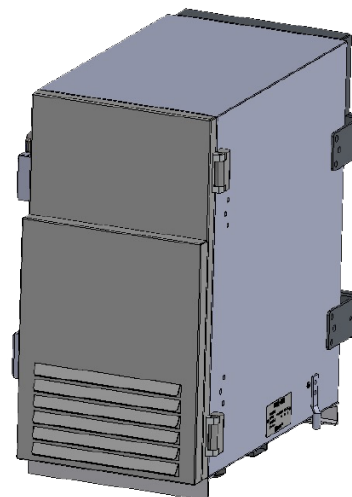


Outdoor Power Cabinet

PRODUCT FEATURES:

- Hot pluggable
- N+1 Redundancy
- IP35 Grade
- Automatic battery charging
- Controlled, measured and reported by RS-232
- Modular design for accommodating high power applications
- Low voltage disconnect for the battery protection (BLVD)



INPUT SPECIFICATIONS:

VOLTAGE	1P3W 220VAC (176~264Vac)
FREQUENCY	57-63Hz
PROTECTION	Under & Over voltage
EFFICIENCY	90% Typical

OUTPUT SPECIFICATIONS:

VOLTAGE	Default -53.5VDC
CURRENT	60A Max (1.6KW X 2 modules)
ADJUSTMENT RANGE	-42VDC~-58VDC
LINE REGULATION	±0.5% Max
LOAD REGULATION	±1.0% Max
TEMP REGULATION	±0.5% Max
NOISE	≤ 300mVp-p
SETPOINT ACCURACY	±0.5%
OVER CURRENT	101~130%
PROTECTION	-59VDC over (recycle input to reset) Thermal Shutdown

STATUS & CONTROL SIGNAL:

COMMUNICATION INTERFACE	RS-232, TCP/IP, SFP Dry Contacts Alarm
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GENERAL SPECIFICATIONS:

OPERATING TEMP	-30°C to +50°C
STORAGE TEMP	-40°C ~ +80°C
OPERATING HUMIDITY	0% ~ 90%(Non-Condensing)
STORAGE HUMIDITY	0% ~ 95%(Non-Condensing)
COOLING	Fan cooling
ALTITUDE	2,000 Meter
SIZE (W×D×H)	300mm x 500mm x 570mm

ELECTROMAGNETIC COMPATIBILITY:

EMISSIONS	EN55022 Class A
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: TBD

UL/CUL	60950-1
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2KW Rectifier Module 54VDC/30A

PRODUCT FEATURES:

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



INPUT SPECIFICATIONS:

VOLTAGE	1Ø220VAC (Nominal 176~264Vac)
FREQUENCY	57-63Hz
INRUSH CURRENT	25A @ 220AVC
PROTECTION	Mains fuse in both lines
LEAKAGE	3.5mA Max @ 240VAC
EFFICIENCY	94% at 100% load
POWER FACTOR	> 0.95at 50% load or more
PROTECTION	Input Under voltage, Overvoltage

OUTPUT SPECIFICATIONS:

VOLTAGE	54.0VDC
CURRENT	30A (Max 1.6KW)
ADJUSTMENT RANGE	43.0~58.0VDC
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	≤ 250mVp-p
SETPOINT ACCURACY	±0.5%
OVER VOLTAGE PROTECTION	59VDC (recycle input to reset) Power derated, Thermal Shutdown

STATUS & CONTROL SIGNALS:

COMMUNICATION	CAN
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GENERAL SPECIFICATIONS:

OPERATING TEMP	-40°C to +55°C
STORAGE TEMP	-40°C to +85°C
OPERATING HUMIDITY	0% to 95% (Non-Condensing)
STORAGE HUMIDITY	5% to 95% (Non-Condensing)
COOLING	Controlled Fan in a module
VIBRATION	10-55Hz, 2G, 3min period/60 min each (3 axes)
ACOUSTIC NOISE	≤55dBA at nominal input and full load
RELIABILITY	>350,000 Hrs MTBF (Ambient : 25°C)
SIZE (W×D×H)	108mm x 340mm x 44mm

ELECTROMAGNETIC COMPATIBILITY:

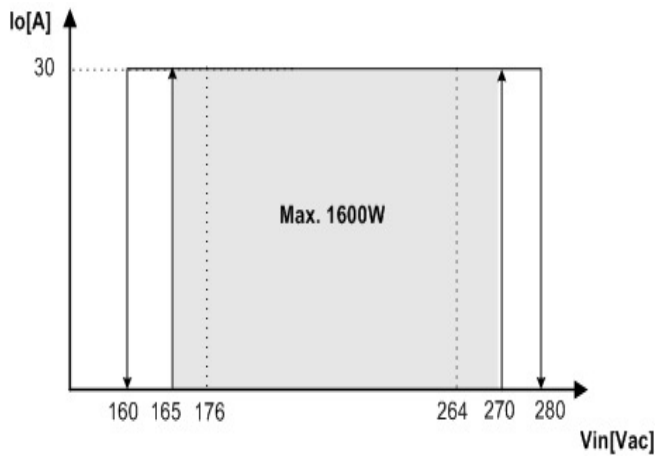
EMISSIONS	EN55022 Level A (Conducted)
ELECTROSTATIC DISCHARGE	EN61000-4-2, 4KV Contact / 8KV Air
RADIATED SUSCEPTIBILITY	EN61000-4-3, 26-1000MHz, 10V/M, 80%AM
EFT/BURSTS	EN61000-4-4, 2KV
SURGES	EN61000-4-5
CONDUCTED IMMUNITY	EN61000-4-6, 0.15-800MHz, 10V 80%
VOLTAGE DIPS	EN61000-4-10, 95% Dip&10ms, 30%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

STANDARDS & APPROVALS:

UL, CE, CB

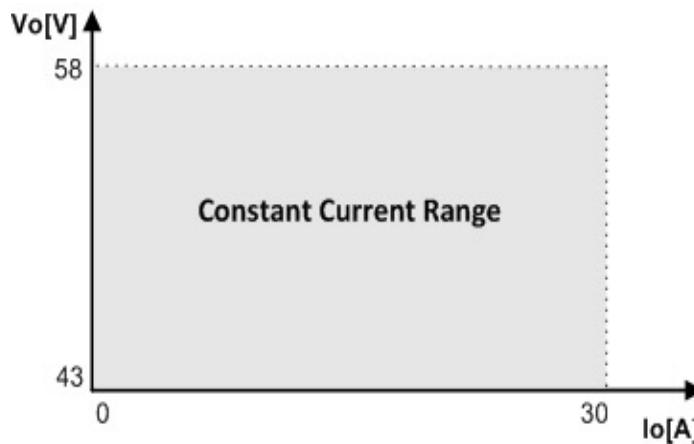


AC INPUT:



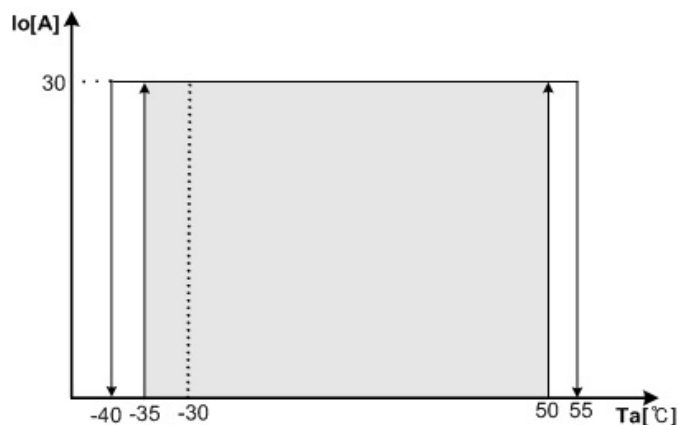
- **Voltage range : 160Vac ~ 280Vac**
- **Constant power range (Max 1.6KW)**
: 176Vac ~ 264Vac
- **Shut-down. Voltage**
 - OVP : 280Vac (recovery 270Vac)
 - UVP : 160Vac (recovery 165Vac)

DC OUTPUT:



- **Voltage range : -43.0Vdc ~ -58.0Vdc**
- **Constant Current: Max 30A**

TEMPERATURE:



- **Operating temperature : -40°C ~ 55°C**
- **Constant power range (Max 1.6KW)**
: -30°C ~ 50°C
- **Shut-down. Temperature (Tolerance: $\pm 5^\circ\text{C}$)**
 - : 75°C (recovery 65°C)
 - : -40°C (recovery -35°C)



1KW Rectifier Module 54VDC/20A

PRODUCT FEATURES:

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



INPUT SPECIFICATIONS:

VOLTAGE	1Ø220VAC (Nominal 176~264Vac)
FREQUENCY	57-63Hz
INRUSH CURRENT	21A @ 220AVC
PROTECTION	Mains fuse in both lines
LEAKAGE	3.5mA Max @ 240VAC
EFFICIENCY	93% at 100% load
POWER FACTOR	> 0.95at 50% load or more
PROTECTION	Input Under voltage, Overvoltage

OUTPUT SPECIFICATIONS:

VOLTAGE	54.0VDC
CURRENT	20A (Max 1KW)
ADJUSTMENT RANGE	43.0~58.0VDC
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	≤ 250mVp-p
SETPOINT ACCURACY	±0.5%
OVER VOLTAGE PROTECTION	59VDC (recycle input to reset) Power derated, Thermal Shutdown

STATUS & CONTROL SIGNALS:

COMMUNICATION	CAN
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GENERAL SPECIFICATIONS:

OPERATING TEMP	-40°C to +55°C
STORAGE TEMP	-40°C to +85°C
OPERATING HUMIDITY	0% to 95% (Non-Condensing)
STORAGE HUMIDITY	5% to 95% (Non-Condensing)
COOLING	Controlled Fan in a module
VIBRATION	10-55Hz, 2G, 3min period/60 min each (3 axes)
ACOUSTIC NOISE	≤55dBA at nominal input and full load
RELIABILITY	>350,000 Hrs MTBF (Ambient : 25°C)
SIZE (W×D×H)	108mm x 340mm x 44mm

ELECTROMAGNETIC COMPATIBILITY:

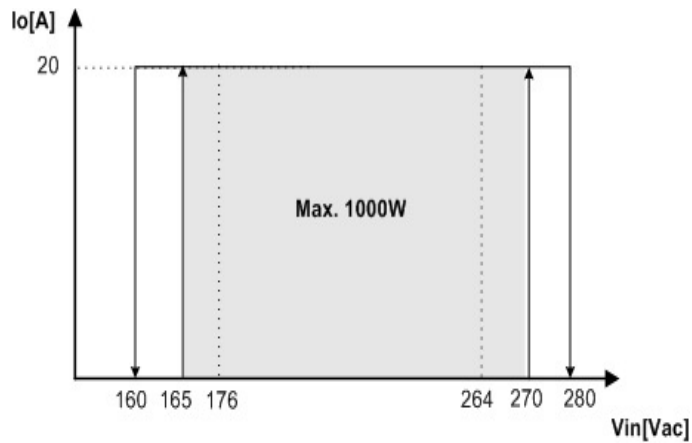
EMISSIONS	EN55022 Level A (Conducted)
ELECTROSTATIC DISCHARGE	EN61000-4-2, 4KV Contact / 8KV Air
RADIATED SUSCEPTIBILITY	EN61000-4-3, 26-1000MHz, 10V/M, 80%AM
EFT/BURSTS	EN61000-4-4, 2KV
SURGES	EN61000-4-5
CONDUCTED IMMUNITY	EN61000-4-6, 0.15-800MHz, 10V 80%
VOLTAGE DIPS	EN61000-4-10, 95% Dip&10ms, 30%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

STANDARDS & APPROVALS:

UL, CE, CB

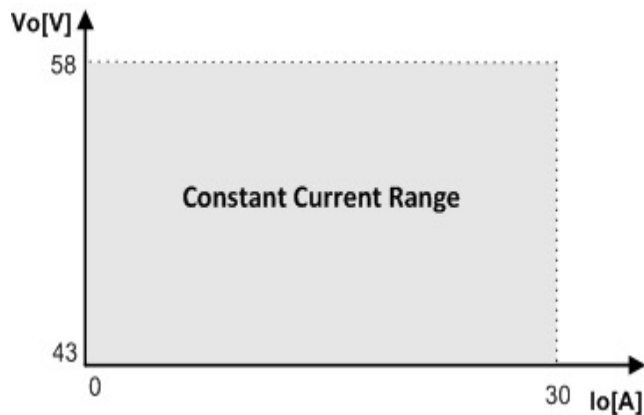


AC INPUT:



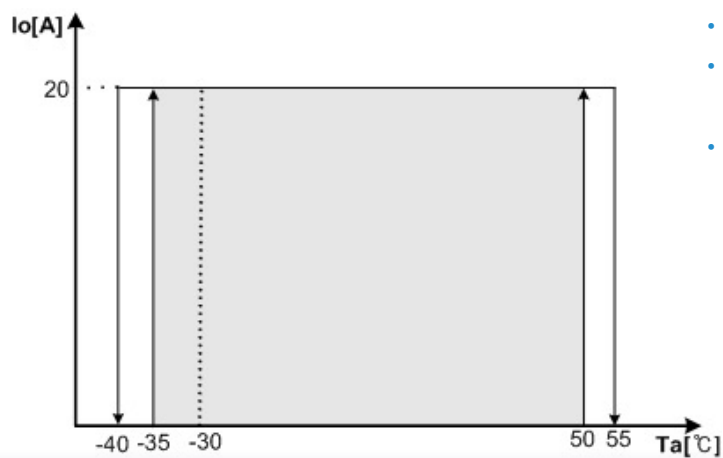
- **Voltage range :** 160Vac ~ 280Vac
- **Constant power range (Max 1.6KW)**
: 176Vac ~ 264Vac
- **Shut-down. Voltage**
 - OVP : 280Vac (recovery 270Vac)
 - UVP : 160Vac (recovery 165Vac)

DC OUTPUT:



- **Voltage range :** -43.0Vdc ~ -58.0Vdc
- **Constant Current:** Max 30A

TEMPERATURE:



- **Operating temperature :** -40°C ~ 55°C
- **Constant power range (Max 1.6KW)**
: -30°C ~ 50°C
- **Shut-down. Temperature (Tolerance: $\pm 5^\circ\text{C}$)**
 - : 75°C (recovery 65°C)
 - : -40°C (recovery -35°C)



PRODUCT FEATURES:

- RS 232 interface for PC connection, TCP/IP, SNMP
- Adjustable Output Voltage
- Battery Charging Current Limiting
- AC Input High/Low Voltage Alarm

DISPLAY:

- The status of the rectifier system is displayed on the front meter window of the control unit:
 - Output voltage/Input voltage
 - Output current/battery charge/discharge current
 - Rectifier Temperature
 - Rectifier system setup value and alarms
 - Display output currents for individual rectifier modules, the battery set and the total output

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

- Rectifier input AC voltage
- Rectifier output DC voltage
- Rectifier load current
- Rectifier battery charge/discharge current
- Battery enclosure temperature, Battery charge current
- Rectifier temperature

CONTROLLER UNIT FUNCTION:

- Failure of the rectifier controller shall not affect the operation of the rectifiers in the system
- The Control unit which sees can be stored and displayed 500 event alarm log.
- Output Alarm 11EA (User Defined alarms)



CPU:

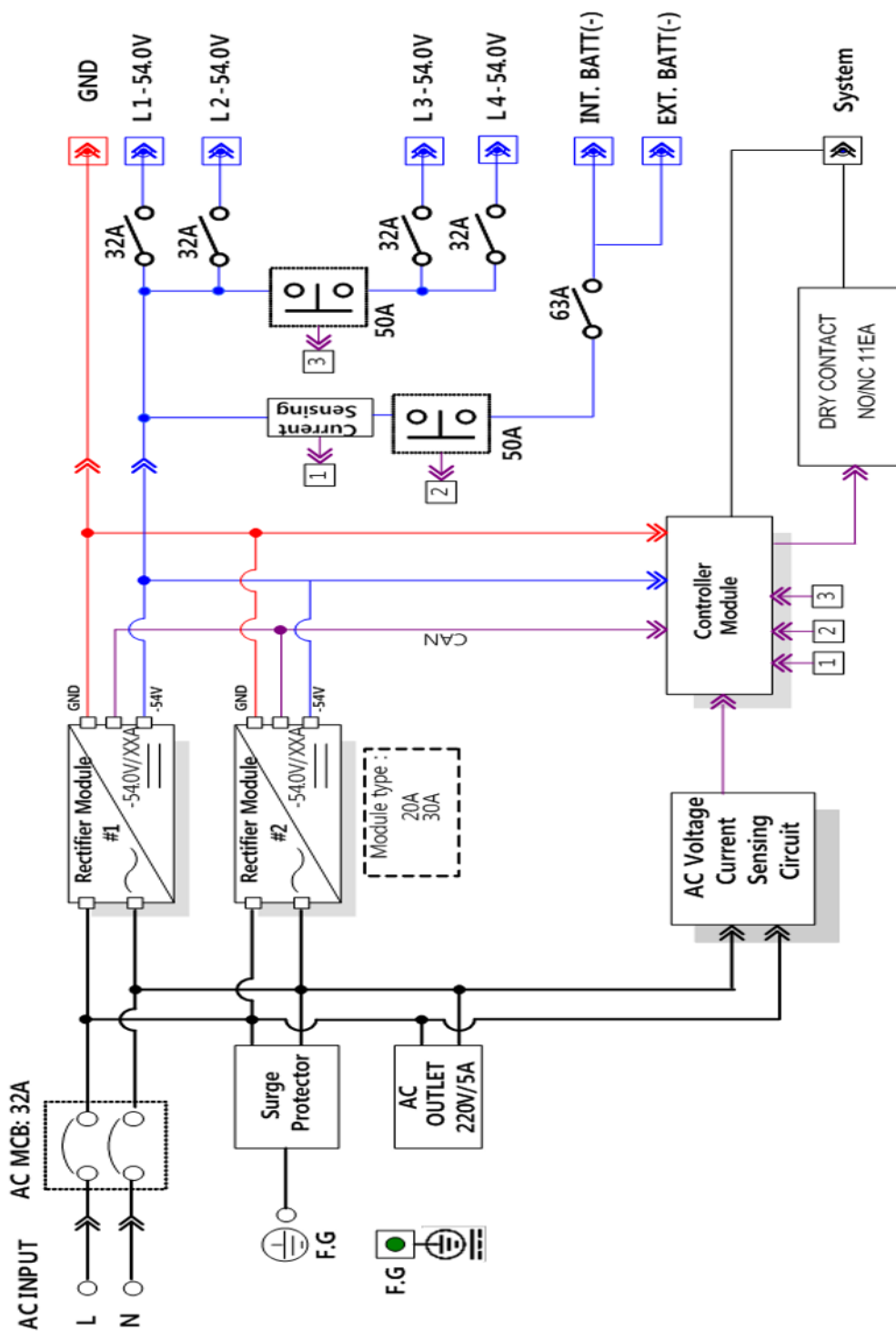
- Cortex-M4 Core
- CPU Clock – Up to 150MHz
- 32ch DMA, 16KB cache, DSP, floating-point unit
- Memory:
 - Flash 1MB / RAM128KB / EEPROM / Flax RAM, Flax NVM
- Ethernet, UART
- Support RTOS

INTERFACE:

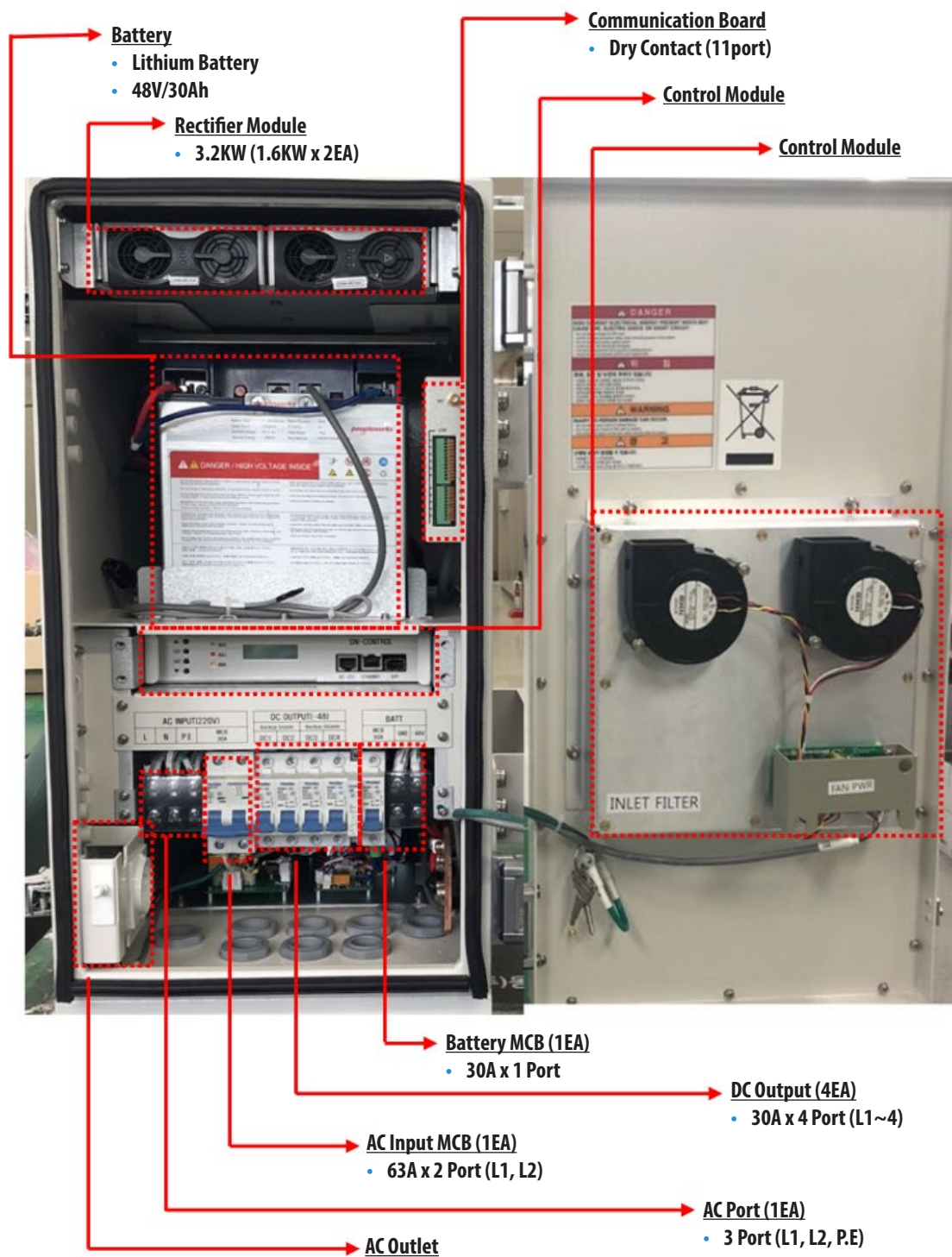
- RS232
 - Baud Rate : 115, 200 bps
 - Data Bits : 8Bit / Stop Bits : 1Bit / Parity Bits : N
- LAN
 - Hardwired TCP/IP protocol(TCP/UDP/ICMP/Ethernet)
 - 1G SFP Type (100 Base-Fx SFP /Copper SFP)
 - 10BaseT/100Base/1GBase TX Ethernet MAC/PHY Embedded
 - Auto Negotiation (Full and half duplex, 10/100/1G-Based)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



BLOCK DIAGRAM:



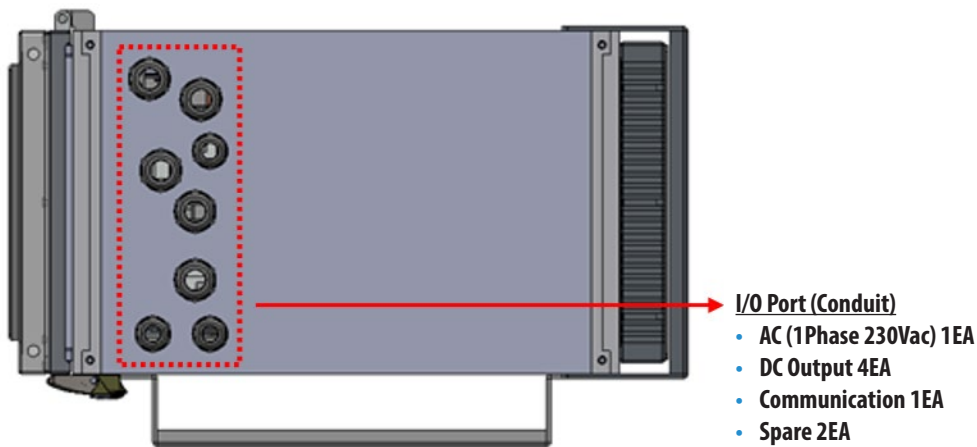
FRONT VIEW:



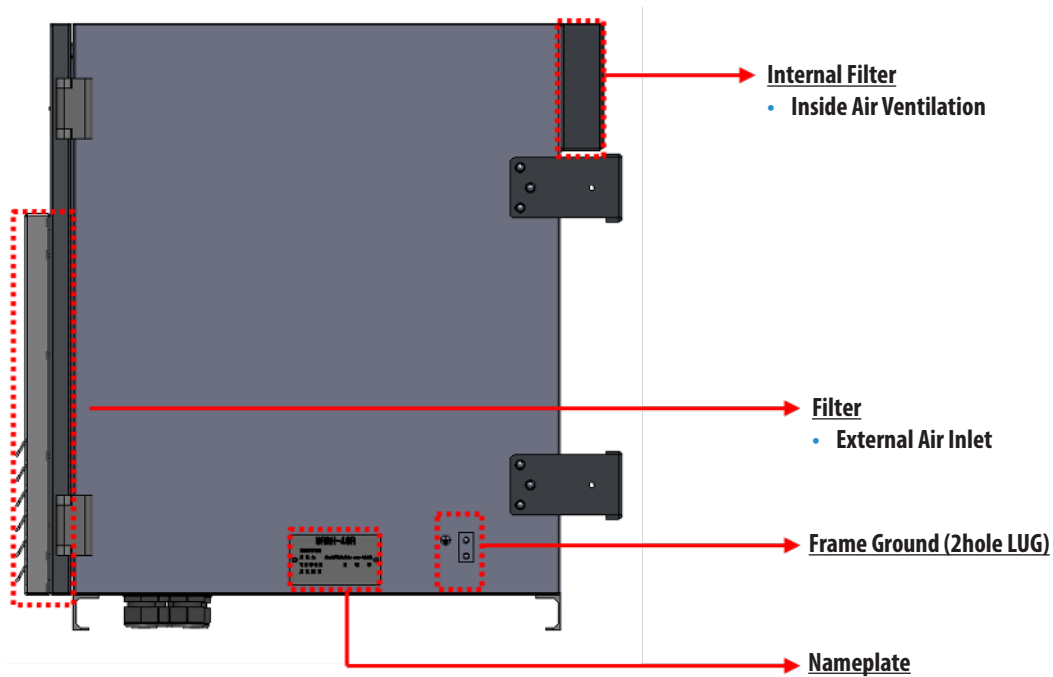
The capacity of DC & BATT Distribution is subject to be changeable.



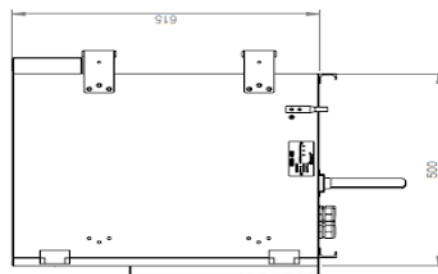
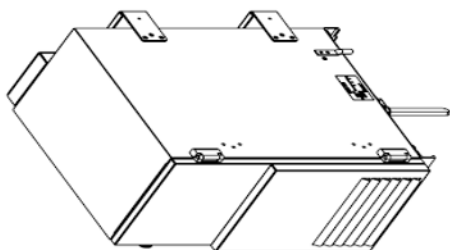
BOTTOM VIEW:



RIGHT SIDE VIEW:



DIMENSIONS:



Note
1. Remove all burrs and sharp edges.
2. Tolerance between holes : ± 0.15
3. General round or chamfer : R1.0 / C1.0

