



# Large Capacity Power System

TP483000D

HUAWEI TECHNOLOGIES CO., LTD.



## Introduction



Huawei TP483000D is the first all-digital large capacity telecom power system in industry. The system consists of 1U 100A high efficiency rectifiers. The output of rectifier cabinet can reach 3000A, expandable up to 24000A. The system has impressive features such as high reliability, high efficiency, high power density, high capacity, low noise and easy maintenance.

## Features

- High reliability: MTBF of rectifier is over 540,000 hours, MTBF of system is over 500,000 hours
- The system complies with the CE standards. The rectifier module complies with the UL, CE and TUV standards
- Wide range of AC input: 260VAC~530VAC
- High power efficiency of rectifier, over 96%, saving huge energy
- High capacity: Max. 24,000A output can be achieved by parallel combination
- High power density: power density of module is up to 25.4W/inch<sup>3</sup>, far higher than the industry average level
- All-CAN communication, improves system's response rate
- Support Huawei NetEco and the third network management system, saving OPEX
- Support in-band/out-band/IP monitoring, matching customer's future evolution strategy mode



## Application Scenarios

Wireless network central office, fixed network central office, large capacity convergence site, enterprise network central office, data center

## System Construction

- Monitor Unit (SMU05A)
- 100A rectifier module (R48100G1)
- AC distribution cabinet (TPA38401B-N20B1, TPA38631B-N20B1)
- Rectifier cabinet (TPR48202B-N20C3, TPR48302B-N20C3)
- DC distribution cabinet (TPD48302B-N20B1, TPD48302B-N20B1)

## Basic Specification

Operating temperature	-10°C ~ +45°C
Storage temperature	-40°C ~ +70°C
Operating humidity	5%~95%(non-condensing)
Altitude	0~4000m
Installation mode	Floor installation(antistatic floor or ground installation)
Cabling mode	Top or bottom inlet & outlet
Maintenance	Front access, front and rear maintenance
Protection level	IP20
Cooling mode	Natural cooling
Noise	≤60dB(at ambient temperature 25°C)
MTBF	>500,000 hours

# Monitor and Rectifier

## Monitor Unit



SMU05A

### Features

8 dry contact outputs, 4 spare signal inputs

Provides FE, RS485/232

Manages rectifiers, batteries, D.G., AC power distribution cabinet, DC power distribution cabinet

Supports multiple languages, such as English, Chinese, Turkish, Spanish, and Portuguese, and German.

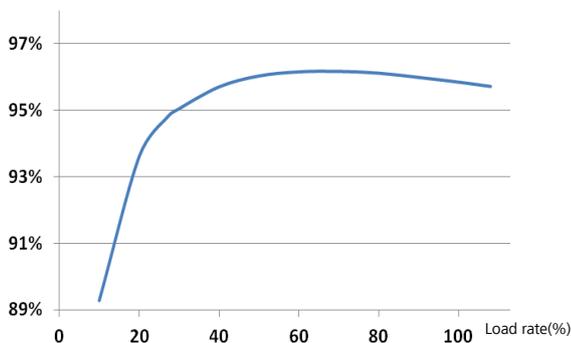
Maximum 10000 history alarm and system alarm records

## Rectifier Module



R48100G1

- Efficiency >96%
- Hot swap
- Digital control mode
- Supports intelligent ammeter
- Supports CAN communication
- Supports voltage and current adjustment
- Supports LED display



Efficiency Curve

### Basic Specification

Security	Passed the TUV, CE, UL certifications and is CB certified
EMC	EN55022 Class B
Reliability	MTBF>540,000 hours

### Input specification

Input voltage	260VAC~530VAC
Frequency	45~66Hz, rated 50Hz/60Hz
Maximum input current	≤13A (Vin:308VAC, 100% load)
Power factor	≥ 0.99
THD	≤ 5%

### Output Specification

Output voltage	42VDC~58VDC, rated 53.5VDC
Output power	6000W (304~530VAC)
Power density	25.4W/inch <sup>3</sup>
Regulated voltage precision	≤±0.6%

### Others

Dimensions	238mm(W)×378mm(D)×43mm(H)
Weight	<6kg
Cooling	Forced ventilation

# AC Distribution Cabinet



## Features

- Flexible AC distribution configuration, knife switch/ATS/MCCB are optional
- Individual AC power distribution detection unit, detects voltage, current, frequency of the AC input and the status of AC SPD in real time
- Expandable up to 8 cabinets in parallel combination mode
- Built-in AC SPD
- All the MCBs are hidden in the cabinet door, improving security
- Hassle-free Cable routing from top or bottom, front access, flexible and convenient
- Uses internationally reputed brand's circuit breakers
- Optional emergency lighting, easy maintenance

## Input Specification

Cabinet style	TPA38631B-N20B1	TPA38401B-N20B1
Input mode	Three phase four/five line mode support TN, TT, IT	
Input voltage	260VAC ~ 530VAC, rated 380VAC	
Frequency	45~66Hz, rated 50Hz/60Hz	
AC input	600A knife switch	400A knife switch
AC input surge protection	20kA/40kA, 8/20μs	

## Output Specification

AC output configuration	6 × 160A (MCCB), 1 × 63A/3P (MCB), 1 × 32A/3P (MCB), 3 × 32A/1P (MCB)	4 × 160A (MCCB), 1 × 63A/3P (MCB), 1 × 32A/3P (MCB), 3 × 32A/1P (MCB)
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## Others

Dimensions	600mm(W)×600mm(D)×2000mm(H)
Weight	≤120kg

# Rectifier Cabinet



## Features

- Single cabinet output 3000A, large capacity
- Expandable up to 8 cabinets in parallel combination mode, matching network long-term evolution
- Power density of rectifier cabinet is up to 500kW/m<sup>2</sup>, far higher than the industry average level, saving footprint
- Each rectifier is configured with an individual breaker
- Hidden breaker design, high security
- Uses internationally reputed brand's circuit breakers

## Input Specification

Cabinet style	TPR48202B-N20C3	TPR48302B-N20C3
Input voltage	260VAC ~ 530VAC, rated 380VAC	
Frequency	45Hz ~ 66Hz, rated 50Hz/60Hz	
Power factor	≥0.99	
Rectifier MCB	20×20A/3P(MCB)	30×20A/3P(MCB)
Surge protection	20kA/40kA, 8/20μs	

## Output Specification

Cabinet style	TPR48202B-N20C3	TPR48302B-N20C3
Output voltage	42VDC ~ 58VDC, rated 53.5VDC	
Number of rectifier	20	30
Maximum output current	2000A	3000A

## Others

Dimensions	600mm(W)×600mm(D)×2000mm(H)	
Weight	≤150kg (without rectifier modules)	

# DC Distribution Cabinet



## Features

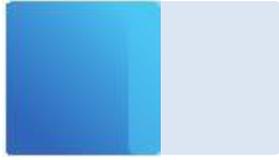
- Individual shunt for important load, detects the current and sends an early warning in case of over-current
- Individual DC power distribution detection unit, provides following alarms :DC overvoltage and under-voltage, battery charging over-current, and for load fuse or battery fuse breakdown
- Expandable up to 14 cabinets in parallel combination mode
- Increased distance between positive bus bar and negative bus bar effectively avoids short-connection risk
- The negative bus bar is located in the middle of cabinet, matches ergonomics design, convenient for parallel combination and maintenance

## Output Specification

Cabinet style	TPD48202B-N20B1	TPD48302B-N20B1
Output voltage	-42VDC ~ -58VDC, rated 53.5VDC	
Rated capacity	2000A	3000A
Battery branch	2 × (2 × 1000A)(NT4)	2 × (2 × 1250A)(NT4)
Load branch	6 × 500A (NT3), 2 × 250A (NT1), 6 × 160A (NT00), 4 × 100A (NT00), 4 × 63A (NT00)	8 × 500A (NT3), 4 × 400A (NT2), 4 × 200A (NT1), 8 × 160A (NT00), 6 × 100A (NT00)

## Others

Dimensions	800mm(W) × 600mm(D) × 2000mm(H)
Weight	≤180kg
Surge protection	10kA/20kA, 8/20μs



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