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TERMINOLOGY USED

- Vout = Output Voltage
- Iout = Output Current
- Vin = Input Voltage
- Iin = Input Current
- Ilim = Current Limit
- Ta = Ambient Temperature
- OCP = Over-current protection
Load/Line Regulation
Vout = 385Vdc, 100% load = 109A, Ta = 25°C
Vout measured at output connector.

<table>
<thead>
<tr>
<th>Iout\Vin</th>
<th>360VAC</th>
<th>400VAC</th>
<th>480VAC</th>
<th>528VAC</th>
<th>Line Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% Load</td>
<td>386.11</td>
<td>385.69</td>
<td>384.92</td>
<td>384.54</td>
<td>1.57 0.41%</td>
</tr>
<tr>
<td>25% Load</td>
<td>385.62</td>
<td>385.42</td>
<td>384.78</td>
<td>384.33</td>
<td>1.29 0.33%</td>
</tr>
<tr>
<td>50% Load</td>
<td>385.45</td>
<td>385.28</td>
<td>384.63</td>
<td>384.19</td>
<td>1.26 0.33%</td>
</tr>
<tr>
<td>75% Load</td>
<td>385.3</td>
<td>385.12</td>
<td>384.5</td>
<td>384.07</td>
<td>1.23 0.32%</td>
</tr>
<tr>
<td>100% Load</td>
<td>385.13</td>
<td>384.97</td>
<td>384.37</td>
<td>383.94</td>
<td>1.19 0.31%</td>
</tr>
<tr>
<td>Load</td>
<td>0.98</td>
<td>0.71</td>
<td>0.56</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Regulation</td>
<td>0.25%</td>
<td>0.19%</td>
<td>0.14%</td>
<td>0.16%</td>
<td></td>
</tr>
</tbody>
</table>

Temperature Drift
Vout =385Vdc, 100% load = 109A

<table>
<thead>
<tr>
<th>Vin (VAC)</th>
<th>Iout (%)</th>
<th>Vout @ -10°C</th>
<th>Vout @ 25°C</th>
<th>Vout @ 50°C</th>
<th>Vout Delta</th>
<th>Overall Temperature Coefficient (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>0%</td>
<td>384.31</td>
<td>385.30</td>
<td>382.47</td>
<td>1.84</td>
<td>80</td>
</tr>
<tr>
<td>400</td>
<td>100%</td>
<td>384.07</td>
<td>384.87</td>
<td>381.34</td>
<td>2.74</td>
<td>118</td>
</tr>
<tr>
<td>400</td>
<td>107%</td>
<td>384.08</td>
<td>384.89</td>
<td>381.38</td>
<td>2.70</td>
<td>117</td>
</tr>
<tr>
<td>480</td>
<td>0%</td>
<td>383.44</td>
<td>383.39</td>
<td>381.66</td>
<td>1.78</td>
<td>77</td>
</tr>
<tr>
<td>480</td>
<td>100%</td>
<td>383.15</td>
<td>382.66</td>
<td>380.96</td>
<td>2.20</td>
<td>95</td>
</tr>
<tr>
<td>480</td>
<td>107%</td>
<td>383.16</td>
<td>382.73</td>
<td>381.13</td>
<td>2.02</td>
<td>88</td>
</tr>
</tbody>
</table>
### Efficiency vs Output Current

Vout = 385Vdc, 100% Load = 109A, Ta = 25°C

<table>
<thead>
<tr>
<th>Iout(%) / Vin</th>
<th>360 VAC</th>
<th>400 VAC</th>
<th>480 VAC</th>
<th>528 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% Load</td>
<td>99</td>
<td>99</td>
<td>99</td>
<td>98</td>
</tr>
<tr>
<td>107% Load</td>
<td>99</td>
<td>99</td>
<td>99</td>
<td>99</td>
</tr>
</tbody>
</table>

### Power Factor vs Output Current

Vout = 385Vdc, 100% Load = 109A, Ta = 25°C

<table>
<thead>
<tr>
<th>Iout(%) / Vin</th>
<th>360 VAC</th>
<th>400 VAC</th>
<th>480 VAC</th>
<th>528 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% Load</td>
<td>.94</td>
<td>.94</td>
<td>.94</td>
<td>0.93</td>
</tr>
<tr>
<td>107% Load</td>
<td>.94</td>
<td>.94</td>
<td>.95</td>
<td>.94</td>
</tr>
</tbody>
</table>
Inrush Characteristics
Inrush Current <150A peak per phase @ 400-480VAC input (excluding initial spike charging EMI capacitors lasting < 2ms)

Vout = 385Vdc, Ta = 25°C, Iout = 116A

Figure 1: Inrush @ 400VAC (Imax = 156A)

Figure 2: Inrush @ 400VAC - At Load turn on (Imax = 148A)
Figure 3: Inrush @ 400VAC - Initial spike charging of EMI capacitors (Imax = 156A)

Figure 4: Inrush @ 480VAC (Imax = >258A)
Figure 5: Inrush @ 480VAC - At Load turn on (I_{max} = 134A)

Figure 6: Inrush @ 480VAC - Initial spike charging of EMI capacitors (I_{max} = >258A)
**Turn On Characteristics**

$V_{out} = 385\text{Vdc}, T_{a} = 25^\circ\text{C}, \textit{AC ON Control}$ – Output turn on time from application of input voltage

![Figure 7: Turn ON Time from Vin = 360VAC.](image1)

(CH1: Vout, 100V/div; CH2: Vin, 1kV/div, CH4: Iin, 200A/div)

![Figure 8: Turn ON Time from Vin = 400VAC.](image2)

(CH1: Vout, 100V/div; CH2: Vin, 1kV/div, CH4: Iin, 200A/div)
Figure 9: Turn ON Time from Vin = 480VAC.
(CH1: Vout, 100V/div; CH2: Vin, 1kV/div, CH4: Iin, 200A/div)

Figure 10: Turn ON Time from Vin = 528VAC.
(CH1: Vout, 100V/div; CH2: Vin, 1kV/div, CH4: Iin, 200A/div)
**Remote On/Off Control** – Signal connected between terminals 1 (PSON1) and 2 (PSON2) of the Signal connector. 0~0.6 V or open, OFF, >6 V, ON

![Figure 11: Turn on Time from Remote On-Off - 360VAC](image)

(CH1: Vout, 100V/div; CH2: Vin, 1kV/div; CH3: PSON, 10V/div; CH4: Iin, 200A/div, Timebase = 100ms/div)

![Figure 12: Rise Time from Remote On-Off - 400VAC](image)

(CH1: Vout, 100V/div; CH2: Vin, 1kV/div; CH3: PSON, 10V/div; CH4: Iin, 200A/div, Timebase = 100ms/div)
Figure 13: Rise Time from Remote On-Off - 480VAC
(CH1: Vout, 100V/div; CH2: Vin, 1kV/div; CH3: PSON, 10V/div; CH4: Iin, 200A/div, Timebase = 100ms/div)

Figure 14: Rise Time from Remote On-Off - 528VAC
(CH1: Vout, 100V/div; CH2: Vin, 1kV/div; CH3: PSON, 10V/div; CH4: Iin, 200A/div, Timebase = 100ms/div)
Hold-Up Time Characteristics
Vout = 385Vdc, Ta=25°C, Iout = 116A

Figure 15: HOLD-UP TIME 400VAC
(CH1: Vout, 100V/div, CH2: Vin, 1kV/div, CH4: Iin, 200A/div, Timebase = 10ms/div)

Figure 16: HOLD-UP TIME 480VAC
(CH1: Vout, 100V/div, CH2: Vin, 1kV/div, CH4: Iin, 200A/div, Timebase = 10ms/div)
Ripple Characteristics

Ripple and Noise: 20MHz bandwidth. 100:1 probe.
Vout = 385Vdc, Ta= 25°C, Iout = 116A

Figure 17: Ripple @ 360VAC.
(CH1: Vout, 1V/div, Timebase = 2ms/div)

Figure 18: Ripple at 100% Load @ 400VAC.
(CH1: Vout, 400mV/div, Timebase = 2ms/div)
Figure 19: Ripple at 100% Load @ 480VAC.
(CH1: Vout, 400mV/div, Timebase = 2ms/div)

Figure 20: Ripple at 100% Load @ 480VAC.
(CH1: Vout, 400mV/div, Timebase = 2ms/div)
**OCP Characteristics**

Vout = 385Vdc, Ta=25°C

![OCP Threshold vs Input Voltage](image)

**Figure 30: OCP Threshold vs Input Voltage**
Conducted Emissions

EN55032 Class A / FCC Part 15 Class A

Vout = 385Vdc, Ta=25°C, Iout = 109A

Figure 31: Conducted Emissions. Vin = 400VAC
Radiated Emissions
EN55032 Class A /FCC Part 15 Class A

\[ V_{out} = 385\, V_{dc}, \theta = 25^\circ C, I_{out} = 109A \]

Figure 34: EN55032 Class A Radiated Emissions

The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators.)

Figure 34: EN55032 Class A Radiated Emissions
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e., antenna factors, cable loss, amplifier gains, and attenuators).

Figure 35: FCC Part 15 Class A Radiated Emissions