# OUTDOOR TELECOM RECTIFIER
# DPU6000

## DESCRIPTION

**DPU6000** is a high-efficiency digital rectifier module designed for using in outdoor environment.
It integrates power rectification, distribution, and monitoring. It converts AC or HVDC power into stable 54.5VDC/57VDC power, generates fault alarms, and reports monitoring data to the upstream network management system (NMS) in real time.

## FEATURES

- Integrated design: power rectification, monitoring, power distribution, and surge protection
- Natural cooling
- Compact and lightweight design
- Mounting on a pole, wall, channel steel, or angle steel
- Allows parallel operation of multiple rectifiers and lithium batteries
- Same set of mounting kits for all scenarios, survey-free
- Quick connectors for input, output ports, and communication ports, which are foolproof and prevent reverse connection
- Online expansion to increase loading capacity and backup time
- Remote monitoring

| AC INPUT | |
|---|---|
| **Rated voltage** | 220VAC, single phase |
| **Voltage range** | 85VAC ~ 300VAC |
| **Frequency range** | 45Hz ~ 65Hz |
| **Power factor** | ≥ 0.99 (100% load) |
| **THD** | ≤ 5% (100% load) |
| **DC OUTPUT** | |
| **Rated voltage** | 54.5VDC or 57VDC |
| **Voltage range** | 42VDC ~ 58VDC |
| **Rated power** | 6000W (176–300VAC)<br>3000W (85–175VAC) |
| **Efficiency** | ≥ 97% |
| **Voltage stabilization** | ≤ ±0.6% |
| **Ripple and noise** | ≤ 200 mVp-p |
| **Current sharing imbalance** | < ±5% (20%–100% load) |
| **MISCELLANEOUS** | |
| **Dimensions (HxWxD)** | 420mm x 120mm x 300mm (excluding terminals) |
| **Weight** | 18 kg |
| **Protection level** | IP65 |
| **MTBF** | 500,000 hours (25°C ambient temperature) |

Sunelt Science & Technology Co. Ltd.
Email: info@sunelt.com

sunelt.com

# OUTDOOR TELECOM RECTIFIER
# DPU6000

## PROTECTION PARAMETERS

| | |
|---|---|
| **AC input overvoltage** | Protection trigger: ≥298VAC<br>Recovery range: 290VAC ~ 298VAC |
| **AC input undervoltage** | Protection trigger: ≤85VAC<br>Recovery range: 85VAC ~ 90VAC |
| **DC input overvoltage** | Protection trigger: ≥410VDC<br>Recovery range: 400VDC ~ 410VDC |
| **DC input undervoltage** | Protection trigger: ≤85VDC<br>Recovery range: 85VDC ~ 90VDC |
| **Output overvoltage** | Protection trigger: 56VDC ~ 60VDC<br>(can be set via settings)<br><br>Default: 59.5VDC |
| **AC surge** | Differential mode: 20 kA<br>Common mode: 20 kA, 8/20 μs |
| **DC surge** | Differential mode: 10 kA<br>Common mode: 20 kA, 8/20 μs |
| **Safety standards** | IEC62368-1, IEC/EN 60950-22, IEC60950-1, GB4943-2011, YD/T 1436-2014 |

## ENVIRONMENT

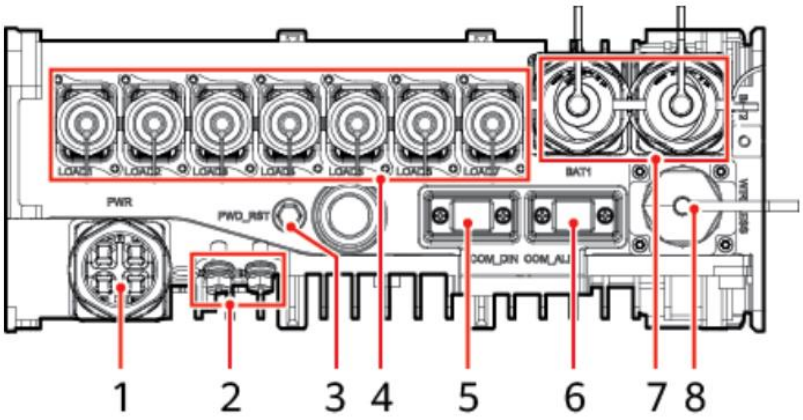
| | |
|---|---|
| **Cooling** | Natural<br>(fanless design) |
| **Operating temp range** | –40℃ ~ +55℃ |
| **Storage temp range** | –40℃ ~ +75℃ |
| **Humidity<br>(operating and storage)** | 5% ~ 95%<br>(no condensation) |
| **Altitude** | ≤4000m<br>(2000m ~ 4000m operating temp drops 1℃ per 200m) |

## EMC

| | |
|---|---|
| **Conducted emission (CE)** | AC input: class B, EN55032<br>DC output: class A, EN55032 |
| **Radiated emission (RE)** | Class B, EN55032 |
| **Harmonic current** | IEC 61000-3-2 |
| **Voltage fluctuation and flicker** | IEC 61000-3-3 |
| **ESD** | IEC 61000-4-2<br>Contact discharge: 6 kV<br>Air discharge: 8 kV |
| **Electrical fast transient (EFT)** | IEC 61000-4-4<br>AC power port: ±2 kV<br>DC power port: ±1 kV<br>Signal port: ±0.5 kV |
| **Radiated susceptibility (RS)** | IEC 61000-4-3<br>80 MHz to 2.7 GHz: 10 V/m |
| **Conducted susceptibility (CS)** | IEC 61000-4-6<br>Power port: 10 V<br>Signal port: 3 V |
| **Surge susceptibility** | IEC 61000-4-5<br>AC power port: 6 kV in differential mode, 6 kV in common mode, 1.2/50μs<br>DC power port: 2 kV in differential mode, 4 kV in common mode, 1.2/50μs<br>Signal port: 2 kV in differential mode, 4 kV in common mode, 1.2/50μs |
| **Voltage dip** | IEC 61000-4-11 |

Sunelt Science & Technology Co. Ltd.
Email: info@sunelt.com

sunelt.com




(1) AC Input

(2) GND

(3) WiFi module port

(4) DC Output (Load1 – Load7)

(5) COM_DIN port

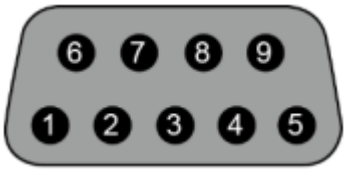
(6) COM_ALM port

(7) Battery Output (BAT1, BAT2)

(8) Extra module port

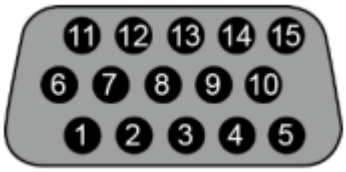
| Port | Fuse capacity | Function |
|---|---|---|
| **PWR** | 63A | AC input |
| **LOAD1 – LOAD7** | 40A | DC output |
| **BAT1, BAT2** | 125A | Battery port |

## COM_DIN




| Pin | Signal | Description |
|---|---|---|
| 1-7 | NC | NC |
| 8 | CANH | CAN data send/receive HIGH |
| 9 | CANL | CAN data send/receive LOW |

## COM_ALM




| Pin | Signal | Description |
|---|---|---|
| 1 | ALM1+ | AC outage alarm |
| 2 | ALM1- | |
| 3 | ALM2+ | DPU fault alarm |
| 4 | ALM2- | |
| 5 | ALM3+ | Battery fault alarm |
| 6 | ALM3- | |
| 7 | RS485_TX+ | RS485 transmits data POSITIVE |
| 8 | RS485_TX- | RS485 transmits data NEGATIVE |
| 9 | RS485_RX+ | RS485 receives data POSITIVE |
| 10 | RS485_RX- | RS485 receives data NEGATIVE |
| 11 | ALM4+ | DPU or battery generates an recoverable alarm |
| 12 | ALM4- | |
| 13 | NC | NC |
| 14 | CANH | CAN data send/receive HIGH |
| 15 | CANL | CAN data send/receive LOW |

**IMPORTANT NOTE!**
ALM1-ALM4 use variable resistance to indicate an alarm.

High resistance: ALARM
Low resistance: NORMAL

## COMMUNICATION PORTS

| Port | Communication parameters | Protocol | Function |
|---|---|---|---|
| **COM_DIN** | - | CAN2.0 | Communicates with a lithium battery or a cascaded PSU |
| **COM_ALM** | Baud rate: 9600 bit/s, 19200 bit/s, 115200 bit/s, auto-negotiation | Slave protocol/BIN protocol | Communicates with upstream monitoring equipment |
| | - | CAN2.0 | Communicates with a cascaded PSU |

## LIST OF AVAILABLE ALARMS

| Alarm type | Alarm |
|---|---|
| **DPU fault** | Rectifier Fault/Address Conflict/SMU Fault |
| **Battery fault** | Board Hardware Fault/Heater Fault/Battery Cell N Fault/Address Conflict |
| **Recoverable DPU alarm** | Rectifier Protection/Rectifier Shutdown/Communication Failure/Rectifier Power Failure/Parallel Fail/AC Overvoltage/AC Undervoltage |
| **Recoverable battery alarm** | Discharge Overcurrent Protection/Charge Overcurrent Protection/High Temperature protection/Low Temperature Protection/Abnormal Close/Charge Overcurrent Protection/Discharge Overcurrent Protection |

## TYPICAL SYSTEM CONFIGURATIONS

| Number of DPUs (pcs) | Number of batteries (pcs) | Number of loads (pcs) | DC power (W) | Battery backup capacity (Wh) | Battery backup power (W) |
|---|---|---|---|---|---|
| 1 | 0 | 7 | 6000 | 0 | 0 |
| 1 | 1 | 7 | 6000 | 2400 | 3000 |
| 1 | 2 | 7 | 6000 | 4800 | 5700 |
| 1 | 3 | 7 | 6000 | 7200 | 7200 |
| 1 | 4 | 7 | 6000 | 9600 | 9600 |

## PARALLEL CONNECTION DERATING

| Number of batteries | Power |
|---|---|
| 1 | 3000W |
| 2 | 5700W |
| 3-4 | 3000W x Number of batteries x 0.8 |

Sunelt Science & Technology Co. Ltd.
Email: info@sunelt.com