



# Rectifier Module

## R4815N1

### Introduction

R4815N1 is a 1000W, 94% efficiency, digital controlled high power density rectifier.

It converts input Voltage ranges between 85 to 300 into 42 to 58 Vdc adjustable output voltage.

With comprehensive protection functions, it supports walk-in start function with low noise operation and latest technology on real time state monitoring.

### Features

- **High efficiency:**  $\geq 94\%$
- **Wide operation temperature range:** from  $-40\text{ }^{\circ}\text{C}$  to  $75\text{ }^{\circ}\text{C}$  (full output up to **55°C**)
- **Wide input voltage range:** 85 to 300 Vac
- Total harmonic distortion(THD):  $\leq 5\%$
- **Hot-swappable** rectifier
- **Digital control**
- **Intelligent electric meter**
- **CAN communication**
- Adjustable voltage and current
- **TUV,CE,UL,CB** certifications



Overview of R4815N1



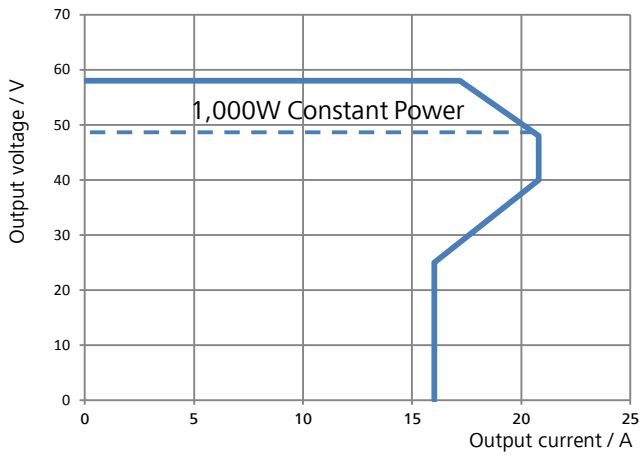
Front view of R4815N1

### Scenarios

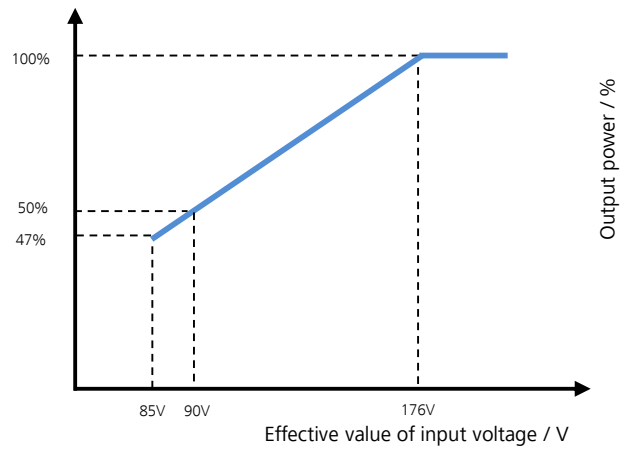
- Access network
- Transmission network
- Communication network of enterprises



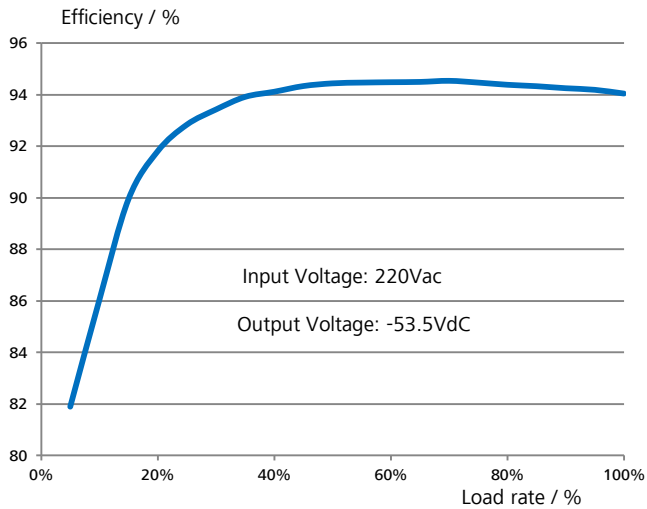
## Feature Curve



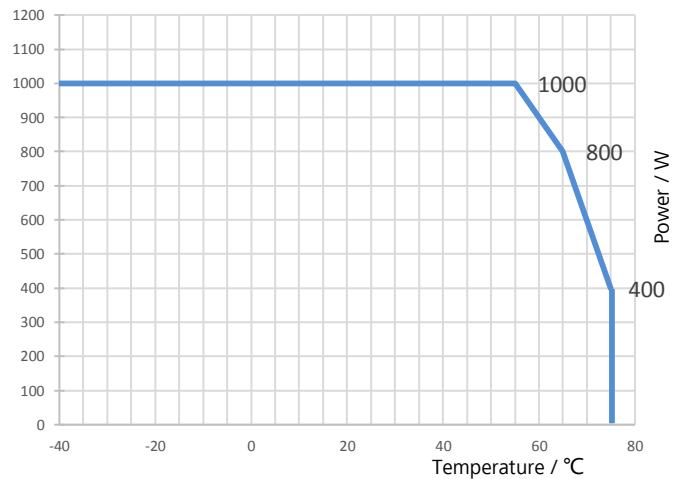
Output Feature Curve



Output Power Vs Input Voltage Curve

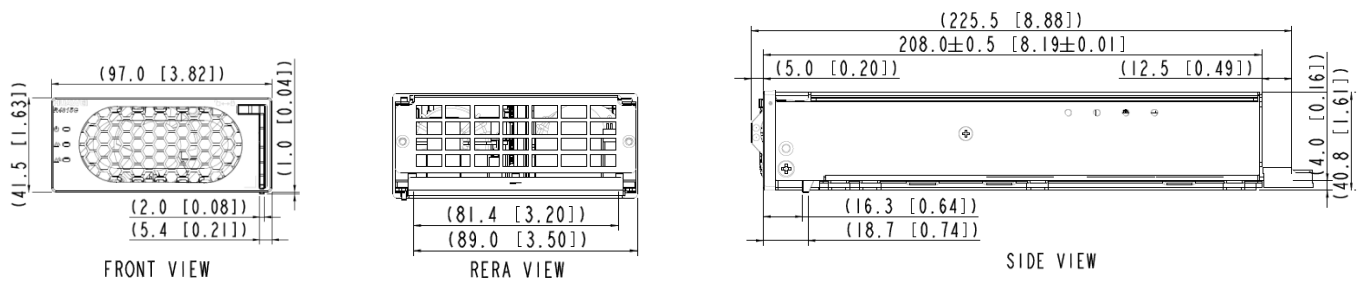


Energy Efficiency Curve



Output Power Vs Temperature Curve

## Dimension Drawings



# Specifications

Product	R4815N1	
Basic specifications	Dimension	95.5 mm(W) × 208 mm(D) × 40.8 mm(H)
	Weight	≤ 1.1 kg
	Cooling	Forced Air cooling (Built-in fan)
Input feature	Input Voltage	85 to 300 Vac
	AC Input Mode	220 Vac single phase (or 110 Vac dual live lines)
	Frequency	45 to 66 Hz, rated: 50 Hz / 60 Hz
	Input Current	≤ 6.4 A
	Power Factor	≥ 0.98 (> 50% load at 230 Vac), ≥ 0.99 ( 100% load at 230 Vac )
	THD	≤ 5% (> 50% load at 230 Vac)
Output feature	Efficiency (for 230 Vac Input)	> 93% (30% to 100% load) > 94% Max
	Output Voltage	42 to 58 Vdc, rated voltage: 53.5 Vdc
	Output Power	1000W (176 to 300 Vac)
	Ripple and Noise	<200 mV pk-pk, 20 M bandwidth, < 2 mV rms psophometric
	Hold-up Time	> 10 mS at 1000W, output voltage > 42 V
	Output Regulated Voltage Precision	≤ 0.6% Vo from no load to full load
	Current Share	±5% output rated current from 10% to 100% load
Environmental specifications	Operating Temperature	-40 °C to +75 °C (full output below 55°C), ETS EN 300-019
	Storage Temperature	-40 °C to +75 °C; ETS EN 300-019
	Relative Humidity	5% to 95% (non-condensing), ETS EN 300-019
	Altitude Range	≤ 4000 m (If the altitude is within the range of 3000 m to 4000 m, the maximum operating temperature decreases by 1°C as the altitude increases by 200 m)
Protection	Input Overvoltage Protection	Protection point: > 300 Vac
	Input Under-voltage Protection	Protection point: < 80 Vac
	Output Overvoltage Protection	56 to 60 Vdc (can be set by monitoring unit)
	Output Short Circuit Protection	A long term short circuit is allowed. After the fault is rectified, the rectifier will restore automatically
	Over-temperature Protection	Protection point: ≥ 75 °C
Reliability	MTBF	≥ 500,000 hours (Telcordia SR-332 issue2 Method 1 at 25 °C)
Audible noises	Specification	≤ 40 dB (25 °C, full load); sound pressure@1m distance, ISO3744
Safety/EMC/ Lightning protection	Safety Certification	Passed TUV, CE, UL certifications; got the CB certificate; complies with UL60950-1, IEC60950-1, EN60950-1, CAN/CSA C22.2 No. 60950 -1
	Isolation	Input to output: 4242 Vdc; input to earth: 2121 Vdc; output to earth: 707Vdc
	EMC	EN55022 Class B, EN55024, EN61000-3-2, EN61000-3-3, ETSI EN300 386, ETSI EN301489, ITU-T K.20
	Lightening Protection	Common model(input to earth) / differential model(input to input): 5KA (8/20uS, ITU-T K.44)

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