



RT18 240V 30A 8.64kW HRE Rectifier Specification

The RT18 240V 30A 8.64kW HRE Rectifier is a high reliability and high efficiency switched mode rectifier (SMR) module that converts 220VAC to 240VDC at 30A output. It is suitable for high reliability applications such as Internet Data Centres (IDC) and DC UPS. The RT18 is fully compliant with China YD/T-2378-2011 and it delivers a power saving peak efficiency of > 95.5%.

The compact dimensions of the RT18 in its magazine (2.5U high, 3 units across) allow high power density in 800mm x 800mm footprint racks.

The addition of a MCSU-4 controller allows sophisticated power system management with

network connectivity and advanced rectifier sleep mode functionality for additional power savings.



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Detailed specifications at 220VAC in, 270VDC out, 25°C, unless otherwise stated

Input 220VAC

Voltage requirement:

Single phase, nominal range: 187 – 242VAC;
Voltage tolerance: 165 – 275VAC;
Full output power available above 187VAC;
Frequency: 50Hz ± 5Hz;
Voltage distortion: ≤ 5%;

Current drawn at full load:

42A RMS max at 220 VAC;
50A RMS max below 187VAC;

Power factor: Type 1

Greater than 0.99 at full load; 0.98 at half load;

Harmonic distortion of input current: Type 1

Less than 5% at full load; 10% at half load;

Voltage withstand test:

2800VDC input to chassis for 1 minute;

Protection:

Overvoltage: operates to 300VAC typically and will sustain 420VAC without damage;
Undervoltage: operates at reduced power to 90VAC typically;
Surge protection to 6kV/3kA;

Startup and hot plug:

Inrush less than 100% input current;
Soft start approx 10 seconds to match diesel generator start-up characteristics;

Output 240VDC

Voltage:

Float adjustment range: 204 – 290V;
Equalise adjustment range: 204 – 300V;
Precision: <±0.5%;

Current limit:

Range 6 - 33A;
Precision: <±1%;

Power limit:

Current limit is automatically reduced to limit output power to 8640W;

Available current: 33A at 204V
33A at 240V
32A at 270V
30A at 288V

Voltage withstand test:

2800VDC output to chassis for 1 minute;

Static regulation:

Load: terminal voltage drops by 2.5V ± 0.2V from zero to 30A load (for passive current sharing) for stand-alone units, or regulates to better than ±0.05% for MCSU-4 controlled units;

Dynamic regulation:

± 5% for 25/50/25% and 50/75/50% step load change;
± 0.5% of final value within 200us of step change;

Noise:

< 0.5% peak to peak (0 - 20MHz);





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Load sharing:

Better than $\pm 5\%$ of full scale with active current sharing from MCSU;

Protection:

Overcurrent: can sustain short circuit at output terminals indefinitely;

Inrush: no voltage dip on bus on hot plug;

Surge protection to 5kV/2.5kA;

Overshoot: 2% max at start-up;

General

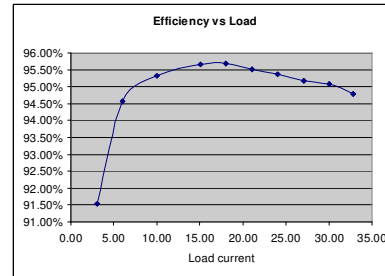
Isolation:

Input and output are isolated, all components that cross the isolation barrier are tested to 4000VAC or 5600VDC or higher;

Efficiency:

>95.5% peak efficiency;

>95% typical from 10 – 30A;



Standards

Product:

Designed to YD/T-2378-2011;

Safety:

Designed to IEC60950-1, Second Edition (2005);

EMC Emissions and Immunity:

Designed to IEC61000-6-4:2006; IEC61000-6-2:2005

Mechanical

Module:

Width: 178mm
 Height: 88mm (2U)
 Depth: 640mm
 Mass: < 11kg

Acoustic Noise:

≤ 55 dB (A Weighted);

Magazine to accept 3 modules:

Width 23 inch standard;
 Height 110mm (2.5U);

Environment

Operating range:

-5 °C to +40 °C, $\leq 90\%$ RH;

Storage and transport:

-40 °C to +70 °C, $\leq 95\%$ RH;

Vibration:

10-55Hz, 0.35mm sine;

Altitude:

1000m without de-rating;

Connections

Input, Output, and Communications:

A multifunction hot-plug connector is mounted on the back of the rectifier module that carries the AC, DC and communications lines. A matching connector is located at the back of the magazine. Reliable mating is ensured by a spring latch in the magazine that mechanically secures the rectifier.

