

RT7e-48V/6kW

Rectifier Specification



The RT7e-48V/6kW Rectifier is a high reliability and high efficiency (>97%) switched mode rectifier (SMR) module that converts 3-phase 380VAC to 48VDC at 100A output. It is designed for telecommunications applications but is suitable for any high reliability purpose. The RT7e is compliant with China YD/T 731 and it delivers an efficiency of > 97% in its normal operating range.

The RT7e allows high power density in 600mm x 600mm 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 380VAC in, 54VDC out, 25oC, unless otherwise stated:

Input

Voltage	3 phase, 4 wire (no neutral) nominal range: 304 – 475VAC; Voltage tolerance: 155 – 530VAC; Full output power available above 304VAC; Frequency: 45 - 66Hz; Voltage distortion: ≤ 5%;
Current	10A RMS max at 380 VAC; 13A RMS max below 304VAC;
Protection	Overvoltage: operates to 535VAC typically and will sustain 575VAC without damage; Undervoltage: operates at reduced power to 150VAC typically; Surge protection to 10kV/5kA; Missing phase: shutdown, with auto recovery
Voltage Withstand Test	2828VDC input to chassis for 1 minute;
Harmonic Distortion	Less than 5% at full load; 10% at half load;
Power Factor	Greater than 0.99 at full load; 0.98 at half load;
Startup and hot plug	Inrush less than 100% input current; Soft start <10 seconds to match diesel generator start-up characteristics;

Output

Voltage	Float adjustment range: 42 – 58.0V; Equalise adjustment range: 50 – 59.5V; Precision: 0.5%;
Current Limit	Range: 10 - 130A; Precision: 1%;
Power Limit	Current limit is automatically reduced to limit output power to 6kW; Available current: <ul style="list-style-type: none">• 125A at 48.0V• 110A at 54.0V• 101A at 59.5V
Voltage Withstand Test	1500VDC output to chassis for 1 minute;
Static Regulation	Load: terminal voltage drops by 0.42V ± 0.03V from zero to 100A load (for passive current sharing) for stand-alone units, or regulates to better than ±0.05% for MCSU-4 controlled units;
Dynamic Regulation	± 0.5% of final value for 25/50/25 or 50/75/50% step load change;



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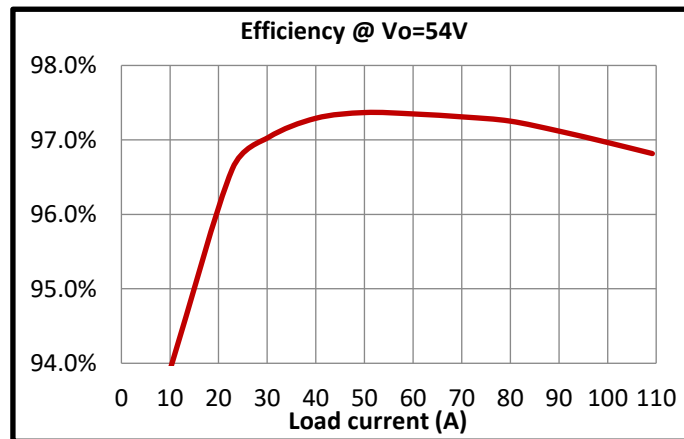
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Noise	< 2mV psophometric < 50mV rms 3.4 – 150kHz; < 20mV rms 0.15 – 30MHz; < 5mV discrete frequency 3.4 – 150kHz; < 3mV discrete frequency 150 – 200kHz; < 2mV discrete frequency 200 - 500kHz; < 1mV discrete frequency 0.5 – 30MHz; < 200mV peak to peak (0 - 20MHz);
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;

General

Isolation	Input and output are isolated; all components that cross the isolation barrier are tested to 4000VAC or 5600VDC or higher;
Efficiency	97.3% typical peak efficiency; >97% from 40 –90A;
Sleep Mode Power consumption	<5W



Standards

Product	Designed to YD/T 731 and Iron Tower requirements;
Safety	Designed to IEC60950-1, Second Edition (2005);
EMC Emissions and Immunity	Designed to IEC61000-6-4:2006; IEC61000-6-2:2005

Environmental

Operating range	-25°C to +50°C, $\leq 90\%$ RH;
Storage and transport	-40°C to +70°C, $\leq 95\%$ RH;
Altitude	4000m max, de-rating 5°C per 1000m;
Vibration	10-55Hz, 0.35mm sine;



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Mechanical

Dimensions	Height: 86 mm (2U) (3.40") Width: 441 mm (17.35") Depth: 458 mm (18.03")
Mass	15kg
Acoustic Noise	≤ 55dB (A Weighted)
Magazine size	Height: 88mm (2U) The RT7e-48V/6kW magazine is installed in a standard depth 600mm (23.6") 19-inch rack and takes up 2U of height. No additional clearance needs to be left at the top and bottom of the rack.

Connections

Input, Output, and Communications:

Hot-plug connectors are mounted on the back of the rectifier module that carries the AC, DC and communications lines. Matching connectors are located at the back of the magazine.

RT7e-48V/6kW Dimensions

