complete system configuration can be easily uploaded, downloaded or edited using CSGM custom-programming software.

Program options include – but are not limited to – smoke-detector environmental compensation; detector pre-*Alarm*; history log; output control by event; check-and-change time-based control; detector sensitivity, *Alarm* verification by device or zone; 32-character custom alphanumeric messages per device, system-operation passwords, and NAC coding.

Model SMB-2 provides a port for connection of the programming laptop computer.

Annunciator/Keypad (MKB-4)



MKB-4

Model MKB-4 mounts on a hinged frame in the Model MSE-3L enclosure, as well as provides an 80-character, backlit alphanumeric liquid-crystal display (LCD) annunciator, which scrolls continuously to display system-status data, and to show 32-character, user defined device messages.

When multiple events occur, Model MKB-4 will then display the highest-priority event. Additional data can be viewed by depressing the NEXT key. At any time, the display scroll can be stopped by depressing the HOLD button.

Switches are provided for system *Trouble*, *Supervisory* and *Security* conditions; and to *Acknowledge* fire-alarms events. An individual switch is also provided for silencing the system NACs. A separate switch is used for resetting the MXL-IQ control unit.

A 10-digit, numeric keypad is supplied to allow entry of the user passwords, as well as perform a wide variety of specific, menu-driven operation, programming and maintenance functions.

A set of 12 user-assignable 'Function' keys provide single-button access to a variety of system commands. These switches may be used to perform system operations, such as: "Drill," manual relay control, zone disconnect, etc.

System-status indicator light-emitting diodes (LEDs) are contained on Model MKB-4, which can function even if the main system microprocessor fails. The LEDs provide indication of: *Main Power On*, *Fire Alarm*, *Security Condition*, *System Trouble*, *Supervisory*, *System Audibles Active / Silenced* and *Partial System Disable*.

Model MKB-4 communicates with Model SMB-1, via the system network link.

Power Supply (MPS-6)



MPS-6

Model MPS-6 is a fully supervised power supply that provides the system with primary DC power. Rated at 6.5 Amps, Model MPS-6 is unfiltered and unregulated.

MXL-IQ Components — (continued)

Model MPS-6 supplies the MXL-IQ control unit and its expansion modules with power required for normal operation. The MXL-IQ incorporates a resettable circuit breaker on the primary input, and includes a built-in AC line filter for surge and noise suppression.

Model MPS-6 mounts in the MXL-IQ enclosure back box, (Model MSE-3L).

Power Supply (MPS-12)

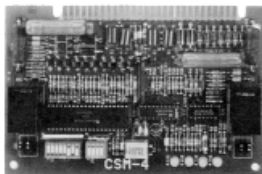


MPS-12

Model MPS-12 is a fully supervised power supply that provides the MXL-IQ system with primary DC power. Model MPS-12 also supplies the MXL-IQ and the expansion modules with power required for normal operation. Model MPS-12 is rated at 12 Amps, and is unfiltered and unregulated.

Model MPS-12 incorporates a resettable circuit breaker on the primary input, and includes a built-in AC line filter for surge-and-noise suppression. Model MPS-12 mounts in the MXL enclosure back box.

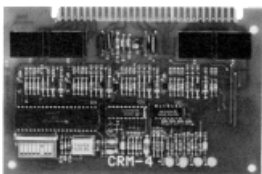
Controllable Signal Module (CSM-4)



CSM-4

The Controllable Signal Module (Model CSM-4) provides two (2) fully supervised, programmable NACs. Model CSM-4 supplies two (2) Class B [Style Y] or Class A [Style Z]-type output circuits for the control and supervision of listed audible or visual notification appliances, which include: horns, bells, speakers, strobes, etc. Each circuit can provide up to 1.5 Amps (24 VDC) of current to power notification appliances. Model CSM-4 is also used for **Sinorix™** engineered fire suppression, as well as for applications that call for municipal tie or leased line operation.

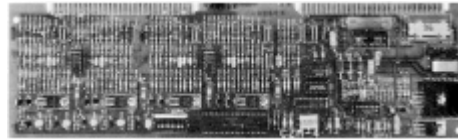
Controllable Relay Module (CRM-4)



CRM-4

The Controllable Relay Module (CRM-4) is designed to provide auxiliary control of building functions, such as: door-holder release; elevator capture; smoke control; lock release, etc. Model CRM-4 plugs into one (1) of the slots in the Model MOM-2 or Model MOM-4 expansion card cage. Model CRM-4 provides four (4) fully programmable relays. Each relay contains one (1) set of SPDT contacts rated at 2 Amps; 30 VDC / 120 VAC, resistive.

Conventional Zone Module (CZM-4)



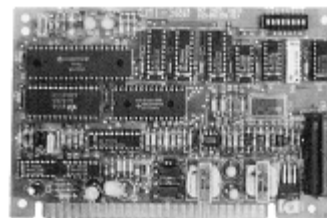
CZM-4

The Conventional Zone Module (Model CZM-4) is used with the MXL-IQ Control unit to provide four (4) Class A [Style D] or Class B [Style B] conventional initiating-device circuits.

Each circuit can monitor up to 30 Siemens — Fire Safety two-wire photoelectric or ionization smoke detectors and an unlimited number of normally open (N.O.) contact devices. Projected beam detectors may also be used.

Model CZM-4 circuits will support the use of detector relay bases, and remote indicator lamps. Activation of any device on a circuit will initiate a zone *Alarm* condition, resulting in the operation of programmed functions. Model CZM-4 plugs into one (1) full slot in the Model MOM-2 or Model MOM-4 expansion card cage.

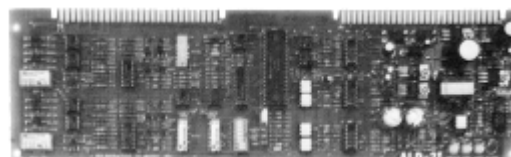
Interface Module (PIM-1)



PIM-1

Model PIM-1 is a MXL-IQ option module that provides a bi-directional, isolated RS-232 port for connection to peripheral devices, such as: printers; cathode ray tubes (CRTs); diagnostics; pocket pagers, and color graphics. Model PIM-1 mounts onto Model MKB-4, and connects to Model SMB-1, thus providing a screw-terminal block for RS-232-device connections. A number of supervised and non-supervised formats are available.

Analog Loop Driver (ALD-2I)



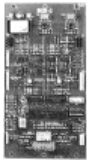
ALD-2I

MXL-IQ Components – (continued)

Model ALD-2I is an MXL-IQ network-option module that supplies two (2) intelligent analog circuits, utilizing Siemens — Fire Safety model-series 'I'-type intelligent devices. Model ALD-2I occupies two (2) addresses on the MXL-IQ local network, and through the use of a distinctive communication protocol. Devices connected to Model ALD-2I circuits are dynamically supervised by the MXL-IQ control unit. Up to 60 programmable input-and-output devices may be connected to each of its two (2) circuits. Each circuit may be wired as Style 4 or Style 6.

(See: **Compatible Devices** table on Page 6 of this document.)

Input / Output Module (MOI-7)



MOI-7

Model MOI-7 is a MXL-IQ, RS-485 network module that provides a fully programmable serial interface to the Model MOD-16 output drivers and MID-16 input drivers.

When used with Model MOD-16, Model MOI-7 provides a serial annunciator or relay driver. When used with Model MID-16, Model MOI-7 provides programmable inputs.

Each Model MOI-7 driver can operate up to eight (8) Model MOD-16 output drivers and eight (8) Model MID-16 input drivers, simultaneously. Each Model MOD-16 output driver and Model MID-16 input driver is independently programmable, via the MXL-IQ custom software.

Output Driver (MOD-16)



MOD-16

Model MOD-16 is an output-driver module used in conjunction with Model MOI-7, as a part of the Siemens — Fire Safety MXL-IQ control unit. Up to eight (8) Model MOD-16 drivers can be connected to an individual Model MOI-7 interface module. Each Model MOD-16 output driver provides 16 open-collector, current-sinking outputs rated at 24 VDC, 50mA. Model MOD-16 output drivers are programmable through the MXL-IQ custom software (CSGM).

Input Driver (MID-16)

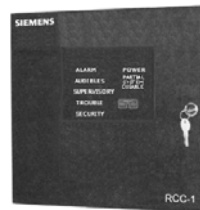


MID-16

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Model MID-16 is an input module used in conjunction with Model MOI-7 as a part of the Siemens — Fire Safety MXL-IQ control unit. Up to eight (8) Model MID-16 input drivers — along with eight (8) Model MOD-16 output drivers — can be connected to a single Model MOI-7. Each MID-16 provides a non-supervised input that can monitor contact devices. Each Model MID-16 input driver can be separately used as a part of the MXL-IQ custom-programming logic. These inputs can be individually set for: *Alarm, Supervisory, Trouble, Security* or *Status* usage. The inputs can also be configured to provide supervision for lamps driven by Model MOD-16 outputs. Screw terminals and connectors are provided on the Model MID-16 input drivers for interface to monitored devices.

Remote Command Console (RCC-1)



RCC-1

Model RCC-1 is a remotely located MXL-IQ annunciator-display module. Model RCC-1 contains an 80-character LCD, along with a control keypad (Model MKB) and a Model PS-5N7 network interface. Each Model RCC-1 console can be located in any area where control or annunciation is required. Model RCC-1 can be programmed solely for display, or can provide both display and system control. If Model PIM-1 is added to Model RCC-1, remote printers or graphics computers can be located throughout a facility.

Remote Command Console (RCC-2)



RCC-2

Model RCC-2 is a remotely located MXL-IQ annunciator-display module mounted in a small enclosure (8-1/2" [W] x 7" [H] x 2-7/8" [D]). Model RCC-2 can be situated in any area where control or annunciation is required. Model RCC-2 contains an 80-character LCD; a control keypad for system controls, and a Model PS-5N7 network interface.

No function keys are included with Model RCC-2, and Model RCC-2 can be programmed solely for display, or can provide both display and system control. If Model PIM-1 is added to the RCC-2, remote printers, VDT, or graphics computers can be located throughout a facility.

MXL-IQ Components – (continued)

Remote Serial Enclosure (RSE-1)



RSE-1

The Remote Serial Enclosure (Model RSE-1) is a remotely located MXL-IQ module that allows connections to a printer, PC monitor, alphanumeric-pager interface, or remote diagnostic module. Model RSE-1 contains an annunciator board and a Model PS-5N7 interface board – with space in the enclosure for a printer-driver board (Model PIM-1).

UL Listed Parallel Printer (PAL-1)



PAL-1

Model PAL-1 is a UL Listed, supervised parallel system printer for the MXL-IQ control unit. Model PAL-1 connects to Model PIM-1.

Intelligent [B6 Chip] Control Point (ICP-B6)



ICP-B6

Model ICP-B6 is a field-mounted output module with programming capabilities as a remote bell, horn, or strobe circuit. Model ICP-B6 communicates with the MXL-IQ control unit, via the ALD loop.

Line Isolator Module (LIM-1)



LIM-1

Model LIM-1 is a short-circuit isolator module for use on the MXL-IQ control unit's analog loops. Model LIM-1 is capable of providing Style 4, Style 6 wiring of ALD loops. Multiple short-circuit isolators can be used on a single ALD loop to prevent any loss-of-protection, in the event of a short circuit.

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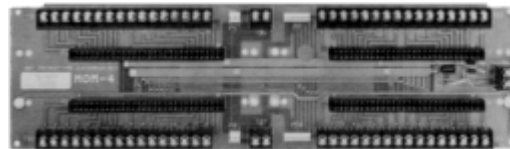
Network-Option-Module Card Cage (MOM-2)



MOM-2

Model MOM-2 provides the MXL-IQ main unit with card slots for optional modules. Each Model MOM-2 provides space for one (1), full-width option modules: {Model ALD-2I, Model NIM-1W or Model CZM-4} – or two (2), half-width option modules: {Model CRM-4, Model CSM-4 and Model REP-1}.

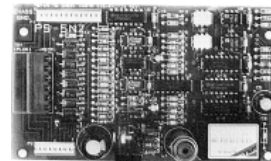
Network-Option-Module Card Cage (MOM-4)



MOM-4

The Model MOM-4 card cage provides the MXL-IQ control unit with card slots for option modules. Each Model MOM-4 supplies connection space for either two (2), full-width option modules: {Models ALD-2I, CZM-4 and NIM-1W} or four (4), half-width option modules: {Models CRM-4, CSM-4 and REP-1} – or any combination of one (1), full-width and two (2), half-width modules.

5-Volt Power Supply / Network Interface (PS-5N7)



PS-5N7

Model PS-5N7 is a 5-Volt power supply and MXL-IQ local-network interface module. Model PS-5N7 is an integral part in the operation of the Remote Command Console (Model RCC-1).

NCCXP Software (NCCXP-G, NCCXP-GL and NCCXP-WAN)



NCCXP-G Series

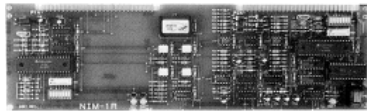
Software for the Network Command Center (Model NCCXP-series) is a Windows®-based, color-display and control-software package for use with the Siemens Industry, Inc. – Fire Safety LifeLINK network. The software provides full control and annunciation for a LifeLINK network of up to 63 MXL-IQ or MXL systems. Model NCCXP-series is comprised of three (3) package offerings:

MXL-IQ Components – (continued)

- Model NCCXP-G provides a graphical, network command center for networked MXL-series and FireFinder XLS-series panels
- Model NCCXP-GL serves as the graphical command center for a standalone MXL or FireFinder XLS system
- Model NCCXP-WAN – with the use of the HUB-4 communication card – allows for communication to a XL3 control panel by using a MMX modem or a MXL control panel, or to a conventional panel using WAIO.

Model NCCXP-series utilizes a user-friendly design to intuitively guide the operator to take appropriate action to system events: (e.g. – *Alarm, Trouble, or Supervisory*).

Network Intelligent Module (NIM-1W)



NIM-1W

Model NIM-1W is a full-sized slot, MXL-IQ module that allows networking / interconnection of up to 63 MXL / MXL-IQ systems. Model NIM-1W provides a RS-485 communication path in either Style 4-or-Style 7 wiring configurations.

Model NIM-1W allows MXL / MXL-IQ control units to have inter-panel logic and communicate in a 'peer-to-peer' formation. Model NIM-1W can be programmed via CSGM logic as a Foreign System Interface (FSI) to communicate with external-building control and annunciation systems.

Model NIM-1W is programmable to serve as an intelligent link to the air-sampling detection system.

MXL-IQ Enclosure / Door (MSE-3L)



MSE-3L

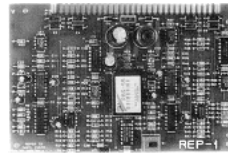
Model MSE-3L is a sheet-metal back box for the MXL-IQ control unit. Model MSE-3L supports mounting for Model SMB-2; Model MPS-6; Model MPS-12; Model MPS-12-220; Model MPS-12-240; Model MKB-4; and either one (1) Model MOM-2 or one (1) Model MOM-4 card cage.

Model MSE-3L measurements are 27^{-1/16"} [H] x 21^{-1/8"} [W] x 6" [D]. The Model IQ-DFL plate (p/n: 500-695436) is also available for use with Model MSE-3L to provide full, dead-front construction. Model MET-3L (p/n: 500-695437), which is a flush trim-mounting kit, is also available for use with Model MSE-3L. Model MET-3L provides an optional 1" trim-mounting ring around Model MSE-3L. Model MSE-3L also has an option for mounting a remote power supply (Model PSR-1) in place of Model SMB-2 for MXL and MXLV applications.

When Model PSR-1 is mounted into the Model MSE-3L enclosure, the blank plate (Model IQBLANK) / (p/n: 500-695438) is available to cover the cut-out in the Model MSE-3L door.

Other versions of Model MSE-3L include Model MSE-3LR - Red version, and Model MET-3LR - Red version of the Model MET-3L trim-ring kit.

Optional Remote Network Module (REP-1)



REP-1

Model REP-1 is an optional MXL module that extends the distance of the MXL panel's RS-485 network. Model REP-1 provides the ability to support various wiring configurations, including series and star configurations. Model REP-1 provides the ability to support NFPA Style 4 or Style 7 network communications wiring. Model REP-1 can be used to provide network wiring between MXL panels or MXLR panels. Model REP-1 is a one-half slot card that plugs into a Model MOM-2 or MOM-4 card cage. Model REP-1 allows MXL network distances to be expanded to allow greater application flexibility.

Model REP-1 is a RS-485 repeater module capable for configuration as one (1) Style 7 or two (2) Style 4 network-communication lines.

Compatible Devices

Model Number[s]	Base	Installation Instructions Number[s]
CZM-1	—	P / N: 315-090725
CZM-1B6	—	P / N: 315-095355
FP-11 / FPT-11*	DB-3S w/ DB-ADPT DB-11	P / N: 315-095921
ICP	—	P / N: 315-092471
ICP-B6	—	P / N: 315-095306
ILI-1 / 1H	DB-3S, DB-X3RS	P / N: 315-095387
ILI-1A / 1AH	DB-3S, DB-X3RS	P / N: 315-095387
ILI-1B / 1BH	AD-3I AD-3XR I	P / N: 315-093234 P / N: 315-093235
ILP-1 / ILPT-1	DB-3S, DB-X3RS	P / N: 315-092594
ILP-1	AD-3ILP AD-3XR ILP	P / N: 315-093234 P / N: 315-093235
ILP-2**	DB-3S, DB-X3RS	P / N: 315-095028
ILP-2**†	AD-3ILP AD-3XR ILP	P / N: 315-093234 P / N: 315-093235
ILT-1	DB-3S	P / N: 315-093336
LIM-1	—	P / N: 315-092135
MSI-10 / 20	—	P / N: 315-090903
MSI-10B / 20B	—	P / N: 315-093329
MSI-B6	—	P / N: 315-093613
TRI-B6 / B6R / B6D	—	P / N: 315-093315
TRI-B6M	—	P / N: 315-094547
TRI-S / D / R	—	P / N: 315-096242

* Model FP-11 / FPT-11 only compatible with MXL-IQ Rev. 6.0 or greater firmware

** Model ILP-2 only compatible with MXL-IQ Rev. 3.0 or greater firmware

† DUCT application must be selected when device is used in air-duct housing or in a spot-duct application at point of CSGM configuration

Technical Data

Model SMB-2 Analog Device Loops (TB2 and TB3)

1. Electrical Ratings:

Supervisory: 30 VDC max, 66mA max.

Alarm: 30 VDC max, 66mA max.
(60 devices in alarm)

2. All wiring must be in accordance with Article 760 of NEC or local building codes.

3. Only the following list of devices may be used. A maximum of 60 devices in any combination may be connected to a single analog loop. The ®UL identifiers for compatibility are the same as the model names specified in **Compatible Devices** table.

4. No end of line device is required.

5. Both circuits are power limited to NFPA 70 / NEC 760. Each detector – or group of detectors – requires a minimum 18 AWG, two-wire circuit of thermoplastic-fixture wire.

6. Total circuit resistance must not exceed 100 ohms.

Maximum capacitance: 0.4uF, between loop+ and loop-
0.8uF, between loop+ and chassis 0.8uF, between loop and chassis

7. T-tapping is not allowed on Style 6 loops.

8. See: **(p/n: 315-092772)** for more information on wiring.

Model SMB-2 Notification Appliance Circuits (TB5, 1-4 and TB5, 5-8)

1. These NACs are for alarm-notification appliances only (NFPA 72).

Use Model CSM-4 for the following:

- For Municipal Tie (NFPA 72, Chapter 4)
- Releasing (NFPA 13)
- Leased Line (NFPA 72, Chapter 4)

2. All wiring must be in accordance with Article 760 of NEC or local building codes.

3. Both NACs are power limited to NFPA 70 / NEC 760.

4. Electrical Ratings:

Supervisory: 18-31 VDC, 12mA max.

Alarm: 18-31 VDC, 1.5A max.

5. End-of-Line Device:

Use Siemens – Fire Safety EOL 2.2K, 1/2W
(p/n: 140-820380)

6. Line Resistance:

Not to exceed 3 ohms total.

7. See: **(p/n: 315-092772)** for more information on wiring.

Model SMB-2 AUX Power (TB5, 9-12)

1. AUX power is available on TB5 terminals 9-12.

2. All wiring must be in accordance with Article 760 of NEC or local building codes.

3. AUX power is power limited to NFPA 70 / NEC 760.

4. Electrical Ratings:

18-31 VDC, 1A max.

5. See: **(p/n: 315-092772)** for more information on wiring.

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Notice: This marketing data sheet is not intended to be used for system design or installation purposes.
For the most up-to-date information, refer to each product's installation instructions.

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May 2011
Supersedes sheet dated 1/06
(Rev. 1)