MODEL 8111SYS-L/H

8000 SERIES™ SYSTEM

The Model 8111 System is a component of the IED 8000 Series™, a computer controlled, modular, four bus audio system all in one mainframe. By the selection of function cards, it can provide multi-channel equalization, multi-channel audio zone mapping, multi-channel noise sensing and compensation, multi-channel monitoring and testing, logic sensing, logic outputs, form C relay closures, variable voltage sensing, variable voltage outputs, signal conditioning (EQ compression limiting), signal generation, and analysis.

Every 8111SYS comes with an 8001CPU, an 8111PIA, an 8011MF, and one 8012PS. The 8011MF provides housing, internal and external connections, and cooling for all of the system components. In addition the mainframe provides backward compatibility for all of the 8000 function cards used in the previous mainframe (8001MF). The 8111PIA in conjunction with the 8011MF has greatly reduced internal cabling for ease of setup and serviceability of the internal PC. The 8111PIA is located in the center of the frame. See figure 1. The 8012PS with the 8011MF increases reliability, power monitoring and allows hot-swap in-rack servicing of the power supply.

The 8012PS is designed to operate over the line voltage range of 100 VAC to 240 VAC. No user adjustment is required. The only difference between the “L” and “H” versions is the plug on the supply end of the power cord.

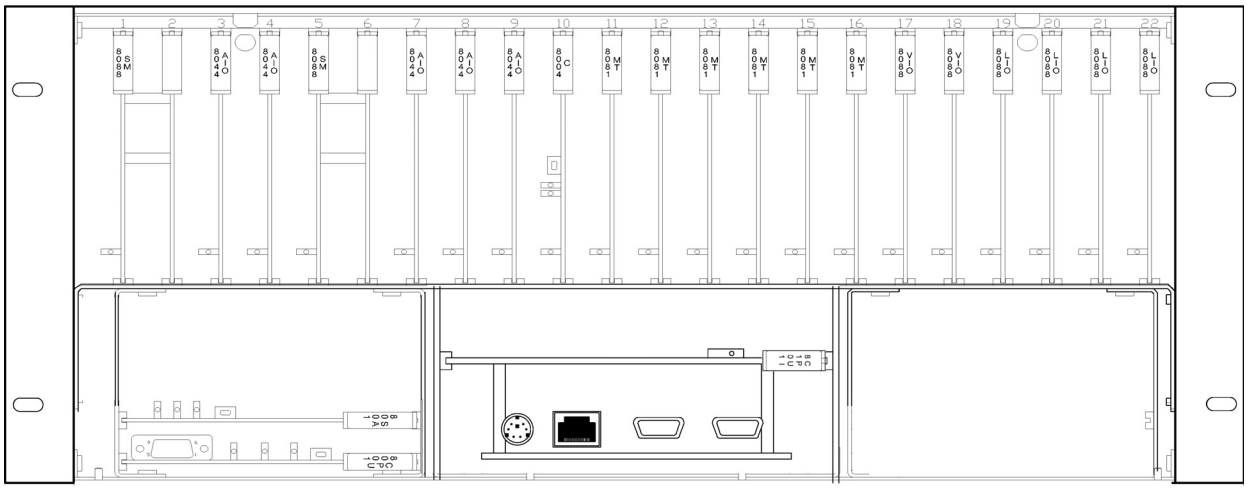

Figure 1 - 8011MF with Typical Card Complement
Front view, door not shown

SYSTEM COMPONENTS

8111PIA-1 PROCESSING INTEGRATED ASSEMBLY

The 8111PIA combines the 8101CPUI Interface Card with a PC (8101CPU-3) which effectively integrates the PC into the 8011MF Mainframe. The combination adds 8101CPU-3 interfacing at the front of the assembly for VGA, keyboard, PS/2 mouse, Ethernet (front or rear), and RS232 (front and rear). The 8111PIA assembly is powered from ±15 VDC provided by the 8012PS via the mainframe motherboard. The 8101CPUI powers the 8101CPU-3 with +5 VDC derived from the 8012PS +15 VDC.

The audio and visual messages and the operating system are on a flash-type storage device on the 8101CPU-3. Two channels of digital recording and playback are provided through the 8111PIA to any of the 4 audio buses and to all test buses via the 8101CPUI card on the mainframe motherboard. Status indicators and voltage test points are provided on the 8101CPUI for checking the operating condition of the 8111PIA assembly.

8012PS POWER SUPPLY

The 8111 system comes with one 8012PS providing +/– 15 VDC at 150 watts each. A second 8012PS is optional. With two 8012PS power supplies, the units operate in the most reliable mode of power sharing, and each is checked for proper operation by the 8001CPU every 5 minutes.

8011MF MAINFRAME

The Model 8111 System provides a housing for and connections to and between the mother board, the 8012PS power supply modules, 8111PIA module, and the 8000 Series™ function cards. It has slots for a total of 24 function cards. Slots 1 through 22 can be used for any function card except the 8001CPU or the 8001SA. Slots 23 and 24 are multifunction in that they can house the 8000 cards or an additional 8101HD Hard Drive. Slots 25 and 26 are dedicated to the 8001SA System Signal Analysis Card and the 8001CPU Central Processing Unit, respectively.

Slots 1 through 22 are arranged vertically and are numbered from left to right. Slots 23 and 24 are oriented horizontally and are located on the right side of the mainframe below slots 1 through 22. Slots 25 and 26 are located similarly, but on the left side of the mainframe. See figure 1.

Input and output connection is easy through the use of plug-in rear panel compression-type screw terminal connectors. The system can be powered from a 120 VAC or 240 VAC line, with any line frequency from 50 to 400 Hz.

The 8011MF Mainframe mounts in a standard 19" equipment rack. It occupies 5 EIA rack spaces (8.5" of vertical space) with a depth of 17”.

CARD INSTALLATION AND REMOVAL

The function cards are mounted in the 8011 Mainframe, with the internal cabling of the 8011 providing the connection to the rear terminal boards. Prior to installing the function cards as in the 8011 Mainframe, turn off the AC power, plug the function cards into the appropriate slots. When satisfied that this has been done correctly, turn on the AC power

to the 8011 Mainframe, and check that the LED status indicators of the function cards are showing a correct indication as described in each product description.

INTERMEDIATE CONNECTIONS

In order to allow for flexibility in grouping of functions on the rear panel according to the needs of the application, the function card connectors are routed to the input/output connectors via ribbon cables. There are two ribbon cables per function card. The cards are designed so that the connections to each cable will be grouped by function, such as inputs, outputs, control signal, sense signal, or whatever is applicable to the particular card. The ribbon cables can also be looped between cards when it is necessary to route signals from card to card. The removable rear portion of the top panel facilitates cable installation and removal.

REAR INPUT/OUTPUT CONNECTORS

There are 8 types of rear input/output modules which are used for wiring to/from the function cards. Each module is labeled to show its input/output functions and connections. See figure 2 for part numbers and layouts. The IED8048TB is a generic module used when rear panel space runs out and it becomes necessary to use one module for several functions.

FUNCTION CARDS

The 8111SYS is compatible with all of the function cards used in previous 8000 Series systems with the 8001MF Mainframe. Refer to Table 1 for a list of specific function cards.

TRANSIENT SUPPRESSION

Audio and control lines going outside the equipment room may be subject to harmful voltage transients. For certain applications such as UL 864, Emergency Evacuation System, transient protection is required to forestall possible equipment damage or malfunction.

In the configuration for these applications, two card types are affected and require transient protection. They are the 8004C Microphone Station Control Card and the 8022DR Line Receiver/Line Driver Card.

Transient suppressors are most effective when mounted on the terminal boards to which the external cable is connected at the entry point to the rack or enclosure of the 8111 System.

Implementation requires connecting a suppressor from each audio line to ground and from each control line to ground.

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SPECIFICATIONS

ELECTRICAL

1. Input Voltage Range . . . . . 90 VAC - 240 VAC
2. Input Frequency . . . . . 50 Hz - 400 Hz
3. Fuse . . . . . 5 mm X 20 mm, 10 A slow blow
   120 VAC or 240 VAC Version

CONNECTORS

1. RS232 . . . . . DB9 PC Mount Female
   AMP 205734-1, or equivalent
2. 8010RPTB RJ-45
3. Input/Output Terminal Block, Female . . . . . Phoenix 1803374
4. Mating Compression-type Screw Terminal Connector, Male . . . Phoenix 1803375
5. Power Cord . . . . . Belden 17250, or equivalent

MECHANICAL

1. Size (maximum overall dimensions as viewed from the front)
   Height . . . . . (21.6 cm) 8.5"
   Width . . . . . (48.3 cm) 19.0"
   Depth
   Without Power Cord . . . . . (43.2 cm) 17"
   Additional depth allowance for Power Cord . . . . . (5.1 cm) 2.5"
2. Weight . . . . . (12.2 kg) 27 lb
   Function cards and power supplies not included

ENVIRONMENTAL

1. Operating Temperature Range . . . . . (+32 °F - +122 °F) 0 °C - +50 °C
2. Storage Temperature Range . . . . . (–40 °F - +158 °F) –40 °C - +70 °C

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PRODUCT ID	FUNCTION	IED DOC. NO.
8044AIO	Audio Input/Output Card	8 20 A
8008AO	Audio Output Card	8 21 A
8044APM	Audio Music/Bus Paging Card	8 22 A
8004C	Microphone Station Control Card	8 25 A
8044DSP	8000 Series Digital Signal Processing Card	8 33 A
8040NS	Ambient Noise Sensor Interface and Level Detector Card	8 35 A
8081MT	8 Input/1 Output Monitor/Test Card	8 50 A
8001SA	System Signal Analysis Card	8 55 A
8088VIO	8 Input/8 Output Variable Voltage Card	8 65 A
8088LIO	8 Input/8 Output Logic Card	8 70 A
8008RY	Form C Relay Card	8 75 A
8022DR	2-Channel Line Receiver/Line Driver Card	8 80 A
8088SM	8-Input/8-Output Audio Switch Matrix Card	8 90 A

Table 1 - 8000 Series Function Cards

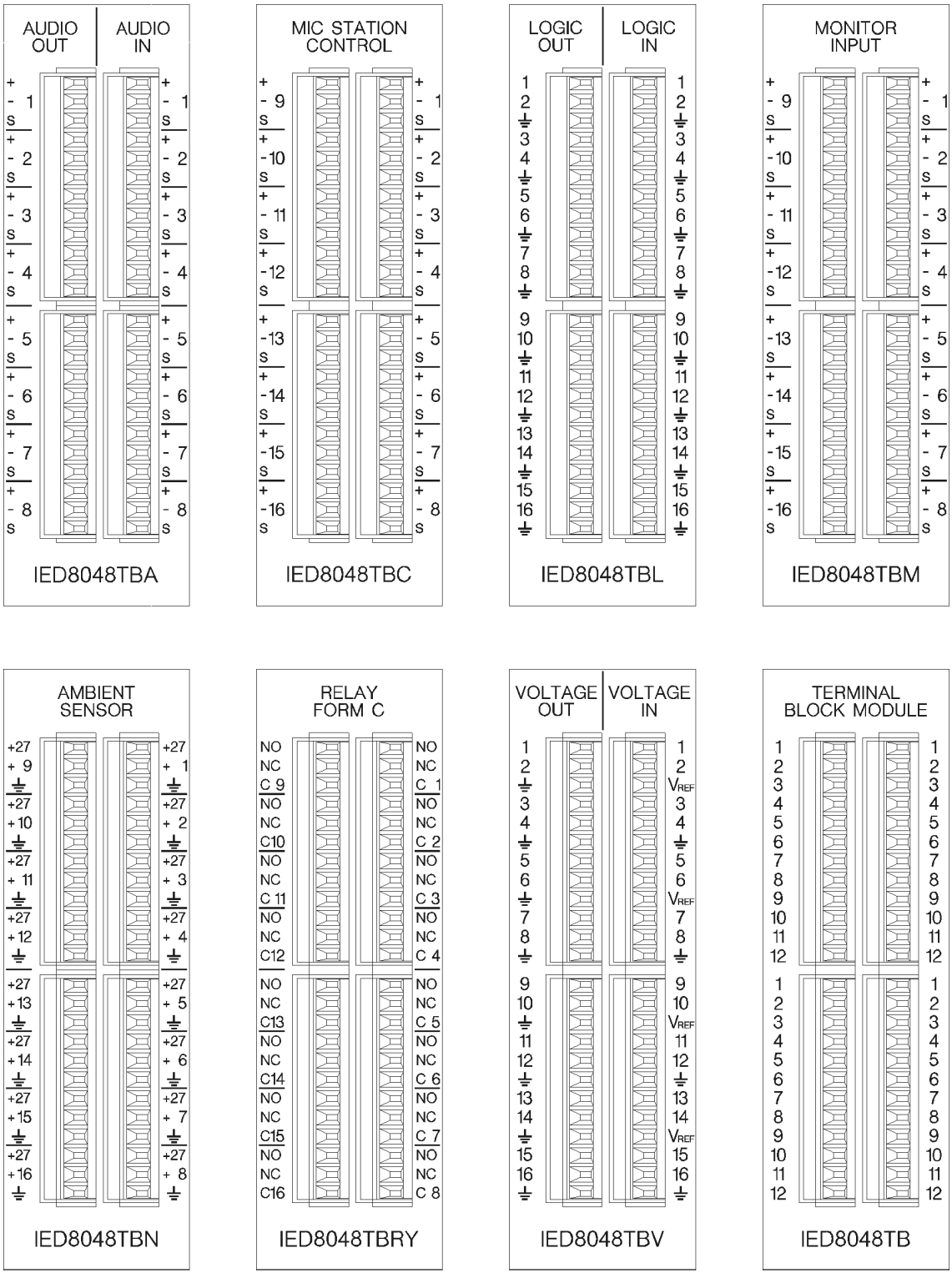

Figure 2 - Rear Terminal Block Connector Options

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