RT15 400V 75A 30kW
HRE Rectifier Specification

The RT15 400V 75A 30kW HRE Rectifier is a high reliability and high efficiency switched mode rectifier (SMR) module that converts 3-phase 380VAC to 378VDC at 30kW output. It is suitable for high reliability applications such as Internet Data Centres (IDC) and DC UPS. The RT15 is compliant with China QB-H-007-2012 and it delivers a power saving peak efficiency of >96%.

The compact size of the RT15 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.

Detailed specifications at 380VAC in, 378VDC out, 25°C, unless otherwise stated

**Input 380VAC**

**Voltage requirement:**
Three phase, 4 wire (no neutral) nominal range: 323 – 480VAC;
Voltage tolerance: 285 – 530VAC;
Full output power available above 323VAC;
Frequency: 50/60Hz ± 10%;
Voltage distortion: ≤ 5%;
Phase imbalance: <10%

**Current drawn at full load:**
48A RMS max at 380 VAC;
57A RMS max below 323VAC;

**Power factor: Type 1**
Greater than 0.99 at full load; 0.98 at half load;
0.95 at 30% 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 530VAC typically and will sustain 720VAC without damage;
Undervoltage: operates at reduced power to 155VAC 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 336VDC (378 normally)**

**Voltage:**
Float adjustment range: 300 – 392V;
Equalise adjustment range: 350 – 400V;
Precision: <±0.5%;

**Current limit:**
Range: 14 – 83A;
Precision: <±1%;

**Power limit:**
Current limit is automatically reduced to limit output power to 29kW;

**Voltage withstand test:**
2800VDC output to chassis for 1 minute;

**Static regulation:**
Load: terminal voltage drops by 3.5V ± 0.2V from zero to 75A load (for passive current sharing) for stand-alone units, or regulates to better than ±0.05% for MCSU-4 controlled units;

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<table>
<thead>
<tr>
<th>Dynamic regulation:</th>
<th>Protection:</th>
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<tbody>
<tr>
<td>± 5% for 25/50/25% and 50/75/50% step load change; ± 0.5% of final value within 200µs of step change;</td>
<td>Overcurrent: can sustain short circuit at output terminals indefinitely;</td>
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<td><strong>Noise:</strong></td>
<td>Inrush: no voltage dip on bus on hot plug;</td>
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<tr>
<td>&lt; 0.5% peak to peak (0 - 20MHz);</td>
<td>Surge protection to 5kV/2.5kA;</td>
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<tr>
<td><strong>Load sharing:</strong> Better than ± 5% of full scale with active current sharing from MCSU;</td>
<td>Overshoot: less than 0.1% at start-up;</td>
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**General**

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

Efficiency:
>96% peak efficiency; >95% typical from 30 – 100A;

**Standards**

Product: Designed to QB-H-007-2012;
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: 482.6mm
- Height: 130mm (3U)
- Depth: 440mm
- Mass: < 31kg

Acoustic Noise:
≤ 55dB (A Weighted);

Magazine:
- Width: 19 inch standard;
- Height: 132mm (3U);

**Environment**

Operating range:
-5°C to +40°C, ≤90% RH;
-40°C to +70°C, ≤95% RH;

Storage and transport:
10-55Hz, 0.35mm sine;
1000m without de-rating;

Vibration:

Altitude:

**Connections**

Input, Output, and Communications:
Two hot-plug connectors are mounted on the back of the rectifier module that carry the AC, DC and communications lines. Matching connectors are located at the back of the magazine.