

## ac Power Solutions (cont'd)

(per phase for a sine wave with a resistive load at 0° to 40° C, within an output frequency range of 45 Hz to 1000Hz, and in ac coupled mode after a 30 minute warm-up unless otherwise noted. Note: For 6814B, 6834B and 6843A output voltage must be at least 50% of range.)<sup>1</sup>

## SPECIFICATIONS

|  |  | 6811B  | 6812B  | 6813B  | 6814B  | 6834B   | 6843A  |
|--|--|--|--|--|--|---|--|
| <b>Number of phases</b>                  |  | 1  | 1  | 1  | 1  | 1/3   | 1  |
| <b>Output ratings (Maximum)</b>          | Power                                    | 375 VA   | 750 VA   | 1750 VA  | 3000 VA  | 4500 VA/1500 VA   | 4800 VA  |
|  | rms voltage                              | 300 V  | 300 V  | 300 V  | 300 V (high range)<br>150 V (low range)                            | 300 V (high range)<br>150 V (low range)                                     | 300 V (high range)<br>150 V (low range)            |
|  | rms current                              | 3.25 A   | 6.5 A  | 13 A   | <sup>2</sup> 10 A (300 V range)<br><sup>2</sup> 20 A (150 V range) | <sup>2</sup> 15 A/5 A (300 V range)<br><sup>2</sup> 30 A/10 A (150 V range) | 16A (300 V range)<br>32A (150 V range)             |
|  | Repetitive & non-repetitive peak current | 40 A   | 40 A   | 80 A   | 40 A (300 V range)<br>80 A (150 V range)                           | 60 A/20A (300 V range)<br>120 A/40 A (150 V range)                          | 48 A (300 V range)<br>96 A (150 V range)           |
|  | Crest factor                             | 12   | 6  | 6  | 4  | 4   | 3  |
|  | Load Power factor capability             | 0 to 1   | 0 to 1   | 0 to 1   | 0 to 1   | 0 to 1  | 0 to 1   |
|  | dc power                                 | 285 W  | 575 W  | 1350 W   | N/A  | N/A   | N/A  |
|  | dc voltage                               | ±425 V   | ±425 V   | ±425 V   | N/A  | N/A   | N/A  |
|  | dc current                               | 2.5 A  | 5.0 A  | 10.0 A   | N/A  | N/A   | N/A  |
| <b>Output frequency range</b>            |  | dc; 45Hz to 1 kHz                                | dc; 45Hz to 1 kHz                                | dc; 45 Hz to 1 kHz                               | 45Hz to 5 kHz  | 45 Hz to 5 kHz  | 45 Hz to 1 kHz                                     |
| <b>Constant voltage ripple and noise</b> | (20 kHz to 10 MHz)                       | -60 dB (relative to full scale)                  | -60 dB (relative to full scale)                  | -60 dB (relative to full scale)                  | -60 dB (relative to full scale)                                    | -60 dB (relative to full scale)   | -60 dB (relative to full scale)                    |
| <b>Line regulation</b>                   | (% of full scale)                        | 0.1%   | 0.1%   | 0.1%   | 0.1%   | 0.1%  | 0.1%   |
| <b>Load regulation</b>                   | (% of full scale)                        | 0.5%   | 0.5%   | 0.5%   | 0.5%   | 0.5%  | 0.5%   |
| <b>Maximum total harmonic distortion</b> |  | 0.25% at 50/60Hz<br>1% worst case<br>45 to 1 kHz | 0.25% at 50/60Hz<br>1% worst case<br>45 to 1 kHz | 0.25% at 50/60Hz<br>1% worst case<br>45 to 1 kHz | 1% (45-1000Hz)<br>1% + 1%/kHz<br>(>1 kHz - 5 kHz)                  | 1% (45-1000Hz)<br>1% + 1%/kHz<br>(>1 kHz - 5 kHz)                           | 1% (45-1000 Hz)<br>1% + 1%/kHz<br>(>1 kHz - 5 kHz) |

(per phase for a sine wave with a resistive load at 0° to 40° C, within an output frequency range of 45 Hz to 1000Hz, and in ac coupled mode after a 30 minute warm-up unless otherwise noted. Note: For 6814B, 6834B and 6843A output voltage must be at least 50% of range.)<sup>1</sup>

## SPECIFICATIONS (CONTINUED)

|  |                                 | 6811B                           | 6812B                           | 6813B                           | 6814B                           | 6834B   | 6843A                           |
|--|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---|---------------------------------|
| <b>Programming accuracy (25° ± 5° C)</b>     |                                 |                                 |                                 |                                 |                                 |   |                                 |
| <b>Number of Phases</b>                      |                                 | 1                               | 1                               | 1                               | 1                               | 1/3   | 1                               |
| <b>RMS Voltage</b><br>(% of output + offset) | 0.15% + 0.3 V<br>(45 - 100Hz)   | 0.15% + 0.3 V<br>(45 - 100Hz)   | 0.15% + 0.3 V<br>(45 - 100Hz)   | 0.15% + 0.3 V<br>(45 - 100Hz)   | 0.15% + 0.3 V<br>(45 - 100Hz)   | 0.15% + 0.3 V<br>(45 - 100Hz)   | 0.15% + 0.3 V<br>(45 - 100Hz)   |
|  | 0.5% + 0.3 V<br>(>100 - 500 Hz) | 0.5% + 0.3 V<br>(>100 - 500 Hz) | 0.5% + 0.3 V<br>(>100 - 500 Hz) | 0.5% + 0.3 V<br>(>100 - 500 Hz) | 0.5% + 0.3 V<br>(>100 - 500 Hz) | 0.5% + 0.3 V<br>(>100 - 500 Hz)   | 0.5% + 0.3 V<br>(>100 - 500 Hz) |
|  | 1% + 0.3 V<br>(> 500 - 1000 Hz) | 1% + 0.3 V<br>(> 500 - 1000 Hz) | 1% + 0.3 V<br>(> 500 - 1000 Hz) | 1% + 0.3 V<br>(> 500 - 1000 Hz) | 1% + 0.3 V<br>(> 500 - 5000 Hz) | 1% + 0.3 V<br>(> 500 - 5000 Hz)   | 1% + 0.3 V<br>(> 500 - 1000 Hz) |
|  |                                 |                                 |                                 |                                 |                                 |   |                                 |
| <b>DC voltage</b>                            |                                 | 0.1% + 0.5 V                    | 0.1% + 0.5 V                    | 0.5% + 0.3 V                    | N/A                             | N/A   | N/A                             |
| <b>Frequency</b>                             |                                 | 0.01% + 10μHz                   | 0.01% + 10μHz                   | 0.01% + 10μHz                   | 0.01% + 10μHz                   | 0.01% + 10μHz   | 0.01% + 10μHz                   |
| <b>3 Phase Mode</b><br>(6834B only)          |                                 | N/A                             | N/A                             | N/A                             | N/A                             | 0.1* (45 - 100 Hz)<br>1* (>100 - 1kHz)<br>1* + 1*/ kHz<br>(>1 kHz - 5kHz) | N/A                             |

For a complete list of specifications for Agilent's ac power solutions, please see the operating manual on our web site at <http://www.agilent.com/find/manuals>

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ac Power Solutions (cont'd)

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SPECIFICATIONS (CONTINUED)

|  | 6811B                         | 6812B   | 6813B   | 6814B           | 6834B                                  | 6843A   |
|--|-------------------------------|---|---|-----------------|--|---|
| <b>Measurement accuracy (25 ± 5° C)</b>  |                               |   |   |                 |  |   |
| <b>Rms. voltage (45 - 100 Hz)</b>  | 0.03% + 100 mV <sup>3</sup>   | 0.03% + 100 mV <sup>3</sup>                                 | 0.03% + 100 mV <sup>3</sup>                                 | 0.05% + 250 mV  | 0.05% + 250 mV                         | 0.05% + 250 mV  |
| <b>dc Voltage</b>  | 0.05% + 150 mV <sup>3</sup>   | 0.05% + 150 mV <sup>3</sup>                                 | 0.05% + 150 mV <sup>3</sup>                                 | N/A             | N/A                                    | N/A   |
| <b>RMS Current (45 - 100 Hz)<sup>4</sup></b>   |                               |   |   |                 |  |   |
| high range   | 0.05% + 10 mA                 | 0.05% + 10 mA   | 0.05% + 10 mA   | 0.1% + 50 mA    | 0.1% + 50 mA (1Φ)<br>0.1% + 25 mA (3Φ) | 0.1% + 50 mA  |
| low range  | 0.05% + 1.5 mA                | 0.05% + 1.5 mA  | 0.05% + 1.5 mA  | N/A             | N/A                                    | N/A   |
| <b>Power (VA) (45-100 Hz)<sup>4</sup></b>  |                               |   |   |                 |  |   |
| high range   | 0.1% + 1.5 VA +<br>12 mVA/V   | 0.1% + 1.5 VA +<br>12 mVA/V                                 | 0.1% + 1.5 VA +<br>12 mVA/V                                 | 0.15% + 5 VA    | 0.15% + 5 VA (1Φ)<br>0.15% + 3 VA (3Φ) | 0.15% + 9 VA  |
| low range  | 0.1% + 1.5 VA<br>+1.2 mVA/V   | 0.1% + 1.5 VA<br>+1.2 mVA/V                                 | 0.1% + 1.5 VA<br>+1.2 mVA/V                                 | N/A<br>N/A      | N/A<br>N/A                             | N/A<br>N/A  |
| <b>Power (watts) (45-100 Hz)<sup>4</sup></b>   |                               |   |   |                 |  |   |
| high range   | 0.1% + 0.3 W +<br>12 mW/V     | 0.1% + 0.3 W +<br>12 mW/V                                   | 0.1% + 0.3 W +<br>12 mW/V                                   | 0.15% + 5 W     | 0.15% + 5 W (1Φ)<br>0.15% + 3 W (3Φ)   | 0.15% + 9 W   |
| low range  | 0.1% + 0.3 W +<br>+1.2 mW/V   | 0.1% + 0.3 W +<br>+1.2 mW/V                                 | 0.1% + 0.3 W +<br>+1.2 mW/V                                 | N/A<br>N/A      | N/A<br>N/A                             | N/A<br>N/A  |
| <b>Frequency</b>   | 0.01% + 0.01 Hz               | 0.01% + 0.01 Hz   | 0.01% + 0.01 Hz   | 0.01% + 0.01 Hz | 0.01% + 0.01 Hz                        | 0.01% + 0.01 Hz   |
| <b>Power Factor</b>  | 0.01                          | 0.01  | 0.01  | 0.01            | 0.01                                   | 0.01  |
| <b>Regulatory Test Solutions IEC mode measurement system characteristics (6812B, 6813B and 6843A only)</b> |                               |   |   |                 |  |   |
| <b>Output frequency range</b>  | N/A                           | 50 /60 Hz   | 50 /60 Hz   | N/A             | N/A                                    | 50 /60 Hz   |
| <b>Reference impedance accuracy</b>  | N/A                           | 3% (at 0.4 Ω and 796 mH)<br>1% (at 0.4 Ω and 796 mH at 25°) | 3% (at 0.4 Ω and 796 mH)<br>1% (at 0.4 Ω and 796 mH at 25°) | N/A             | N/A                                    | 3% (at 0.4 Ω and 796 mH)<br>1% (at 0.4 Ω and 796 mH at 25°) |
| <b>Output voltage harmonic content<sup>6</sup></b>   | N/A                           | Compliant with IEC 868 and IEC 61000-3-2                    | Compliant with IEC 868 and IEC 61000-3-2                    | N/A             | N/A                                    | Compliant with IEC 868 and IEC 61000-3-2                    |
| <b>Measurement accuracy</b>  |                               |   |   |                 |  |   |
| <b>Current magnitude (low range)</b>   | Fundamental<br>Harmonics 2-49 | 0.03% + 1.5 mA<br>0.03% + 1mA + 0.2%/kHz                    | 0.03% + 1.5 mA<br>0.03% + 1mA + 0.2%/kHz                    | N/A             | N/A                                    | 0.03% + 3 mA<br>0.03% + 2 mA + 0.2%/kHz                     |
| <b>Current magnitude (high range)</b>  | Fundamental<br>Harmonics 2-49 | 0.05% + 5 mA<br>0.05% + 3 mA + 0.2%/kHz                     | 0.05% + 5 mA<br>0.05% + 3 mA + 0.2%/kHz                     | N/A             | N/A                                    | 0.05% + 6 mA<br>0.05% + 3 mA + 0.2%/kHz                     |
| <b>Flicker</b>   | N/A                           | Compliant with IEC 868                                      | Compliant with IEC 868                                      | N/A             | N/A                                    | Compliant with IEC 868                                      |
| <b>Flicker Perceptibility (PST)</b>  | N/A                           | Compliant with IEC 868                                      | Compliant with IEC 868                                      | N/A             | N/A                                    | Compliant with IEC 868                                      |
| <b>Synchronization accuracy</b>  | N/A                           | <1ppm   | <1ppm   | N/A             | N/A                                    | <1ppm   |
| <b>Current shunt burden</b>  | N/A                           | 0 volts   | 0 volts   | N/A             | N/A                                    | 0 volts   |
| <b>Current harmonic smoothing filter time constant</b>   | N/A                           | 1.5 seconds   | 1.5 seconds   | N/A             | N/A                                    | 1.5 seconds   |
| <b>Pst integration time</b>  | N/A                           | 1, 5, 10 or 15 minutes                                      | 1, 5, 10 or 15 minutes                                      | N/A             | N/A                                    | 1, 5, 10 or 15 minutes                                      |

IEC Mode Measurement System Characteristics

|                                | Sample Rate | Window Width | Acquisition Overlap |
|--------------------------------|-------------|--------------|---------------------|
| <b>50 Hz Operation</b>         |             |              |                     |
| Rectangular measurement window | 12.8 kHz    | 16 cycles    | None                |
| Hanning measurement window     | 8.533 kHz   | 24 cycles    | 50%                 |
| <b>50 Hz Operation</b>         |             |              |                     |
| Rectangular measurement window | 15.360 kHz  | 16 cycles    | None                |
| Hanning measurement window     | 7.680 kHz   | 24 cycles    | 50%                 |

Notes:

- It is possible to program the output frequency of the 6812B and 6813B from dc to 45 Hz (please see note 3).
- Full current is available at voltages between 50% and 100% of the output voltage range.
- Product may be operated between dc and 45 Hz subject to the following conditions:  
Measurements may be extended to 4.5 Hz at full accuracy only by selecting a digitization rate of 250 μ seconds per point  
Frequency content of the measured signal must be limited to 4 k Hz or less to avoid aliasing effects
- Select low measurement range for improved accuracy (10:1) for lower power measurements.
- Single-phase operation.
- Output voltage harmonic content specification is limited for the 6843A for half-wave rectified/Class C loads. Compliance will be tested, verified and reported by the RTS software for all Devices Under Test

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1-800-452-4844

## ac Power Solutions (cont'd)

## SUPPLEMENTAL CHARACTERISTICS (non-warranted characteristics determined by design that are useful in applying the product)

|   | 6811B  | 6812B            | 6813B            | 6814B   | 6834B                                  | 6843A             |
|---|--|------------------|------------------|---|--|-------------------|
| <b>Average programming accuracy</b><br>(% of output + offset) rms current | 1.2% + 50 mA                                       | 1.2% + 50 mA     | 1.2% + 50 mA     | 0.2% + 80 mA  | 0.2% + 80 mA (1Φ)<br>0.2% + 40 mA (3Φ) | 0.2% + 80 mA      |
| <b>Average programming resolution</b>                                     |  |                  |                  |   |  |                   |
| rms voltage   | 125 mV   | 125 mV           | 125 mV           | 80 mV   | 80 mV                                  | 80 mV             |
| dc voltage  | 250 mV   | 250 mV           | 250 mV           | N/A   | N/A                                    | N/A               |
| Overvoltage programming (OVP)   | 2 V peak   | 2 V peak         | 2 V peak         | 2 V peak  | 2 V peak                               | 2 V peak          |
| rms current   | 2 mA   | 4 mA             | 4 mA             | 5 mA  | 7.5 mA (1Φ), 2.5 mA (3Φ)               | 7.5 mA            |
| peak current  | 12.5 mA  | 25 mA            | 25 mA            | N/A   | N/A                                    | N/A               |
| output frequency  | 10 μHz   | 10 μHz           | 10 μHz           | 10 μHz  | 10 μHz                                 | 10 μHz            |
| phase   | N/A  | N/A              | N/A              | N/A   | N/A                                    | N/A               |
| <b>Average measurement resolution</b>                                     |  |                  |                  |   |  |                   |
| rms voltage   | 10 mV  | 10 mV            | 10 mV            | 10 mV   | 10 mV                                  | 10 mV             |
| rms current   | 2 mA   | 2 mA             | 2 mA             | 3 mA  | 2 mA (1Φ)/6 mA (3Φ)                    | 6 mA              |
| <b>Programmable output impedance</b>                                      |  |                  |                  |   |  |                   |
| resistance  | 0-1 Ω  | 0-1 Ω            | 0-1 Ω            | N/A   | N/A                                    | N/A               |
| inductance  | 20 μh - 1 mh                                       | 20 μh - 1 mh     | 20 μh - 1 mh     | N/A   | N/A                                    | N/A               |
| <b>Remote sense capability</b>  | Up to 1 Vrms can be dropped across each load lead. |                  |                  | Up to 10 Vrms can be dropped across each load lead. |  |                   |
| <b>Isolation to ground</b>  | 300 Vrms/425 Vdc                                   | 300 Vrms/425 Vdc | 300 Vrms/425 Vdc | 300 Vrms  | 300 Vrms                               | 300 Vrms          |
| <b>Net Weight</b>   | 28.2 kg (62 lb)                                    | 28.2 kg (62 lb)  | 32.7 kg (72 lb)  | 79.5 kg (175 lb)                                    | 87.7 kg (193 lb)                       | 87.7 kg (193 lb)  |
| <b>Shipping Weight</b>  | 31.8 kg (70 lb)                                    | 31.8 kg (70 lb)  | 36.4 kg (80 lb)  | 119.1 kg (262 lb)                                   | 127.3 kg (280 lb)                      | 127.3 kg (280 lb) |
| <b>Dimensions</b>   | See drawings on page 54                            |                  |                  | See drawings on page 55                             |  |                   |

## ac INPUT RATINGS

|   | 6811B  | 6812B  | 6813B  | 6814B   | 6834B   | 6843A   |
|---|--|--|--|---|---|---|
| <b>Voltage range (Vac)</b><br>* default factory setting | 87 to 106 Vac<br>* 104 to 127 Vac<br>174 to 220 Vac<br>191 to 254 Vac      | 87 to 106 Vac<br>* 104 to 127 Vac<br>174 to 220 Vac<br>191 to 254 Vac    | 174 to 220 Vac<br>* 191 to 254 Vac                     | * 180 to 235 L-L (3Φ)<br>360 to 440 L-L (3Φ)<br>(requires option 400) | * 180 to 235 L-L (3Φ)<br>360 to 440 L-L (3Φ)<br>(requires option 400) | * 180 to 235 L-L (3Φ)<br>360 to 440 L-L (3Φ)<br>(requires option 400) |
| <b>Maximum input current (rms)<sup>1</sup></b>          | 12 A (100 Vac)<br>10 A (120 Vac)<br>7.5 A (200/208 Vac)<br>6.5 A (230 Vac) | 28 A (100 Vac)<br>24 A (120 Vac)<br>15 A (200/208 Vac)<br>13 A (230 Vac) | 22 A (200/208 Vac)<br>24 A (120 Vac)<br>20 A (230 Vac) | 18 A (208 Vac)<br>10 A (380 Vac)                                      | 24 A (208 Vac)<br>15 A (380 Vac)                                      | 24 A (208 Vac)<br>15 A (380 Vac)                                      |
| <b>Input power (max)<sup>2</sup></b>                    | 1000 VA/700 W  | 2500 VA/1400 W   | 3800 VA/2600 W   | 5800 VA/4100 W  | 8900 VA/5900 W  | 8900 VA/5900 W  |
| <b>Input frequency</b>                                  | 47 to 63 Hz  | 47 to 63 Hz  | 47 to 63 Hz  | 47 to 63 Hz   | 47 to 63 Hz   | 47 to 63 Hz   |

<sup>1</sup> Measured at low line    <sup>2</sup> Measured at high line    <sup>3</sup> Measured at high line

## Ordering Information

**Opt 001** Harmonic and Flicker Emissions Test (6812B, 6813B, 6843A only)  
**Opt 002** Voltage and Frequency Disturbances Immunity Test (6812B, 6813B, 6843A only)  
**Opt 003** Interharmonics Immunity Test (6812B, 6813B, 6843A only)  
**Opt 009** All the RTS software (6812B, 6813B, 6843A only)  
**Opt 0BN** Service Manual, extra Operating Guide, and Programming Guide  
**Opt 1CM** Rack-mount Kit, p/n 5062-3977 (quantity 2) (support rails required) **E3664AC Cabinet Rails must be ordered when rack mounting the 6814B and 6834B Opt 1CM**  
**Opt 1CP** Rack-mount Kit with Handles, p/n 5062-3983 (support rails required) 6811B, 6812B, 6813B only  
**Support rails, p/n 12679B, required when rack mounting the 6811B, 6812B, and 6813B Opt 1CM and Opt 1CP**

**Opt 100** 87 to 106 Vac, 48 to 63 Hz input (6811B, 6812B only) Japan only  
**Opt 200** 174-220 Vac, 48-63 Hz input (6813B only) Japan only  
**Opt 230** 191 to 254 Vac, 48-63 Hz input (6811B, 6812B only)  
**Opt 400** 360 to 440 Vac, 3-phase, 47 to 63 Hz input (6814B, 6834B, 6843A only) required for Europe  
**Opt 831** 12 AWG, 200 to 240 Vac, unterminated (6812B, 6813B only)  
**Opt 832** 4 mm<sup>2</sup> wire size, unterminated (6813B only)

**Opt 833** 1.5 mm<sup>2</sup> wire size, 200 to 240 Vac, unterminated (6812B only)  
**Opt 834** 10 AWG, 100 to 120 Vac, unterminated (6812B only)  
**Opt 841** Line Cord with NEMA L6-20P; 20 A 250 V Plug (6812B only)  
**Opt 842** Line Cord with IEC 309; 32 A 220 V plug (6813B only)  
**Opt 844** Line Cord with NEMA L6-30P; 30 A 250 V Locking Plug (6813B only)  
**Opt 845** Line Cord with IEC 309; 16 A 220 V Plug (6812B only)  
**Opt 846** Line Cord with NEMA L6-30P; 30 A 120 V Plug (6812B only)  
**Opt 847** Line Cord with CEE 7/7; 16 A 220 V Plug (6812B only)  
**Opt 848** Line Cord with BS 546; 15 A 240 V Plug (6812B only)  
**For ac Line Cord and Cord Options information see pages 44-47.**  
**For Dimension Drawings see pages 58 and 59.**

## 6814B and 6834B Accessories

**p/n 5060-3513** Three 30 A replacement fuses for 180 to 440 Vac line  
**p/n 5063-2310** Heavy duty rack slide kit