NetSure™ 802 Series NCU Retrofit Kit

Installation Manual

Kit Specification Number: 565408

For Use in Spec. No. 582140000 Power System (Secondary Bay List 11, 12, 13, 14, 15)

Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit https://www.vertiv.com/en-us/support/ for additional assistance.

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Admonishments Used in this Document

DANGER! Warns of a hazard the reader ***will*** be exposed to that will ***likely*** result in death or serious injury if not avoided. (ANSI, OSHA)

WARNING! Warns of a potential hazard the reader ***may*** be exposed to that ***could*** result in death or serious injury if not avoided. This admonition is not used for situations that pose a risk only to equipment, software, data, or service. (ANSI)

CAUTION! Warns of a potential hazard the reader ***may*** be exposed to that ***could*** result in minor or moderate injury if not avoided. (ANSI, OSHA) This admonition is not used for situations that pose a risk only to equipment, data, or service, even if such use appears to be permitted in some of the applicable standards. (OSHA)

ALERT! Alerts the reader to an action that ***must be avoided*** in order to protect equipment, software, data, or service. (ISO)

ALERT! Alerts the reader to an action that ***must be performed*** in order to prevent equipment damage, software corruption, data loss, or service interruption. (ISO)

FIRE SAFETY! Informs the reader of fire safety information, reminders, precautions, or policies, or of the locations of fire-fighting and fire-safety equipment. (ISO)

SAFETY! Informs the reader of general safety information, reminders, precautions, or policies not related to a particular source of hazard or to fire safety. (ISO, ANSI, OSHA)

Important Safety Instructions

Safety Admonishments Definitions

Definitions of the safety admonishments used in this document are listed under “Admonishments Used in this Document” on page iv.

Safety and Regulatory Statements

Refer to Section 4154 (provided with your customer documentation) for Safety and Regulatory Statements.

Déclarations de Sécurité et de Réglementation

Reportez-vous à la Section 4154 (fourni avec les documents de votre client) pour les déclarations de sécurité et de réglementation.

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1 Vertiv™ NetSure™ 802 Series NCU Retrofit Kit Installation Instructions

1.1 Kit Description

These instructions provide a step-by-step procedure to field install this kit into a Vertiv™ NetSure™ 802 Series DC Power System (Spec. No. 582140000, Secondary Bay List 11, 12, 13, 14, 15). Installation of this kit in other equipment should not be attempted.

This kit replaces the control shelf in an older style system with the kit supplied control shelf that is offered in the latest revision system. The latest revision system replaces the MCA (Meter, Control, Alarm Panel) and optional LMS monitoring system of the older style system with the NCU controller.

1.2 Kit Contents

Table 1.1 lists the items furnished as a part of this kit. Before installing the kit, check the items furnished against those listed to ensure that there are no shortages.

Table 1.1 Kit Contents

Qty.	P/N	Description
1	565578	Preassembled Secondary Control Shelf (and associated interconnect cable)
1	534715	Distribution Designation Label
7	237650200	Cable Tie

1.3 Tools and Material Required

Table 1.2 lists the items required to install this kit.

Table 1.2 Tools and Material Required

Description
#1 Phillips Screwdriver
#2 Phillips Screwdriver

1.4 Installation Procedure

THESE INSTRUCTIONS SHOULD BE READ THROUGH COMPLETELY BEFORE INSTALLING THE KIT.

The following is a step-by-step procedure to install the kit. The procedure has been written for ease of use and to minimize the possibility of contact with potentially hazardous energy. This procedure should be performed in the sequence given, and each step should be completely read and fully understood before performing that step. Observe all "Important Safety Instructions" starting on page v and also those presented in the following procedure. As each step of the procedure is completed, the box adjacent to the respective step should be checked. This will minimize the possibility of inadvertently skipping any steps. If the step is not required to be performed for your site, also check the box to indicate that it was read.

DANGER! This kit can be installed with the system operating. Observe the "Important Safety Instructions" starting on page v and those listed in the power system manual.

CAUTION! When performing any step in procedures that requires removal or installation of hardware, use caution to ensure no hardware is dropped and left inside the unit; otherwise service interruption or equipment damage may occur.

NOTE! *When performing any step in this procedure which requires removal of existing hardware, retain all hardware for use in subsequent steps, unless otherwise stated.*

Initial Procedure

[ ] 1. Performing this procedure may activate external alarms. Do one of the following. If possible, disable these alarms. If these alarms cannot be easily disabled, notify the appropriate personnel to disregard any future alarms associated with this system while the procedure is being performed.

[ ] 2. Open the front door of the bay.

Removing the Existing System Monitoring and Control Shelf Procedure

[ ] 1. Label each cable attached to the Monitor and Control Shelf. See Figure 1.1 through Figure 1.6.

[ ] 2. Disconnect and insulate each cable.

[ ] 3. Remove the System Monitoring and Control Shelf. See Figure 1.7.

Figure 1.1 Removing Cables

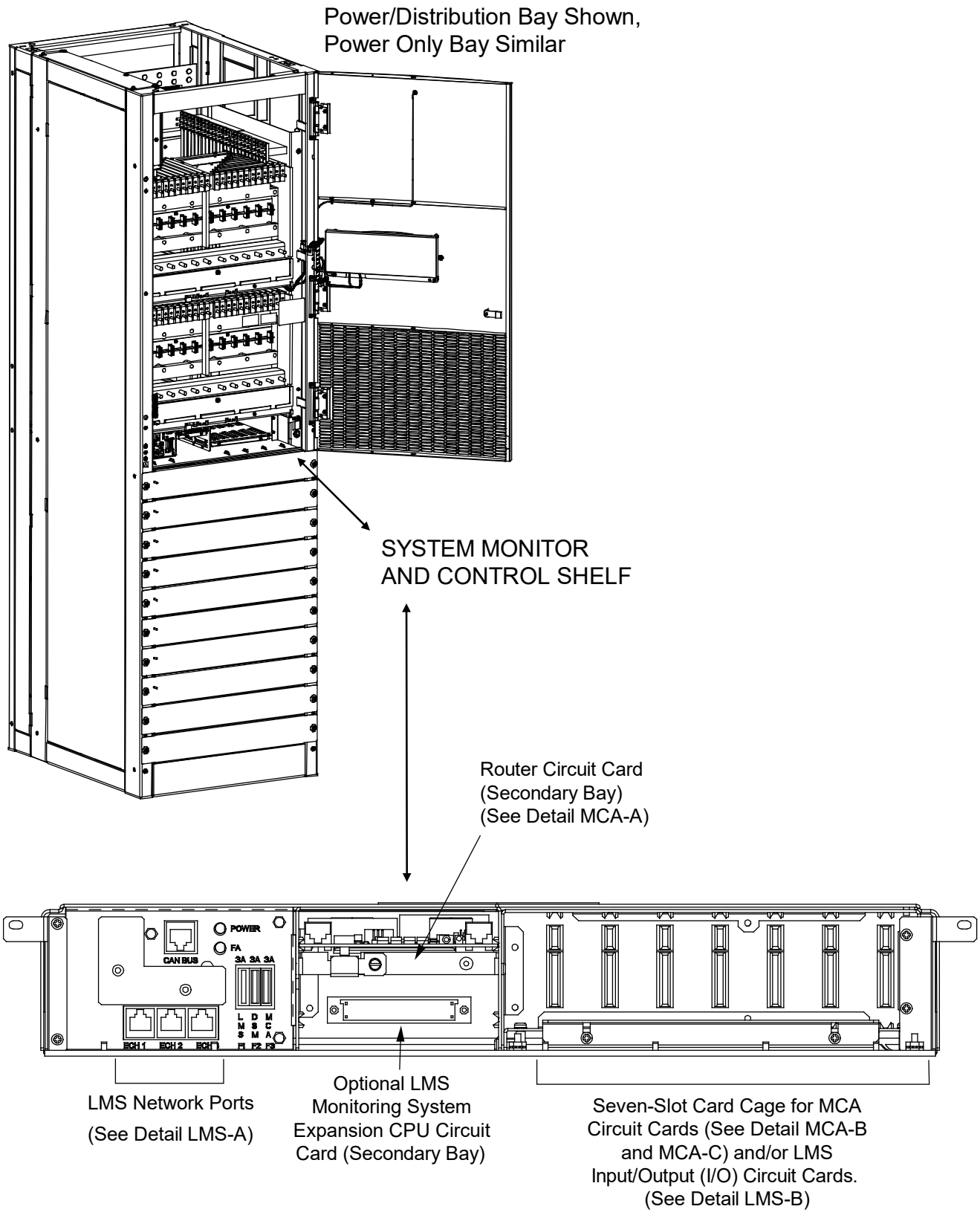


Figure 1.2 Removing Cables – Detail MCA-A

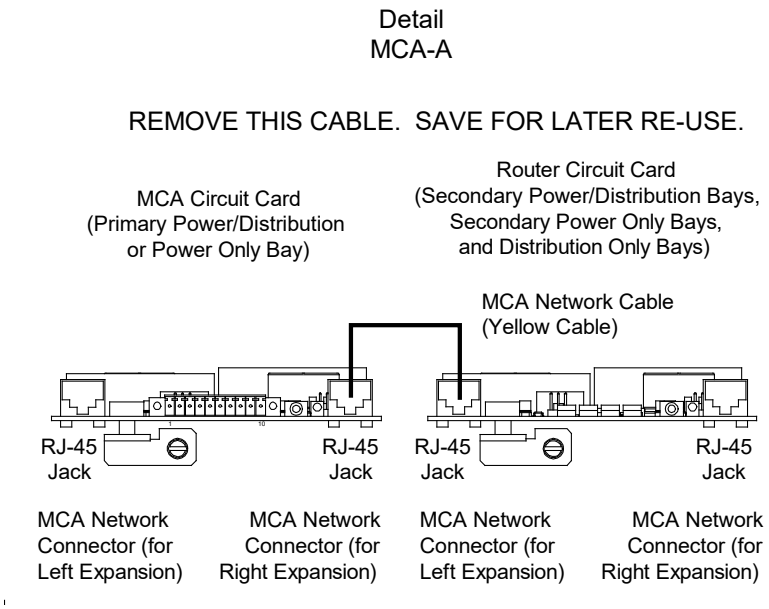
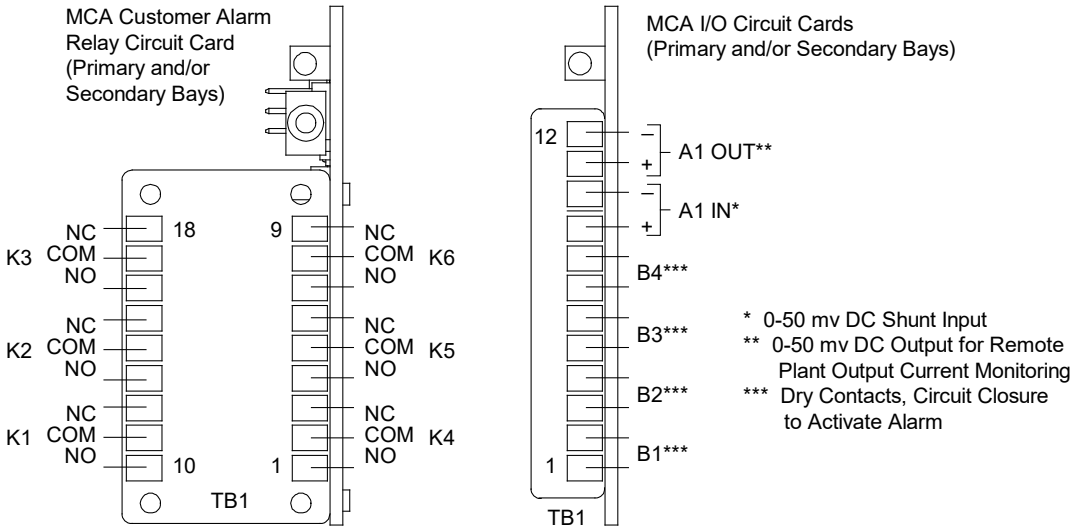


Figure 1.3 Removing Cables – Detail MCA-B

IF THESE LEADS WILL NOT BE REUSED:
DISCONNECT AND REMOVE THESE LEADS FROM THE BAY OR INSULATE AND TIE BACK THESE LEADS PER YOUR COMPANY POLICIES.

IF THESE LEADS WILL BE RECONNECTED TO THE NCU INTERFACE CARDS:
LABEL THE LEADS THEN TEMPORARILY DISCONNECT, INSULATE, AND TIE BACK THESE LEADS.



Detail MCA-B

Figure 1.4 Removing Cables – Detail MCA-C

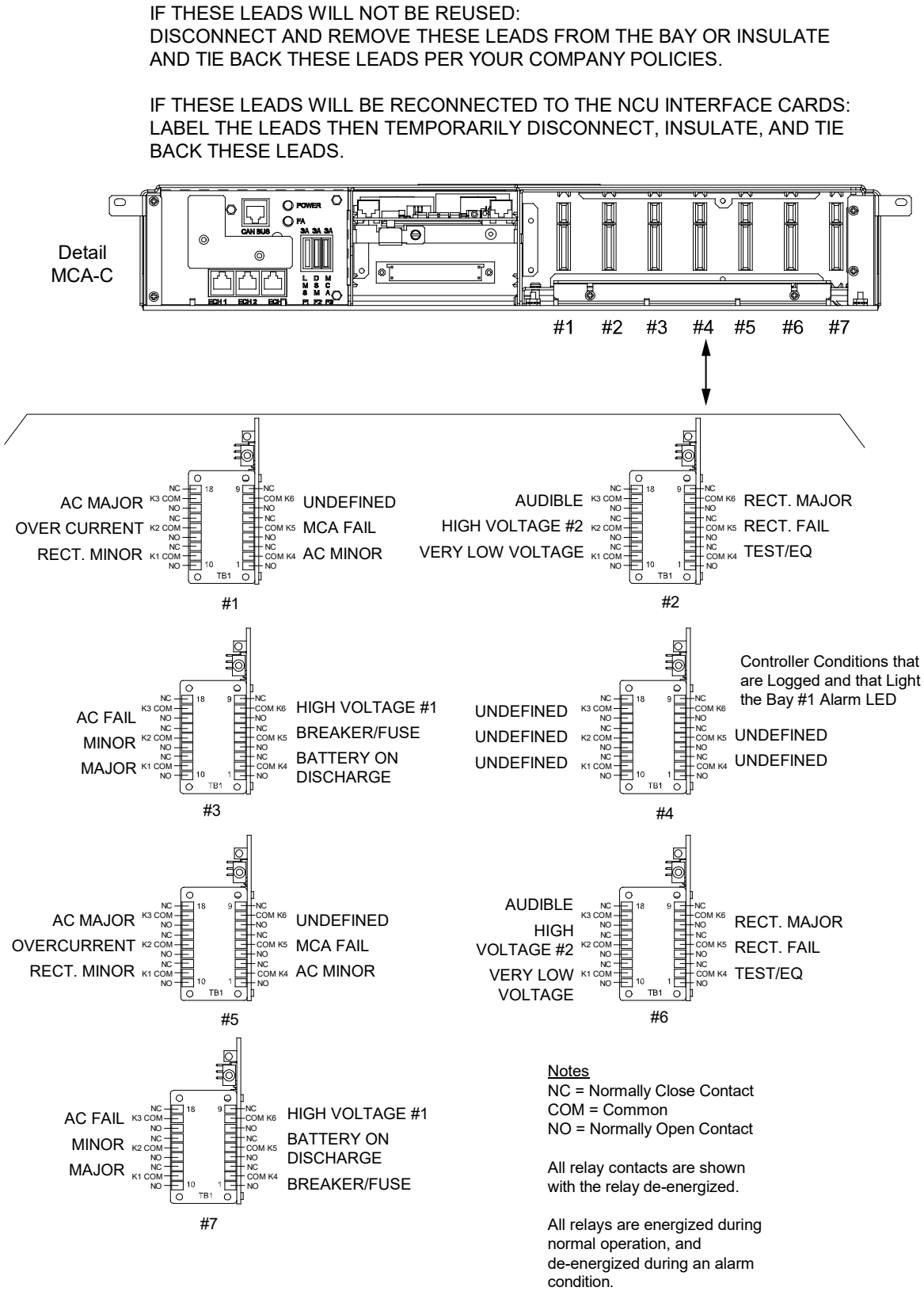


Figure 1.5 Removing Cables – Detail LMS-A

Detail LMS-A

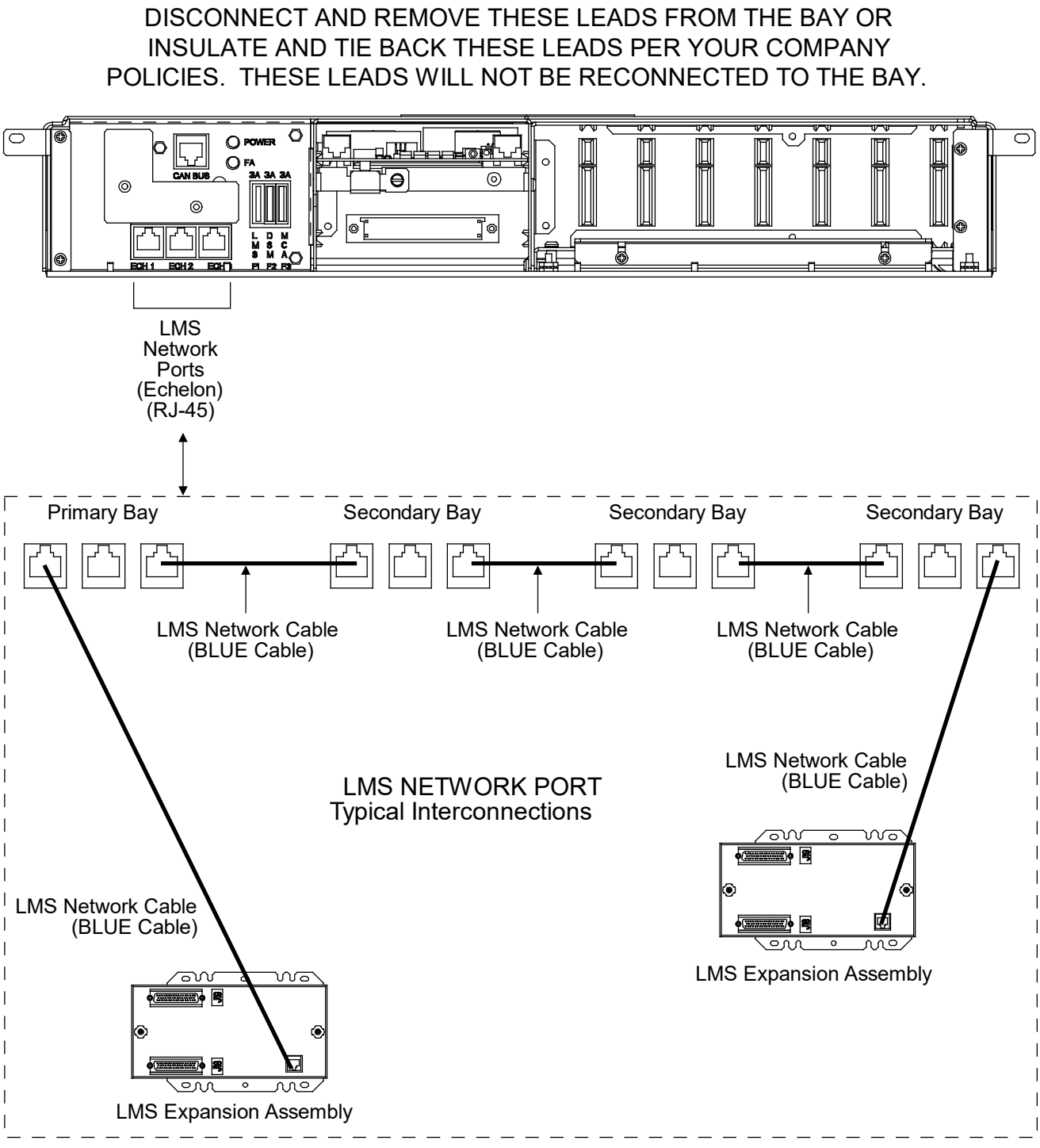
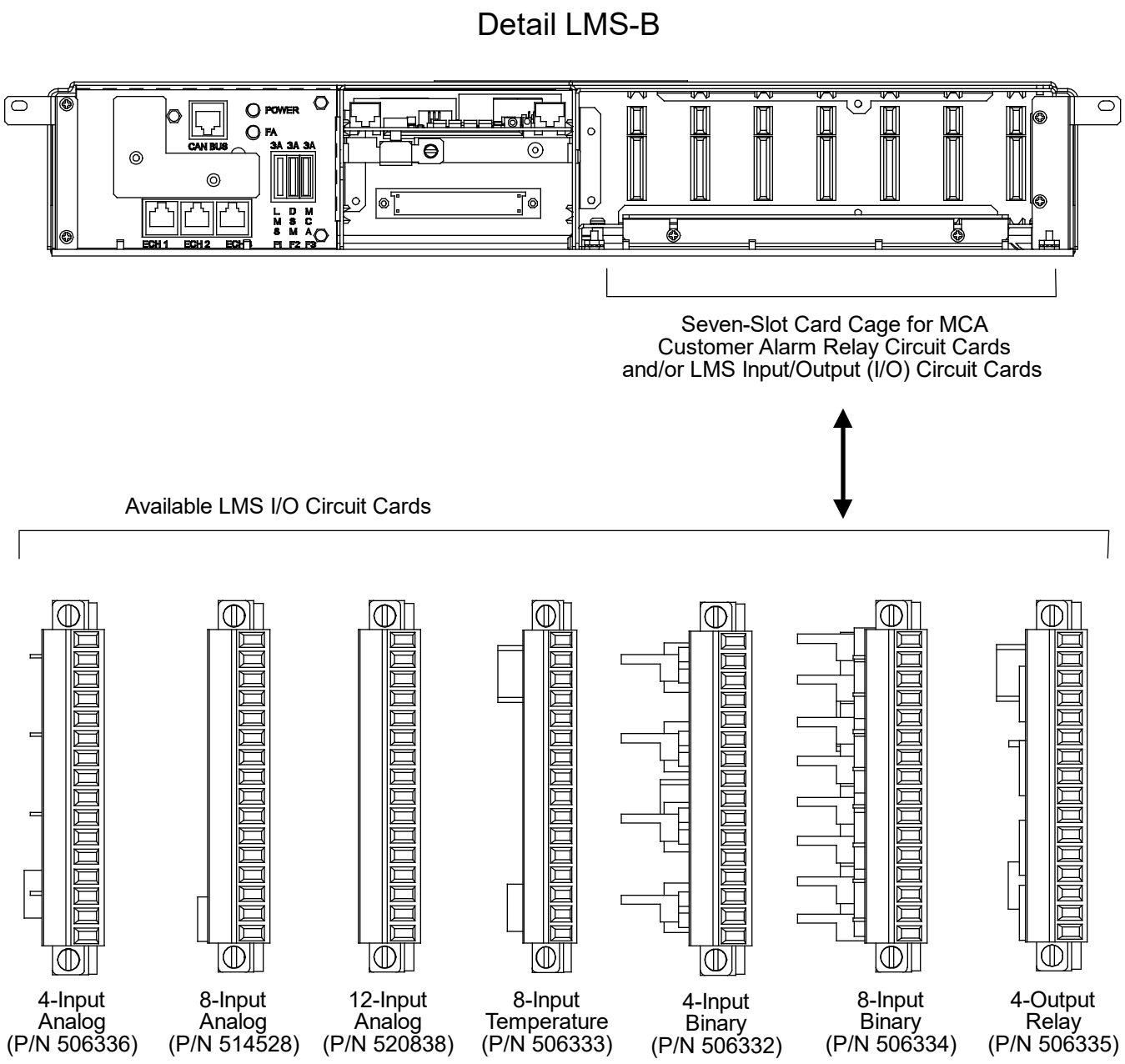


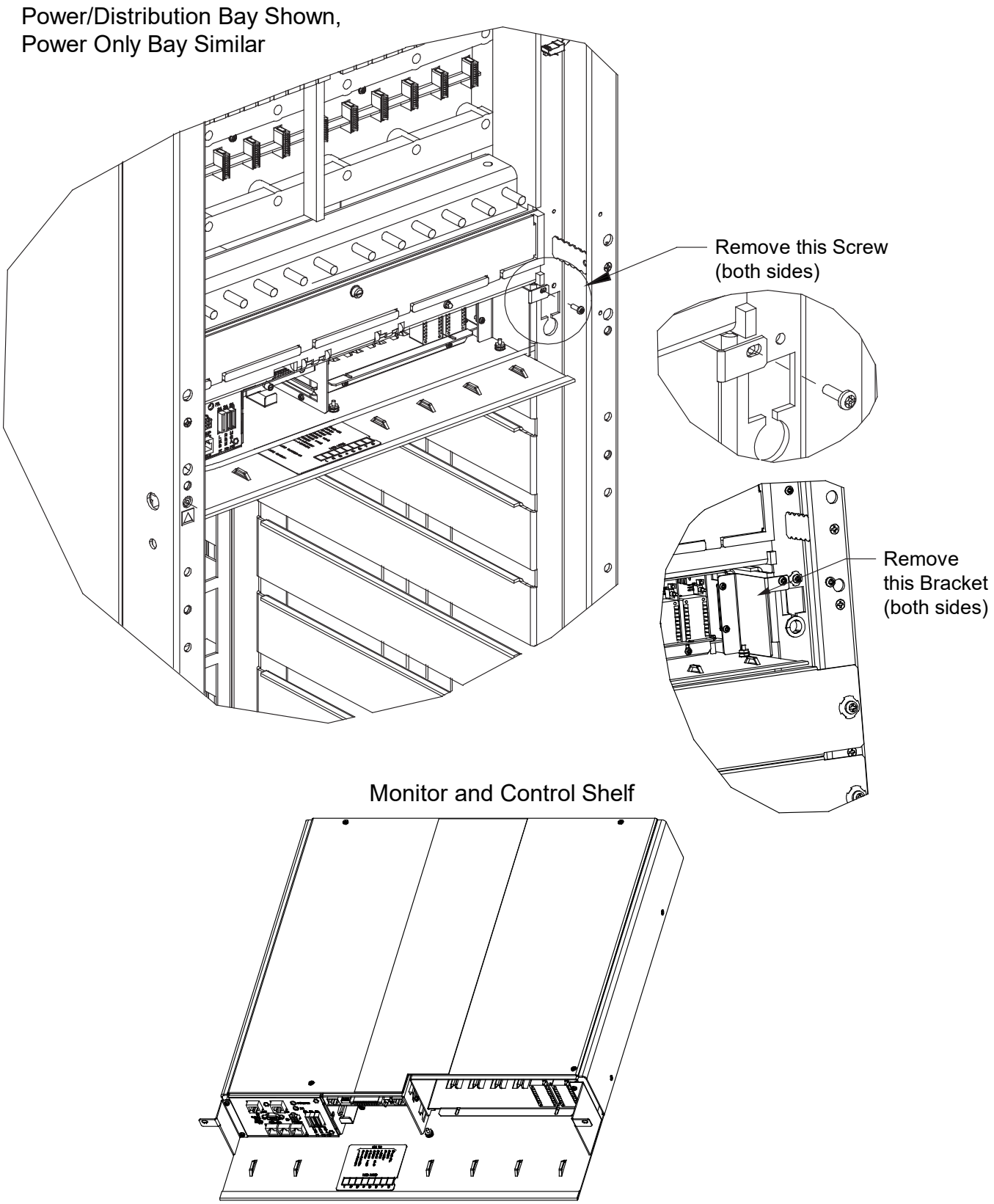
Figure 1.6 Removing Cables – Detail LMS-B



IF THESE LEADS WILL NOT BE REUSED:
DISCONNECT AND REMOVE THESE LEADS FROM THE BAY OR INSULATE AND TIE BACK THESE LEADS PER YOUR COMPANY POLICIES.

IF THESE LEADS WILL BE RECONNECTED TO THE NCU INTERFACE CARDS:
LABEL THE LEADS THEN TEMPORARILY DISCONNECT, INSULATE, AND TIE BACK THESE LEADS.

Figure 1.7 Removing System Monitoring and Control Shelf



Setting the Bay Address Procedure

[ ] 1. Set the bay address. Each bay needs a unique address to communicate with the NCU.

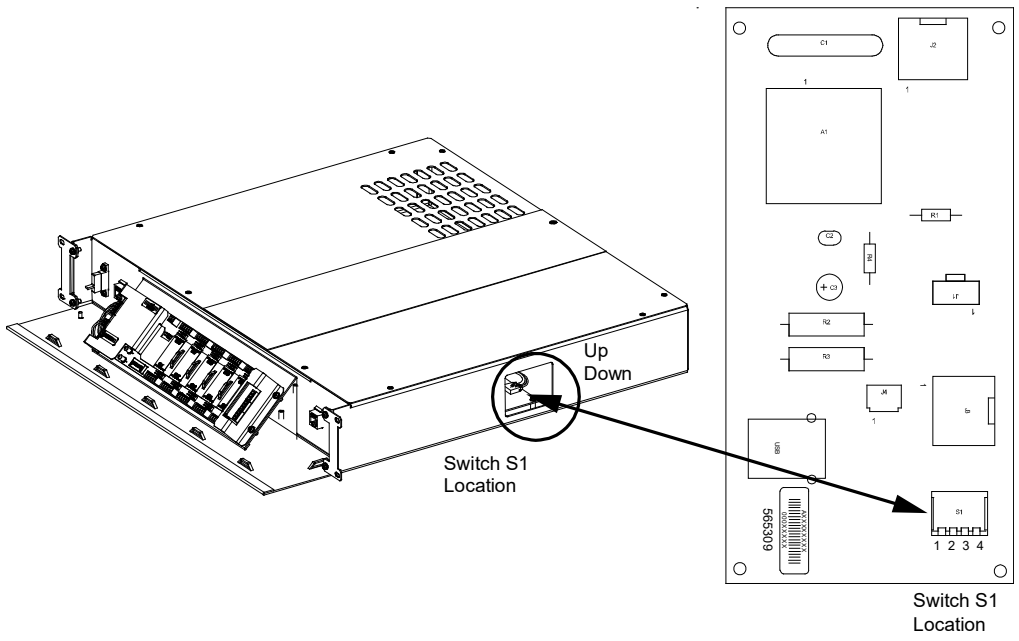
a) Dip Switch S1 is used to set the communications address for each bay. Refer to Table 1.3 for S1 settings. Refer to Figure 1.8 for S1 location.

b) Set the addressing switches on each kit installed in the system to a unique address per Table 1.3.

Table 1.3 DIP Switch S1 (Bay Addressing)

DIP Switch S1				
Communication Address			Reserved	Description of Status
1	2	3	4	
DOWN	DOWN	DOWN	DOWN	Address 1# (Setting for 1st Bay in System)
UP	DOWN	DOWN		Address 2# (Setting for 2nd Bay in System)
DOWN	UP	DOWN		Address 3# (Setting for 3rd Bay in System)
UP	UP	DOWN		Address 4# (Setting for 4th Bay in System)
DOWN	DOWN	UP		Address 5# (Setting for 5th Bay in System)
UP	DOWN	UP		Address 6# (Setting for 6th Bay in System)
DOWN	UP	UP		Address 7# (Setting for 7th Bay in System)
UP	UP	UP		Address 8# (Setting for 8th Bay in System)

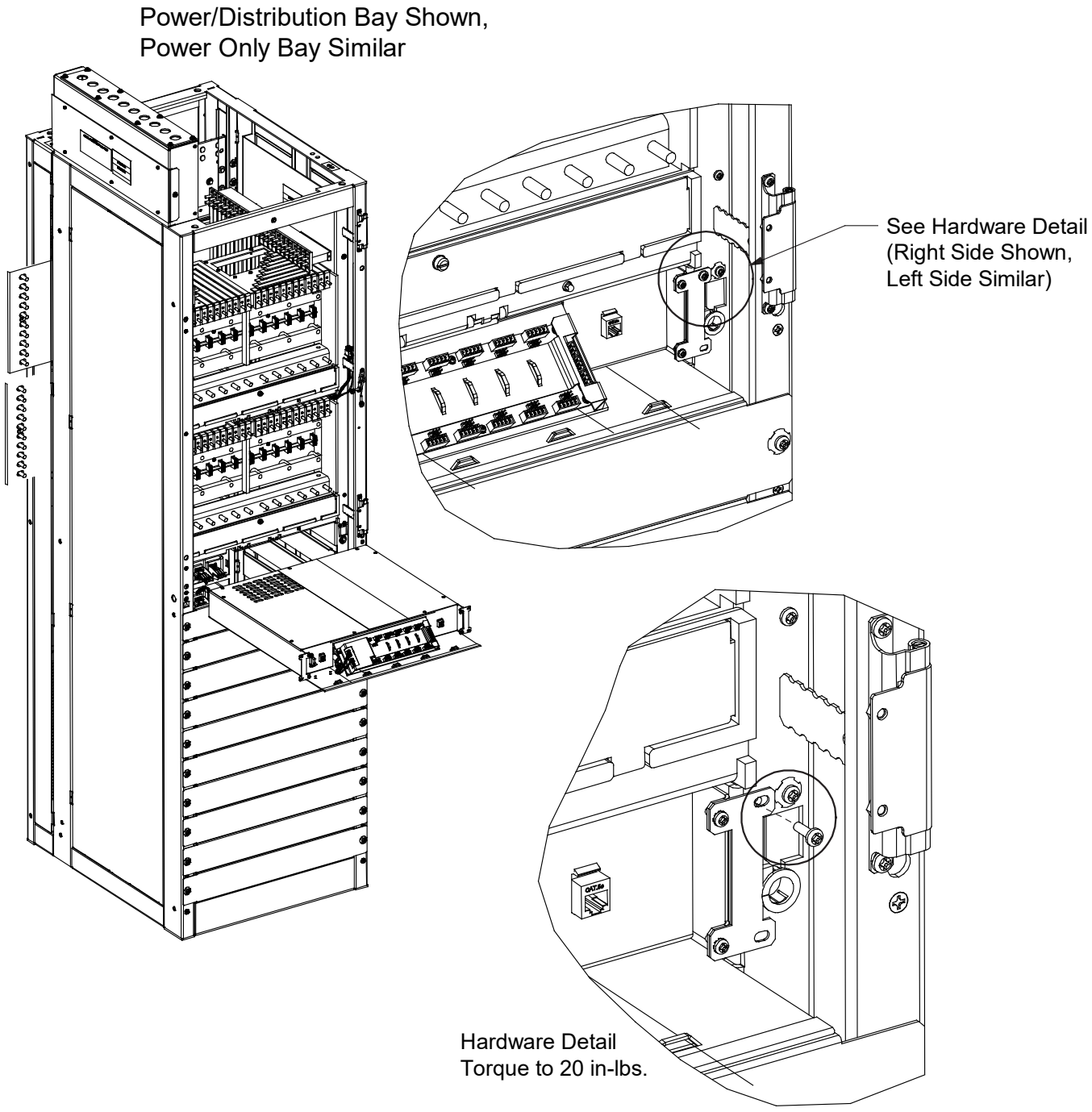
Figure 1.8 DIP Switch S1 (Bay Addressing)



Installing the Kit Furnished Control Shelf Procedure

[ ] 1. Install the kit furnished control shelf in the same position as the System Monitoring and Control Shelf just removed. See Figure 1.9. Ensure the connector on the back of the control shelf properly mates with the system connector.

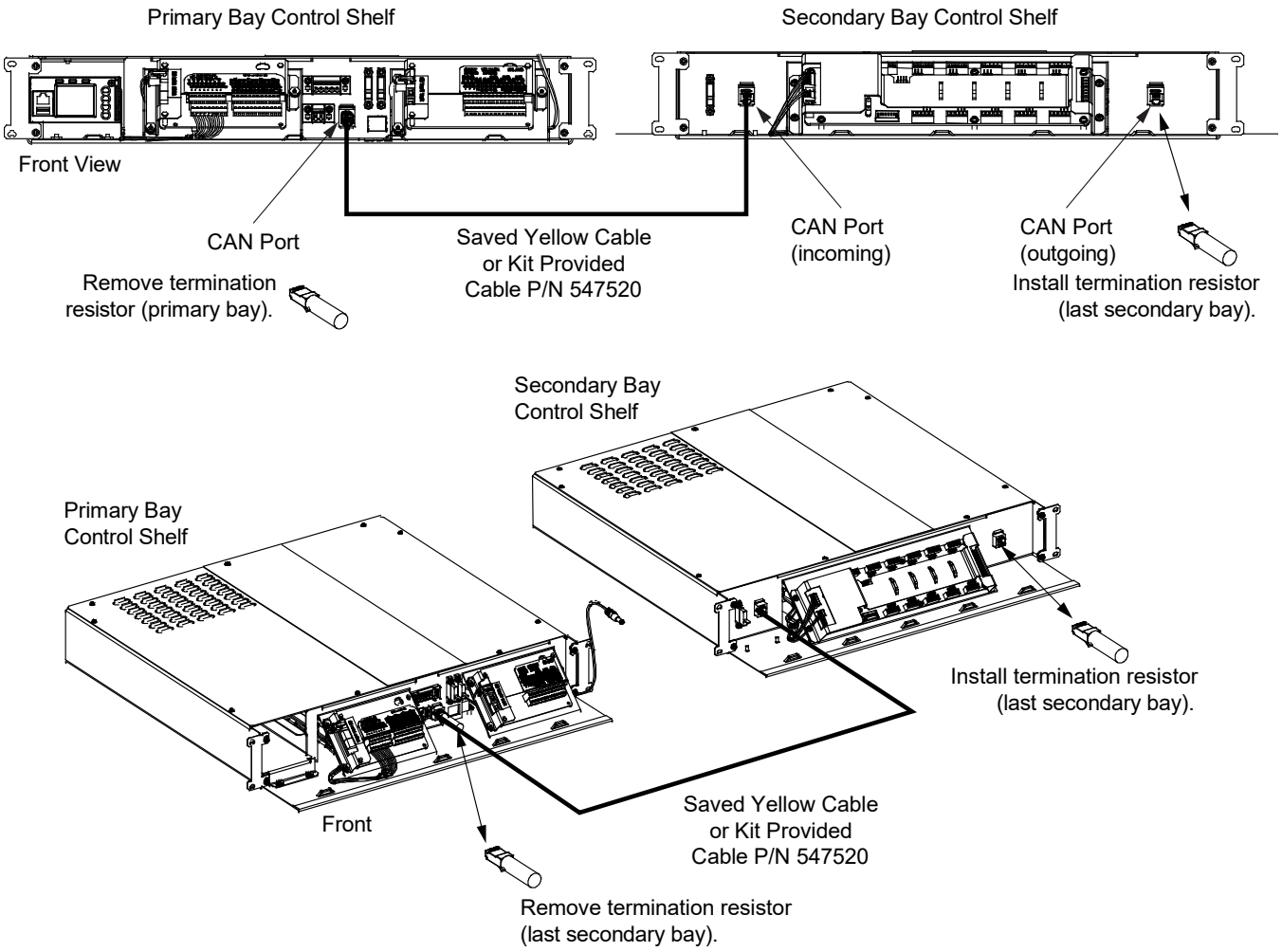
Figure 1.9 Installing the Kit Furnished Control Shelf



Interconnecting the "Primary Bay Control Shelf to a Secondary Bay Control Shelf" and a "Secondary Bay Control Shelf to a Secondary Bay Control Shelf" Procedure

[ ] 1. Connect the interconnect cable (yellow cable) removed from the existing control shelf or kit provided cable (P/N 547520) between the primary bay control shelf and a secondary bay control shelf as shown in Figure 1.10. Note that the system can be expanded left or right (either CAN connector on the secondary bay control shelf can be used). Connect a cable between a secondary bay control shelf and another secondary bay control shelf in a similar manner. Ensure the termination resistor is moved from the primary bay CAN connector to the last secondary bay open CAN connector as shown in Figure 1.10.

Figure 1.10 Interconnecting the "Primary Bay Control Shelf to a Secondary Bay Control Shelf" and a "Secondary Bay Control Shelf to a Secondary Bay Control Shelf"



Final Procedure

[ ] 1. Adhere the kit supplied “distribution designation label” to the inside of the front door as required.

[ ] 2. Refer to the remainder of this manual and make any required external connections to the SM-DUE installed in the secondary bay control shelf, as required. Refer to the NCU controller manual (UM1M830BNA) for programming information.

[ ] 3. Dress and secure the cables connected to the new control shelf to the bay. Ensure the cables cannot be pinched when the door is closed.

NOTE! *A controller reboot may be required to update controller distribution inventory.*

[ ] 4. Close the front door of the bay.

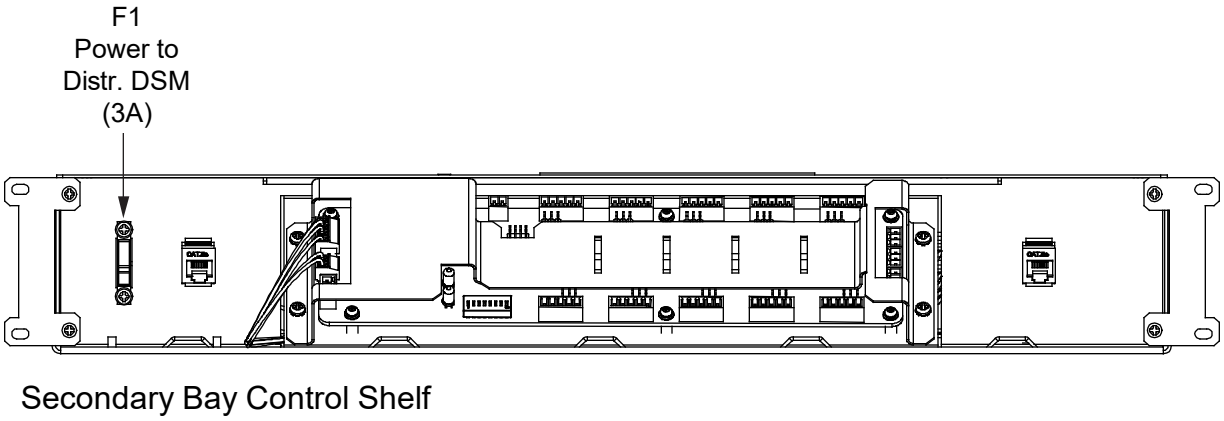
[ ] 5. Ensure that there are no local or remote alarms active on the system.

[ ] 6. Enable the external alarms, or notify appropriate personnel that this procedure is finished.

2 Fuse Location

See Figure 2.1.

Figure 2.1 Fuse Location



3 SM-DUE

3.1 General

The new control shelf installed in a secondary power/distribution bay or secondary power only bay contains an SM-DUE. The SM-DUE is used to input external monitoring information to the NCU controller. The SM-DUE provides the following monitoring inputs:

- Ten (10) input blocks with each providing the following monitoring inputs:
  - One (1) Load Bus Voltage (0 VDC to 60 VDC) per input block
  - One (1) Load Fuse Alarm (Bus- base of 0 VDC, >10 VDC alarm, <10 VDC normal) per input block
  - One (1) Programmable Analog Input, can be set to accept one (1) of the following inputs per input block:
    10 mV DC to 50 mV DC Load Shunt (only load shunts are supported at this time)
    General-Purpose Current Transducer
    General-Purpose Voltage Transducer
    1 uA/K Temperature Sensor

NOTE! *Only the SM DUE designated as SMDUE1 and SMDUE2 via the addressing switches can have temperature probes connected to them.*

The SM-DUE also contains a +5 VDC power supply output for connection to external Hall devices.

The SM-DUE connects into the NCU CAN bus. Up to eight (8) SM-DUE units can be connected to an NCU.

3.2 General Technical Specifications

See Table 3.1.

Table 3.1 General Technical Specifications

Item	Description	
Input Power	Input voltage range: 19 VDC to 60 VDC. Maximum input non-destructive voltage: 75 VDC.	
Input Signals	Ten (10) Load Bus Voltage	Valid measurement voltage range: 0 VDC to 60 VDC.
	Ten (10) Load Fuse Alarm	Bus- base of 0 VDC, >10 VDC alarm, <10 VDC normal.
	Ten (10) Analog Inputs	Each can be set to accept one (1) of the following inputs: • 10 mV DC to 50 mV DC Load Shunt (only load shunts are supported at this time) • 0 mA to 20 mA General-Purpose Transducer • 0 VDC to 10 VDC General-Purpose Transducer • 1 uA/K Temperature Sensor
Output Signals	+5 VDC Output for External Hall Devices	
Communication	One (1) RS-485 Port (factory use only)	RS-485 isolated asynchronous port. Baud rate: 9600/19200 bps, set by hardware. Data format: N, 8, 1.
	One (1) CAN Bus Port	CAN baud rate: 125 Kbps.
Environmental	Ambient Temperature	Normal: -10 °C to +65 °C. Non Destructive: -40 °C to +75 °C.
	Humidity	Less than 90% without condensation.
	Environment	Atmosphere free of dust, corrosive or explosive vapors, oily fumes, moisture, condensation, metallic particulates, and salinity.
	Altitude	Under 3000 meters.
	Cooling Mode	Air cooling without fan.
EMC	Complies with standards: EN 55022, EN 61000-4-6, EN 61000-4-2, EN 61000-4-4, EN 61000-4-5, and EN 61000-4-29.	
Safety	Complies with standards: EN60950, UL60950, GR-63, and GR-1089. Safety certifications: CE, UL. Meets the requirements of NEBS level 3.	

3.3 Switch Settings on SM-DUE

The SM-DUE installed in each secondary power/distribution bay and secondary power only bay control shelf contains DIP switch SW1. Dip switch SW1 on the SM-DUE is used for parameter settings.

Procedure

1. Set DIP switch SW1 on each SM-DUE per site requirements. Refer to Figure 3.1 for SM-DUE and switch SW1 location. Refer to Table 3.2 for switch settings.

NOTE! *Set each SM-DUE to a different communications address.*

Table 3.2 SM-DUE Switch Settings

Communication Address (Use Switch 1, 2, and 3 of SW1) 1	2	3	Function Descriptions
Off	Off	Off	SM-DUE #1 (Default Setting)
Off	Off	On	SM-DUE #2
Off	On	Off	SM-DUE #3
Off	On	On	SM-DUE #4
On	Off	Off	SM-DUE #5
On	Off	On	SM-DUE #6
On	On	Off	SM-DUE #7
On	On	On	SM-DUE #8
Baud Rate for Serial Port Communication (Use Switch 4 of SW1) 4			**Function Descriptions**
Off			19200 (Default Setting)
On			9600
Parameter of Shunt Setting Configured by Hardware or Software (Use Switch 5 of SW1) 5			**Function Descriptions**
Off			Shunt parameter is set through software. (Default Setting)
On			Shunt parameter is set through DIP switch.
Shunt Voltage (Use Switch 6 of SW1) 6			**Function Descriptions**
Off			25 mV (Default Setting)
On			50 mV
Shunt Current (Use Switch 7 and 8 of SW1) 7		**8**	**Function Descriptions**
Off		Off	500 A (Default Setting)
Off		On	1000 A
On		Off	1500 A
On		On	2000 A

3.4 Jumper Settings on SM-DUE

The SM-DUE installed in each secondary power/distribution bay and secondary power only bay control shelf contains thirty (30) 2-pin jumpers. Three (3) for each of the ten (10) SM-DUE analog inputs. These jumpers must be set according to the type of analog signal that will be connected to the input.

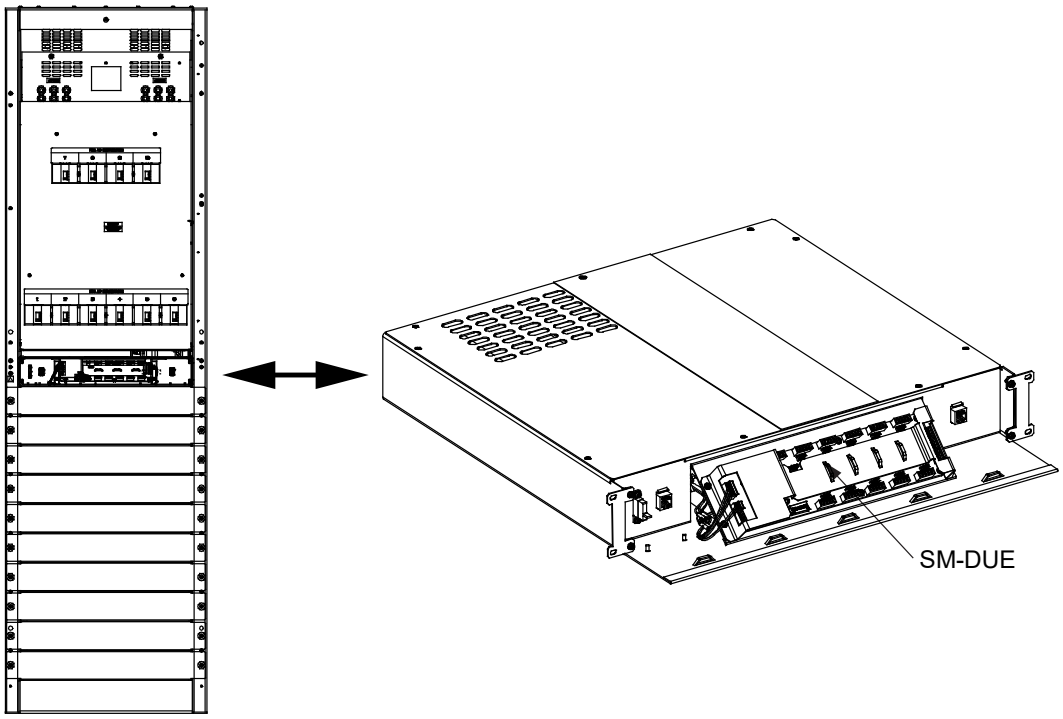
Procedure

1. Set the jumpers on the SM-DUE as required. Refer to Figure 3.1 for SM-DUE and jumper location. Refer to Table 3.3 for jumper settings. You can store unused jumpers on one terminal of a jumper connector.

Table 3.3 SM-DUE Jumper Settings

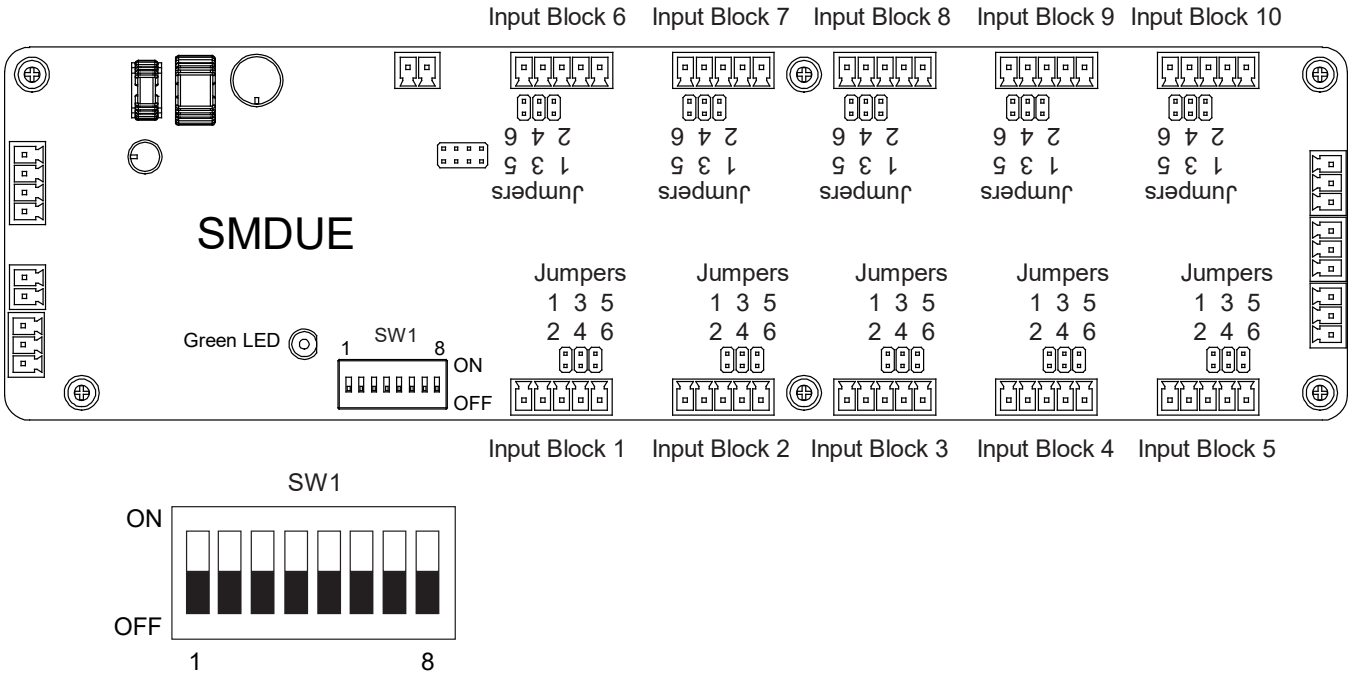
Type of Input Signal (V_AI+ and V_AI- Terminals)	Range	Jumper Position		
		1-2	3-4	5-6
General-Purpose Voltage Transducer	0 VDC to 10 VDC	OFF	OFF	OFF
Load Shunt Current	10 mV DC to 50 mV DC	ON	OFF	ON
General-Purpose Current Transducer	0 mA to 20 mA	ON	ON	OFF
Temperature Sensor	1 uA/K	ON	OFF	OFF

Figure 3.1 SM-DUE Switch and Jumper Location



Secondary Power Only Bay
Secondary Power/ Distribution Bay Similar

Front door removed in illustration for clarity only.



3.5 Customer Connections to SM-DUE

3.5.1 Important Safety Instructions

DANGER! Observe the “Important Safety Instructions” starting on page v and those listed in the power system manual.

3.5.2 Wiring Considerations

All wiring should follow the current edition of the American National Standards Institute (ANSI) approved National Fire Protection Association's (NFPA) National Electrical Code (NEC), and applicable local codes. For operation in countries where the NEC is not recognized, follow applicable codes.

3.5.3 General

The SM-DUE installed in each secondary power/distribution bay and secondary power only bay control shelf is used to input external monitoring information to the NCU controller. Customer connections are provided for the following:

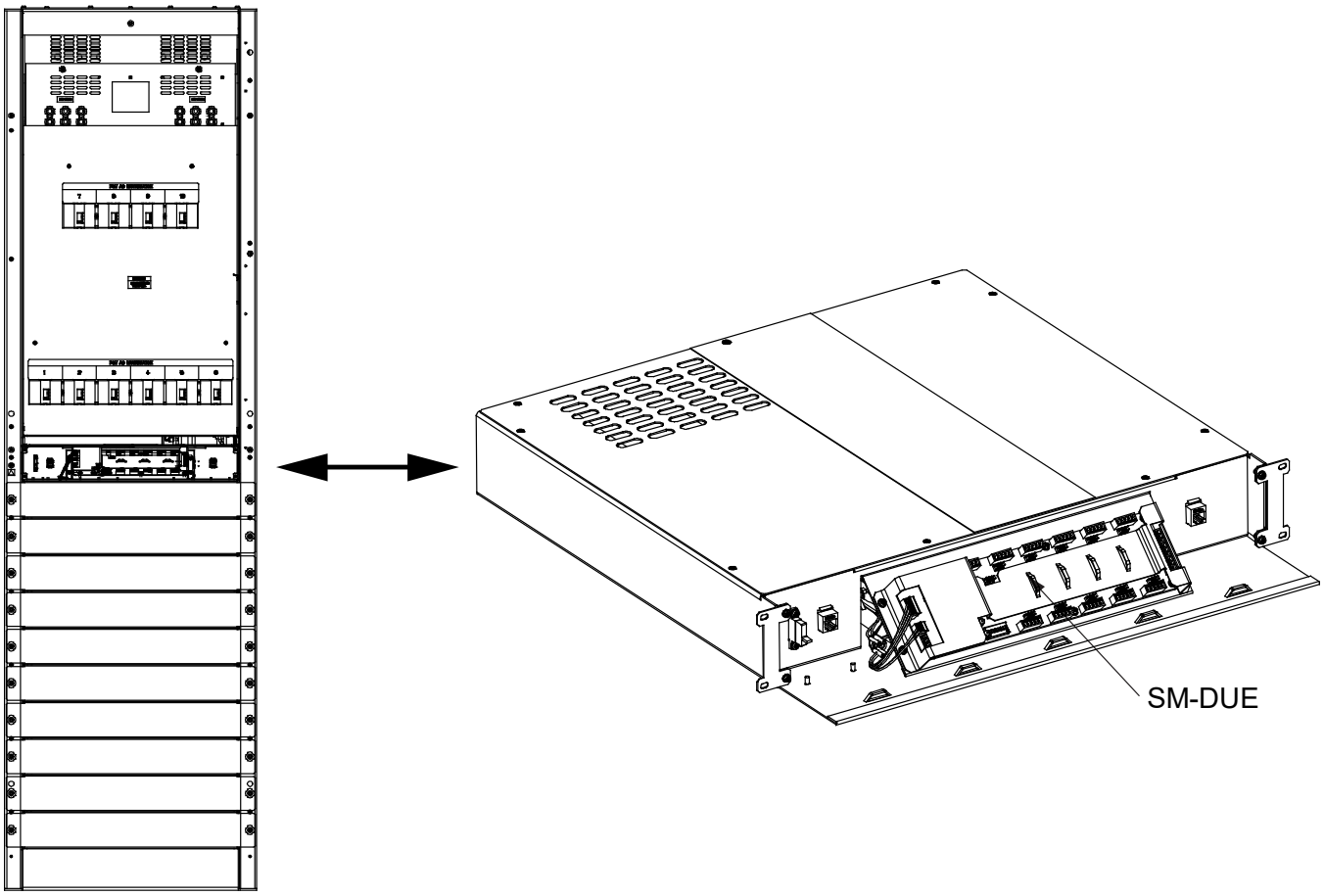
- SM-DUE Input Power Voltage (19 VDC to 60 VDC)
- +5 VDC Power Supply Output for Connection to External Hall Devices
- Ten (10) input blocks with each providing the following monitoring inputs:
  - One (1) Load Bus Voltage (0 VDC to 60 VDC) per input block
  - One (1) Load Fuse Alarm (Bus- base of 0 VDC, >10 VDC alarm, <10 VDC normal) per input block
  - One (1) Programmable Analog Input, can be set to accept one (1) of the following inputs per input block:
    10 mV DC to 50 mV DC Load Shunt (only load shunts are supported at this time)
    General-Purpose Current Transducer
    General-Purpose Voltage Transducer
    1 uA/K Temperature Sensor

NOTE! *Only the SM-DUE designated as SMDUE1 and SMDUE2 via the addressing switches can have temperature probes connected to them.*

- CAN Bus Port

Refer to the following procedures and make connections to the SM-DUE as required. Refer to Figure 3.2 for SM-DUE location. Refer to Figure 3.3 for SM-DUE connector locations. See also “Switch Settings on SM-DUE” on page 16 and “Jumper Settings on SM-DUE” on page 17.

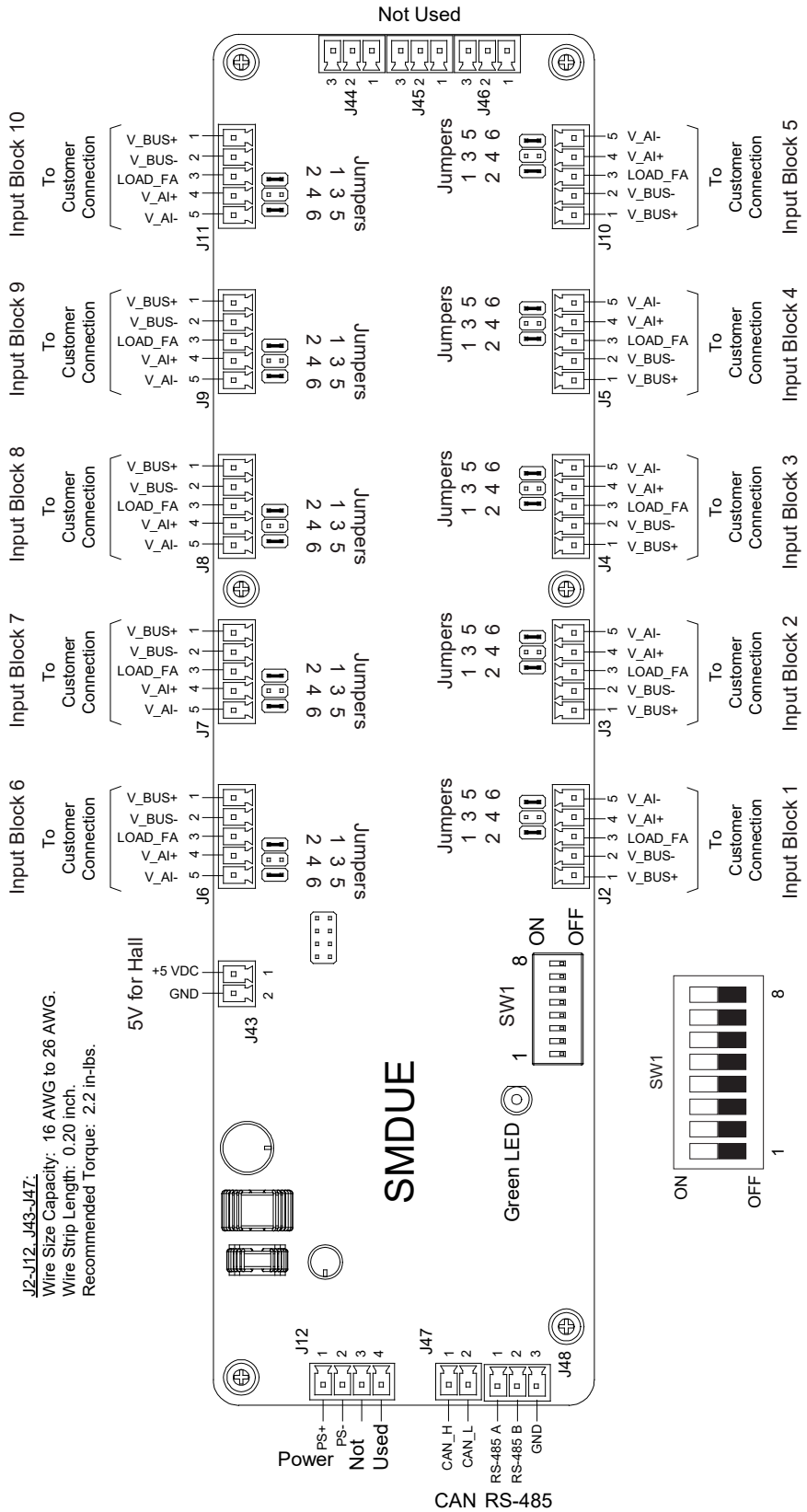
Figure 3.2 SM-DUE Location



Secondary Power Only Bay
Secondary Power/ Distribution Bay Similar

Front door removed in illustration for clarity only.

Figure 3.3 SM-DUE Connector Locations



3.5.4 Input Power Voltage Connection

General

- Input power to the SM-DUE is connected to J12.
- Refer to Table 3.4 for connector pinout information.
- Refer to Figure 3.3 for connector location.

Table 3.4 Input Power Voltage Connector J12

Connector	Pin No.	Signal Name	Signal Symbol	Description
J12	1	Power Input+	PWR + (PS+)	Positive (+) Input Power Lead
	2	Power Input-	PWR – (PS-)	Negative (-) Input Power Lead
	3	Not Used		
	4	Not Used		

Procedure

WARNING! Check for correct polarity before making connections.

1. Connections to pin 1 and 2 of J12 are factory made.

3.5.5 +5 VDC Power Supply Output Connection

General

- The SM-DUE contains a +5 VDC power supply. Input power to a Hall device can be connected to J43.
- Refer to Table 3.5 for connector pinout information.
- Refer to Figure 3.3 for connector location.

Table 3.5 Input Power to Hall Device Connector J43

Connector	Pin No.	Signal Name	Signal Symbol	Description
J43	1	Power Supply Output+	+5 VDC	Power Output for Hall Sensor Device
	2	Power Supply Output-	GND	

Procedure

1. Connect the positive (+) input power lead from a Hall device to pin 1 of J43.
2. Connect the negative (-) (ground) input power lead from a Hall device to pin 2 of J43.

3.5.6 Ten (10) Monitoring Input Blocks Connections

General

- Inputs to the ten (10) monitoring input blocks are connected to J2, J3, J4, J5, J6, J7, J8, J9, J10, and J11.
- Refer to Table 3.6 for connector pinout information. Refer to Table 3.7 for input block and connector mapping.
- Refer to Figure 3.3 for connector location.
- See also "Switch Settings on SM-DUE" on page 16 and "Jumper Settings on SM-DUE" on page 17.

Table 3.6 Input Block Monitoring Input Signals Connectors J2, J3, J4, J5, J6, J7, J8, J9, J10, J11

Connector	Pin No.	Signal Name	Signal Symbol	Description
J2, J3, J4, J5, J6, J7, J8, J9, J10, J11	1	Positive (+) Load Bus Voltage	V_BUS+	Load Bus Voltage Monitoring
	2	Negative (-) Load Bus Voltage	V_BUS-	
	3	Load Fuse Alarm	LOAD_FA	Load Fuse Alarm Monitoring
	4	Positive (+) Analog Input	V_AI+	See Note Below
	5	Negative (-) Analog Input	V_AI-	

NOTE! *Terminals 4 and 5 of J2, J3, J4, J5, J6, J7, J8, J9, J10, J11 can be set to accept one (1) of four (4) types of input signals via jumper settings: 0 VDC to 10 VDC general-purpose transducer, 10 mV DC to 50 mV DC load shunt (only load shunts are supported at this time), 0 mA to 20 mA general-purpose transducer, and 1 uA/K temperature sensor. See also "Jumper Settings on SM-DUE" on page 17.*

NOTE! *Only the SM-DUE designated as SMDUE1 and SMDUE2 via the addressing switches can have temperature probes connected to them.*

Table 3.7 Input Block and Connector Mapping

Input Block	1	2	3	4	5	6	7	8	9	10
Connector	J2	J3	J4	J5	J10	J6	J7	J8	J9	J11

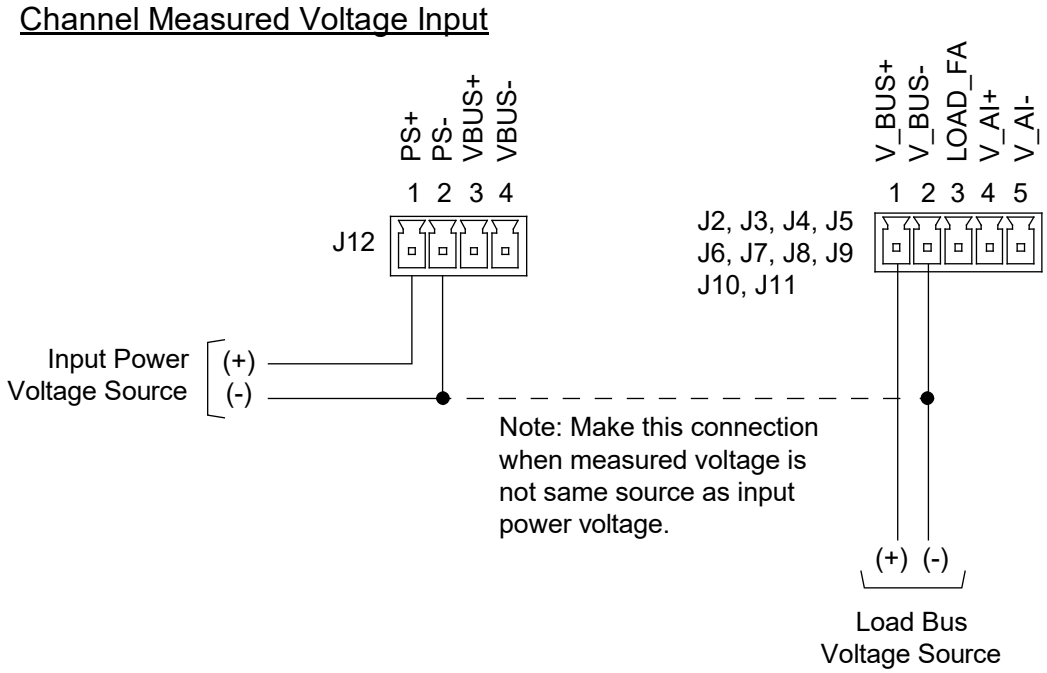
Procedure

1. Refer to "Jumper Settings on SM-DUE" on page 17 and set each input block's analog input for the type of signal being connected.
2. For each input block (connectors J2, J3, J4, J5, J6, J7, J8, J9, J10, J11), connect the following signals. Refer to the next sections for specific connection details.
   - Connect the positive (+) load bus voltage monitoring lead to pin 1.
   - Connect the negative (-) load bus voltage monitoring lead to pin 2.
   - Connect the fuse alarm monitoring lead to pin 3
     (Bus- base of 0 VDC, >10 VDC alarm, <10 VDC normal).
   - Connect the positive (+) analog input lead to pin 4.
   - Connect the negative (-) analog input lead to pin 5.

Load Bus Voltage Monitoring Connections

Refer to Figure 3.4 for a wiring diagram.

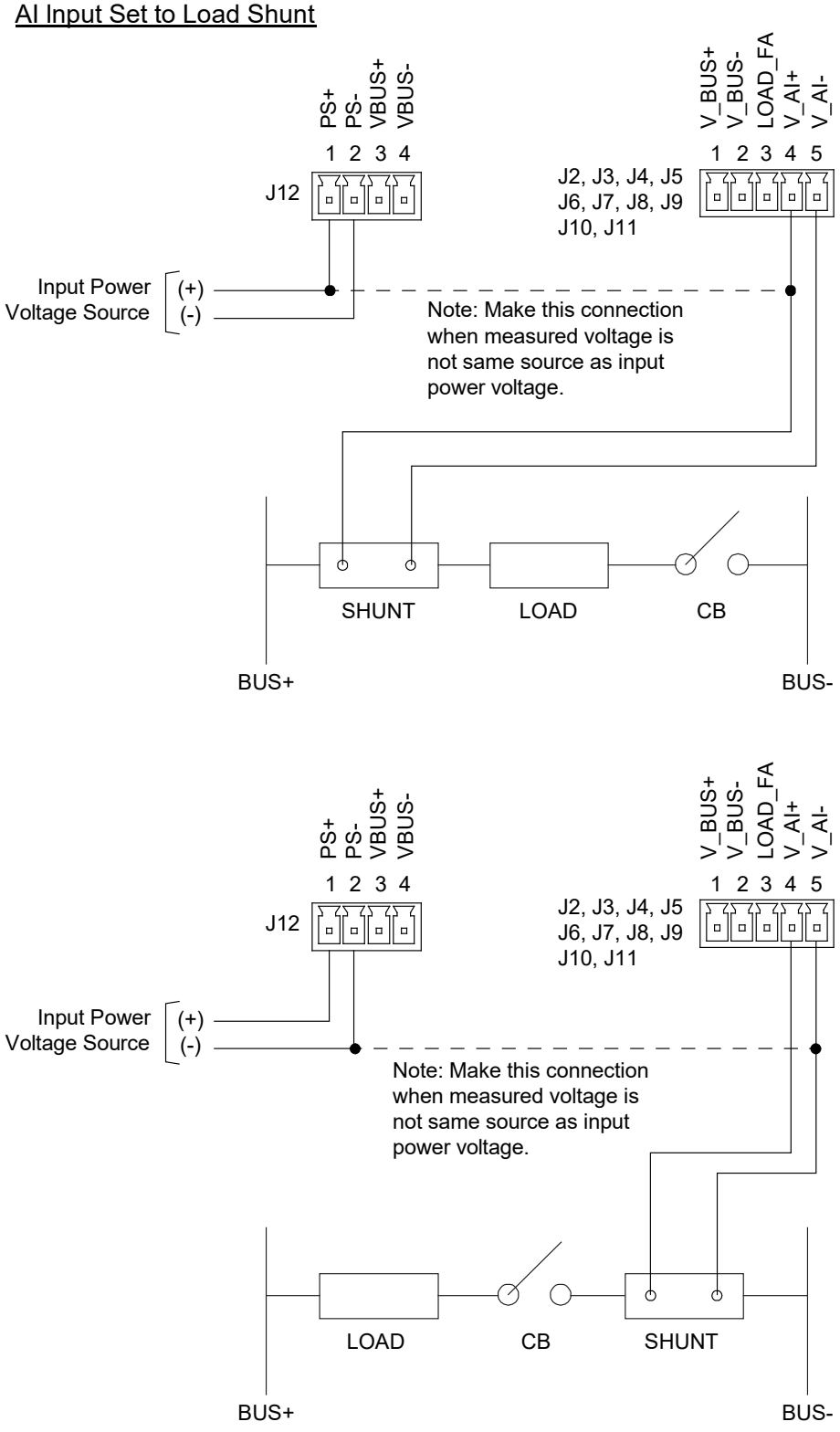
Figure 3.4 Load Bus Voltage Monitoring Connections



Analog Input (AI) Connections when Set for Load Shunt

Refer to Figure 3.5 for a wiring diagram.

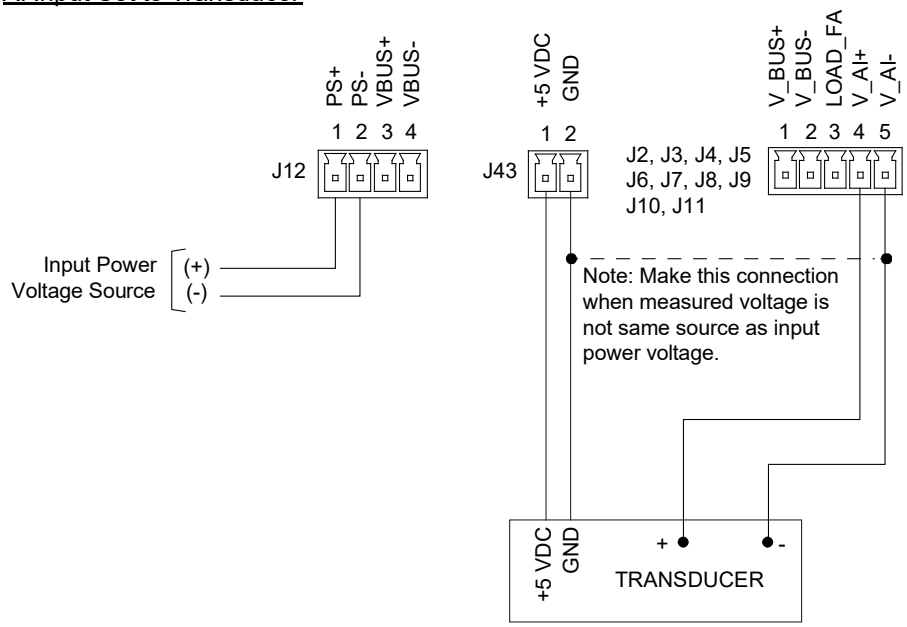
Figure 3.5 Analog Input (AI) Connections when Set for Load Shunt



Analog Input (AI) Connections when Set for Transducer

Refer to Figure 3.6 for a wiring diagram.

Figure 3.6 Analog Input (AI) Connections when Set for Transducer



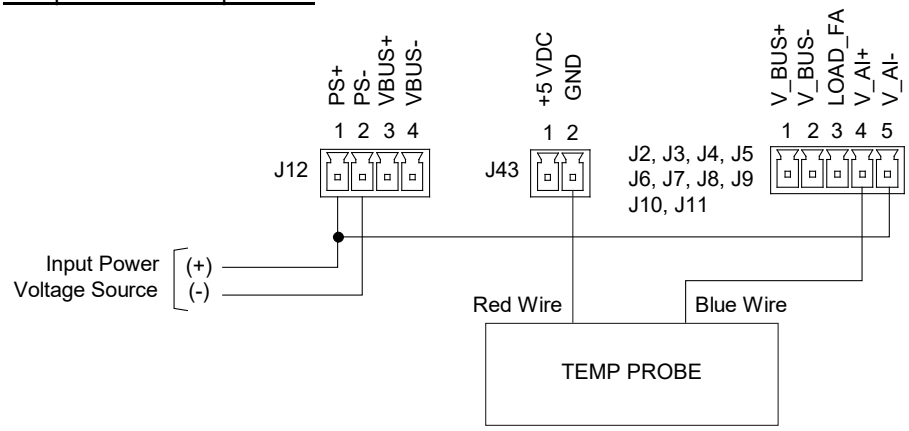
Analog Input (AI) Connections when Set for Temperature Probe

Refer to Figure 3.7 for a wiring diagram.

NOTE! *The connector end must be cut off from the temperature probe and the temperature probe hardwired into the unit.*

NOTE! *Only the SM-DUE designated as SMDUE1 and SMDUE2 via the addressing switches can have temperature probes connected to them.*

Figure 3.7 Analog Input (AI) Connections when Set for Temperature Probe



3.5.7 CAN Bus Port Connection

General

- The SM-DUE is connected into the NCU CAN Bus via connector J47. Communication between the SM-DUE and the NCU is accomplished through the CAN port (J47).
- The CAN port (J47) can also be used to interconnect multiple SM-DUE units together.
- Refer to Table 3.8 for connector pinout information.
- Refer to Figure 3.3 for connector location.

Table 3.8 CAN Bus Port Connector J47

Connector	Pin No.	Signal Name	Signal Symbol	Description
J47	1	CAN Communication H	CAN_H	CAN Port
	2	CAN Communication L	CAN_L	

Procedure

NOTE! *The NCU can communicate with up to eight (8) SM-DUE units.*

1. SM-DUE connector J47 is factory connected to the CAN port connectors located on the secondary bay's control shelf. Refer to "Interconnecting the "Primary Bay Control Shelf to a Secondary Bay Control Shelf" and a "Secondary Bay Control Shelf to a Secondary Bay Control Shelf" Procedure" on page 11.

3.6 Initially Starting, Configuring, and Checking SM-DUE Operation

3.6.1 Initial Startup Preparation

Refer to the separate NCU controller manual (UM1M830BNA) supplied with the main bay upgrade kit (P/N 565406) for complete NCU controller operating information.

3.6.2 Initially Starting the SM-DUE

Procedure

1. Apply input power to the SM-DUE.
2. The SM-DUE starts and goes through an initialization process. The "Operation" LED will flash during the initialization process. After the initialization process is complete, the "Operation" LED will stay flashing to indicate normal operation.

NOTE! *On initial power up of the SM-DUE, a controller reboot may be required to update controller SM-DUE inventory.*

3. Refer to the next section "Configuring the SM-DUE" and set the SM-DUE as required for your application.

3.6.3 Configuring the SM-DUE

Refer to the NCU controller manual (UM1M830BNA) for detailed instructions on how to program the SM-DUE.

3.7 SM-DUE Indicators

There is one (1) status LED indicator located on the SM-DUE. Refer to Figure 3.8 for location. Refer to Table 3.9 for indicator function.

Figure 3.8 SM-DUE Indicator Locations

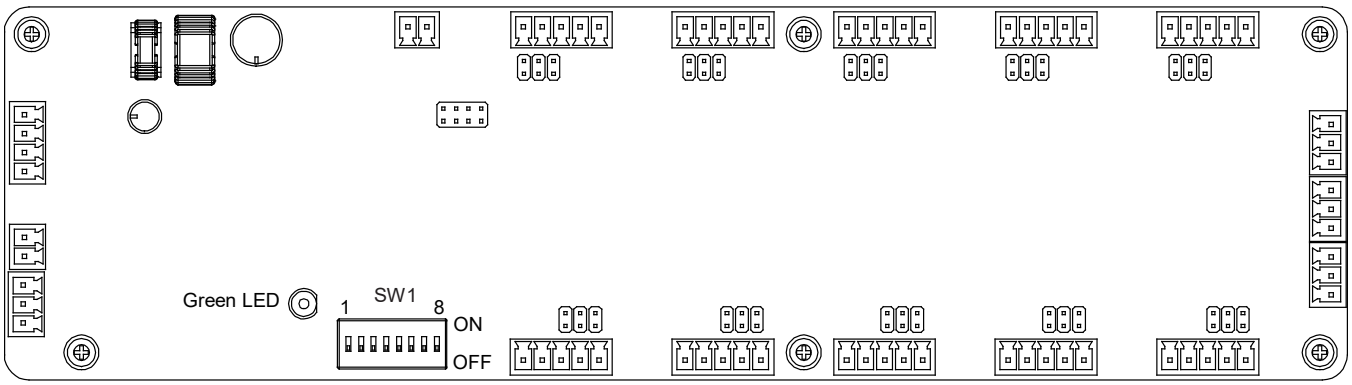


Table 3.9 SM-DUE Indicators

Indicator	Normal State	Fault State	Description
Operation (Green)	Flashing	--	Unit is operating normally.
	--	Off	Unit is non-operational.

3.8 Troubleshooting

LED Indication Error

Requirement: When power is supplied to the SM-DUE, the “Operation” LED should flash.

Issue: SM-DUE “Operation” LED is OFF.

Possible Solutions: Check if the power input wiring of the SM-DUE is correct. Use a multimeter to check if the input voltage to the SM-DUE meets requirements. Check if the wiring of the other terminals is correct.

Incorrect Measurement Readings

Issue: The NCU is unable to obtain correct data when doing measurements.

Possible Solutions: Check if the SM-DUE jumper settings are correct. Check if the input wring is securely connected to the proper terminals. Check if the input voltage to the SM-DUE is correct. Check if the input configuration is correct at the NCU. Check the CAN connection.

CAN Communication Failure

Issue: Communication through the CAN port fails.

Possible Solution: Check if the CAN port is correctly connected.

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