Shindengen
Powering the Next Generation

Eclipse Series

80A Power System

Tentative Data Sheet

The Eclipse Series is a 3U-high –48V modular power system designed for 19” and 23” rack applications, where remote performance is critical. The system is temperature hardened for outdoor applications.

The Eclipse 80 provides up to 80A (60A with n+1 redundancy) in a single 23” shelf, and can be expanded up to 160A with an expansion shelf. Eclipse Series –48V, 20A hot swappable rectifier modules operate at wide AC input voltage range from as low as 85Vac and up to 264Vac at 50Hz / 60 Hz.

The Eclipse 60 provides up to 60A (40A with n+1 redundancy) in a single 19” shelf, and can be expanded up to 120A with an expansion shelf.

Advanced intelligent control and monitoring unit provides system monitoring and control functions. Complete system monitoring can be achieved through standard RS232 connection, and can be upgraded for Web & Simple Network Management Protocol (SNMP) interface.

Features

- Flexible, modular, cost effective
- N+1 redundant architecture
- Operates from 85Vac to 264Vac input, 50Hz/60Hz
- Wide operating temperature range (-40°C to +65°C) with slope temperature compensation
- Up to 4 plug-in lightweight 20A rectifier modules in a 23” frame (Three in a 19” frame)
- Continuous operation incorporates hot-swappable, plug-and-play rectifier modules for convenient system maintenance without interruption of service
- Complete system monitoring available through Web and SNMP interface
- UL60950/ CSA C22.2 60950 approved
- NEBS Level 3 compliant (certification pending)

Applications

- Central Office
- Wireless Sites
- Customer Premises Applications
- Digital Loop Carrier (DLC)
- Controlled Environment Vaults
- Microwave Transmission Sites
- Industrial
- Utilities

If you require further information or assistance, please contact Shindengen at the following address:

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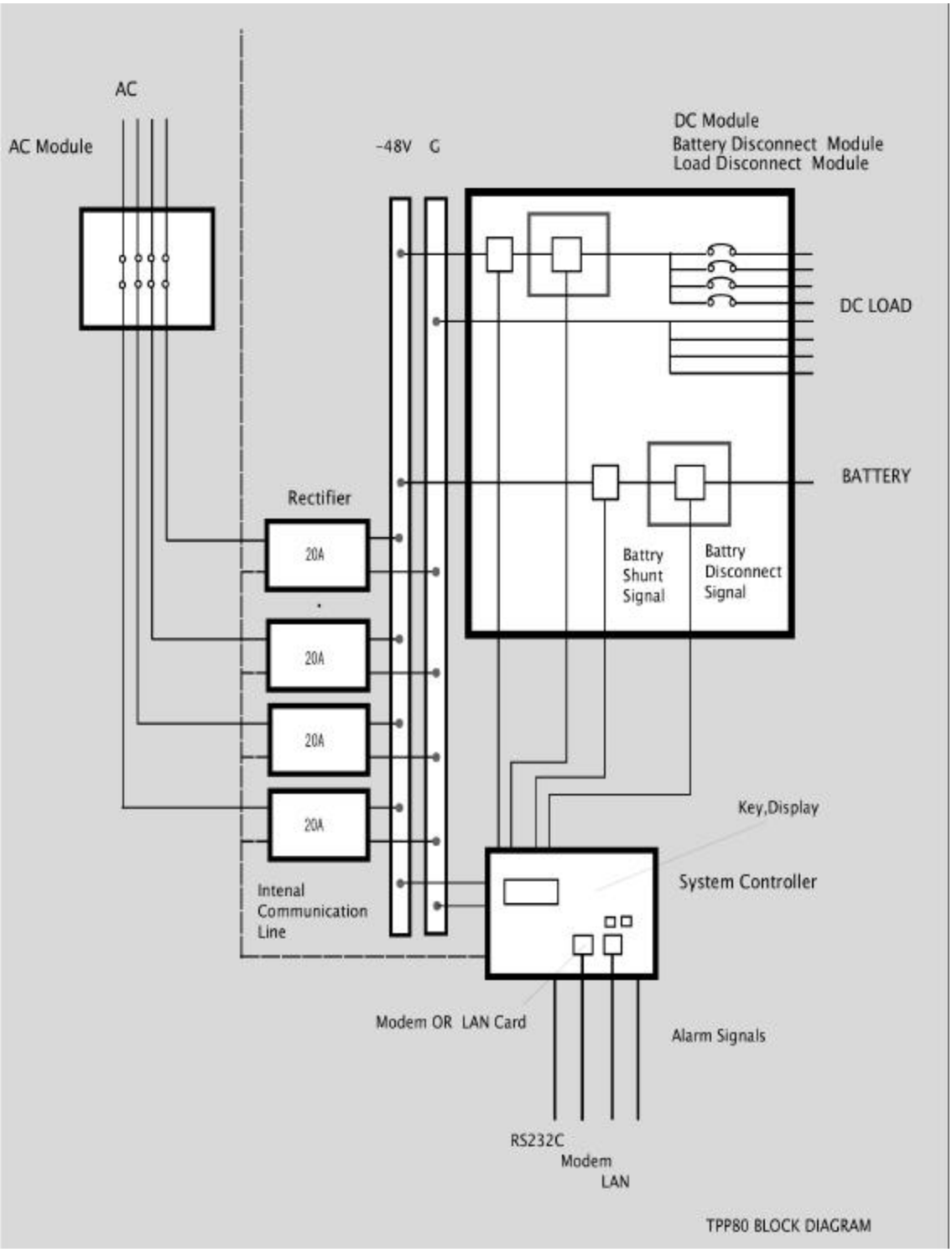
Eclipse 80 System Configuration / Block Diagram:



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ECLIPSE SERIES –48V, 20ADC RECTIFIER SPECIFICATIONS:

AC Input	Description
Nominal Voltage, 1 phase	100Vac / 108Vac / 110Vac / 120Vac / 200Vac / 208Vac / 220Vac / 240Vac nominal, 2 wire plus ground (no neutral)
Voltage Range	85Vac–264Vac phase-to-phase
Operating Frequency (Range)	50 Hz / 60Hz nominal (47Hz–63Hz)
Power Factor	0.98 (@ full load)
Input current	15A @ 85Vac, 10.6A @ 120Vac, 6.3A @ 200Vac, 5.2A @ 240Vac. Measurements taken at 54V output voltage and 20A output current
Total Harmonic Distortion (THD)	<5% (@ 50%–100% load)
Low AC Voltage Protection	No damage from any voltage less than 85Vac with automatic recovery

DC Output	Description
Rated Current	20Adc at 54Vdc 22.5A at ≤ 48Vdc
Nominal Voltage	48/52.08/54.5Vdc
Operating Voltage Range	44Vdc to 56.5Vdc (adjustable through controller)
Voltage Regulation	±0.5%
Ripple (Peak to Peak noise)	< 150 mV peak-to-peak ripple
Psophometric Noise	< 2.0 mV
High Voltage Shutdown Backup	Individual rectifiers shall shutdown when output voltage of the rectifier reaches 59V±0.5V regardless of other conditions
High Voltage Shutdown Internal	Individual rectifiers providing current shall shut down when output voltage of the rectifier exceeds a configured value **and** communication with controller has failed Threshold range 50Vdc–60Vdc
High Voltage Shutdown External	Individual rectifiers providing current shall shut down when system voltage exceeds a configured value **and** communication with controller is O.K. Threshold range 50Vdc–60Vdc
Automatic Restart	The rectifier controller itself and system controller will attempt to restart any rectifier that has stopped providing power for any reason
Forced Load Sharing	5%
Current Limiting Set Point	25%–112.5% of 20A
Constant Power & Constant Current	1.08 kW at 48Vdc–56.5Vdc 22.5A at 44Vdc–48Vdc

Environmental	Description
Operating Temperature	–40°C to 65°C, with excursions to 75°C
Operating Relative Humidity	5%–90% (non-condensing)
Storage & Transportation Temperature	–40°C to 75°C
Storage & Transportation Relative Humidity	5%–90%
Operating Altitude	–200 ft. to 10,000 ft. For altitudes above 5000 ft. derate the temperature by 2.0°C per 1000 ft.

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ECLIPSE SERIES –48V, 20ADC RECTIFIER SPECIFICATIONS (continued):

General	Description
Efficiency	91% at 240Vac input voltage, 54V output voltage and 20A output current
Cooling	Front to Rear Fan Cooling
Acoustic Noise	<65 dBA
Visual Indicators (LEDs)	ON (green), RFMJ (Red), RFMN (Yellow)

Physical	Description
Height	5.08 in. (129 mm, 3U)
Width	3.23 in. (82 mm)
Depth	10.5 in. (266.7 mm)
Weight	6 lbs (2.72 kg)

Safety / EMC	Description
Safety	UL 60950, CSA 22.2 No. 60950 (c UL)
EMC	Emission: EN55022, CISPR22 Class B, Radiated / Conducted Emissions, FCC Part 15 Class B Immunity: EN61000-4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11
NEBS	Level 3, GR-63-CORE, GR-1089-CORE (Pending)

ECLIPSE SERIES, -48V SYSTEM SPECIFICATIONS:

General	Description
Rectifiers	For Eclipse 80: Maximum 4 rectifiers in initial shelf Maximum 4 rectifiers in expansion shelf • Maximum 8 rectifiers per system (Initial shelf + Expansion shelf) For Eclipse 60: Maximum 3 rectifiers in initial shelf Maximum 3 rectifiers in expansion shelf • Maximum 6 rectifiers per system (Initial shelf + Expansion shelf)
Rated Output Current	For Eclipse 80: • Initial Shelf – 80A • Expansion Shelf – 80A • Maximum – 160A per system For Eclipse 60: • Initial Shelf – 60A • Expansion Shelf – 60A • Maximum – 120A per system

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ECLIPSE SERIES, -48V SYSTEM SPECIFICATIONS (continued):

General	Description
Shelves per system	For Eclipse 80 or Eclipse 60: 1 initial shelf or 1 initial shelf and 1 expansion shelf
Output DC distribution	Options • Qty. (4) DIN style CB from 0.5A to 63A distribution module • Qty. (16) GMT Type fuses up to 15A distribution module • Qty. (2) DIN style CB from 0.5A to 63A + Qty. (8) GMT Type fuses up to 15A distribution module • Bulk feed option
AC input option	For Eclipse 80 system: • Single AC input, Dual AC input and AC input for each rectifier For Eclipse 60 system: • Single AC input, and AC input for each rectifier
Low Voltage Battery Disconnect (LVBD)	Option with only LVBD available
Low Voltage Load Disconnect (LVLD)	Optional with only LVLD available

General	Description
Manual Battery Disconnect Switch	Standard
Acoustic Noise	65dBA

Electrical (Input / Output)	Description
System Output Current	For Eclipse 80: • 80A – Initial Shelf • 80A – Expansion Shelf • 160A – Initial Shelf (80A) + Expansion Shelf (80A) For Eclipse 60: • 60A – Initial Shelf • 60A – Expansion Shelf • 120A – Initial Shelf (60A) + Expansion Shelf (60A)
System Efficiency	> 91%
Psophometric Noise	<2.0 mV
Ripple (Peak to Peak noise)	150 mV peak-to-peak

Environmental	Description
Operating Ambient Temperature	–40°C to 65°C, with excursion to 75°C
Operating Relative Humidity	5%–90% (non-condensing)
Storage Ambient Temperature	–40°C to 75°C
Storage Relative Humidity	5%–90%
Operating Altitude	–200 ft. to 10,000 ft. For altitudes above 5000 ft. derate the temperature by 2.0°C per 1000 ft.

ECLIPSE SERIES, -48V SYSTEM SPECIFICATIONS (continued):

Physical	Description
Height	5.21 in. (132.33 mm, 3U) for initial shelf
Width	For Eclipse 80: • 21 in. (533.4 mm) For Eclipse 60: • 17.5 in. (444.5 mm)
Depth	12 in. (304.8mm)
Weight	For Eclipse 80: • 48.5 lbs (22.04 kg) with 4 rectifiers, controller and system chassis (initial frame only) For Eclipse 60: • 40.8 lbs (18.54 kg) with 3 rectifiers, controller and system chassis (initial frame only)

Safety / EMC	Description
Safety	UL 60950, CSA 22.2 No. 60950 (c UL)
EMC	Emission: EN55022, CISPR22 Class B, Radiated / Conducted Emissions, FCC Part 15 Class B Immunity: EN61000-4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11
NEBS	Level 3. GR-63-CORE, GR-1089-CORE (Pending)

ECLIPSE SERIES CONTROLLER SPECIFICATIONS:

General	Description
Display	2 line by 8 character LED
Keys	MENU, ESC, ENT, Up/Down Arrow
System Status Severity LEDs	Normal, PMJ, PMN
Communications Status LED	COM
Individual Alarm LEDs	ACF, CB, BD, HV, LV, MRF, HBT, RFA, BCB, CTRL
System Status Severity Form-C Relays	PMJ, PMN
Individual Alarm Status Form-C Relays	Alarm 1 and Alarm 2 relays are user-programmable to their choice from the list of PMJ and PMN alarms available. Default for Alarm 1 is ACF, and Alarm 2 is BD
Control & Monitoring	Monitoring and control of all rectifiers in all frames. Control includes Slope Thermal Compensation and Forced Load Share. Monitor and control essential plant functions such as plant voltage, current, temperature, LVBD, LVLD
Automatic Rectifier restart	Provided
System configuration & settings	Change system configuration and settings from the keys on the front panel of the controller or from an external device via the communications port

ECLIPSE SERIES CONTROLLER SPECIFICATIONS (continued):

General	Description
Battery Temperature Monitoring	1 temperature probe available
Slope Temperature Compensation	Standard. Enabled or disabled through controller
Local Port RS232 connection	Standard
LAN / SNMP interface Card	Optional
Modem	Optional