

Intelligent Distribution Bay

-48V Secondary DC Distribution



Overview

The OmniOn Power™ Intelligent Distribution Bay (IDB) provides secondary distribution of -48V power to load equipment. Using Intelligent Protection Device (IPD) breakers, users can monitor current for individual loads and an array of other critical performance data. The bay may be configured for 2, 4, 6 or 8 load buses with up to 176 load positions across 8 panels, each panel supporting up to an 800A total load.

Cabinet Options

Cabinets are 7" (2134mm) tall, 24" (610mm) deep, 30" (762mm) wide or 7" (2134mm) tall, 28" (711mm) deep, 26" (660mm) wide and available with a black or white finish. Cabinets include an intelligent control panel and up to four distribution assemblies each equipped with two 20 or 22-position panels arranged for either internal or external returns. Each panel may be individually fed or multiple panels may be joined together. Each load bus includes landings for four 750kcmil cables.

Distribution Panels

Each 20 or 22-position panel includes an Intelligent Panel Control Card (IPCC) to process data from installed IPD breakers and communicate with the controller. Perforated metal doors protect the breakers and allow visibility of handle position and status LEDs. Panels also accept standard bullet breakers and bullet fuse holders that simply report an alarm when tripped. This flexibility allows customers options depending on their monitoring needs.

Advantages

- Low first cost since preinstalled shunts or hall effect devices and associated measurement circuitry are not required.
- Comprehensive protector information automatically uploads to controller minimizing installation programming.
- Per-circuit current monitoring and protector status.
- Modular design for top or bottom feed.
- 2, 4, 6 and 8-bus configurations (field configurable).
- Integrated 10/100/1000M Base-T LAN port for remote connectivity and centralized management through SNMPv2c, SNMPv3, and MODBUS TCP.
- Monitoring and alarming via IP/SNMP connectivity.
- Ideal for datacenter applications requiring real time load monitoring.
- LCD color touchscreen.
- Flexible protector options allowing single-pole, two-pole, and three-pole advanced intelligent protection devices.
- Provides basic status information directly to a Galaxy Millennium 2 power system controller via an available RS485 Galaxy Protocol communication port.

Intelligent Protection Devices (IPDs)

Intelligent Protection Devices (IPDs) provide advanced monitoring compared to standard circuit breakers. The user installs IPDs as needed in a “pay as you grow” advantage. The IPD automatically provides the following comprehensive information to the controller without cumbersome and time-consuming programming.

- Load Current
- Power Usage
- Presence
- Slot position
- Rated Value
- Open/Closed
- Life remaining
- Number of poles
- Number of operations
- Number of overload conditions
- Trip Status
- Serial Number
- Manufactured Date
- Programmable Status LEDs

Advanced Data Collection

The Intelligent Distribution Bay automates many of the activities that were previously manually entered and configured. This includes positional location, number of poles and rating information.

Alarm Notifications

System Alarms

Alarm Description	ID	Sev	Relay	Bay Alarm LED	Email				SNMP				Notification Delay in Seconds	Notify on Occur	Notify on Retire	Latch
					1	2	3	4	1	2	3	4				
ACO Active	AAC1	WAR			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Alarm Test Active	ATA1	WAR			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Alarm Test Aborted	ATB1	RO			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Auxiliary 1 Alarm	AUX1	MIN		LED1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Auxiliary 2 Alarm	AUX2	MIN		LED1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Auxiliary 3 Alarm	AUX3	MIN		LED1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Auxiliary 4 Alarm	AUX4	MIN		LED1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Input Feeder Voltage Low	BDA1	CRIT	RO1	LED1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Panel Details

Select Panel: 1

Panel:	1
Description:	-
Alarm Status:	Normal
Volts:	-53.54 V
Amps:	48.78 A
Watts:	2.61 kW
Capacity:	6 % 800A Panel Rating
Overload Threshold:	80 %
Delay:	0 SECOND(S)
Latch:	Disable

Panel Control Card: IPCC-1 LBOMPW24KZ25006884

Circuit Breakers											
Position	Breaker Reference	Poles	Current	Rating	Threshold	Delay	Latch	Redundant Breaker Reference	State	LED	
01	-	-	-	-	-	-	-	-	-	-	
02	CB102	1	0.0 A	60 A	80 % (48 A)	0	Disabled	-	On	●	✓
03	-	-	-	-	-	-	-	-	-	-	
04	CB104	1	0.0 A	40 A	80 % (32 A)	0	Disabled	CB204	On	●	✓
05	CB105	1	0.0 A	40 A	80 % (32 A)	0	Disabled	-	On	●	✓
06	CB106	1	0.0 A	20 A	80 % (16 A)	0	Disabled	0	On	●	✓
07	-	-	-	-	-	-	-	-	-	-	

Alarm History

Description	Date and Time	Alarm Severity	
Circuit Breaker Off	09/29/2023 02:19:23 PM	Minor	✓
Thermal Probe Failure	09/29/2023 02:14:33 PM	Critical	✓
Major Communication Fail Alarm	09/29/2023 02:14:33 PM	Critical	✓
Circuit Breaker Fault	09/29/2023 02:13:33 PM	Major	✓
Bus Voltage Drop	09/29/2023 01:49:38 PM	Critical	✓
Circuit Breaker Redundancy Fault	09/29/2023 01:49:28 PM	Major	✓
Controller Communication Loss	09/29/2023 01:49:16 PM	Critical	✓
Unconfigured Alarm Destination	09/29/2023 01:49:10 PM	Warning	✓
Password At Default	09/29/2023 01:49:08 PM	Warning	✓
Processor Halt	09/29/2023 01:49:06 PM	Warning	✓
Config Reboot Required	09/29/2023 01:47:10 PM	Critical	✓
Configuration Changed	09/28/2023 12:13:05 PM	Warning	✓

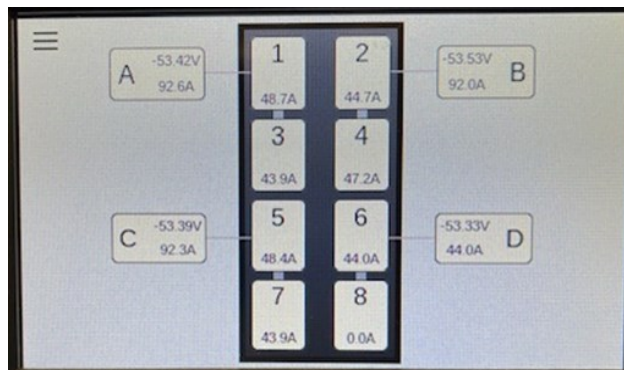
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Comprehensive Monitoring

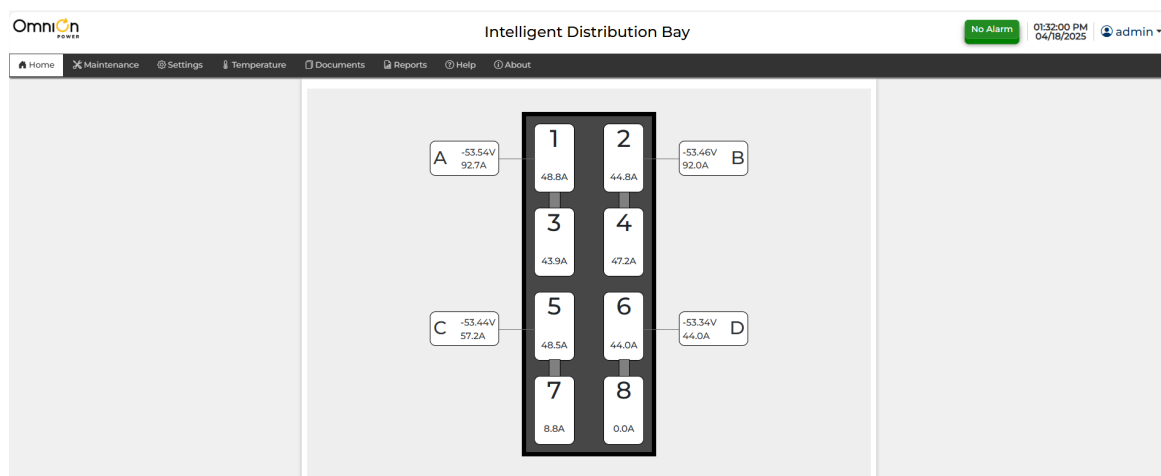
There are three ways to view data collected by the controller:

- Locally through the 4.3" touch screen display.
- Laptop connected to 10/100M Base-T craft port using standard web browser.
- Remote connection to 10/100/1000 Base-T ethernet LAN port using standard web browser. This port also supports machine-to-machine interfaces like SNMP, Modbus, and Telnet. All user access points can be made secure using password management.

There are similarities between the front panel and web screens, but they are not identical. They both provide menu bars for navigating to **Home, Maintenance, Settings, Documents, Reports, About and Help** screens along with an interactive pictorial depiction of the panels and load busses in the bay. Front panel access allows the user to view data and make minor preference changes but web page access either through the local craft port or remotely is necessary for major configuration alterations.



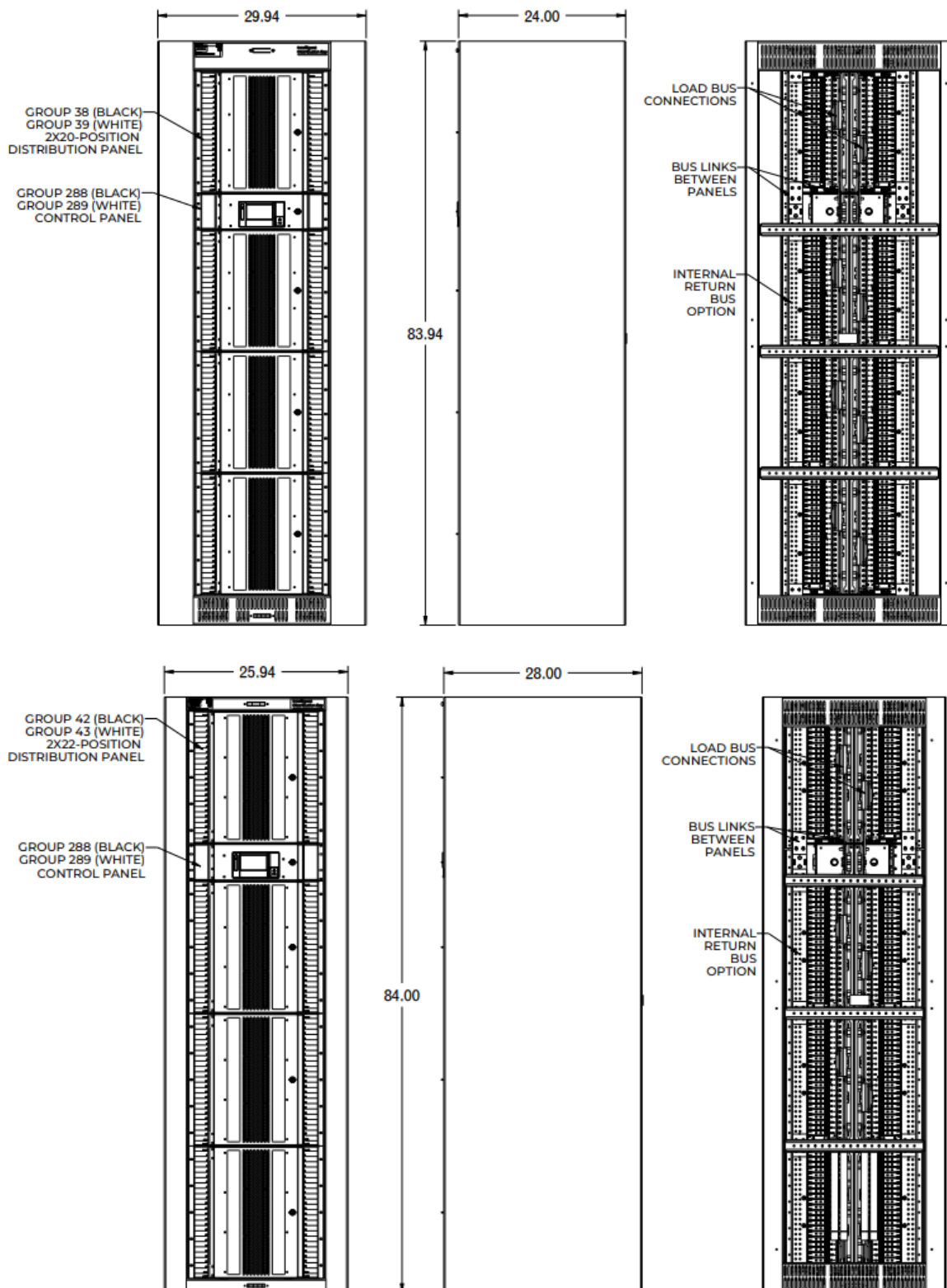
Front Panel Home Page - System View



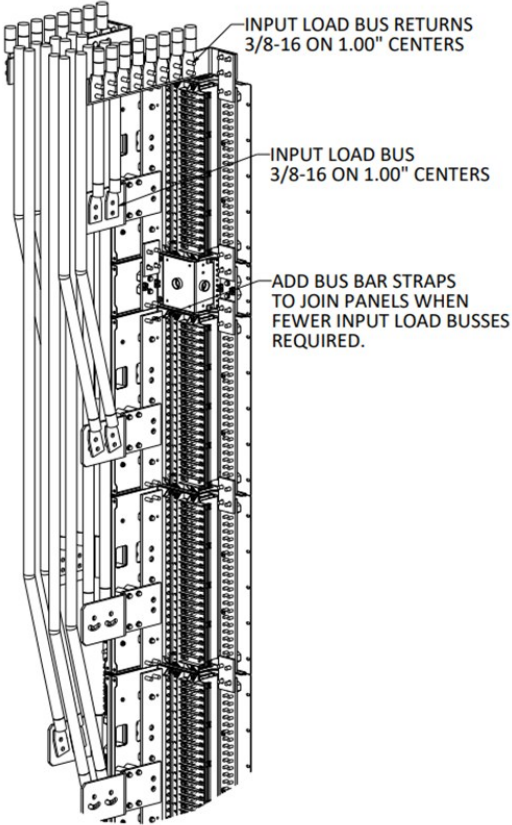
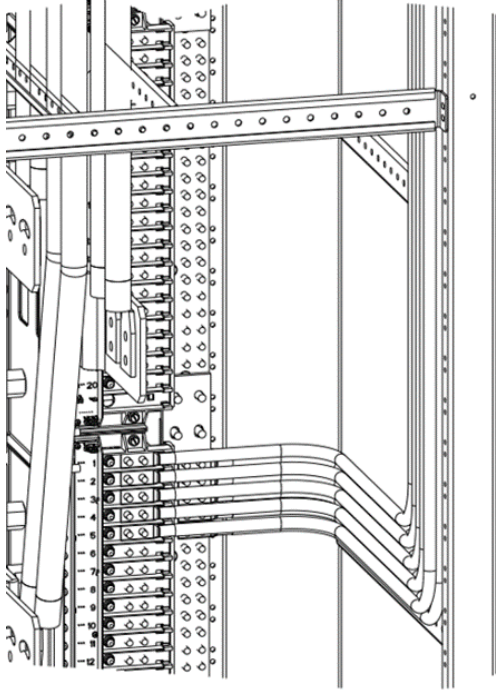
Web Page - System View

Cabinet Drawings

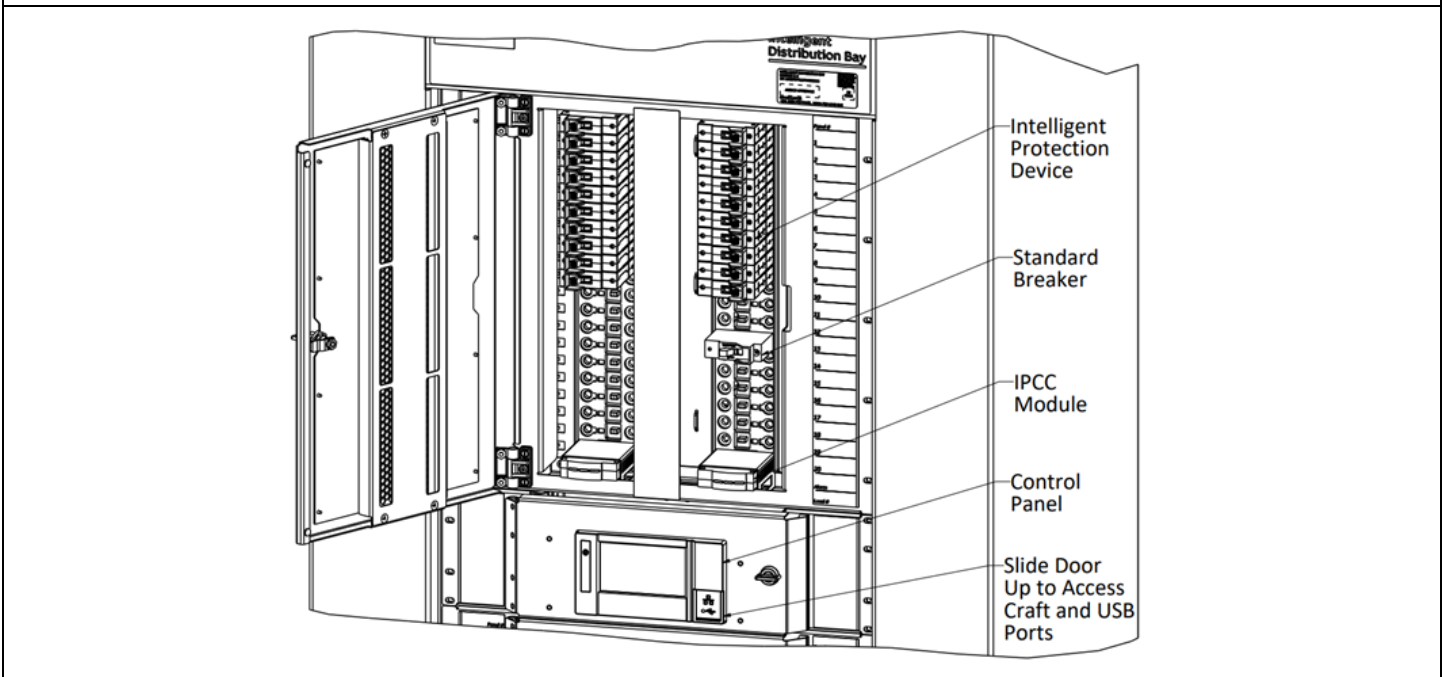
Cabinet Layout



Cabinet Drawings (Continued)

Input Connections	Output Connections
 <p>INPUT LOAD BUS RETURNS 3/8-16 ON 1.00" CENTERS</p> <p>INPUT LOAD BUS 3/8-16 ON 1.00" CENTERS</p> <p>ADD BUS BAR STRAPS TO JOIN PANELS WHEN FEWER INPUT LOAD BUSES REQUIRED.</p>	

Control and Distribution Panels



Specifications

Electrical	
Voltage	-48V _{DC} (-36.00 to -60.00V _{DC})
Output Current	800A per panel, up to 6400A per bay
Number of Input Load Busses	2, 4, 6, or 8
Outputs per Panel	20 or 22 positions per panel
Over Current Protectors	TPS/TPL Plug-in bullet up to 125A (Standard only) Single pole breaker up to 100A (Standard or Intelligent) Double pole breaker up to 200A (Standard or Intelligent) Triple pole breaker up to 300A (Standard or Intelligent)

Mechanical	
G401 Black Cabinet G402 White Cabinet	inches: 84H x 30W x 24D mm: 2134H x 762W x 610D weight: 450lbs
G403 Black Cabinet G404 White Cabinet	inches: 84H x 26W x 28D mm: 2134H x 660W x 711D weight: 425lbs
Access	Top or bottom feed; rear cable access

Environmental	
Operating Temperatures	0°C to +40°C (32F to 104F)

Agency Certification	
Safety	Canada/US UL62368/UL1801
EMI/EMC	CISPR Class A conducted and radiated
Telcordia	NEBS Level 3 (Pending)
Seismic	Zone 4

Controller	
Front Panel User Interface	4.3" color touch screen with integrated audible alarm, system status LED, and front panel PIN functionality.
Multiple Ethernet Ports	10/100 Base-T dedicated Craft access; 10/100/1000 Base-T LAN; 10/100/1000 Base-T Port forwarding.
Protocol Support	SNMP V1, V2c, V3, Modbus, Telnet/SSH, HTTP/HTTPS, NTP.
USB Port	USB A 2.0 front panel Craft use.
SD Card Slot	Reserved for future use.
Multiple RS485 Ports	Internal RS485 (Galaxy Protocol) to PCC; External Modbus RTU (RS485) connection to Management device.
Temperature Monitors	Optional Hot Aisle, Cold Aisle and Ambient DTP monitors; Integrated controller temperature sensor.
Alarm Inputs/Outputs	Four configurable binary/digital inputs; Seven Form-C output alarm relays (60V _{DC} /0.5A).
Monitoring Levels	Input Feeder, Panel level, Individual protectors including volts, amps, watts, capacity utilization, alarm states, protector health, redundancy, temperatures.
Advanced Reporting	Reports (Inventory, Voltage Discharge, IPD Overview, Alarm History, Input Feed and Trend Statistics) Alarm management (protectors, panels, input feeds).

Ordering Information

Cabinet Options

7 FOOT HIGH, 26 INCH WIDE X 28 INCH DEEP CABINET

Ordering Code	Color	Cabinet Description
1600484416A	Black	4 Load E/W Shunts, Four 2 X 22-Position panels, Controller, Top feed, Internal returns (H569445G403, 10A, (2) 28, (4) 42, (4) 69A, 69B, 288)

7 FOOT HIGH, 30 INCH WIDE X 24 INCH DEEP CABINET

1600200597A	Black	8 Load, Four 2 X 20-Position panels, Controller, Top feed, Internal returns (H569445G401, 10A, (4) 29, (4) 38, (4) 68A, 68, 288)
1600482679A	White	8 Load, Four 2 X 20-Position panels, Controller, Top feed, Internal returns (H569445G402, 10A, (4) 29, (4) 39, (4) 68A, 68, 289)
1600483901A	Black	8 Load E/W Shunts, Four 2 X 20-Position panels, Controller, Top feed, Internal returns (H569445G401, 10A, (4) 28, (4) 38, (4) 68A, 68, 288)
1600483902A	White	8 Load E/W Shunts, Four 2 X 20-Position panels, Controller, Top feed, Internal returns (H569445G402, 10A, (4) 28, (4) 39, (4) 68A, 68, 289)





Note 1: Load Bus connections are accessible for either top or bottom cable entry without field modification.

Note 2: Bus links are included with each panel. If unused in configuration, they are shipped loose for any field modification that might be required.

Miscellaneous Spare/Replacement Parts




Part number	Description
1600419640A	IM1043E Controller
1600483854A	IPCC Module (Intelligent Panel Control Card)
1600483279A	Bay LED alarm board
8600399549P	Top Cover Kit for bottom feed applications
847135662	(4) ½ inch drop-in anchors (For zones 0,1,2)
847135688	(4) 12mm cap bolt anchors (For zones 0,1,2,3,4)

Intelligent Protection Devices (IPDs)



Part Number	Rating	# of poles	Photo
4600397167P	5A	1	
4600397168P	10A	1	
4600397169P	15A	1	
4600397170P	16A	1	
4600397171P	20A	1	
4600397172P	25A	1	
4600397173P	30A	1	
4600397174P	40A	1	
4600397175P	50A	1	
4600397176P	60A	1	
4600397177P	70A	1	
4600397178P	80A	1	
4600397179P	90A	1	
4600397180P	100A	1	
4600410581P	125A	2	
4600410582P	150A	2	
4600410585P	175A	2	
4600410586P	200A	2	
4600410587P	225A	3	
4600410588P	250A	3	
4600410589P	300A	3	
8600483214P	2-position Adapter Bus Kit (one required for 2-pole IPD and one for internal return bus)		
8600483215P	3-position Adapter Bus Kit (one required for 3-pole IPD and one for internal return bus)		

Note 1: All IPDs are rated for 80V_{DC} and 10KAIC Interrupt rating.


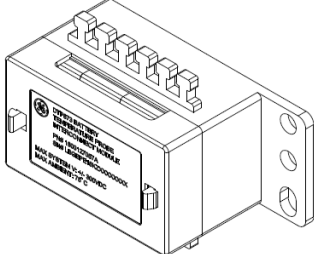
Standard Bullet Style Load Circuit Breakers

Ordering Code	Amperage	CB Positions (Poles)	Min Wire Gauge	Photo
407998137	3	1	10	
407998145	5	1	10	
407998152	10	1	10	
407998160	15	1	10	
407998178	16	1	10	
407998186	20	1	10	
407998194	25	1	10	
407998202	30	1	10	
408213486	40	1	8	
407998210	45	1	8	
407998228	50	1	6	
407998236	60	1	6	
407998244	70	1	2	
407998251	80	1	2	
407998269	90	1	2	
407998277	100	1	2	
CC848808551	100	2	2	
408185353	125	2	2	
408185346	150	2	1/0	
450023081	175	2	1/0	
408564941	200	3	2/0	
CC408573975	225	3	4/0	
408535752	250	3	4/0	

TPS/TLS Fuses

Ordering Code	Amperage	Ordering Code	Amperage	Photo
406700567	3	406700658	40	
406700583	5	406700674	50	
406700591	6	406700682	60	
406700609	10	406700690	70	
406700617	15	CC408618020	80	
406700625	20	CC408618037	90	
406700633	25	CC408618045	100	
406700641	30	CC408618061	125	
402328926	0.18 Alarm Fuse			
408548944	Bullet Fuse Holder, TFD-101-011-09 (Alarms on Blown Fuse or Fuse Head Removal)			
CC408617410	Bullet Fuse Holder, TFD-102-011-10 (Alarms on Blown Fuse Only)			

External Temperature Monitor Accessories

Part Number	Description	Photo
1600210840A	DTP873 Cold Aisle One-Wire Ambient Temperature monitor (Blue stripe)	
1600210841A	DTP873 Hot Aisle One-Wire Ambient Temperature monitor (Orange stripe)	
1600093512A	DTP873 One-Wire Ambient Temperature monitor (Red stripe)	
1600127057A	DTP Probe Termination Module	
1600134098A	Thermal Probe Cable – 25FT	
1600134099A	Thermal Probe Cable – 50FT	
1600134100A	Thermal Probe Cable – 100FT	

Training

OmniOn Power™ offers both on-site and classroom training options based on certification curriculum. Technical training can be tailored to individual customer needs. Training enables customers and partners to manage and support the power infrastructure more effectively. We have built our training program on practical learning objectives that are relevant to specific technologies or infrastructure design objectives.

Service & Support

OmniOn Power™ field service and support personnel are trusted advisors to our customers and always available to answer questions and help with any project, large or small. Our certified professional services team consists of experts in every aspect of power conversion with the resources and experience to manage large turnkey projects along with custom approaches to complex challenges. Proven systems engineering and installation best practices are designed to safely deliver results that exceed our customers' expectations.

Warranty

OmniOn Power™ is committed to providing quality products and solutions. We have developed a comprehensive warranty that protects you and provides a straightforward way to get your products repaired or replaced as soon as possible. For full warranty terms and conditions please go to <https://www.omnionpower.com/>.

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