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# NEAX® 2000 IVS

## Circuit Card Manual

DECEMBER, 1997

NEC America, Inc.

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| PAGE No. | ADD. No. | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 |
| i | | 2.2 | | | | | | |
| ii | 2.1 | | | | | | | |
| iii | | | | | | | | |
| iv | | | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | 2.2 | | | | | | |
| 4 | 2.1 | | | | | | | |
| 5 | 2.1 | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | 2.2 | | | | | | |
| 10 | | 2.2 | | | | | | |
| 11 | | 2.2 | | | | | | |
| 12 | | 2.2 | | | | | | |
| 13 | | | | | | | | |
| 14 | 2.1 | | | | | | | |
| 15 | | | | | | | | |
| 16 | | | | | | | | |
| 17 | | | | | | | | |
| 18 | | | | | | | | |
| 19 | | | | | | | | |
| 20 | | | | | | | | |
| 21 | | 2.2 | | | | | | |
| 22 | | | | | | | | |
| 23 | | | | | | | | |
| 24 | | | | | | | | |
| 25 | | | | | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | 2.1 | | | | | | | |
| 30 | | | | | | | | |
| 31 | | 2.2 | | | | | | |
| 32 | 2.1 | 2.2 | | | | | | |
| 33 | | 2.2 | | | | | | |
| 34 | | 2.2 | | | | | | |

| PAGE No. | ADD. No. | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 |
| 35 | | 2.2 | | | | | | |
| 36 | | 2.2 | | | | | | |
| 37 | | | | | | | | |
| 38 | | | | | | | | |
| 39 | | 2.2 | | | | | | |
| 40 | 2.1 | 2.2 | | | | | | |
| 41 | | 2.2 | | | | | | |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | | | | | | | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | | | |
| 52 | 2.1 | | | | | | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | | | | | | | | |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |
| 60 | | | | | | | | |
| 61 | | | | | | | | |
| 62 | | | | | | | | |
| 63 | | | | | | | | |
| 64 | | | | | | | | |
| 65 | | | | | | | | |
| 65-1 | 2.1 | | | | | | | |
| 65-2 | 2.1 | | | | | | | |
| 65-3 | 2.1 | | | | | | | |
| 65-4 | 2.1 | | | | | | | |
| 66 | | | | | | | | |
| 67 | 2.1 | | | | | | | |
| 68 | | | | | | | | |

| ADDENDUM-001 | | ADDENDUM-002 | | ADDENDUM-003 | | ADDENDUM-004 | |
|---|---|---|---|---|---|---|---|
| DATE | JULY, 1998 | DATE | OCTOBER, 1998 | DATE | | DATE | |
| ADDENDUM-005 | | ADDENDUM-006 | | ADDENDUM-007 | | ADDENDUM-008 | |
| DATE | | DATE | | DATE | | DATE | |

| PAGE No. | ADD. No. | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 |
| 68-1 | 2.1 | | | | | | | |
| 68-2 | 2.1 | | | | | | | |
| 68-3 | 2.1 | | | | | | | |
| 68-4 | 2.1 | | | | | | | |
| 69 | | | | | | | | |
| 70 | 2.1 | | | | | | | |
| 71 | 2.1 | | | | | | | |
| 72 | | | | | | | | |
| 73 | | | | | | | | |
| 74 | | | | | | | | |
| 75 | | | | | | | | |
| 76 | | | | | | | | |
| 77 | | | | | | | | |
| 78 | | | | | | | | |
| 78-1 | 2.1 | | | | | | | |
| 78-2 | 2.1 | | | | | | | |
| 78-3 | 2.1 | | | | | | | |
| 78-4 | 2.1 | | | | | | | |
| 78-5 | 2.1 | | | | | | | |
| 78-6 | 2.1 | | | | | | | |
| 79 | | | | | | | | |
| 80 | | | | | | | | |
| 81 | | | | | | | | |
| 82 | | | | | | | | |
| 83 | | | | | | | | |
| 84 | | | | | | | | |
| 85 | | | | | | | | |
| 86 | | | | | | | | |
| 87 | | | | | | | | |
| 88 | | | | | | | | |
| 89 | | | | | | | | |
| 90 | | | | | | | | |
| 91 | | | | | | | | |
| 92 | | | | | | | | |
| 93 | | | | | | | | |
| 94 | | | | | | | | |
| 95 | | | | | | | | |
| 96 | | | | | | | | |

| PAGE No. | ADD. No. | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 |
| 97 | | | | | | | | |
| 98 | | | | | | | | |
| 99 | | | | | | | | |
| 100 | | | | | | | | |
| 101 | | | | | | | | |
| 102 | | | | | | | | |
| 103 | | | | | | | | |
| 104 | | | | | | | | |
| 105 | | | | | | | | |
| 106 | | | | | | | | |
| 107 | | | | | | | | |
| 108 | | | | | | | | |
| 109 | | | | | | | | |
| 110 | | | | | | | | |
| 111 | | | | | | | | |
| 112 | | | | | | | | |
| 113 | | | | | | | | |
| 114 | | | | | | | | |
| 115 | | | | | | | | |
| 116 | | | | | | | | |
| 117 | | | | | | | | |
| 118 | | | | | | | | |
| 119 | | | | | | | | |
| 120 | | | | | | | | |
| 121 | | | | | | | | |
| 122 | | | | | | | | |
| 123 | | | | | | | | |
| 124 | | | | | | | | |
| 125 | | | | | | | | |
| 126 | | | | | | | | |
| 127 | | | | | | | | |
| 128 | | | | | | | | |
| 129 | | | | | | | | |
| 130 | | | | | | | | |
| 131 | | | | | | | | |
| 132 | | | | | | | | |
| 133 | | | | | | | | |
| 134 | | | | | | | | |

| ADDENDUM-001 | | ADDENDUM-002 | | ADDENDUM-003 | | ADDENDUM-004 | |
|---|---|---|---|---|---|---|---|
| DATE | JULY, 1998 | DATE | OCTOBER, 1998 | DATE | | DATE | |
| ADDENDUM-005 | | ADDENDUM-006 | | ADDENDUM-007 | | ADDENDUM-008 | |
| DATE | | DATE | | DATE | | DATE | |

# NEAX2000 IVS
# Circuit Card Manual

TABLE OF CONTENTS

# LIST OF FIGURES

# LIST OF TABLES

# CHAPTER 1 INTRODUCTION

## 1. PURPOSE

For installers and maintenance technicians of the NEAX2000 IVS (PBX), this manual explains the functional outline and installation conditions of the circuit cards, and explains the meaning of each indicator lamp (LED) and the switch settings on the circuit cards.

## 2. OUTLINE OF THE MANUAL

This manual consists of four chapters. The contents of Chapter 2 through 4 are as outlined below.

- Chapter 2: Functional Outline of Circuit Cards

  This chapter outlines various circuit cards used in the system by means of tables.

- Chapter 3: Circuit Card Accommodating Conditions

  This chapter explains the conditions for installing various circuit cards used in the system.

- Chapter 4: Lamp Indications and Switch Settings

  This chapter explains the meaning of lamp indications and the switch settings of various circuit cards used in the system.

Each switch setting table provided in Chapter 4 has a “CHECK” column. Make necessary entries in the CHECK column during and/or after system installation and maintenance. After the result of switch setting has been checked, use each table as a reference for subsequent system maintenance and operations.

This page is for your notes.

# CHAPTER 2 FUNCTIONAL OUTLINE OF CIRCUIT CARDS

This chapter explains the functional outline of various circuit cards used in the NEAX2000 IVS. Explanations are given in alphabetical order of the circuit card names for each kind (Control, Application, and Line/Trunk) of circuit cards.

## 1. CONTROL CIRCUIT CARDS

Table 2-1 shows the functional outline of each control circuit card.

**Table 2-1 Functional Outline of Control Circuit Cards**

| CARD NAME | FUNCTIONAL NAME | FUNCTIONAL OUTLINE |
|---|---|---|
| PN-BS00-A /PN-BS00-B | BS00 | Bus interface card for PIM0.<br>This card functions as a driver/receiver of various signals, adjusts gate delay timing and cable delay timing, monitors the I/O Bus and PCM Bus, and controls the power supply.<br>When the system consists of more than one PIM, this card is mounted in PIM0.<br>Only one per system is used. |
| PN-BS01-A /PN-BS01-B | BS01 | Bus interface card for PIM1 through PIM7.<br>This card functions as a driver/receiver of various signals, adjusts gate delay timing and cable delay timing, monitors the I/O Bus and PCM Bus, and controls the power supply.<br>When the system consists of more than one PIM, one each of this card is mounted respectively in PIM1 through PIM7. |
| PN-CP00 /PN-CP00-B /PN-CP00-C | MP | Main Processor card.<br>This card is equipped with Memory, TDSW (1024CH × 1024CH), 16-Line CFT, PB Sender, Clock, PLO (slave mode 2 ports), RS-232C Ports (2 ports), Modem for remote maintenance, and Internal Music-On-Hold tone source.<br>One card per system. |
| PN-CP03 /PN-CP03-C | MP | Main Processor card.<br>This card is equipped with Memory, TDSW (1024CH × 1024CH), 16-Line CFT, PB Sender, PB Receiver, Clock, PLO (slave mode 2 ports), RS-232C Ports (2 ports) for MAT/Built-in SMDR, Modem for remote maintenance, Internal/External Music-On-Hold tone source.<br>One card per system (This card can be used only in 1 or 2 PIM system). |
| PN-CP01 | FP | Firmware Processor card.<br>This card is equipped with Line/Trunk Interface and Memory. When the system consists of more than one PIM, one each of this card is mounted respectively in PIM0, PIM2, PIM4 and PIM6. |
| PN-CP02 /PN-CP02-C | MP | Main Processor card for Back Up MP System only.<br>This card is equipped with Memory, TDSW (1024CH × 1024CH), 16-Line CFT, PB Sender, Clock, PLO (slave mode 2 ports), RS-232C Ports (2 ports), Modem for remote maintenance, and Music-On-Hold tone source. Two cards per Back up MP System. |
| PN-PW00 | PW00 | Power Supply card for SN716 Desk Console.<br>This card provides –48 V DC power for one SN716 Desk Console, and is mounted in the LT/AP slot of PIM. Max. 3 PN-PW00 cards per PIM and max. 4 cards per 4 PIM. |

**Table 2-1 Functional Outline of Control Circuit Cards (Continued)**

| CARD NAME | FUNCTIONAL NAME | FUNCTIONAL OUTLINE |
|---|---|---|
| PZ-PW86/<br>PZ-PW86-A | PWR | Main power supply card.<br>Input: AC100 V/200 V (50 Hz/60 Hz)<br>Output: –27 V (8 A), +5 V (8.5 A), CR (30 mA)<br>One card per PIM. |
| PZ-PW86(C) | PWR | Main power supply card.<br>Input: AC100 V/200 V (50 Hz/60Hz)<br>Output: –27 V (4.5 A), +5 V (7.5 A), CR (30 mA), +80 V (110 mA)<br>One card per PIM. |
| PZ-PW86(D) | PWR | Main power supply card.<br>Input: AC100 V/200 V (50 Hz/60 Hz)<br>Output: –27 V (4.5 A), +5 V (7.5 A), CR (30 mA), +80 V (110 mA)<br>One card per PIM. |

## 2. APPLICATION CIRCUIT CARDS

Table 2-2 shows the functional outline of each application circuit card.

**Table 2-2 Functional Outline of Application Circuit Cards**

| CARD NAME | FUNCTIONAL NAME | FUNCTIONAL OUTLINE |
|---|---|---|
| PN-AP00-A | AP00 | Application Processor card.<br>This card is equipped with four RS-232C ports, and is used for SMDR, H/M Printer, PMS functions and MCI.<br>One card per system. |
| PN-AP01 | AP01 | Application Processor card.<br>This card is equipped with one RS-232C port and one Ethernet interface port, and is used for OAI function. Also, this card is used to expand authorization code and ACD.<br>One card per system. |
| PN-BRTA | BRI | Basic Rate (2B+D) Interface Trunk card. (S/T Interface)<br>This card has one circuit of Basic Rate interface and provides one 2-channel PCM digital line.<br>This card is used for BRI trunks from the Telco to the PBX. |
| PN-2BRTC | BRI | Basic Rate (2B+D) Interface Trunk card.<br>This card has two circuits of Basic Rate interface and provides two 2-channel PCM digital lines.<br>This card is used for BRI trunks from the Telco to the PBX. |
| PN-ME00 | EXTMEM | Memory Expansion card.<br>This card is used with PN-AP00-A card for providing expansion memory.<br>This card can be equipped with a SRAM card (1MB) as extra SMDR data memory. |
| PN-CC00 | ETHER | Ethernet Control card.<br>This card is used with the PN-AP01 card to accommodate the Ethernet, transmitting/receiving a signal of TCP/IP protocol. |

**Table 2-2 Functional Outline of Application Circuit Cards (Continued)**

| CARD NAME | FUNCTIONAL NAME | FUNCTIONAL OUTLINE |
|---|---|---|
| PN-CC01 | ETHER | Ethernet Control card.<br>This card is used with the PN-AP01 card to accommodate the Ethernet, transmitting/receiving a signal of TCP/IP protocol.<br>10 BASE-T twisted pair cable can be connected directly to this card. |
| PN-CK00 | PLO | Phase Locked Oscillator card.<br>This card is a phase locked oscillator for providing a synchronized clock signal with the network.<br>This card is used when the PBX is a master office or when the PBX requires two clock supply routes and those frequencies differ. |
| PN-24DTA<br>/PN-24DTA-A | DTI | Digital Trunk Interface (23B+D, 1.5 Mbps) card.<br>This card accommodates one 24-channel PCM digital lines. |
| PN-30DTC<br>/PN-30DTC-A | DTI | Digital Trunk Interface (2 Mbps) card.<br>This card accommodates one 30-channel PCM digital line. |
| PN-4RSTB | MFR | 4-line MF Receiver Trunk card.<br>This card is used for MF Signaling on Digital DID trunks. A maximum of four cards can be provided per one system, including the PN-4RSTC card. |
| PN-4RSTC | CIR | 4-line CALLER ID Receiver Trunk card.<br>This card is used for CALLER ID (CLASS SM) on analog trunks. A maximum of four cards can be provided per one system, including the PN-4RSTB card. |
| PN-SC00 | CCH | Common Channel Handler card.<br>This card transmits/receives signals on the common signaling channel of No. 7 CCIS. |
| PN-SC01 | DCH | D-channel Handler card.<br>This card transmits/receives signals on the D channel of ISDN Primary Rate (23B+D). |
| PN-SC02<br>/PN-SC03 | ICH | ISDN-channel Handler card.<br>This card provides the D channel signaling interface and controls an ILC (Layer 2 and 3).<br>There are 2 types of the ICH card.<br>PN-SC02 is the 2-channel ICH card.<br>PN-SC03 is the 8-channel ICH card. |
| PN-SC03 | CSH | Zone Transceiver Channel Handler card.<br>This card provides 8 D-channel signaling interface through the PN-2CSIA to the Zone Transceiver for the Wireless Communication System. |

## 3. LINE/TRUNK CIRCUIT CARDS

Table 2-3 shows the functional outline of each line/trunk circuit card.

**Table 2-3 Functional Outline of Line/Trunk Circuit Cards**

| CARD NAME | FUNCTIONAL NAME | FUNCTIONAL OUTLINE |
|---|---|---|
| PN-2AMPA | AMP | 2-line Amplifier Trunk card.<br>This card is equipped with the functions of Echo Canceller (EC), Automatic Gain Controller (AGC) and Tone Disabler (TD). |
| PN-AUCA | AUC | 2-line Long-Line circuit card provided with the Power Failure Transfer (PFT) function.<br>Line resistance in the case of a long-line circuit: Max. 2500 ohms (inclusive of the internal resistance of the distant office equipment)<br>This card is internally equipped with a –48 V DC On-Board Power Supply.<br>This card can also be used as a 2-line Direct Inward Dialling trunk card. |
| PN-CFTA | CFT | Conference Trunk card<br>Use of one card: Can control a conference of up to six participants.<br>Use of two cards:Can control a conference of up to ten participants. |
| PN-4COTB | COT | 4-line Central Office Trunk card (Ground Start/Loop Start trunk) equipped with the functions for loop detection, sending/detecting ground on Ring/Tip wire. |
| PN-4COTG | COT | 4-line Central Office Trunk card (Loop Start trunk) equipped with the functions for loop detection, receiving/sending the CALLER ID (CLASS SM) signal. |
| PN-2DATA | DAT | 2-line Digital Announcement Trunk card.<br>Duration: Max. 60 seconds. |
| PN-DK00 | DK | Circuit card for External Relay Control/External Key Scan.<br>This card is provided with eight circuits, and can provide the above-mentioned control functions on a per circuit basis. |
| PN-4DITB | DIT | 4-line Direct In Dialing Trunk card.<br>This card is equipped with the function for loop detection, sending reverse signal and PB to DP signal conversion.<br>This card is internally equipped with –48 V DC On-Board Power supply. |
| PN-2DLCB | DLC | 2-line Digital Line Circuit card for $D^{term}$ Series E/Series III/DSS Console.<br>[–48V Version, 2-wire type, line length: max. 850 m (2789 ft.)]<br>This card is equipped with quick diagnostics to detect short line conditions and the normality (Synchronous/Asynchronous) of the terminal.<br>This card is internally equipped with a –48 V DC On-Board Power Supply. |
| PN-2DLCC | DLC | 2-line Digital Line Circuit card for $D^{term}$ Series II/SN610 Attendant Console.<br>[–48 V Version, 4-wire type, line length: max. 1200 m (3940 ft.)]<br>This card is equipped with quick diagnostics to detect short line conditions and the normality (Synchronous/Asynchronous) of the terminal.<br>This card is internally equipped with –48 V On-Board Power Supply. |
| PN-2DLCN | DLC | 2-line Digital Line Circuit card for $D^{term}$ Series E/Series III/DSS Console.<br>[–48 V Version, 2-wire type, line length: max. 850 m (2789 ft.)]<br>This card is equipped with quick diagnostics to detect short line conditions and the normality (Synchronous/Asynchronous) of the terminal.<br>This card is internally equipped with a –48 V DC On-Board Power Supply. |

**Table 2-3 Functional Outline of Line/Trunk Circuit Cards (Continued)**

| CARD NAME | FUNCTIONAL NAME | FUNCTIONAL OUTLINE |
|---|---|---|
| PN-4DLCA | DLC | 4-line Digital Line Circuit card for D$^{term}$ Series E/Series III/ElectraPro/DSS Console.<br>[–27 V Version, 2-wire type, line length: max. 200 m (656 ft.)]<br>This card is equipped with quick diagnostics to detect short line conditions and the normality (Synchronous/Asynchronous) of the terminal. |
| PN-4DLCD | DLC | 4-line Digital Line Circuit card exclusively used for D$^{term}$ Series E/Series III.<br>[-27 V Version, 2-wire type, line length: max. 200 m (656 ft.)]<br>This card is equippedwith quick diagnostics to detect short line conditions and the normality (Synchronous/Asynchronous) of the terminal. |
| PN-4DLCF | DLC | 4-line Digital Line Circuit card for Dterm Series II/SN610 Attendant Console<br>[-27 V Version, 4-wire type, line length: max. 300 m (984.3 ft.)].<br>This card is equipped with quick diagnostics to detect short line conditions. |
| PN-4DLCM | DLC | 4-line Digital Line Circuit card for D$^{term}$ Series E/Series III/ElectraPro/DSS Console.<br>[–27 V Version, 2-wire type, line length: max. 200 m (656 ft.)]<br>This card is equipped with quick diagnostics to detect short line conditions and the normality (Synchronous/Asynchronous) of the terminal. |
| PN-4DLCQ | DLC | 4-line Digital Line Circuit card exclusively used for D$^{term}$ Series E/Series III.<br>[–27 V Version, 2-wire type, line length: max. 200 m (656 ft.)]<br>This card is equipped with quick diagnostics to detect short line conditions and the normality (Synchronous/Asynchronous) of the terminal. |
| PN-2DPCB | DPC | 2-line Data Port Controller card.<br>This card is used for the intra-office or inter-office digital data transmission on fixed path connection.<br>And this card can accommodate a maximum of two DTE with V.11 (X.21) interface or V.24/V.28 (RS-232C) interface. |
| PN-2ILCA | ILC | 2-line ISDN Line Circuit card.<br>This card provides a physical interface to ISDN Terminals. |
| PN-4LCD | LC | 4-line Analog Line Circuit card for single line telephones.<br>This card is equipped with the function for controlling Message Waiting Lamp.<br>Loop resistance: Max. 600 ohms.<br>This card is equipped with quick diagnostics to detect short and open line conditions.<br>This card is internally equipped with a +80 V DC-DC Power Supply circuit and a relay for momentary open (only in No.3 circuit). |
| PN-4LCD-A | LC | 4-line Analog Line Circuit card for single line telephones.<br>This card is equipped with momentary open function.<br>This card is equipped with the function for controlling Message Waiting Lamp.<br>Loop resistance: Max. 600 ohms.<br>This card is equipped with quick diagnostics to detect short and open line conditions.<br>This card is internally equipped with a +80 V DC-DC Power Supply circuit. |

**Table 2-3 Functional Outline of Line/Trunk Circuit Cards (Continued)**

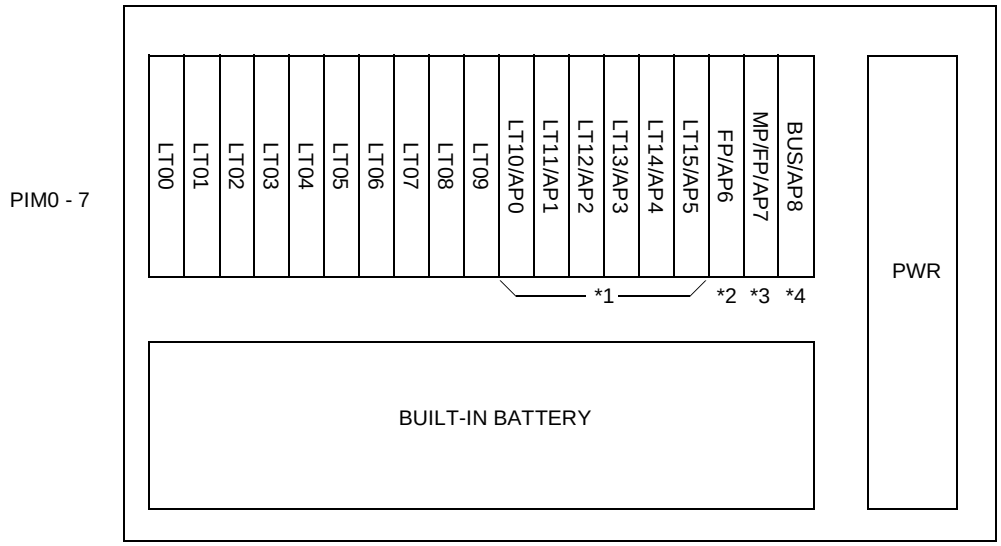
| CARD NAME | FUNCTIONAL NAME | FUNCTIONAL OUTLINE |
|---|---|---|
| PN-4LCJ | LC | 4-line Analog Line Circuit card for single line telephones.<br>This card provides 4 circuits with Disconnect Supervision.<br>Loop resistance: Max. 600 ohms.<br>This card is equipped with quick diagnostics to detect short and open line conditions. |
| PN-M03 | M03 | V.35 DTE interface card.<br>This card is used together with the PN-2DPCB card to provide the V.35 interface. |
| PN-2ODTA | ODT | 2-line OD Trunk card.<br>This card can be used as either a 2-wire E&M trunk or a 4-wire E&M trunk, and is internally equipped with a –48 V DC On-Board Power Supply.<br>Both No. 0 and No. 1 circuits must be set to same purpose (2-wire or 4-wire) in one card. |
| PN-8RSTA | PBR | 8-line PB Receiver card.<br>This card can be used for a PB station line, DID or tie line. |
| PN-TNTA | TNT | 2-line Tone/Music Source interface card.<br>This card is used for BGM or Music on Hold, and is equipped with two interface for an external tone/music source. |
| PN-2CSIA | CSI | 2-line Zone Transceiver Interface card.<br>The CSI is used to interface with the Wireless Communication System to the Zone Transceiver, based on ISDN S-interface.<br>Each CSI occupies 7 time slots. |

# CHAPTER 3 CIRCUIT CARD INSTALLATION CONDITIONS

This chapter explains the conditions for installing various kinds of circuit cards used in the PBX.

## 1. CIRCUIT CARD MOUNTING SLOTS

Figure 3-1 below shows circuit card mounting slots allocated in the PIM based on circuit card type.




| | | |
|---|---|---|
| LT00 - LT15 | : | Line/trunk circuit card mounting slots |
| AP0 - AP8 | : | Application circuit card mounting slots |
| MP | : | PN-CP00/PN-CP00-B/PN-CP00-C mounting slot |
| FP | : | PN-CP01 mounting slots |
| BUS | : | PN-BS00-A/PN-BS00-B, PN-BS01-A/PN-BS01-B mounting slot |
| PWR | : | PZ-PW86 mounting slot |

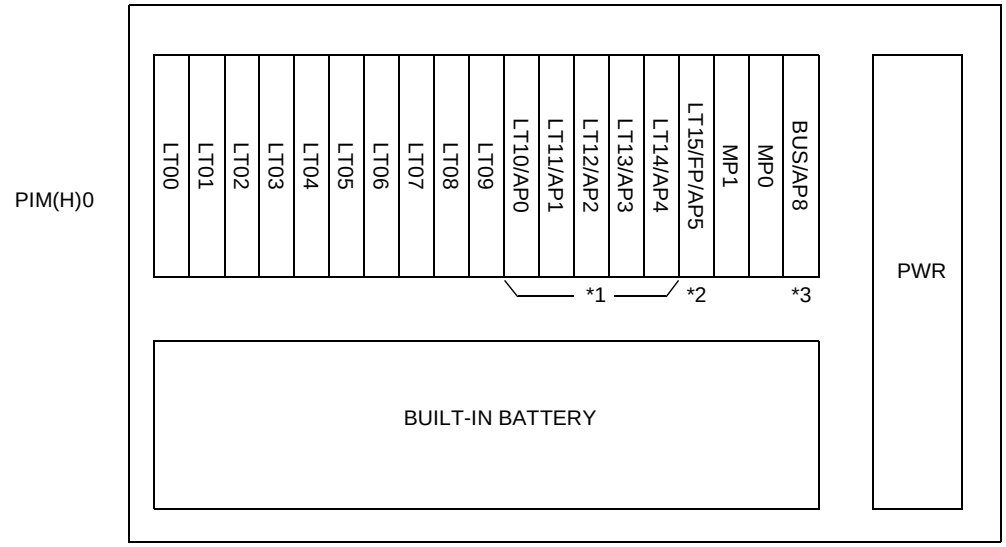
***1*** *Either line/trunk circuit cards or application circuit cards can be mounted in these slots.*

***2*** *PN-CP01 or an application circuit card is to be mounted in this slot according to the system configuration.*

***3*** *PN-CP00/PN-CP00-B/PN-CP00-C, PN-CP01 or an application circuit card is to be mounted in this slot according to the system configuration.*

***4*** *PN-BS00-A/PN-BS00-B, PN-BS01-A/PN-BS01-B or an application circuit card is to be mounted in this slot according to the system configuration.*

**Figure 3-1 Circuit Card Mounting Slots**




| | | |
|---|---|---|
| LT00 - LT15 | : | Line/trunk circuit card mounting slots |
| AP0 - AP8 | : | Application circuit card mounting slots |
| MP0, MP1 | : | PN-CP02/PN-CP02-C mounting slot |
| FP | : | PN-CP01 mounting slots |
| BUS | : | PN-BS00-A/PN-BS00-B, PN-BS01-A/PN-BS01-B mounting slot |
| PWR | : | PZ-PW86/PZ-PW86-A/PZ-PW86 (C)/(D) mounting slot |

***1** Either line/trunk circuit cards or application circuit cards can be mounted in these slots.*

***2** Either line/trunk circuit card, PN-CP01 or an application circuit card is to be mounted in this slot according to the system configuration.*

***3** PN-BS00-A/PN-BS00-B, PN-BS01-A/PN-BS01-B or an application circuit card is to be mounted in this slot according to the system configuration.*

**Figure 3-1 Circuit Card Mounting Slots (Continued)**

## 2. INSTALLATION CONDITIONS FOR CONTROL CIRCUIT CARDS

### 2.1 PN-CP00/PN-CP00-B/PN-CP00-C (MP)

Mount the PN-CP00/PN-CP00-B/PN-CP00-C in the MP slot of PIM0.

### 2.2 PN-CP01 (FP)

1. The PN-CP01 is required only if any of the following is true.
   - More than one PIM is used.
   - A PN-2DLCC is used.
   - A PN-AP01 is used.
   - OAI, ACD, No. 7 CCIS or ISDN is used.

2. When the system is equipped with two PIMs, mount one PN-CP01 in the FP slot of PIM0. When the system is equipped with more than two PIMs--depending on the number of additional PIMs used--mount one PN-CP01 in the FP slot of PIM0 and one PN-CP01 in the MP/FP slot of PIM2, PIM4 and PIM6.

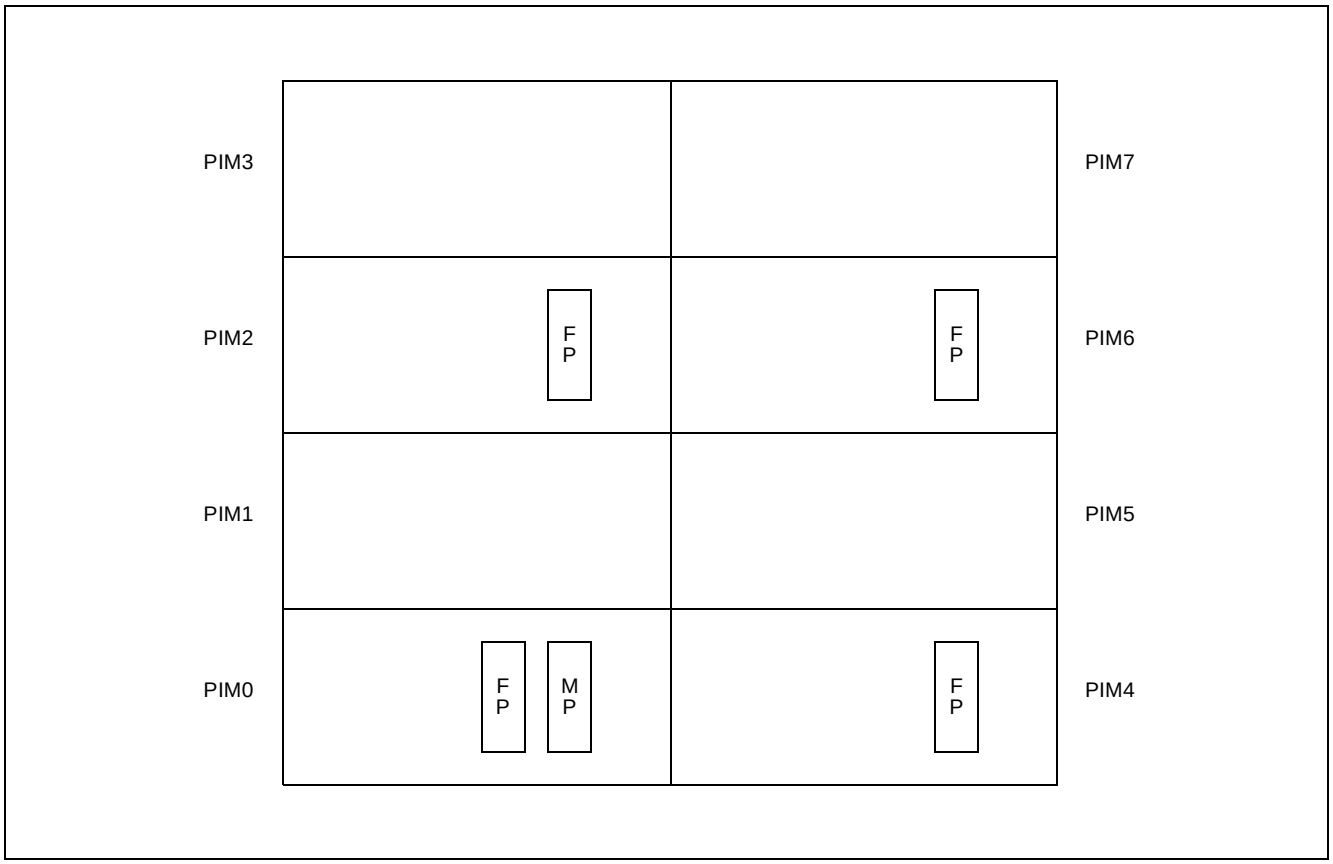



**Figure 3-2 MP/FP Card Mounting Slots**

### 2.3 PN-CP02/PN-CP02-C (MP)

Mount the PN-CP02/PN-CP02-C in the MP0 and MP1 slot of PIM(H)0.

This card is used only for Back up MP system.

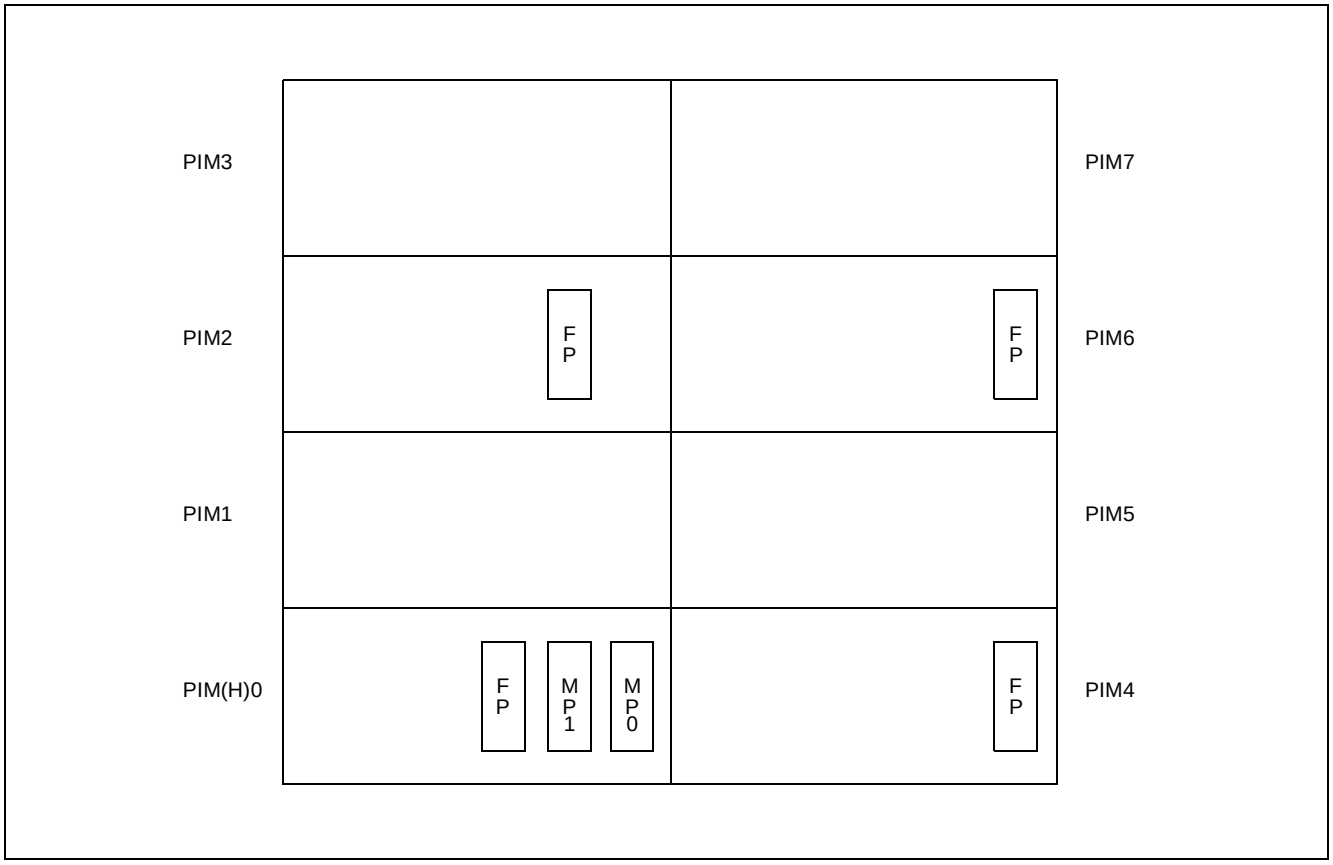



**Figure 3-3 MP/FP Card Mounting Slots for Back up MP System**

### 2.4 PN-BS00-A/PN-BS00-B (BS00), PN-BS01-A/PN-BS01-B (BS01)

1. In a one-PIM system, neither the PN-BS00-A/PN-BS00-B nor the PN-BS01-A/PN-BS01-B is needed.
2. When the system is equipped with more than one PIM, mount a PN-BS00-A/PN-BS00-B in the BUS slot of PIM0 or PIM(H)0.
3. When the system is equipped with more than one PIM, mount one PN-BS01-A/PN-BS01-B in the BUS slot of PIM1 through PIM7, as required.

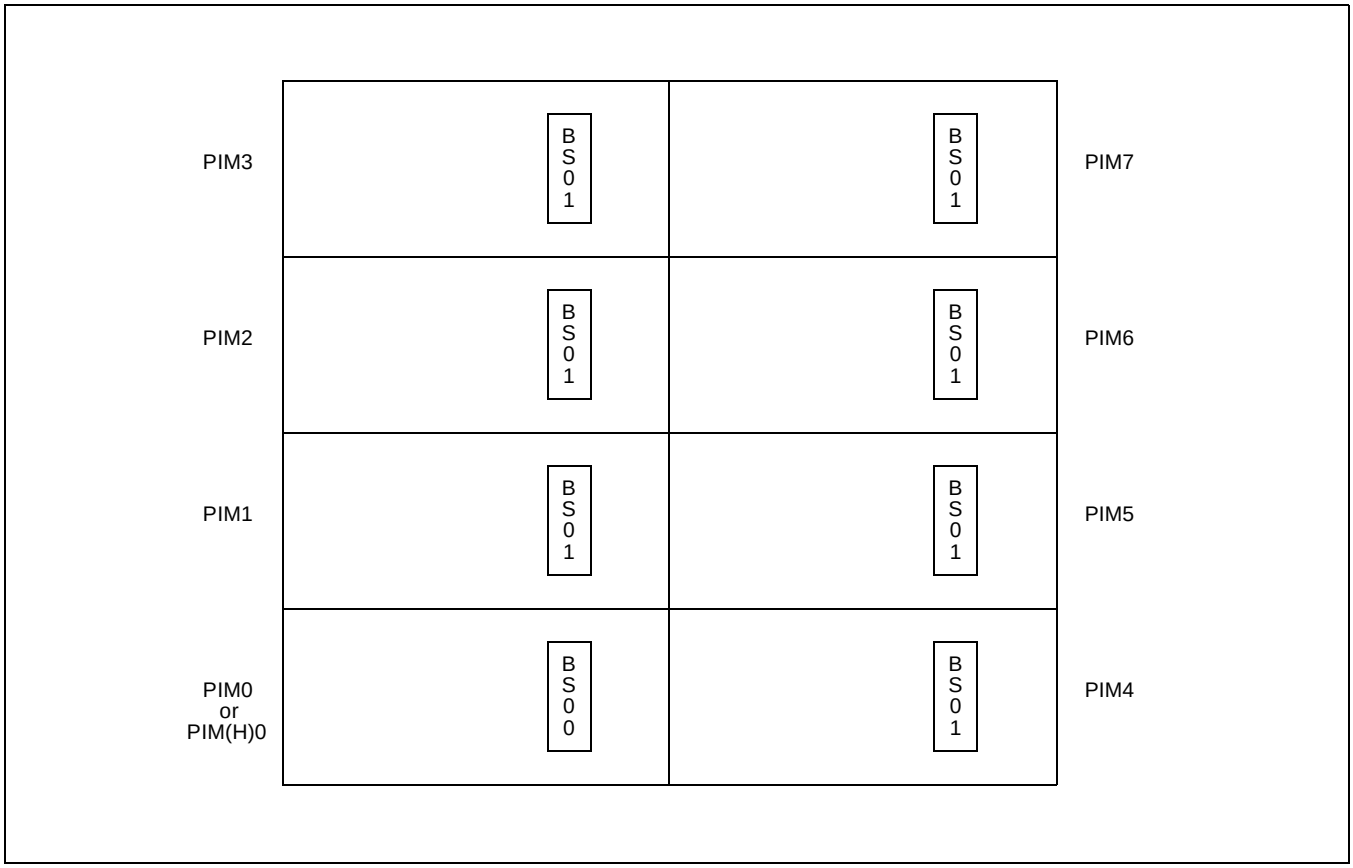



**Figure 3-4 BS00/BS01 Card Mounting Slots**

### 2.5 PN-PW00 (EXTPWR)

Mount the PW00 card into the LT01-AP8 slot. A maximum of three PW00 cards can be mounted in one frame (4PIMs).

**Note:** *The PW00 card occupies the adjoining left side (smaller number) slot because of its two-stories structure.*

### 2.6 PZ-PW86 (PWR)

Mount one PZ-PW86 in the PWR slot of PIM0/PIM(H)0 through PIM7, as required.

## 3. INSTALLATION CONDITIONS FOR APPLICATION CIRCUIT CARDS

1. When the system is equipped with only one PIM:
   - An application circuit card can be mounted in the AP0 through AP6, and AP8 slots.
   - An application circuit card can not be mounted in the AP6 slot if any of the following is true.
     – A PN-2DLCC is used.
     – A PN-AP01 is used.
     – OAI, ACD, No. 7 CCIS or ISDN is used.
     – The PN-CP02s are used.

2. When the system is equipped with more than one PIM:
   - An application circuit card can be mounted in the AP0 through AP5 slots of PIM0/PIM(D)0.
   - An application circuit card can be mounted in the AP0 through AP6 slots of PIM2, 4 and 6.
   - An application circuit card can be mounted in the AP0 through AP7 slots of PIM1, 3, 5 and 7.
   - If the system is equipped with CP02s, the AP5 and AP6 slot of PIM(H)0 cannot be used for an application circuit card.

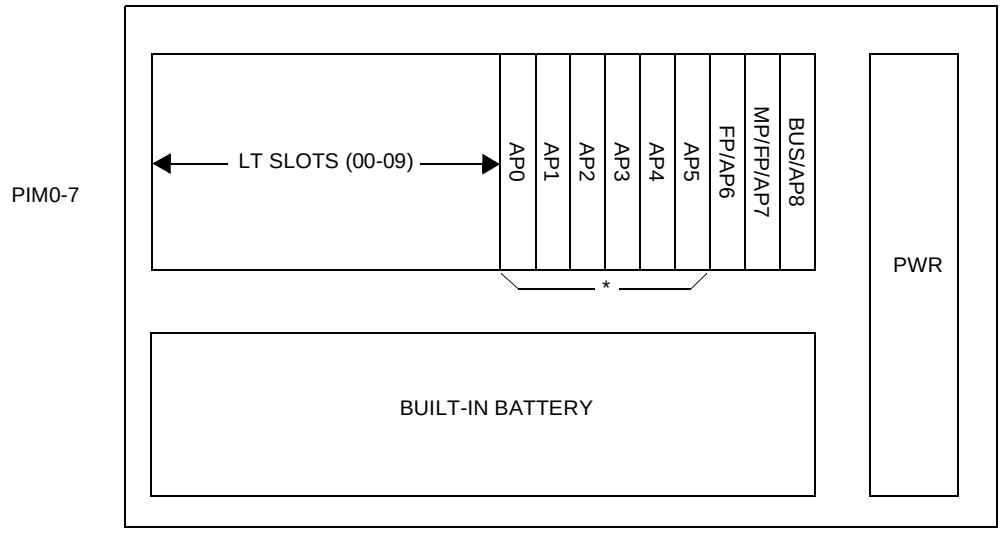
**Note 1:** *The application circuit card (PN-24DTA/PN-24DTA-A/PN-30DTC/PN-30DTC-A) cannot be mounted in either the AP7 or the AP8 slot since neither of these slots have a connection to the MDF through the Back Wiring Board.*

**Note 2:** *The application circuit card (PN-24DTA/PN-24DTA-A/PN-30DTC/PN-30DTC-A [DT10, DT11] which receives a clock signal must be mounted in the AP0 through AP5 slots of PIM0/PIM(H)0.*

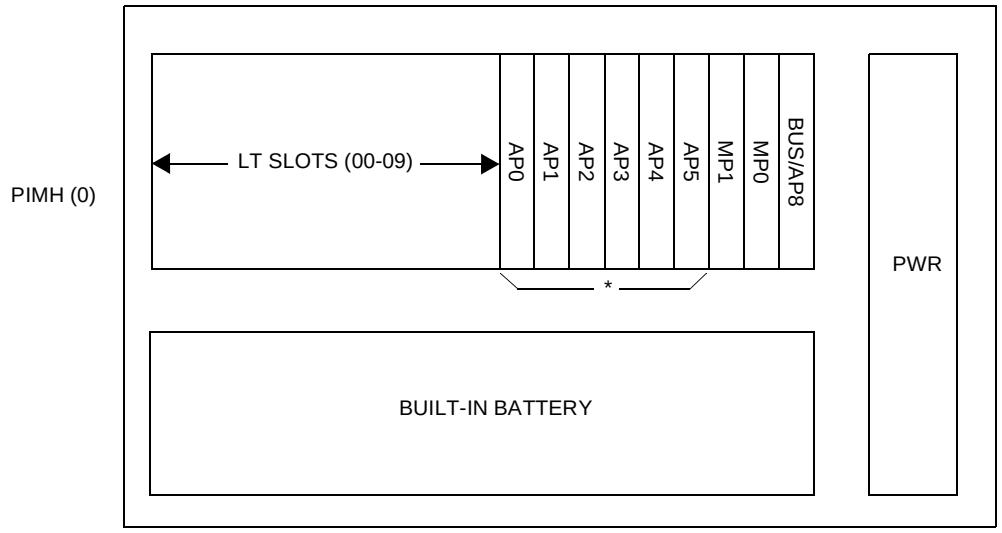
**Note 3:** *The application circuit card (PN-CK00) must be mounted in the AP0 through AP6 slots of PIM0/PIM(H)0.*

**Note 4:** *The application circuit card (PN-CC00/PN-CC01) can be mounted in any one of the LT slots or the AP slots.*
*PN-CC00 card needs two LT/AP slots per one card.*

**Note 5:** *The application circuit card (PN-CC00/PN-CC01) should be mounted in a LT/AP slot that adjoins an AP slot for the PN-AP01 card because the cable (48-TW0.3 CONN CA) is connected between the PN-CC00/PN-CC01 card and the PN-AP01 card.*




- *Line/trunk circuit cards can also be mounted in AP0 - AP5 slots.*

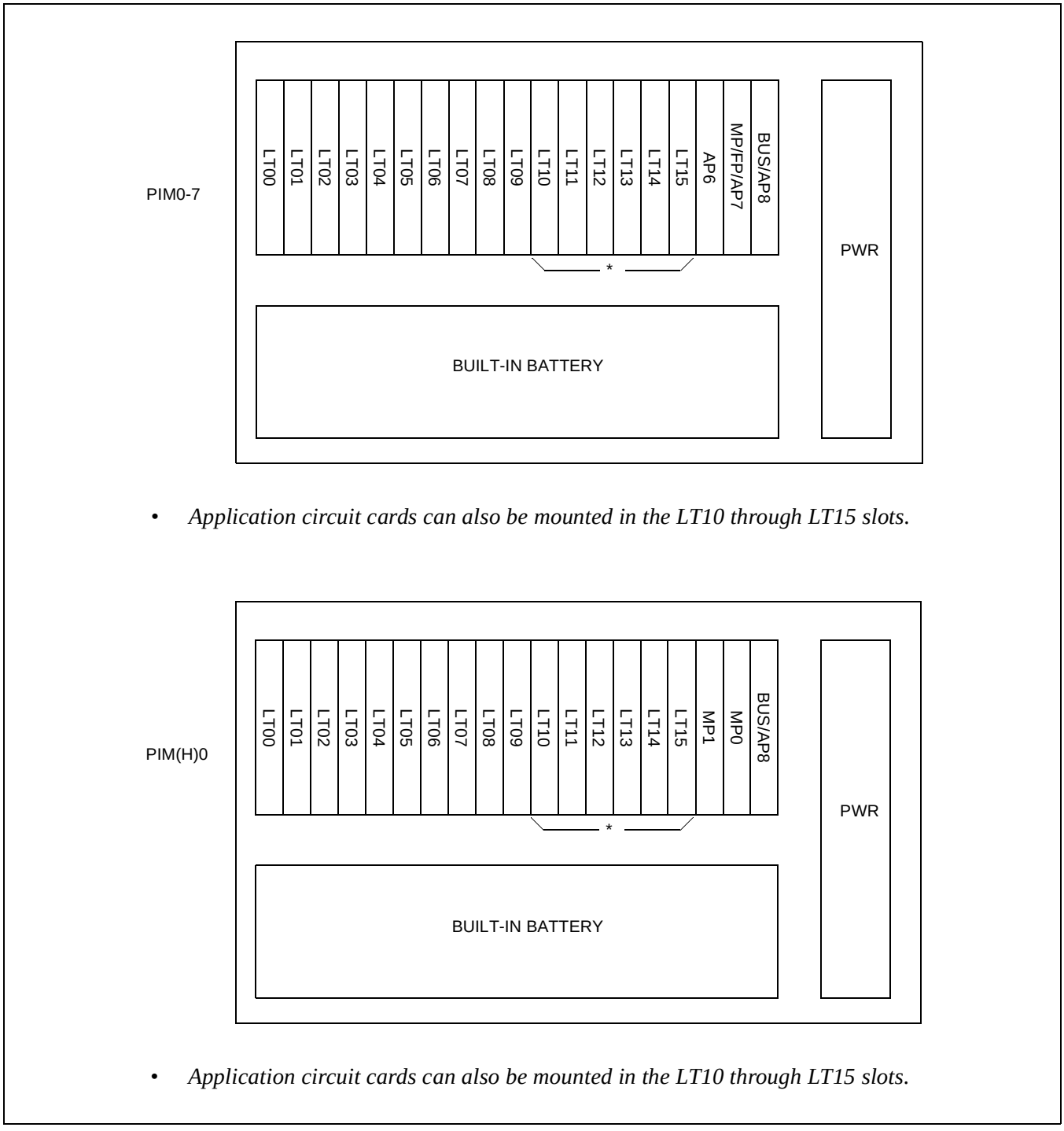



- *Line/trunk circuit cards can also be mounted in AP0 - AP5 slots.*

**Figure 3-5 Application Circuit Card Mounting Slots**

## 4. INSTALLATION CONDITIONS FOR LINE/TRUNK CIRCUIT CARDS

Mount the line/trunk circuit cards in the LT00 through LT15 slots of PIM0/PIM(H)0 through PIM7.




- *Application circuit cards can also be mounted in the LT10 through LT15 slots.*

- *Application circuit cards can also be mounted in the LT10 through LT15 slots.*

**Figure 3-6 Line/Trunk Circuit Card Mounting Slots**

# CHAPTER 4 LAMP INDICATIONS AND SWITCH SETTINGS

This chapter explains various circuit cards used in the PBX with respect to the following items. Explanations are given in the alphabetical order of the circuit card names within each circuit card category (Control, Application, and Line/Trunk).

1. Locations of Lamps, Switches, and Connectors

   The locations of lamps, switches, and connectors of each circuit card are shown by a face layout.

2. Lamp Indications

   The name, color, and functions of each indicator lamp equipped on each circuit card are shown and described in a table.

3. Switch Settings

   The name, settings, and functions of each switch equipped on each circuit card are shown and described in a table.

Each switch setting table has a “CHECK” column. Make necessary entries in the CHECK column during and/or after system installation and maintenance, and use each table as a reference for subsequent system maintenance and operations.

## 1. PRECAUTION IN HANDLING

When handling a circuit card, the installer must wear a grounded wrist strap to protect the circuit card from static electricity.

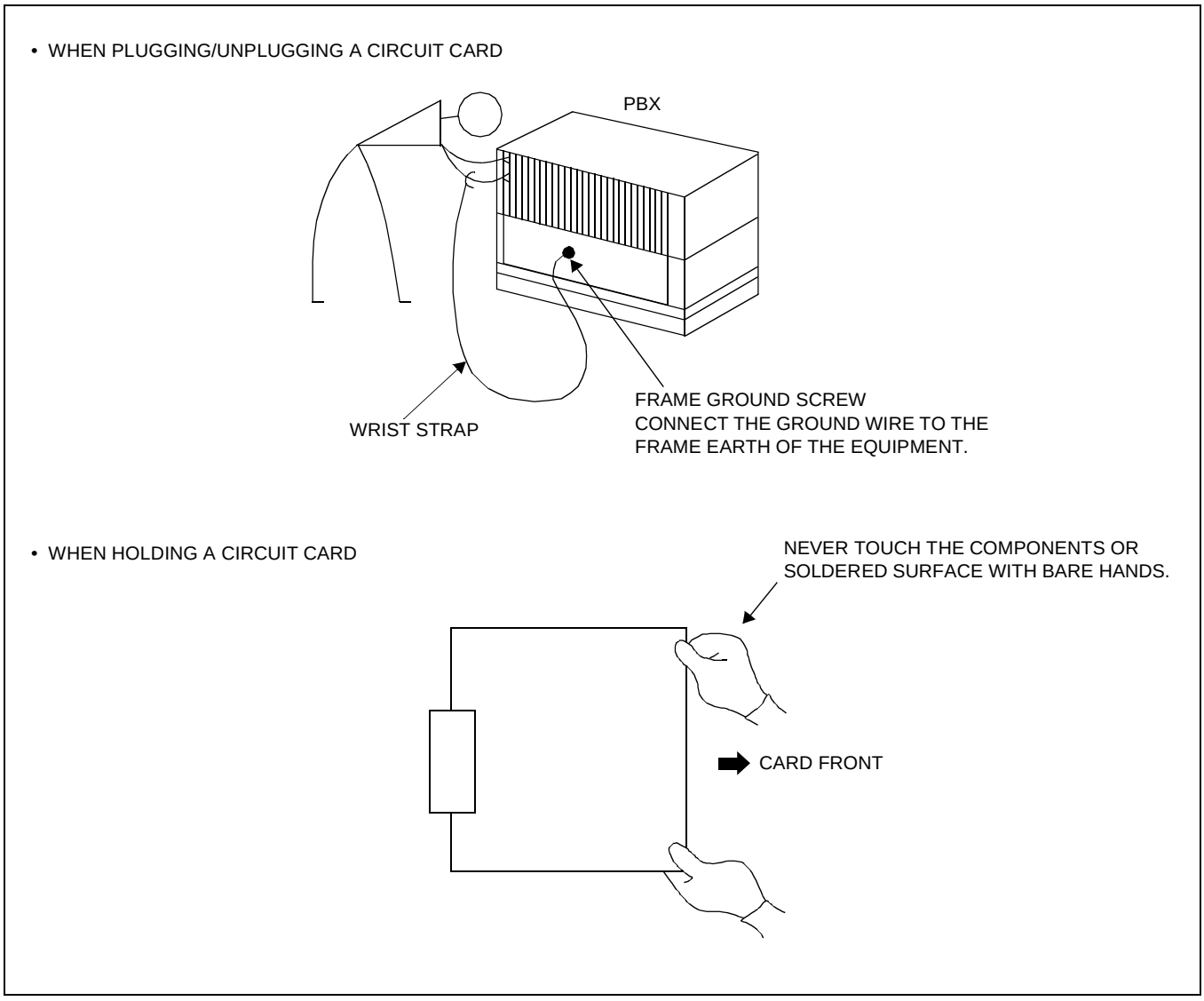



**Figure 4-1 Static Electricity Precautions (1 of 2)**

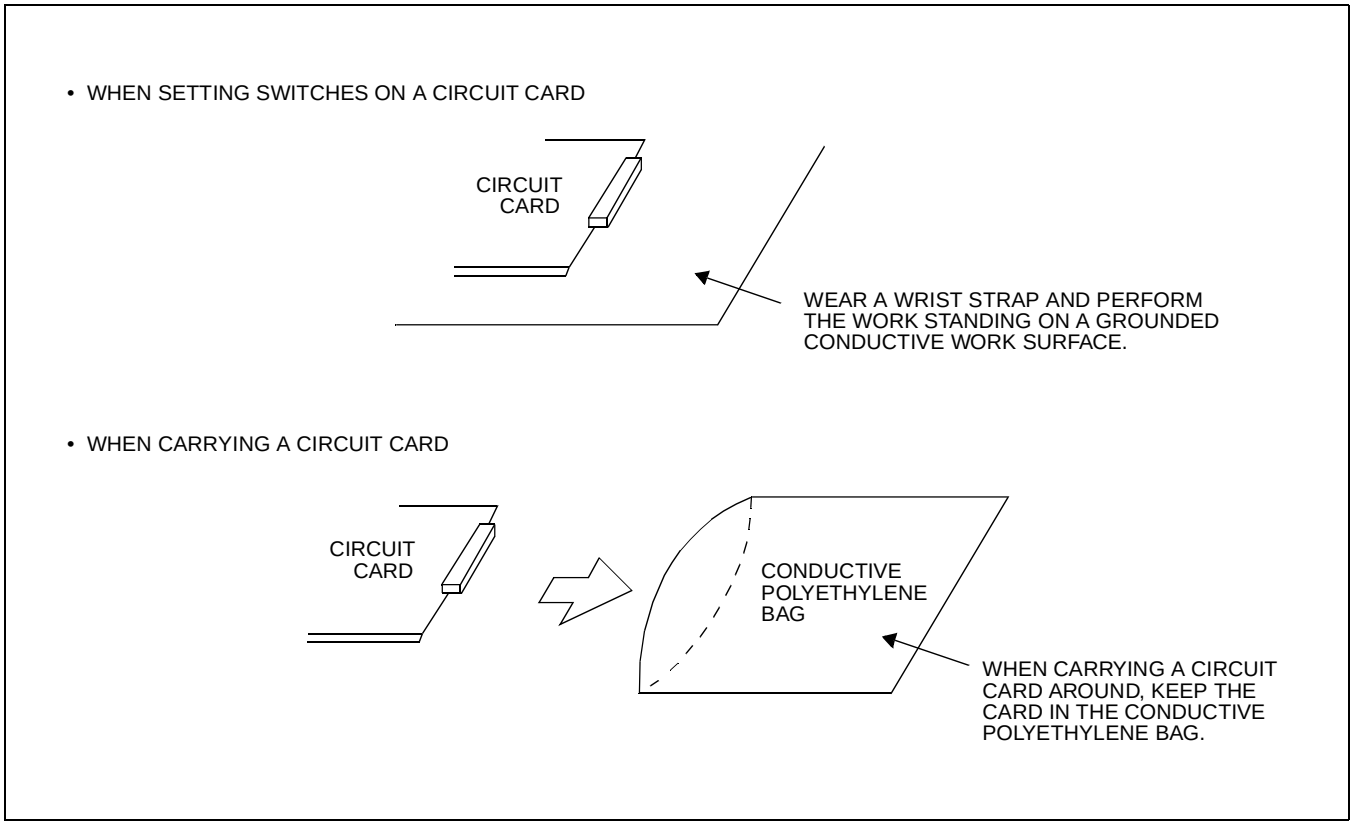



**Figure 4-1 Static Electricity Precautions (2 of 2)**

**CAUTION**

The installer must hold the edge of circuit card, when plugging or unplugging the circuit card. If you touch another area, you may be exposed to hazardous voltages.

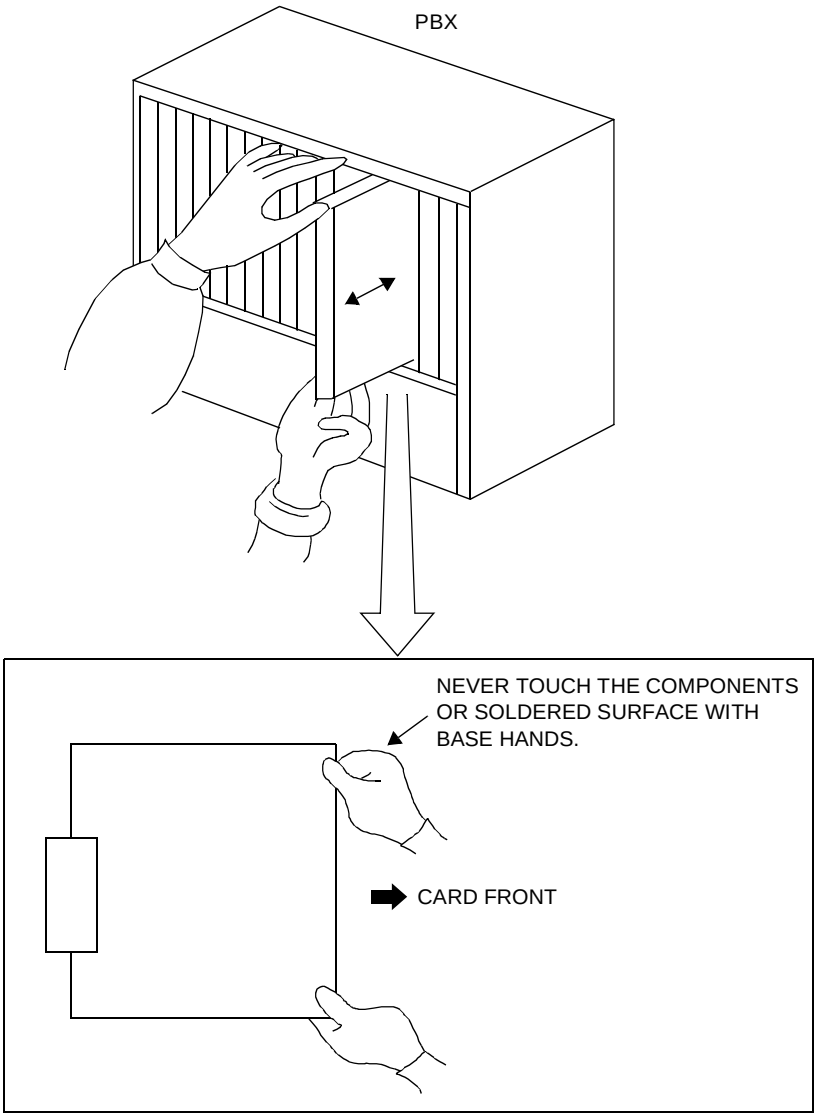



**Figure 4-2 Circuit Card Handling Precautions**

## 2. LAMP INDICATIONS AND SWITCH SETTINGS OF CONTROL CIRCUIT CARDS

Table 4-1 below shows the control circuit cards to be explained in this section.

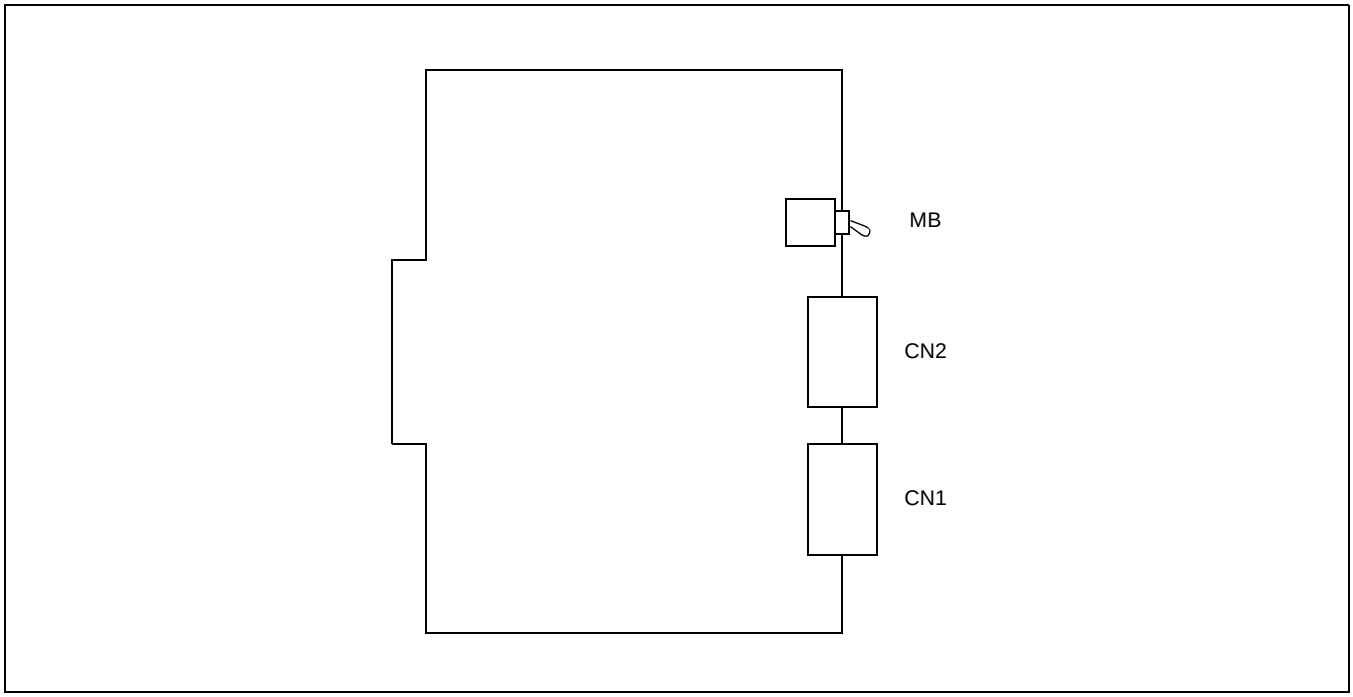
**Table 4-1 Table of Control Circuit Cards**

| NAME (FUNCTIONAL NAME) | EXISTENCE OF LAMPS X: PROVIDED —: NOT PROVIDED | EXISTENCE OF SWITCHES X: PROVIDED —: NOT PROVIDED | EXTRACTION/INSERTION WITH POWER ON X: ALLOWED Δ: ALLOWED AFTER MB* —: NOT ALLOWED | REFERENCE PAGE |
|---|---|---|---|---|
| PN-BS00-A/ PN-BS00-B (BS00) | — | X | Δ | 22 |
| PN-BS01-A (BS01) | — | X | Δ | 24 |
| PN-BS01-B (BS01) | — | X | Δ | 26 |
| PN-CP00 (MP) | X | X | — | 28 |
| PN-CP00-B /PN-CP00-C (MP) | X | X | — | 31 |
| PN-CP03 /PN-CP03-C (MP) | X | X | — | 34 |
| PN-CP01 (FP) | X | X | Δ | 37 |
| PN-CP02 /PN-CP02-C (MP) | X | X | Δ | 39 |
| PN-PW00 (EXTPWR) | X | X | Δ | 42 |
| PZ-PW86 (PWR) | X | X | — | 44 |
| PZ-PW86-A (PWR) | X | X | — | 46 |
| PZ-PW86(C) (PWR) | X | X | — | 48 |
| PZ-PW86(D) (PWR) | X | X | — | 50 |

* MB = Make Busy

# PN-BS00-A/PN-BS00-B (BS00)

1. Locations of Lamps, Switches, and Connectors



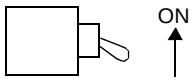

**PN-BS00-A/PN-BS00-B (BS00) Card**

2. Lamp Indications

   This card has no indicator lamps.

(3) Switch Settings

**Switch Settings**

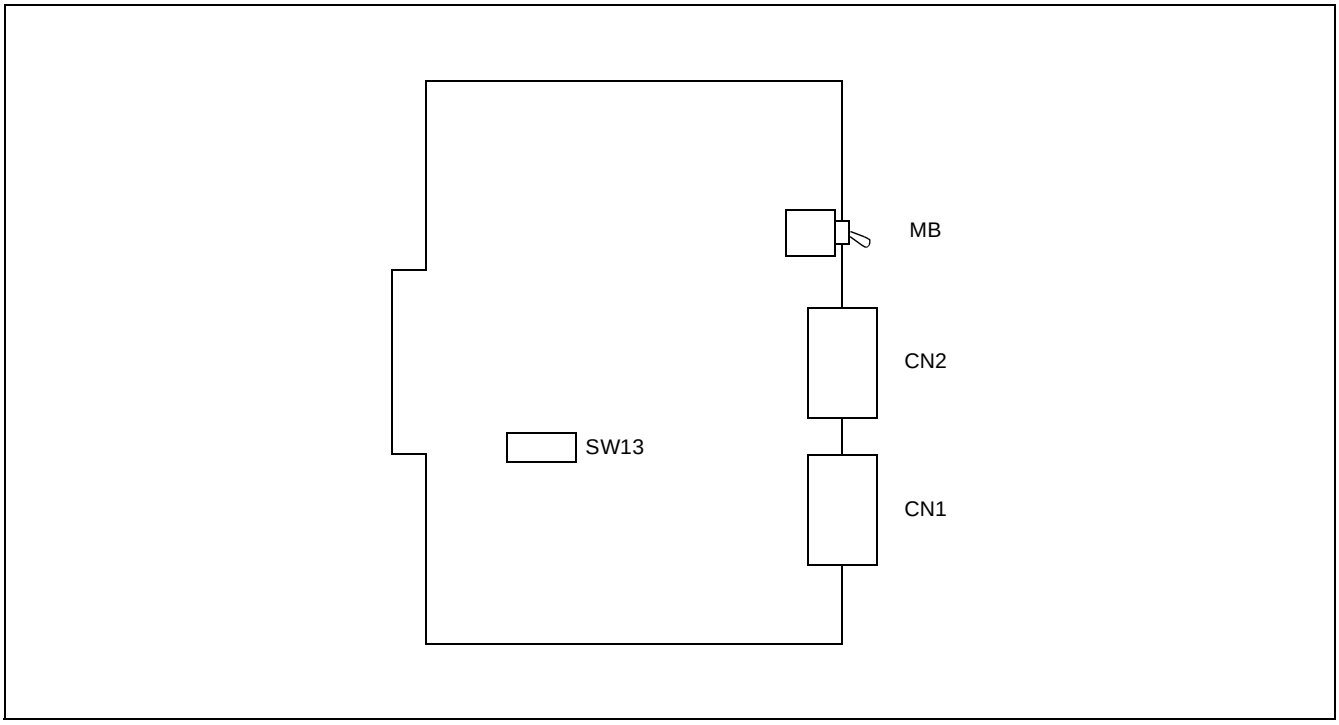
| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| MB (Toggle SW)   **Note** | | UP | For make-busy | |
| | | DOWN | For normal operation | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

# PN-BS01-A (BS01)

1. Locations of Lamps, Switches, and Connectors



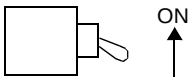
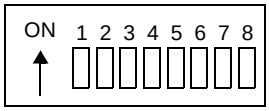

**PN-BS01-A (BS01) Card**

2. Lamp Indications

   This card has no indicator lamps.

(3) Switch Settings

**Switch Settings**

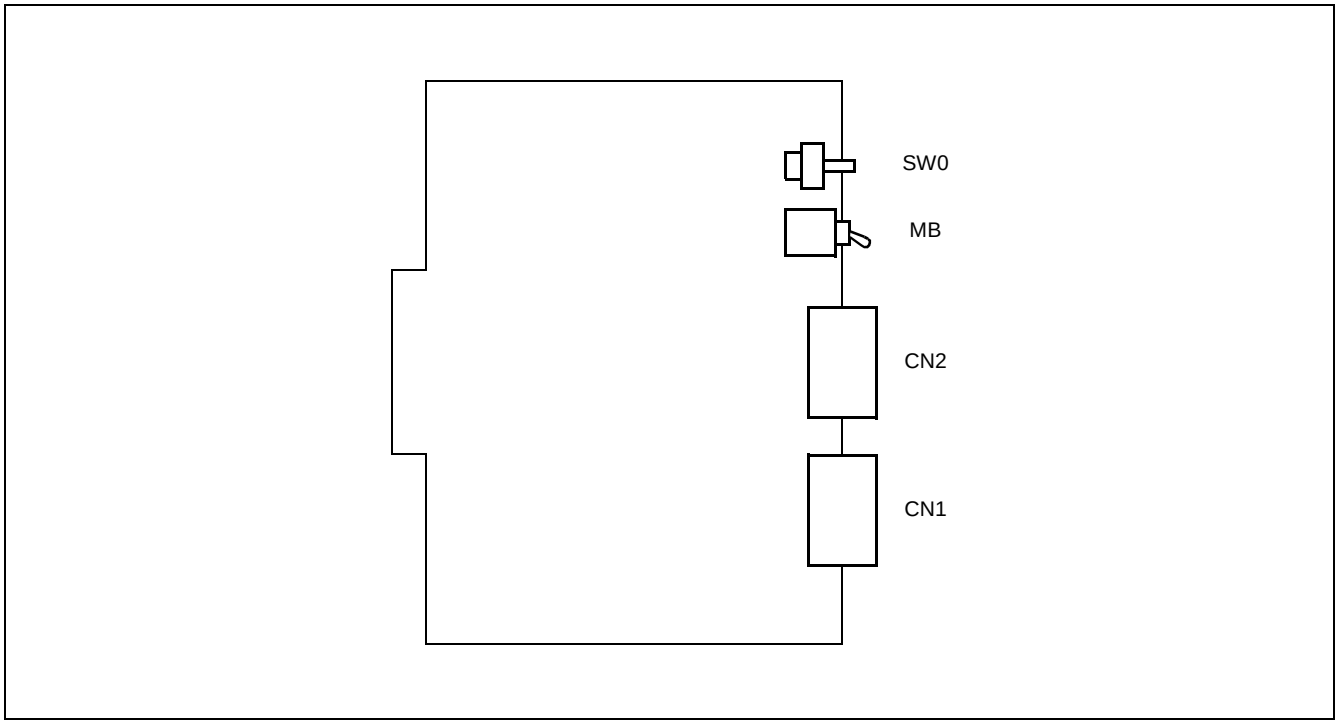
<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">MB (Toggle SW)<br>  <br><br>Note</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>(DOWN)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="8">SW13 (Dip SW)<br>  <br></td><td rowspan="2">1, 5</td><td>ON</td><td rowspan="8">Set SW13 according to the mounting location of this card.<br><br><table><tr><th>MOUNTING LOCATION \ SWITCH No.</th><th>SW13 -1, 5</th><th>SW13 -2, 6</th><th>SW13 -3,7</th><th>SW13 -4, 8</th></tr><tr><td>PIM1</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>PIM2, PIM3</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td></tr><tr><td>PIM4, PIM5</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td></tr><tr><td>PIM6, PIM7</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr></table></td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">2, 6</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">3, 7</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">4, 8</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
</table>

The figure in the SWITCH NAME column and the position in (DOWN) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and (DOWN), the setting of the switch varies with the system concerned.

**Note:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

# PN-BS01-B (BS01)

1. Locations of Lamps, Switches, and Connectors



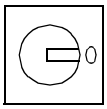
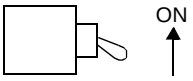

**PN-BS01-B (BS01) Card**

2. Lamp Indications

   This card has no indicator lamps.

(3) Switch Settings

**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW0 (Rotary SW)  **Note 1** | 0 - 3 | Set this rotary switch to match the location in which this circuit card is to be mounted. | | |
| | | 0 | For mounting this card in PIM1 | |
| | | 1 | For mounting this card in PIM2, 3 | |
| | | 2 | For mounting this card in PIM4, 5 | |
| | | 3 | For mounting this card in PIM6, 7 | |
| | 4 - F | | Not used | |
| MB (Toggle SW)   **Note 2** | | UP | For make-busy | |
| | | DOWN | For normal operation | |

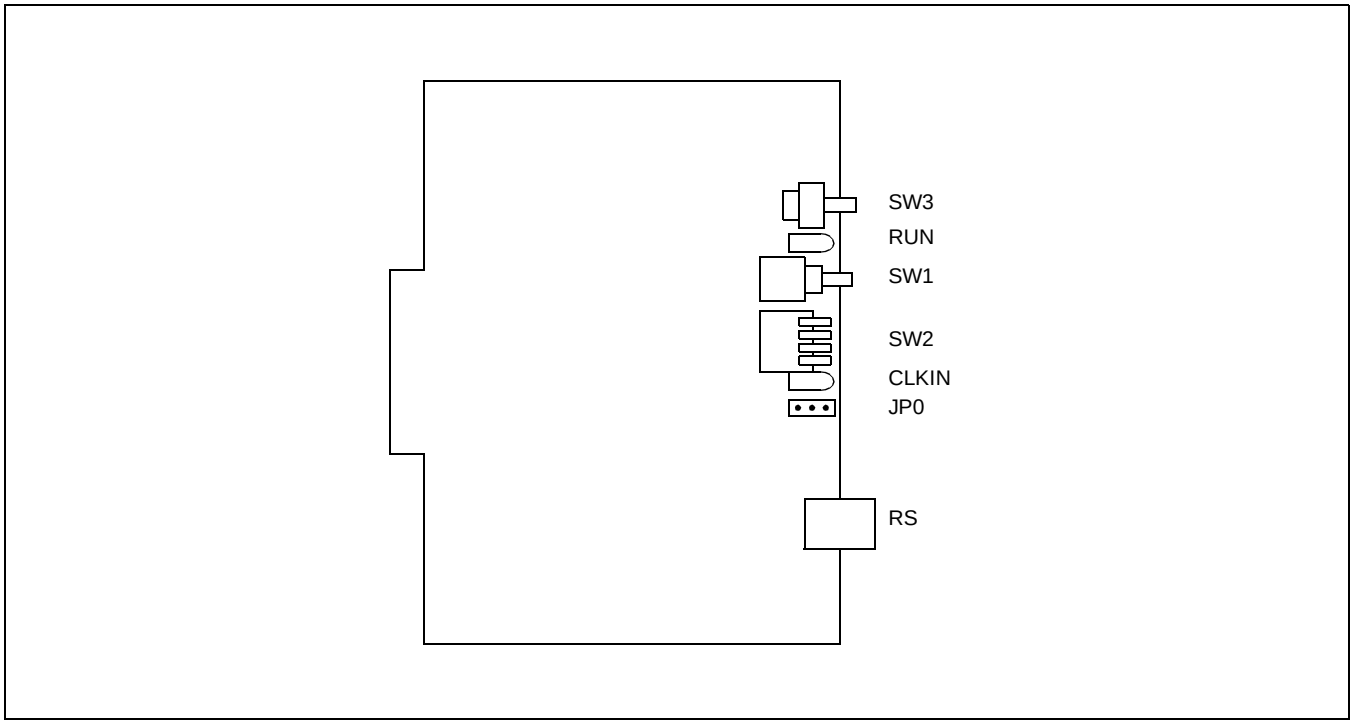
The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the desired switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

# PN-CP00 (MP)

1. Locations of Lamps, Switches, and Connectors




**PN-CP00 (MP) Card**

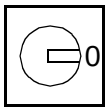
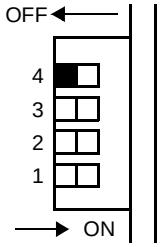
2. Lamp Indications

**Lamp Indications**

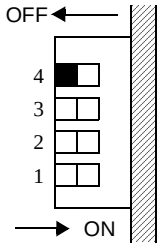
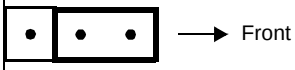
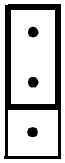
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while the circuit card is operating normally. |
| CLKIN | Green | Lights while receiving clock signals to the PLO oscillator. |

(3) Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="6">SW3 (Rotary SW)<br>  <br><br>Note</td><td rowspan="6">0 ~ F</td><td>0</td><td>On Line (Call processing is in progress)</td><td></td></tr>
<tr><td>2</td><td>Off Line (Call processing is stopped)<br>• I/O port: Depending on CM40 YY=08</td><td></td></tr>
<tr><td>3</td><td>Off Line (Call processing is stopped)<br>• I/O port: 1200 bps (Fixed)</td><td></td></tr>
<tr><td>B</td><td>For clearing the office data</td><td></td></tr>
<tr><td>C</td><td>For setting the resident system program</td><td></td></tr>
<tr><td>1, 4 ~ 9<br>A, D ~ F</td><td>Not used</td><td></td></tr>
<tr><td>SW1 (Push SW)</td><td></td><td></td><td>For initializing the CPU</td><td></td></tr>
<tr><td rowspan="2">SW2 (Piano Key SW)<br>  <br></td><td>1</td><td>ON</td><td>KF Mode</td><td></td></tr>
<tr><td>1</td><td>OFF</td><td>MF/PF Mode.</td><td></td></tr>
<tr><td>2, 3</td><td colspan="2">Selection of PLO (Phase Locked Oscillator)<br>• When using the internal PLO of MP card:<br><table><tr><th colspan="2">SWITCH NUMBER</th><th rowspan="2">FUNCTION</th></tr><tr><th>2</th><th>3</th></tr><tr><td>OFF</td><td>OFF</td><td>1.5 MHz clock<br>[For PN-24DTA/PN-24DTA-A]</td></tr><tr><td>ON</td><td>OFF</td><td>192 kHz clock<br>[For PN-BRTA]</td></tr><tr><td>OFF</td><td>ON</td><td>2 MHz clock<br>[For PN-30DTC/PN-30DTC-A/<br>PN-2BRTC]</td></tr><tr><td>ON</td><td>ON</td><td>Not used</td></tr></table></td><td></td></tr>
</table>

**Switch Settings (Continued)**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW2 (Piano Key SW)<br>  | 2, 3 | • When using the PLO card (PN-CK00):<br>SW2-2 OFF SW2-3 ON<br>• When not using the internal PLO and the PLO card:<br>SW2-2 OFF SW2-3 OFF | | |
| | 4 | (OFF) | Not used | |
| JP0 (Jumper pin)<br>  | | LEFT | For factory testing | |
| | | (RIGHT) | For normal operation | |
| JP2 (Jumper pin)<br>  | | (UP) | For normal operation<br>Memory backup connected | |
| | | DOWN | For factory test only<br>Disconnect battery | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

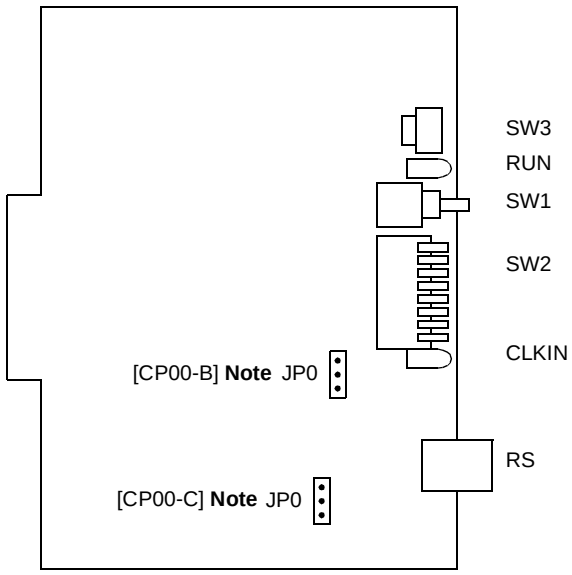
**Note:** *Set the groove on the switch knob to the desired switch position.*

**CAUTION**

*When the operating power is being supplied to this circuit card, do not plug/unplug this circuit card into/from its mounting slot.*

# PN-CP00-B/PN-CP00-C (MP)

1. Locations of Lamps, Switches, and Connectors




**Note:** *Location of JP0 is different between CP00-B and CP00-C.*

**PN-CP00-B/PN-CP00-C (MP) Card**

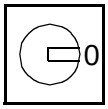
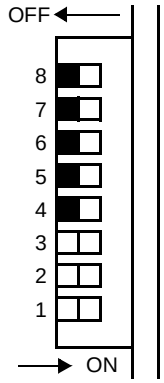
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while the circuit card is operating normally. |
| CLKIN | Green | Lights while receiving clock signals to the PLO oscillator. |

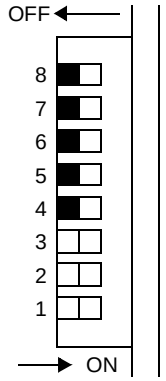
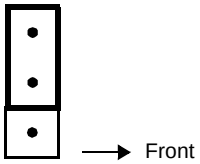
(3) Switch Settings

**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW3 (Rotary SW)<br>  <br><br>**Note** | 0 ~ F | 0 | On Line (Call processing is in progress) | |
| | | 2 | Off Line (Call processing is stopped)<br>• I/O port: Depending on CM40 YY=08 | |
| | | 3 | Off Line (Call processing is stopped)<br>• I/O port: 1200 bps (Fixed) | |
| | | B | For clearing the office data | |
| | | C | For setting the resident system program | |
| | | 1, 4 ~ 9<br>A, D ~ F | Not used | |
| SW1 (Push SW) | | | For initializing the CPU | |
| SW2 (Piano Key SW)<br>  <br> | 1 | ON | KF Mode | |
| | | OFF | MF/PF Mode | |
| | 2, 3 | Selection of PLO (Phase Locked Oscillator)<br>• When using the internal PLO of MP card: | | |

| SWITCH NUMBER | | FUNCTION |
|---|---|---|
| 2 | 3 | |
| OFF | OFF | 1.5 MHz clock<br>[For PN-24DTA/PN-24DTA-A] |
| ON | OFF | 192 kHz clock<br>[For PN-BRTA] |
| OFF | ON | 2 MHz clock<br>[For PN-30DTC/PN-30DTC-A /PN-2BRTC] |
| ON | ON | Not used |

**Switch Settings (Continued)**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW2 (Piano Key SW)<br>  <br> | 2, 3 | • When using the PLO card (PN-CK00):<br>SW2-2 OFF, SW2-3 ON<br>• When not using the internal PLO and the PLO card:<br>SW2-2 OFF, SW2-3 OFF | | |
| | 4 ~ 8 | OFF | Not used | |
| JP0 (Jumper pin)<br>  <br> | | UP | For normal operation<br>Memory backup connected | |
| | | DOWN | For factory testing<br>(Disconnect battery for memory backup.) | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

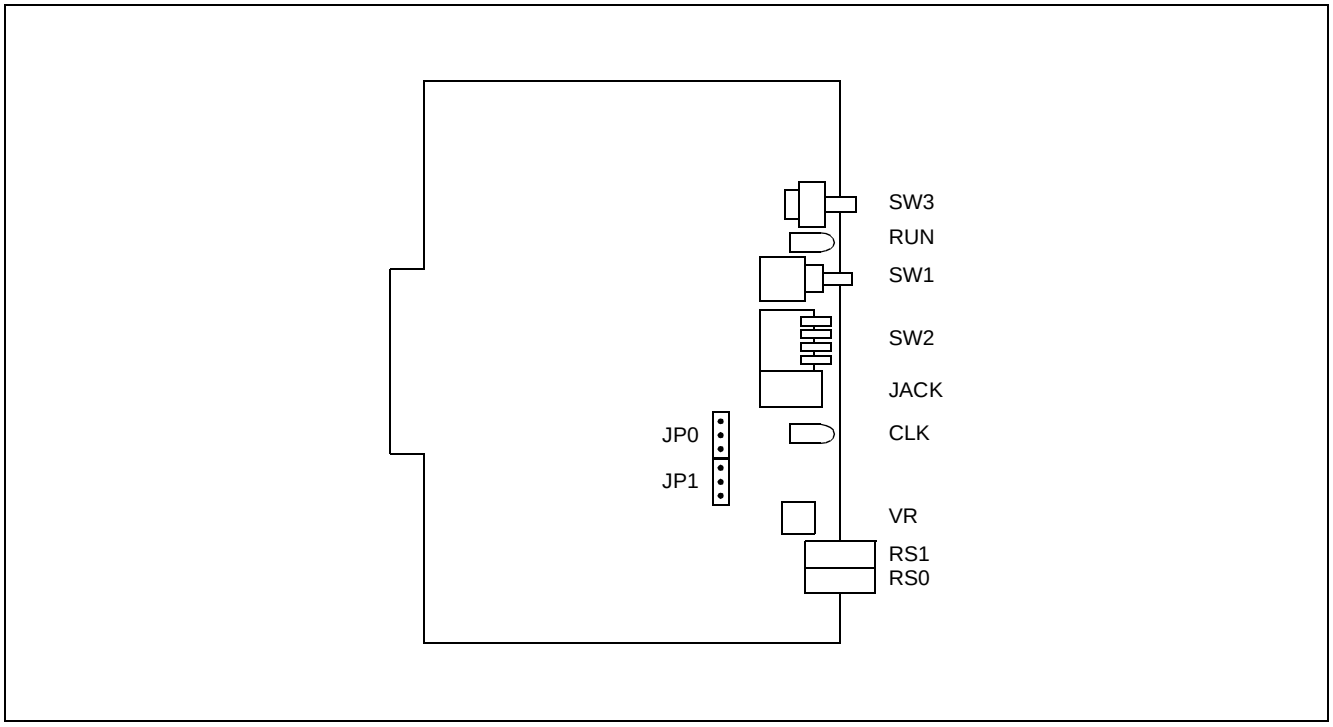
**Note:** *Set the groove on the switch to the desired switch position.*

**CAUTION**

*When the operating power is being supplied to this circuit card, do not plug/unplug this circuit card into/from its mounting slot.*

# PN-CP03/PN-CP03-C (MP)

1. Locations of Lamps, Switches, and Connectors




**PN-CP03/PN-CP03-C (MP) Card**

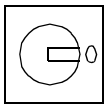
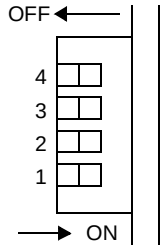
2. Lamp Indications

**Lamp Indications**

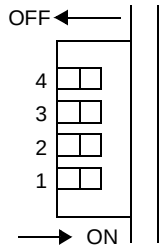
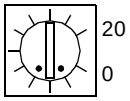
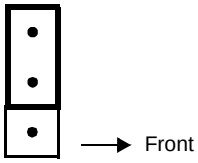
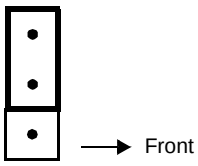
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while the circuit card is operating normally. |
| CLKIN | Green | Lights while receiving clock signals to the PLO oscillator. |

(3) Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="6">SW3 (Rotary SW)<br>  <br>Note</td><td rowspan="6">0 ~ F</td><td>0</td><td>On Line (Call processing is in progress)</td><td></td></tr>
<tr><td>2</td><td>Off Line (Call processing is stopped)<br>• I/O port: Depending on CM40 YY=08</td><td></td></tr>
<tr><td>3</td><td>Off Line (Call processing is stopped)<br>• I/O port: 1200 bps (Fixed)</td><td></td></tr>
<tr><td>B</td><td>For clearing the office data</td><td></td></tr>
<tr><td>C</td><td>For setting the resident system program</td><td></td></tr>
<tr><td>1, 4 ~ 9<br>A, D ~ F</td><td>Not used</td><td></td></tr>
<tr><td>SW1 (Push SW)</td><td></td><td></td><td>For initializing the CPU</td><td></td></tr>
<tr><td rowspan="3">SW2 (Piano Key SW)<br>  <br></td><td rowspan="2">1</td><td>ON</td><td>KF Mode</td><td></td></tr>
<tr><td>OFF</td><td>MF/PF Mode</td><td></td></tr>
<tr><td>2, 3</td><td colspan="2">Selection of PLO (Phase Locked Oscillator)<br>When using the internal PLO of MP card:<br><table><tr><th colspan="2">SWITCH NUMBER</th><th rowspan="2">FUNCTION</th></tr><tr><th>2</th><th>3</th></tr><tr><td>OFF</td><td>OFF</td><td>1.5 MHz clock<br>[For PN-24DTA/PN-24DTA-A]</td></tr><tr><td>ON</td><td>OFF</td><td>192 kHz clock<br>[For PN-BRTA]</td></tr><tr><td>OFF</td><td>ON</td><td>2 MHz clock<br>[For PN-30DTC/PN-30DTC-A<br>/PN-2BRTC]</td></tr><tr><td>ON</td><td>ON</td><td>Not used</td></tr></table></td><td></td></tr>
</table>

**Switch Settings (Continued)**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW2 (Piano Key SW)<br>  | 2, 3 | • When using the PLO card (PN-CK00):<br>SW2-2 SW2-3<br>OFF ON<br>• When not using the internal PLO and the PLO card:<br>SW2-2 SW2-3<br>OFF OFF | | |
| | 4 | ON | When using RS1 port for built-in MODEM | |
| | | OFF | When using RS1 port for RS-232C. | |
| VR (Rotary SW)<br>  | | | Variable Resister for External Hold Tone Source<br>(0 - 20 KΩ: Clockwise) | |
| JP0 (Jumper pin)<br>  | | UP | For normal operation<br>Memory backup connected | |
| | | DOWN | For factory testing<br>(Disconnect battery for memory backup.) | |
| JP1 (Jumper pin)<br>  | | UP | For normal operation | |
| | | DOWN | For using External Tone Source | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

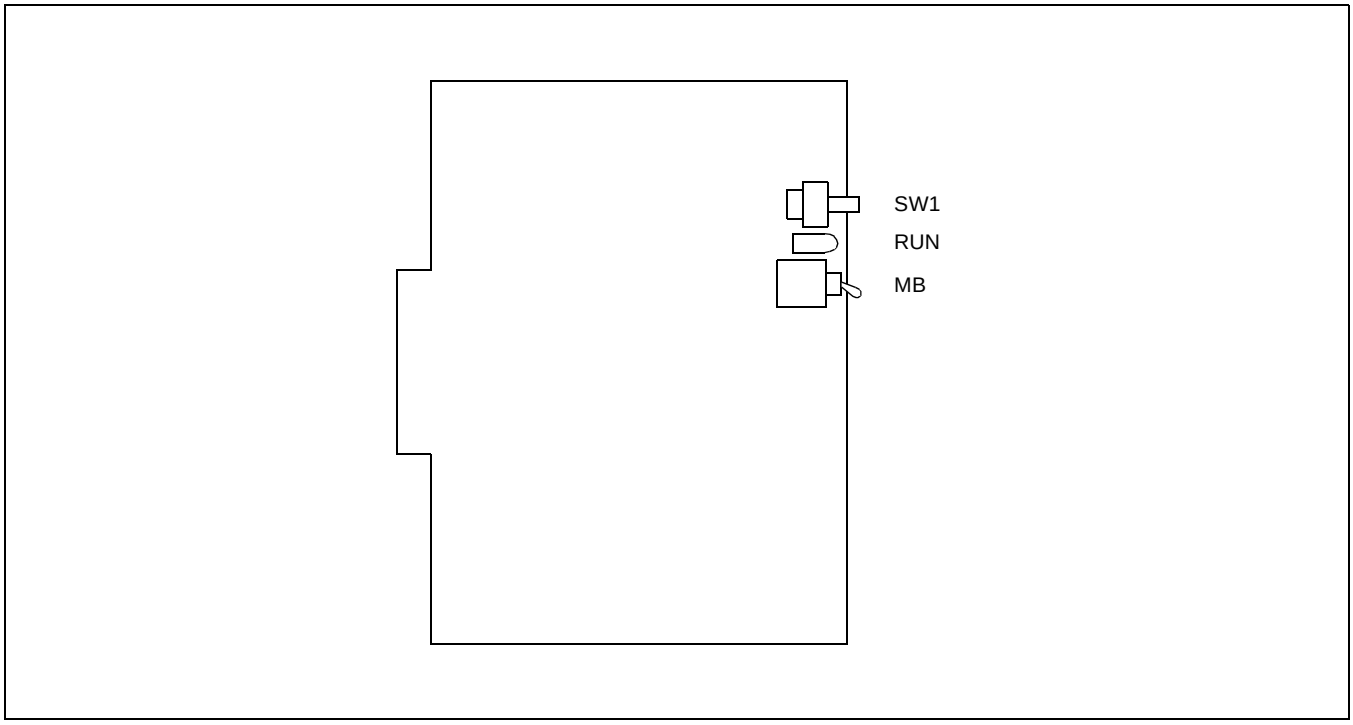
**Note:** *Set the groove on the switch knob to the desired switch position.*

**CAUTION**

*When the operating power is being supplied to this circuit card, do not plug/unplug this circuit card into/from its mounting slot. When the CP03/CP03-C is plugged in and power is on, do not move Jumper JP1.*

# PN-CP01 (FP)

1. Locations of Lamps, Switches, and Connectors




**PN-CP01 (FP) Card**

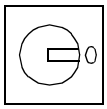
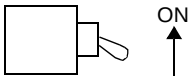
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while the circuit card is operating normally. |

(3) Switch Settings

**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW1 (Rotary SW)  **Note 1** | 0 – 3 | Set this rotary switch to match the location in which this circuit card is to be mounted. | | |
| | | 0 | For mounting this card in PIM0 | |
| | | 1 | For mounting this card in PIM2 | |
| | | 2 | For mounting this card in PIM4 | |
| | | 3 | For mounting this card in PIM6 | |
| | 4 – F | | Not used | |
| MB (Toggle SW)   **Note 2** | | UP | For make-busy | |
| | | DOWN | For normal operation | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the desired switch position.*

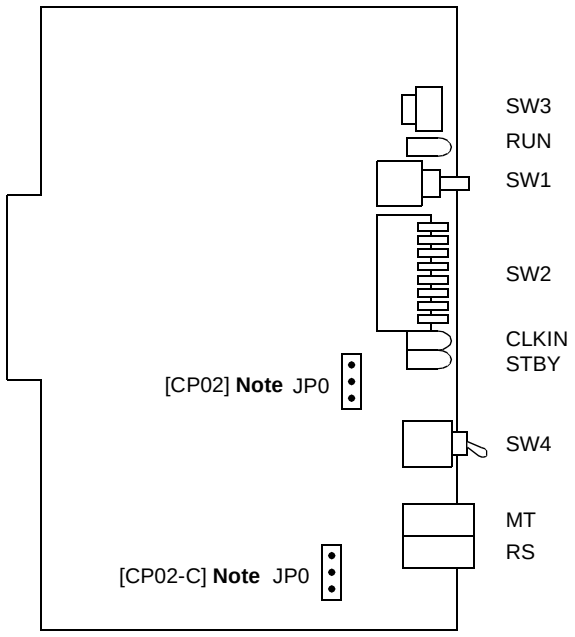
**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

**Note 3:** *The PN-CP01 is required only if any of the following is true:*

- *More than one PIM is used.*
- *A PN-2DLCC is used.*
- *A PN-AP01 is used.*
- *OAI, ACD, No. 7 CCIS, or ISDN is used.*

# PN-CP02/PN-CP02-C (MP)

1. Locations of Lamps, Switches, and Connectors




**Note:** *Location of JP0 is different between CP02 and CP02-C.*

**PN-CP02/PN-CP02-C (MP) Card**

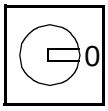
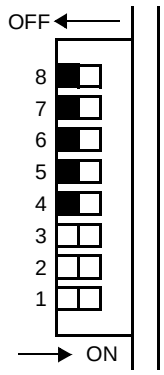
2. Lamp Indications

**Lamp Indications**

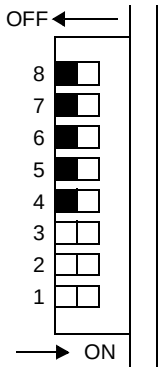
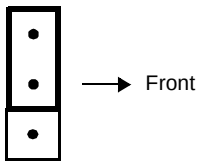
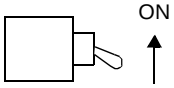
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | • Flashes at 120 IPM while the circuit card is active status and operating normally.<br>• Flashes at 30 IPM or 15 IPM while the circuit card is stand by status.<br>⌈ Normally operating: 30 IPM (1 sec - ON, 1 sec - OFF) ⌉<br>⌊ Copying office data: 15 IPM (3 sec - ON, 1 sec - OFF) ⌋ |
| CLKIN | Green | Lights while receiving clock signals to the PLO oscillator. |
| STBY | Red | Lights when the circuit card is in the standby mode. |

(3) Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="6">SW3 (Rotary SW)<br>  <br><br>Note 1</td><td rowspan="6">0 ~ F<br>Note 2</td><td>0</td><td>On Line (Call processing is in progress)</td><td></td></tr>
<tr><td>2</td><td>Off Line (Call processing is stopped)<br>• I/O port: Depending on CM40 YY=08</td><td></td></tr>
<tr><td>3</td><td>Off Line (Call processing is stopped)<br>• I/O port: 1200 bps (Fixed)</td><td></td></tr>
<tr><td>B</td><td>For clearing the office data</td><td></td></tr>
<tr><td>C</td><td>For setting the resident system program</td><td></td></tr>
<tr><td>1, 4 ~ 9<br>A, D ~ F</td><td>Not used</td><td></td></tr>
<tr><td>SW1 (Push SW)</td><td></td><td></td><td>For initializing the CPU</td><td></td></tr>
<tr><td rowspan="3">SW2 (Piano Key SW)<br>  <br></td><td rowspan="2">1</td><td>ON</td><td>KF Mode</td><td></td></tr>
<tr><td>OFF</td><td>MF/PF Mode</td><td></td></tr>
<tr><td>2, 3</td><td colspan="2">Selection of PLO (Phase Locked Oscillator)<br>• When using the internal PLO of MP card:<br><table><tr><th colspan="2">SWITCH NUMBER</th><th rowspan="2">FUNCTION</th></tr><tr><th>2</th><th>3</th></tr><tr><td>OFF</td><td>OFF</td><td>1.5 MHz clock<br>[For PN-24DTA/PN-24DTA-A]</td></tr><tr><td>ON</td><td>OFF</td><td>192 kHz clock<br>[For PN-BRTA]</td></tr><tr><td>OFF</td><td>ON</td><td>2 MHz clock<br>[For PN-30DTC/PN-30DTC-A/PN-2BRTC]</td></tr><tr><td>ON</td><td>ON</td><td>Not used</td></tr></table></td><td></td></tr>
</table>

**Switch Settings (Continued)**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW2 (Piano Key SW)<br>  <br> | 2, 3 | • When using the PLO card (PN-CK00):<br>SW2-2 OFF, SW2-3 ON<br>• When not using the internal PLO and the PLO card:<br>SW2-2 OFF, SW2-3 OFF | | |
| | 4 ~ 7 | (OFF) | Not used | |
| | 8<br>**Note 3** | ON | Allowed to use MAT | |
| | | (OFF) | For normal operation<br>(Not allowed to use MAT) | |
| JP0 (Jumper pin)<br>  <br> | | (UP) | For normal operation<br>Memory backup connected | |
| | | DOWN | For factory test only<br>(Disconnect battery for memory backup.) | |
| SW4 (Toggle SW)<br>  <br><br>**Note 4** | | UP | For make-busy | |
| | | (DOWN) | For normal operation | |

The figure in the SWITCH NAME column and the position in (  ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and (  ), the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch to the desired switch position.*

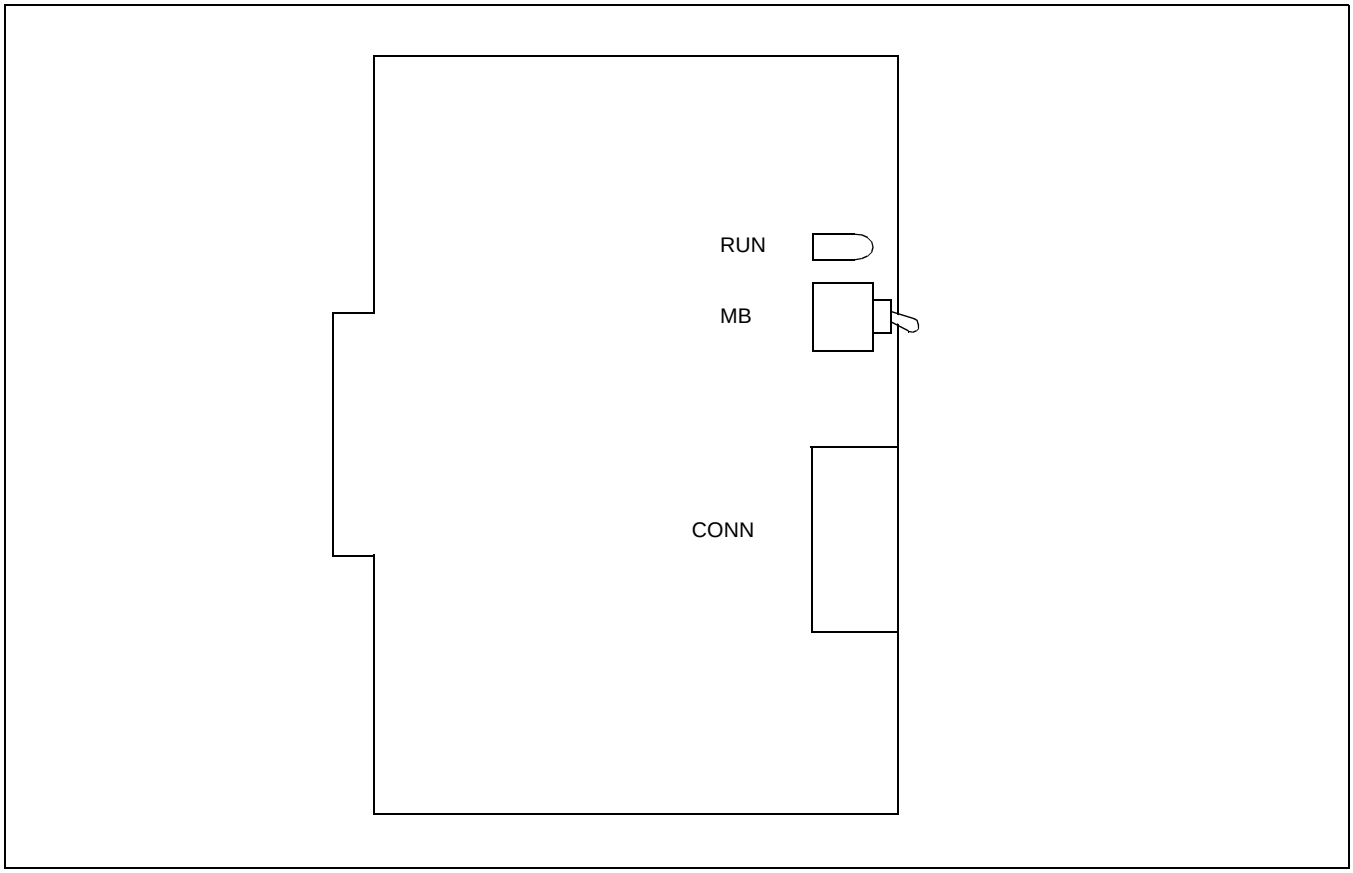
**Note 2:** *On the stand by status circuit card, the SW3 can be set to only "0" or "B". Do not set to the other position (1-9, A, C-F).*

**Note 3:** *MP0 and MP1 must not set to "ON" at the same time.*

**Note 4:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

# PN-PW00 (EXTPWR)

1. Locations of Lamps, Switches and Connectors




**PN-PW00 (EXTPWR) Card**

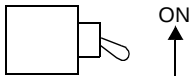
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Remains lit while –48 V power is being supplied |

(3) Switch Setting

**Switch Settings**

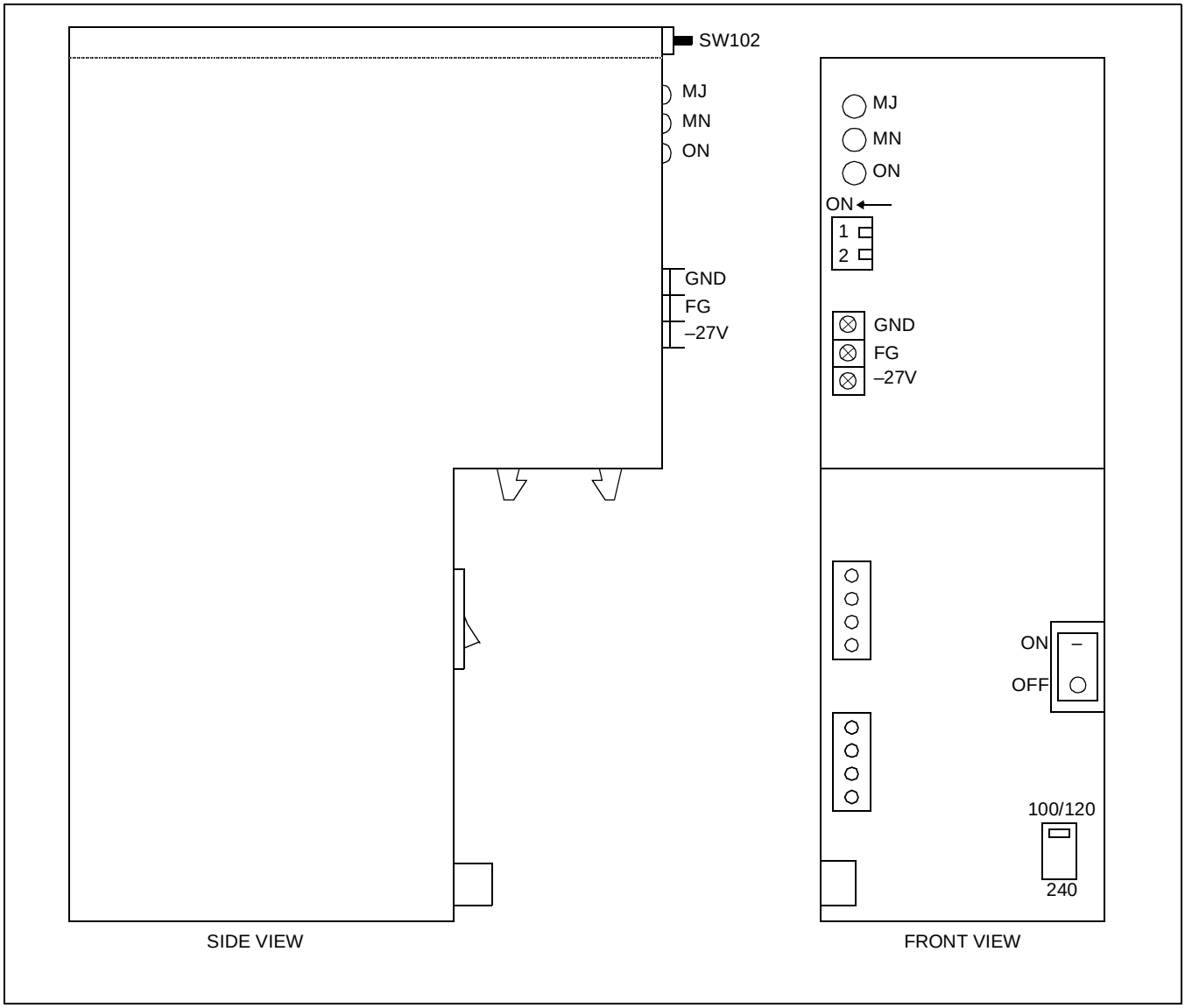
| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| MB (Toggle SW)<br>  <br><br>**Note** | | UP | For make-busy (–48 V power off) | |
| | | DOWN | For normal operation (–48 V power on) | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

# PZ-PW86 (PWR)

1. Locations of Lamps, Switches, and Connectors




**PZ-PW86 (PWR) Card**

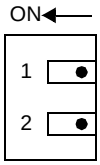
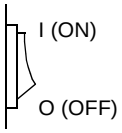
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| MJ | Red | Lights upon occurrence of a major trouble |
| MN | Yellow | Lights upon occurrence of a minor trouble |
| ON | Green | Remains lit while the operating power is being supplied |

(3) Switch Settings

**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
|  | 1 | ON | Set to ON. | |
| | 2 | ON | Standard setting (for equalize charging) | |
| | | OFF | Not used | |
| SW  | | ON | For turning AC source power on | |
| | | OFF | For turning AC source power off | |
| 100/120  240 | | UP | AC INPUT: 90 V - 138 V | |
| | | DOWN | AC INPUT: 180 V - 276 V | |

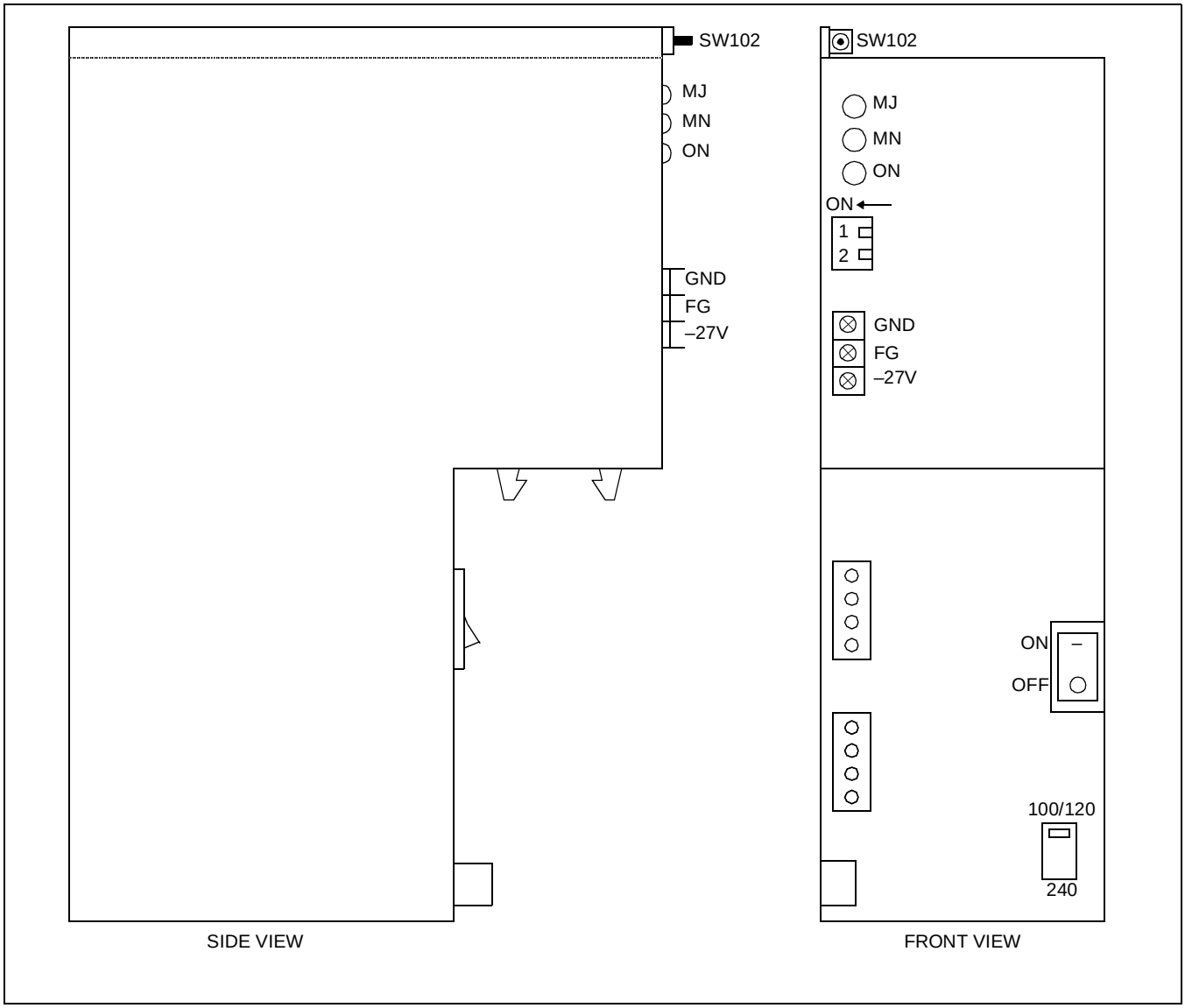
The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**CAUTION**

- *When the operating power is being supplied to this circuit card, do not plug/unplug this circuit card into/from its mounting slot.*
- *Set the appropriate voltage by using the AC voltage select switch (slide switch) before powering on.*

# PZ-PW86-A (PWR)

1. Locations of Lamps, Switches, and Connectors




**PZ-PW86-A (PWR) Card**

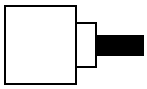
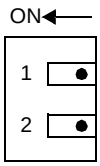
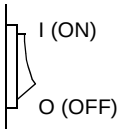
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| MJ | Red | Lights upon occurrence of a major trouble |
| MN | Yellow | Lights upon occurrence of a minor trouble |
| ON | Green | Remains lit while the operating power is being supplied |

(3) Switch Settings

**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW102  | | PRESS MOMENTARILY | To start each PIM on battery power, when AC power is not provided (Switch "SW" must be ON). | |
|   | 1 | ON | Set to ON. | |
| | 2 | ON | For float charging | |
| | | OFF | Standard setting for equalize charging (Set to equalize for Gel cell or no battery.) | |
| SW   | | ON | For turning AC source power on | |
| | | OFF | For turning AC source power off | |
| 100/120  240 | | UP | AC INPUT: 90 V - 138 V | |
| | | DOWN | AC INPUT: 180 V - 276 V | |

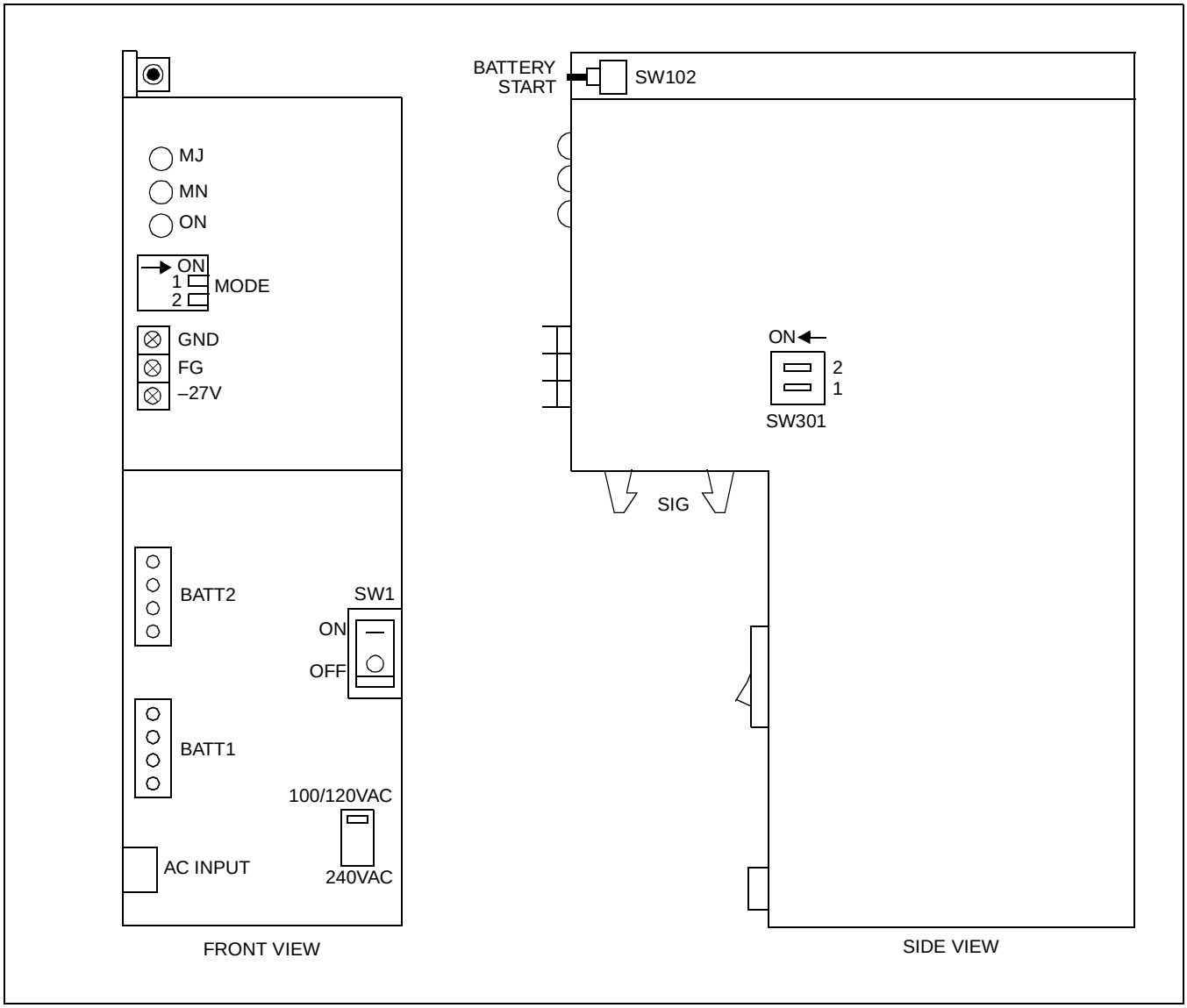
The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**CAUTION**

- *When the operating power is being supplied to this circuit card, do not plug/unplug this circuit card into/from its mounting slot.*
- *Set the appropriate voltage by using the AC voltage select switch (slide switch) before powering on.*

# PZ-PW86 (C) (PWR)

1. Locations of Lamps, Switches, and Connectors




**PZ-PW86(C) (PWR) Card**

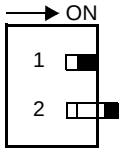
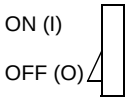
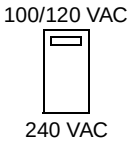
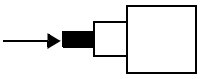
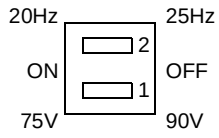
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| MJ | Red | Lights upon occurrence of a major trouble |
| MN | Orange | Lights upon occurrence of a minor trouble |
| ON | Green | Remains lit while the operating power is being supplied |

(3) Switch Settings

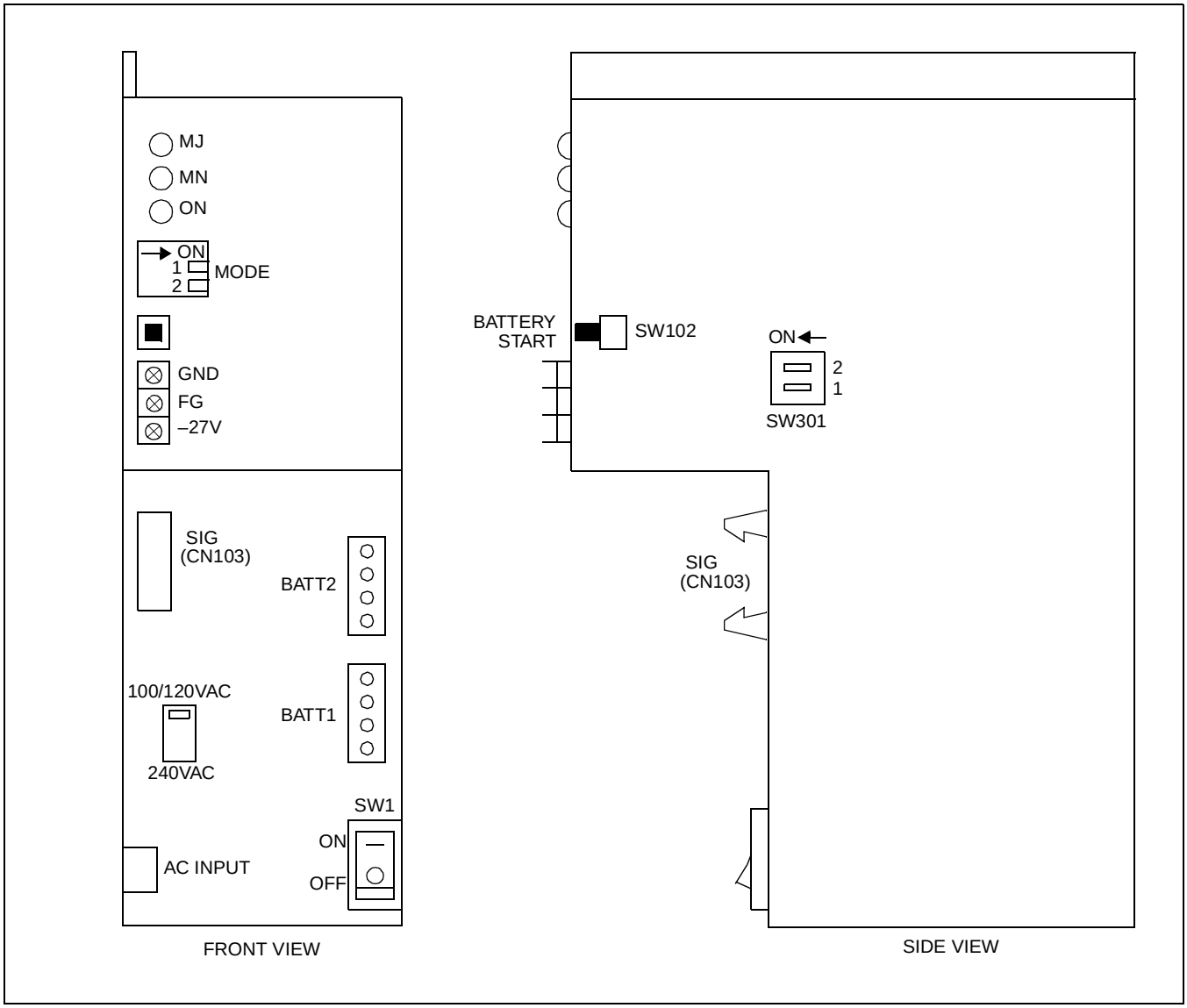
**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| MODE   | 1 | OFF | Always set to OFF | |
| | 2 | ON | Float charging, for sealed batteries (Normal Setting).<br>OPTION: Periodic Equalize charging of external vented batteries. | |
| | | OFF | Flaot charging, for vented batteries only. | |
| SW1   | | ON | For turning AC power and the battery on | |
| | | OFF | For turning AC power and the battery off | |
|   | | UP | AC INPUT: 90 V - 138 V | |
| | | DOWN | AC INPUT: 180 V - 264 V | |
| SW102  | | PRESS MOMENTARILY | To start each PIM on battery power, when AC power is not provided (switch “SW” must be ON) | |
| SW301   | 1 | ON | CR Voltage: 75 Vrms | |
| | | OFF | CR Voltage: 90 Vrms | |
| | 2 | ON | Frequency: 20 Hz | |
| | | OFF | Frequency: 25 Hz | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

# PZ-PW86 (D) (PWR)

1. Locations of Lamps, Switches, and Connectors




**PZ-PW86(D) (PWR) Card**

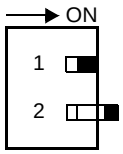
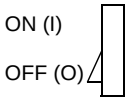
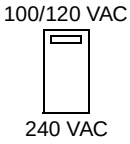
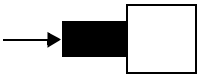
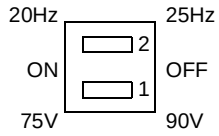
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| MJ | Red | Lights upon occurrence of a major trouble |
| MN | Orange | Lights upon occurrence of a minor trouble |
| ON | Green | Remains lit while the operating power is being supplied |

(3) Switch Settings

**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| MODE   | 1 | OFF | Always set to OFF | |
| | 2 | ON | Float charging, for sealed batteries (Normal Setting).<br>OPTION: Periodic Equalize charging of external vented batteries. | |
| | | OFF | Flaot charging, for vented batteries only. | |
| SW1   | | ON | For turning AC power and the battery on | |
| | | OFF | For turning AC power and the battery off | |
|   | | UP | AC INPUT: 90 V - 138 V | |
| | | DOWN | AC INPUT: 180 V - 264 V | |
| SW102  | | PRESS MOMENTARILY | To start each PIM on battery power, when AC power is not provided (switch “SW” must be ON) | |
| SW301   | 1 | ON | CR Voltage: 75 Vrms | |
| | | OFF | CR Voltage: 90 Vrms | |
| | 2 | ON | Frequency: 20 Hz | |
| | | OFF | Frequency: 25 Hz | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

## 3. LAMP INDICATIONS AND SWITCH SETTINGS OF APPLICATION CIRCUIT CARDS

Table 4-2 below shows the application circuit cards to be explained in this section.

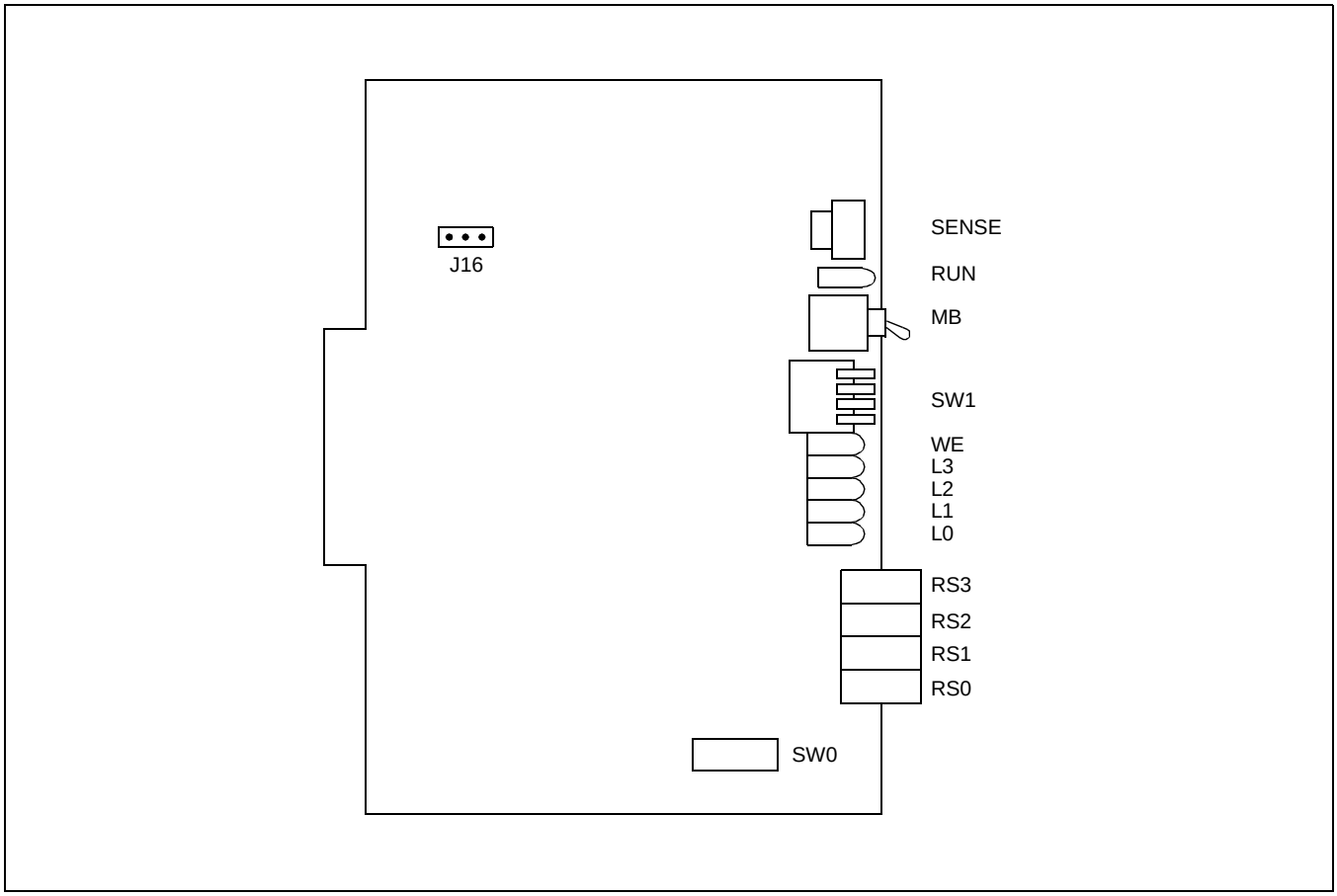
**Table 4-2 Table of Application Circuit Cards**

| NAME (FUNCTIONAL NAME) | EXISTENCE OF LAMPS X: PROVIDED —: NOT PROVIDED | EXISTENCE OF SWITCHES X: PROVIDED —: NOT PROVIDED | EXTRACTION/INSERTION WITH POWER ON X: ALLOWED Δ: ALLOWED AFTER MB* —: NOT ALLOWED | REFERENCE PAGE |
|---|---|---|---|---|
| PN-AP00-A (AP00) | X | X | Δ | 53 |
| PN-AP01 (AP01) | X | X | Δ | 59 |
| PN-BRTA (BRI) | X | X | Δ | 62 |
| PN-2BRTC (BRI) | X | X | Δ | 65-1 |
| PN-CC00 (ETHER) | X | X | X | 66 |
| PN-CC01 (ETHER) | X | X | Δ | 68-1 |
| PN-CK00 (PLO) | X | X | Δ | 69 |
| PN-24DTA (DTI) | X | X | Δ | 72 |
| PN-24DTA-A (DTI) | X | X | Δ | 75 |
| PN-30DTC/30DTC-A (DTI) | X | X | Δ | 78-1 |
| PN-ME00 (EXTMEM) | X | X | Δ | 79 |
| PN-4RSTB (MFR) | X | X | Δ | 84 |
| PN-4RSTC (CIR) | X | X | Δ | 86 |
| PN-SC00 (CCH) | X | X | Δ | 88 |
| PN-SC01 (DCH) | X | X | Δ | 91 |
| PN-SC02 (ICH) | X | X | Δ | 94 |
| PN-SC03 (ICH) | X | X | Δ | 96 |
| PN-SC03 (CSH) | X | X | Δ | 98 |

* MB=Make Busy

# PN-AP00-A (AP00)

1. Locations of Lamp, Switches, and Connectors




**PN-AP00-A (AP00) Card**

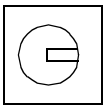
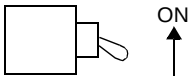
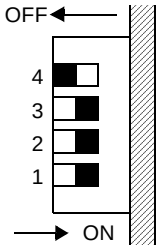
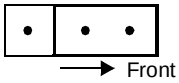
(2) Lamp Indications

**Lamp Indications**

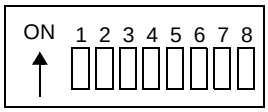
| LAMP NAME | | COLOR | FUNCTION | |
|---|---|---|---|---|
| RUN | | Green | Flashes at 120 IPM while this card is operating normally. | |
| WE | | Red | Not used. | |
| L0 - L3 | | Green | Second data setting value for the first data 250 of CM D001 | |
| | | | 0 | 1 (port 0) - 3 (port 2) |
| | L3 | | Indication of the transmitting status of port 0 | Indication of the status of CTS signal on port 0 - 2 |
| | L2 | | Indication of the transmitting status of port 1 | Indication of the status of DCD signal on port 0 - 2 |
| | L1 | | Indication of the transmitting status of port 2 | Indication of the status of TXD signal on port 0 - 2 |
| | L0 | | Indication of the transmitting status of port 3 | Indication of the status of RXD signal on port 0 - 2 |

(3) Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td>SENSE<br>(Rotary SW)<br>  <br>Note 1</td><td>4 - F</td><td colspan="2">Set the switch to match the AP Number (04 - 15) to be set by CM05.<br><table><tr><td>AP NO.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW NO.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td></td><td>0 - 3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td>MB (Toggle SW)<br>  <br><br>Note 2</td><td></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td></td><td></td><td>DOWN</td><td>For normal operation</td><td></td></tr>
<tr><td>SW1 (Piano Key SW)<br>  <br></td><td rowspan="2">1</td><td>ON</td><td>For normal operation</td><td></td></tr>
<tr><td></td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td></td><td rowspan="2">2</td><td>ON</td><td>For normal operation</td><td></td></tr>
<tr><td></td><td>OFF</td><td>For AP data clearing by CMD100/CMD101</td><td></td></tr>
<tr><td></td><td rowspan="2">3</td><td>ON</td><td>For normal operation</td><td></td></tr>
<tr><td></td><td>OFF</td><td>For AP data clearing by CMD100/CMD101</td><td></td></tr>
<tr><td></td><td>4</td><td>OFF</td><td>Always set to OFF</td><td></td></tr>
<tr><td>J16 (Jumper pin)<br>  <br></td><td></td><td>RIGHT</td><td>Memory backup ON</td><td></td></tr>
<tr><td></td><td></td><td>LEFT</td><td>Memory backup OFF</td><td></td></tr>
</table>

**Switch Settings (Continued)**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW0 (Dip SW)<br>  | 1<br>**Note 3** | ON | Enables the receive clock from the DCE (Modem) side when the No. 0 Port is synchronous. (Clock is received at the RXC terminal.) | |
| | | OFF | • Uses the internal clock as the receive clock when the No. 0 Port is synchronous<br>• When the No. 0 Port is asynchronous | |
| | 2 | ON | Enables transmit clock from the DCE (Modem) side when the No. 0 Port is synchronous. (Clock is received at the TXC (2) terminal.) | |
| | | OFF | • Uses the internal clock as the send clock when the No. 0 Port is synchronous<br>• When the No. 0 Port is asynchronous | |
| | 3 | ON | For transmitting the send clock from the DTE (this card) when the No. 0 Port is synchronous. (Clock is transmitted from the TXC (1) terminal.) | |
| | | OFF | • For not transmitting the send clock from the DTE (this card) side when the No. 0 Port is synchronous<br>• When the No. 0 Port is asynchronous | |
| | 4 | ON | When the No. 0 Port is asynchronous | |
| | | OFF | When the No. 0 Port is synchronous | |

**Switch Settings (Continued)**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW0 | 5 **Note 4** | ON | • Uses the internal clock as the receive clock when the No. 0 Port is synchronous.<br>• When the No. 0 Port is asynchronous. | |
| | | OFF | Enables receive clock from the DCE (Modem) side when the No. 0 Port is synchronous. (Clock is received at the RXC terminal) | |
| | 6 **Note 5** | ON | Set No. 0 port forcibly in a state which DSR signal is always provided. Force DSR signal high for port 0. No SMDR buffering. | |
| | | OFF | Receive DSR signal from the DCE on No. 0 port. Detect DSR signal from DCE for port 0. Allows SMDR records to buffer. | |
| | 7 **Note 5** | ON | Set No. 1 port forcibly in a state which DSR signal is always provided. Force DSR signal high for port 1. No SMDR buffering. | |
| | | OFF | Receive DSR signal from the DCE on No. 1 port. Detect DSR signal from DCE for port 1. Allows SMDR records to buffer. | |
| | 8 **Note 5** | ON | Set No. 2 port forcibly in a state which DSR signal is always provided. Force DSR signal high for port 2. No SMDR buffering. | |
| | | OFF | Receive DSR signal from the DCE on No. 2 port. Detect DSR signal from DCE for port 2. Allows SMDR records to buffer. | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the desired switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

**Note 3:** *The SW 1 is used to select the AP operating mode as shown below.*

| SWITCH | ON LINE | OFF LINE |
|---|---|---|
| SW 1-4 | OFF | OFF |
| SW 1-3 | ON | OFF |
| SW 1-2 | ON | OFF |
| SW 1-1 | ON | ON |

On line : Normal operating mode. The AP should be always in the "On line", other than when you delete the AP data.

Off line : The mode for AP data clearing by the command CMD100/CMD101.

**Note 4:** *The use of the external clock (from the distant end) or the internal clock is determined by the following table:*

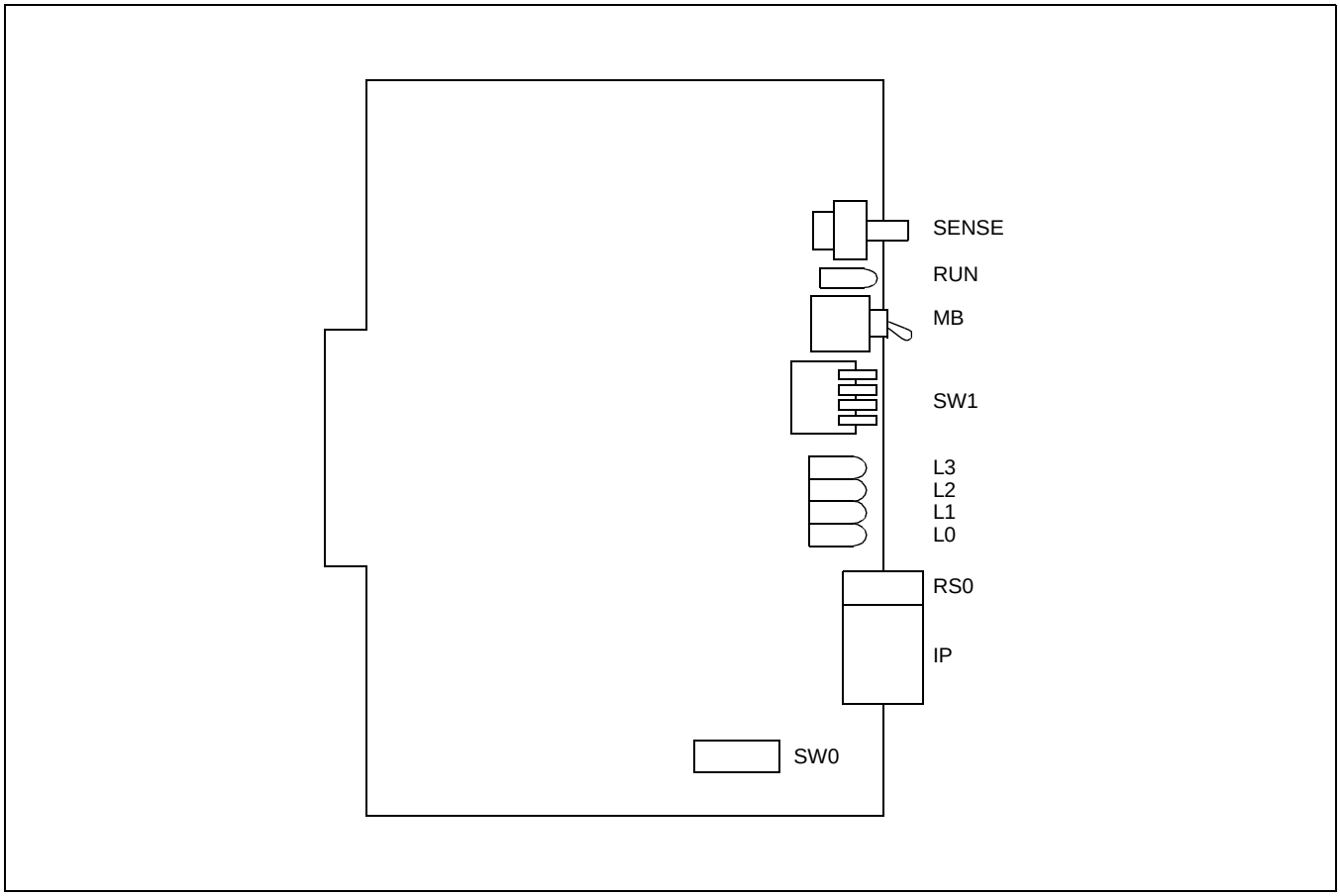
| CLOCK | SW0 | |
|---|---|---|
| | 1 | 5 |
| External | ON | OFF |
| Internal | OFF | ON |

**Note 5:** *When the DCE connected to the port does not provide a function to send the DSR signals, set the switch to ON. In this case, the AP00 card can not recognize the actual state of the DCE, so that the call records or system messages will not be stored in the memory buffer on the AP00 card even if the cable is disconnected from the DCE.*

*When the switch is set to OFF, the call records or system messages will be stored when the cable is disconnected, and will be sent when the cable is re-connected.*

# PN-AP01 (AP01)

1. Locations of Lamps, Switches, and Connectors




**PN-AP01 (AP01) Card**

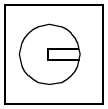
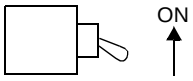
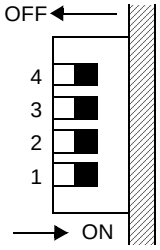
2. Lamp Indications

**Lamp Indications**

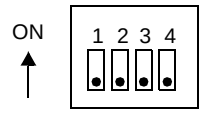
| LAMP NAME | | COLOR | FUNCTION |
|---|---|---|---|
| RUN | | Green | Flashes at 120 IPM while this card is operating normally. |
| L0-L3 | L3 | Green | Indication of the status of CTS signal on the RS-232C port. |
| | L2 | | Indication of the status of DCD signal on the RS-232C port. |
| | L1 | | Indication of the status of TXD signal on the RS-232C port |
| | L0 | | Indication of the status of RXD signal on the RS-232C port. |

(3) Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th colspan="2">SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="3">SENSE<br>(Rotary SW)<br>  <br>Note 1</td><td>4 - F</td><td colspan="2">Set the switch to match the AP Number (04 - 15) to be set by CM05.</td><td></td><td></td></tr>
<tr><td colspan="4"><table>
<tr><td>AP NO.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr>
<tr><td>SW NO.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr>
</table></td><td></td></tr>
<tr><td>0 - 3</td><td colspan="2">Not used</td><td></td><td></td></tr>
<tr><td rowspan="2">MB(Toggle SW)<br>  <br>Note 2</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>DOWN</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="8">SW1 (Piano Key SW)<br>  </td><td rowspan="2">1</td><td>ON</td><td>For normal operation</td><td></td></tr>
<tr><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td>For normal operation</td><td></td></tr>
<tr><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td rowspan="2">3</td><td>ON</td><td>For normal operation</td><td></td></tr>
<tr><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td rowspan="2">4</td><td>ON</td><td>For normal operation</td><td></td></tr>
<tr><td>OFF</td><td>Not used</td><td></td></tr>
</table>

**Switch Settings (Continued)**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW0 (Dip SW)<br>  | 1 | OFF | Always set to OFF | |
| | 2 | OFF | Always set to OFF | |
| | 3 | OFF | Always set to OFF | |
| | 4 | OFF | Always set to OFF | |

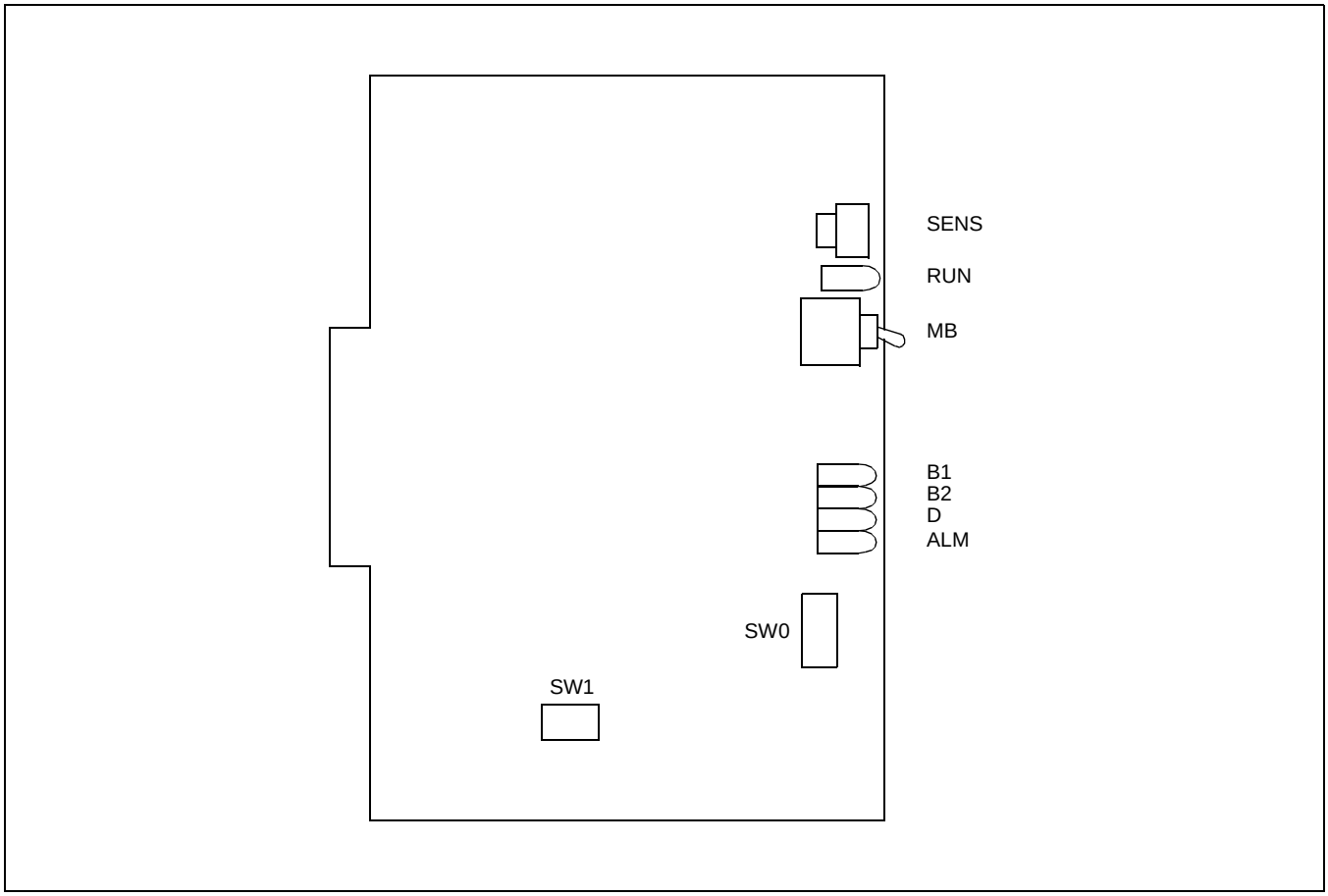
The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the desired switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

# PN-BRTA (BRI)

1. Locations of Lamps, Switches, and Connectors




**PN-BRTA (BRI) Card**

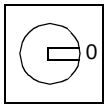
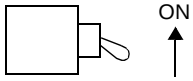
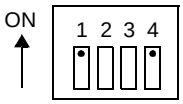
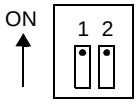
(2) Lamp Indications

**Lamp Indications on the PN-BRTA (BRI) Card**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while this card is operating normally. |
| B1 | Green | B1 channel status<br>ON: Busy<br>OFF: Idle<br>Flash (60 IPM):Make Busy |
| B2 | Green | B2 channel status<br>ON: Busy<br>OFF: Idle<br>Flash (60 IPM):Make Busy |
| D | Green | D channel status<br>ON: Busy<br>OFF: Idle |
| ALM | Red | Transmission line fault status<br>ON: Line fault<br>OFF: Normal operation |

(3) Switch Settings

**Switch Settings on the PN-BRTA (BRI) Card**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td>SENS<br>(Rotary SW)<br>  <br><br>Note 1</td><td>4 - F</td><td colspan="2">Set the switch to match the AP Number (04 - 15) as set by CM05.<br><table><tr><td>AP NO.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW NO.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td></td><td>0 - 3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td>MB (Toggle SW)<br>  <br><br>Note 2</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>(DOWN)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="9">SW0 (Dip SW)<br>  <br></td><td rowspan="2">1</td><td>(ON)</td><td>For normal operation (BRI mode)</td><td></td></tr>
<tr><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td rowspan="2">2<br>Note 3</td><td>ON</td><td>Clock signal from a master office is sent to the PLO of MP card according to the switch setting of SW0-3.</td><td></td></tr>
<tr><td>OFF</td><td>Clock signal from a master office is not sent to the PLO of MP card.</td><td></td></tr>
<tr><td rowspan="2">3<br>Note 3</td><td>ON</td><td>Clock signal is sent to PLO 0 of MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Clock signal is sent to PLO 1 of MP card.</td><td></td></tr>
<tr><td rowspan="2">4</td><td>(ON)</td><td>For normal operation</td><td></td></tr>
<tr><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td rowspan="4">SW1 (Dip SW)<br>  <br></td><td rowspan="2">1</td><td>(ON)</td><td>For terminating the transmitting side of channels B1 and B2 with 100 ohms.</td><td></td></tr>
<tr><td>OFF</td><td>To remove the terminating resistor on the transmitting side of channels B1 and B2.</td><td></td></tr>
<tr><td rowspan="2">2</td><td>(ON)</td><td>For terminating the receiving side of channels B1 and B2 with 100 ohms.</td><td></td></tr>
<tr><td>OFF</td><td>To remove the terminating resistor on the receiving side of channels B1 and B2.</td><td></td></tr>
</table>

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the desired switch position.*

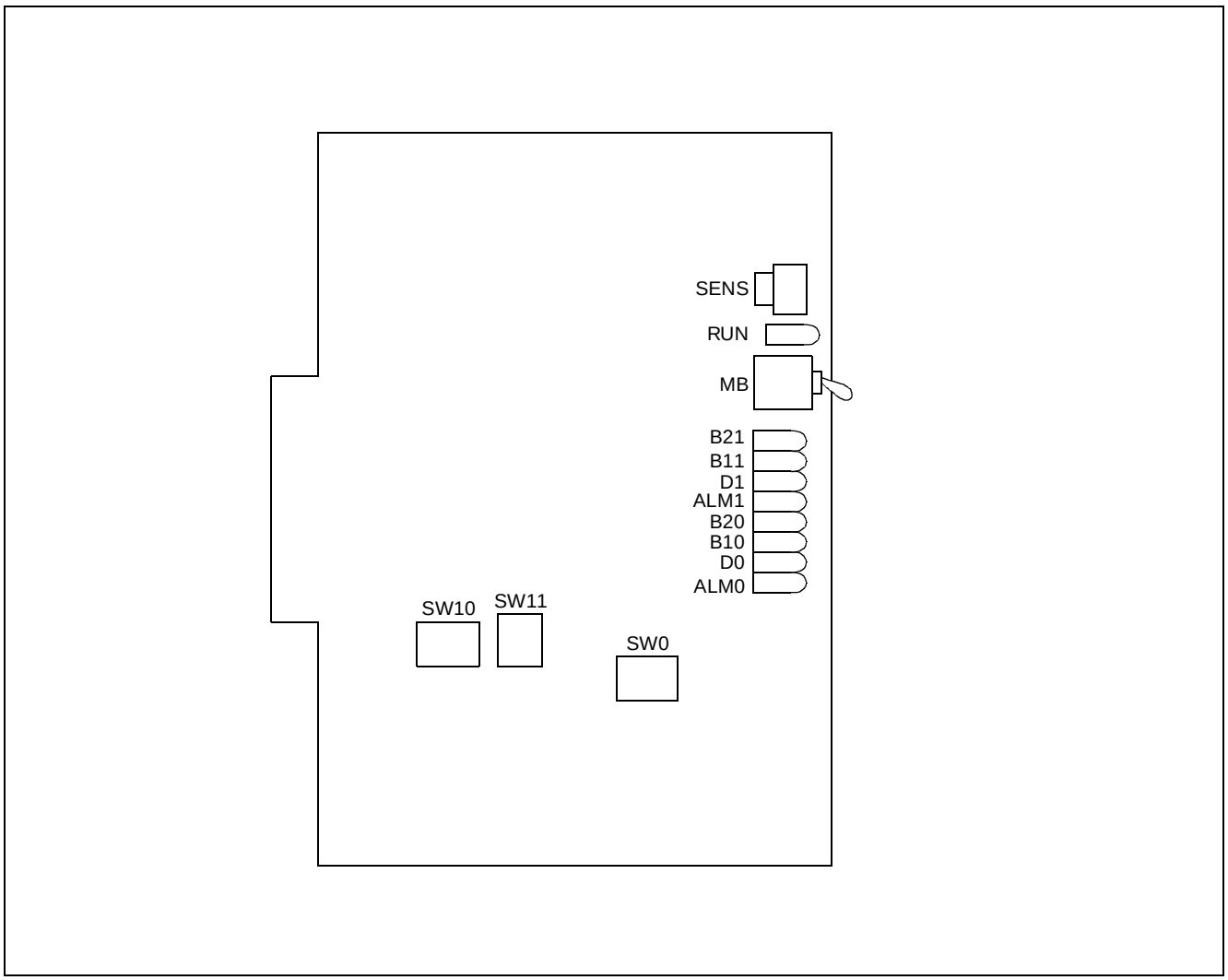
**Note 2:** *When the power is on, set the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

**Note 3:** *Set SW0-2 and SW0-3 as follows.*

| No. of BRI / SW / CONDITIONS | BRI 0 | | BRI 1 | | BRI 2 | | .... | BRI 11 | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | SW 0-2 | SW 0-3 | SW 0-2 | SW 0-3 | SW 0-2 | SW 0-3 | .... | SW 0-2 | SW 0-3 | |
| When one BRI is provided. | ON | ON | | | | | | | | The MP card will receive the clock signal from BRI 0 at its PLO 0 input. |
| When more than one BRI is provided. | ON | ON | ON | OFF | OFF | ON | .... | OFF | ON | The MP card will receive the clock signal from BRI 0 at its PLO 0 input under normal conditions. Should a clock failure occur on BRI 0, the MP card will automatically switch to the PLO 1 input, and so derive the clock from BRI 1. |

# PN-2BRTC (BRI)

1. Locations of Lamps, Switches, and connectors




**PN-2BRTC (BRI) Card**

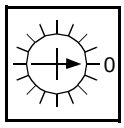
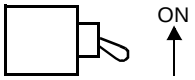
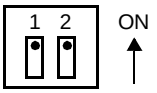
2. Lamp Indications

**Lamp Indications**

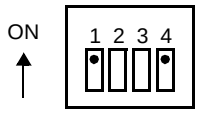
| LAMP NAME | COLOR | FUNCTION | |
|---|---|---|---|
| RUN | Green | Flashes at 120 IPM while this card is operating normally. | |
| B21 | Red | No.1 Circuit | B2 channel status<br>ON: Busy<br>OFF: Idle<br>Flash (60 IPM): Make Busy |
| B11 | Red | | B1 channel status<br>ON: Busy<br>OFF: Idle<br>Flash (60 IPM): Make Busy |
| D1 | Green | | D channel status<br>ON: Busy<br>OFF: Idle |
| ALM1 | Red | | Transmission line fault status<br>ON: Line fault<br>OFF: Normal operation |
| B20 | Red | No.0 Circuit | B2 channel status<br>ON: Busy<br>OFF: Idle<br>Flash (60 IPM): Make Busy |
| B10 | Red | | B1 channel status<br>ON: Busy<br>OFF: Idle<br>Flash (60 IPM): Make Busy |
| D0 | Green | | D channel status<br>ON: Busy<br>OFF: Idle |
| ALM0 | Red | | Transmission line fault status<br>ON: Line fault<br>OFF: Normal operation |

3. Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">SENS<br>(Rotary SW)<br>  <br>Note 1</td><td>4 ~ F</td><td colspan="2">Set the switch to match the AP Number (04-15) as set by CM05.<br><table><tr><td>AP No.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW No.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td>0 ~ 3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td rowspan="2">MB (Toggle SW)<br>  <br>Note 2</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>DOWN</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="4">SW0, SW10<br>(Dip SW)<br>  </td><td rowspan="2">1</td><td>ON</td><td>For terminating the transmitting side of channels B1 and B2 with 100 ohms.</td><td></td></tr>
<tr><td>OFF</td><td>To remove the terminating resistor on the transmitting side of channels B1 and B2.</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td>For terminating the receiving side of channels B1 and B2 with 100 ohms.</td><td></td></tr>
<tr><td>OFF</td><td>To remove the terminating resistor on the receiving side of channels B1 and B2.</td><td></td></tr>
</table>

**Switch Settings (Continued)**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW11 (Dip SW)<br>  | 1 | (ON) | For normal operation (BRI mode) | |
| | | OFF | Not used | |
| | 2<br>**Note 3** | ON | Output clock signals according to the switch setting of SW11-3. | |
| | | OFF | Do not output clock signals. | |
| | 3<br>**Note 3** | ON | Output clock signals to PLO 0 of MP. | |
| | | OFF | Output clock signals to PLO 1 of MP. | |
| | 4 | (ON) | For normal operation | |
| | | OFF | Not used | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the desired switch position.*

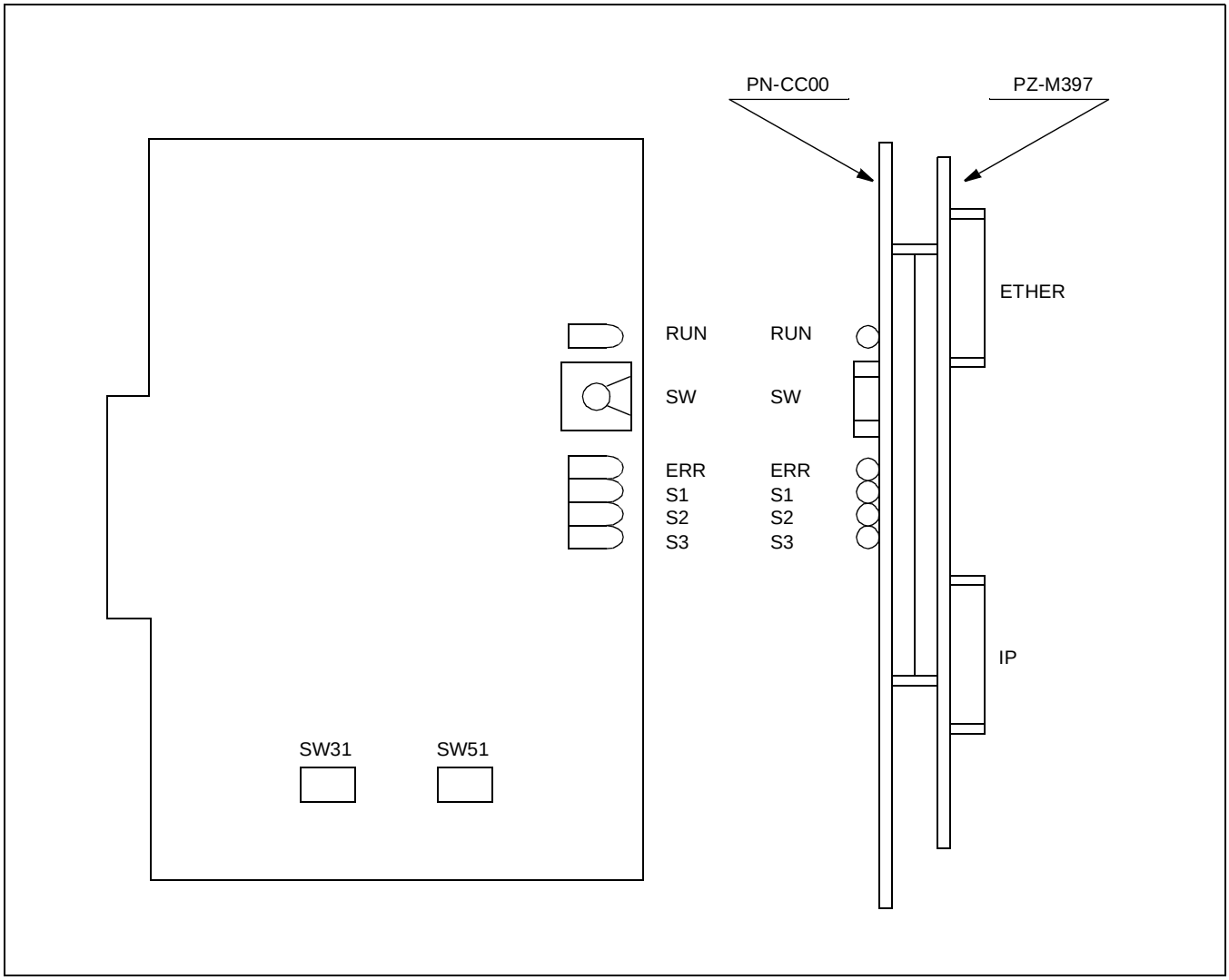
**Note 2:** *When the power is on, set the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

**Note 3:** *The system can supply clock signals from two clock supply routes.*
*In normal condition, the system synchronizes to the clock signals supplied on the PLO 0 of MP card via the Back Wiring Board, and if the clock signals are failed, the clock supply route takes over to PLO1 automatically. Set SW11-2 and SW11-3 as follows.*

| No. of BRI / SW / CONDITIONS | BRI 0 | | BRI 1 | | BRI 2 | | ---- | BRI 11 | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | SW 11-2 | SW 11-3 | SW 11-2 | SW 11-3 | SW 11-2 | SW 11-3 | ---- | SW 11-2 | SW 11-3 | |
| When one BRI is provided. | ON | ON | | | | | | | | The clock signals are supplied to the PLO through No. 0 circuit the BRI. If the clock supply route of No. 0 circuit is failed, the clock supply route of No. 1 circuit takes over automatically. |
| When more than one BRI is provided. | ON | ON | ON | OFF | OFF | ON | ---- | OFF | ON | The system can supply the clock signals from BRI 0 or BRI 1. The system is synchronized to the BRI 0 clock signals normally, and if both No. 0 circuit clock supply route and No. 1 circuit clock supply route is failed, the BRI 1 takes over. |

# PN-CC00 (ETHER)

1. Locations of Lamps, Switches, and Connectors




**PN-CC00 (ETHER) Card**

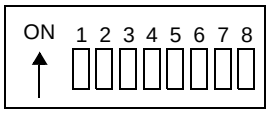
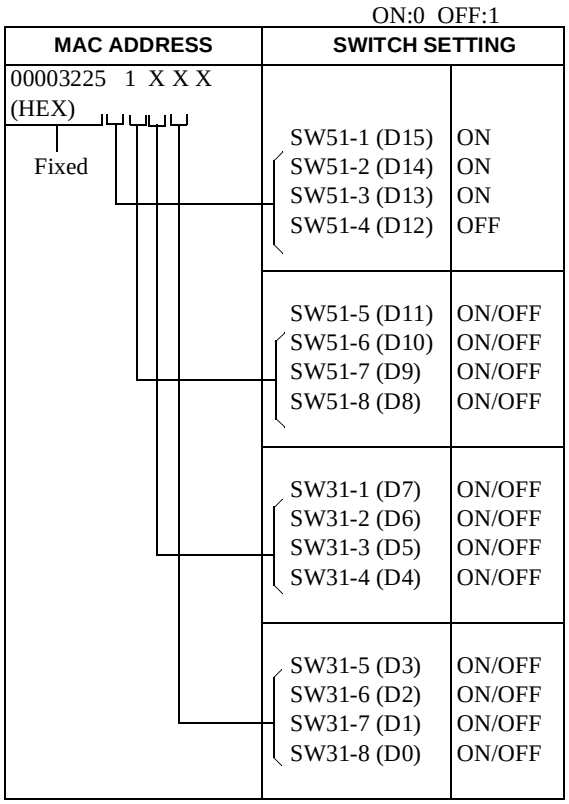
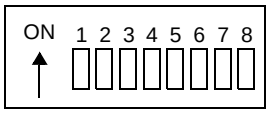
2. Lamp Indications

**Lamp Indications**

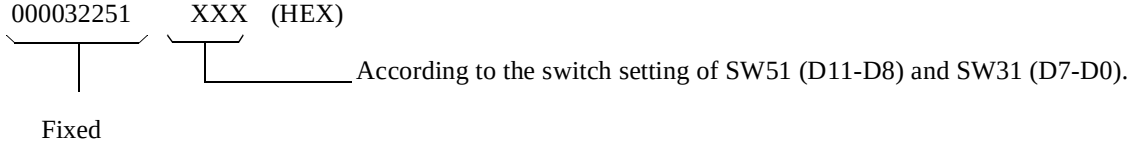
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Steadily lights while this card is operating normally. |
| ERR | Red | Flashes at 120 IPM when system error occurs. |
| S1 | Green | Lights when it is transmitting or receiving the data. |
| S2 | Green | Lights when it can transmit or receive the data. |
| S3 | Green | Lights when the power sets ON. |

(3) Switch Settings

**Switch Settings**

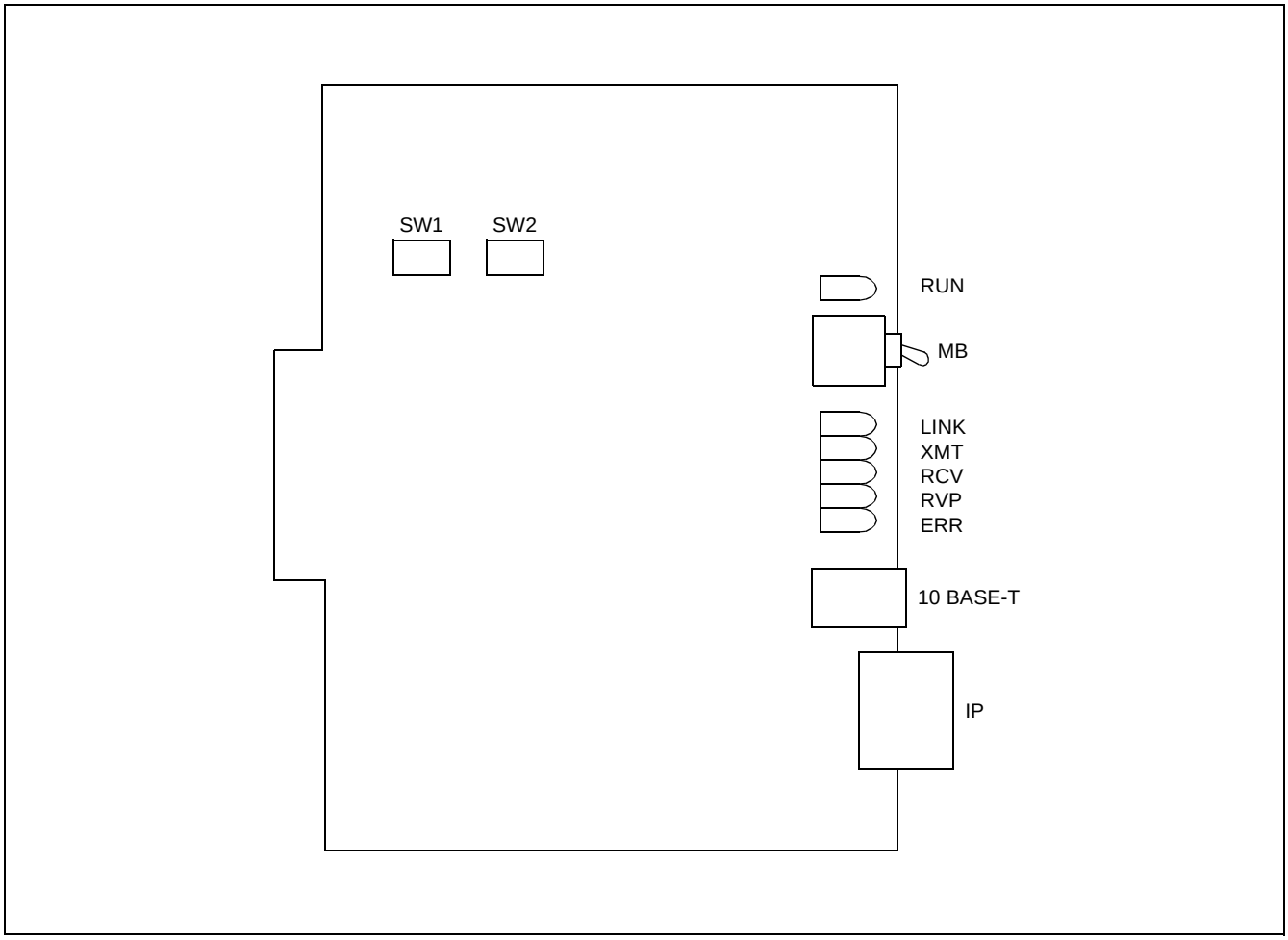
| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW (Rotary SW)  | | 0 | Always set to 0 | |
| | | 1-F | Not used | |
| SW51 (Dip SW)   **Note** | 1 (D15) | ON |   | |
| | 2 (D14) | ON | | |
| | 3 (D13) | ON | | |
| | 4 (D12) | OFF | | |
| | 5 (D11) | ON | | |
| | | OFF | | |
| | 6 (D10) | ON | | |
| | | OFF | | |
| | 7 (D9) | ON | | |
| | | OFF | | |
| | 8 (D8) | ON | | |
| | | OFF | | |
| SW31 (Dip SW)   **Note** | 1 (D7) | ON | | |
| | | OFF | | |
| | 2 (D6) | ON | | |
| | | OFF | | |
| | 3 (D5) | ON | | |
| | | OFF | | |
| | 4 (D4) | ON | | |
| | | OFF | | |
| | 5 (D3) | ON | | |
| | | OFF | | |
| | 6 (D2) | ON | | |
| | | OFF | | |
| | 7 (D1) | ON | | |
| | | OFF | | |
| | 8 (D0) | ON | | |
| | | OFF | | |

**Note:** *Each equipment must have a unique MAC address to distinguish between systems. Therefore, when more than one PBX is installed in the same network, assign the lower 3 digits of the following MAC address by SW31 and SW51 to prevent duplicate addresses.*



# PN-CC01 (ETHER)

1. Location of Lamps, Switches, and Connectors




**PN-CC01 (ETHER) Card**

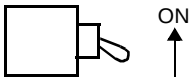
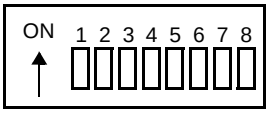
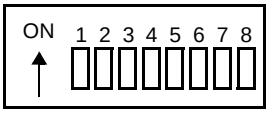
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 60 IPM while this card is operating normally. |
| LINK | Green | Lights when link is established. |
| XMT | Green | Lights when it is transmitting the data. |
| RCV | Green | Lights when it is receiving the data. |
| RVP | Green | Lights only when it is receiving the data with its own IP address. |
| ERR | — | Not used |

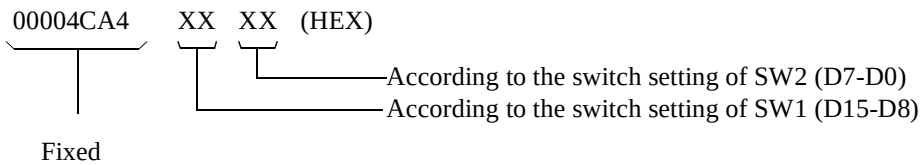
3. Switch Settings

**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| MB (Toggle SW)<br>  <br><br>**Note 1** | | UP | For make-busy | |
| | | (DOWN) | For normal operation | |
| SW1 (Dip SW)<br>  <br><br>**Note 2** | 1 (D15) | ON | ON: 0 OFF: 1<br>MAC ADDRESS: 00004CA4 X X X X (HEX) — Fixed<br>SW1-1 (D15) ON/OFF<br>SW1-2 (D14) ON/OFF<br>SW1-3 (D13) ON/OFF<br>SW1-4 (D12) ON/OFF<br>SW1-5 (D11) ON/OFF<br>SW1-6 (D10) ON/OFF<br>SW1-7 (D9) ON/OFF<br>SW1-8 (D8) ON/OFF<br>SW2-1 (D7) ON/OFF<br>SW2-2 (D6) ON/OFF<br>SW2-3 (D5) ON/OFF<br>SW2-4 (D4) ON/OFF<br>SW2-5 (D3) ON/OFF<br>SW2-6 (D2) ON/OFF<br>SW2-7 (D1) ON/OFF<br>SW2-8 (D0) ON/OFF | |
| | 2 (D14) | ON | | |
| | 3 (D13) | ON | | |
| | 4 (D12) | OFF | | |
| | 5 (D11) | ON | | |
| | | OFF | | |
| | 6 (D10) | ON | | |
| | | OFF | | |
| | 7 (D9) | ON | | |
| | | OFF | | |
| | 8 (D8) | ON | | |
| | | OFF | | |
| SW2 (Dip SW)<br>  <br><br>**Note 2** | 1 (D7) | ON | | |
| | | OFF | | |
| | 2 (D6) | ON | | |
| | | OFF | | |
| | 3 (D5) | ON | | |
| | | OFF | | |
| | 4 (D4) | ON | | |
| | | OFF | | |
| | 5 (D3) | ON | | |
| | | OFF | | |
| | 6 (D2) | ON | | |
| | | OFF | | |
| | 7 (D1) | ON | | |
| | | OFF | | |
| | 8 (D0) | ON | | |
| | | OFF | | |

**Note 1:** *When the power is on, set the MB switch to ON (UP position) before plugging/unplugging the Circuit card.*

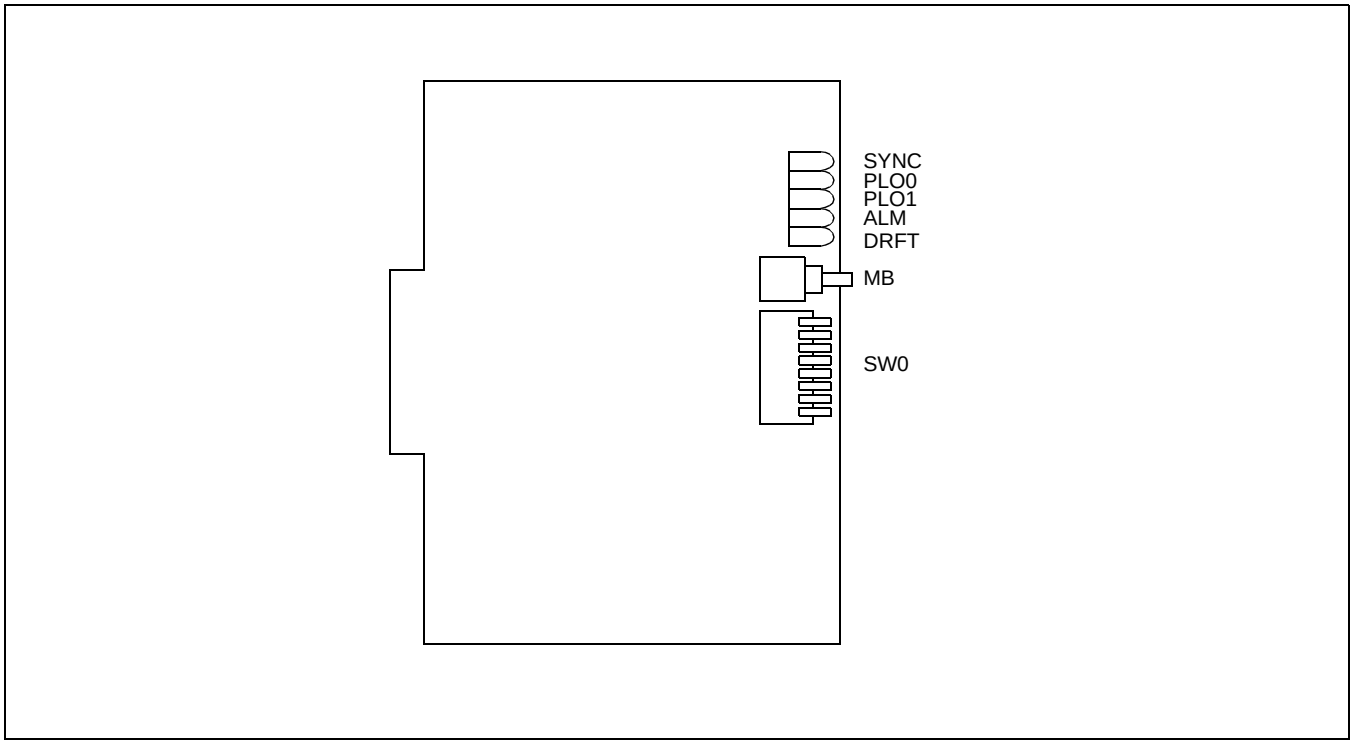
**Note 2:** *Each equipment must have a unique MAC address to distinguish between systems. Therefore, when more than one PBX is installed in the same network, assign the lower 4 digits of the following MAC address by SW1 and SW2 to prevent duplicate addresses.*



This page is for your notes.

# PN-CK00 (PLO)

1. Locations of Lamps, Switches, and Connectors




**PN-CK00 (PLO) Card**

2. Lamp Indications

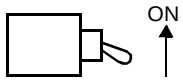
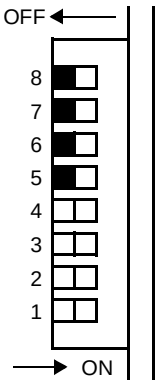
**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| SYNC | Green | Lights while clock signals from this card are sent out and are not DRIFT status. |
| PLO0 | Green | Lights while receiving clock signals from the network to the PLO0 input on this card. |
| PLO1 | Green | Lights while receiving clock signals from the network to the PLO1 input on this card. |
| ALM | Red | Lights while clock signal from this card are not sent out. |
| DRFT | Red | Lights while clock signals are DRIFT status. |

DRIFT: Means the status which the oscillation of clock signal from the PN-CK00 is not synchronized with the network.

(3) Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">MB (Toggle SW)<br>  <br><br>Note</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>(DOWN)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="4">SW0 (Piano Key SW)<br>  <br></td><td>1, 2</td><td colspan="2">Selection of PLO 0 (Phase Locked Oscillator)<br><table><tr><th colspan="2">SWITCH NUMBER</th><th rowspan="2">FUNCTION</th></tr><tr><th>1</th><th>2</th></tr><tr><td>ON</td><td>ON</td><td>2 MHz clock<br>[For PN-30DTC/PN-30DTC-A/<br>PN-2BRTC]</td></tr><tr><td>OFF</td><td>ON</td><td>1.5 MHz clock<br>[For PN-24DTA/PN-24DTA-A]</td></tr><tr><td>ON</td><td>OFF</td><td>192 kHz clock<br>[For PN-BRTA]</td></tr><tr><td>OFF</td><td>OFF</td><td>Not used</td></tr></table></td><td></td></tr>
<tr><td>3, 4</td><td colspan="2">Selection of PLO 1 (Phase Locked Oscillator)<br><table><tr><th colspan="2">SWITCH NUMBER</th><th rowspan="2">FUNCTION</th></tr><tr><th>3</th><th>4</th></tr><tr><td>ON</td><td>ON</td><td>2 MHz clock<br>[For PN-30DTC/PN-30DTC-A/<br>PN-2BRTC]</td></tr><tr><td>OFF</td><td>ON</td><td>1.5 MHz clock<br>[For PN-24DTA/PN-24DTA-A]</td></tr><tr><td>ON</td><td>OFF</td><td>192 kHz clock<br>[For PN-BRTA]</td></tr><tr><td>OFF</td><td>OFF</td><td>Not used</td></tr></table></td><td></td></tr>
<tr><td>5 ~ 7</td><td>(OFF)</td><td>Not used</td><td></td></tr>
<tr><td rowspan="2">8</td><td>ON</td><td>PLO frequency hold circuit OFF</td><td></td></tr>
<tr><td>(OFF)</td><td>PLO frequency hold circuit ON</td><td></td></tr>
</table>

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note 1:** *When the power is on, flip the MB switch ON (UP position) before plugging/unplugging the circuit card.*

**Note 2:** *When using this card, set the SW2 switch on the PN-CP00/PN-CP00-B/PN-CP03 (MP) as follows.*

*SW2-2: OFF*
*SW2-3: ON*

**Note 3:** *When using this card for providing a master office clock signal, set the SW0 switch on the PN-CK00 and the SW switch on the PN-24DTA/PN-24DTA-A or the PN-30DTC/PN-30DTC-A mounted in PIM0 as follows.*

- *PN-CK00 card*
  *SW0-1: OFF*
  *SW0-2: OFF*
  *SW0-3: OFF*
  *SW0-4: OFF*
  *SW0-8: ON*
- *PN-24DTA/PN-24DTA-A card*
  *SW-1: OFF*
  *SW-2: OFF*
- *PN-30DTC/PN-30DTC-A card*
  *SW-1: OFF*
  *SW-2: OFF*

**Note 4:** *When using this card as a sub-master, set the SW0 switch on the PN-CK00 and the SW switch on the PN-24DTA/PN-24DTA-A or the PN-30DTC/PN-30DTC-A as follows:*

For 1.5MHz interface:

- *PN-CK00 card*
  *SW0-1: OFF*
  *SW0-2: ON*
  *SW0-3: OFF*
  *SW0-4: ON**
  *SW0-8: ON*
- *PN-24DTA/PN-24DTA-A card*
  *SW-1: ON*
  *SW-2: OFF*

** Set to ON, when more than one DTI card is mounted in PIM0, or set to OFF when only one DTI card is mounted in PIM0.*

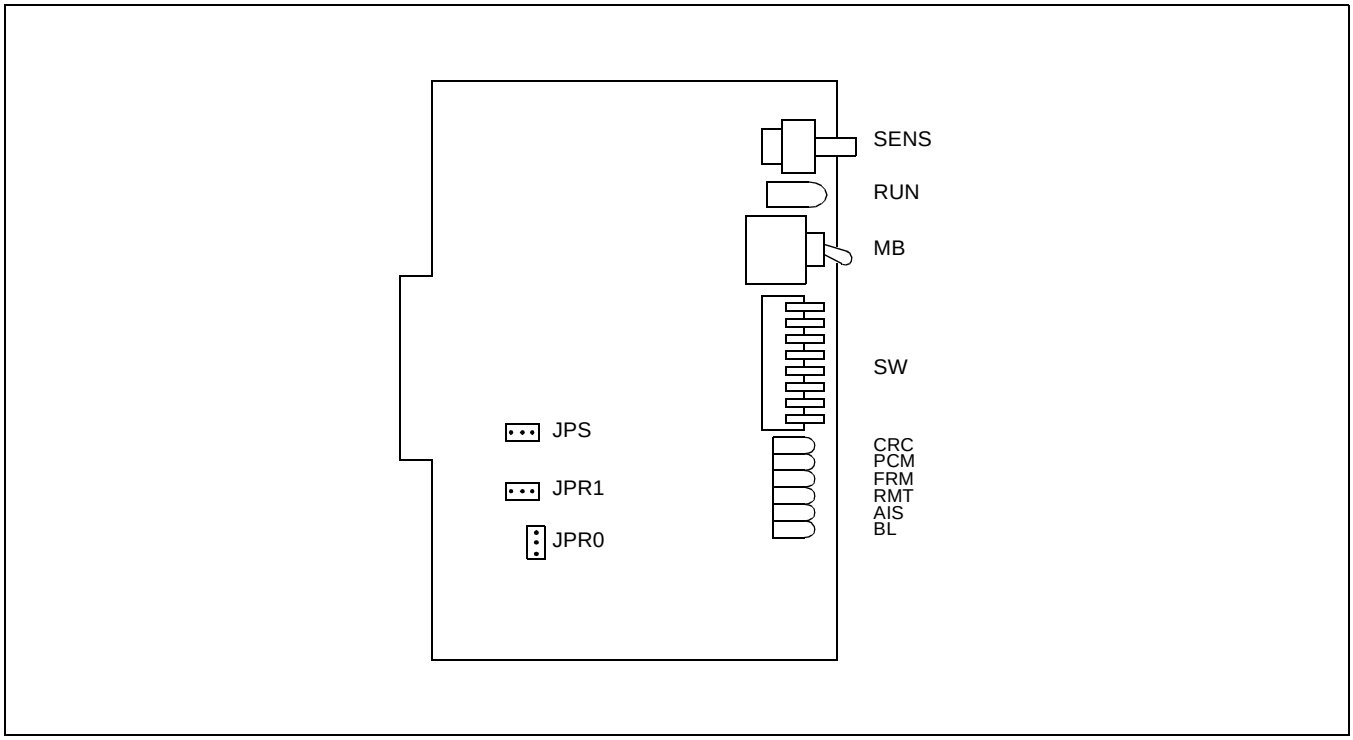
For 2MHz interface:

- *PN-CK00 card*
  *SW0-1: ON*
  *SW0-2: ON*
  *SW0-3: ON*
  *SW0-4: ON**
  *SW0-8: ON*
- *PN-30DTC/PN-30DTC-A card*
  *SW-1: ON*
  *SW-2: OFF*

** Set to ON, when more than one DTI card is mounted in PIM0, or set to OFF when only one DTI card is mounted in PIM0.*

# PN-24DTA (DTI)

1. Locations of Lamps, Switches, and Connectors




**PN-24DTA (DTI) Card**

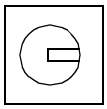
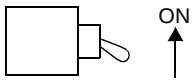
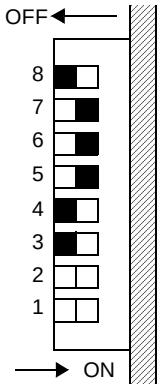
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while this card is operating normally. |
| CRC | Red | Lights when detecting Cyclic Redundancy Checking (CRC) errors. |
| PCM | Red | Lights when detecting PCM signal loss. |
| FRM | Red | Lights when detecting a Frame Alignment signal loss. |
| RMT | Red | Lights when receiving a Frame Alignment signal loss alarm from a distant office. |
| AIS | Red | Lights when a pattern of consecutive “1” bits is received. The distant office transmits this signal for a loop-back test. |
| BL | Red | B channel status<br>ON : More than 10 channels are busy<br>OFF : All channels are idle<br>Flash (60 IPM):Only one channel is busy<br>Flash (120 IPM):2 through 10 channels are busy |

(3) Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td>SENS<br>(Rotary SW)<br>  <br>Note 1</td><td>4 - F</td><td colspan="2">Set the switch to match the AP Number (04 - 15) to be set by CM05.<br><table><tr><td>AP NO.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW NO.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td></td><td>0 - 3</td><td>Not used</td><td></td><td></td></tr>
<tr><td>MB (Toggle SW)<br>  <br>Note 2</td><td></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td></td><td></td><td>(DOWN)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="12">SW<br>(Piano Key SW)<br>  </td><td rowspan="2">1</td><td>ON</td><td>Clock signal from a master office is sent to the PLO 0 input on the MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Clock signal from a master office is not sent to the PLO 0 input on the MP card.</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td>Clock signal from a master office is sent to the PLO 1 input on the MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Clock signal from a master office is not sent to the PLO 1 input on the MP card.</td><td></td></tr>
<tr><td rowspan="2">3</td><td>ON</td><td>Remote loop-back</td><td></td></tr>
<tr><td>(OFF)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">4</td><td>ON</td><td>Local loop-back (AIS send)</td><td></td></tr>
<tr><td>(OFF)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">5</td><td>(ON)</td><td rowspan="6">Set the equalizer according to the cable length between the PBX and the MDF.<br><table><tr><th>SW-5</th><th>SW-6</th><th>SW-7</th><th>CABLE LENGTH</th></tr><tr><td>ON</td><td>ON</td><td>ON</td><td>0 - 40 m ( 0 - 131.2 ft.)</td></tr><tr><td>ON</td><td>ON</td><td>OFF</td><td>40 - 80 m (131.2 - 262.5 ft.)</td></tr><tr><td>ON</td><td>OFF</td><td>ON</td><td>80 - 120 m (262.5 - 394 ft.)</td></tr><tr><td>ON</td><td>OFF</td><td>OFF</td><td>120 - 160 m (394 - 525 ft.)</td></tr><tr><td>OFF</td><td>ON</td><td>ON</td><td>160 - 200 m (525 - 656 ft.)</td></tr><tr><td>OFF</td><td>OFF</td><td>OFF</td><td>Signal is not sent</td></tr></table></td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">6</td><td>(ON)</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">7</td><td>(ON)</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td>8</td><td>(OFF)</td><td>Always set to OFF</td><td></td></tr>
</table>

**Switch Settings (Continued)**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| JPS (Jumper pin)  | | (Right) | Neutral grounding on the transmitting line is not provided. | |
| | | Left | Neutral grounding on the transmitting line is provided. | |
| JPR0 (Jumper pin)  | | (Up) | Neutral grounding on the receiving line is not provided. | |
| | | Down | Neutral grounding on the receiving line is provided. | |
| JPR1 (Jumper pin)  | | Right | Line impedance : 110 ohms | |
| | | (Left) | Line impedance : 100 ohms | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ) , the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the intended switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

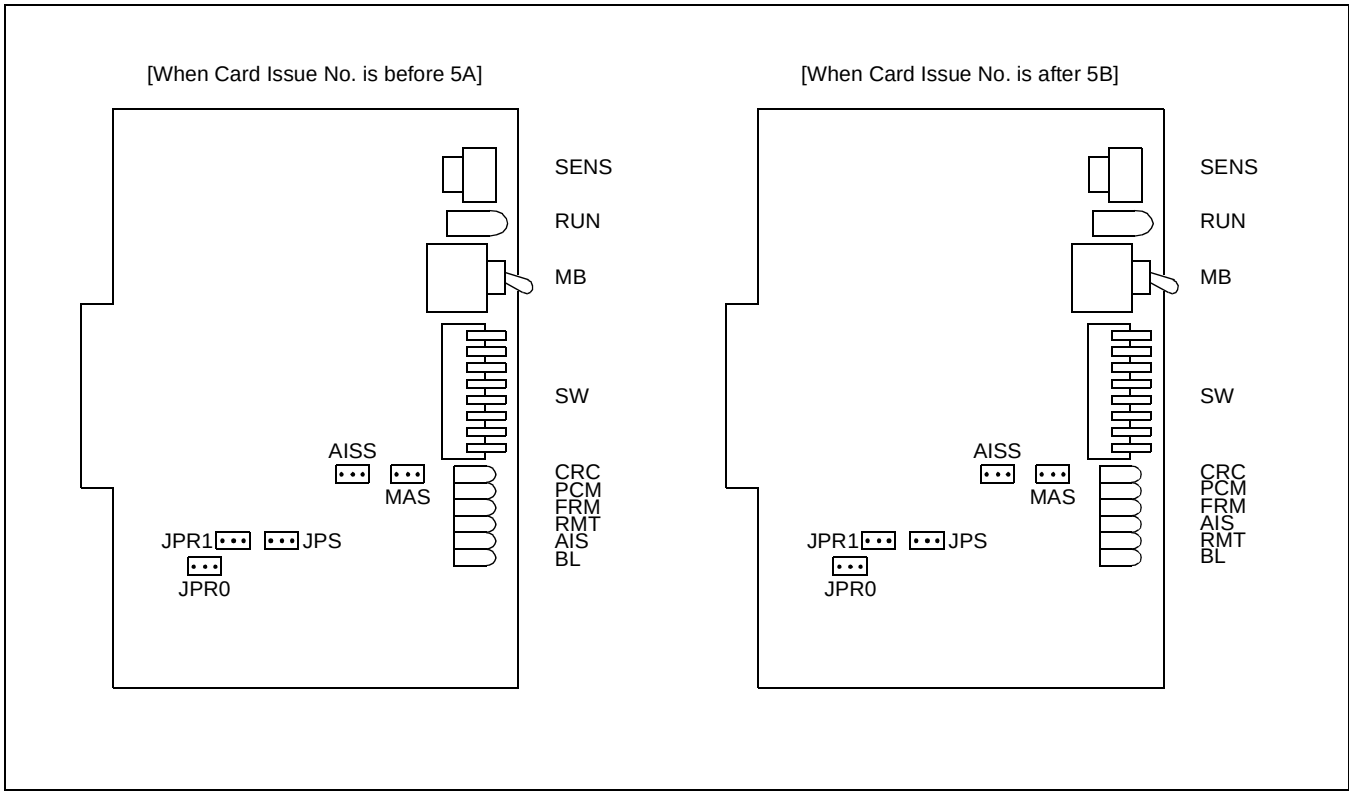
**Note 3:** *Set SW-1 and SW-2 as follows:*

| NO. OF DTI / SW / CONDITIONS | DTI0 | | DTI1 | | DTI2 | | DTI3 | | DTI4 | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SW -1 | SW -2 | SW -1 | SW -2 | SW -1 | SW -2 | SW -1 | SW -2 | SW -1 | SW -2 | |
| When one DTI is provided | ON | OFF | | | | | | | | | The MP card receives the clock signal from DTI0 at its PLO0 input. |
| When more than one DTI is provided | ON | OFF | OFF | ON | OFF | OFF | OFF | OFF | OFF | OFF | The MP card receives the clock signal from DTI0 at its PLO0 input under normal conditions. Should a clock failure occur with DTI0, the MP card switches to the PLO1 input, which gets clock from DTI1. |

**Note 4:** *When the PBX is the master office, set the SW-1 and SW-2 on all the DTI cards mounted in PIM0 to "OFF".*

# PN-24DTA-A (DTI)

1. Location of Lamps, Switches, and Connectors




**PN-24DTA-A (DTI) Card**

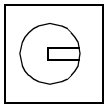
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while this card is operating normally. |
| CRC | Red | Lights when detecting Cyclic Redundancy Checking (CRC) errors. |
| PCM | Red | Lights when detecting PCM signal loss. |
| FRM | Red | Lights when detecting a Frame Alignment signal loss. |
| RMT | Red | Lights when receiving a Frame Alignment signal loss alarm from a distant office. |
| AIS | Red | Lights when a pattern of consecutive “1” is received. The distant office transmits this signal for a loop-back test. |
| BL | Red | B channel status<br>ON : More than 10 channels is busy<br>OFF : All channels are idle<br>Flash (60 IPM):Only one channel is busy<br>Flash (120 IPM):2 through 10 channels are busy |

(3) Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td>SENS<br>(Rotary SW)<br>  <br>Note 1</td><td>4 ~ F</td><td colspan="2">Set the switch to match the AP Number (04 ~ 15) to be set by CM05.<br><table><tr><td>AP NO.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW NO.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
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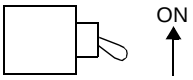
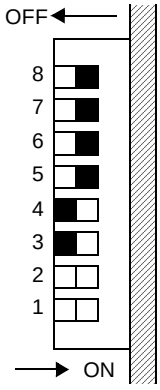
<tr><td>MB (Toggle SW)<br>  <br>Note 2</td><td></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td></td><td></td><td>DOWN</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="16">SW<br>(Piano Key SW)<br>  </td><td rowspan="2">1</td><td>ON</td><td>Clock signal from a master office is sent to the PLO 0 input on the MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Clock signal from a master office is not sent to the PLO 0 input on the MP card.</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td>Clock signal from a master office is sent to the PLO 1 input on the MP card.</td><td></td></tr>
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<tr><td rowspan="2">3</td><td>ON</td><td>Remote loop-back</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
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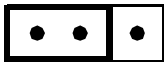
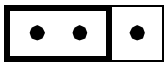
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">6</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">7</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td>8</td><td>ON</td><td>Always set to ON</td><td></td></tr>
</table>

**Switch Settings (Continued)**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| JPS (Jumper pin)  | | Right | Neutral grounding on the transmitting line is not provided. | |
| | | Left | Neutral grounding on the transmitting line is provided. | |
| JPR0 (Jumper pin)  | | Right | Neutral grounding on the receiving line is provided. | |
| | | Left | Neutral grounding on the receiving line is not provided. | |
| JPR1 (Jumper pin)  | | Right | Line impedance : 110 ohms | |
| | | Left | Line impedance : 100 ohms | |
| AISS (Jumper pin)  | | Right | AIS signal is sent out when make-busy or power on. | |
| | | Left | AIS signal is not sent out when make-busy or power on. | |
| MAS (Jumper pin)  | | Right | When this card is used for factory testing. | |
| | | Left | When this card is used for normal operation. | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the intended switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

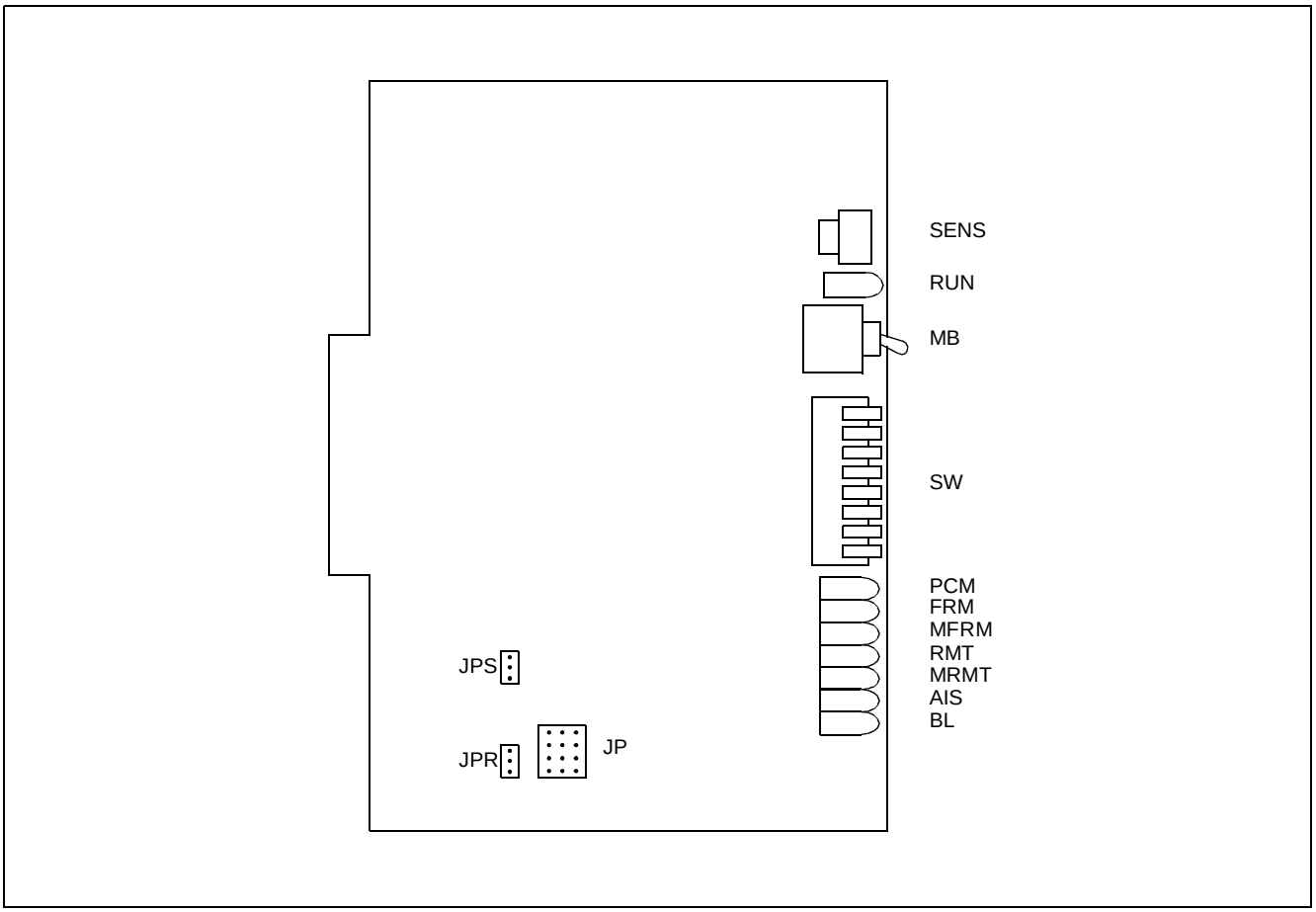
**Note 3:** *Set SW-1 and SW-2 as follows:*

| No. of DTI / SW / CONDITIONS | DTI0 | | DTI1 | | DTI2 | | DTI3 | | DTI4 | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SW-1 | SW-2 | SW-1 | SW-2 | SW-1 | SW-2 | SW-1 | SW-2 | SW-1 | SW-2 | |
| When one DTI is provided. | ON | OFF | | | | | | | | | The MP card will receive the clock signal from DTI0 at its PLO0 input. |
| When more than one DTI is provided. | ON | OFF | OFF | ON | OFF | OFF | OFF | OFF | OFF | OFF | The MP card will receive the clock signal from DTI0 at its PLO0 input, under normal conditions.<br>Should a clock failure occur with DTI0, the MP card will switch to the PLO1 input which gets clock from DTI1. |

**Note 4:** *When the PBX is the master office, set the SW1-1 and SW1-2 on all the DTI cards mounted in PIM0 to "OFF".*

# PN-30DTC/30DTC-A (DTI)

1. Locations of Lamps, Switches, and Connectors




**PN-30DTC/30DTC-A (DTI) Card**

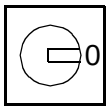
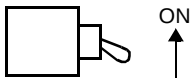
2. Lamp Indications

**Lamp Indications**

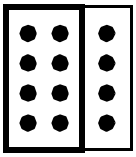
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM when this card is normally operating. |
| PCM | Red | Lights when detecting PCM signal loss. |
| FRM | Red | Lights when detecting Frame Alignment signal loss. |
| MFRM | Red | Lights when detecting Multi-Frame Alignment signal loss on time slot 16. |
| RMT | Red | Lights when receiving an alarm because Frame Alignment signal loss has been detected at the distant office. |
| MRMT | Red | Lights when receiving an alarm because Multi-Frame Alignment signal loss has been detected at the distant office. |
| AIS | Red | Lights when indicating that the pattern of consecutive "1" is being received. (The distant office transmits this signal for a loop-back test). |
| BL | Red | B channel status<br>ON : More than10 channels are busy<br>OFF : All channels are idle<br>Flash (60 IPM) : Only one channel is busy<br>Flash (120 IPM) : 2 to 10 channels are busy |

3. Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td>SENS<br>(Rotary SW)<br>  <br>Note 1</td><td>4 ~ F</td><td colspan="2">Set the switch to match the AP Number (04-15) as set by CM05.<br><table><tr><td>AP NO.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW NO.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td></td><td>0 ~ 3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td>MB (Toggle SW)<br>  <br>Note 2</td><td></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td></td><td></td><td>(DOWN)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="10">SW<br>(Piano Key SW)<br>  </td><td rowspan="2">1<br>Note 3</td><td>ON</td><td>Clock signal from master office is sent to PLO 0 on the MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Clock signal from master office is not sent to PLO 0 on the MP card.</td><td></td></tr>
<tr><td rowspan="2">2<br>Note 3</td><td>ON</td><td>Clock signal from master office is sent to PLO 1 on the MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Clock signal from master office is not sent to PLO 1 on the MP card.</td><td></td></tr>
<tr><td rowspan="2">3</td><td>ON</td><td>Remote loop-back</td><td></td></tr>
<tr><td>(OFF)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">4</td><td>ON</td><td>Local loop-back (AIS send)</td><td></td></tr>
<tr><td>(OFF)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">5</td><td>ON</td><td>Transmission line cable: Coaxial (75 Ω) Note 4</td><td></td></tr>
<tr><td>(OFF)</td><td>Transmission line cable: Twisted-pair (120 Ω)</td><td></td></tr>
<tr><td>6</td><td>(OFF)</td><td rowspan="2">Always set to OFF</td><td></td></tr>
<tr><td>7</td><td>(OFF)</td><td></td></tr>
<tr><td>8</td><td>(ON)</td><td>Always set to ON</td><td></td></tr>
</table>

**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| JPS (Jumper pin)  | | UP | Balanced transmission (For twisted-pair cable) | |
| | | DOWN | TA is grounded on the transmission line (For coaxial cable) **Note 4** | |
| JPR (Jumper pin)  | | UP | Balanced transmission (For twisted-pair cable) | |
| | | DOWN | RA is grounded on the transmission line (For coaxial cable) | |
| JP (Jumper pin)  | | RIGHT | Line impedance: 75 ohms (For coaxial cable) **Note 4** | |
| | | LEFT | Line impedance: 120 ohms (For twisted-pair cable) | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ) , the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the intended switch position.*

**Note 2:** *When the power is on, set the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

**Note 3:** *Set SW-1 and SW-2 as follows.*

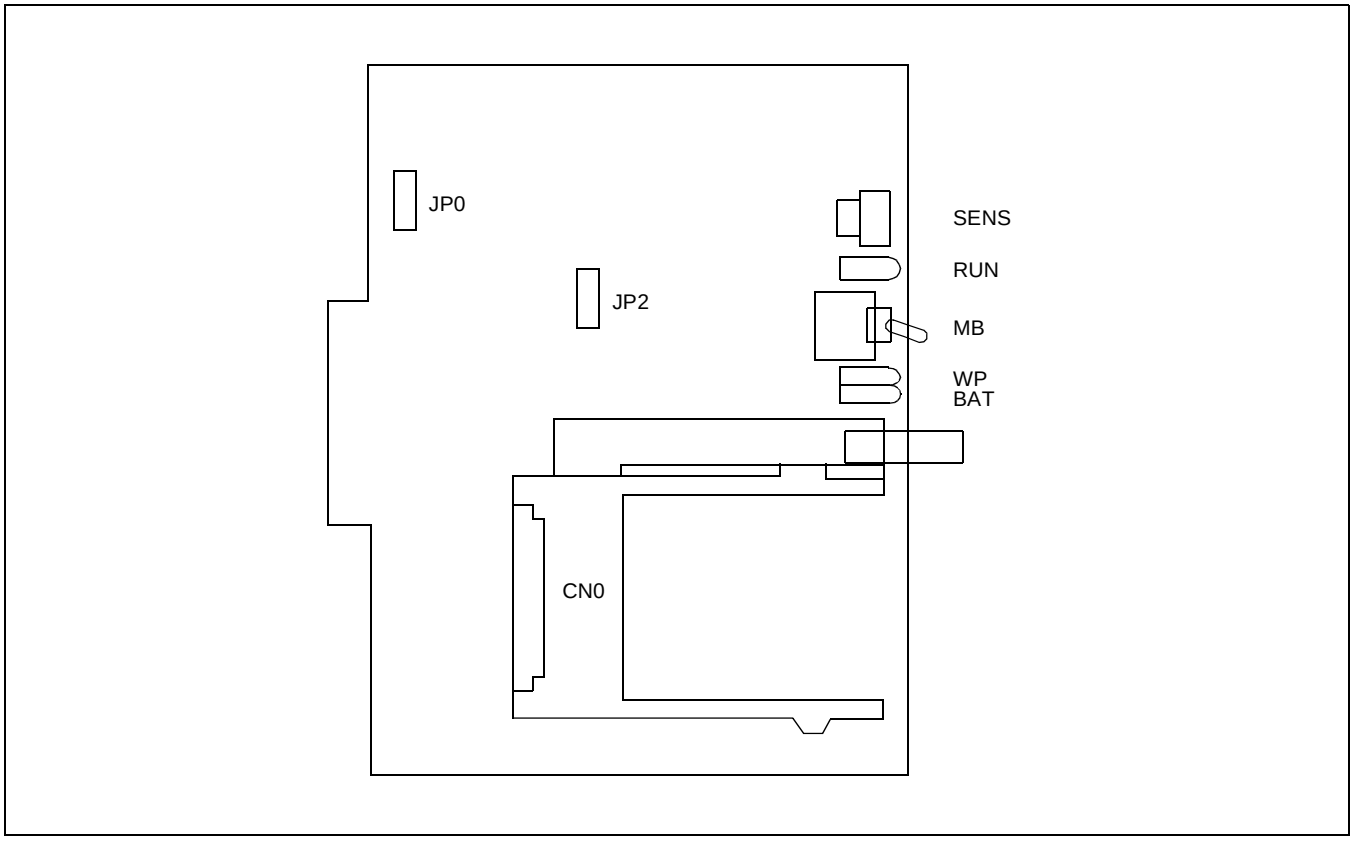
| No. of DTI / SW / CONDITIONS | DTI 0 | | DTI 1 | | DTI 2 | | DTI 3 | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | SW-1 | SW-2 | SW-1 | SW-2 | SW-1 | SW-2 | SW-1 | SW-2 | |
| When one DTI is provided. | ON | OFF | | | | | | | The MP card will receive the clock signal from DTI 0 at its PLO 0 input. |
| When more than one DTI is provided. | ON | OFF | OFF | ON | OFF | OFF | OFF | OFF | The MP card will receive the clock signal from DTI 0 at its PLO 0 input, under normal conditions. Should a clock failure occur on DTI 0, the MP card will automatically switch to the PLO 1 input, and so derive the clock from DTI 1. |

**Note 4:** *Coaxial cable connection to the PN-30DTC/30DTC-A is not available in the U.S.*

This page is for your notes.

# PN-ME00 (EXTMEM)

1. Locations of Lamps, Switches, and Connectors




**PN-ME00 (EXTMEM) Card**

2. Lamp Indications

**Lamp Indications**

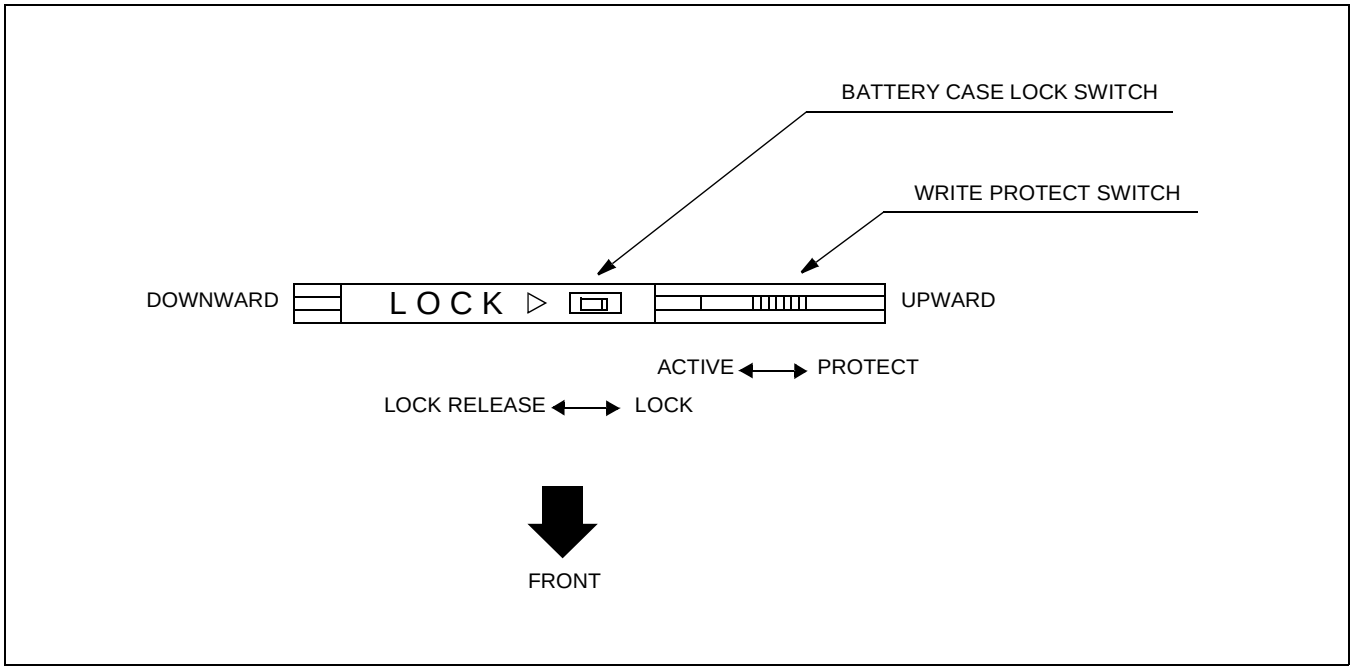
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while this circuit card is operating normally. |
| WP | Red | Lights when the RAM is being accessed. |
| BAT | Red | Lights indicating the status (Write Protect Switch status and the battery voltage status) of the SRAM card on this circuit card. |

| LAMP STATUS | WRITE PROTECT SWITCH STATUS | BATTERY VOLTAGE STATUS |
|---|---|---|
| On | Protect On | OK |
| Flash (60 IPM) | Protect Off | Needs to be replaced |
| Flash (120 IPM) | Protect On | Needs to be replaced |
| Off | Protect Off | OK |

## How to Handle the SRAM Card

■ Mounting the SRAM Card

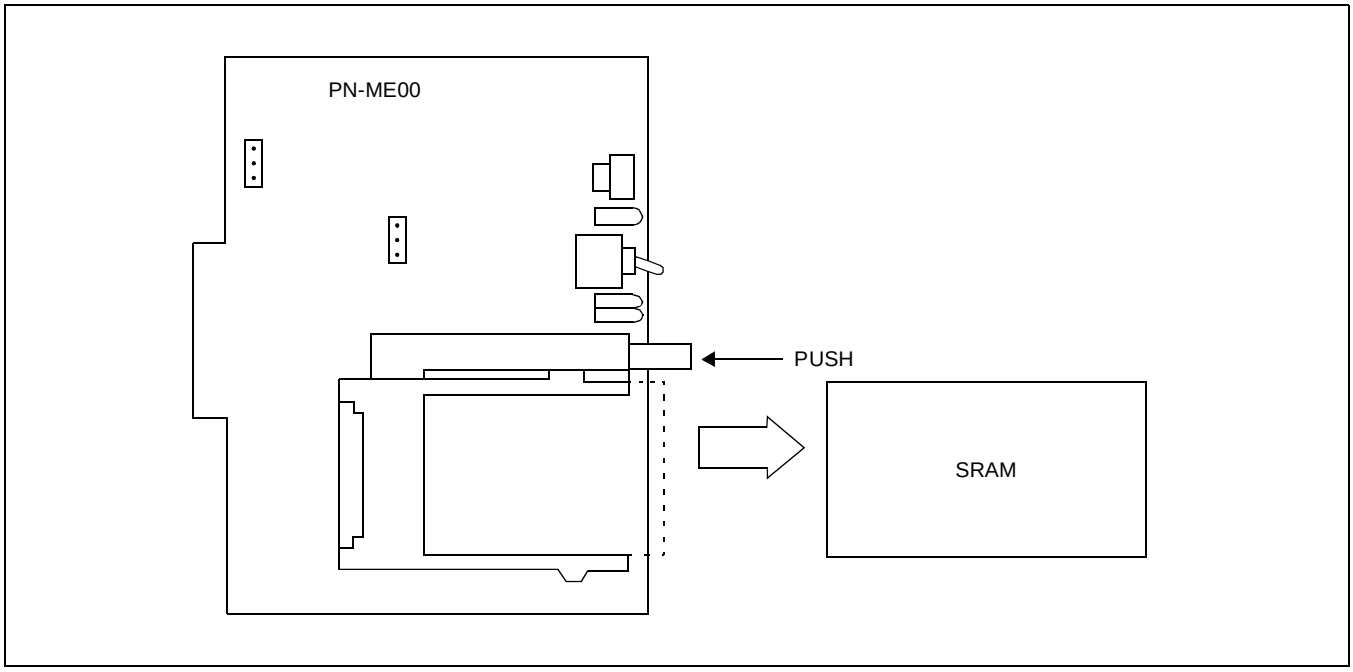
① Slide the lock switch downward (Lock Release), then remove the battery case from the SRAM card.
② Mount the battery on the battery case, then insert the battery case into the SRAM card.
③ Slide the lock switch upward (Lock).
④ Mount the SRAM card in the PN-ME00 card.
⑤ Slide the write protect switch downward (Active).




**Front View of the SRAM Card**

■ Removing the SRAM Card

① Push the card slot bar of the PN-ME00 card.
② Remove the SRAM card.



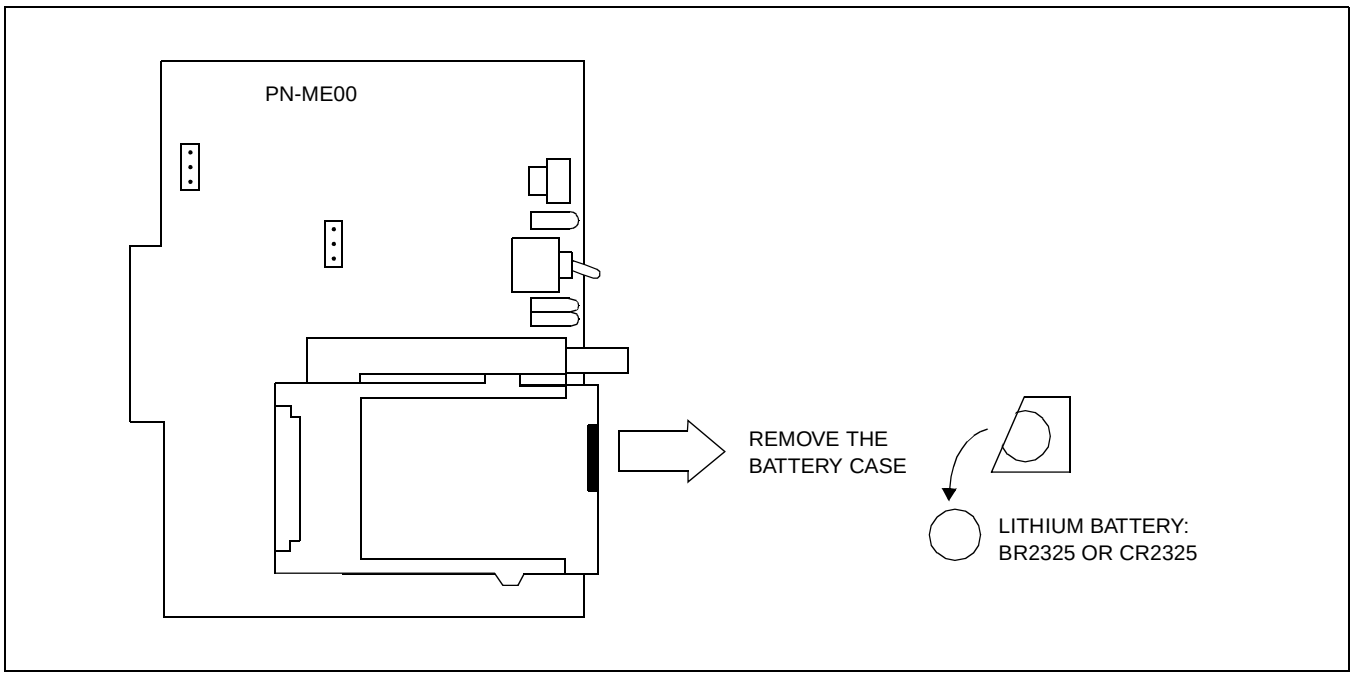

**Removing the SRAM Card**

■ Replacing the SRAM Battery

**CAUTION**

*To prevent loss of memory on an active system, the battery must be replaced when the SRAM card is installed on the PN-ME00, and the PN-ME00 is installed in the system. Also, power to the system must be "ON".*

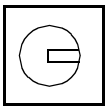
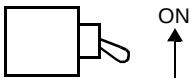
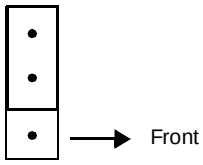
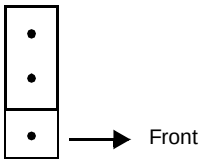
① Slide the lock switch downward (Lock Release), then remove the battery case from the SRAM card.
② Replace the battery, then insert the battery case into the SRAM card.
③ Slide the lock switch upward (Lock).




**Replacing the SRAM Battery**

(3) Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">SENSE<br>(Rotary SW)<br>  <br>Note 1</td><td>4 - F</td><td colspan="2">Set the switch to match the AP Number (04 - 15) to be set by CM05.<br><table><tr><td>AP NO.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW NO.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td>0 - 3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td rowspan="2">MB(Toggle SW)<br>  <br><br>Note 2</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>DOWN</td><td>For normal operation</td><td></td></tr>
<tr><td>JP0 (Jumper pin)<br>  <br><br>Note 3</td><td></td><td>UP</td><td>For normal operation</td><td></td></tr>
<tr><td>JP2 (Jumper pin)<br>  <br></td><td></td><td>UP</td><td>For normal operation</td><td></td></tr>
</table>

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

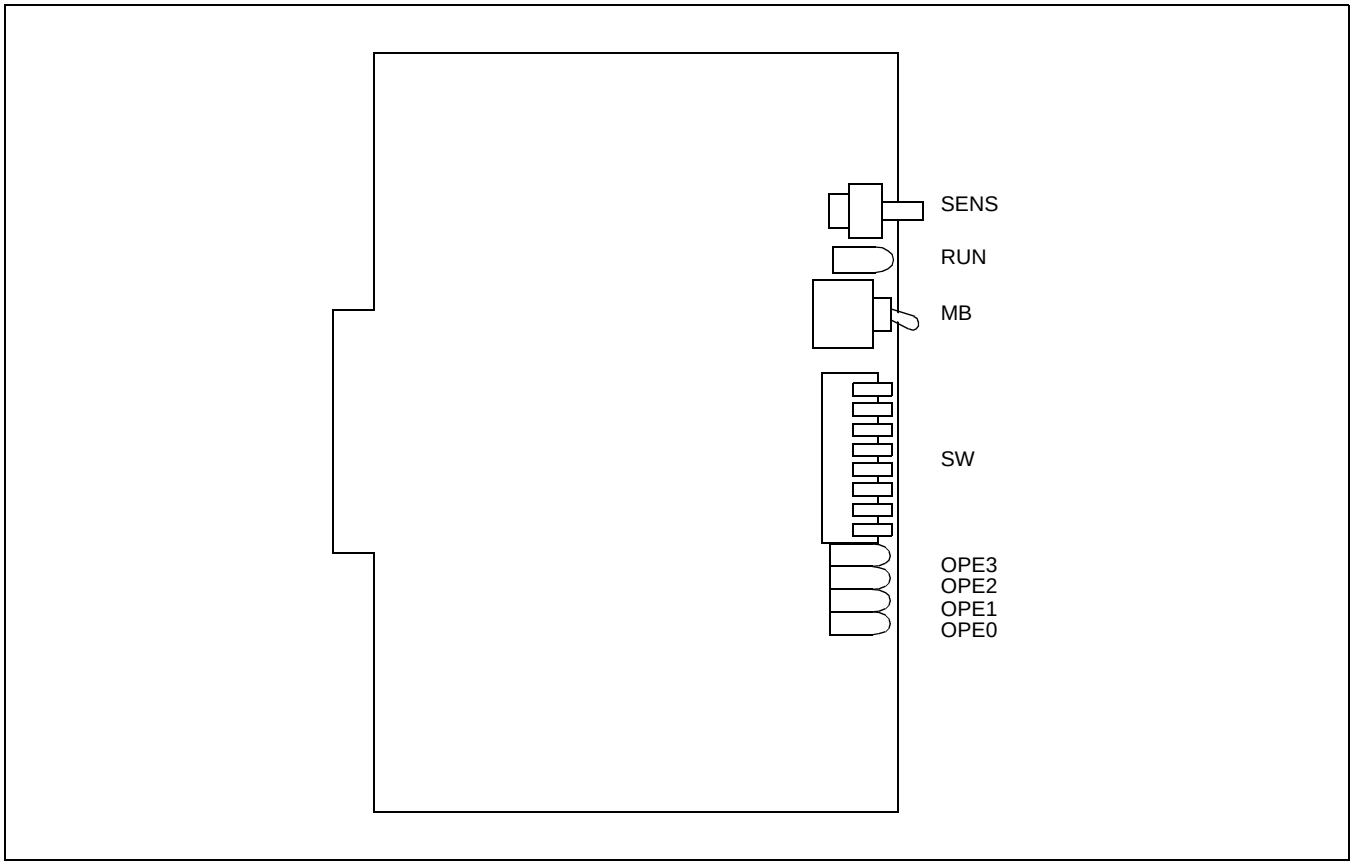
**Note 1:** *Set the groove on the switch knob to the desired switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

**Note 3:** *Do not touch the JP0. If the jumper is pulled off, the data in the memory of the ME00 card is cleared.*

# PN-4RSTB (MFR)

1. Locations of Lamps, Switches and Connectors




**PN-4RSTB (MFR) Card**

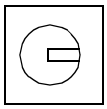
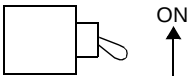
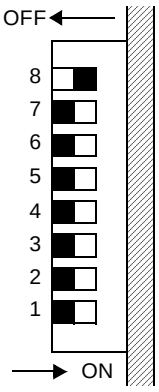
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while the circuit card is operating normally. |
| OPE | Red | • Lights when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

(3) Switch Settings

**Switch Settings**

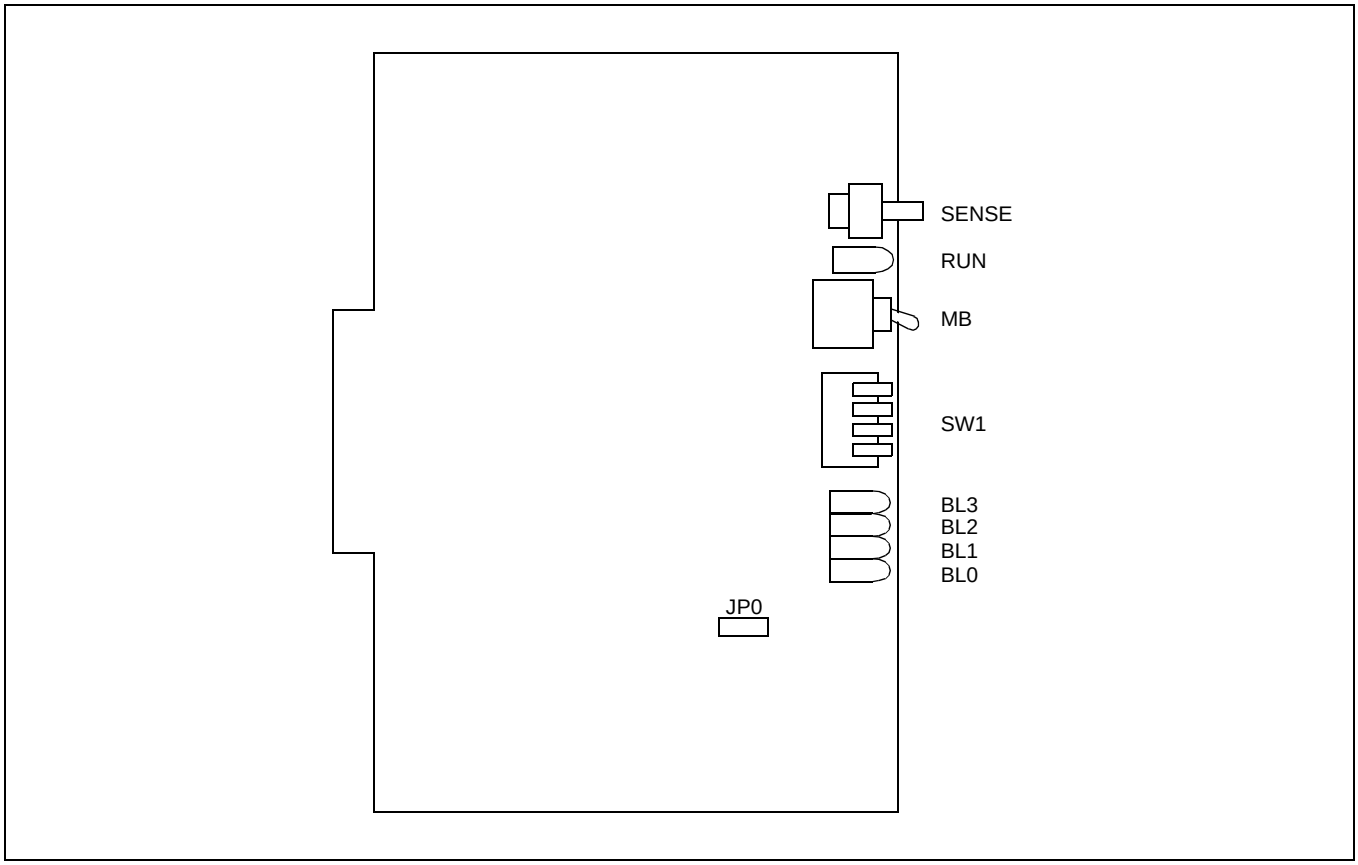
<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td>SENS<br>(Rotary SW)<br>  <br>Note 1</td><td>4 - F</td><td colspan="2">Set the switch to match the AP Number (04 - 15) to be set by CM05.<br><table><tr><td>AP NO.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW NO.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td></td><td>0 - 3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td>MB (Toggle SW)<br>  <br>Note 2</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>DOWN</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="16">SW<br>(Piano Key SW)<br>  </td><td rowspan="2">1</td><td>ON</td><td>For make-busy No. 0 circuit</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td>For make-busy No. 1 circuit</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">3</td><td>ON</td><td>For make-busy No. 2 circuit</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">4</td><td>ON</td><td>For make-busy No. 2 circuit</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td>5</td><td>OFF</td><td rowspan="3">Not used</td><td rowspan="3"></td></tr>
<tr><td>6</td><td>OFF</td></tr>
<tr><td>7</td><td>OFF</td></tr>
<tr><td>8</td><td>ON</td><td>Always set to ON</td><td></td></tr>
</table>

**Note 1:** *Set the groove on the switch knob onto the desired switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

# PN-4RSTC (CIR)

1. Locations of Lamps, Switches and Connectors




**PN-4RSTC (CIR) Card**

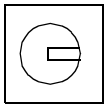
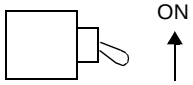
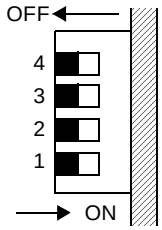
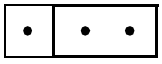
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while the circuit card is operating normally. |
| BL0-3 | Red | Lights when receiving a CALLER ID (CLASS SM) signal. |

(3) Switch Settings

**Switch Settings**

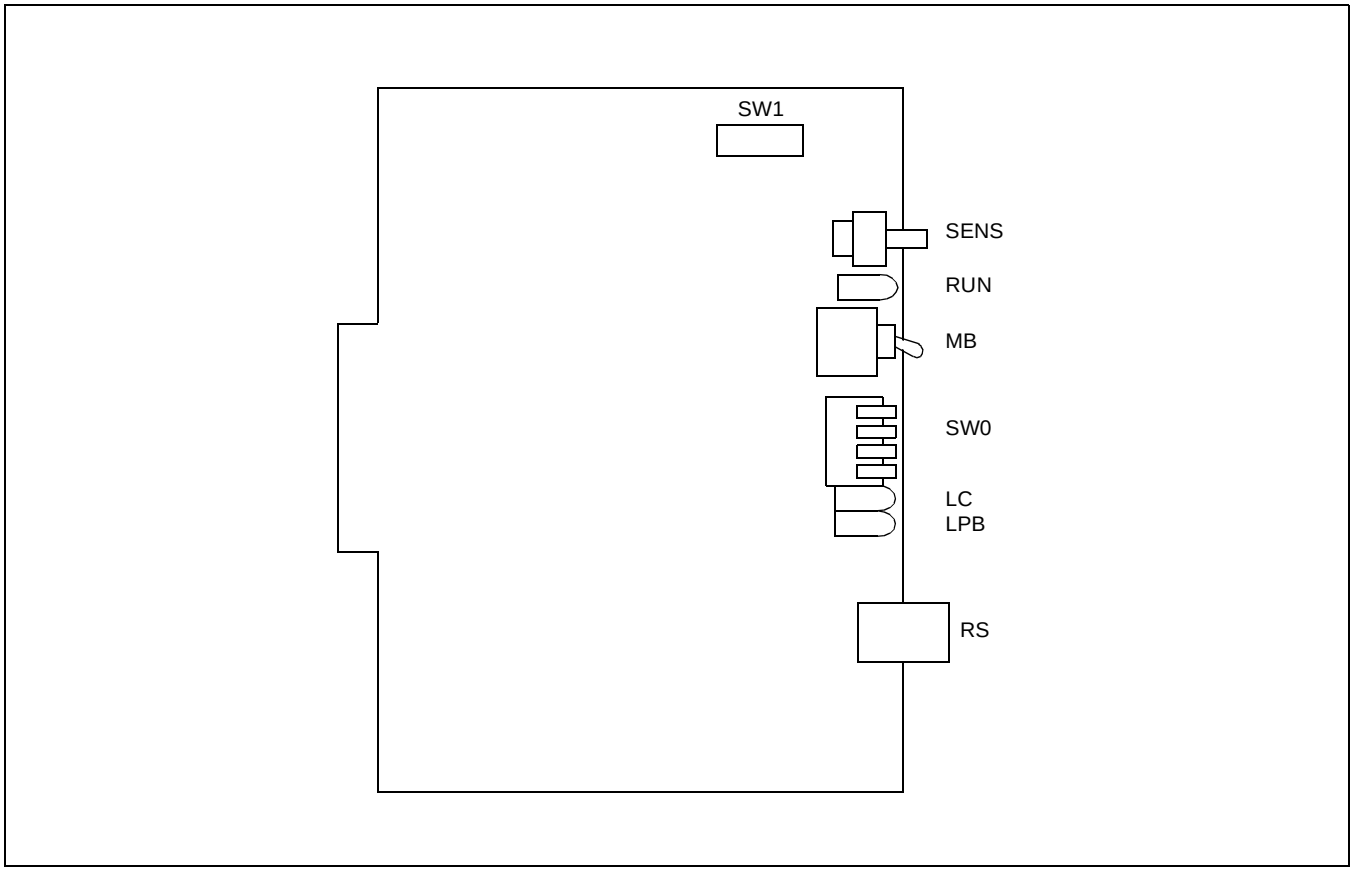
<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="3">SENSE<br>(Rotary SW)<br>  <br>Note 1</td><td>4 - F</td><td colspan="2">Set the switch to match the AP Number (04 - 15) to be set by CM05.</td><td></td></tr>
<tr><td colspan="4"><table>
<tr><td>AP NO.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr>
<tr><td>SW NO.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr>
</table></td></tr>
<tr><td>0 - 3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td rowspan="2">MB(Toggle SW)<br>  <br><br>Note 2</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>(DOWN)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="8">SW1<br>(Piano Key SW)<br>  <br></td><td rowspan="2">1</td><td>ON</td><td>For make-busy No. 0 circuit</td><td></td></tr>
<tr><td>(OFF)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td>For make-busy No. 1 circuit</td><td></td></tr>
<tr><td>(OFF)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">3</td><td>ON</td><td>For make-busy No. 2 circuit</td><td></td></tr>
<tr><td>(OFF)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">4</td><td>ON</td><td>For make-busy No. 3 circuit</td><td></td></tr>
<tr><td>(OFF)</td><td>For normal operation</td><td></td></tr>
<tr><td>JP0 (Jumper pin)<br>  </td><td></td><td>(Right)</td><td>For normal operation</td><td></td></tr>
</table>

**Note 1:** *Set the groove on the switch knob onto the desired switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

# PN-SC00 (CCH)

1. Locations of Lamps, Switches and Connectors




**PN-SC00 (CCH) Card**

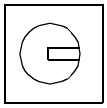
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while this card is operating normally. |
| LC | Green | Lights when communications are normally ongoing with the common signalling channel data links connected. |
| LPB | Green | Lights when a loop-back test is in progress. |

(3) Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td>SENS<br>(Rotary SW)<br>  <br>Note 1</td><td>4 - F</td><td colspan="2">Set the switch to match the AP Number (04 - 15) to be set by CM05.<br><table><tr><td>AP NO.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW NO.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
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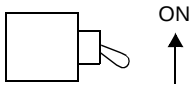
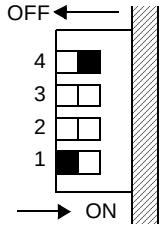
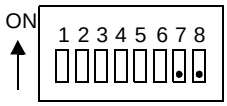
<tr><td>MB(Toggle SW)<br>  <br>Note 2</td><td></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td></td><td></td><td>(DOWN)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="6">SW0<br>(Piano Key SW)<br>  </td><td rowspan="2">1</td><td>ON</td><td>Loop-back test</td><td></td></tr>
<tr><td>(OFF)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td>Analog interface</td><td></td></tr>
<tr><td>OFF</td><td>Digital interface</td><td></td></tr>
<tr><td rowspan="2">3</td><td>ON</td><td>RS-232C RTS signal (to MODEM) ON<br>Note 3</td><td></td></tr>
<tr><td>OFF</td><td>RS-232C RTS signal (to MODEM) OFF</td><td></td></tr>
<tr><td>4</td><td>(ON)</td><td>Always set to ON</td><td></td></tr>
</table>

**Switch Settings (Continued)**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="12">SW1(Dip SW)<br>  <br></td><td rowspan="2">1</td><td>ON</td><td rowspan="10">• Common channel signalling data transmission speed (For Digital Interface)<br><table><tr><th>TRANSMISSION SPEED</th><th>SW 1-1</th><th>SW 1-2</th><th>SW 1-3</th><th>SW 1-4</th><th>SW 1-5</th></tr><tr><td>48Kbps ¨</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>48Kbps ¦</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td><td>ON</td></tr><tr><td>56Kbps</td><td>ON</td><td>ON</td><td>OFF</td><td>ON</td><td>ON</td></tr><tr><td>64Kbps</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr></table>• Common channel signalling data transmission speed (For Analog Interface)<br>Set switches (SW1-1 - SW1-5) to OFF.</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">3</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">4</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">5</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">6</td><td>ON</td><td>A-Law</td><td></td></tr>
<tr><td>OFF</td><td>μ-law</td><td></td></tr>
<tr><td>7</td><td>OFF</td><td>Always set to OFF</td><td></td></tr>
<tr><td>8</td><td>OFF</td><td>Always set to OFF</td><td></td></tr>
</table>

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ) , the setting of the switch varies with the system concerned.

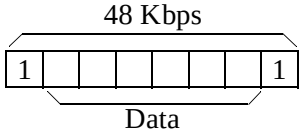
**Note 1:** *Set the groove on the switch knob to the desired switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

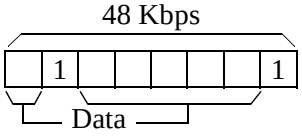
**Note 3:** *This setting is available when SW0-2 is set to ON (Analog Interface).*

**Note 4:** *The followimg two kinds of rate adaptation method are available when using 48 Kbps data transmission. The rate adaptation method must be set to match the rate adaptation of the master office.*

① SW1-3: OFF

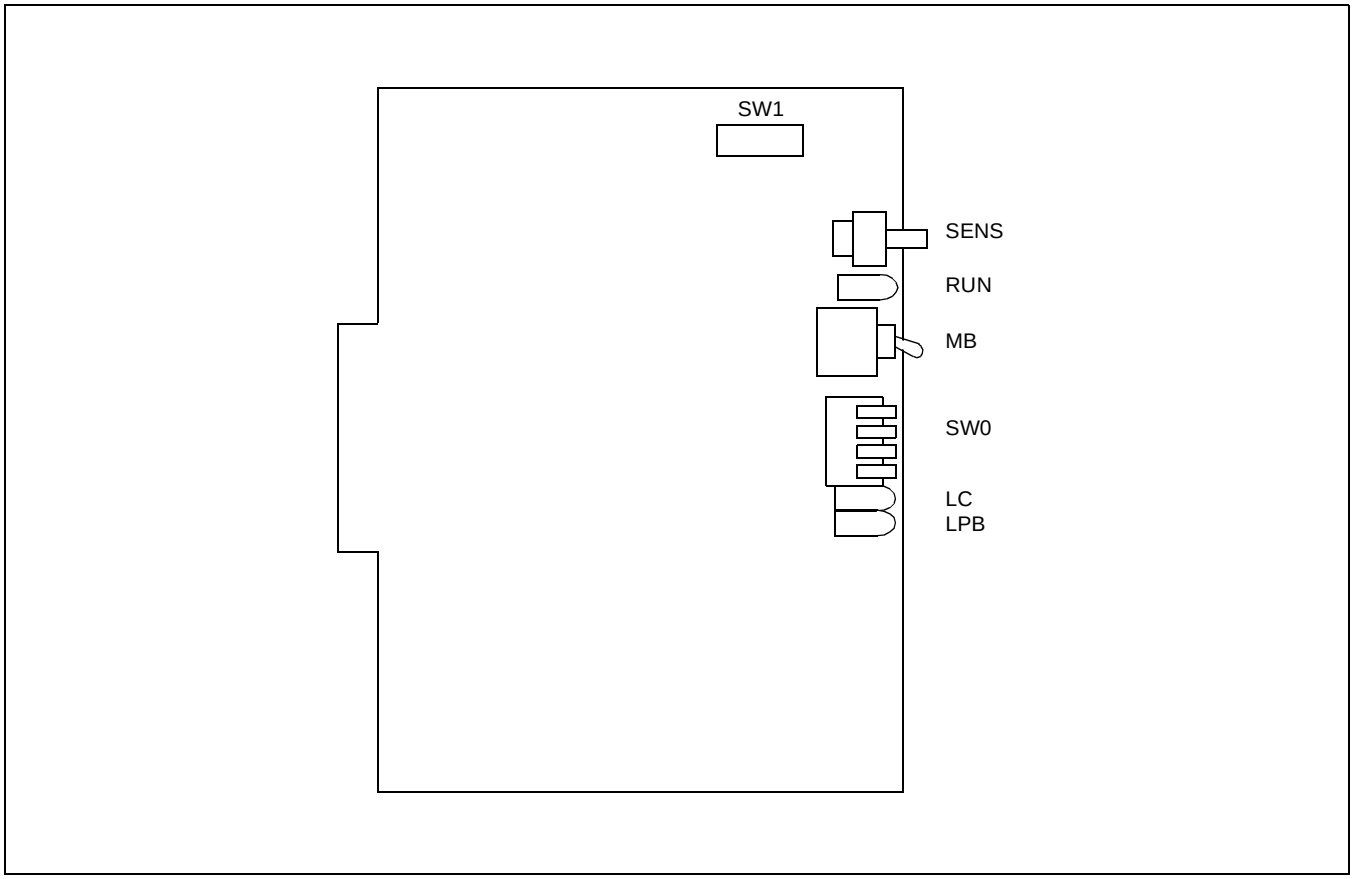



② SW1-3: ON



# PN-SC01 (DCH)

1. Locations of Lamps, Switches and Connectors




**PN-SC01 (DCH) Card**

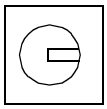
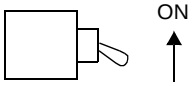
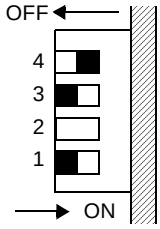
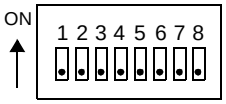
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while this card is operating normally. |
| LC | Green | Lights when communications are normally ongoing with the D channel data links connected. |
| LPB | Green | Not used. |

(3) Switch Settings

**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SENS (Rotary SW)  **Note 1** | 4 - F | Set the switch to match the AP Number (04 - 15) to be set by CM05. | | |
| | 0 - 3 | Not used | | |
| MB(Toggle SW)   **Note 2** | | UP | For make-busy | |
| | | (DOWN) | For normal operation | |
| SW0 (Piano Key SW)   | 1 | OFF | AT&T Interface | |
| | | ON | Northern Telecom Interface | |
| | 2 | OFF | No deletion | |
| | | ON | Delete the first three digits of all 011 International Calls. | |
| | 3 | (OFF) | Always set to OFF | |
| | 4 | (ON) | Always set to ON | |
| SW1 (Dip SW)   | 1 | (OFF) | Always set to OFF | |
| | 2 | (OFF) | Always set to OFF | |
| | 3 | (OFF) | Always set to OFF | |
| | 4 | (OFF) | Always set to OFF | |
| | 5 | (OFF) | Always set to OFF | |
| | 6 | (OFF) | Always set to OFF | |
| | 7 | (OFF) | Always set to OFF | |
| | 8 | (OFF) | Always set to OFF | |

| AP NO. | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW NO. | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |

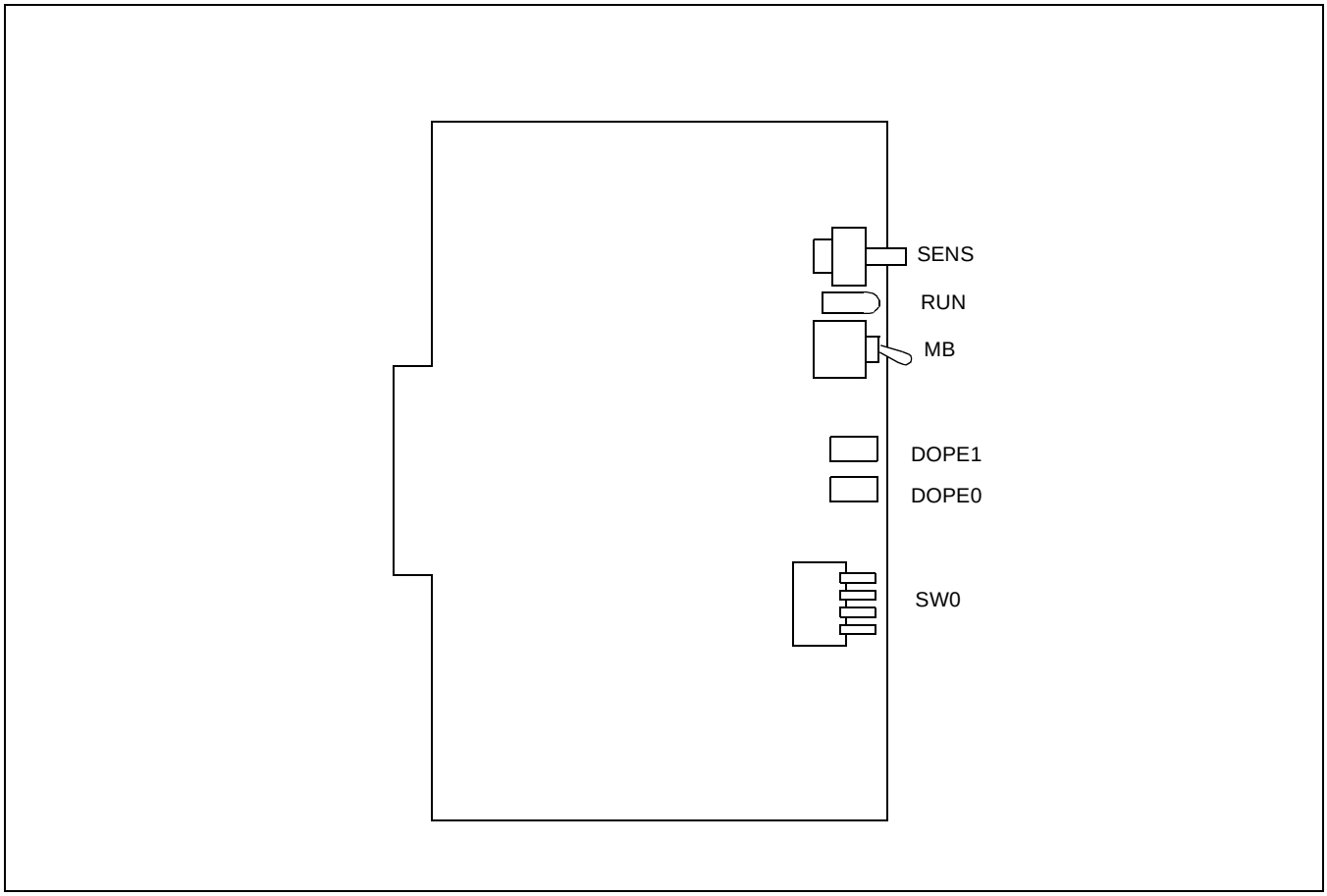
The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ) , the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob onto the intended switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

# PN-SC02 (ICH)

1. Locations of Lamps, Switches, and Connectors




**PN-SC02 (ICH) Card**

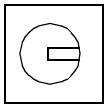
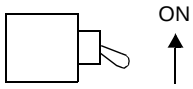
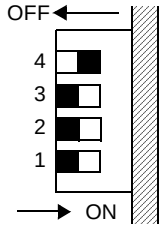
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while this card is operating normally. |
| DOPE0 | Green | ON: No. 0 circuit D channel link is connected.<br>OFF: No. 0 circuit D channel link is not connected. |
| DOPE1 | Green | ON: No. 1 circuit D channel link is connected.<br>OFF: No. 1 circuit D channel link is not connected. |

(3) Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">SENS<br>(Rotary SW)<br>  <br>Note 1</td><td>4 - F</td><td colspan="2">Set the switch to match the AP Number (04 - 15) to be set by CM05.<br><table><tr><td>AP NO.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW NO.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td>0 - 3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td rowspan="2">MB (Toggle SW)<br>  <br><br>Note 2</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>(DOWN)</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="4">SW0<br>(Piano Key SW)<br>  <br></td><td>1</td><td>(OFF)</td><td>Always set to OFF</td><td></td></tr>
<tr><td>2</td><td>(OFF)</td><td>Always set to OFF</td><td></td></tr>
<tr><td>3</td><td>(OFF)</td><td>Always set to OFF</td><td></td></tr>
<tr><td>4</td><td>(ON)</td><td>Always set to ON</td><td></td></tr>
</table>

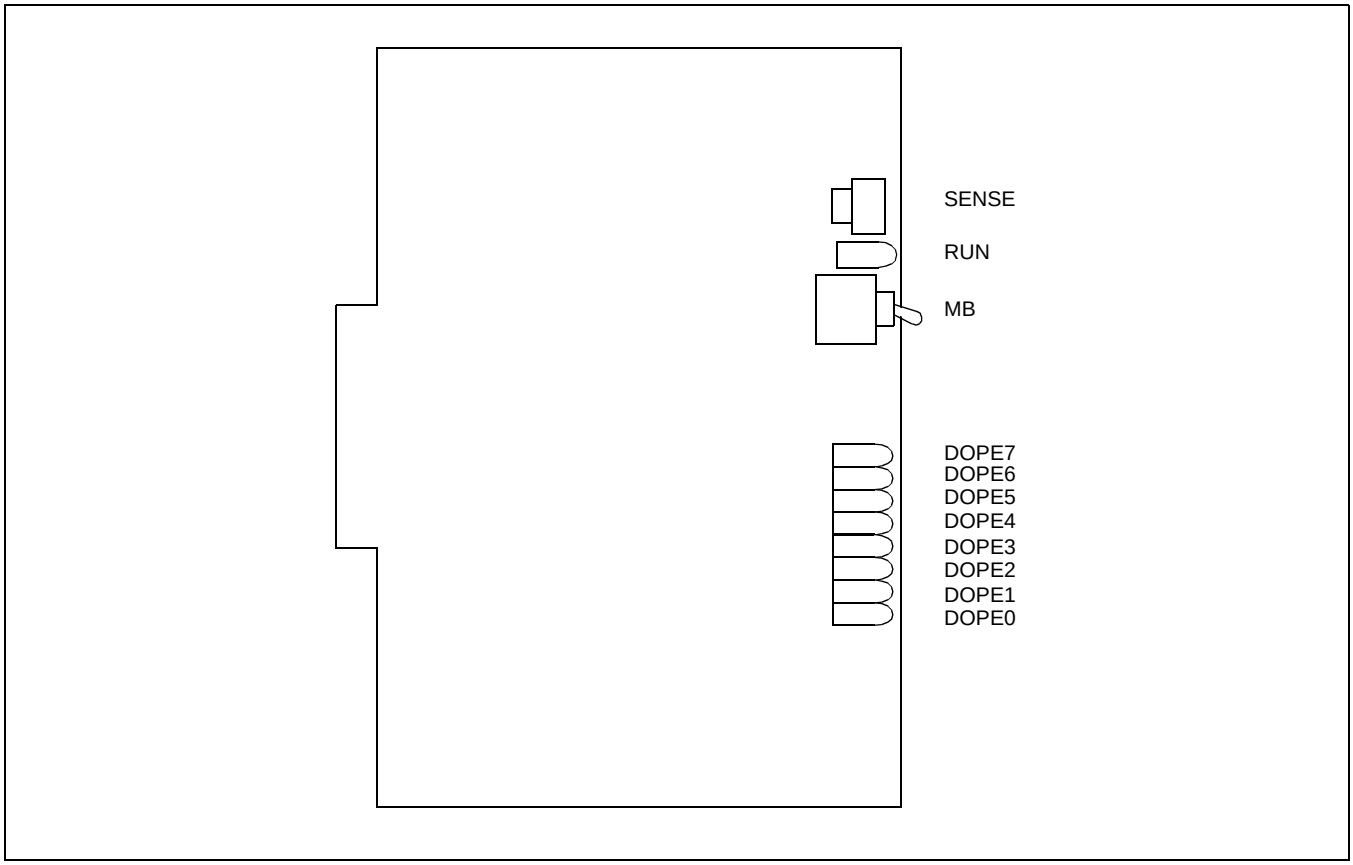
The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ) , the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the desired switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

# PN-SC03 (ICH)

1. Locations of Lamps, Switches, and Connectors




**PN-SC03 (ICH) Card**

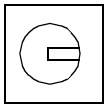
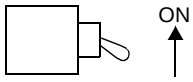
2. Lamp Indications

**Lamp Indications on ICH Card**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while the card is operating normally. |
| DOPE7 | Green | Lights when No.7 circuit D channel link is connected. |
| DOPE6 | Green | Lights when No.6 circuit D channel link is connected. |
| DOPE5 | Green | Lights when No.5 circuit D channel link is connected. |
| DOPE4 | Green | Lights when No.4 circuit D channel link is connected. |
| DOPE3 | Green | Lights when No.3 circuit D channel link is connected. |
| DOPE2 | Green | Lights when No.2 circuit D channel link is connected. |
| DOPE1 | Green | Lights when No.1 circuit D channel link is connected. |
| DOPE0 | Green | Lights when No.0 circuit D channel link is connected. |

(3) Switch Settings

**Switch Settings on ICH Card**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="3">SENSE<br>(Rotary SW)<br>  <br>Note 1</td><td>4 ~ F</td><td colspan="2">Set the switch to match the AP Number (04 ~ 15) to be set by CM05.</td><td rowspan="3"></td></tr>
<tr><td colspan="3"><table>
<tr><td>AP No.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr>
<tr><td>SW No.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr>
</table></td></tr>
<tr><td>0 ~ 3</td><td colspan="2">Not used</td></tr>
<tr><td rowspan="2">MB (Toggle SW)<br>  <br><br>Note 2</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>(DOWN)</td><td>For normal operation</td><td></td></tr>
</table>

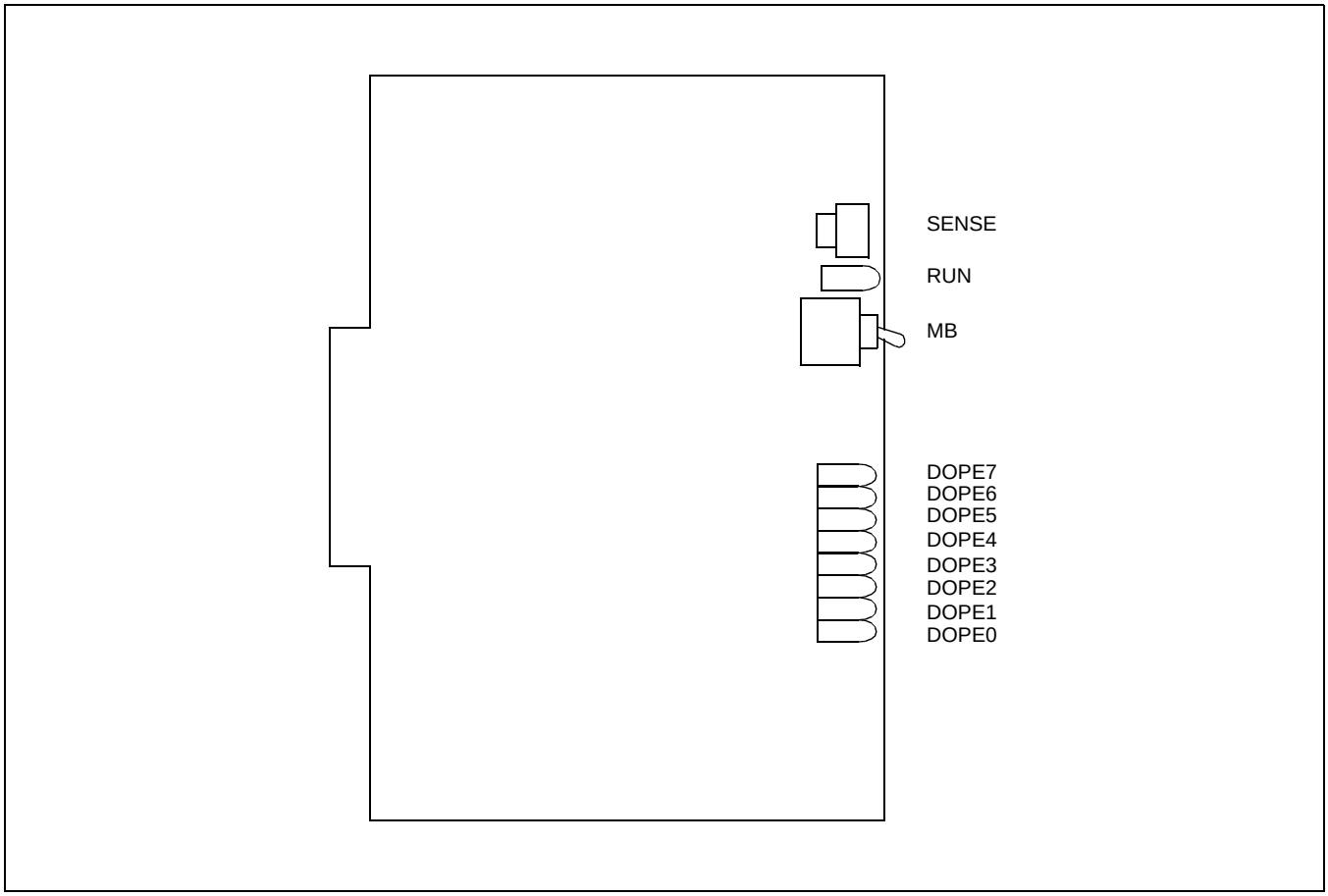
The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the intended switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

# PN-SC03 (CSH)

1. Locations of Lamps, Switches, and Connectors




**PN-SC03 (CSH) Card**

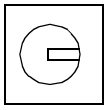
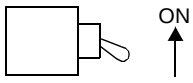
(2) Lamp Indications

**Lamp Indications on CSH Card**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| RUN | Green | Flashes at 120 IPM while the card is operating normally. |
| DOPE7 | Green | Lights when No.7 circuit D channel link is connected. |
| DOPE6 | Green | Lights when No.6 circuit D channel link is connected. |
| DOPE5 | Green | Lights when No.5 circuit D channel link is connected. |
| DOPE4 | Green | Lights when No.4 circuit D channel link is connected. |
| DOPE3 | Green | Lights when No.3 circuit D channel link is connected. |
| DOPE2 | Green | Lights when No.2 circuit D channel link is connected. |
| DOPE1 | Green | Lights when No.1 circuit D channel link is connected. |
| DOPE0 | Green | Lights when No.0 circuit D channel link is connected. |

3. Switch Settings

**Switch Settings on CSH Card**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="3">SENSE<br>(Rotary SW)<br>  <br>Note 1</td><td>4 ~ F</td><td colspan="2">Set the switch to match the AP Number (04 ~ 15) to be set by CM05.</td><td rowspan="3"></td></tr>
<tr><td colspan="3"><table>
<tr><td>AP No.</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr>
<tr><td>SW No.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr>
</table></td></tr>
<tr><td>0 ~ 3</td><td colspan="2">Not used</td></tr>
<tr><td rowspan="2">MB (Toggle SW)<br>  <br><br>Note 2</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>(DOWN)</td><td>For normal operation</td><td></td></tr>
</table>

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the intended switch position.*

**Note 2:** *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

## 4. LAMP INDICATIONS AND SWITCH SETTINGS OF LINE/TRUNK CIRCUIT CARDS

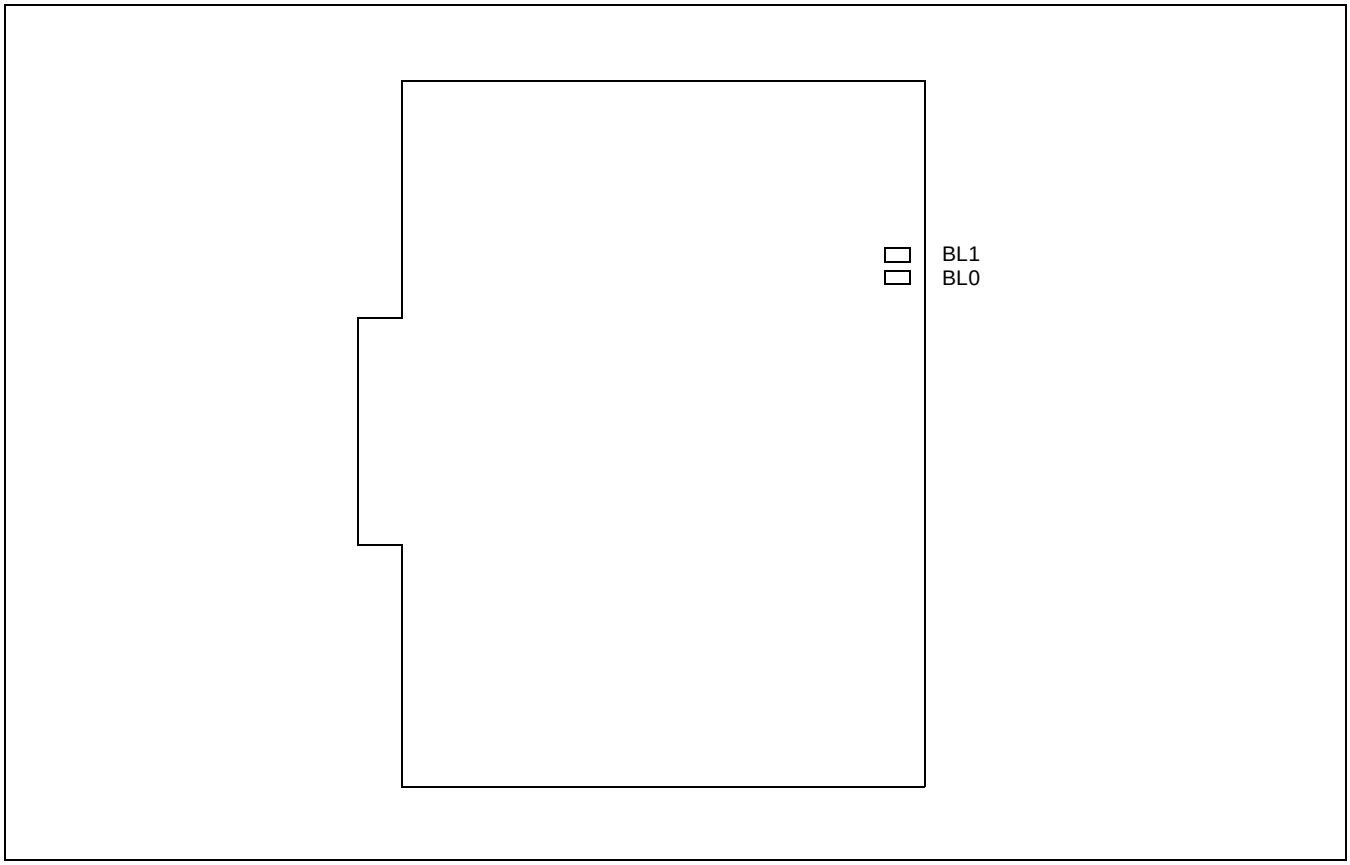
Table 4-3 below shows the line/trunk circuit cards to be explained in this section.

**Table 4-3 Table of Line /Trunk Circuit Cards**

| NAME (FUNCTIONAL NAME) | EXISTENCE OF LAMPS X: PROVIDED — : NOT PROVIDED | EXISTENCE OF SWITCHES X: PROVIDED — : NOT PROVIDED | EXTRACTION/INSERTION WITH POWER ON X: ALLOWED — : NOT ALLOWED | REFERENCE PAGE |
|---|---|---|---|---|
| PN-2AMPA (AMP) | X | — | X | 101 |
| PN-AUCA (AUC) | X | — | X | 102 |
| PN-CFTA (CFT) | X | — | X | 103 |
| PN-4COTB (COT) | X | — | X | 104 |
| PN-4COTG (COT) | X | — | X | 105 |
| PN-2DATA (DAT) | X | X | X | 106 |
| PN-DK00 (DK) | — | — | X | 108 |
| PN-4DITB (DIT) | X | — | X | 109 |
| PN-2DLCB (DLC) | X | — | X | 110 |
| PN-2DLCC (DLC) | X | — | X | 111 |
| PN-2DLCN (DLC) | X | — | X | 112 |
| PN-4DLCA (DLC) | X | — | X | 113 |
| PN-4DLCD (DLC) | X | — | X | 114 |
| PN-4DLCF (DLC) | X | — | X | 115 |
| PN-4DLCM (DLC) | X | — | X | 116 |
| PN-4DLCQ (DLC) | X | — | X | 117 |
| PN-2DPCB (DPC) | X | X | X | 118 |
| PN-2ILCA (ILC) | X | X | X | 121 |
| PN-4LCD/4LCD-A (LC) | X | — | X | 124 |
| PN-4LCJ (LC) | X | — | X | 125 |
| PN-M03 (M03) | X | X | X | 126 |
| PN-2ODTA (ODT) | X | — | X | 129 |
| PN-8RSTA (PBR) | — | — | X | 130 |
| PN-TNTA (TNT) | — | X | X | 131 |
| PN-2CSIA (CSI) | X | X | X | 133 |

# PN-2AMPA (AMP)

1. Locations of Lamps, Switches and Connectors




**PN-2AMPA (AMP) Card**

2. Lamp Indications

**Lamp Indications**

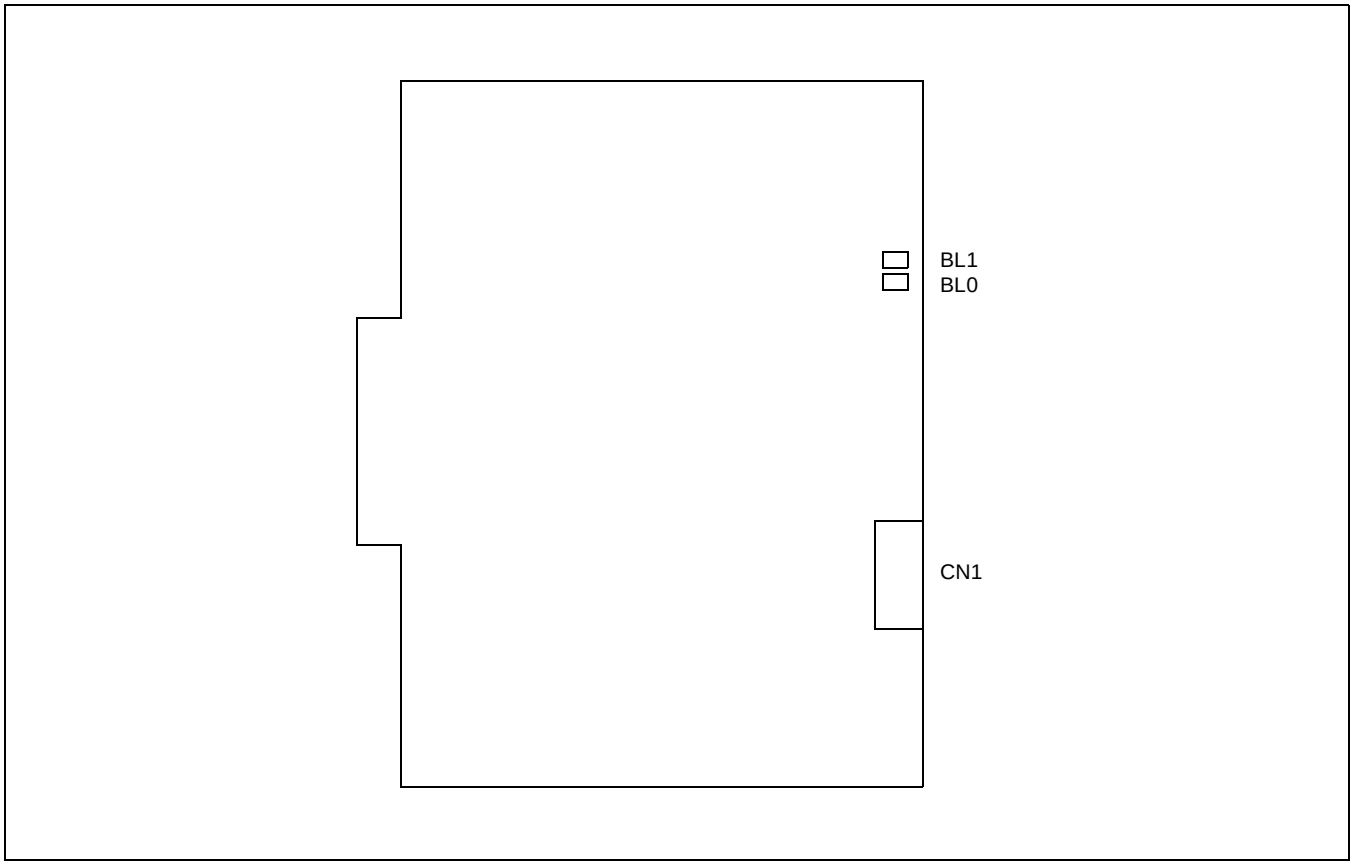
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0, 1 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-AUCA (AUC)

1. Locations of Lamps, Switches and Connectors




**PN-AUCA (AUC) Card**

2. Lamp Indications

**Lamp Indications**

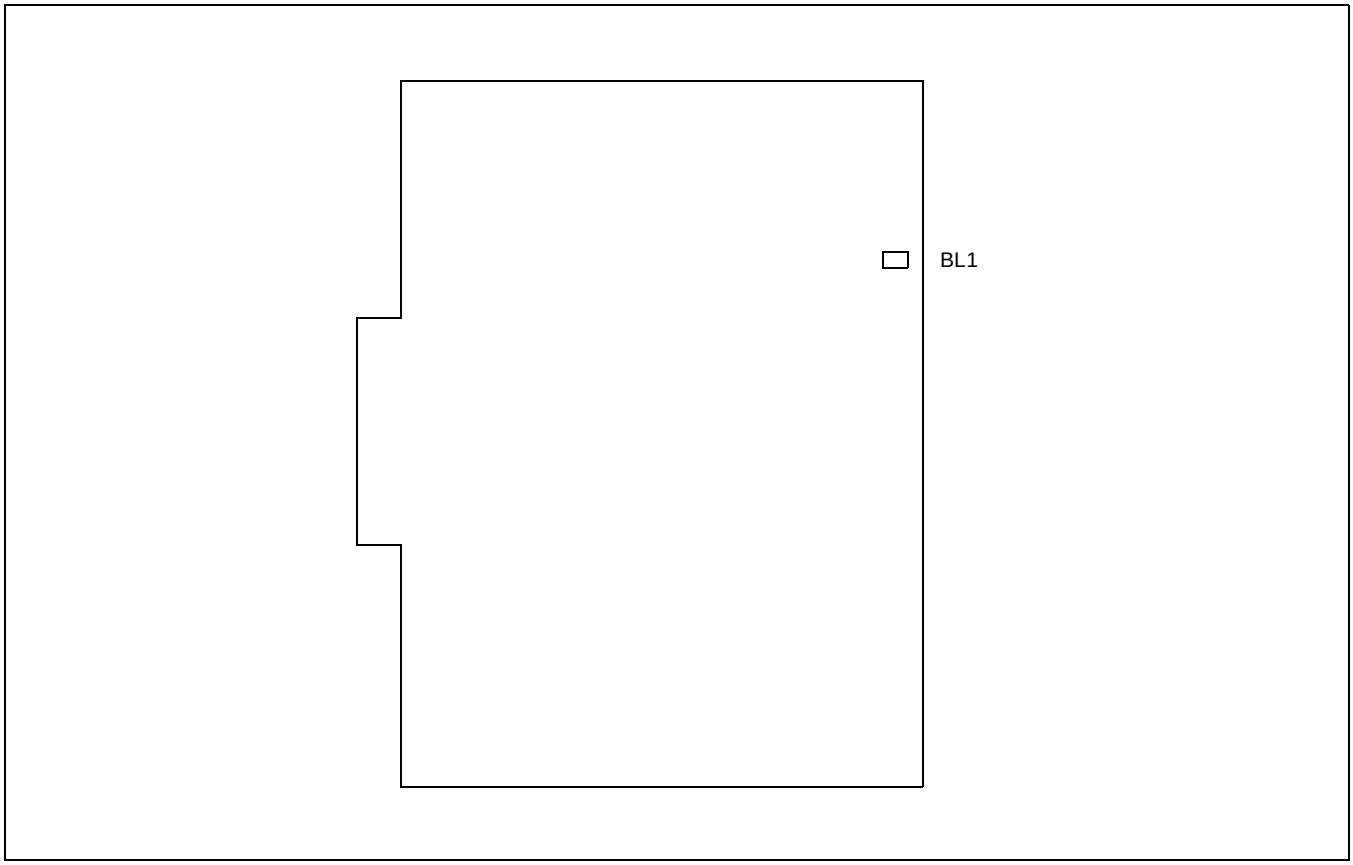
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0, 1 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-CFTA (CFT)

1. Locations of Lamps, Switches and Connectors




**PN-CFTA (CFT) Card**

2. Lamp Indications

**Lamp Indications**

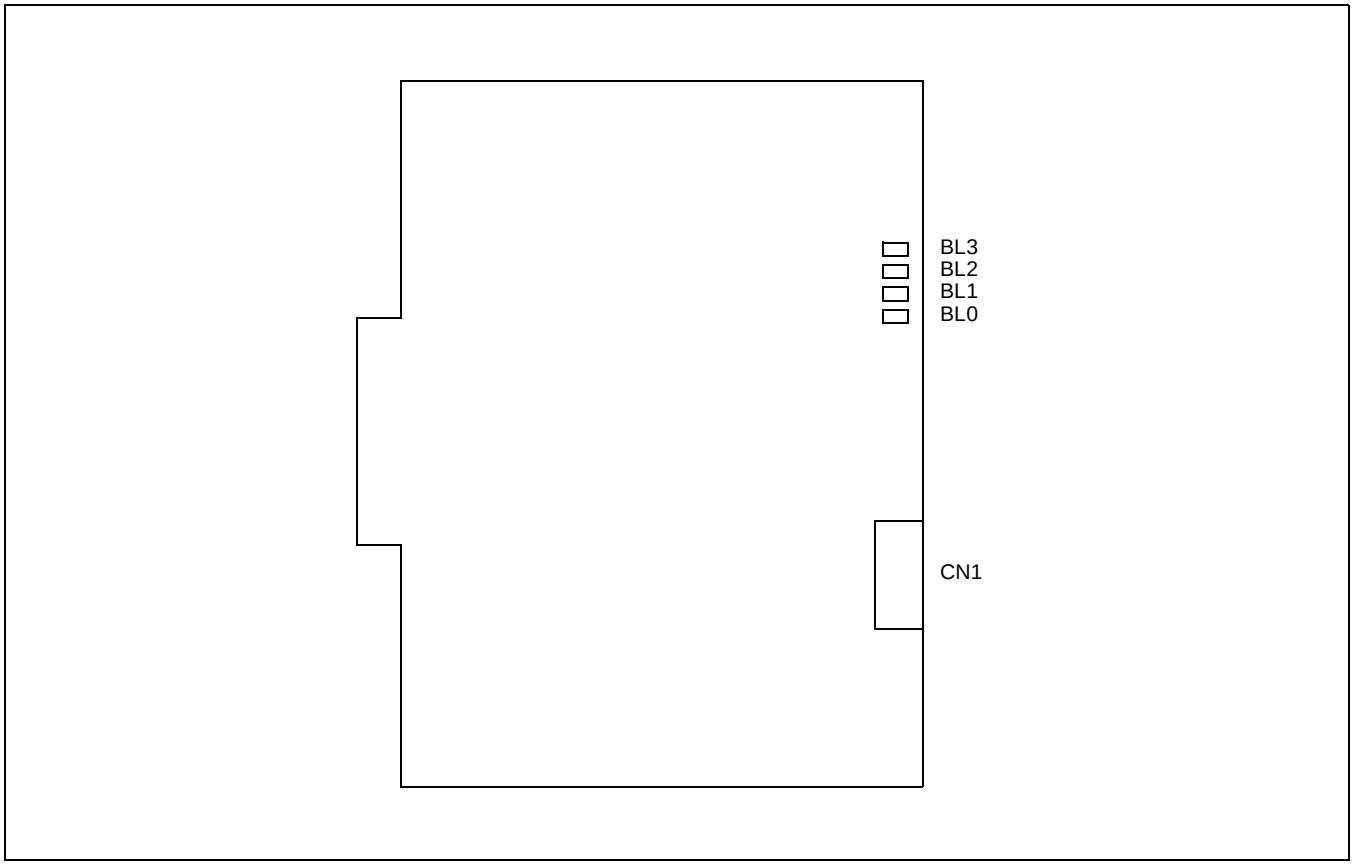
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0 | Red | • Remains lit when the card is in use.<br>• Flashes (60 IPM) When the circuit on the card is in the make-busy state on the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-4COTB (COT)

1. Locations of Lamps, Switches and Connectors




**PN-4COTB (COT) Card**

2. Lamp Indications

**Lamp Indications**

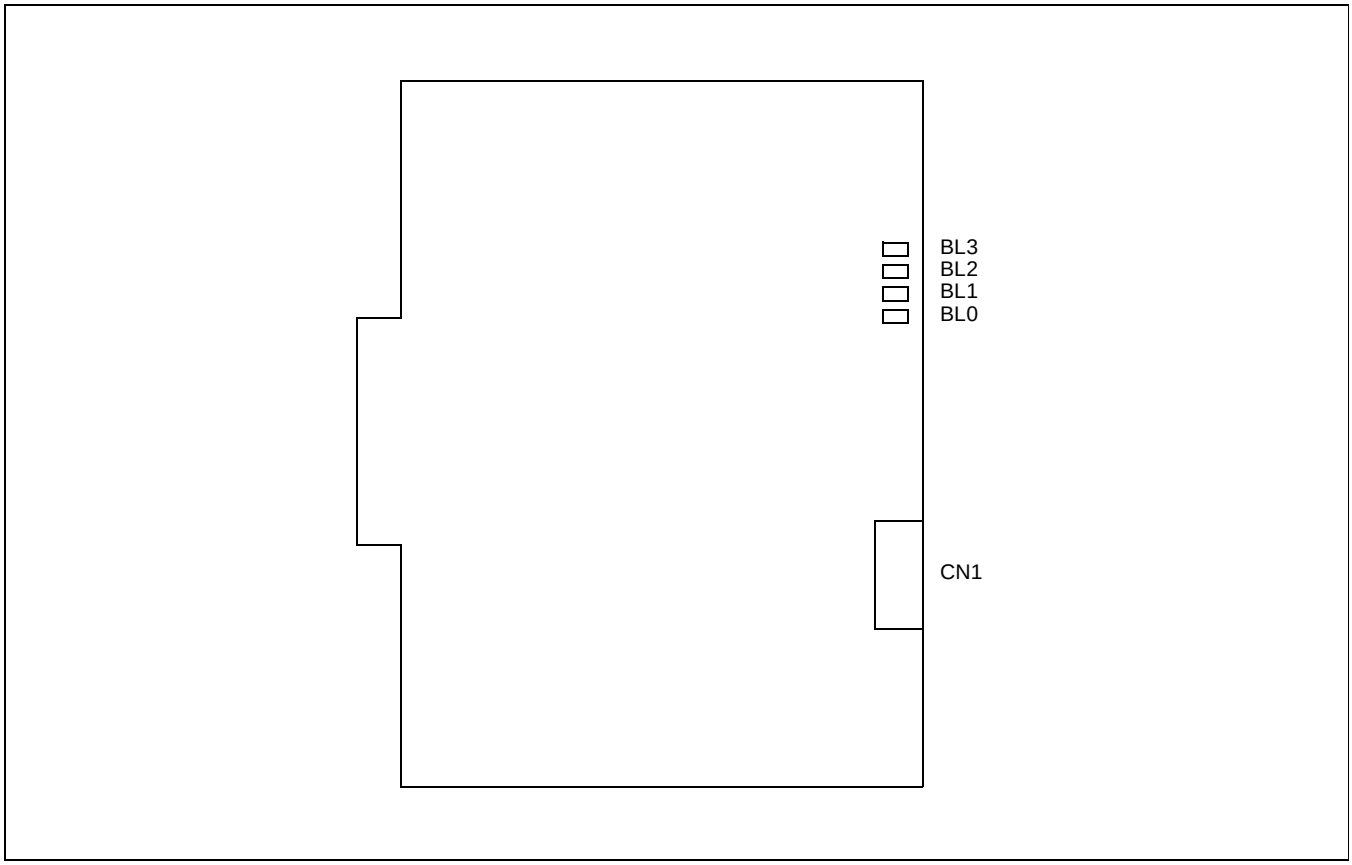
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0 - 3 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-4COTG (COT)

1. Locations of Lamps, Switches and Connectors




**PN-4COTG (COT) Card**

2. Lamp Indications

**Lamp Indications**

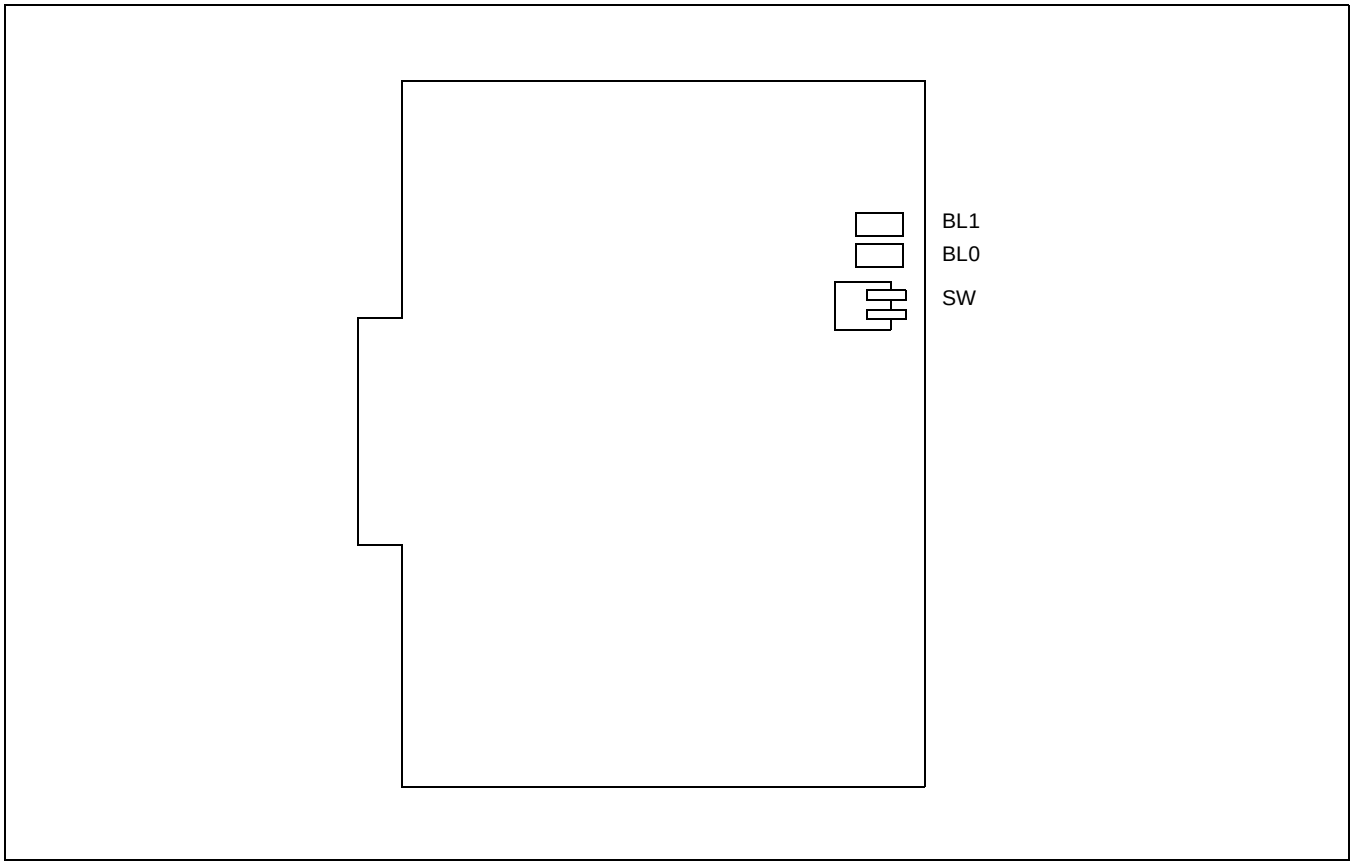
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0 - 3 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-2DATA (DAT)

1. Locations of Lamps, Switches and Connectors




**PN-2DATA (DAT) Card**

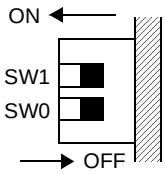
2. Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0, 1 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

(3) Switch Settings

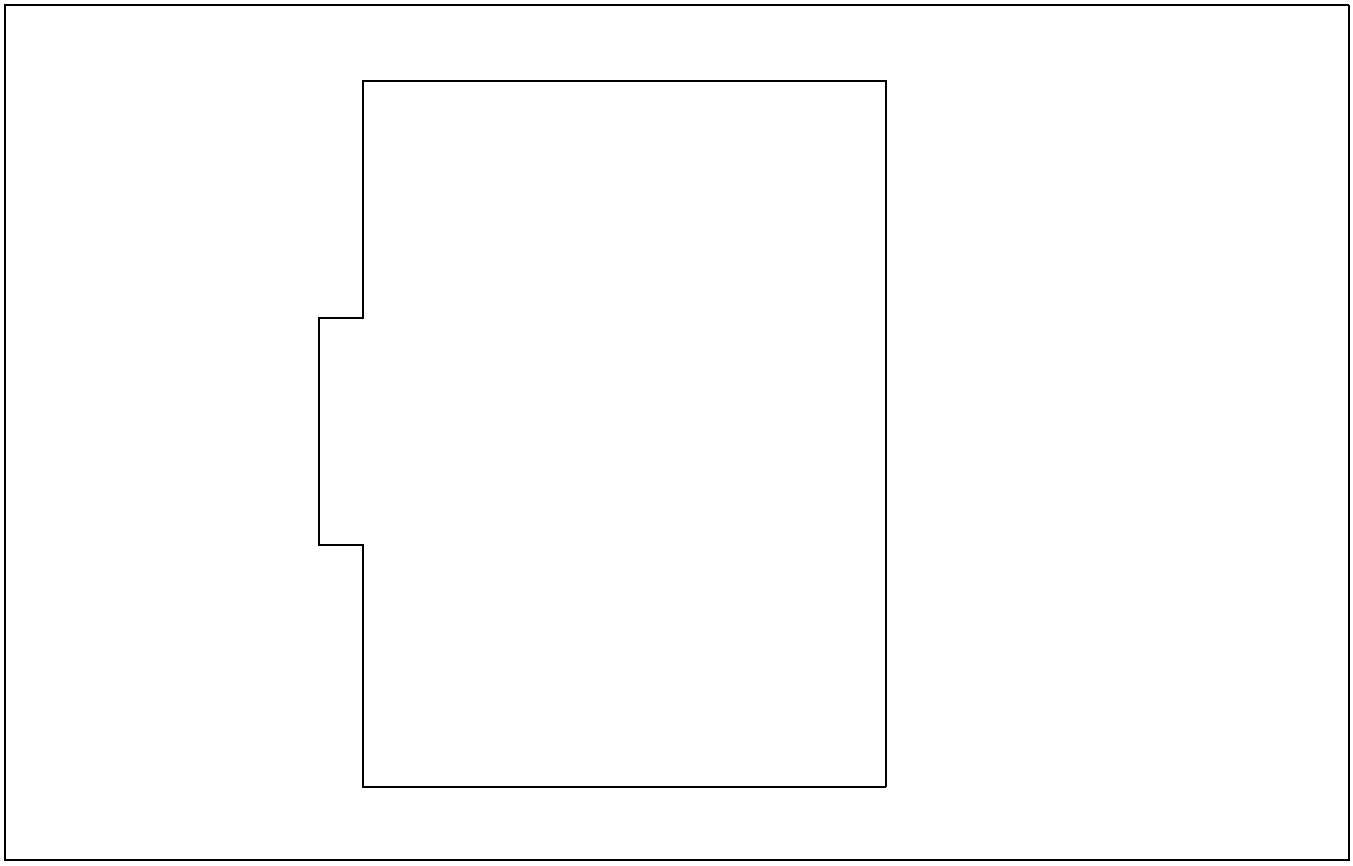
**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW (Piano Key SW)   | SW-0 | ON | Data write into the No.1 circuit is disabled. | |
| | | OFF | Data write into the No.1 circuit is enabled. | |
| | SW-1 | ON | Data write into the No.1 circuit is disabled. | |
| | | OFF | Data write into the No.1 circuit is enabled. | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

# PN-DK00 (DK)

1. Locations of Lamps, Switches and Connectors



**PN-DK00 (DK) Card**

2. Lamp Indications

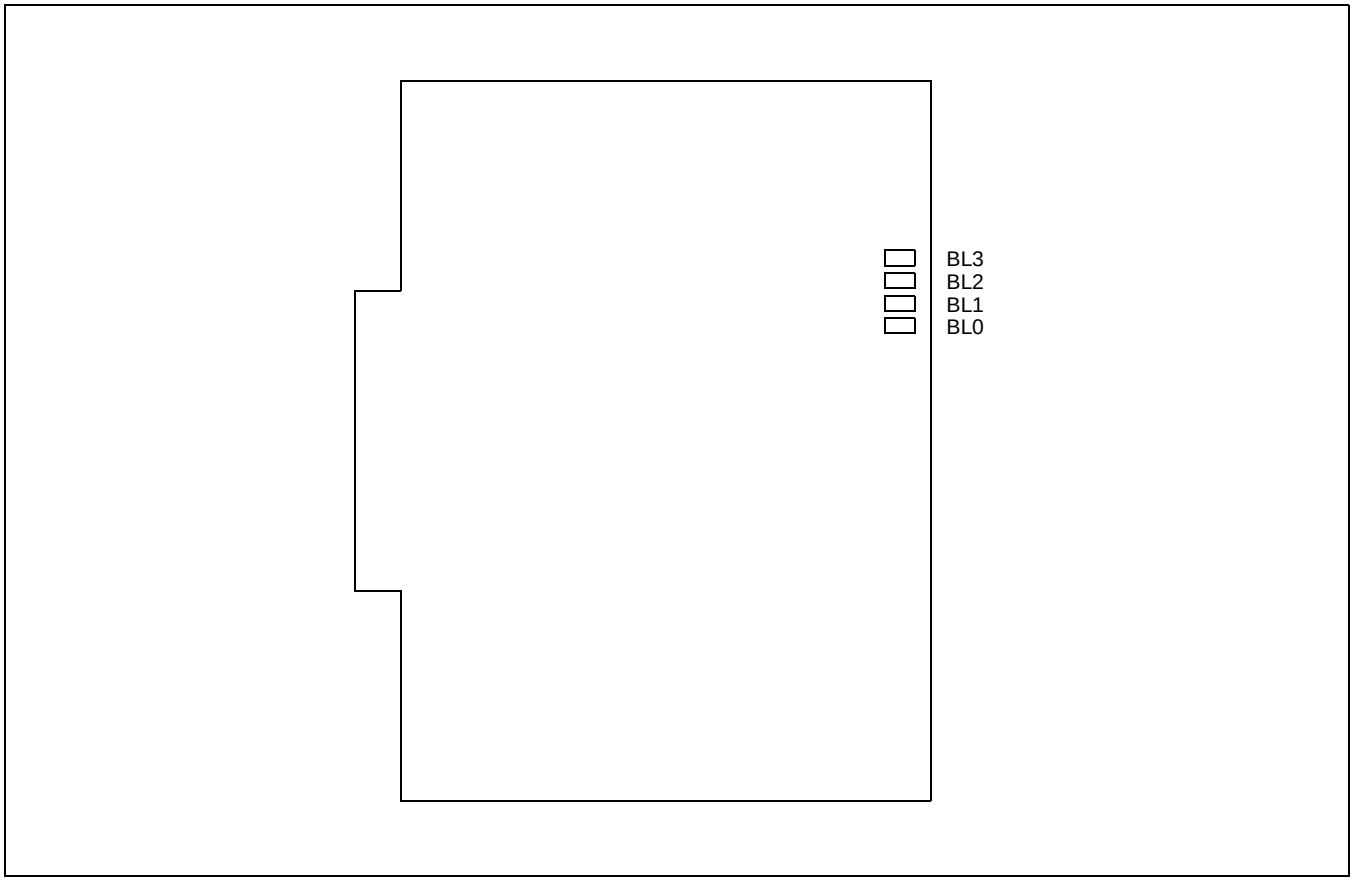
   This card has no indicator lamps.

3. Switch Settings

   This card has no switches.

# PN-4DITB (DIT)

1. Locations of Lamps, Switches, and Connectors




**PN-4DITB (DIT) Card**

2. Lamp Indications

**Lamp Indications**

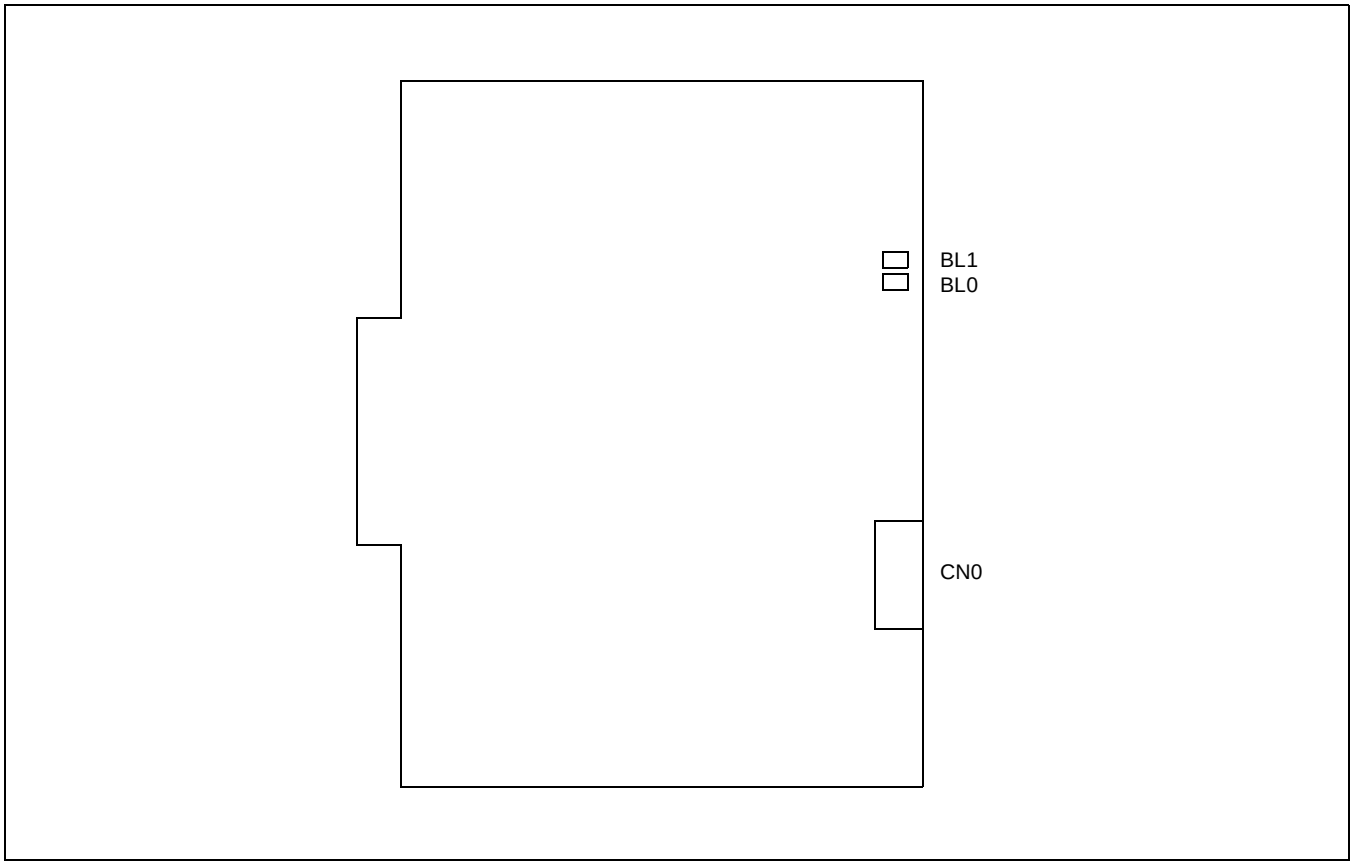
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0 ~ 3 | Red | • Light when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-2DLCB (DLC)

1. Locations of Lamps, Switches and Connectors




**PN-2DLCB (DLC) Card**

2. Lamp Indications

**Lamp Indications**

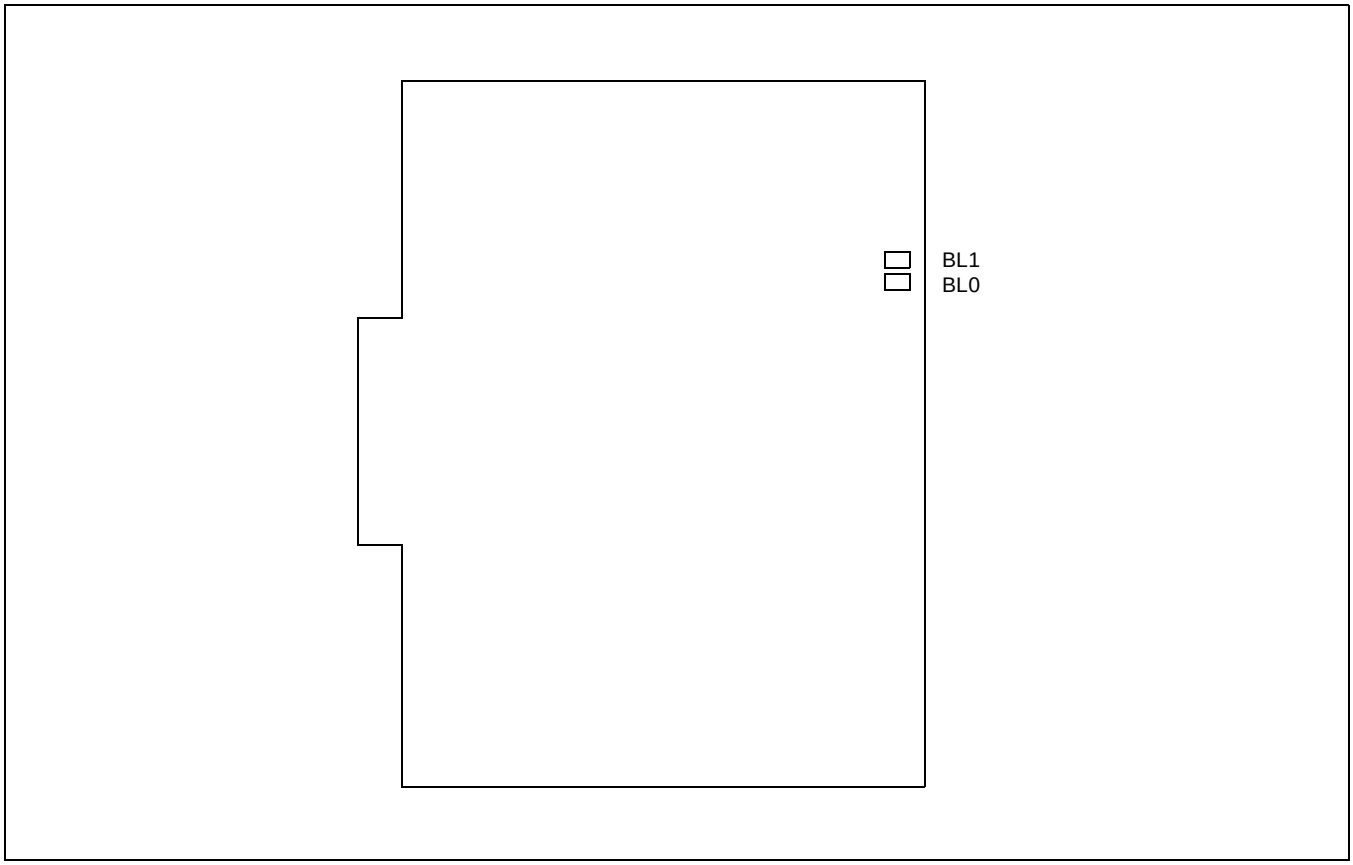
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0 , 1 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-2DLCC (DLC)

1. Locations of Lamps, Switches and Connectors




**PN-2DLCC (DLC) Card**

2. Lamp Indications

**Lamp Indications**

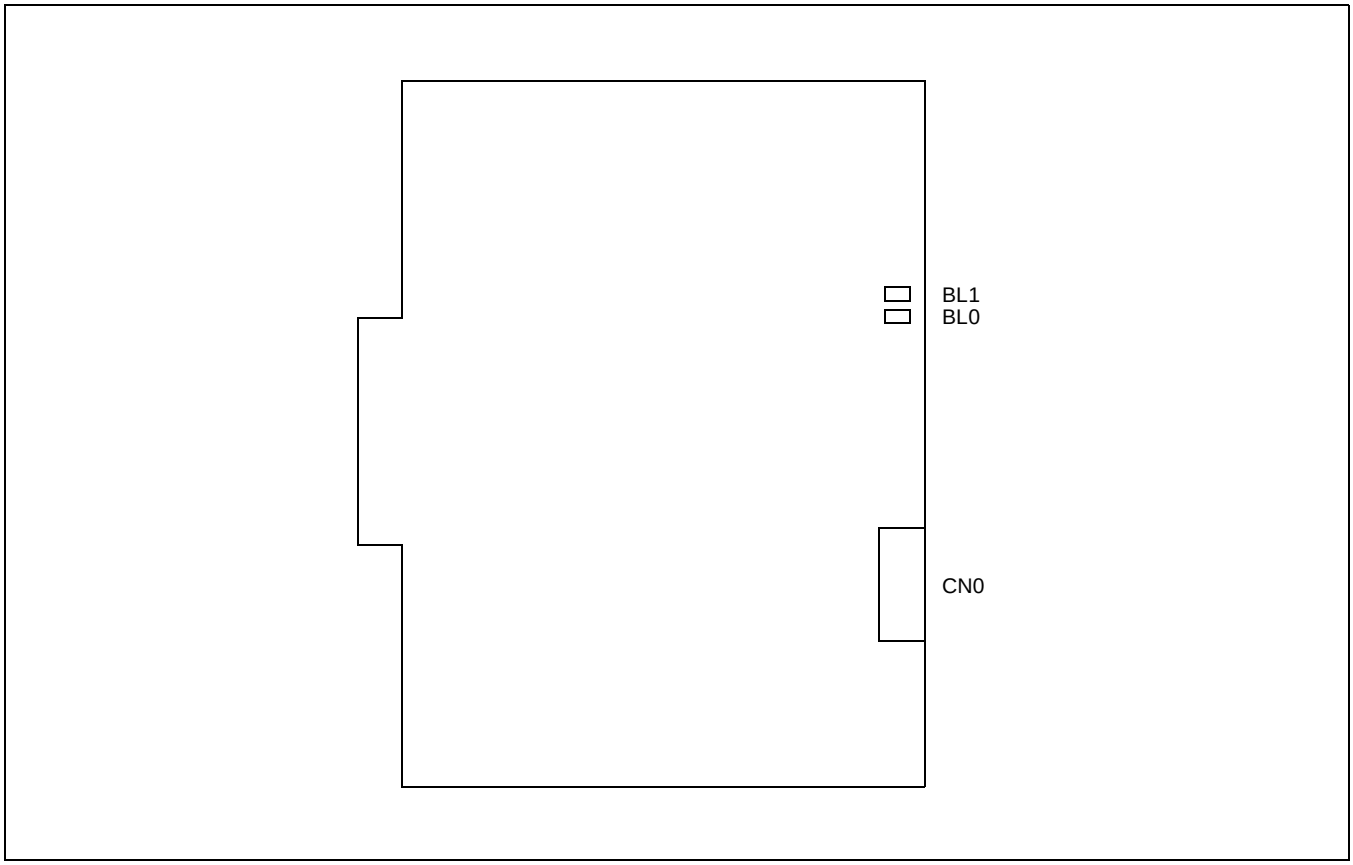
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0 , 1 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-2DLCN (DLC)

1. Locations of Lamps, Switches and Connectors




**PN-2DLCN (DLC) Card**

2. Lamp Indications

**Lamp Indications**

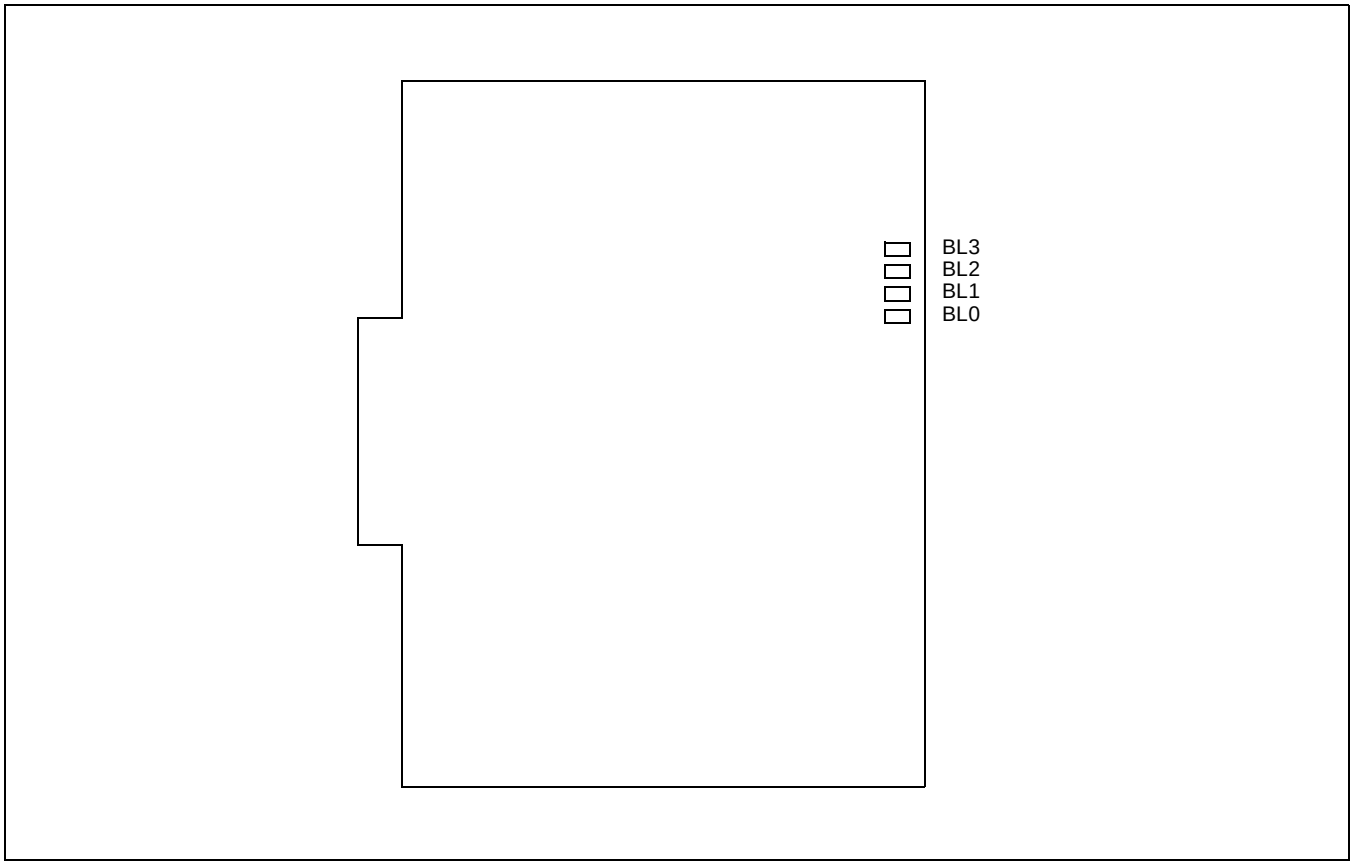
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0, 1 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-4DLCA (DLC)

1. Locations of Lamps, Switches and Connectors




**PN-4DLCA (DLC) Card**

2. Lamp Indications

**Lamp Indications**

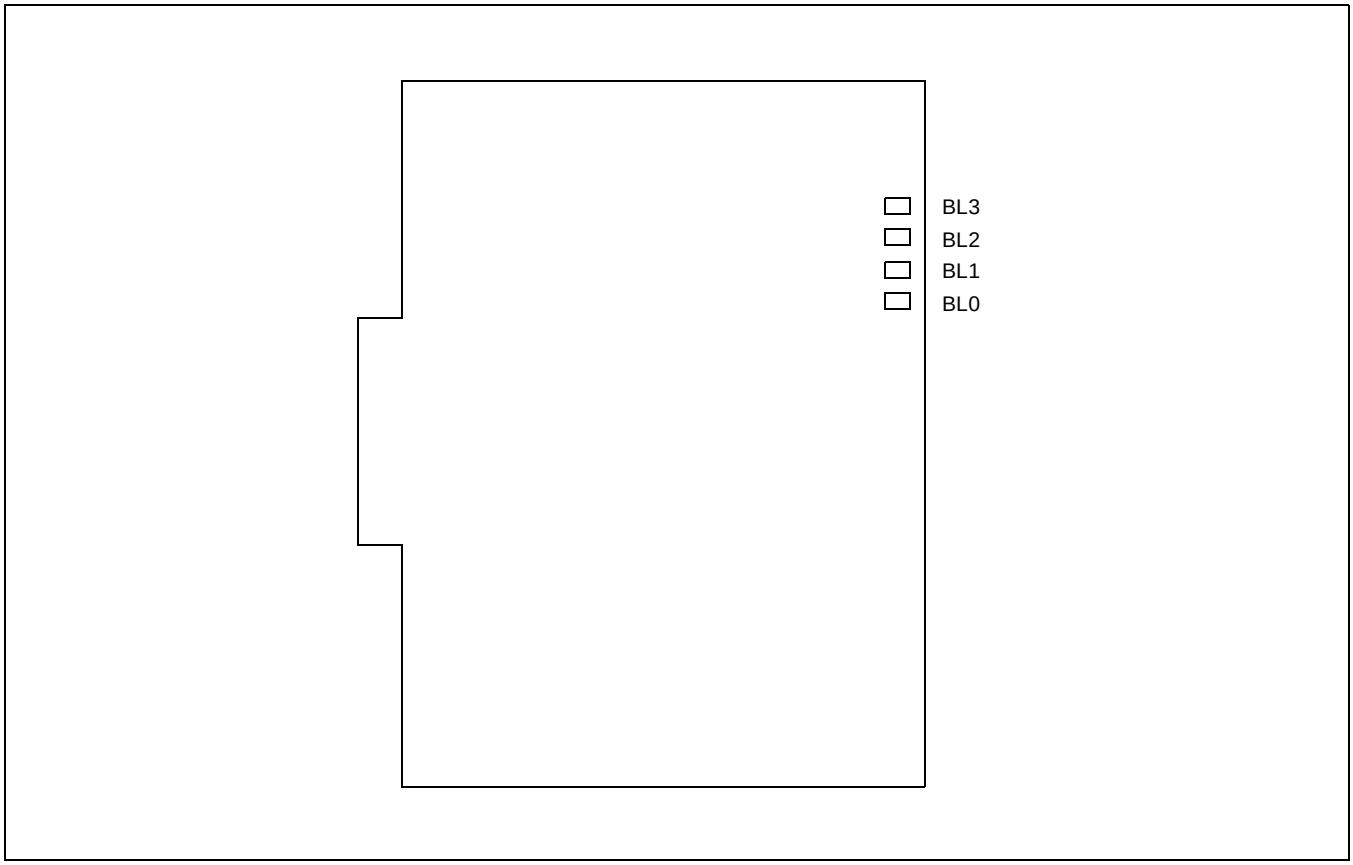
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0 - 3 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-4DLCD (DLC)

1. Locations of Lamps, Switches and Connectors




**PN-4DLCD (DLC) Card**

2. Lamp Indications

**Lamp Indications**

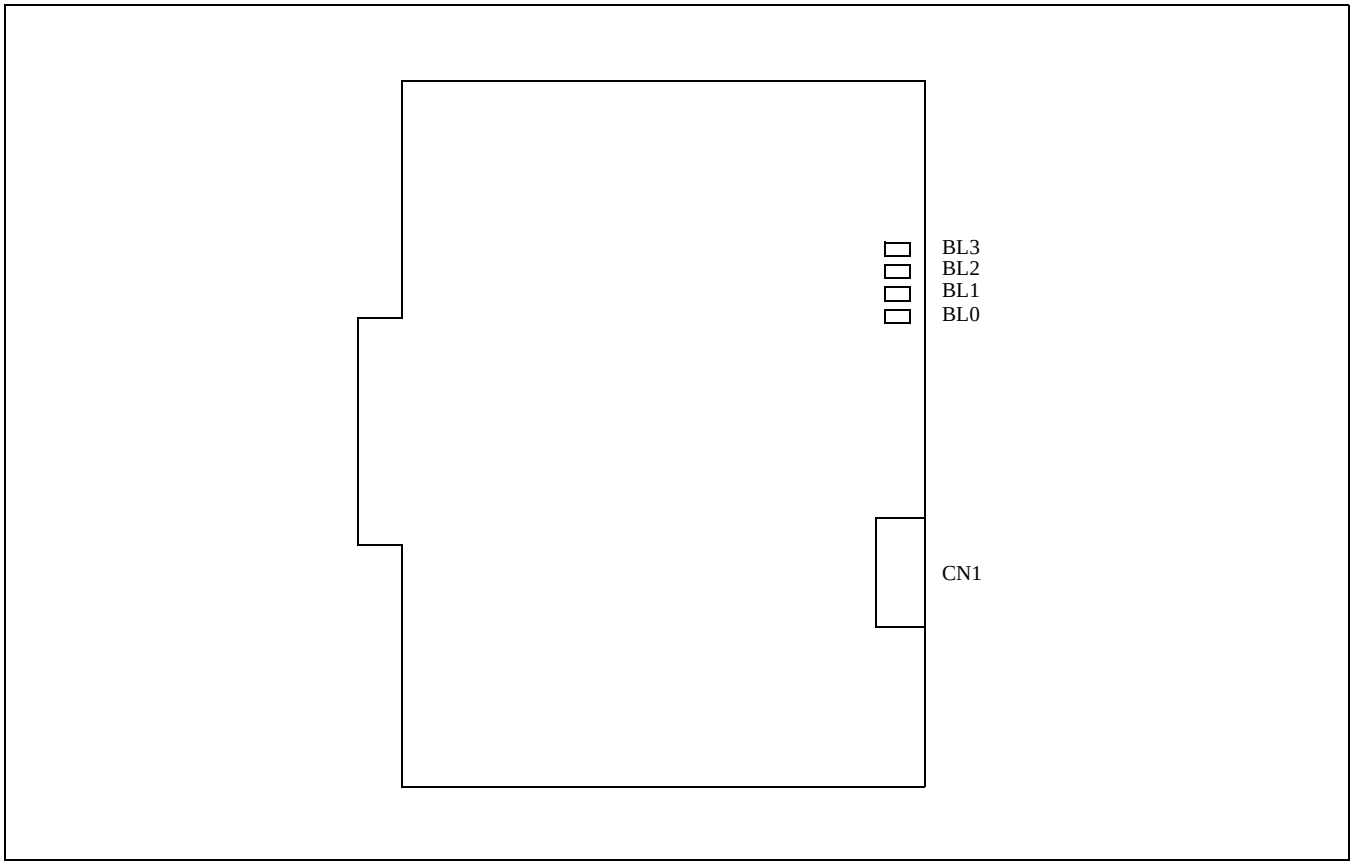
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0-3 | Red | • Remains lit when the corresponding circuit is in use<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned |

3. Switch Settings

This card has no switches.

# PN-4DLCF (DLC)

1. Locations of Lamps, Switches and Connectors




**PN-4DLCF (DLC) Card**

2. Lamp Indications

**Lamp Indications**

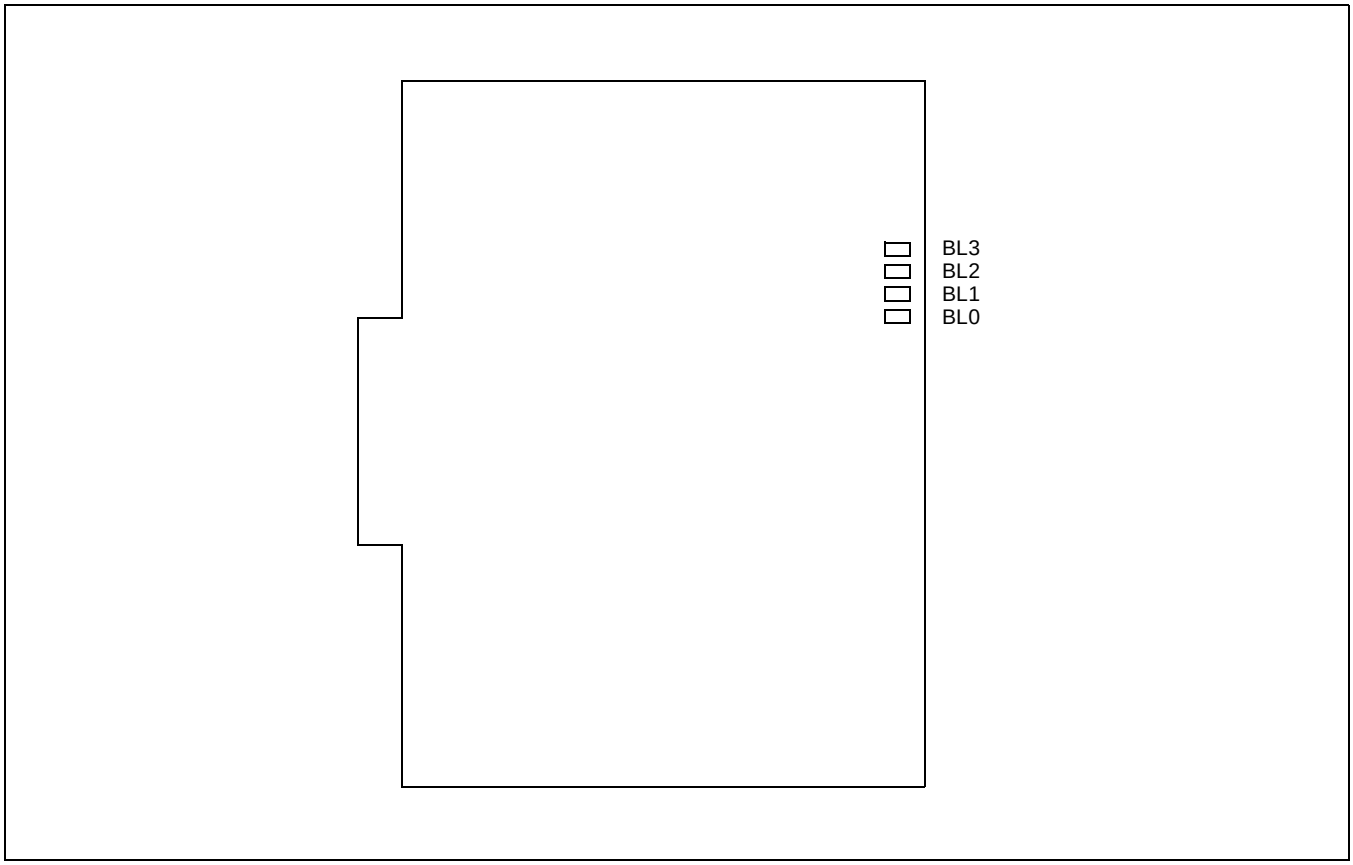
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0 - 3 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-4DLCM (DLC)

1. Locations of Lamps, Switches and Connectors




**PN-4DLCM (DLC) Card**

2. Lamp Indications

**Lamp Indications**

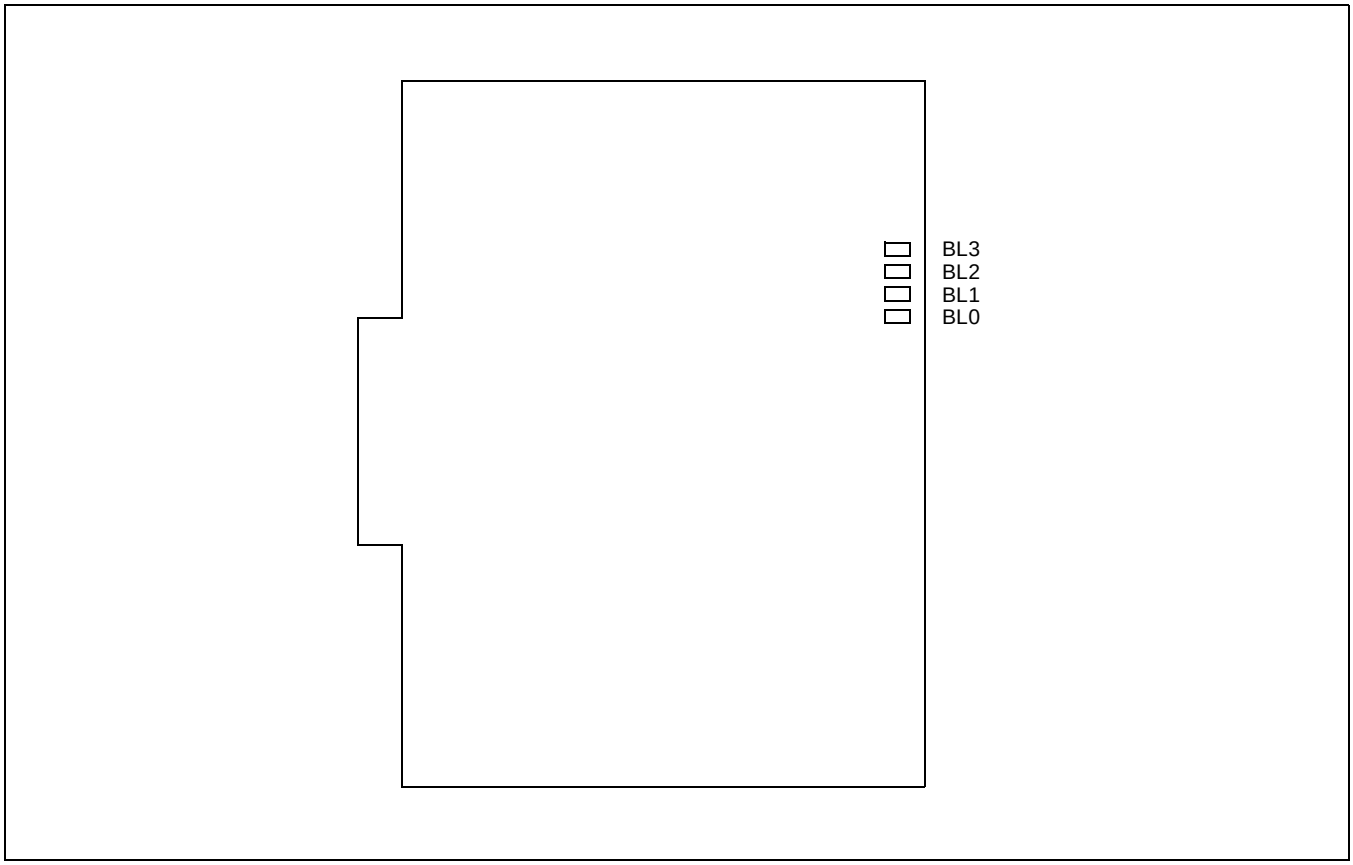
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0-3 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-4DLCQ (DLC)

1. Locations of Lamps, Switches and Connectors




**PN-4DLCQ (DLC) Card**

2. Lamp Indications

**Lamp Indications**

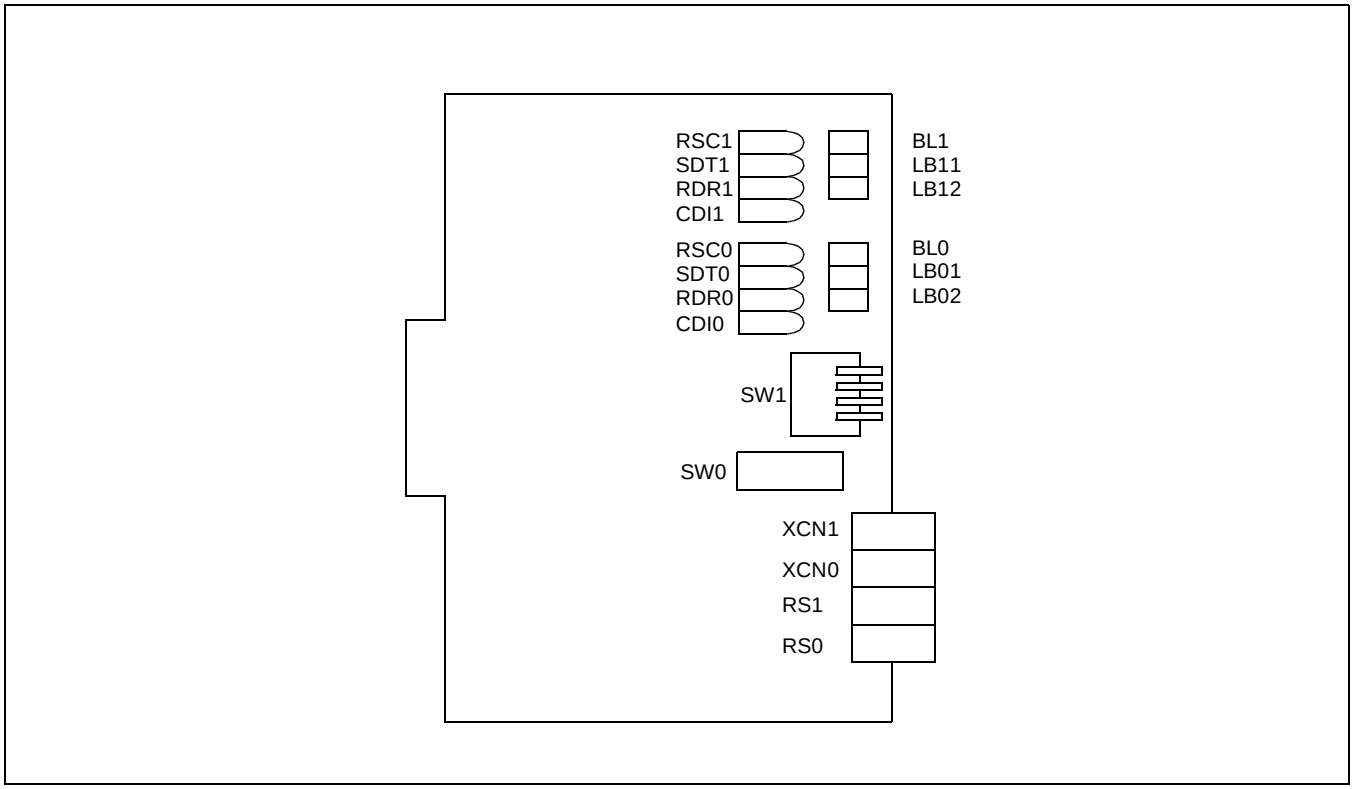
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0-3 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-2DPCB (DPC)

1. Location of Lamps, Switches and Connectors




**PN-2DPCB (DPC) Card**

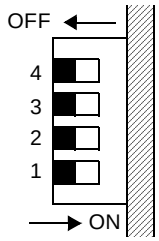
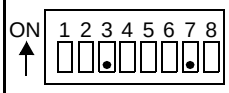
(2) Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION | |
|---|---|---|---|
| BL0 | Red | No. 0 Circuit | ON: Ready for digital data transmission or the circuit is busy.<br>OFF: Fixed path is not connected.<br>Flash (60IPM): Make-busy state or the system data for this card is not assigned.<br>Flash (120IPM): Fixed path is connected. |
| LB01 | Red | | ON: Loop Back 1 is set.<br>OFF: Normally operating. |
| LB02 | Red | | ON: Loop Back 2 is set.<br>OFF: Normally operating. |
| RSC0 | Green | | ON: RTS/C signal ON.<br>OFF: RTS/C signal OFF. |
| SDT0 | Green | | ON: TXD/T signal is “0”.<br>OFF: TXD/T signal is “1”. |
| RDR0 | Green | | ON: RXD/R signal is “0”.<br>OFF: RXD/R signal is “1”. |
| CDI0 | Green | | ON: DCD/I signal ON.<br>OFF: DCD/I signal OFF. |
| BL1 | Red | No. 1 Circuit | ON: Ready for digital data transmission or the circuit is busy.<br>OFF: Fixed path is not connected.<br>Flash (60IPM): Make-busy state or the system data for this card is not assigned.<br>Flash (120IPM): Fixed path is connected. |
| LB11 | Red | | ON: Loop Back 1 is set.<br>OFF: Normally operating. |
| LB12 | Red | | ON: Loop Back 2 is set.<br>OFF: Normally operating. |
| RSC1 | Green | | ON: RTS/C signal ON.<br>OFF: RTS/C signal OFF. |
| SDT1 | Green | | ON: TXD/T signal is “0”.<br>OFF: TXD/T signal is “1”. |
| RDR1 | Green | | ON: RXD/R signal is “0”.<br>OFF: RXD/R signal is “1”. |
| CDI1 | Green | | ON: DCD/I signal ON.<br>OFF: DCD/I signal OFF. |

(3) Switch Settings

**Switch Settings**

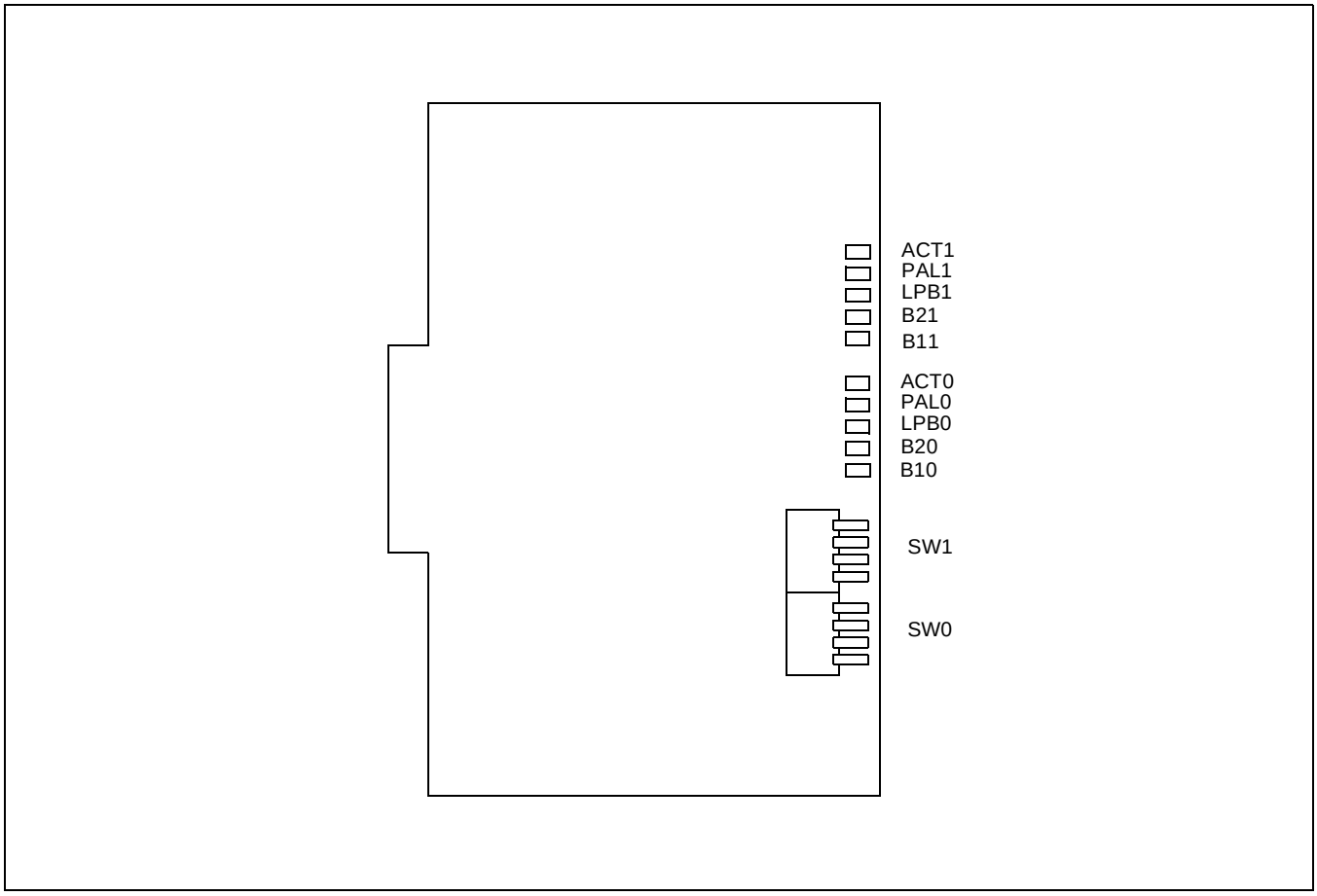
| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | | CHECK |
|---|---|---|---|---|---|
| SW1 (Piano Key SW)   | 1 | ON | No. 0 Circuit | Loop Back 1 ON | |
| | | (OFF) | | Loop Back 1 OFF | |
| | 2 | ON | | Loop Back 2 ON | |
| | | (OFF) | | Loop Back 2 OFF | |
| | 3 | ON | No. 1 Circuit | Loop Back 1 ON | |
| | | (OFF) | | Loop Back 1 OFF | |
| | 4 | ON | | Loop Back 2 ON | |
| | | (OFF) | | Loop Back 2 OFF | |
| SW0 (Dip SW)   | 1 | ON | No. 0 Circuit | Forcibly turning the DTR signal to ON | |
| | | OFF | | The DTR signal from DTE goes through the card | |
| | 2 | ON | | Forcibly turning the RTS/C signal to ON | |
| | | OFF | | The RTS/C signal from DTE goes through the card | |
| | 3 | (OFF) | | Not used | |
| | 4 | ON | | V.11 (X.21) interface | |
| | | OFF | | V.24/V.28 (RS-232C) interface | |
| | 5 | ON | No. 1 Circuit | Forcibly turning the DTR signal to ON | |
| | | OFF | | The DTR signal from DTE goes through the card | |
| | 6 | ON | | Forcibly turning the RTS/C signal to ON | |
| | | OFF | | The RTS/C signal from DTE goes through the card | |
| | 7 | (OFF) | | Not used | |
| | 8 | ON | | V.11 (X.21) interface | |
| | | OFF | | V.24/V.28 (RS-232C) interface | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ) , the setting of the switch varies with the system concerned.

**Note:** *When the power is on, disconnect the cables before unplugging the circuit card, and connect the cables after plugging the circuit card.*

# PN-2ILCA (ILC)

1. Locations of Lamps, Switches, and Connectors




**PN-2ILCA (ILC) Card**

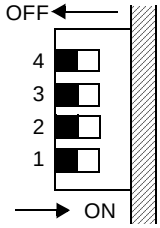
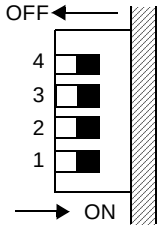
(2) Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION | |
|---|---|---|---|
| ACT1 | Green | No. 1 Circuit | ON: Normally operating.<br>OFF: Not operating. |
| PAL1 | Red | | ON: Line is short-circuiting.<br>OFF: Normally operating. |
| LPB1 | Red | | OFF: Not used. |
| B21 | Green | | ON: B2 channel is in use.<br>OFF: B2 channel is idle. |
| B11 | Green | | ON: B1 channel is in use.<br>OFF: B1 channel is idle. |
| ACT0 | Green | No. 0 Circuit | ON: Normally operating.<br>OFF: Not operating. |
| PAL0 | Red | | ON: Line is short-circuiting.<br>OFF: Normally operating. |
| LPB0 | Red | | OFF: Not used. |
| B20 | Green | | ON: B2 channel is in use.<br>OFF: B2 channel is idle. |
| B10 | Green | | ON: B1 channel is in use.<br>OFF: B1 channel is idle. |

(3) Switch Settings

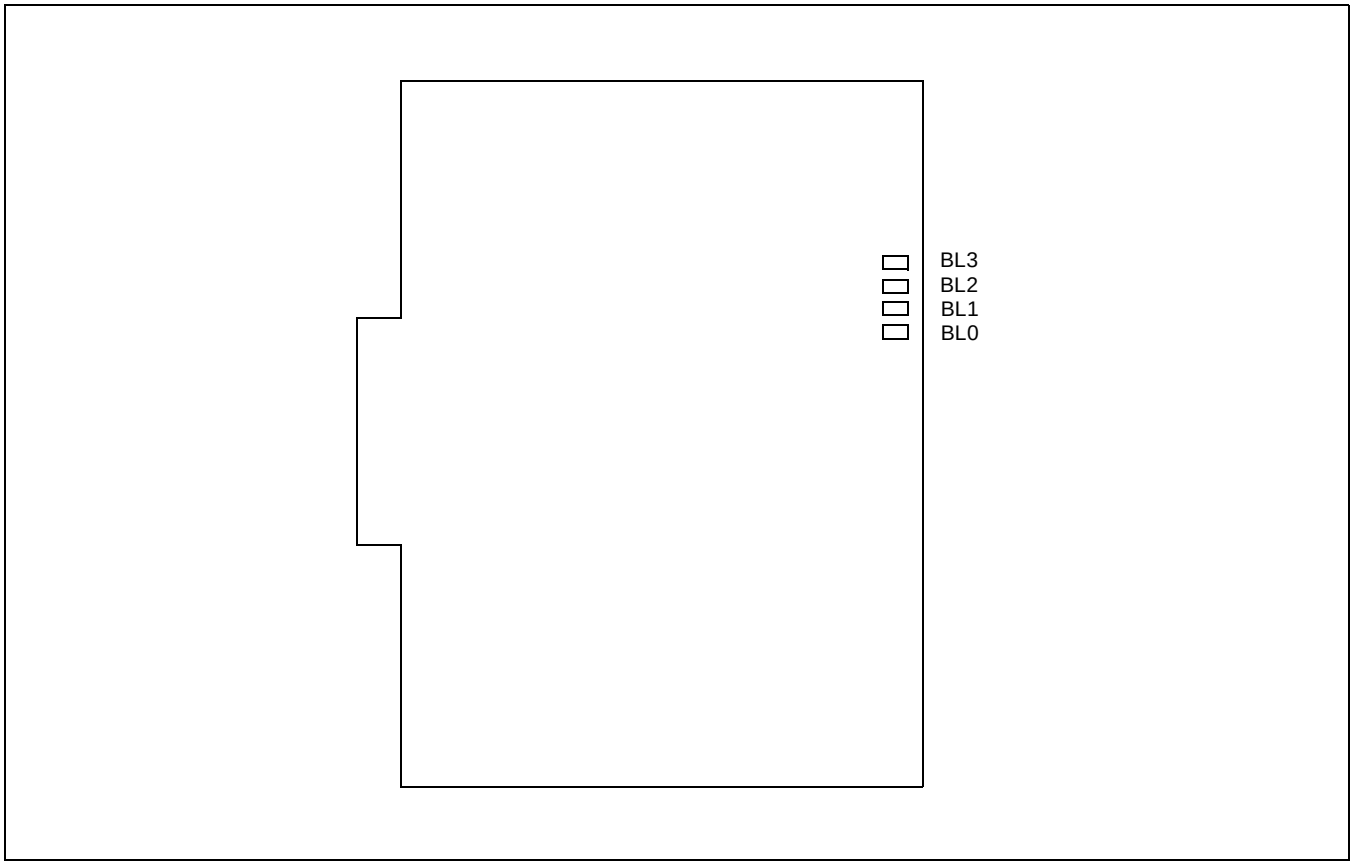
**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | | CHECK |
|---|---|---|---|---|---|
| SW1<br>(Piano Key SW)<br>  <br> | 1 | OFF | Always set to OFF | | |
| | 2 | OFF | Always set to OFF | | |
| | 3 | OFF | Always set to OFF | | |
| | 4 | OFF | Always set to OFF | | |
| SW0<br>(Piano Key SW)<br>  <br> | 1 | ON | No. 0 Circuit (Receiving) | Terminating register is provided. | |
| | | OFF | | Terminating register is not provided. | |
| | 2 | ON | No. 0 Circuit (Sending) | Terminating register is provided. | |
| | | OFF | | Terminating register is not provided. | |
| | 3 | ON | No. 1 Circuit (Receiving) | Terminating register is provided. | |
| | | OFF | | Terminating register is not provided. | |
| | 4 | ON | No. 1 Circuit (Sending) | Terminating register is provided. | |
| | | OFF | | Terminating register is not provided. | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ) , the setting of the switch varies with the system concerned.

# PN-4LCD/4LCD-A (LC)

1. Locations of Lamps, Switches and Connectors




**PN-4LCD/4LCD-A (LC) Card**

2. Lamp Indications

**Lamp Indications**

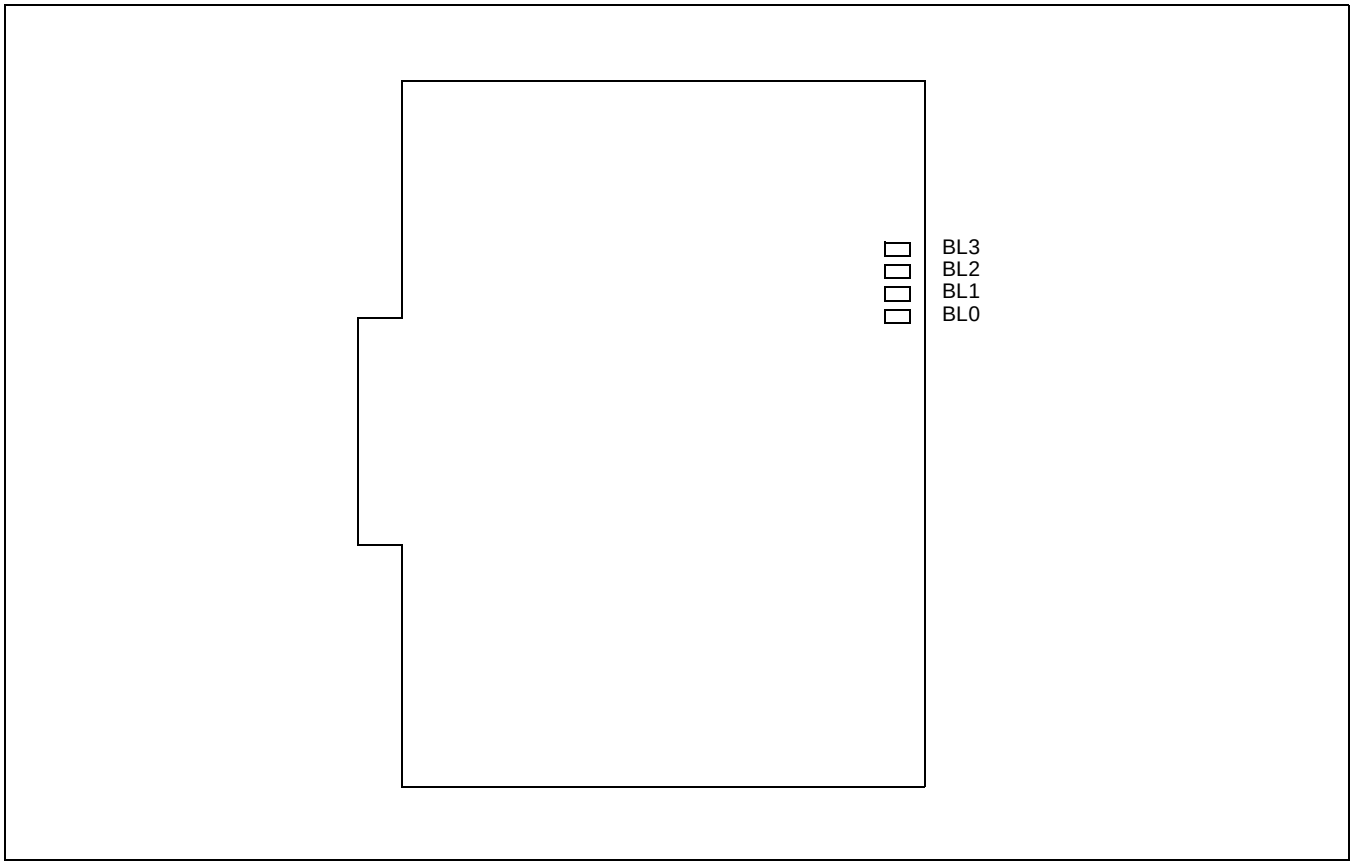
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0-3 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-4LCJ (LC)

1. Locations of Lamps, Switches and Connectors




**PN-4LCJ (LC) Card**

2. Lamp Indications

**Lamp Indications**

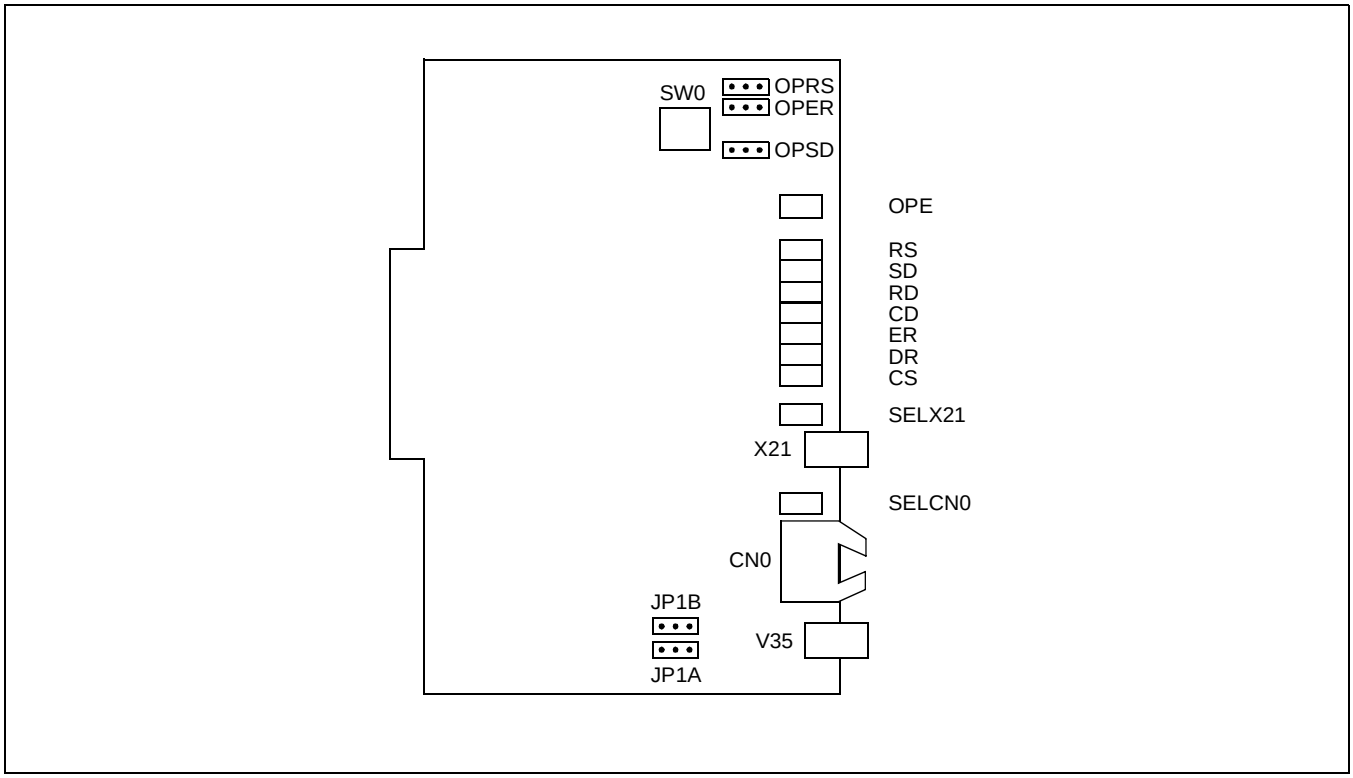
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0 - 3 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-M03 (M03)

1. Locations of Lamps, Switches and Connectors




**PN-M03 (M03) Card**

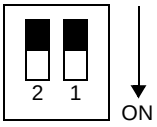
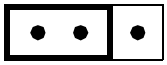
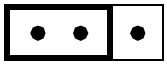
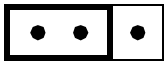
(2) Lamp Indications

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| OPE | Green | ON: This card is normally connected to the PN-2DPCB.<br>OFF: This card is abnormally connected to the PN-2DPCB. |
| RS | Green | ON: RTS signal is ON.<br>OFF: RTS signal is OFF. |
| SD | Green | ON: TXD signal is “0” (Space condition).<br>OFF: TXD signal is “1” (Mark condition). |
| RD | Green | ON: RXD signal is “0” (Space condition).<br>OFF: RXD signal is “1” (Mark condition). |
| CD | Green | ON: DCD signal is ON.<br>OFF: DCD signal is OFF. |
| ER | Green | ON: DTR signal is ON.<br>OFF: DTR signal is OFF. |
| DR | Green | ON: DSR signal is ON.<br>OFF: DSR signal is OFF. |
| CS | Green | ON: CTS signal is ON.<br>OFF: CTS signal is OFF. |
| SELX21 | Green | ON: Connecting to the PN-2DPCB is available.<br>OFF: Connecting to the PN-2DPCB is not available. |
| SELCN0 | Green | Not used. |

(3) Switch Settings

**Switch Settings**

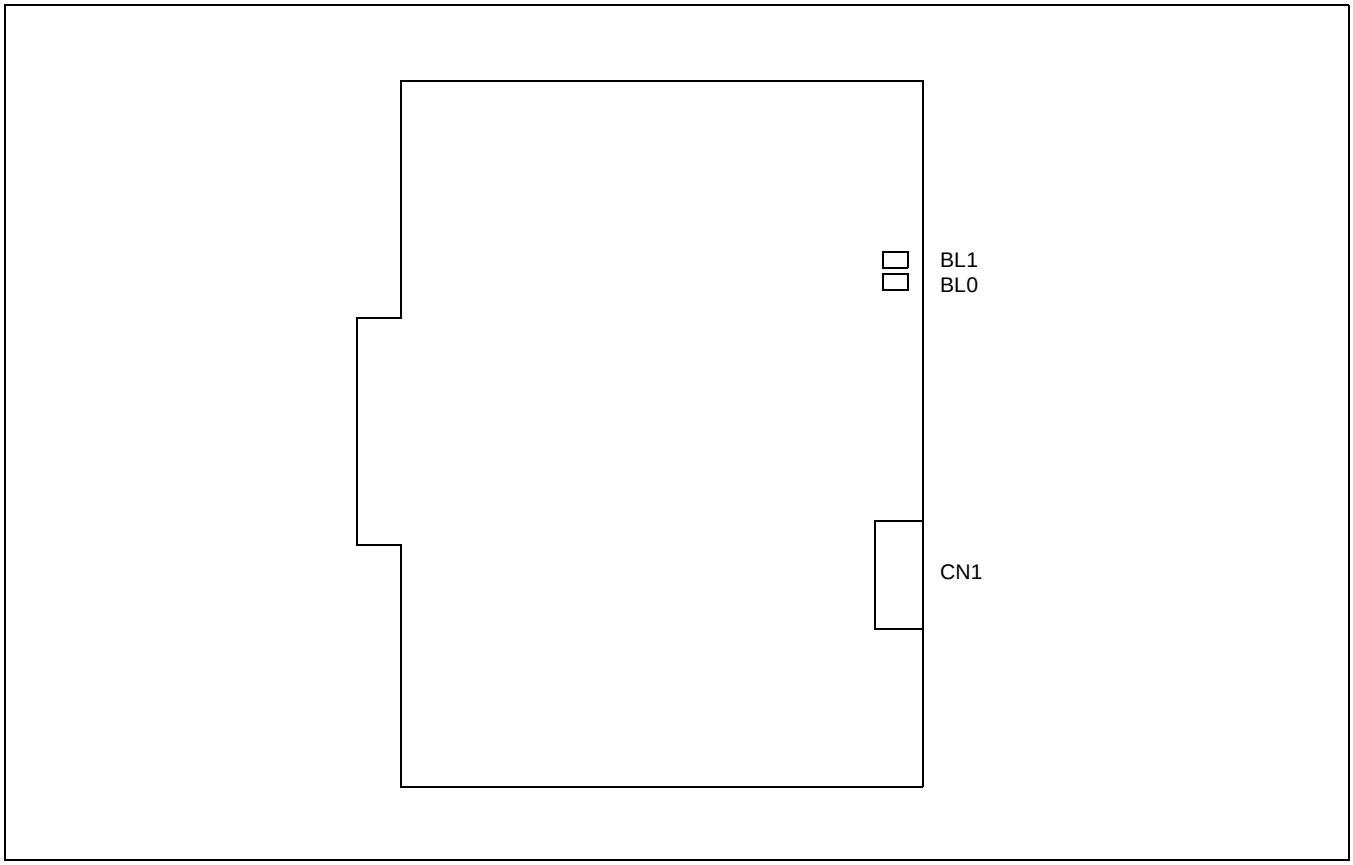
| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| SW0 (Dip SW)   | 1 | OFF | Always set to OFF. | |
| | 2 | OFF | Not used. | |
| JP1A (Jumper pin)  **Note** | | Right | TXC(2) signal is sent out. | |
| | | Left | TXC(2) signal is inputted. | |
| JP1B (Jumper pin)  **Note** | | Right | TXC(2) signal is sent out. | |
| | | Left | TXC(2) signal is inputted. | |
| OPSD (Jumper pin)  | | Right | Set the function of extending distance for TXD signal. | |
| | | Left | Cancel the function of extending distance for TXD signal. | |
| OPRS (Jumper pin)  | | Right | Set the function of extending distance for RTS signal. | |
| | | Left | Cancel the function of extending distance for RTS signal. | |
| OPER (Jumper pin)  | | Right | Set the function of extending distance for DTR signal. | |
| | | Left | Cancel the function of extending distance for DTR signal. | |

**Note:** *The JP1A and JP1B must be set to the same position each other.*

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

# PN-2ODTA (ODT)

1. Locations of Lamps, Switches and Connectors




**PN-2ODTA (ODT) Card**

2. Lamp Indications

**Lamp Indications**

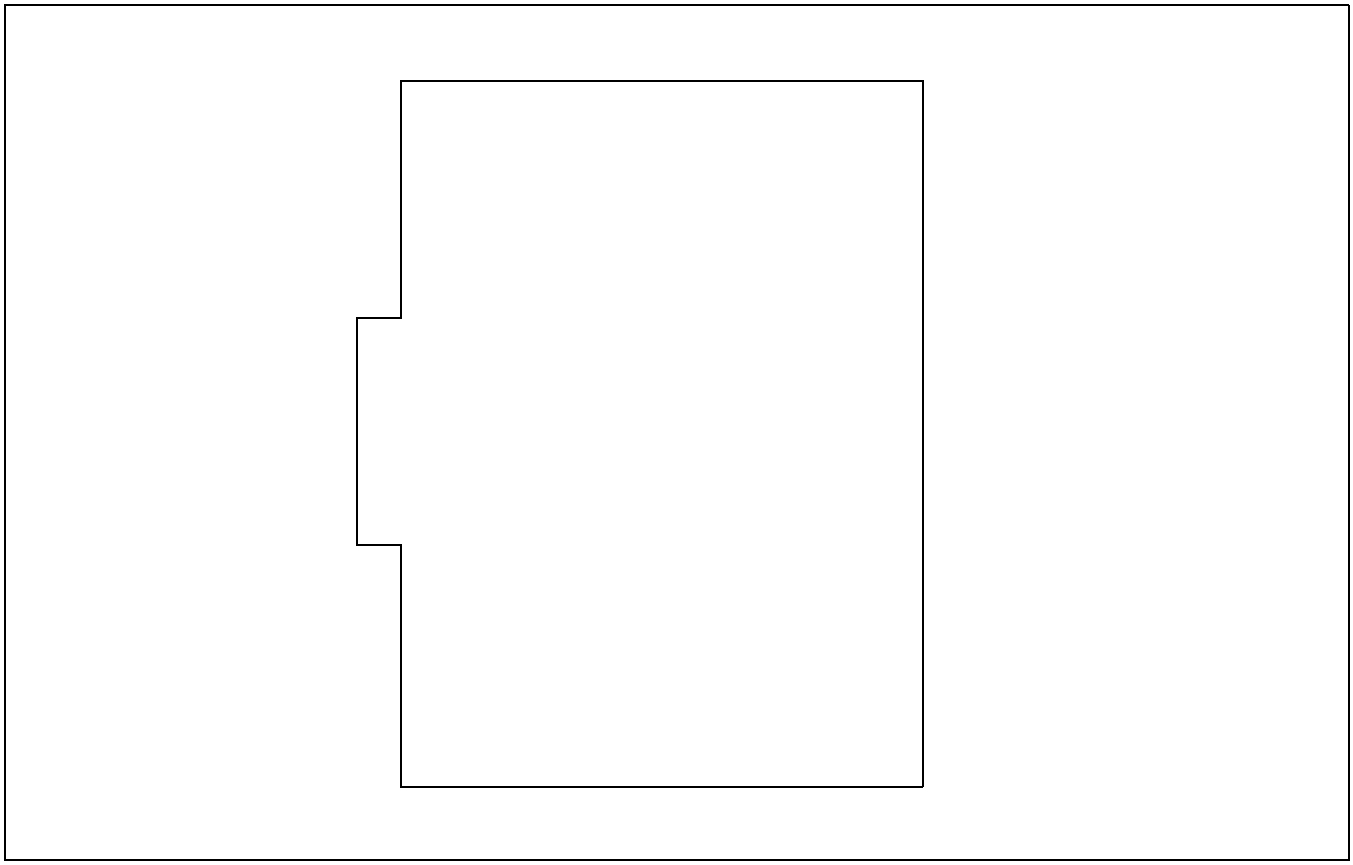
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| BL0, 1 | Red | • Remains lit when the corresponding circuit is in use.<br>• Flashes at 60 IPM when the corresponding circuit is in the make-busy state or the system data for this card is not assigned. |

3. Switch Settings

This card has no switches.

# PN-8RSTA (PBR)

1. Locations of Lamps, Switches and Connectors



**PN-8RSTA (PBR) Card**

2. Lamp Indications

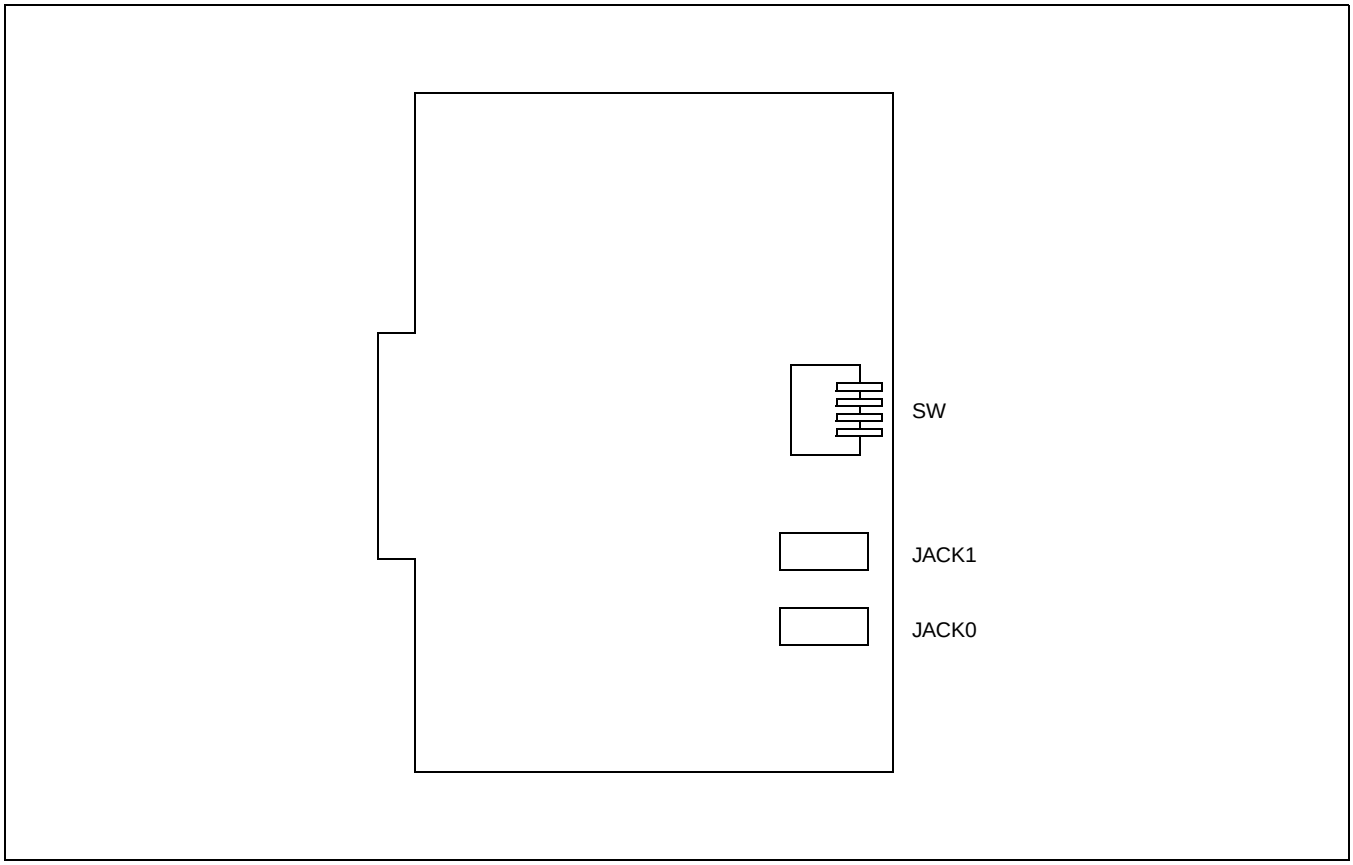
   This card has no indicator lamps.

3. Switch Settings

   This card has no switches.

# PN-TNTA (TNT)

1. Location of Lamps, Switches and Connectors



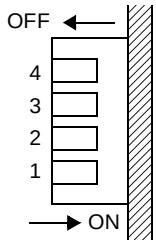

**PN-TNTA (TNT) Card**

2. Lamp Indications

   This card has no lamps.

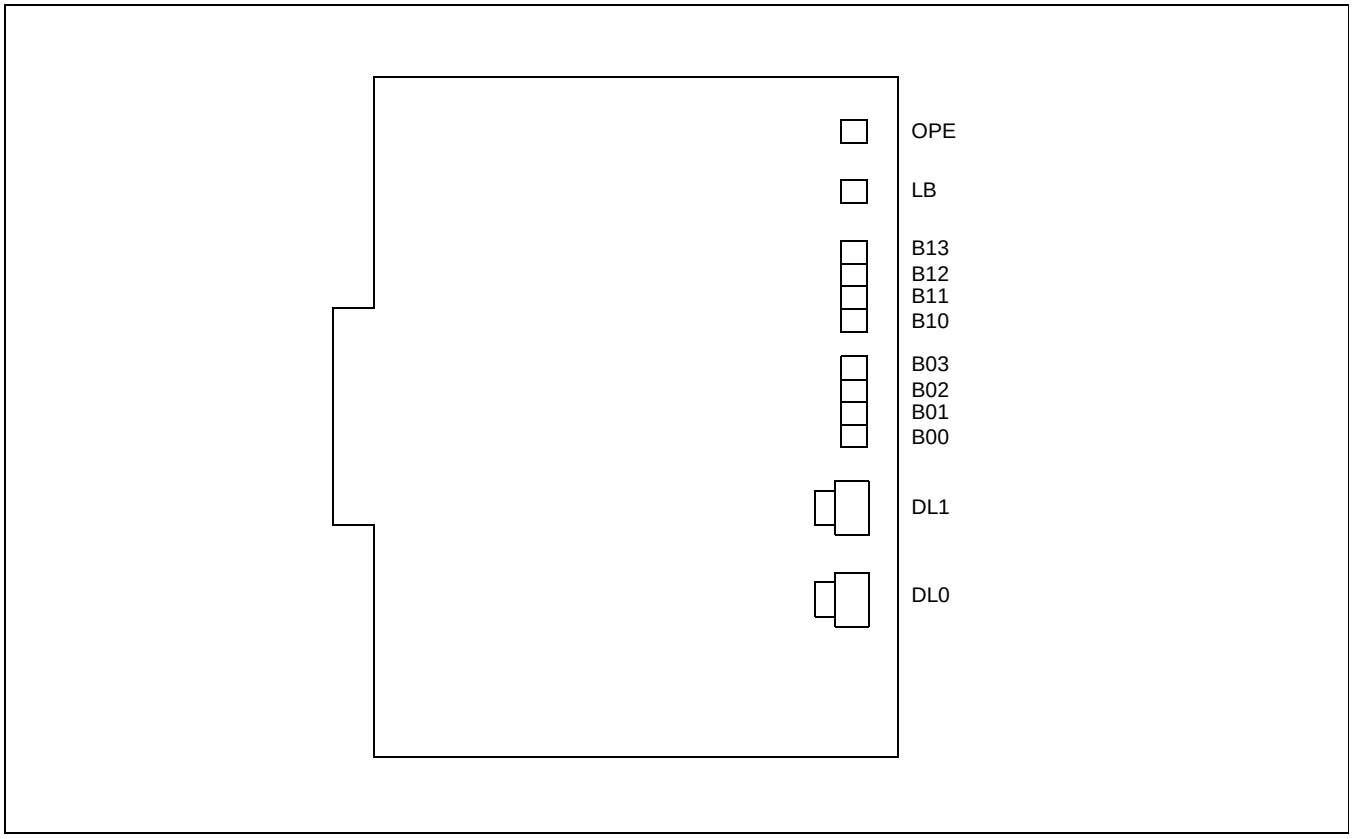
3. Switch Settings

**Switch Settings**

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">SW<br>(Piano Key SW)<br>  <br></td><td>1, 2</td><td colspan="2">Volume adjustment for No. 0 circuit<br><table><tr><th colspan="2">SWITCH NUMBER</th><th rowspan="2">VOLUME</th></tr><tr><th>1</th><th>2</th></tr><tr><td>OFF</td><td>OFF</td><td>–10 dB</td></tr><tr><td>ON</td><td>OFF</td><td>–7 dB</td></tr><tr><td>OFF</td><td>ON</td><td>–4 dB</td></tr><tr><td>ON</td><td>ON</td><td>–1 dB</td></tr></table></td><td></td></tr>
<tr><td>3, 4</td><td colspan="2">Volume adjustment for No. 1 circuit<br><table><tr><th colspan="2">SWITCH NUMBER</th><th rowspan="2">VOLUME</th></tr><tr><th>3</th><th>4</th></tr><tr><td>OFF</td><td>OFF</td><td>–10 dB</td></tr><tr><td>ON</td><td>OFF</td><td>–7 dB</td></tr><tr><td>OFF</td><td>ON</td><td>–4 dB</td></tr><tr><td>ON</td><td>ON</td><td>–1 dB</td></tr></table></td><td></td></tr>
</table>

# PN-2CSIA (CSI)

1. Locations of Lamps, Swtiches, and Connectors.




**PN-2CSIA (CSI) Card**

2. Lamp Indications

**Lamp Indications**

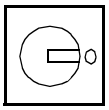
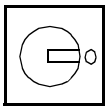
| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| OPE | Green | Lights when the corresponding circuit is in use. |
| LB | Red | Lights when a loop-back is in progress. |
| B13 | Red | Not used (Flash [60IPM]) |
| B12 | Red | B channel status<br>ON : B2 channel of the No. 1 circuit is in use.<br>OFF : B2 channel of the No. 1 circuit is in idle.<br>Flash (60 IPM) : ZT is not connected to the No. 1 circuit. ZT is in make-busy status. |
| B11 | Red | B channel status<br>ON : B1 channel of the No. 1 circuit is in use.<br>OFF : B1 channel of the No. 1 circuit is in idle.<br>Flash (60 IPM) : ZT is not connected to the No. 1 circuit. ZT is in make-busy status. |

**Lamp Indications**

| LAMP NAME | COLOR | FUNCTION |
|---|---|---|
| B10 | Red | B channel status<br>ON : B0 channel of the No. 1 circuit is in use.<br>OFF : B0 channel of the No. 1 circuit is in idle.<br>Flash (60 IPM) : ZT is not connected to the No. 1 circuit.<br>ZT is in make-busy status. |
| B03 | Red | Not used (Flash[60 IMP]) |
| B02 | Red | B channel status<br>ON : B2 channel of the No. 0 circuit is in use.<br>OFF : B2 channel of the No. 0 circuit is in idle.<br>Flash (60 IPM) : ZT is not connected to the No. 0 circuit.<br>ZT is in make-busy status. |
| B01 | Red | B channel status<br>ON : B1 channel of the No. 0 circuit is in use.<br>OFF : B1 channel of the No. 0 circuit is in idle.<br>Flash (60 IPM) : ZT is not connected to the No. 0 circuit.<br>ZT is in make-busy status. |
| B00 | Red | B channel status<br>ON : B0 channel of the No. 0 circuit is in use.<br>OFF : B0 channel of the No. 0 circuit is in idle.<br>Flash (60 IPM) : ZT is not connected to the No. 0 circuit.<br>ZT is in make-busy status. |

3. Switch Settings

**Switch Settings**

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
|---|---|---|---|---|
| DL0 (Rotary SW)<br>  <br>**Note** | 0 ~ F | 0 | For normal operation | |
| | | 1 ~ F | Not used | |
| DL1 (Rotary SW)<br>  <br>**Note** | 0 ~ F | 0 | For normal operation | |
| | | 1 ~ F | Not used | |

The figure in the SWITCH NAME column and the position in ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

**Note:** *Set the groove on the switch knob to the intended switch position.*