PCSCN-2600W mains power supply

Description

The Compact rectifier is optimized for the demanding power needs of wireless communications, enterprise and broadband access equipment. the compact rectifier can provide up to 2900 Watts of power and operate up to 70ºC. The small size can free up space to reduce system size.

The rectifier is designed to operate as an integral component in telecommunication power system. It is extremely flexible, and can be applied as a stand-alone module.

Applications: High power broadcasting

Features:
- Small footprint – 2U
- Slide-in design
- Universal AC input range (with some derating)
- Up to 92% efficiency
- Operational temperature range from -40C to +70C
- Active load sharing
- Advanced internal monitoring

1 Electrical Features

1.1 Input Characteristics

Model	48VDC
	PCSCN-2600W
Input Voltage	176～300Vac full load 90～176Vac De-rating
Input Voltage (maximum)	300Vac
Input Frequency (minimum)	45 Hz
Input Frequency (maximum)	65 Hz
Input Current (maximum)	19A
Inrush Current (maximum)	≤150% the rated input steady-state peak value (excludes X caps in the EMC input filter)
Power Factor	≥0.99 Typical (@ 220Vac at full load)
Efficiency	≥92% (@ 220Vac at full load)
THD	<5% Typical (@ 220Vac full load)

1.2 Output Specifications

Model	48VDC
	PCSCN-2600W
Vo Set Point (min/typ/max)	40/53.5/66 (Vdc)
Io Output	54.2A @53.5Vdc 40A @66Vdc
Vo Regulation (min/max)	-1/1 (%) (Total regulation line, load, aging & temperature)
Output Power	2900W
Current Limit (max)	55A
Output Noise (maximum)	<200 mV (peak to peak, bandwidth 20MHz)
Psophometric noise	<2 mV
Dynamic Response (maximum)	5%
Turn On Delay (maximum)	8 sec
Load Sharing (min/max)	-5/5 (%)

1.3 Protection Characteristics

	Min	Typ	Max	Unit	Notes
Over Temperature protection			70	ºC	
Input over voltage protection		300		Vac	
Input under voltage protection		80		Vac	
Output over voltage protection		67		Vdc	
Short circuit protection					No damage within long time

2 Environmental Characteristics

Parameter	Min	Typ	Max	Unit	Notes
Storage Temperature	-40		85	ºC	
Operating Temperature (internal cooling)	-40		70	ºC	–5 to +45 degree C with full performance, derating from 45C to 70C, 2%/C
Humidity	5		95	%	Relative Humidity Non Condensing
Altitude	-100		2000	m	
MTBF	10^5			hours	
Insulation Resistance	20MΩ				
	20MΩ				
	20MΩ				
Dielectric Strength			2121		AC-Enclosure
			4242	Vdc	AC-DC
			707		DC-enclosure
Leakage current			3.5	mA	

Input Derating Characteristics

Input Voltage	90 VAC	176 VAC	300VAC
Output Power	1450W	2900W	2900W

Output power vs. input voltage at Tamb < 45C
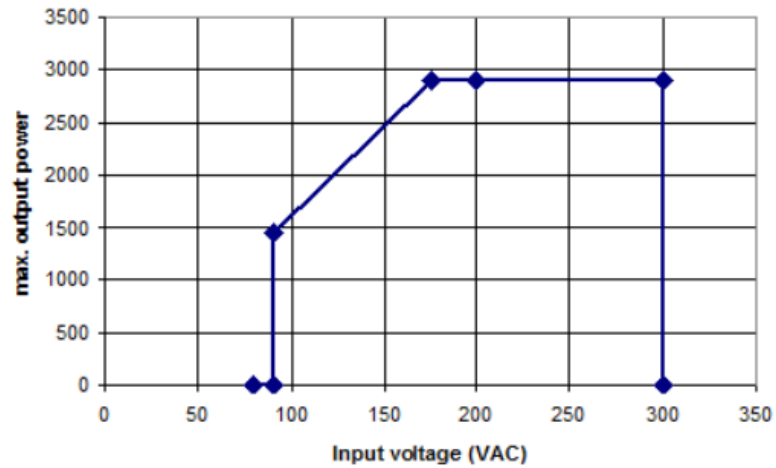
Diagram of Input Derating

Temperature Derating Characteristics

Temperature	-40C	45C	60C	70C
Output Power	2900W	2900W	2000W	1450W

Note: Rectifier will shut down above 75C
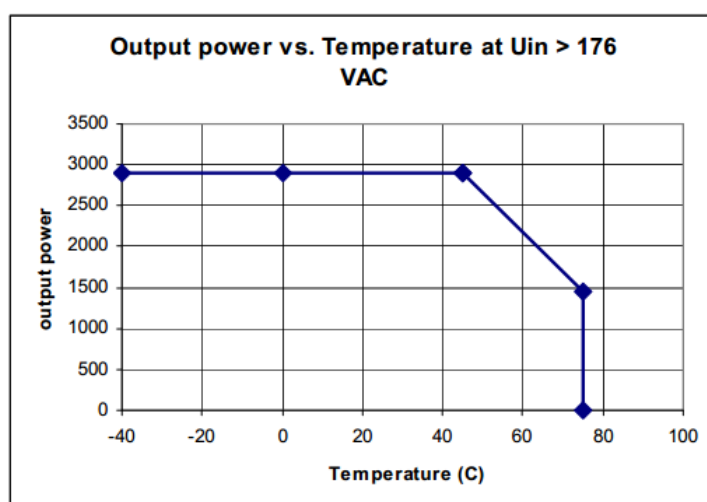
Diagram of Temperature Derating

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

Item	content
EN55022	Conducted Emission Radiated Emission
EN61000-3-2	Limits for harmonic current emissions for class D equipment
EN61000-3-3	Limits for voltage fluctuations and flicker in low-voltage systems
EN61000-4-2	Electrostatic discharge immunity test
EN61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test
EN61000-4-4	Electrical fast transient/burst immunity test
EN61000-4-5	Surge immunity test
EN61000-4-6	RF Common Mode
EN61000-4-8	Magnetic Field
EN61000-4-11	Voltage dips, short interruptions and voltage variations
IEC60068-2-27	Shock
IEC60068-2-64	Vibration

6 Physical Specifications

Parameter	Min	Typ	Max	Unit	Notes
Depth		231		mm	
Width		85.2		mm	
Height		112.7		mm	Includes Faceplate
Weight		2.5		kg	
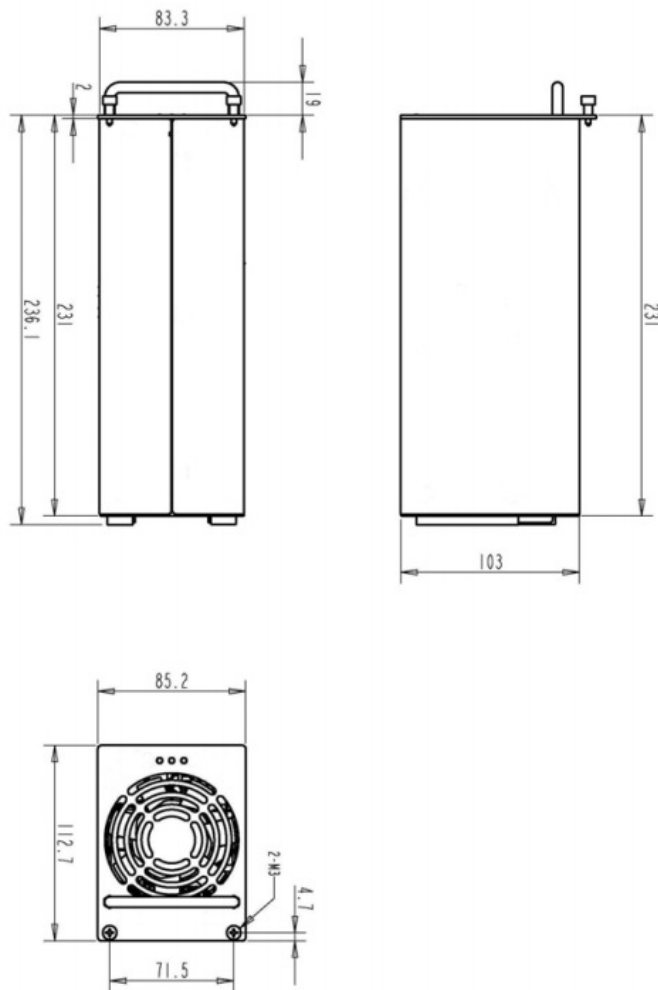
7 Connector and Signal Definitions

N PE L

Pre-charge V+ V-
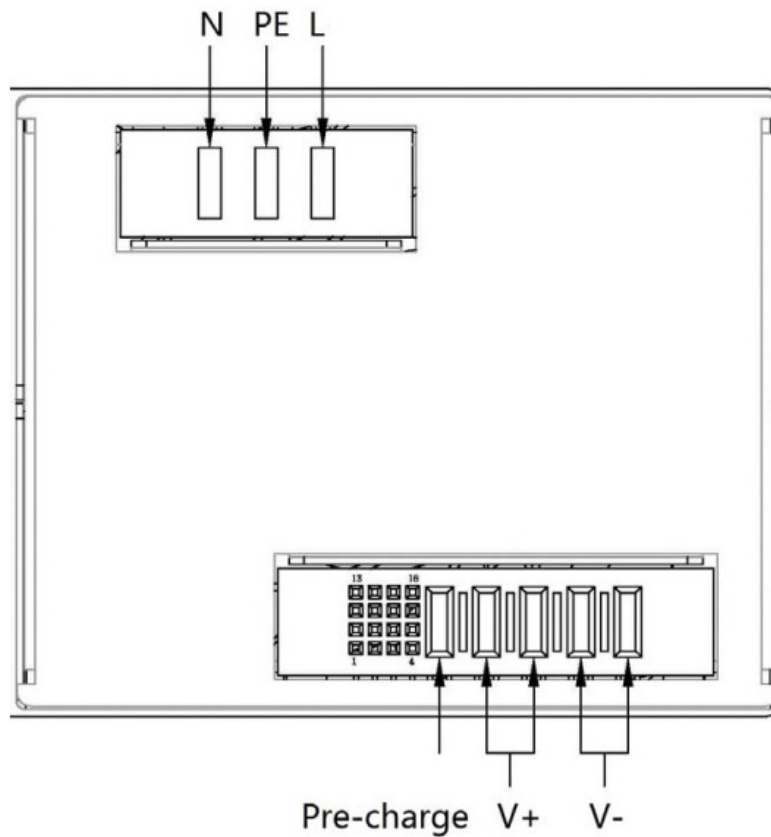
7.1 Input

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

7.2 output

Vout is connected with output through backplane board

7.3 Signal output

Pin1: ADDRESS0

Pin2:ADDRESS1

Pin3: LOADSHARE+, current share

Pin4: INHIBIT

Pin5: CANH

Pin6: ADDR_GND

Pin7: ADDRESS2

Pin8: ADDRESS3

Pin9: LOADSHARE-

Pin10: RS485 +5V

Pin11: RS485 +5V_GND

Pin12: RS485B

Pin13: ADDRESS4

Pin14: ALARM

Pin15: RS485A

Pin16: CANL

CAN Communication between rectifier and controller and CAN BUS can be use for current share automatically, don't care about other pins.

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REVISIONS AND ERRATA

V1.0 (Dec, 2018): Release version

Please report any errors you see in this manual, you will be helping us and many other users out there. Thank you!