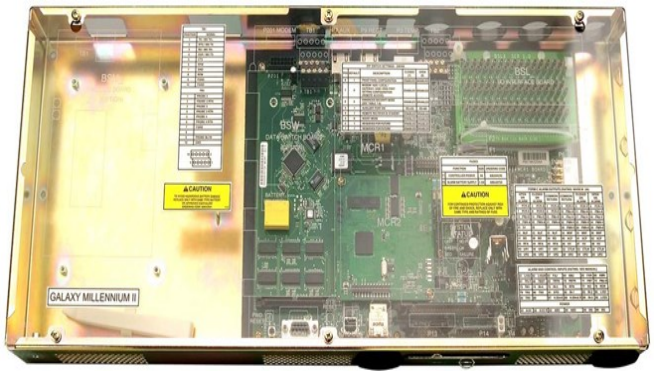
GALAXY Millennium™ II Controller



Description

Capable of controlling and monitoring as many as 64 rectifiers, the GALAXY MILLENNIUM II Controller simplifies the administration and surveillance associated with power plants and auxiliary equipment.

GALAXY MILLENNIUM II is OmniOn Power™'s flagship controller designed to meet the needs of telecom power systems in the 21st century.

Building on the industry leading GALAXY MILLENNIUM controller, the GALAXY MILLENNIUM II combines sophisticated control, monitoring and remote network access previously implemented on three separate circuit packs onto a single circuit pack offering to deliver state-of-the-art performance. It has been designed to simplify plant administrative and surveillance routines as well as reduce operating, provisioning, and personnel expenses.

Features of GALAXY MILLENNIUM II can be configured for office requirements via a menu-based front-panel display, through a local terminal or remote modem access using EasyView, a Microsoft Windows*-based configuration and reporting software program, or through the network utilizing standard web browsers or network protocols. GALAXY MILLENNIUM II can control and monitor up to 85 RS485 serial devices including 64 switchmode rectifiers. In addition to its standard integrated monitoring capabilities, this controller offers extensive external monitoring using Bay Interface Cards (BICs) and remote peripheral monitoring modules (RPMs) designed for shunt, various voltage ranges, binary, and temperature monitoring. External relay control is also available.

The GALAXY MILLENNIUM II, with integrated remote network access, allows for advanced network supervision using OmniOn Power standard network management software the Galaxy Manager. Galaxy Manager is the central component of a comprehensive monitoring and control system designed to meet power plant engineering, operations and maintenance needs. Using a centralized server on an intranet/ internet network, the user gains access to live data and information logged into the server from each plant controller across the power network via the World Wide Web.

Applications

- Galaxy Power Systems (GPS) 4848/100
- Galaxy Power Systems (GPS) 4812/24
- Galaxy Power Systems (GPS) 2424
- Upgrades or replacements to existing Millennium controllers
- Upgrades to Galaxy Vector controller applications
- Customer-specific applications possible – consult factory

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Millennium II Benefits

Multiple Security Levels

- Multiple password-protected security levels
- Multiple user accounts
- Hardware DIP switches for RD and RD/WR access and critical plant functions
- All configuration, statistical, history and alarm data is stored in nonvolatile memory
- A callback security option

User-Friendly Installation and Configuration

- Push-button, menu driven front panel for basic programming functions and information
- Industry standard defaults
- Customer specific configuration available
- EasyView or Network interface for more advanced programming
- ANSI standard T1.317 command line interface

Efficient Physical Design

- Single base circuit pack to manage for with more features than previous three pack implementation
- Backwards compatible for upgrades and replacements
- Mounted to power cabinet door to provide maximum equipment-mounting space inside the cabinet
- Display mounted on outside of cabinet door to minimize internal cabinet access
- Clear lexan controller cover to allow visibility to internal wire and cable terminations and component LEDs
- Lexan allows the cover to be removed without having to worry about shorts due to physical contact
- Networked remote peripheral monitoring modules minimize cable complexity and congestion

Designed for Optimal Flexibility and Growth

- Remote/local software upgradeable
- Modem, RS232 Dataswitch, and other future internal option cards capable
- RPMs/BICs for additional monitoring and control
- Robust connectorized RS485 equipment bus for additional rectifiers and system components

Remote Peripheral Monitoring and Control

- Modular monitor and control growth options for up to 95 monitoring modules designed for optimized voltage monitoring, shunts, binary inputs, temperature, transducers, and, as well as Form-C relay control
- Devices managed and powered by the controller via one twisted-pair cable over distances of 300M or more
- Daisy-chain connections from module to module reducing installation costs and cable congestion



Remote Peripheral Monitoring Modules

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Enhanced Battery Management Features

- Various battery discharge test options such periodic or local/ remote manual initiated tests based upon user configurable thresholds or Lineage Power's 20% discharge algorithm without the risk of dropping service
- An accurate battery reserve time using calculations that factor in battery specific parameters, plant voltage, load, temperature, number of battery strings and number of cells per string

Extensive Plant and Monitoring Statistics

- Real-time data and historical statistics to help analyze critical performance parameters
- Statistics for planning preventive or corrective maintenance before serious problems occur

Derived Channels

- 32 derived channels enable arithmetic and boolean operations to be performed on measured values to allow customer specific parameters such as output power to be calculated and managed

Rectifier Management

- Provides ability to automatically shutdown selected rectifiers during low plant loads maintaining maximum battery plant efficiency without sacrificing reliability
- Provides Reserve Operation feature for maintaining designated number of rectifiers on during Engine runs
- Provides ability to transfer rectifiers (TR1-TR4) on in certain sequences for return of AC

Remote Access

Offers several simultaneous remote-access options:

- ANSI T1.317 command-line interface through terminal or modem
- EasyView software through computer or modem connection
- TL1 and X.25 interfaces
- 10/100 Base-T Ethernet connection utilizing HTTP, DHCP, SNMP, SMTP, TL1,Telnet, and FTP



The front panel provides a backlit LCD display with an easy-to-use, push-button, and menu-driven interface. The panel can be used to program basic functions and access real-time date, history, statistics, and measured values.

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Features

Enhanced Front Panel User Interface

- Cabinet door mounted for front access without opening the cabinet
- 8-line by 40-character (240 x 64) backlit display with digital contrast adjust
- User friendly menu driven LCD with push-button membrane switch interface
- Menu structure similar to other controllers
- Integrated Audible Alarm Buzzer with enable/ disable
- 12 individual user configurable status LEDs: Critical, Major, Minor, Normal, AC System, Battery, Controller, Distribution, Rectifier, Remote Modules, Modem, and Battery On Discharge
- Front panel system bus voltage test jacks
- Local DB-9 RS232 system port for local terminal access or event log printing
  - ANSI T1.317 serial access
  - EasyView Windows-based software for configuration and reporting
  - Ground referenced
- Millennium II unit backwards compatible to existing Millennium displays
- New Millennium II display assembly backwards compatible to existing Millennium

Standard System Features

- Monitoring and control of up to 85 RS485 serial connected devices
  - Maximum of 64 serial switchmode rectifiers
  - Maximum of 32 Bay Interface Cards (BICs)
  - Maximum of 16 serial converters
- Standard and custom User Defined system alarms
  - Alarm cut-off
  - Alarm test
  - Multiple-level alarm severity: Critical, Major, Minor, Warning, and record-only
- Standard rectifier management features
  - Automatic rectifier restart
  - Reserve engine transfer
  - Energy management
  - Remote rectifier (on/off) control
  - Automatic rectifier sequence control
  - N + X redundancy check
- Low Voltage Load And Low Voltage Disconnect Options (3)
- Various levels of Configuration, Statistics, and history
  - All stored in non-volatile memory
  - Remote and local backup and restore of configuration data
- Remote and local software upgrade
- Basic and trend statistics kept
- Detailed History kept
- Maintenance reminders
- Inventory management
- User defined events and derived channels
- HW DIP switch control of access

Standard Battery Management Features

- Float/boost mode control
  - Manual Front Panel Boost
  - Manual Timed Boost- Locally T1.317 and remotely initiated
  - External Timed Boost
  - Battery Thermal Protect module Boost (BTP)
  - Auto Boost terminated by time or current
- Battery discharge testing
  - Manual
  - Periodic
  - Plant Battery Test (PBT) input driven
- Slope Thermal Compensation
  - High Temperature Compensation
  - Low Temperature Compensation
  - Step Temperature
  - STC Enable/Disable, Low Temperature Enable/ Disable
  - mV/°C adjustments
- High Temperature Disconnect and Step setting
- Sophisticated reserve-time prediction for a variety of batteries with
  - User configurable system reserve low alarm during normal operation
  - User configurable reserve time low alarm during
- Recharge Current Limit
- Integrated “At Rate Calculator” for estimation purposes
- Battery Discharge Trace Data
- Emergency Power Off Input

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Features (continued)

Integrated Monitoring Inputs/Outputs

- System Plant Voltage (Accuracy: ± 30mV @ 24V / ± 40mV @ 48V, Resolution: 0.01V)
- Up to two system shunts (Accuracy: ± 0.5% full scale, Resolution: 1A)
  - Battery or load
  - Mounted in the battery or return side of the plant
- 4-20mA Input Monitor (Accuracy ± 100uA, Resolution 10.0uA)
- 0-5V Input Monitor (Accuracy ±25mV, Resolution 0.01V)
  - Scaling circuits for 5V, 30V, and 60V ranges available
- Four temperature probe inputs
  - 10K/30K Thermal Probe Input (Accuracy ±2°C, Resolution 0.1°C)
  - (3) 10K Thermoprobe inputs (Accuracy ±2°C, Resolution 0.1°C)
- 22 Binary inputs
  - Standard default assignments: Fuse Alarm Major (FAJ), Fuse Alarm Minor (FAN), Auxiliary Major Alarm (AMJ), Auxiliary Minor Alarm (AMN), Open String (OS), LVD1-LVD3 Fail, Plant Battery Test (PBT), Emergency Power Off (EPO), Reserve Operation (RO), TR1-TR4, Timer Float/Boost Control, General Input 1 – General Input 5
  - User assignable
- Integrated Remote Peripheral Monitoring (RPM) Bus
  - 90 RPMs up to 300 meters
  - Two-Wire communication with power from controller
- RPM options for voltage, transducer, temperature, shunt, and binary monitoring and relay control are available:
  - Voltage modules: 221A, 221B, 221C, and 221D
  - 221J Transducer module (six channels rated 0-100mV_{DC})
  - 223T Temperature module (seven channels rated - 40 to +70°C)
  - 221F Shunt module (six channels rated -50mV to +150mV plus one temperature channel rated 40 to +70°C)
  - 222A Binary module (six channels rated 5 to 200V_{DC})
  - 214A Relay module (three Form-Cs rated 110V_{DC}@.3A)

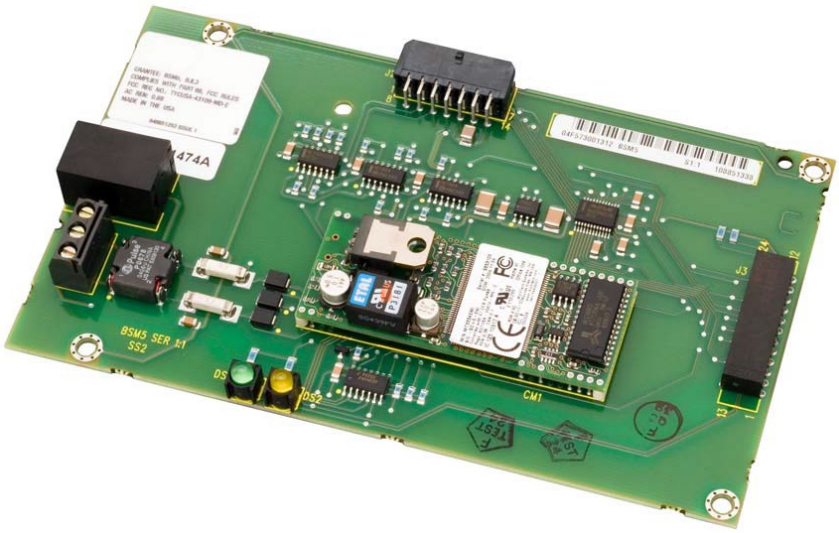
Integrated Outputs

- Traditional office alarm interface with 19 Form-C alarm outputs (60V_{DC} @.3A)
  - Standard default assignments: Power Critical-Audio, Power Critical-Visual, Power Critical-External, Power Major-Audio, Power Major-Visual, Power Major- External, Power Minor-Audio, Power Minor-Visual, Power Minor-External, Major Fuse (MJF), Minor Fuse (MNF), Battery On Discharge (BD), AC Fail (ACF), Rectifier Fail, High Voltage (HV), Very Low Voltage (VLV), Controller Fail, User Relay 1, User Relay 2
  - 16 Form-Cs are user assignable
- 1 1/3A ABS Output

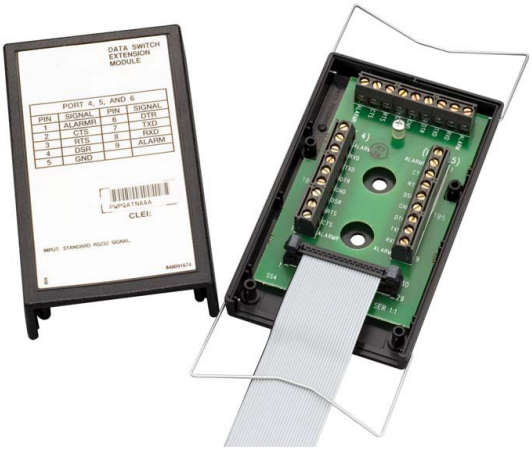
Remote Access And Features

- Integrated 10/100Base-T Ethernet Network capability
  - Supports TCP/IP Version 5, SNMP Version 2c, SMTP, TL1, DHCP, Telnet, FTP
  - Standard and custom web pages for standard browsers (HTTP)
  - Standard Shielded RJ-45 interface referenced to chassis
- Optional Modem access
  - Remote access via internal BSM5 modem option (56k bps modem)
  - Remote access capability via external modem
  - Callback security
- Optional BSW Dataswitch
  - Connections to 3 standard RS232 devices for pass- through and alarm management
  - BSN extension to provide 3 additional RS232 serial connections
- Configurable RS-232/485 port for remote via TL1/ X.25
- EasyView, Windows-based software, for configuration and reporting through local terminal or Modem connections
- Multiple password-protected security le Super User, Administrator for all access
- 1-Wire Bus for up standard serial thermal probes and mid-cell detector
- English and Spanish menu options

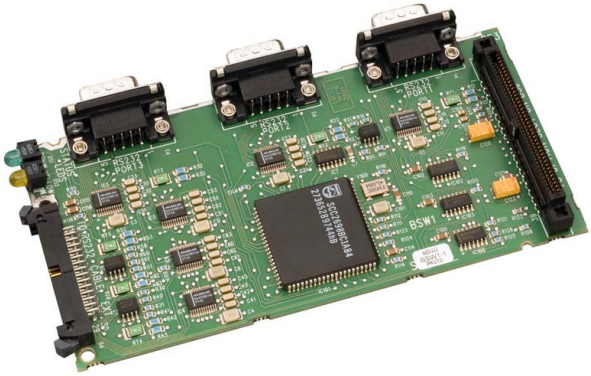
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GALAXY MILLENNIUM II
BSM5 Modem Option



BSN1 3-Port Dataswitch
Extension Module



Multi-RS232 Port Dataswitch

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Technical Specifications

Specifications

Electrical and Environmental	
Operating Voltage	±24 V_{DC}, -48 V_{DC} (Range: 18 to 60 V_{DC})
Input Power	36W (depending on options)
Operating Temperature	-40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 75 °C (-40 to 167 °F)
Physical Specifications	9.24 in. H, 20.76 in. W, 2.14 in. D
Display	8-line by 40-character backlit LCD
Cabinet Mounting Requirements	Door mounted
Safety/Standards Compliance	
Electrostatic Discharge	IEC 801-2 level 2, 4, 5
Radiated Emissions	FCC Class B, CISPR 22 level B
Safety	UL Unlisted Component as Part of GPS Power System
NEBs	Level 3 Tested and Complaint with Galaxy Power Systems

Ordering Information

For complete ordering information, please contact your OmniOn Power™ sales representative.

Related Product Literature

Data Sheet	Document Number
WP-93497 AC Interface Units for the Galaxy Controller	DS03-028
Galaxy Power System (GPS) 4812/24	DS03-031
Galaxy Power System (GPS) 2424/30	DS03-043
Galaxy Power System (GPS) 4848/100	DS03-044
Galaxy Millennium Controller Intelligent Options	DS03-025
DC Distribution and Battery Connections	DS03-061

Contact Us

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Change History (excludes grammar & clarifications)

Revision	Date	Description of the change
1.2	01/03/2021	Updated as per template
1.3	11/24/2023	Updated as per OmniOn Power template
1.4	07/11/2025	Removed “Galaxy manager compatible” section

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