

EDPS-9K (Shelf Type)

the
POWER

REV: 080918

POWER SHELF

PRODUCT FEATURES:

- Hot pluggable
- Controlled, measured and reported by RS232, TCP/IP, SNMP V3
- Modular design for accommodating high power applications
- 19-Inch Rack Mount Type



INPUT SPECIFICATIONS:

VOLTAGE	1P3W 240VAC (Nominal 176~264Vac)
FREQUENCY	45-66Hz
PROTECTION	Under & Over voltage
EFFICIENCY	96% Typical (2kW module) 96% Max (3kW module)

OUTPUT SPECIFICATIONS:

OUTPUT VOLTAGE	DEFAULT -54.0VDC
OUTPUT CURRENT	6KWatt Max (2KW 3 modules) 9KWatt Max (3KW 3 modules)
ADJUSTMENT RANGE	-42VDC~-58VDC
LINE REGULATION	±0.5% Max
LOAD REGULATION	±1.0% Max
TEMP REGULATION	±0.5% Max
NOISE	≤ 250mVp-p (2KW Module) ≤ 300mVp-p (3KW Module)
SETPOINT ACCURACY	±0.5%
OVER CURRENT	101~110%
PROTECTION	-59VDC over (recycle input to reset), Thermal Shutdown

STATUS & CONTROL SIGNALS:

COMMUNICATION INTERFACE	RS232, TCP/IP, CAN
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GENERAL SPECIFICATIONS:

OPERATING TEMPERATURE	-40°C ~ +75°C (Derating above +55°C): 2KW -40°C ~ +75°C (Derating above +45°C): 3KW
STORAGE TEMPERATURE	-40°C ~ +80°C
OPERATING HUMIDITY	0% ~ 90% (Non-Condensing)
STORAGE HUMIDITY	0% ~ 95% (Non-Condensing)
COOLING	Fan cooling
ALTITUDE	2,000 Meter
SIZE (WxDxH)	482mm x 500mm x 88.8mm

ELECTROMAGNETIC COMPATIBILITY:

EMISSIONS	FCC Part 15b/ICES 003
HARMONIC CURRENT -	EN61000-3-2
EMISSIONS	
FLUCTUATIONS & FLICKER	EN61000-3-3
ELECTROSTATIC -DISCHARGE	EN61000-4-2
RADIATED EMI	EN61000-4-3
EFT/BURSTS	EN61000-4-4
SURGE TRANSIENTS	EN61000-4-5
CONDUCTED IMMUNITY	EN61000-4-6
VOLTAGE DIPS AND -	EN61000-4-11
SHORT INTERRUPTIONS	

STANDARDS & APPROVALS:

UL/CUL	60950-1
EMI	FCC Part 15b/ICES 003



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REV: 100417

Rectifier Module
54VDC/3000W

PRODUCT FEATURES:

- **Modular Design**
- **1U Rack Mountable**
- **World Wide Safety Approval**
- **DSP Controller**
- **LED alarm indicated**
- **Hot pluggable**
- **Energy saving operation**



INPUT SPECIFICATIONS:

VOLTAGE	1Ø240VAC (85VAC ~ 297VAC) (Nominal 176~275Vac)
FREQUENCY	47-63Hz
INRUSH CURRENT	25A @ 240AVC
PROTECTION	Mains fuse in both lines
LEAKAGE	3.5mA Max @ 240VAC
EFFICIENCY	Max 96.0%
POWER FACTOR	> 0.98 at 50% load or more
PROTECTION	Input Under voltage, Overvoltage

OUTPUT SPECIFICATIONS:

VOLTAGE	54.0VDC
CURRENT	55.5A (Max 3KW)
ADJUSTMENT RANGE	42.0~58.0VDC
LINE REGULATION	±0.5% Max over entire input range
LOAD REGULATION	±0.5% Maximum
TEMP REGULATION	±0.5% Maximum
OVERALL REGULATION	±5.0% Maximum
RIPPLE	≤ 300mVp-p(3KW)
SETPOINT ACCURACY	±0.5%
OVER VOLTAGE PROTECTION	59VDC (recycle input to reset) Power de-rated, Thermal Shutdown

STATUS & CONTROL SIGNALS:

COMMUNICATION	CAN
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GENERAL SPECIFICATIONS:

OPERATING TEMP	-40°C to +75°C (Derating above +45°C)
STORAGE TEMP	-40°C to +85°C
OPERATING HUMIDITY	10% to 95% (Non-Condensing)
STORAGE HUMIDITY	5% to 95% (Non-Condensing)
COOLING	Controlled Fan in a module
ACOUSTIC NOISE	≤58dBA at nominal input and full load
RELIABILITY	>350,000 Hrs MTBF (Ambient : 25°C)
SIZE (W×D×H)	108mm × 340mm × 44mm

ELECTROMAGNETIC COMPATIBILITY:

EMISSIONS	EN55022 Level A (Conducted)
ELECTROSTATIC DISCHARGE	EN61000-4-2, 4KV Contact / 8KV Air
RADIATED SUSCEPTIBILITY	EN61000-4-3, 26-1000MHz, 10V/M, 80%AM
EFT/BURSTS	EN61000-4-4, 2KV
SURGES	EN61000-4-5
CONDUCTED IMMUNITY	EN61000-4-6, 0.15-800MHz, 10V 80%
VOLTAGE DIPS	EN61000-4-10, 95% Dip&10ms, 30% Dip&500ms
VOLTAGE INTERRUPTIONS	EN61000-4-11, 95% reduction, 5ms
FLUCTUATIONS & FLICKER	EN61000-3-3

STANDARDS & APPROVALS:

UL, CE, CB



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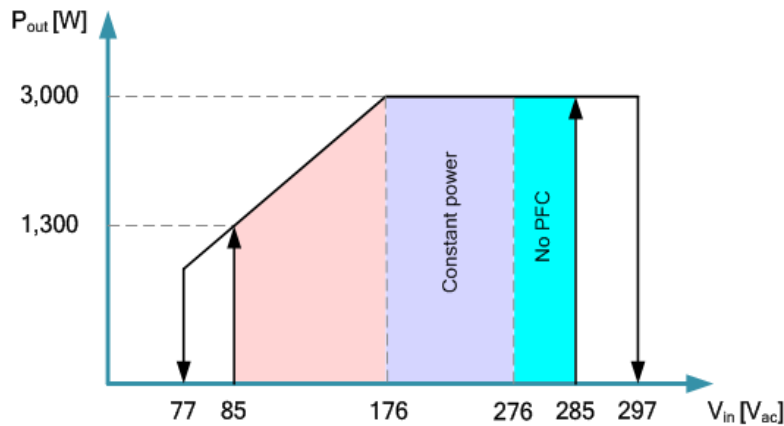
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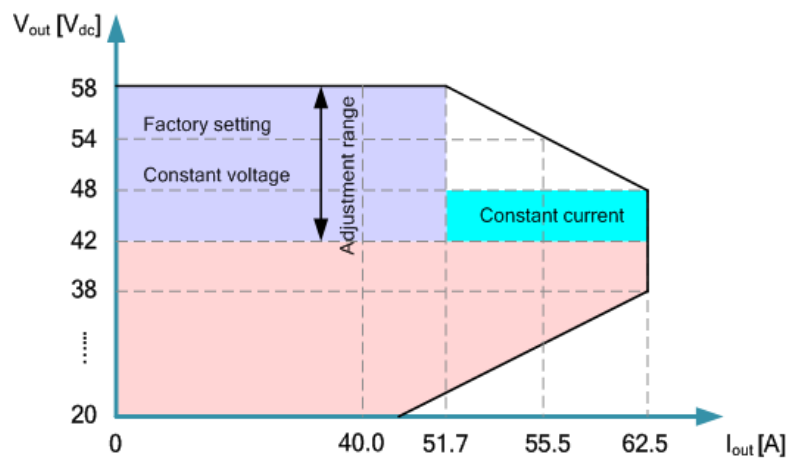
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AC INPUT:



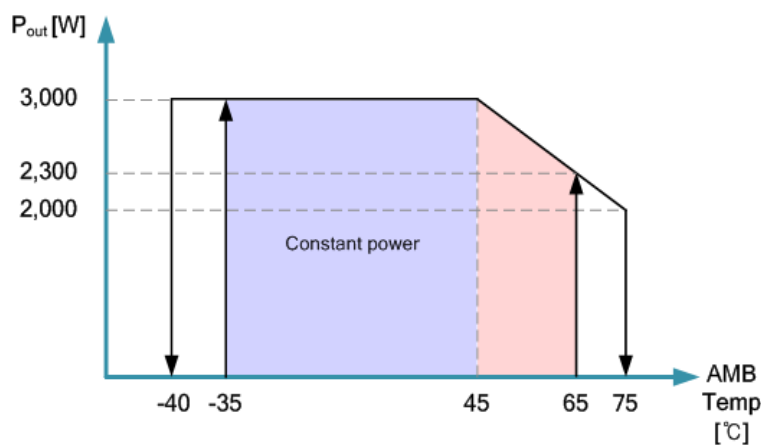
- Voltage range : 85Vac ~ 297Vac
- Constant power range (Max 3KW):
176Vac ~ 297Vac
- Shut-down. Voltage
 - OVP : 297Vac (recovery 285Vac)
 - UVP : 77Vac (recovery 85Vac)

DC OUTPUT:



- Voltage range : -42.0Vdc ~ -58.0Vdc
- Constant power range (Max 3KW):
48.0Vdc ~ -54.0Vdc

TEMPERATURE:



- Operating temperature : -40°C ~ 75°C
- Constant power range (Max 3KW):
-40°C ~ 45°C
- Shut-down. Temperature (Tolerance: $\pm 5^\circ\text{C}$):
75°C (recovery 65°C)
-40°C (recovery -35°C)



REV: 100417

Control Module

CONTROL MODULE

PRODUCT FEATURES:

- RS 232 interface for PC connection, TCP/IP, SNMP V1, SNMP V2C
- Adjustable Output Voltage
- AC Input High/Low Voltage Alarm



DISPLAY:

- Status of the rectifier system is displayed on the LCD:
 - Output voltage/Input voltage
 - Output load current
 - Rectifier Temperature
 - Rectifier system setup value and alarms
 - Display output currents for individual rectifier modules

ANALOG MEASUREMENTS (TOLERANCE: FULL SCALE $\pm 0.5\%$):

- Rectifier input AC voltage
- Rectifier output DC voltage
- Rectifier load current
- Rectifier temperature

CONTROLLER UNIT FUNCTION:

- Failure of the rectifier controller shall not affect the operation of the rectifiers in the system
- Store and display 1,000 event alarm logs & 1,000 data logs
- †Digital Input Alarm (User Defined alarms)
- †Dry Contact Alarm (User Defined alarms)

† : The number of alarms can vary depending on the shelf

BATTERY MANAGERMENTS:

- Battery charge/discharge current/the battery set and the total output/Battery Temperature Display and Measurement
- Manual/Float/Equal charging mode exchangeable
- Battery Charging Current Limiting
- Temperature Compensated Charge Voltage for increased battery Lifetime
- Setting of Battery Temperature Compensation Curve

CPU:

- Cortex-M4 Core
- CPU Clock – Up to 150MHz
- 32ch DMA, 16KB cache, DSP, floating-point unit
- Memory:
 - Flash 1MB / RAM128KB / EEPROM / Flax RAM, Flax NVM
- Ethernet, UART, RS485
- Support RTOS

INTERFACE:

- RS232
 - Baud Rate : 115,200 bps
 - Data Bits : 8Bit / Stop Bits : 1Bit / Parity Bits : N
- LAN
 - Hardwired TCP/IP protocol(TCP/UDP/ICMP/Ethernet)
 - 10BaseT/100BaseTX Ethernet MAC/PHY Embedded
 - Auto Negotiation (Full and half duplex, 10/100-Based)
 - Auto MDI/MDIX (Straight-through or Crossover)



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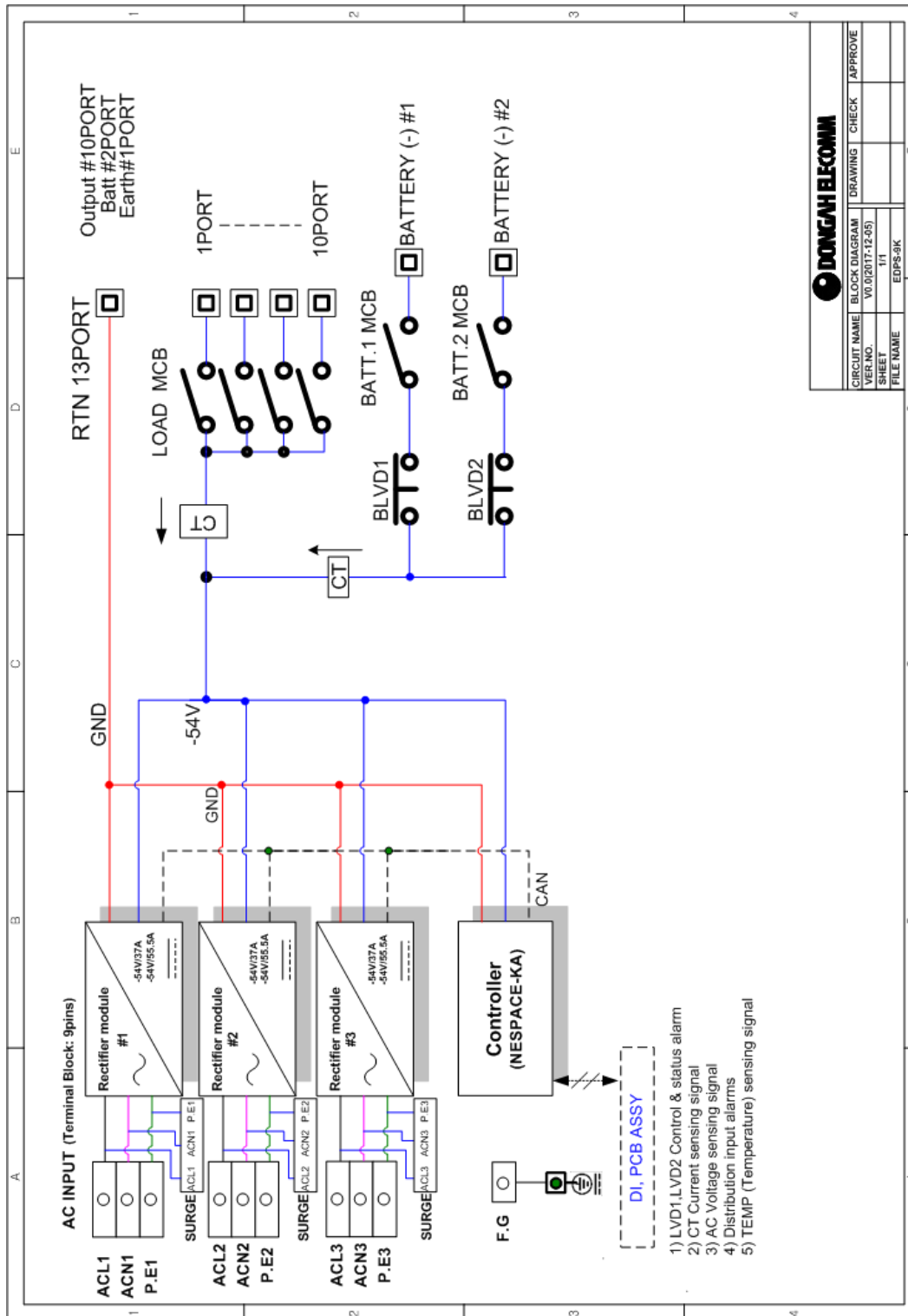
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BLOCK DIAGRAM:



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CIRCUIT NAME	BLOCK DIAGRAM	DRAWING	CHECK	APPROVE
VER. NO.	V0.02017-12-05			
SHEET	1/1			
FILE NAME	EDPS-9K			



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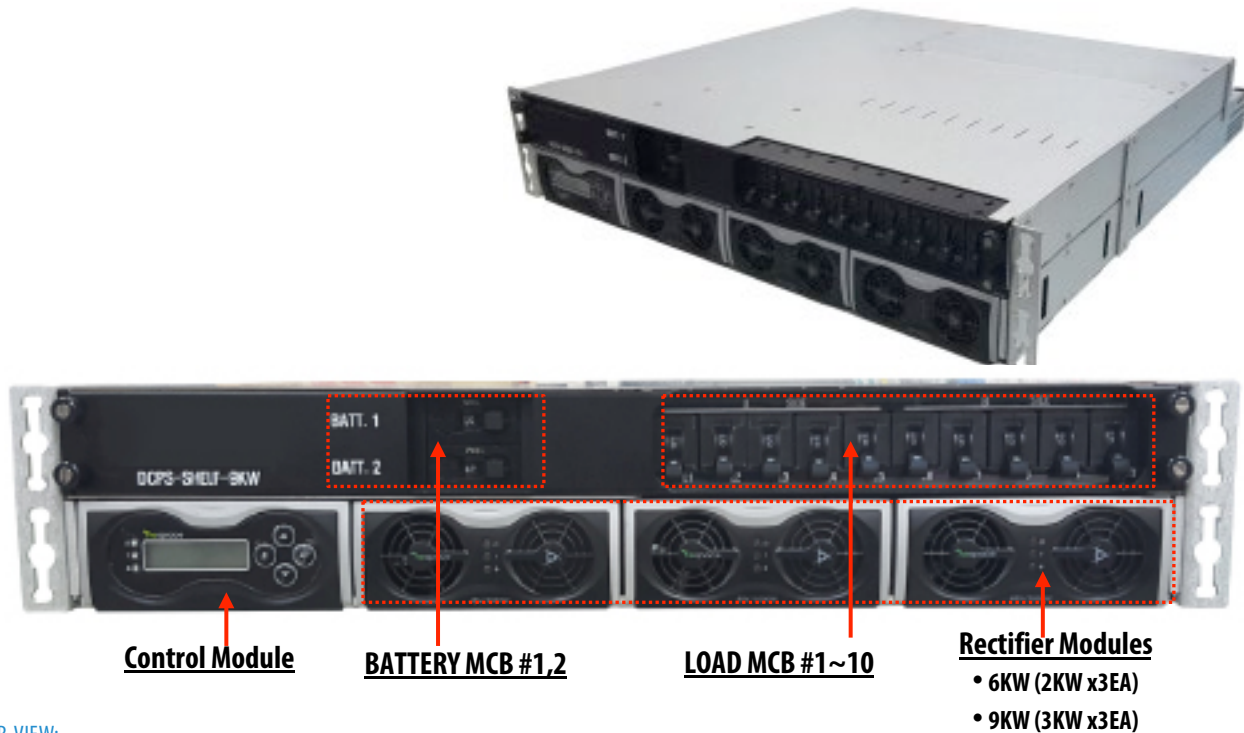
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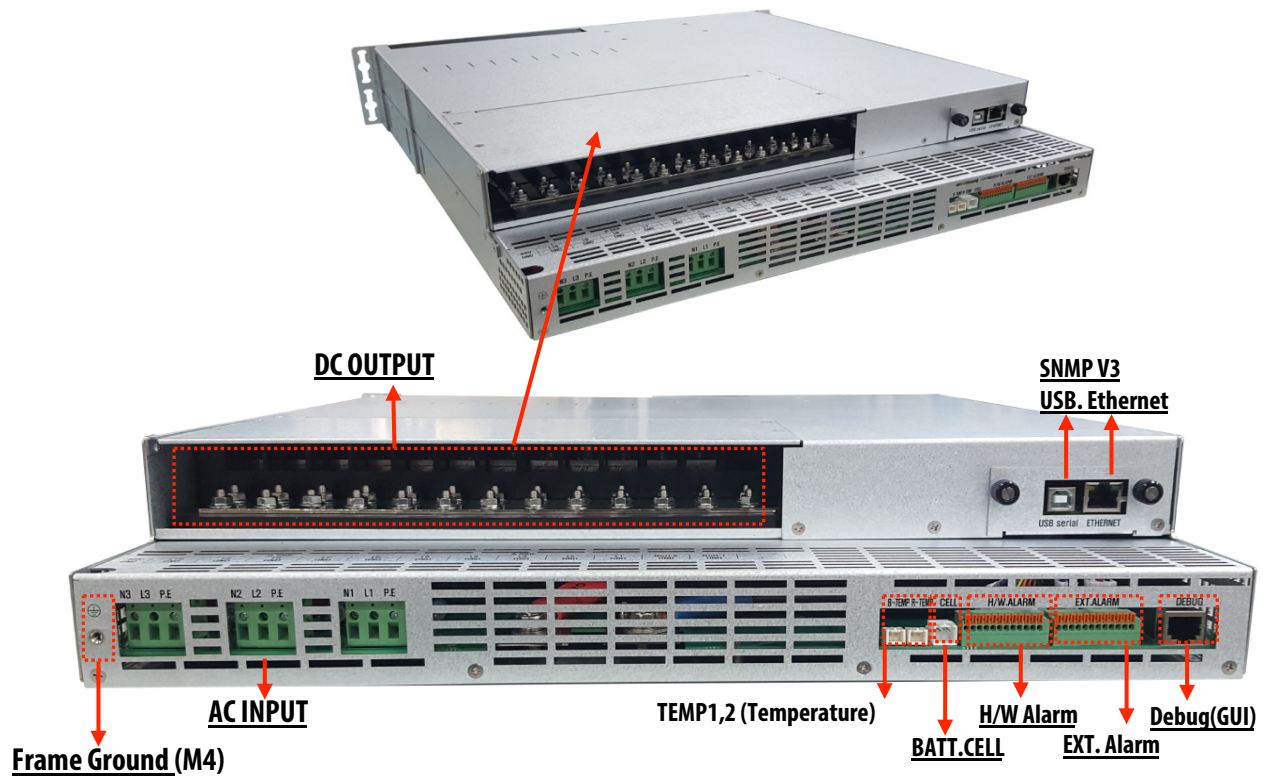
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FRONT VIEW:



REAR VIEW:



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