MAPNET II®, TrueAlarm® Module 4100-0110
- up to 127 MAPNET II addressable devices or TrueAlarm analog sensors per module
- MAPNET II Line Isolator Modules for panel mount (4100-0111) or line powered (2190-9169, surface mount or 2190-9170, flush mount)
- Refer to data sheet S4100-0002 for details

24 Point Input / Output MODULE 4100-3024
- Provides up to 24 Programmable input / output relays.
- Individually configured as either input or output relay.
- Relay SPST Contacts rated 0.5A @24VDC or 30VAC

Dial-in Service Modem 4100-0139
Provides remote access for a computer equipped with a modem and terminal emulation software.

Panel Mount Printer 4100-0451
- 40 column high speed event printer
- 20 exposed lines with internal take-up reel
- Operates from system voltage with battery back-up
- Requires dedicated RS-232 port Refer to data sheet S4100-0021 for details

Miniplex® Distributed Module Operation
- Allows remote location of Amplifiers, MAPNET II and TrueAlarm Interface Modules, IDCs, NACs, and Auxiliary Control Circuits
- **4100-EWIS** control panels are for audio operation,
- Up to 31 MINIPLEX transponders can be controlled from the c.i.e.
- Refer to data sheet S4100-0015 for Miniplex transponder details
- The figure to the right shows a typical audio/voice MINIPLEX transponder system with initiating devices and notification, each monitored and controlled by the control panel

Remote Unit Interface, RUI 4100-0304
- Supervised serial communication channel for control and monitoring of remotely located annunciators, MINIPLEX transponders, and I/O panels
- Can be wired for either Style 7 (Class A) or Style 4 (Class B) communications
- Up to four RUI modules can be installed
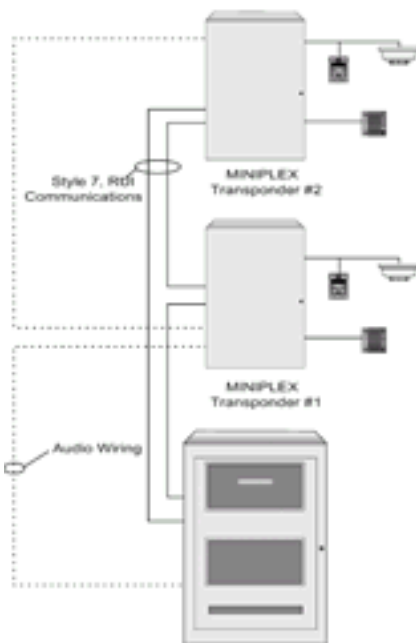
LED Annunciation
Optional interface modules are available for remote and/or local control panel annunciation. The LEDs are programmable for slow rate, fast rate pulse or steady illumination.
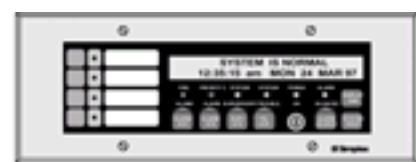
4603-9101 LCD Annunciator

4603-9101 Serial LCD Annunciator
Simplex LCD annunciators provide remote area annunciation and control using a display and controls similar to those of the 4100 control panel. Information is transmitted over a single twisted, shielded pair. Other styles of serial annunciators can be connected on the same pair of wires. (Refer to data sheet S4603-0001.)

LED/Switch Module Selection

4100-0401	8 red LEDs
4100-0402	8 red & 8 yellow LEDs
4100-0403	8 red LEDs & 8 momentary switches
4100-0404	8 red & 8 green LEDs, & 8 three position maintained switches
4100-0405	8 red & 8 yellow LEDs, & 8 momentary switches
4100-0406	yellow LEDs

MiniPlex System Example

64/64 LED/Switch Controller 4100-0301
- Interfaces up to 64 LEDs and 64 switches to the master controller via serial communications
- Continuously monitors switches for changes in status
- Supervises and controls LEDs
- Supervises LED/switch module placement

24 Point I/O Graphic Interface 4100-0302
- Each of the 24 points can be individually configured as either a switch input or a lamp driver output
- 150 mA lamp driver output (+24 VDC common)
- Outputs can be steady, slow pulse, or fast pulse
- Switch inputs can monitor 2 position or 3 position switches
- Lamp test input
- Provides supervised monitoring and/or control for smoke control applications

LED/Switch Modules
- Modules contain socketed LEDs to allow interchanging with different color LEDs to indicate function
- Switch modules can be used to perform manual control such as for HVAC, pressurization fans, damper control, speaker circuits, etc.
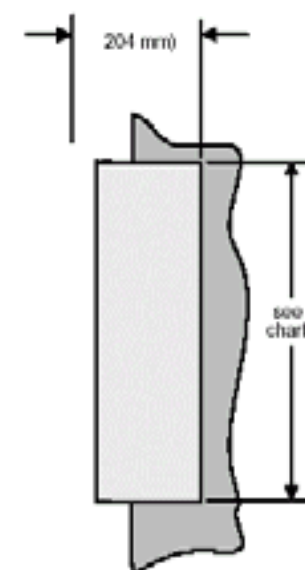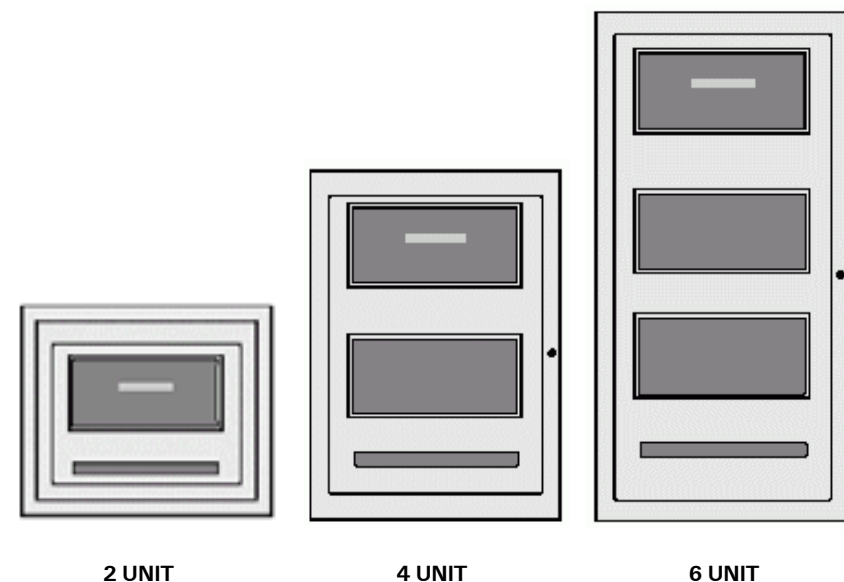
Mounting

Model Number	Description	Size	Height	Cabinet Width	Cabinet Depth
4100-8921 4100-8920	Glass Door Solid Door	2-Unit	656 mm		
4100-8923 4100-8926 4100-8922	Glass Door RHand Hinged Glass Door Solid Door	4-Unit	1168 mm	735 mm	204 mm
4100-8925 4100-8927 4100-8920	Glass Door RHand Hinged Glass Door Solid Door	6-Unit	1530 mm		

NOTE: A system ground must be provided for Earth Detection and transient protection devices. This connection shall be made to an approved, dedicated Earth connection

2 UNIT   **4 UNIT**   **6 UNIT**   **INSTALLATION DETAIL (SIDE VIEW)**

Specifications

Physical
Cabinet Size (mm):	Refer to table
Cabinet Material:	1.2 mm mild steel.
Finish	Baked epoxy powdercoat finish: Magnolia Ripple
Style:	Wall mounting. Outer door hinges left (003 key lock) to access controls.
Shipping Weight:	22 kg (without batteries).
Temperature:	0°C to 49°C operating.
Humidity:	Up to 85% RH (non-condensing).

Approved
The Simplex, Model 4100/4120 Network, c.i.e. complies with the requirements of Australian Standard AS 4428.1-1998, 'Fire detection, warning, control and intercom systems - Control and indicating equipment - Fire' and Australian Standard AS 1603.4-1987, Automatic Fire Detection and Alarms Systems, Control and Indicating Equipment'.

SSL ActivFIre Listing Number afp-1165

Simplex
FIRE PRODUCTS

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Tyco reserve the right to alter specifications without notice in line with their policy of continuous product improvement.

4100-0505 draft1

*A **tyco** COMPANY*

Simplex 4100/4120 Series Addressable Network c.i.e.

Simplex 4100/4120 series Fire Alarm Detection and Control Panels provide an extensive and powerful feature list to satisfy a wide variety of applications and local code requirements. They are on-site programmable to provide mapping logic for inputs and outputs and for custom labeling additions and revisions. Their flexible site-specific software features can be quickly and securely generated, modified, and archived by trained service personnel using computer based programming tools. With this flexibility, last minute changes can be made on-site, minimizing delays in job completion. Monitor and control point expansion is available up to a maximum of 1000 circuits in any combination of IDCs, NACs, auxiliary control relays, and addressable devices. Annunciation capacity is up to 2000 points. Where system capacities exceed 1000 circuits multiple 4100 panels are networked to form a 4120 network system.

- Certified to AS1603.4 – 1997
- UL listed
- 80 character super-twist LCD display
- Dedicated isolate and fault indicators and acknowledge keys
- Nonvolatile flash EPROM memory
- Battery supervision (low/no battery)
- Expandable up to 1000 circuits

Software Features
- WALK TEST system test**
- Four operator access levels
- 600 event historical log
- Individual circuit disconnect/disable
- Programmable:
  - Alarm verification by zone or point
  - Selective signaling and/or relay control
  - Signal silence reminder

Optional Features
- Voice communications and fire fighter's phones
- 25Watt / 50 Watt emergency warning system amplifiers approved to AS2220
- Interface to remote:
  - MAPNET II® addressable devices

- TrueAlarm® analog sensors†
- 4-20mA analog monitor ZAMs
- MINIPLEX® transponders
- Supervised serial annunciators

Optional Modules
- 4120 network interface
- Style B or D initiating device circuits
- Style Y or Z notification appliance circuits (NACs)
- Control relays with feedback
- Dial-in service modem
- RS-232 interface to graphics command centre, remote printer or CRT keyboard terminal
- Panel mount printer
- Simplex 2120 interface

** WALK TEST is protected by US patent #4.725.818

4100 Fire Indicator Panel

Operator Interaction

Primary Operator Functions
The 4100 operator panel maximises the performance of primary fire alarm functions by displaying only the indications and interaction switches required for responding to emergency situations.
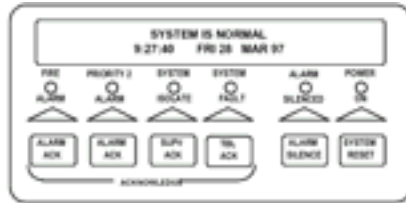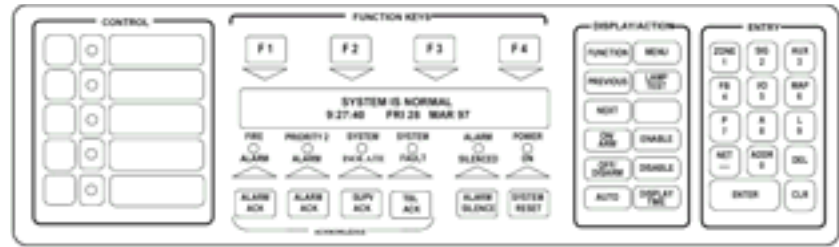
Primary Operator Functions

Indications
Alarm, Isolate, and Fault conditions are indicated at the operator's panel by dedicated LEDs and a local tone-alert. An 80 character (2 lines x 40 characters) alphanumeric super-twist liquid crystal display provides information concerning point status (alarm, fault, isolate, etc.), type of alarm (smoke detector, manual call point, flowswitch , etc.), number of alarms in the system, and a custom location label.

Switch Operation
Alarm, Isolate and Fault conditions have dedicated acknowledge push-button switches. Operation of the appropriate acknowledge switch silences the tone-alert with the LED remaining illuminated until all conditions in that category are restored to normal.
The 4100 can be programmed to perform a "global acknowledge" where a single push of the appropriate acknowledge switch will silence the tone-alert for all points in that condition. It can also be programmed for individual acknowledgment of each point in an abnormal condition, as well as their restoration.
Notification appliances can be silenced by pressing the ALARM SILENCE switch. Pressing the SYSTEM RESET switch restores the system to the normal operation mode. The system tone-alert can be programmed to resound at user specified time intervals to serve as an "active status reminder" when a trouble condition remains in the system and the audible trouble signal has been silenced.

Additional Operator Keys

Additional Operator Function Keys
For increased functionality, additional operator keys are available by opening the access door. The FUNCTION KEYS, DISPLAY/ACTION keypad and the ENTRY keypad are the operator interface sections that are not essential in a fire emergency situation.
These functions are presented in a self directing manner and include: circuit/ device ENABLE or DISABLE, control point turn ON or OFF, DISPLAY HISTORICAL LOGS, etc. Operator access is determined by four passcode protected security levels.
Level 1 allows routine actions while level 4 is reserved for more sensitive operations requiring higher level operator knowledge.
Access in levels 2, 3, and 4 is selectable and passcode protected to ensure proper authorization for that level's control access. Passcode log-ins are stored in the history log for access review.

Display Action and Entry Keypads
The Display Action and Entry keypads allow operators (with proper access levels) to perform controlling functions to system zones, NACs and auxiliary control relays, or to gain access for system information.
DISABLE allows a specific circuit or a specific addressable device to be disconnected from the system to isolate a problem. A fault condition will occur as a reminder of the action taken.
ENABLE followed by ENTER restores the circuit or device to active status in approximately 60 seconds. The display will count down the remaining time and will warn the operator if the circuit to be enabled will cause an alarm.
The "NET" key is used to display 4120 Network point data located at other network panels.

Control Keypad
CONTROL identifies five programmable switches with associated LEDs. Possible applications are: Battery Test, Brigade test, Bell Isolate, ACF Isolate, Alarm Test, Fault test, etc. Control switches can be individually passcode protected such that only certain access level operators can perform that function. .

Typical Indicating LED
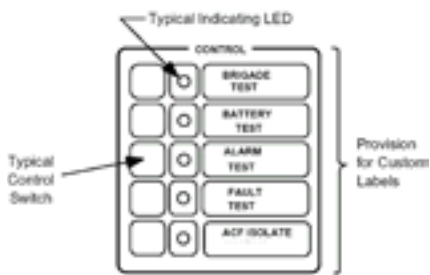
Control Keypad

Function Keys
FUNCTION KEYS identifies the "soft" keys F1 through F4 whose functions vary within each main Menu Option. Each key's function is described on the top line of the display. For example, in the DISPLAY HISTORICAL ALARM LOGS FUNCTION menu, pressing the F2 key will display the most recent alarm event stored in the history log.
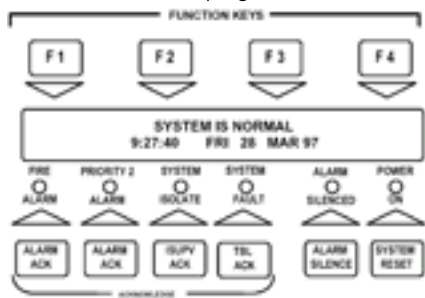
Function Key Detail

Module Descriptions

Master Controller Module
The 4100 Master Controller Board provides system control, synchronisation, and supervision of all modules, continuously scanning each module for status changes. Features include:
- Operator's Panel with LCD and operator keys
- SPDT auxiliary fault relay rated 2 A @ 30 VDC, resistive loads
- 4100- 3003 aux relay card for brigade interface connection, provided by four form "C" contact outputs – Alarm, Fault, Isolate, Panel Fail
- Battery Charger for up to 110 Ah batteries. Batteries up to 80 Ah may be mounted in the bottom of the control cabinet
- Compatible with Lead Acid or NiCad Batteries
- Intelligent power supply (power limited)
  – Two isolated outputs of 4A each at 28.5 VDC when AC powered (24 VDC during battery operation);
  – Tap "B" provides 4A for general purpose control power ie: door holders, flowswitch test solenoids etc.
  – Tap "A" provides 2 A (typical) for NACs controlling "clean" loads with controlled inrush current and proper transient suppression (actual available power depends on total system power requirements)
  – LCD readout of system voltage and current, and battery voltage and current
  – 4100-0019, optional 12 VDC converter rated 2A @ 12 VDC, requires 1.1 A max from 28 VDC
  – AC input 3 A @ 240 VAC, 50/60 Hz

Redundant Master Controller 4100-7023
Provides monitored dual control with automatic switch-over hardware.

Initiating Device Circuits (IDCs) 4100-5000 series
- Eight Circuit Zone Modules provide system expansion as style B (Class B)
- Capable of supporting two-wire standard 20V DC collective smoke detectors and electronic heat detectors plus normally open contact devices (manual call points, flowswitches, etc.)
- Accepts Mechanical Coded Inputs

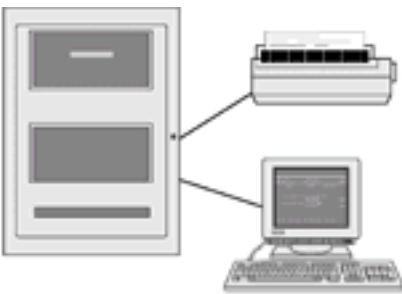### Notification Appliance Circuits (NACs) 4100-4000 series
- Two, four, or six circuit modules provide system expansion as style Y (Class B) or style Z (Class A)
- Circuit ratings: 2 A @ 24 VDC; 50 W @ 25 VRMS, 100 W @ 70 VRMS (for speaker circuits), or for up to 6 firefighter telephones
- Supervised for opens, grounds, and wire-to-wire shorts
- Outputs programmable for temporal code or march time code

RS-232/2120 Communication Module 4100-0113
- Provides two RS-232 outputs for remote printers and or CRT/Keyboards
- Up to Five RS-232 ports per 4100 panel
- Each port can be vectored by event category
- Can be configured to connect to a Graphic Command Center (GCC)
- Can be configured to communicate with a host 2120 Multiplex System using 2-wire, 2120 communications (DC Comm.)
- 4100-0137 module option provides Style 7, RS-232, 2120 communications for connection options to 2120 BMUX

Style 7, 2120 (DC comm) Interface Module 4100-0123
- Maintains a 2120 communications during a wire-to-wire short fault condition
- Primary, secondary, and transmit status indicators

Typical 4100 RS-232 Connections

Auxiliary Control Relays:
- Built-In fuse protection per contact
- Feedback tracks on/off status of remote devices
- 4100-3003, Eight CPU controlled relays, SPDT contacts rated 3 A @ 24 VDC or 120 VAC, resistive

Expansion Power Supply, Power Limited, 120 Vac Input 4100-0118
- 8 A, (two taps of 4 A each) filtered, unregulated 24 VDC output for standard peripheral devices
- AC input is 1.25 A @ 240 VAC, 50/60 Hz

Miniplex® Remote Intelligent Power Supply, Power Limited 4100-1057A
- Tap B provides 4 A at 28.5 VDC for general purpose control power (Door holders, Flowswitch test Solenoids etc.)
- Tap A provides remote module power, 4 A maximum, 2 A is typically available for 'clean' loads with controlled inrush currents and proper transient suppression (actual available power depends on remote module requirements)
- Tap C provides 4 A for battery charging
- Addressable electronics communicate status, voltage, and current information for viewing at the panel LCD. Operator panel can be used to control output taps.
- AC input is 3 A @ 240 VAC, 50/60 Hz

Expansion Power Supplies, Non-power

SUPPLY	INPUT	OUTPUT
4100-0115	240 VAC, 50/60 Hz, 1 A	5A@24VDC ±5% for unregulated peripheral power
4100-0118	240 VAC, 50/60 Hz, 1.25 A	8A(two taps of 4A ea)@24VDC filtered, un-regulated

Limited
Additional Battery Charger & Options:
4100-0104 120 VAC input, 2 A, or 4100-0114, 240 VAC 50/60 Hz input, 1 A:
- Charges up to 110 Ah batteries, lead acid or NiCad
- Monitors for AC power failure, low/no battery, and high battery level.

Enhanced Battery Charger 4100-0124
- Charges up to 110 Ah batteries, lead acid or NiCad
- Manual switches for high rate charge and AC disconnect
- LEDs for AC fail/disconnect, low/no battery, and high battery level
- Meters to indicate battery voltage and charging current, 0-50 VDC voltmeter, 0-5 A ammeter
- AC input is 2 A @ 120 VAC

4120 Network Interface
4100-0140 provides dual wired data communications
4100-0149 provides a modular interface with media options of:
- 4120-0142, for wired data
- 4120-0143, for fiber optics
- 4120-0144, for modem connections
- refer to data sheet S4120-0003 for details

Physical Bridge Modules (4120-6023, Style 4, or 4120-6024, Style 7) provide extended modem connection flexibility (refer to data sheet S4120-0005).

Audio Control Board 4100-0302A
Provides control for up to six audio amplifiers

PA Microphone & Keyswitch Module 4100-0410
Provides a Public Address paging microphone and Microphone / EWS Control selection 3 position keyswitch .

Audio Amplifiers 4100-82xx Series
- Models are available with 25 W or 50W output at 100 VRMS , Approved to AS2220
- Short circuit protection with speaker line supervised for open and short circuit conditions .
- Frequency response of 120 to 12,000 Hz
- Signal-to-noise ratio better than 60dB
- Battery backup capability
- Integral amplifier monitor for supervised operation

Wip Control Module 4100-4321W
- Provides control for up to six WIP circuits
- Each WIP circuit is supervised for open / short circuit condition
- Maximum of three (3) WIPS per WIP circuit
- Approved to AS2220
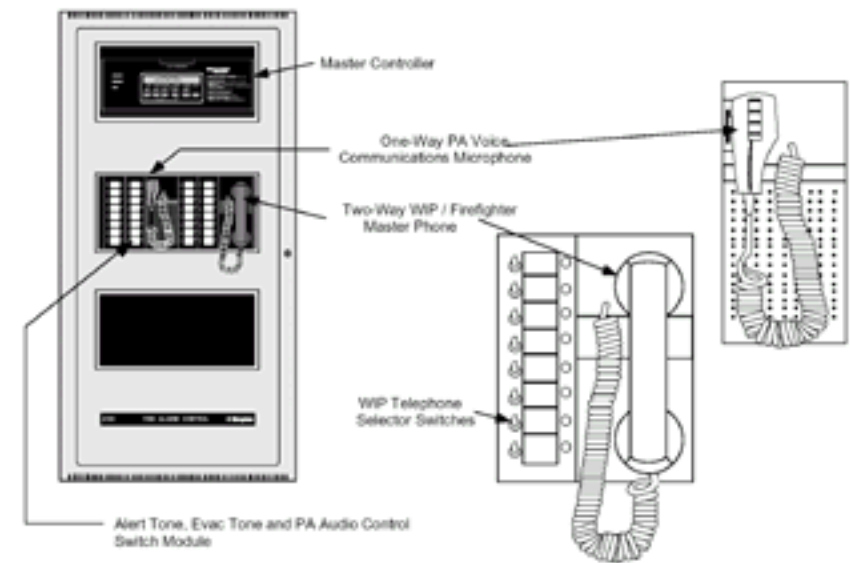
4100/4120 Voice Communication Command Centre Components

One-way Communications Systems
- Approved to AS2220
- 25 watt / 50 Watt AS2220 Audio Amplifiers
- Multiple Supervised Remote Microphone Inputs
- AS2220 Digitized Voice/Tone Generation
- Automatic or Manual Audio Control
- MINIPLEX Voice Transponders for Distributed Audio
- Network Interface for 4120 Network Warning Systems

Wip / Firefighter Telephone Systems
- Multiple Remote Master Phones
- Ring Signal on Remote Firefighters Telephone Indicates Call Request
- Telephone Circuits are Supervised for Open and Short Circuit Conditions
- Up to 3 WIP / Firefighters telephones per WIP input circuit.

General
The 4100 EWIS Audio System provides one-way voice communication, alarm tones, and/or digitally prerecorded voice messages to alert occupants of fire or other emergency situations. Evacuation signaling may be automatically generated via alarm initiated event programs in the 4100 Master Controller or by firefighting personnel operating the system microphone. The system may also be equipped with a WIP Firefighter Master Telephone module to provide the Fire Commander with two-way communications with firefighters or fire wardens located remotely throughout the building. The 4100 EWIS system is approved to AS2220 and is SSL ActivFire listed – afp-1174.

Operation
The 4100 EWIS system uses the same basic components as the 4100 Fire Alarm Panel with the addition of AS2220 Audio amplifiers and WIP Control Interface to provide an EWIS system complying to AS2220. Each audio amplifier has its own in-built tone generator complete with digitised voice