SUPLET®

Technical Specification

Rectifier

CR4830

90Vac to 300Vac Input；42~58Vdc Output

Description

These Compact rectifiers are optimized for the demanding power needs of wireless communications, enterprise and broadband access equipment. Requiring only 1u of rack height, these compact rectifiers can provide up to 1740 Watts of power and operate up to 75ºC. The small size can free up space to reduce system size.

These rectifiers are designed to operate as an integral component in telecommunication power system. They are extremely flexible, and can be applied as a stand-alone module.

Features

- Small Footprint – *1U*
- Universal AC Input range
- > 92 % Efficiency
- Operation temperature range from -40°C to +75°C
- Active Load Sharing
- Advanced Internal Monitoring

Applications

- Telecommunication networks
- Broadcasting and railway networks
- Enterprise networks

1 Electrical Features

1.1 Input Characteristics

Model	48VDC
	CR4830
Input Voltage	176～300Vac full load 90～176Vac De-rating
Normal Input Voltage	100～250Vac
Input Voltage (maximum)	300Vac
Input Frequency (minimum)	45 Hz
Input Frequency (maximum)	65 Hz
Input Current (maximum)	12A
Inrush Current (maximum)	≤150% of steady-state peak value at rated input voltage
Power Factor (1)	≥0.99
Peak Efficiency(1)	>92%
THD(1)	<5%

Note 1: 25℃/220Vac/53.5Vdc

1.2 Output Specifications

Model	48VDC
	CR4830
Vo Set Point (min/typ/max)	42/53.5/58 (Vdc)
Io Output	32.5A @53.5Vdc 30A@58Vdc
Vo Regulation (min/max)	-0.5/0.5 (%)
Output Power	1740W
Current Limit (max)	36.25 A
Output Noise (maximum)	<200 mV (peak to peak, bandwidth 20MHz)
Psophometric noise	<2 mV

Dynamic Response (maximum)	5%
Start-up Time	<10s
Hold-up Time	>10ms
Load Sharing (min/max)	-5/5 (%)

1.3 Protection Characteristics

	Min	Typ	Max	Unit	Notes
Over Temperature Protection	-	-	75	ºC	
Input Over Voltage Protection	-	300	-	Vac	Rectifier shuts down
Input Under Voltage Protection	-	80	-	Vac	Rectifier shuts down
Output Over Voltage Protection	-	59	-	Vdc	
Short Circuit Protection	-	-	-		No damage within long time

2 Environmental Characteristics

Parameter	Min	Typ	Max	Unit	Notes
Storage Temperature	-40	-	85	℃	
Operating Temperature (internal cooling)	-40	-	75	℃	-40~ +50℃ with full load, derating from 50 to 75℃
Humidity	5	-	90	%	Non Condensing
Altitude	-100	-	2000	m	Derating above from 2000m
MTBF	300,000	-	-	hours	
Insulation Resistance	20	-	-	MΩ	AC-Enclosure
	20	-	-		AC-DC
	20	-	-		DC-enclosure
Dielectric Strength	-	-	2121	Vdc	AC-Enclosure
	-	-	4242		AC-DC
	-	-	707		DC-enclosure

Cooling	Horizontal direction, forced air cooling
Audible Noise	< 55dBA

3 CR4830 Curve

Input Derating Characteristics

Input Voltage	90VAC	176VAC	300VAC
Output Power	870W	1740W	1740W

Temperature Derating Characteristics

Temperature	-40℃	50℃	60℃	75℃
Output Power	1740W	1740W	1400W	870W

Note: Rectifier will shut down above 75-80℃

4 Display

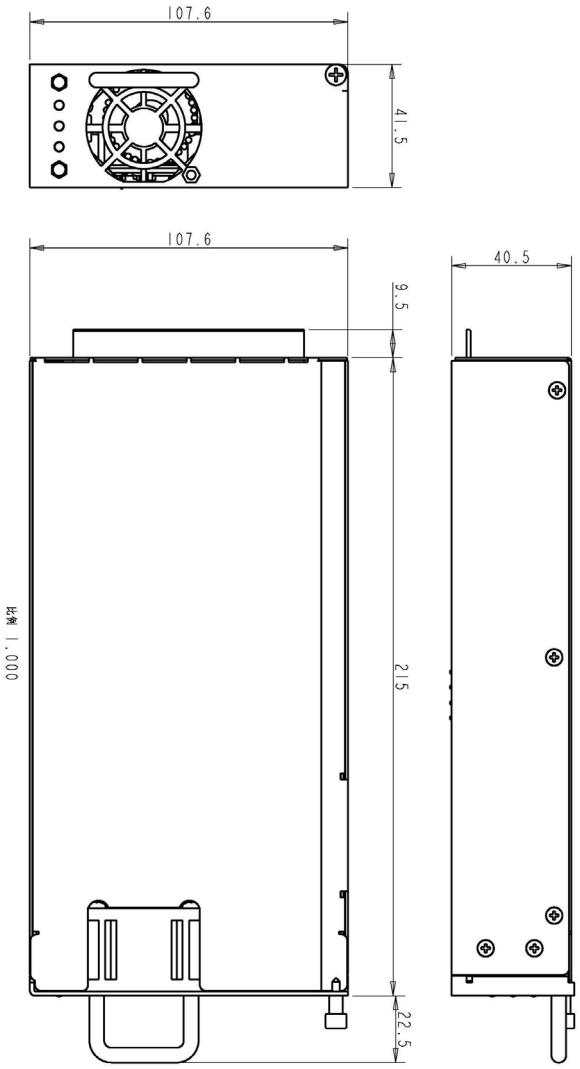
Light	Status
Green Light-Running	Constant: Normal without Controller Flash: Communication with Controller
Yellow light- warning	Constant: Derating with input voltage or temperature
Red light-fault	Constant: EEPROM Fault Low Input Fault High input Fault Low Output Fault High Output Fault Over Ambient Temperature Fault Low Ambient Temperature Fault DCDC Over Temperature PFC Over Temperature Communication Fault between Primary and Secondary Side High Input Voltage Disconnect Fault CAN BUS Fault Flash: Fan Fault

5 Applicable standards

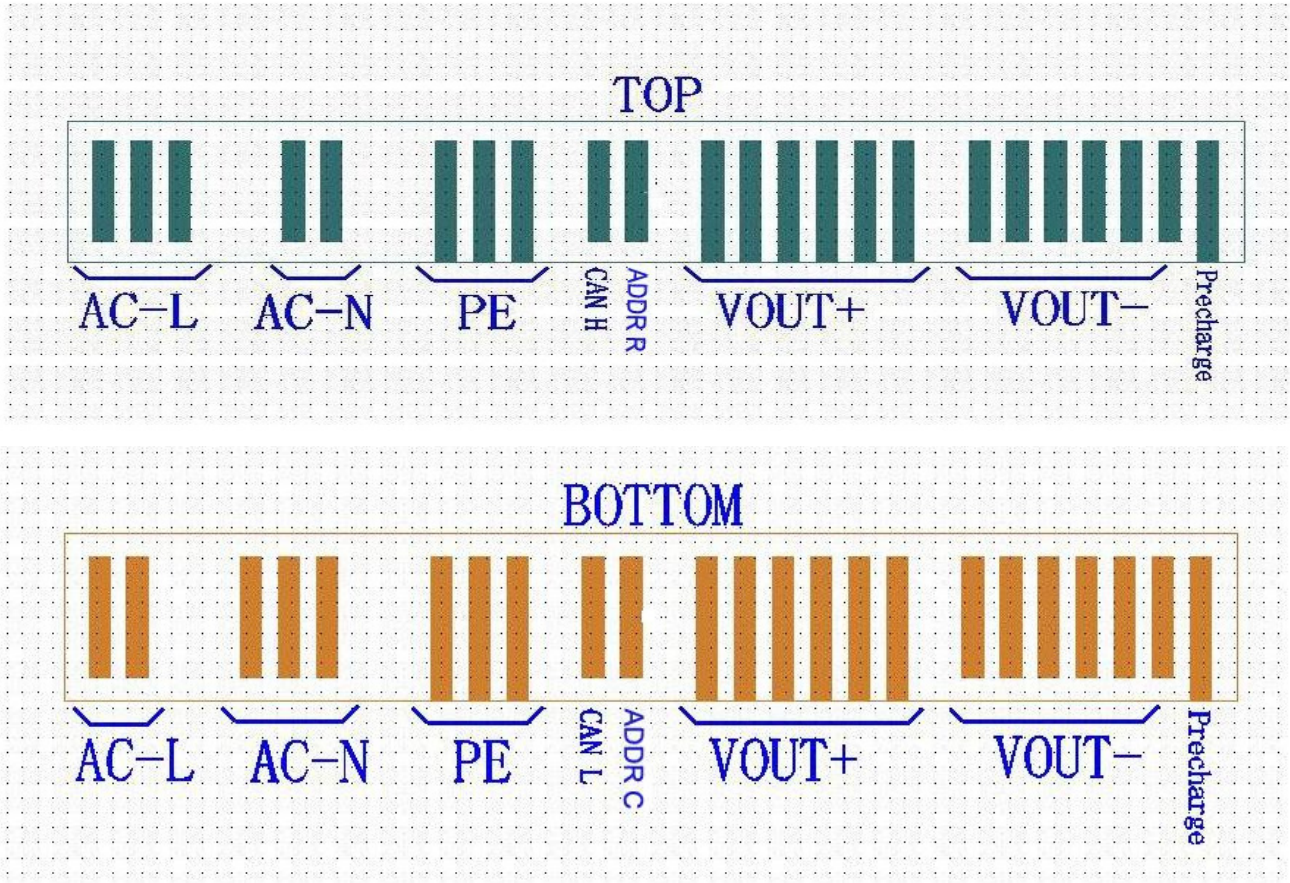
Parameter	Specification
Conducted Emission Radiated Emission	EN55032 (Class A)
Input Current Harmonics	EN61000-3-2
Voltage Fluctuation and Flicker	EN61000-3-3
Electrostatic discharge immunity	EN61000-4-2
Radiated Field Immunity	EN61000-4-3
Electrical Fast Transient Immunity	EN61000-4-4
Surge Immunity	EN61000-4-5
RF Conducted Immunity	EN61000-4-6
Magnetic Field Immunity	EN61000-4-8
Voltage dips, interruptions(220Vac)	EN61000-4-11
Shock	IEC60068-2-27
Vibration	IEC60068-2-64

6 Physical Specifications

Parameter	Min	Typ	Max	Unit	Notes
Depth	-	215	-	mm	Applies to 300mm depth power system
Width	-	107.6	-	mm	
Height	-	40.5	-	mm	
Weight	-	1.3	-	kg	



7 Connector and Signal Definitions



7.1 Input

L/N/PE are connected with AC input through backplane board

7.2 output

Vout is connected with output through backplane board

Precharge Pin is connected with Vout- in backplane board

7.3 Communication

CAN Communication between rectifier and controller.

Monitor: AC status, Rectifier status, Fan Status etc.

Control: On/off control, output voltage adjustment

For more information please contact SUPLET Co., Ltd.

Add: 601, 701, 901 of No.A Building and 401 of No. B Building, Topray Solar Industrial Park,
High-Tech Zone of Tianliao Community, Yutang Street, Guangming District, Shenzhen, Guangdong, China
Tel: +86(755)-86001502
Fax: +86(755)-86001330
E-mail: postmaster@suplethic.com
Web: http://www.suplet.com