5067 Mini-BDFB Battery Distribution Fuse Bay

-48 VDC @ 600 Amps per Load
TPS Fuse / Circuit Breaker Distribution, 23”
With VIM2 meter[1]

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Mini-BDFB Configurations				
Fuse / Breaker Positions		Battery Load Buses		Ordering Code
Total	Per Battery Bus	-48V Battery	Return	
48	24	2	1	6875067P-104
48	12	4	1	6875067P-101

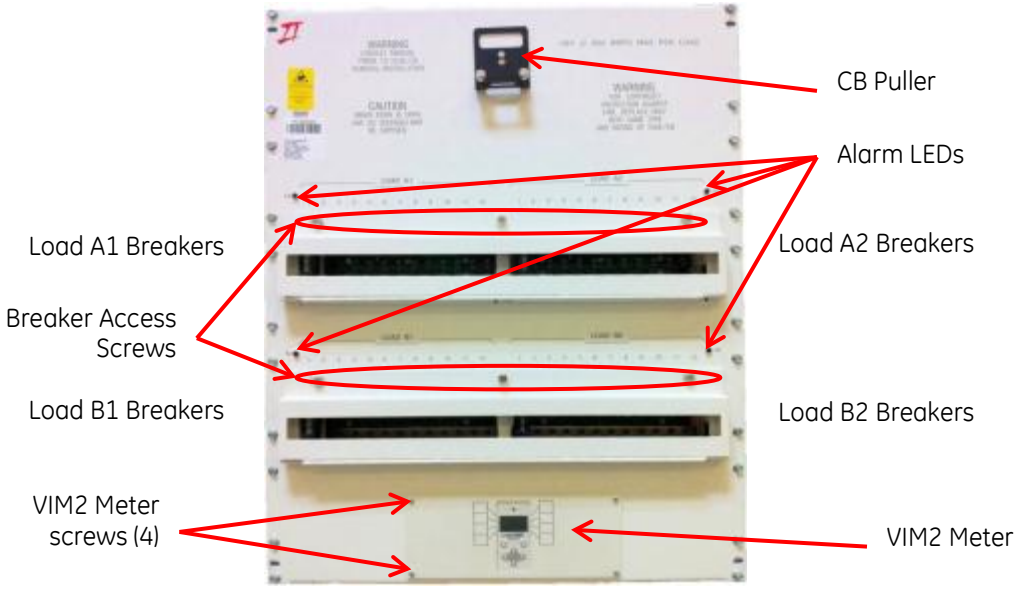

Figure 1 Front View

Dimensions	27.97 in x 23 in x 15.25 in (H x W x D)
Weight	160 lb
Mounting	23 inch frame (not included)

[1] Earlier BDFB versions with 6180638P-3 meter are covered by Product Manual 4380439PD.

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Installation Notes

1. Follow all Installation Notes. Read before installing, maintaining, or repairing the equipment.
2. Follow all site specific installation notes and instructions.
3. Mount to grounded frame using 12-24 screws provided.
   Grounding for the equipment is through this connection to the frame.
   Make sure frame is properly grounded.
4. Do not install this equipment over combustible surfaces.
5. Follow NEC, and local and national codes and rules.
6. Use a personal ESD strap when accessing or removing electronic components.
7. Use only protectors and holders specified in the equipment Ordering Guide.
8. 1-pole breakers over 60A require an adjoining position be left unoccupied for thermal reasons.
9. Size protectors (fuses or circuit breakers) as required by the National Electric Code (NEC) and/or local codes. Refer to the equipment ratings to assure current does not exceed:
   Continuous Load (List 1) - 64% of protector rating
   Maximum Load (List 2 - typically end of discharge) - 80% of protector rating.
10. Field-wired Conductors - Follow all National Electric Code (NEC) and local rules and regulations when making field connections.
    - Size field-wired conductors based on listed recommendations, National Electric Code (NEC) and/or local codes based on 70°C ampacity.
    - Insulation rating: 90°C minimum; 105°C (minimum) if internal to enclosed equipment cabinets.
11. Bonding Network - Suitable for installation as part of either
    - Common Bonding Network (CBN)
    - Isolated Bonding Network (IBN)
12. Facilities - Suitable for installation in
    - Network Telecommunication Facilities
    - Locations where the NEC applies
13. DC Return - Isolated DC Return (DC-I) or Common DC Return (DC-C)
14. Intra-building ports - Equipment and subassembly ports are suitable for connection to intra-building or unexposed wiring or cabling. The equipment and subassembly ports can be connected to shielded intra-building cabling grounded at both ends.

Convert to 4–Load Connections – if so instructed in all site specific installation notes and instructions - optional 4 Load Kit 6421820P

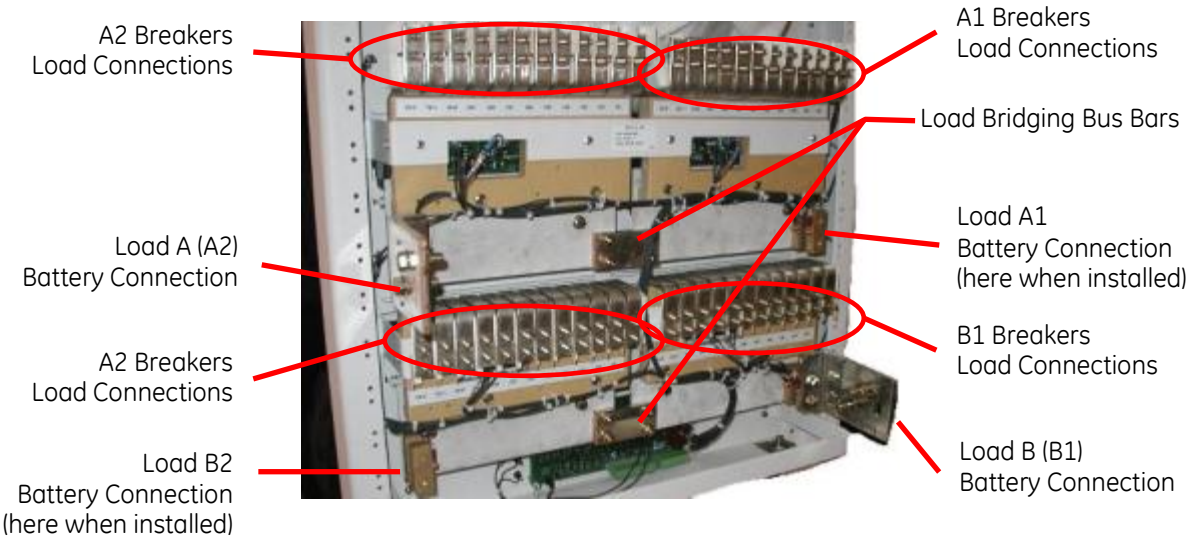
1. Add Battery Connection Bus Bars at Load A1 and Load B2. Secure with included bolts, nuts and washers.
2. Remove Load Bridging Bus Bars by removing nuts and washers securing them. Replace nuts and washers.

Battery Connections - -48V Loads - Figure 2

Connect -48V battery feeds to Battery Connection Bars

2-Load Configurations – to Load A (A2) and Load B (B1).

4-Load Configurations – to Load A1, Load A (A2), Load B (B1), and Load B2.



Battery Connections - 3/8" on 1" centers – torque 16 ft-lb
Breaker Load Connections - 1/4" on 5/8" centers – torque 55 in-lb

2-Load configuration shown

Figure 2 -48V Connections: -48V Battery and Breaker Loads

Battery Return Connections - -48V Loads - Figure 3

Connect battery returns to Return Bus.

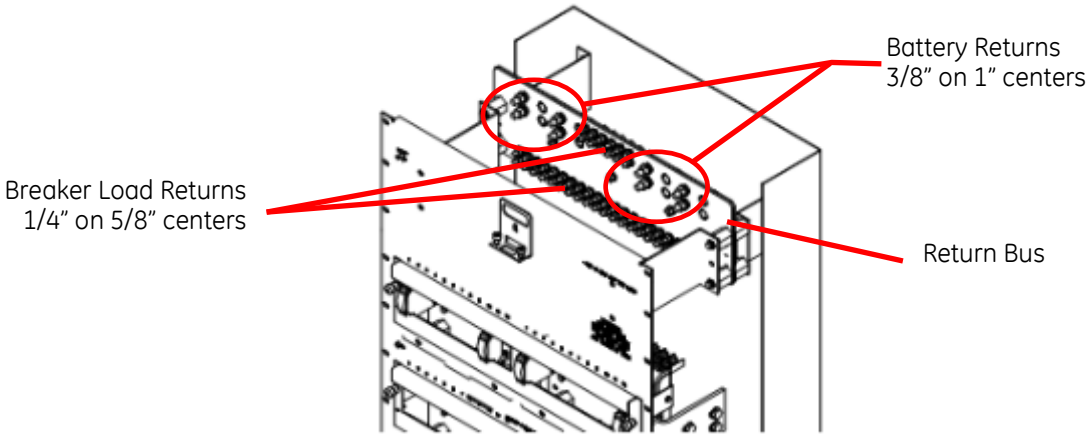


Figure 3 Return Connections

Breakers and Fuse Holders

1. Open Breaker Access Covers by loosening Breaker Access Screws.
2. Install protectors and protector holders.
3. Close Breaker Access Covers and tighten Breaker Access Screws.
4. Install fuses into fuse holders.
5. Install multi-pole bus kits included with each protector and protector holder occupying 2 or 3 positions.

Load Connections - Figure 2 **and** Figure 3

1. Connect breaker load wires to Breaker Load Connections.
2. Connect breaker load return wires to the Return Bus.

Alarm Wiring

1. Connect alarm wires per site specific installation notes and instructions.
   Butt-splice office alarm wires to the provided alarm cable.
2. Remove the VIM2 meter by removing the 4 screws securing its mounting plate - Figure 1.
3. Connect the alarm cable connector to the VIM2 meter.
4. Replace the VIM2 meter and the 4 screws securing its mounting plate.

Alarm Cable Pinouts and Description		
VIM 2 Meter		
Pin	**Form-C Alarm**	**Wire Color**
7	Fuse NO	Blue
1	Fuse NC	White/Blue
2	Fuse C	Slate
10	OVL NO	White/Slate
4	OVL NC	Orange
5	OVL C	White/Orange
12	PL NO	Yellow
6	PL NC	White/Yellow
11	PL C	White

VIM 2 Meter

The VIM 2 can be configured to display the voltage, current, and panel identifier of each monitored load bus.

Notes specific to application in this equipment 5067:

1. 5067 is -48V only.
2. Lamp Test does not activate 5067 Alarm LEDs - Figure 1.

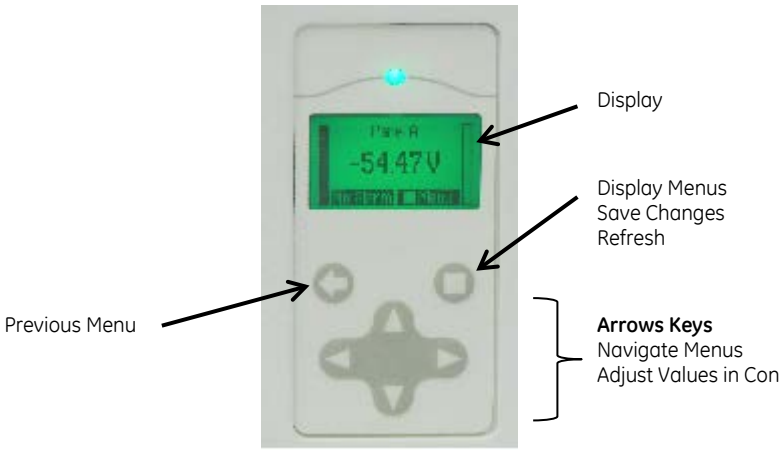
Alarm Indication

When an alarm occurs, LCD backlight on the display changes color from green (normal) to red (alarm active). The front panel text also changes from "No Alarms" to "Alarms"

Navigation Keys

Left and Right Keys are used for menu navigation. Up and Down keys are used to change the parameter values of the meter. They also allow screen contrast adjustment at:

Menu►System Parameters►Display Contrast



VIM 1 Meter

Alarm and Monitoring

Visual, Audible and Remote Alarms

The VIM 1 monitor includes an audible alarm with a user configurable on/off feature. There is a form-C relay for each of the three alarms for remote monitoring.

Power Loss/Under Voltage

Generates an alarm when power is lost to a load bus or when a user configurable low voltage threshold is reached.

Overload

Generates an alarm when a user configurable current threshold is reached. A configurable time delay may also be set to avoid nuisance alarms due to bus transients.

Breaker/Fuse

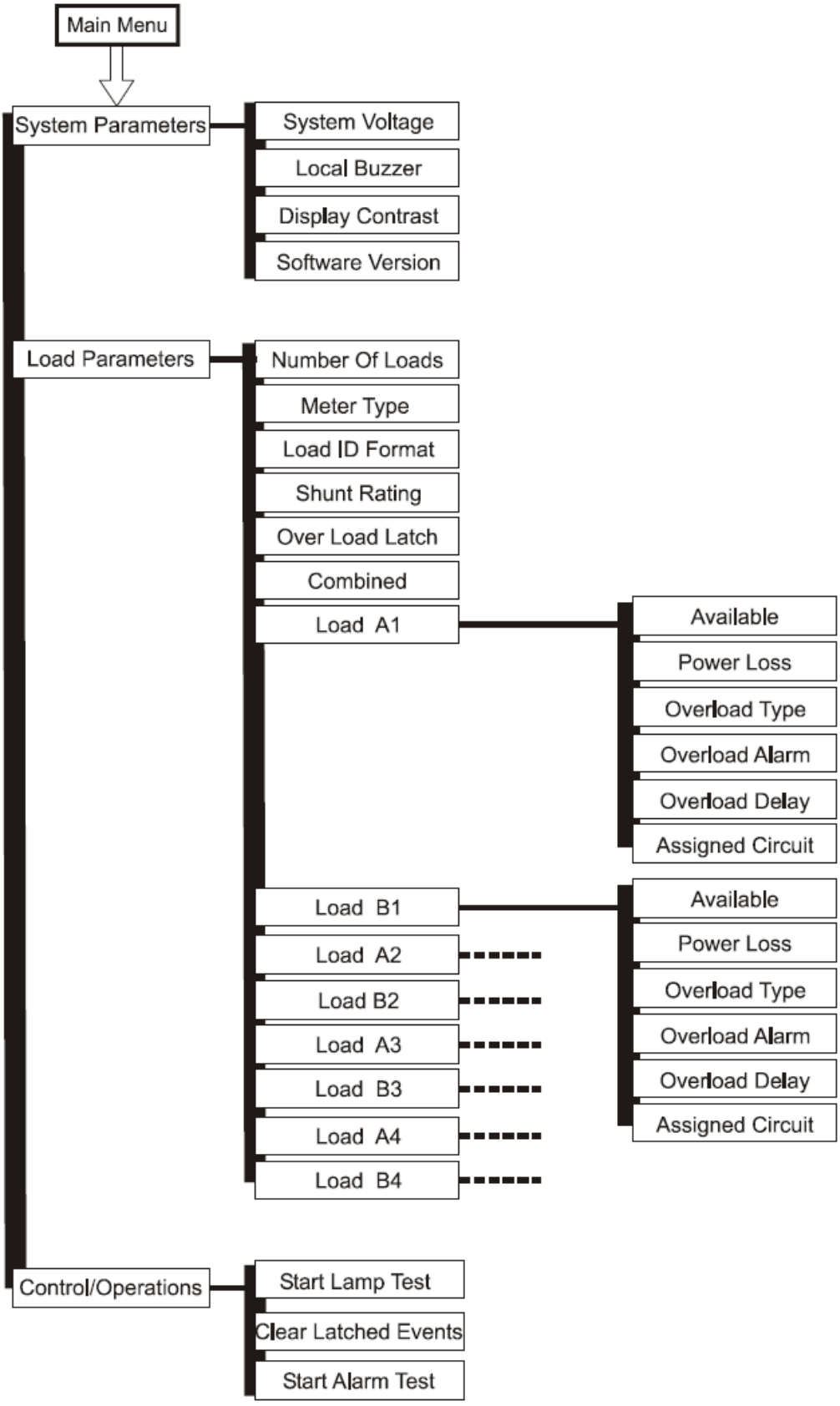
Generates an alarm when either a circuit breaker trips or a fuse blows.

Network Connectivity

There are two RJ45 type connectors on the board for future use.

Menu Map

The VIM 1 front panel is structured such there are three main menu items: System Parameters, Load Parameters, and Control/Operations. Each key menu item has sub items as shown in the menu map below.



Programming the Meter

VIM2 parameters such as shunt size and number of load buses are preconfigured when it is factory installed in a BDFB/BDCBB or Micro-BDFB. Only customer specific preferences need to be adjusted in the field. As a replacement or meter upgrade, the factory default settings may need to be adjusted for the application.

Configurable parameters and their associated factory defaults are listed below.

Following the table are the typical items that need to be configured or verified in a retrofit or replacement application.

System Parameters	Description
System Voltage	Used to identify system voltage. Selectable between 24V and 48V. Factory default is 48V.
Local Buzzer	Allows the integrated audible alarm to be Enabled or Disabled. Factory default is Disabled.
Display Contrast	Allows the display contrast to be adjusted for the local ambient lighting. Adjustable from 0-100% in 1% increments. Factory default is 50%.
Software Version	Displays the version of the application code running in the meter in the format (vX.Y). Version 1.5 is the latest as of this printing.
Load Parameters	**Description**
Number Of Loads	Used to identify the number of individual loads/buses in the distribution. Value configurable from 1-8. Factory default is 6.
Meter Type	Configures meter to display individual monitored bus voltages (voltage), voltages and currents (volt_curr), or only currents (current). This configuration is defined by the internal wiring of the distribution. Factory default is Voltage and Current (volt_curr).
Load ID Format	Configures display format used in referencing individual DC loads/buses. Allowable formats: A1, A, and 1. "A1" identifies loads using an A1, B1; A2, B2; ... format. "A" identifies loads using an A, B, C, D ... format. "1" identifies loads using a 1, 2, 3, 4 ... format. Factor Default is to use the A1 format.
First Load (location)	Used to indicate where the first load in the distribution is located. Allowable configurations are: top-left, top-right, btm-left (bottom-left), btm-right (bottom-right). Every monitored shunt is considered a load. Factory default is "top-left".
Shunt Rating	Used to define the current rating of the shunt in the load bus. All shunts in the load must be of the same size. A 50mV shunt is assumed. Allowable range is 1-4000A. The factory default is 800A.
Overload Latch	A single configuration for all panels/buses that allows a temporary Over Load event to be latched. Factory default is "Disabled".
Combined Load	Displays the load value as one combined sum by adding up all shunts in the system and presenting it as values for a single load. Factory default is disabled.
Load Available (A1-A4;B1- B4)	Indicates if the load is available or in use. Allowable configurations are "installed" and "not installed". "Installed" loads imply that the load is in use. "Not Installed" loads imply that the load may be present, but it is not in use. Information obtained from the load should not be relevant. Factor default is set to be "installed".
Load Power Loss	The Power Loss (PL) alarm is triggered upon loss of the primary DC or when the individual's panels' DC input has reached the configured low voltage threshold. This Power Loss voltage threshold is configurable between 40.00-60.00V for 48V systems and 20.00-30.00V for 24V systems. Factory defaults for these thresholds are 40.00V and 20.00V, respectively.
Load Overload Type	The Power Overload Type defines whether the smart meter is to treat the Overload alarm event for a "Single Bus" or for an "Redundant Bus" configuration. The "Single Bus" configuration is based on straight Overload threshold being exceeded. The "Redundant Bus" configuration causes the VIM2 to sum the two respective left and right load shunt measurements and compare it to the individual overload thresholds configured for the each of the respective panels in the pairing. The lowest Overload value threshold configured for the Redundant loads shall take priority and be used in the comparison. Once the "Redundant Bus" measurement exceeds this threshold, the controller asserts the Over Load (OVL) alarm. Factor default is "Single Bus" configuration".

Load Overload	The Load Overload (OVL) alarm event is triggered when any measured panel currents exceed their respective configured thresholds. These OVL thresholds can be configured from 1-4000A. Factory default is 800A.
Load Overload Delay	An Overload Delay can be set to prevent nuisance alarms. This delay is configurable between 0-300 seconds. Factory default is 0 seconds.
Assigned Circuits	The VIM2 has eight individual load circuits with each circuit having voltage and shunt measurement capability. These circuits are pre-wired with fixed positions in the Lineage BDFB/BDCBBs. If circuit wiring from the VIM is redressed in the field this feature can be used to assign the appropriate circuit to the new load location. Note: in the 6-load H569-445 circuits 1-6 are attached in a descending order viewing from the front of the system in a top left to right numbering scheme. The VIM2 will automatically assign the right circuit if only the first "Load Location" is utilized and the internal wiring is not touched. Note: if wiring has been rearranged details of the circuit connections can be seen in T83150-30.
Control and Operations Parameters	**Description**
Start Lamp Test	Cycles the illumination of the front panel LED and Backlight through Red, Amber, and Green
Clear Latched Events	Clears a latched Overload Alarm event. Note the Overload Latched Event must be enabled to have a latched alarm.
Start Alarm Test	Asserts Form-C alarms available at connector J3 in a fixed sequence: Fuse Alarm (FA), Power Loss (PL), and Overload (OVL). Alarm asserted is displayed on the front panel. Feature can be used to test the site's remote monitoring systems and wiring.

Customer Service Contacts

Customer Service, Customer Training, Technical Support,
Product Repair and Return, and Warranty Service

Services provided include initiating the spare parts procurement process, ordering documents, product warranty administration, and providing other product and service information.

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On-Line Power Systems Product Manuals and Software

Product manuals and software are available on-line. Software includes Easy View and SNMP MIB.

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[2] the USA direct country code for the country where the call is originating